Humber Teaching
NHS Foundation Trust

VENOUS THROMBOEMBOLISM (VTE) ASSESSMENT, INITIATION OF THROMBOPROPHYLAXIS, COMMUNITY VENOUS THROMBOEMBOLISM MANAGEMENT AND INTERIM ANTICOAGULANT IF SUSPICION OF VTE PROCEDURE

Document Reference	Proc454 (Med)
Version Number	2.3
Author/Lead **Job Title**	Diane Pickering, Medicine Optimisation Nurse Anna Adjei-Doku, Pharmacist Carol Wilson, Locality Matron Community Services Sadie Milner, Quality Standards Practice Development Nurse
Director's Name **Date**	Hilary Gledhill, Executive Director of Nursing Allied Health and Social Care Professional
Consultation	Drugs and Therapeutic Group Physical Health and Medical Devices Group
Date of Last Changes	25 January 2024
Date of Next Review	January 2027
Date and name of Ratifying Committee	Drugs and Therapeutic Group 25 January 2024

CHANGE RECORD

Version	Date	Change details
1.0	*Dec 16*	*Policy amended to Procedure as per QPaS December 2016*
2.0	*August 2021*	*Brought into line with recent guidance:* *COVID-19 rapid guideline: managing COVID-19, NICE guideline (NG191) Last updated: 8 April 2021* *Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (NG89)* *Venous thromboembolism in adults: diagnosis and management* *Quality standard (QS29) Published: 28 March 2013 Last updated: 25 January 2021* *Venous thromboembolic diseases: diagnosis, management and thrombophilia testing NICE guideline (NG158) Published: 26 March 2020* *Changes as follows:* *Addition of information on VTE prophylaxis after elective procedures and on discharge* *Guidance on low molecular weight heparins (LMWH) updated to accommodate flexibility of choice in response to stock shortages* *Assessment of VTE risk on admission time frame is now changed to 'as soon as possible after admission' or 'at the consultant review' also added the caveat that this must be within 24 hours.* *Review is at consultant review or if their clinical condition changes. (NG89).* *Removal of Leicester Competency Assessment Tool* *People with suspected VTE are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to be delayed.* *Agreed should ask for expert advice from a/e if have suspicion of VTE.* *GP can give FP10 and assisted by practice nurse, wards have available.*

		VTE post surgery for wards and GP practices to be aware of preventative treatment *Patients with Suspected or Confirmed COVID-19, given the apparent increased incidence of VTE in COVID-19, clinicians should have a low threshold for suspecting VTE.* *Scope to include from 12 years upwards on the children's unit it would be prudent to make sure all have assessment, 16 and above in other areas* *York pathway for prophylaxis with lower limb Immobilisation*
2.1	*September 2021 (DTG)*	*Updated to reflect QS 201 Statement 1 patients will be assessed as soon as possible after admission. All patients needing pharmacological venous thromboembolism (VTE) prophylaxis start it as soon as possible and within 14 hours of hospital admission.* *Added in QS 201 statement 3 relating to People aged 18 and over with a deep vein thrombosis (DVT) Wells score of 2 points or more have a proximal leg vein ultrasound scan within 4 hours of it being requested.* *Removed EIA and mental capacity section as this relates to an old document template.* *The information relating to the VTE patient information leaflet (Appendix 4) has been removed as it is obsolete.*
2.2	*August 2022*	*Document subject to a full review as V2.1 was difficult to navigate.* *Removed administration of treatment and prophylaxis in the community servcies from the scope as covered in other documents.* *Removed the extensive list of post surgical VTE prophylaxis and added link directly to the NICE guidance as our servcies do not undertake surgical procedures of this nature.* *Updated titles in the roles and responsbilities section* *Changed MIU to UTC* *Removed the statement requiring RNs to ensure investigations are carried out and reviewed as this is the roles of the medic.* *Removed HCSW section as this is covered in the community services delegation SOP* *Added additional sub-headings for ease of reading.* *Removed the risk assessment from the appendix and added in the link to the DoH risk assessment* *Added in the links to the Well scores.* *Removed the need for risk assessment ot be carried out in children below 16 years as no evidence to suppor this other than in an acute paed ICU setting.* *Training and competency assessment section updated* *Monitoring section includes VTE zero event*
2.3	*January 2024*	*Reviewed. Changes to Appendix 3 with updated algorithm for Whitby UTC in line with Scarborough and York Teaching Hospitals. Minor alterations regarding competencies in Section 7 and change from Zero Events to Patient Safety Priorities in Section 11. Approved at Drugs and Therapeutic Group (25 January 2024).*

Contents

1. INTRODUCTION

In 2019, the National Institute for Health and Care Excellence (NICE) issued NICE guideline NG89 to update and replace all previous guidelines for reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism in patients over 16 years of age. The guideline aims to help healthcare professionals identify people most at risk and describes interventions that can be used to reduce the risk of venous thromboembolism (VTE). Key recommendations have been organised to provide guidance on:

- Risk assessment
- Providing information and discharge planning
- Advice for all patients
- Specific advice for certain patient groups

Humber Teaching NHS Foundation Trust (the Trust) will implement NG89 for all patients admitted to an inpatient facility; patients will be risk assessed for VTE and bleeding risk, provided with advice on reducing the risk of VTE and where appropriate receive thromboprophylaxis.

2. SCOPE

This procedure applies to all staff within Trust inpatient areas who undertake VTE risk assessments and staff involved in the care of patients at risk of VTE.

The VTE assessment applies to all patients 16 years and over admitted to an inpatient ward (community, mental health, forensic, learning disability and CAMHS).

For children under the age of 16 years admitted to CAMHS inpatient services routine VTE is not required as per NICE guidance. If a young person is thought to be at risk of VTE due to an underlying condition then risk assessment may be required following consultation with specialist services.

Trust community services in conjunction with the patient's general practitioner provide care to patients who are receiving VTE **prophylaxis or treatment** who are housebound. This procedure does not cover the delegation of administration of VTE prophylaxis or treatment within the community services as this is covered in Community - Safe Admin of Dalteparin-Fragmin Tinzaparin Enoxaparin by Unregistered Staff

The procedure also applies to staff treating patients with lower limb plaster casts.

People with suspected VTE will be offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to be delayed as per the Venous thromboembolism in adults: diagnosis and management Quality Standard QS29 updated: 25 January 2021.

3. PROCEDURE STATEMENT

The purpose of this procedure is to:

- Ensure that all Trust inpatients are appropriately assessed for their risk of developing a VTE, that they receive appropriate management and that the level of risk is reviewed as stated in this procedure.
- To offer people with suspected VTE an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to be delayed.
- Consider offering pharmacological VTE prophylaxis to patients with lower limb plaster casts after evaluating the risks and benefits based on clinical assessment and discussion with the patient.

4. DUTIES AND RESPONSIBILITIES

Chief Executive
Is responsible for ensuring that a procedure for assessing and implementing interventions to prevent VTE is in place and that all staff working in the Trust are aware of, operate within the procedure and that resources are in place for implementation, training, monitoring, review and audit of VTE.

Medical Director
Is responsible for ensuring that all medical staff are aware of, are trained in assessing and implementing interventions to prevent VTE.

Director of Nursing, Allied Health and Social Care Professionals
Is responsible for ensuring this procedure is implemented, monitored and reviewed in line with national policy and guidelines

Chief Pharmacist
Is responsible for ensuring the procedure is implemented monitored and reviewed in line with national policy and guidelines and approved through the Drug and Therapeutic group.

Divisional Clinical Leads and General Managers
Are responsible for ensuring that all staff are aware of and operate within the procedure and adhere to training requirements and performance monitoring required by the Trust to demonstrate adherence. Divisional Clinical Leads and General Managers should ensure clinical teams are able to access appropriate training.

Medic, Advanced Clinical Practitioner, or Independent Prescriber
The Medic, Advanced Clinical Practitioner or Independent Prescriber has clinical responsibility to undertake the Risk Assessment for VTE on admission. Following risk assessment they will consider whether prescribing of thromboprophylaxis is clinically indicated. They will complete the assessment and record the prescribing and prophylaxis decision, prescribe medication were indicated and inform the nurse in charge accordingly and ensure that any necessary investigations have been completed prior to commencing thromboprophylaxis. They must prescribe and review the patient as outlined in this procedure.

For patients who attend Whitby UTC with a fracture and need non-surgical lower limb immobilisation, the Medic, Advanced Clinical Practitioner or Independent Prescriber will assess the patient for the need for prophylaxis with Low Molecular Weight Heparin (LMWH), unless contraindicated. This assessment will be based on the York and Scarborough Teaching Hospitals algorithm and the prescriber will decide if VTE prophylaxis is appropriate. See Appendix 3

All prescribers must ensure the patient receives verbal and written information on the risks of VTE and methods of prevention regarding VTE. See section 5.9

Modern Matrons
The modern matron is responsible for ensuring implementation and compliance with this protocol, ensuring practitioners receive appropriate training and are competent before delivering VTE interventions, auditing practice and monitoring any incidents relating to VTE.

The Registered Nurse (RN)
On admission the RN must ensure that the VTE assessment and any applicable assessments have been recorded and an appropriate care plan has been formulated. They must be aware of any risk factors related to VTE and its management including bleeding risks.

Anti-embolic stockings should only be fitted by RNs who are competent to correctly measure and fit patients with anti-embolic stockings and know when their use is not recommended (Appendix 1).

The RN is responsible for ensuring that they keep themselves updated and maintain their competency to undertake the procedures, with regards to the management of VTE.

The RN will adhere to the Nursing Midwifery Council standards on delegation (NMC code of conduct). For delegation within community services please refer to Community - Safe Admin of Dalteparin-Fragmin Tinzaparin Enoxaparin by Unregistered Staff

5. VTE RISK ASSESSMENT, PROPHYLAXIS AND MANAGEMENT

5.1. VTE Risk Assessment

In order to meet with NG89 and QS201 Quality Statement 1 all patients (aged 16 years and over) admitted to hospital or attending UTC for non-surgical lower limb immobilisation will **be assessed as soon as possible after admission. All patients needing pharmacological venous thromboembolism (VTE) prophylaxis start it as soon as possible and within 14 hours of hospital admission.**

The assessment can be located on both SystmOne and Lorenzo and mirrors the Department of Health Risk Assessment DoH Risk assessment for venous thromboembolism (VTE) and assesses both the thrombosis risk and bleeding risk.

All patients should then be re-assessed for risk of VTE and bleeding at the point of consultant review or if their clinical condition changes as per NG89. If a consultant review does not take place routinely, i.e. mental health inpatient units or GP lead community wards then the reassessment can be delegated to an appropriately competent medic.

All patients that are assessed as being appropriate for pharmacological VTE prophylaxis will be assessed for risk of bleeding.

On transfer to an inpatient ward from another ward, the patients should be reassessed for their continued risk of VTE and their level of mobility. The prescriber is responsible for the decision to prescribe further thromboprophylactic therapies.

When a patient has been transferred from another hospital and there is written evidence the VTE assessment was completed, the patient will have their VTE reassessed on admission and if there is no change, the review does not have to take place (the combination of the initial VTE assessment before transfer and this subsequent review on admission would equate to the review). However, the “not necessary” part of the risk assessment should be completed by the prescriber.

The patient should be reassessed for the risk of VTE on a regular basis dependent upon clinical need and a record should be made in the patient’s record.

If the patient is commenced on LMWH at home, the GP is responsible for the VTE assessment, appropriate investigations and to establish blood levels and weight and initiating medication.

5.1.1. Patients with cancer

Offer pharmacological VTE prophylaxis to patients with cancer who are assessed to be at increased risk of VTE.

Do not routinely offer pharmacological or mechanical VTE prophylaxis to patients with cancer having oncological treatments that are ambulant.

Do not routinely offer pharmacological or mechanical VTE prophylaxis to patients with central venous catheters who are ambulant.

Consider offering pharmacological VTE prophylaxis with LMWH (or Unfractionated Heparin (UFH) for patients with severe renal impairment or established renal failure) to patients with central

venous catheters who are at increased risk of VTE.

5.1.2. Patients having palliative care

Consider offering pharmacological VTE prophylaxis to patients having palliative care who have potentially reversible acute pathology. Take into account potential risks and benefits and the views of patients and their families and/or carers.

Do not routinely offer pharmacological or mechanical VTE prophylaxis to patients admitted for terminal care. The views of patients, their families and/or carers and the multidisciplinary team must be considered and agreed. This must be documented. The patient will be reviewed as part of their daily plan of care and the agreement will continue; unless the patient improves or the patient or carers or family wish to change the decision. This decision should be documented in the VTE assessment document in the section “document any reason for deviation from recommended pathway”.

5.1.3. Patients with Suspected or Confirmed COVID- 19

British Thoracic Society (updated May 2020) Guidance on Venous Thromboembolic Disease in patients with COVID-19 have found emerging data and clinical experience to suggest an increased prevalence of venous thromboembolic events in people with COVID-19, especially in patients with more severe disease.

Clinicians should have a low threshold for suspecting VTE in Covid-19 patients. PE should be considered if sudden worsening of hypoxaemia, blood pressure or tachycardia occurs, or if oxygen requirements are disproportionate to the severity of pneumonia (NG191), specialist advice for treatment should be sought from the acute care with immediate transfer.

5.1.4. Other considerations

Lower limb immobilisation: Consider pharmacological VTE prophylaxis with LMWH or fondaparinux sodium for people with lower limb immobilisation whose risk of VTE outweighs their risk of bleeding. **Consider stopping prophylaxis if lower limb immobilisation continues beyond 42 days**

For full details relating to VTE prophylaxis post-surgery please refer to Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (nice.org.uk)

5.2. Pharmacological prevention of VTE

The individual’s risk VTE should be balanced against their risk of bleeding, when deciding whether to offer pharmacological thromboprophylaxis. Pharmacological VTE prophylaxis should start as soon as possible and within 14 hours of admission. If pharmacological prophylaxis is contraindicated, the independent prescriber should consider providing graduated compression using thigh- or knee-high graduated compression anti embolic (TED) stockings. If the patient is assessed as appropriate for VTE prophylaxis, this should be commenced as soon as possible after the risk assessment has been completed and continued until the patient is no longer at increased risk of VTE.

5.3. Investigations prior to commencing pharmacological VTE prophylaxis

When prescribing for prophylaxis, the prescriber is responsible for ensuring the patient has had a Full Blood Count (FBC) prior to commencing LMWH. This is to assess for the risk of thrombocytopenia. Signs of thrombocytopenia can include a 30% reduction of platelets (even within normal range), thrombosis, or skin allergy British National Formulary (BNF).

Hyperkalaemia risk appears to increase with duration of LMWH. Patients with diabetes mellitus, chronic renal failure, acidosis, raised plasma potassium or those taking potassium-sparing drugs seem to be more susceptible. For patients at risk, plasma-potassium concentration should be measured prior to commencing LMWH and monitored regularly as per (BNF). Also, the biochemical profile (BCP) should be monitored before starting treatment and every two to four days

if treatment is continued for more than seven days.

The ongoing monitoring of full blood count should only be carried out for the following:

- Patients on unfractionated heparin post operatively
- Bypass patients receiving any form of heparin who have been treated with unfractionated heparin in the last 100 days
- Post-operative patients receiving low molecular heparin who have been treated with unfractionated heparin in the last 100 days

For patients who attend Whitby UTC and have a fracture and need non-surgical lower limb immobilisation, the prescriber will assess the patient for prophylaxis LMWH. This assessment will be based on the algorithm in Appendix 3 and the prescriber will decide if VTE prophylaxis is appropriate.

5.4. Low molecular weight Heparins (LMWH)

The Trust has approved guidance on the use of LMWH. Patients who are transferred to Trust inpatient care or under community services, who are prescribed alternative agents, should be referred to an independent prescriber to establish if the alternative should be continued. In making their choice prescribers should consider if the patient has brought in supplies which have been issued to them and any current advice on the availability of the different agent

All low molecular weight heparin and unfractionated heparin are porcine derived. Patients should be informed and where appropriate an alternative product should be offered such as Fondaparinux. Fondaparinux should be avoided if the estimated glomerular filtration rate (eGFR) is less than 20 ml/min and the dose should be reduced to 1.5mg daily if eGFR is 20-50ml/ min.

5.5. Administration of LMWH

The RN will ensure the patient understands the implications of VTE and its management and provide a leaflet to the patient if needed.

A brief review of the patient's wellbeing will be undertaken at each administration, to ensure the patient is not experiencing any complications or their condition is deteriorating. The staff member will liaise with the independent prescriber and/or nurse in charge if there is any change to the patient's condition and determine what further actions should be undertaken. This must be documented in the patient records.

For the treatment of thromboembolism or patients with complex needs, the dose of anticoagulant must be calculated with regard to the patient weight (BNF). The RN is responsible for developing a care plan which includes reviewing and monitoring the patient's condition considering any side effects, weight loss or gain. It should be explicit if any deterioration or concerns need to be escalated to a medical practitioner, and any outcomes to be actioned and documented.

The LMWH injection will be administered, as far as possible, the same time each day. The method of administration is by subcutaneous injection, preferably into the abdominal subcutaneous tissue anterolateral or posterolateral, or into the lateral part of the thigh.

After the injection has been administered the waste products should be disposed of as directed in the Trust's Safe and Secure Handling of Medicines Procedure.

If the patient is able and wishes to administer their own injection or a carer will assist, training must be provided and they must be assessed to ensure they can; administer the injection safely, dispose of the equipment appropriately, understand how to store the medicine and be clear about the complications that can occur and what to do if this happens. This assessment and its outcome will be documented in the patient's notes.

5.6. Patients taking antiplatelet agents

Consider VTE prophylaxis for patients taking antiplatelet agents for other conditions and whose risk of VTE outweighs their risk of bleeding. Take into account the risk of bleeding and of comorbidities such as arterial thrombosis.

- If the risk of VTE outweighs the risk of bleeding, consider pharmacological VTE prophylaxis based on their condition or procedure.
- If the risk of bleeding outweighs the risk of VTE, consider mechanical VTE prophylaxis

5.7. Patients taking anticoagulants

Consider VTE prophylaxis for people at increased risk of VTE who are interrupting anticoagulant therapy

5.8. Mechanical Prevention of VTE

Following risk assessment, the independent prescriber should decide whether pharmacological prophylaxis may be contraindicated and consider providing the patient with thigh- or knee-high graduated compression anti embolic (TED) stockings. Where TED stockings are provided patients should be measured for their application by appropriately trained and competent nursing staff as soon as possible after admission.

It is important to ensure that TED stockings are removed, changed and washed regularly to allow the patient to have their legs washed on a daily basis for hygiene purposes and to monitor for adverse events such as blisters, marking or skin deterioration. They should be reapplied as soon as possible. The patient should be reassessed on discharge to see if they need to continue with the stockings. This should be communicated verbally and in writing to the appropriate practitioner and the patient. Accurate documentation of the assessment, application, and monitoring of a patient requiring TED stockings must be documented in the patient's record.

TED stockings must not be offered to patients who have a known allergy to the material of manufacture. TED stockings are not recommended for patients who have been admitted for stroke, cardiac failure, or suspected or proven arterial disease. peripheral arterial bypass grafting, peripheral neuropathy or other causes of sensory impairment, any local conditions in which anti-embolism stockings may cause damage – for example, fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft, severe leg oedema.

Major limb deformity or unusual leg size or shape preventing correct fit. Use caution and clinical judgement when applying anti-embolism stockings over venous ulcers or wounds (NG89).

On initial assessment the community nurse will remove the TED stockings to assess the legs for any contraindications and take appropriate action if needed. If the patient cannot manage their own stockings on a daily basis, the nurse should ensure support or referral for support to help manage the use of stockings.

Patients who are admitted for stroke should not be offered foot impulse devices or neuromuscular electrical stimulation devices. Consider intermittent pneumatic compression (IPC) for VTE prophylaxis for immobile patients who are admitted within three days of acute stroke. Explain to the patient or their family members or carers (as appropriate) that: it reduces the risk of deep vein thrombosis and may provide an increase in survival. When using intermittent pneumatic compression for patients who are admitted for stroke, provide it for 30 days or until the patient is mobile or discharged, whichever is sooner (NICE 2015).

5.9. Patient information and consent

Patients will receive advice and management to reduce the risk of VTE. Patients must be encouraged to mobilise early and prophylaxis will be provided to patients at risk of VTE.

A VTE patient information leaflet advising on VTE should be provided to the patient and discussed with them to help the patient understand VTE, understand what steps they can take to reduce the

risk of VTE, assist informed consent and raise awareness of side effects and what to do if concerned. All staff will be fully aware of the information contained within the patient's information leaflet, enabling them to answer general questions that may arise. The patient can only be provided with treatment if they have consented, or it is within the patient's best interests as defined by the Mental Capacity Act 2005.

Patients who need extended (post hospital) prophylaxis to continue after the end of their hospital stay must be offered, before discharge, verbal and written information on VTE prevention as part of their discharge plan.

Thrombosis UK provide a range of patient information leaflets which can be located here
Also see What is thrombosis? Hospitalisation and clots

6. SUSPECTED VTE

Where there is a suspicion of a VTE, expert advice should be sought immediately. **If a patient is suspected of having a VTE they should be transferred to an acute hospital so they can have the appropriate investigations, associated with diagnosis and a treatment plan commenced. All patients with suspected VTE must not be transferred back to a community hospital setting until their investigations, diagnosis and necessary treatment plan is in place and the patient is assessed as being medically stable for transfer back to a non-acute setting.**

6.1. Suspected Deep Vein Thrombosis (DVT)

As per Quality Standard Statement 3 **People aged 18 and over with a deep vein thrombosis (DVT) Wells score of 2 points or more have a proximal leg vein ultrasound scan within 4 hours of it being requested.** Wells' Criteria for DVT - MDCalc

People with suspected deep vein thrombosis (DVT) should be offered an interim therapeutic dose of anticoagulation therapy (if not contraindicated) if diagnostic investigations are expected to take longer than four hours from the time of first clinical suspicion.

6.2. Suspected Pulmonary Embolism (PE)

For people with a 'likely' pulmonary embolism (PE) or a Wells score of more than 4 points, an interim dose of anticoagulation therapy (if not contraindicated) should be offered if diagnostic investigations cannot be done immediately ('immediately' is defined as within one hour from the first clinical suspicion). For people with an 'unlikely' PE or Wells score of 4 or less, an interim anticoagulation therapy (if not contraindicated) should be offered if the D-dimer test results cannot be obtained within four hours from the time of first clinical suspicion (NICE Guidance Quality Standard (QS29). Wells' Criteria for Pulmonary Embolism - MDCalc

Overview | Venous thromboembolism in adults | Quality standards | NICE

7. TRAINING AND COMPETENCY ASSESSMENT

All staff administering LMWH injection will have evidence of their competency, this will be achieved within the Annual Medicine Administration competency assessment. The competency assessment and guidance for Administration of Low Molecular Weight Heparin by Non-Registered Staff,-can be sourced on the Trust intranet. Other training and competency related to the procedure will also need to be in date for all staff, i.e. , anaphylaxis and basic life support and infection control.

All staff applying graduated compression stockings must be competent and trained in measurement and fitting and have a record of competences. CRS15 - Humber Assessment Competency Tool - HACT.pdf

All RN and HCSW (HCSW in community services) will be supported to maintain their competencies by attending appropriate refresher training yearly, such as e-learning. The RN and HCSW should be able to evidence their competency at their yearly appraisal.

All staff working within the scope of this policy are required to complete the VTE training package available via e- learning for healthcare.

8. DISCHARGING PATIENTS

The patient requires a seamless handover to ensure the patient receives appropriate and timely treatment. It should be ensured that:

- A discussion takes place with other relevant health professional if ongoing treatment is required both verbally and in writing.
- The independent prescriber clearly states the treatment and duration of treatment on the discharge summary and transfer of care form.
- The patient is assessed as being able to administer their treatment before being discharged. Any problems are highlighted and adequate support will be obtained before discharge.
- If the patient needs assistance to administer medication an administration record will need to be written and supplied to the community nurses

On discharge it is important the patient and /or their carer understand:

- The signs and symptoms of Deep Vein Thrombosis and Pulmonary Embolus and other adverse events related to VTE
- The importance of seeking help
- Who to contact if concerned
- If prescribed LMWH the patient needs to understand:
  - The correct use of the medication at home
  - The implications of not using the medication correctly
  - Disposal of equipment safely
- Also, if using anti-embolism stockings, the patient needs to:
  - Understand the benefits of wearing stockings
  - Understand the need for daily hygiene and removal of stockings.
  - Be able to remove and replace them or have someone available who will be able to do this for them
  - Be aware to look for skin marking, blistering or discolouration etc., particularly over the heels and bony prominences.

9. DOCUMENTATION

All patients will be assessed using the VTE assessments within the electronic patient record or UTC algorithm.

10. IMPLEMENTATION

This protocol will be disseminated by the method described in the Procedure for the Control, Review, Approval and Dissemination of Clinical Policies, Procedures, Protocols, Guidelines and Standard Operational Procedures (Proc481)

11. MONITORING AND AUDIT

The matrons/unit managers/team leaders will be responsible for ensuring monitoring is undertaken to assess that all patients have received a VTE risk assessment on admission to the ward, or if attending Whitby UTC for non-surgical lower limb immobilisation and have been offered appropriate treatment. The matron and pharmacist will monitor untoward incidents associated with this policy and resolve any identified difficulties.

VTE assessment compliance is monitored through the Physical Health and Medical Devices Group and VTE assessment being undertaken within 14 hours of admission to our inpatient units is a Patient Safety Priority for our Trust for 2023/24 (Patient Safety Priorities 2023-24.pdf (humber.nhs.uk))

12. REFERENCES

COVID-19 rapid guideline: managing COVID-19
NICE guideline NG191 Published: 23 March 2021. Last updated: October 2021

Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism NG89

Venous thromboembolism in adults: diagnosis and management
Quality standard QS29 Published: 28 March 2013. Last updated: 25 January 2021

Venous thromboembolic diseases: diagnosis, management and thrombophilia testing
NICE guideline NG158 Published: 26 March 2020

Venous Thromboembolism in Adults Quality Standard QS201

Nursing & Midwifery Council (2015) The Code Standards on Delegation

13. RELEVANT TRUST POLICIES/PROCEDURES/PROTOCOLS/GUIDELINES

Safe and Secure Handling of Medicines Procedures (Proc431)

Discharge and Transfer Policy (Inpatient) (N-032)

Deteriorating patient Policy (N-062) and Protocol (Prot-527)

Emergency and Resuscitation Policy and Procedure (M-004)

The Safe Administration of Dalteparin (Fragmin), Tinzaparin, Enoxaparin for Prophylaxis Treatment Only in the Community by Non-Registered Staff (SOP19-050)

14. DEFINITIONS

Venous Thromboembolism: (VTE)

- Venous thrombosis is a condition in which a blood clot (thrombus) forms in a vein in any part of the venous system.
- The thrombus can reduce blood flow through the affected vein, causing pain and swelling.
- Venous thrombosis most commonly occurs in the ‘deep veins’ in the legs, thighs, or pelvis. This is known as a deep vein thrombosis (DVT).

- When a part or all of the thrombus in the deep vein breaks off from the site where it is created and travels through the venous system. This is known as an embolism.
- A dislodged thrombus that travels to the lung is known as a pulmonary embolism (PE). However, DVT and PE are the most common manifestations of venous thrombosis. DVT and PE are known as venous thromboembolism (VTE).

Thromboprophylaxis
Thromboprophylaxis is the treatment to prevent blood clots forming in veins.

VTE Management:
For the purpose of this procedure, VTE management includes VTE prophylaxis or VTE treatment.

Appendix 1: When Anti-Embolism Stockings Should Not be Used

Do not offer anti-embolism stockings to patients who have:

- Been admitted for stroke
- 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, for example fragile ‘tissue paper’ skins, 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.

Appendix 2: VTE Prophylaxis Guidance – Low Molecular Weight Heparins (LMWH)

- For **all** inpatients complete each of the following the patient's record (electronic or otherwise):
  - VTE Risk Assessment
  - Bleeding Risk
  - Decision Pathway
  - VTE reassessment
- **IMPORTANT: do not assess a patient is at risk and then omit prophylaxis**
- Where indicated, prescribe LMWH by dose in **UNITS (or mg) once daily** by S/C injection at 6pm
- If the patient is admitted between 6pm and 4am prescribe stat dose of LMWH
- For pregnancy and puerperium consult the BNF
- The patient's weight **must** be recorded at all times on any Medicines Administration Record Chart and in the patient's record (electronic or otherwise)
  - If known, use actual weight (ask patient/carer if possible)
  - Otherwise use an estimated weight
- **SUGGESTIONS TO ASCERTAIN WEIGHT OF IMMOBILE PATIENTS**
  - Where possible weigh patients on admission
  - Look for a previous recent weight (last three months) in patient records, outpatient records, old drug charts which may all have weights documented.
  - Ask the patient/relative if they know their approximate weight. Or contact the nursing/residential home/community team for a recent weight.

FIRST LINE TRUST-WIDE: DALTEPARIN

Dalteparin for VTE prophylaxis in adults (excluding pregnancy and puerperium) **ONCE DAILY by S/C injection. Use the prefilled syringes**			
Syringe	**Type of patient**	**Dose**	**Volume**
	**Dialysis patients ONLY**	**2500 Units OD**	**0.2mL**
	**All other patients**	**5000 Units OD**	**0.2 mL**
For special circumstances, discuss with Haematology			

SECOND LINE TRUST-WIDE: TINZAPARIN (To be used where Dalteparin is not available)

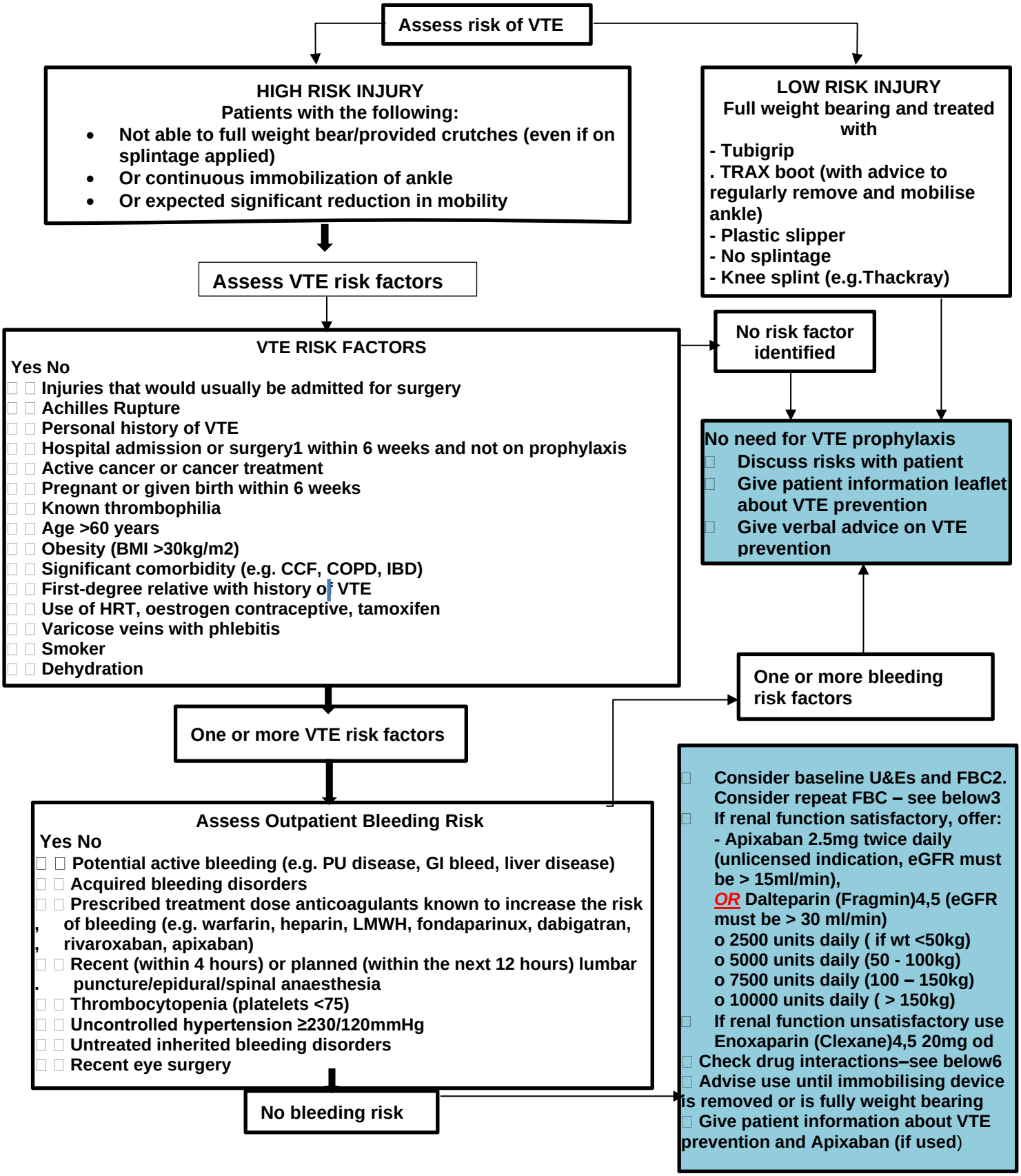
Tinzaparin for VTE prophylaxis in adults (excluding pregnancy and puerperium) ONCE DAILY by S/C injection. Use the 10000 Units/mL syringes in the colours below			
Syringe	**Body Weight**	**Dose**	**Volume**
	**30.0 to 50.0 Kg**	**2500 Units OD**	**0.25 mL**
	**50.1 to 70.0 Kg**	**3500 Units OD**	**0.35 mL**
	**70.1 to 130.0 Kg**	**4500 Units OD**	**0.45 mL**
<30 Kg or > 130.1 Kg- Consider 50 units/Kg OD Seek the advice of a consultant haematologist			
RENAL IMPAIRMENT- REDUCE DOSE (below)			
Reduced dose if CrCl < 20mL/min	**30 Kg to 70 Kg**	**2500 Units OD**	**0.25 mL**
	70.1 Kg to 130 Kg	**3500 Units OD**	**0.35 mL**

THIRD LINE TRUST WIDE- ENOXAPARIN
(To be used when Dalteparin and Tinzaparin are not available)

Enoxaparin for VTE prophylaxis in adults (excluding pregnancy and puerperium) ONCE DAILY by S/C injection. Use the 100mg/mL syringes in the colours below			
Syringe	**Risk**	**Dose**	**Volume**
	**Low**	**20mg OD**	**0.2 mL**
	**High**	**40mg OD**	**0.4 mL**
RENAL IMPAIRMENT- AVOID IF CREATININE CLEARANCE LESS THAN 15 mL/MINUTE Risk of bleeding increased; use of unfractionated heparin may be preferable			

Appendix 3: Whitby Urgent Treatment Centre VTE Risk Assessment and Management of Adult Outpatients with Non-Surgical Lower Limb Immobilisation

(with acknowledgement to York and Scarborough Teaching Hospitals)



Date: ……Name & Signature: ……

1Procedure with a total anaesthetic and surgical time of >90 mins, or 60 mins if the surgery involves the pelvis or lower limb AND/OR recent acute admission with inflammatory or intra-abdominal condition AND/OR expected significant reduction in mobility

2Consider baseline FBC and U&E in patients at risk of renal impairment or low platelets. Otherwise healthy patients do NOT require baseline bloods

3Consider repeat FBC in patients with exposure to therapeutic LMWH or heparin in previous 3 months

4If allergic to LMWH (dalteparin or enoxaparin) consider alternative depending on allergy history

5Previous HIT within last 90 days or high risk, consider oral anticoagulation using Apixaban 2.5mgs twice daily (unlicensed)

6Important interactions include antiplatelet agents and NSAIDS (consider PPI cover), antiepileptics and antiretroviral agents