Public – To be published on the Trust external website

Title: VTE - Risk Assessment for Venous Thromboembolism

Ref: CLIN-0085-v2

Status: Approved
Document type: Procedure

Contents

1 Introduction

Hospital-acquired VTE accounts for thousands of deaths annually in the NHS, and fatal pulmonary embolism remains a common cause of in-hospital mortality. HAT (Hospital Acquired Thrombosis) accounts for 50–60% of all VTE seen.

In 2013/14, there were around 24,700 admissions for pulmonary embolism and 19,400 for DVT in England. In 2013 in England and Wales, there were 2,191 deaths recorded as due to pulmonary embolism and 2,816 due to DVT. Treatment of non-fatal symptomatic VTE and related long-term morbidities is associated with a considerable cost to the health service.

People admitted to hospital or mental health units have varied risk factors for VTE. The spectrum of VTE risk is an understanding the scale of the problem has led to a paradigm shift in preventing and managing VTE in the NHS (NICE 2018).

The National Institute for Health and Clinical Excellence (NICE) 2018 published Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism

Venous thromboembolism (VTE) is a collective term for both deep vein thrombosis (DVT) and pulmonary embolism (PE). A DVT is a blood clot in the deep veins of the leg. A PE is the blockage of one of the pulmonary arteries found in the lungs usually due to a blood clot.

The risk of developing VTE depends on the condition and/or procedure for which the patient is admitted and any predisposing risk factors.

TEWV NHS Foundation Trust provides care to a diverse range of service users across several specialties and localities, all of whom require varying degrees of need and support. As reiterated by NHS England, 2019 [online], care provision is variable, with some groups of people continuing to experience inequalities. TEWV NHS Foundation Trust is therefore fully committed to ensuring that patients receive care that is individualised, holistic and evidence based, and that fair and equal treatment is offered to all. No one should have a poorer service or a lesser experience because of their differences, inclusive of VTE prevention and management. It is in keeping with this principle that this guideline has been written.

This procedure supports Our Journey to change as set out in our Consent to examination or treatment policy.

2 Purpose

Following this procedure will help the Trust to:-

- Reduce the risk of (VTE) venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital.

3 Who this procedure applies to

This policy applies to all healthcare professionals working within TEWV NHS Foundation Trust who have a responsibility to screen, monitor, review and/or manage the risk of venous thromboembolism (VTE) in patients admitted to hospital.

Consideration has also been given to those who may be affected by this guideline to ensure that the document content aligns to the Trust's values, so that people who may be affected are treated with compassion, respect and responsibility.

3.1 Roles and Responsibilities

Role	Responsibility
Executive Medical Director	Ensuring that the procedure is implemented.
General Manager / Head of Service / Clinical Director	Ensuring that the procedure is adhered to within their area.
Medical Staff:	Complete VTE risk assessment on admission, record all relevant information on the electronic care record. Reassessment of risk when the clinical situation changes Prescribe appropriate prophylaxis ensuring correct dose and treatment duration.
Physical Health Practitioners	Complete VTE risk assessment on admission, record all relevant information on the electronic care record. Reassessment of risk when the clinical situation changes Prescribe appropriate prophylaxis ensuring correct dose and treatment duration.
Nursing Staff	Prescription and treatment plan is clear Monitor for clinical signs of suspected VTE
Non-Medical Prescribers	Complete VTE risk assessment on admission, record all relevant information on the electronic care record. Prescribe appropriate prophylaxis ensuring correct dose and treatment duration.
Pharmacy	Prescription and treatment plan are clear with appropriate monitoring.

4 Related documents

This procedure describes what you need to do to implement the Physical Health Assessment of the Physical health and wellbeing policy (inpatients and community)

The Physical health and wellbeing policy (inpatients and community) defines the standards which you must read, understand and be trained in before carrying out the procedures described in this document.

This procedure also refers to:-

- ✓ Consent for Examination and Treatment Policy
- ✓ Medicines Overarching Framework

5 Assessing the risks of VTE and bleeding

For patients that are admitted to adult mental health, older person's mental health and learning disability wards, VTE risk assessment (Appendix 3) is required as soon as possible after admission to hospital or by the time of the first consultant review (NICE 2019). If patients are mobile and have had no change to their physical health, the risk assessment will be complete at **step one** of the VTE risk assessment.

Patients over 18 only

- ✓ Assess all patients on admission to identify those who are at increased risk of VTE
- ✓ Assess all patients for risk of bleeding before offering pharmacological VTE prophylaxis.

All patients should be risk assessed on admission to hospital by a Doctor or Physical Healthcare Practitioner. Patients should be reassessed within 24 hours of admission and whenever the clinical situation changes.

Risk assessment should be carried out by a Doctor or Physical Healthcare Practitioner, and the outcome documented on the electronic care record in the Physical Health Casenote

Reduced mobility in psychiatry has been suggested as the inability to walk 10 meters for 1-2 weeks. Catatonia and prolonged physical restraint are notable causes of reduced

mobility in psychiatry and it is suggested that reduced mobility for 3 day increases the risk of thrombosis tenfold (Maly et. al 2008).

Should any patient's physical condition change or they become confined to bed either on admission or during their inpatient stay (for whatever reason), the patient should have a VTE risk assessment completed by the Doctor responsible for their care

5.1 Reducing the risk of VTE

Give verbal advice and document in PARIS

- ✓ Encourage patients to drink plenty of fluids (unless fluid is restricted due to a medical condition).
- ✓ Encourage patients to mobilise as soon as possible.
- ✓ Patients who may be chair bound can do gentle exercises e.g. ankle circling

5.2 VTE Prophylaxis

The first line of prophylaxis for VTE should be pharmacological using a Low Molecular Weight Heparin (LMWH).

Consider pharmacological VTE prophylaxis with fondaparinux sodium if LMWH is contraindicated for people admitted to an acute psychiatric ward whose risk of VTE outweighs their risk of bleeding. [2018].
Contra-indications include previous heparin induced thrombocytopenia (HIT) or an alternative not from animal origin required.

Mechanical VTE prophylaxis using anti-embolism stockings should only be used when LMWH is contraindicated or if the patient refuses LMWH. See Appendix 4 Prescribing Anti-embolism Stockings.

If a patient refuses LMWH and/or anti-embolism stockings this **must** be documented in the patients PARIS record and reviewed at each Multi-disciplinary team meeting to review the risk assessment and seek compliance.

5.3 Pharmacological VTE prophylaxis

Pharmacological VTE prophylaxis should be offered to patients where the VTE risk outweighs bleeding risks (see appendix 3).

Patients already prescribed therapeutic anticoagulation (eg heparin, warfarin, rivaroxaban etc) due to a pre-existing medical condition, continue on existing anticoagulation treatment.

Low Molecular Weight Heparin (LMWH)

- Low molecular weight heparin (LMWH), is a subcutaneous injectable heparin, and is recommended as prophylaxis to prevent patients at risk, from developing venous thromboembolism.
- Baseline monitoring weight, renal function and platelets must be obtained before commencing treatment.
- Routine monitoring of anti-coagulant effect is not usually required during treatment, however it should be considered for patients are at an increased risk of bleeding e.g. renal impairment and those underweight or overweight. Monitor weight and renal function
- LMWH will be prescribed by an appropriately authorised prescriber and administered by the nursing staff.
- If necessary, prophylaxis should be started as soon as possible after risk assessment has been completed.
- Stop prophylaxis when the patient is assessed to be no longer at risk of VTE.

Dose according to weight

When used for the prevention (prophylaxis) of VTE, a standard dosing regimen is used. The dose of LMWH must be calculated according to body weight

Drug	Patients Weight	Dose
Enoxaparin (Clexane)	<50kg	20mg once daily*
Enoxaparin (Clexane)	51-100kg	40mg once daily
Enoxaparin (Clexane)	101-150kg	40mg twice a day*
Enoxaparin (Clexane)	>150kg	60mg twice a day*

*These doses are 'off licence'.

Dose adjustment in renal impairment

Caution is advised in the use of LMWH in patient with severe renal impairment (kidney disease). People with an estimated glomerular filtration rate (eGFR) of less than 30 ml/min/1.73m2 **the maximum recommended enoxaparin dose is 20mg once a day, irrespective of weight.**

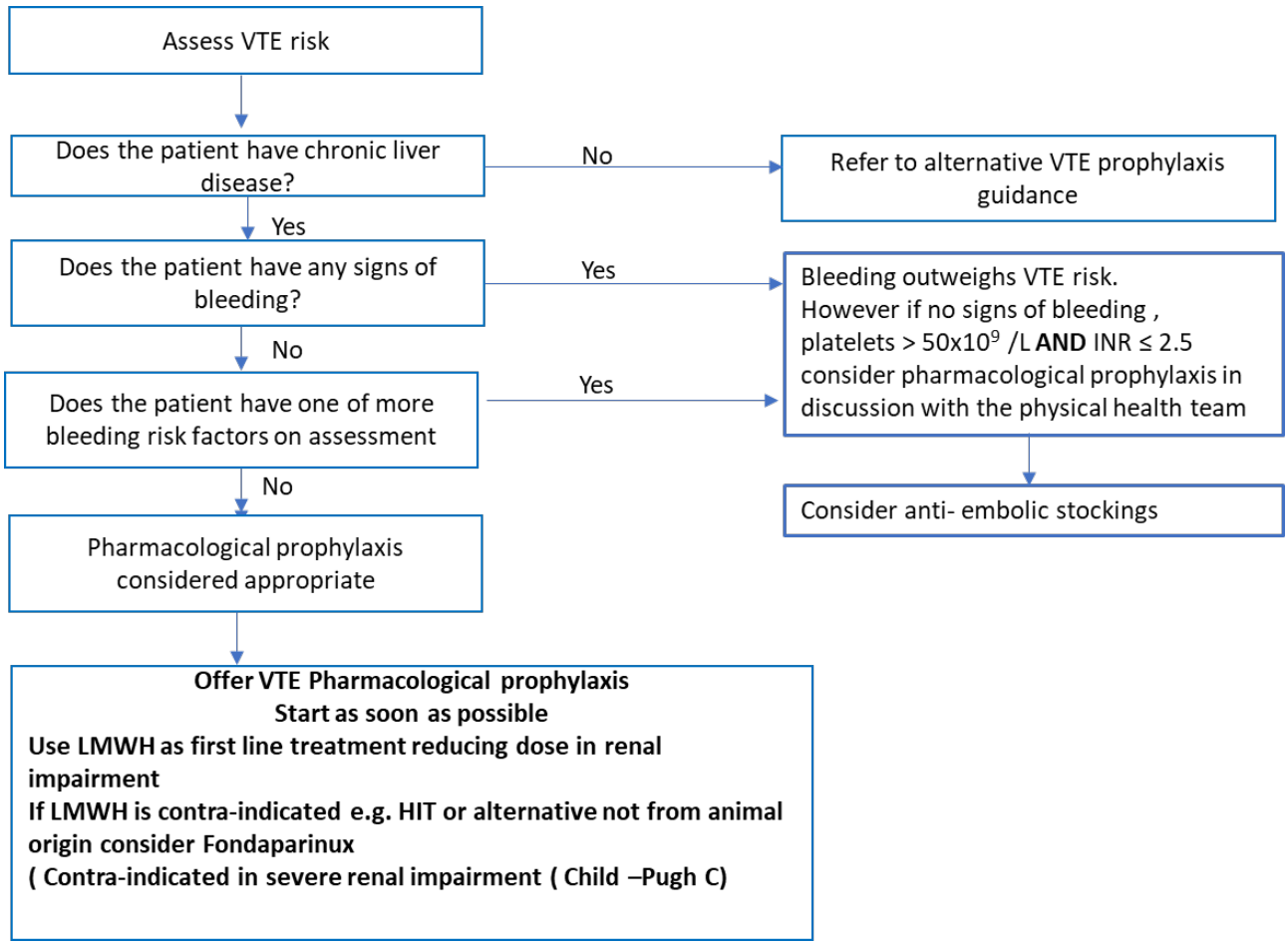
Refer to local pharmacy prescribing guidelines.

Pregnancy

Pregnant or less than 6 weeks post-partum- seek specialist advice.

Chronic Liver Disease

Patients with chronic liver disease may have a high INR and/or low platelets which are thought to be protective factors against venous thromboembolism (VTE). However, there is evidence that now suggests these patients may be pro-thrombotic. Consequently, portal vein thrombosis is encountered in 10-25% of patients with cirrhosis and can be prevented with appropriate use of LMWH



LMWH Contraindicated

In the case of HIT or requirement for medication not from an animal source.

Fondaparinux 2.5mg s/c daily if eGFR ≥50ml/min

Fondaparinux 1.5mg s/c daily of eGFR 20-49 ml/min

5.4 Suspected DVT or PE

If a patient complains of the following, please seek urgent medical advice from Duty Doctor/ Physical health Practitioner:

DVT

- pain in one leg which is worse when the leg is pressed;
- leg becoming warm and red
- swelling of the leg (affected leg at least 2cm larger than the unaffected leg)

Usually only one leg is affected at any time. But, sometimes DVT can affect both legs.

PE

- pain in the chest
- difficulty breathing
- Syncope
- Drop in blood pressure
- Drop in oxygen saturation
- coughing up blood

5.4.1 Action for Medic / Physical Health Practitioner for suspected DVT /PE

For people who present with signs or symptoms of DVT, such as a swollen or painful leg, assess their general medical history and do a physical examination to exclude other causes.

If DVT is suspected, use the 2-level DVT Wells score (table below) to estimate the clinical probability of DVT.

Clinical Feature		Points
Active cancer (treatment or palliation within 6 months)	No	0
	Yes	1
Bedridden recently >3 days or major surgery within 12 weeks	No	0
	Yes	1
Calf swelling >3 cm compared to the other leg (measured 10 cm below tibial tuberosity)	No	0
	Yes	1
Collateral (nonvaricose) superficial veins present	No	0
	Yes	1
Entire leg swollen	No	0
	Yes	1
Localized tenderness along the deep venous system	No	0
	Yes	1
Pitting oedema, confined to symptomatic leg	No	0
	Yes	1
Paralysis, paresis, or recent plaster immobilization of the lower	No	0

extremity	Yes	1
Previously documented DVT	No	0
	Yes	1
Alternative diagnosis to DVT as likely or more likely	No	0
	Yes	-2

Clinical Probability Simplified Score

Wells' Score	**Risk group**
2 points or more	DVT likely
1 point or less	DVT unlikley

DVT likely (Wells score 2 points or more)

Refer people with a **likely** DVT Wells score to the Acute Trust for:

- a proximal leg vein (doppler) ultrasound scan, with the result available within 4 hours if possible

- If a proximal leg vein ultrasound scan result cannot be obtained within 4 hours, arrange a D-dimer test – this should be taken on site and sent immediately to the lab and the result awaited.

5.4.2 Arranging a scan

If a D-dimer result is positive, doppler ultrasound scan is required. Contact Same Day Emergency Care Unit or equivalent (depending upon location) or Medical Registrar on call and refer for DVT rule-out.

High suspicion for DVT should warrant imaging regardless of Wells score.

The presence of DVT is critical to the evaluation of possible PE, and if PE is on the differential, alternative decision aids such as the Wells PE or PERC rule.

Signs or symptoms of PE

For people who present with signs or symptoms of PE, such as chest pain, shortness of breath or coughing up blood, assess their general medical history, do a physical examination and refer to SDEC or Medical registrar on call as appropriate.

Two-level PE Wells score

Clinical Feature		Points
Clinical signs and symptoms of DVT (minimum of leg swelling and pain with palpation of the deep veins)	No	0
	Yes	3
An alternative diagnosis is less likely than PE	No	0
	Yes	3
Heart rate more than 100 beats per minute	No	0
	Yes	1.5
Immobilisation for more than 3 days or surgery in the previous 4 weeks	No	0
	Yes	1.5
Previous DVT/PE	No	0
	Yes	1.5
Haemoptysis	No	0
	Yes	1
Malignancy (on treatment, treated in the last 6 months, or palliative)	No	0
	Yes	1

Clinical Probability Simplified Score

Wells' Score	Risk group
More than 4 points	PE Likely
Less than 4 points	PE unlikely

All patients symptomatic of PE should be discussed with the on call Medical Registrar or Consultant with a view to admission for a PE rule out / treatment

5.5 Discharge

For patients being discharged from our service, complete a formal review prior to discharge and document any need for extended prophylaxis on the discharge summary.

6 Definitions

Term	Definition
VTE	Venous thromboembolism is a collective term for both deep vein thrombosis (DVT) and pulmonary embolism (PE).
PE	Pulmonary Embolism is the blockage of one of the pulmonary arteries found in the lungs; this is usually due to a blood clot.
DVT	Deep Vein Thrombosis is a blood clot in the deep veins of the leg.
LMWH	Low molecular weight heparin.
INR	International Normalised Ratio
DOAC's	Direct Oral Anticoagulant's

7 How this procedure will be implemented

- This procedure will be published on the Trust's intranet and Trust website.

- Line managers will disseminate this policy to all Trust employees through a line management briefing.

7.1 Training needs analysis

Staff/Professional Group	Type of Training	Duration	Frequency of Training

Medical Staff	Online ESR VTE prevention in secondary care	1 hour	Once Only
Registered MH/LD Nursing Staff (inpatients): AMH, Secure inpatient services, MHSOP, LD	Online ESR VTE prevention in secondary care	1 hour	Once Only

8 How the implementation of this procedure will be monitored

Number	Auditable Standard/Key Performance Indicators	Frequency/Method/Person Responsible	Where results and any Associate Action Plan will be reported to, implemented and monitored; (this will usually be via the relevant Governance Group).
1	VTE Audit (approx. 15 question checklist / location of resource audit department	Frequency = Annually Method = audit checklist Person responsible = Medic	Executive Quality Assurance and Improvement Group (EQAIG)
2	VTE prevention in secondary training 100 % completed medics	Frequency = Once only Method = ESR online learning Person responsible =Medical staff	
3	VTE prevention for health care training 100 % completed registered nursing staff	Frequency = Once only Method = ESR online learning Person responsible = Ward Manager	Ward level meeting

9 References

National institute for Health and Clinical Excellence (NICE) (2019) Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (NG89)

Scottish Intercollegiate Guidelines Network (2010) SIGN Publication No122: Prevention and Management of Venous Thromboembolism

What doses of thromboprophylaxis are appropriate for adult patients at extremes of body weight? Prepared for NHS healthcare professionals by the HAT Committee of the UK Clinical Pharmacy Association Date Prepared: April 2010

Maly R., Masopust J., Hosak L., Konupcikova K. (2008) Assessment of risk of venous thromboembolism and its possible prevention in psychiatric patients. Psychiatry and Clinical Neurosciences 62; 3-8.

10 Document control (external)

To be recorded on the policy register by Policy Coordinator

Date of approval	28 August 2023
Next review date	28 August 2026
This document replaces	Risk Assessment for Venous Thromboembolism (VTE) CLIN-0085-v1.3
This document was approved by	Physical Health Group
This document was approved	28 August 2023
This document was ratified by	n/a
This document was ratified	n/a
An equality analysis was completed on this policy on	20 April 2023
Document type	Public
FOI Clause (Private documents only)	n/a

Change record

Version	Date	Amendment details	Status
1	02 Dec 2015	New Document	Withdrawn
1.1	26 Mar 2018	Minor amendment p.6	Withdrawn
1.2	26 Sep 2019	Reviewed and minor amendments in line with NICE guidelines	Withdrawn
1.2	30 Mar 2021	Review date extended to March 2023	Withdrawn
1.3	27 May 2021	Update on how to access VTE e-learning which accessed via ESR please search: Venous Thrombo-embolism* in Section “5 How this guideline will be implemented” – no content changed. (*spelling due to ESR course upload).	Withdrawn

2	28 Aug 2023	Full review with minor amendments in line with NICE VTE Guidelines (amended Aug 2019). Added pharmacological prophylaxis and Wells score chart. Updated to current template	Approved

Appendix 1 - Equality Analysis Screening Form

Please note: The Equality Analysis Policy and Equality Analysis Guidance can be found on the policy pages of the intranet

Section 1	Scope
Name of service area/directorate/department	Physical healthcare
Title	**Risk Assessment for Venous Thromboembolism (VTE)**
Type	Procedure/guidance*
Geographical area covered	Trust wide
Aims and objectives	Update guidelines in line with NICE 2018 Guideline.
Start date of Equality Analysis Screening	29th March 2023
End date of Equality Analysis Screening	20 April 2023

Section 2	Impacts
Who does the Policy, Service, Function, Strategy, Code of practice, Guidance, Project or Business plan benefit?	The Guideline benefits service users by standardising the processes/interventions required by staff for the screening, monitoring and management of VTE risks. Similarly, the information within the Guideline will help facilitate medical and nursing staff to identify people who are at risk of VTE and aims to ensure that service users receive safe, effective and appropriate interventions that are supported by current national guidance and best practice.
Will the Policy, Service, Function, Strategy, Code of practice, Guidance, Project or Business plan impact negatively on any of the protected characteristic groups?	• **Race** (including Gypsy and Traveller) **NO** • **Disability** (includes physical, learning, mental health, sensory and medical disabilities) **NO**

	• **Sex** (Men, women and gender neutral etc.) **NO** • **Gender reassignment** (Transgender and gender identity) **NO** • **Sexual Orientation** (Lesbian, Gay, Bisexual, Heterosexual, Pansexual and Asexual etc.) **NO** • **Age** (includes, young people, older people – people of all ages) **YES** • **Religion or Belief** (includes faith groups, atheism and philosophical beliefs) **YES** • **Pregnancy and Maternity** (includes pregnancy, women who are breastfeeding and women on maternity leave) **YES** • **Marriage and Civil Partnership** (includes opposite and same sex couples who are married or civil partners) **NO** • **Armed Forces** (includes serving armed forces personnel, reservists, veterans and their families) **NO**
Describe any negative impacts	Patients over 60 years of age, patients with limited mobility and pregnant patients have a higher risk of VTE, emphasis in the guideline is placed on reducing the risks for these patients.
Describe any positive impacts	The positive impacts of the guidance are Service users with VTE Risks receive safe, effective and appropriate care and interventions that are supported by current national guidance and best practice.

Section 3	**Research and involvement**
What sources of information have you considered? (e.g. legislation, codes of practice, best practice, nice guidelines, CQC reports or feedback etc.)	National guidance/Reports.
Have you engaged or consulted with service	Yes

users, carers, staff and other stakeholders including people from the protected groups?	
If you answered Yes above, describe the engagement and involvement that has taken place	Given that this Trust Guideline has been developed in accordance with a number of national key documents published by NICE, the Department of Health, NHS England and also, Public Health England, there has been no consultation with service users in terms of the actual writing of this document. However, there has been involvement with various healthcare professionals within the Trust. This Guideline is therefore a standardised approach that enables clinical staff working within TEWV NHS Foundation Trust to adhere to national recommended best practice and guidance in relation to identifying risk and preventing and managing VTE risks.
If you answered No above, describe future plans that you may have to engage and involve people from different groups	

Section 4	**Training needs**
As part of this equality analysis have any training needs/service needs been identified?	Yes
Describe any training needs for Trust staff	There are no specific training needs identified for this specific guideline. However, some of the required interventions within the guideline. Therefore the online ESR VTE prevention in secondary care module has been identified as a training need.
Describe any training needs for patients	No
Describe any training needs for contractors or other outside agencies	No

Check the information you have provided and ensure additional evidence can be provided if asked

Appendix 2 – Approval checklist

	Title of document being reviewed:	Yes / No / Not applicable	Comments
1.	**Title**		
	Is the title clear and unambiguous?	Yes	
	Is it clear whether the document is a guideline, policy, protocol or standard?	Yes	
2.	**Rationale**		
	Are reasons for development of the document stated?	Yes	
3.	**Development Process**		
	Are people involved in the development identified?	Yes	
	Has relevant expertise has been sought/used?	Yes	
	Is there evidence of consultation with stakeholders and users?	Yes	
	Have any related documents or documents that are impacted by this change been identified and updated?	Yes	
4.	**Content**		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
	Are the statements clear and unambiguous?	Yes	
5.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	Yes	
	Are key references cited?	Yes	
	Are supporting documents referenced?	Yes	
6.	**Training**		
	Have training needs been considered?	Yes	
	Are training needs included in the document?	Yes	
7.	**Implementation and monitoring**		

	Title of document being reviewed:	Yes / No / Not applicable	Comments
	Does the document identify how it will be implemented and monitored?	Yes	
8.	**Equality analysis**		
	Has an equality analysis been completed for the document?	Yes	
	Have Equality and Diversity reviewed and approved the equality analysis?	yes	Approved 20 April 2023
9.	**Approval**		
	Does the document identify which committee/group will approve it?	Yes	
10.	**Publication**		
	Has the policy been reviewed for harm?	Yes	
	Does the document identify whether it is private or public?	Public	
	If private, does the document identify which clause of the Freedom of Information Act 2000 applies?	N/A	

Appendix 3- Risk assessment for venous thromboembolism (VTE)

All patients should be risk assessed on admission to hospital. Patients should be reassessed within 24 hours of admission and whenever the clinical situation changes including deterioration of mobility.

RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)

Date of admission:	**Date of assessment:**
Name:	
Date of birth:	
PARIS no:	
Consultant:	

Assess Mobility Guidance Notes

- Assess all patients admitted to hospital for level of mobility.
- Patients admitted to TEWV, who when assessed are mobile and have had no change in their physical health the assessment will be complete. **Do not** proceed to Step Two.

STEP ONE: ASSESS MOBILITY Please tick one of the following:		**Tick**
• Patients with normal mobility and no change to their physical health	• Risk assessment complete. Sign and complete action taken box.	
• Patients with a reduction in mobility for 3 days or more in relation to poor mental health e.g. catatonic or severe depression, and who maybe dehydrated	• Continue to full risk assessment of thrombosis and bleeding risk factors- step two and step three.	

Thrombosis Risk Factors Guidance Notes

If the patient has reduced mobility as highlighted in Step One:

- Review the Thrombosis (VTE) Risk Factors, ticking each box that applies (more than one box can be ticked).
- Any tick for thrombosis (VTE) risk should prompt consideration of thromboprophylaxis according to NICE guidance.

STEP TWO: THROMBOSIS (VTE) RISK FACTORS	Tick
▪ Active cancer or cancer treatment	
▪ Age over 60 yrs	
▪ Dehydration	
▪ One or more significant comorbidities (e.g. heart disease, metabolic, endocrine or respiratory pathologies)	
▪ Acute infection or inflammatory condition	
▪ Personal history or first-degree relative with a history of VTE	
▪ Obesity (BMI greater than 30kg/m2)	
▪ Use of oestrogen-containing contraceptive therapy	
▪ Use of hormone replacement therapy (HRT)	
▪ Varicose veins with phlebitis	
▪ Known thrombophilia	
▪ Pregnant or less than 6 weeks post partum- seek specialist advice	
▪ Smoker	
▪ Severe lower limb injury or Achilles rupture	
▪ Hospital admission or surgery within the last 6 weeks	

Bleeding Risk Factors Guidance Notes

- Review the patient against bleeding risk and tick each box that applies (more than one box can be ticked).
- Any tick should prompt clinical staff to consider of bleeding risk is sufficient to preclude pharmacological intervention.

STEP THREE: BLEEDING RISK FACTORS	Tick
▪ Active bleeding	
▪ Acquired bleeding (e.g. acute liver failure)	
▪ Uncontrolled hypertension (greater than or equal to 230mmHg systolic or 120 mmHg diastolic)	
▪ Acute stroke	

▪ Thrombocytopaenia (platelets less than 75 x 109/L) or previous HIT	
▪ Untreated inherited bleeding disorders (e.g. haemophilia and Von Willebrand's disease)	
▪ Potential active bleeding e.g. PUD, GI bleed or liver disease	
▪ Recent eye surgery	

ACTION TAKEN		**Tick**
▪ No thrombosis risk factors present so no prophylaxis needed		
▪ Thrombosis risk factors present but no prophylaxis prescribed: state reason why (e.g. already on anticoagulation therapy, bleeding risk outweighs thrombosis risk), other		
▪ Thrombosis risk factor identified, consider the following options:	Enoxaparin prescribed	
	Mechanical prophylaxis – anti-embolism stockings	

Risk assessment completed by (name)	
Signature	
Designation	
Results entered on PARIS in Physical Health Casenotes	

Appendix 4 - Prescribing of Antiembolism stockings

Anti-embolism stockings act by applying compression to the lower leg thereby increasing venous blood flow in individuals whose level of mobility is reduced.

CAUTION -The application of moderate pressures to patients with impaired arterial blood supply to the legs may exacerbate the arterial insufficiency and occlude blood-flow. Therefore the following is recommended:

- A venous thromboembolism risk assessment should be performed on every patient on admission to identify patients at risk of venous thromboembolism disease in order to ascertain appropriate management.

- Following assessment, ascertain whether the patient should wear stockings and prescribe accordingly. Anti-embolism stockings must be prescribed by a Medical Practitioner or Physical Healthcare Practitioner. It is at the discretion of the person prescribing whether knee or thigh length stockings are prescribed.

- It is essential that the prescriber and practitioner responsible for measuring and applying stockings, must be sure that the arterial status of the patient is sufficient to allow safe compression.

- Re-assess the patient as appropriate and as their clinical condition changes. The patients risk status may alter during their stay.

Use anti-embolism stockings that provide graduated compression and produce a calf pressure of 14–15 mmHg. (This relates to a pressure of 14–18 mmHg at the ankle and is in line with British Standards 6612:1985 Specification for graduated compression hosiery and 7672:1993 Specification for compression, stiffness and labelling of anti-embolism hosiery)

Caution should be taken and further advice sought from medical staff if the patient has any of the following:

- Extreme leg deformity
- Pressure ulcers to lower limb/Heel pressure ulcers
- Dermatitis
- Recent skin graft to lower limb (within last 3 months)
- Gangrenous conditions
- Pulmonary oedema from congestive heart failure
- Severe peripheral neuropathy
- Known peripheral vascular disease
- History of intermittent claudication , rest pain or night pain
- Diabetes
- Leg Ulcers
- Trophic skin changes (cold, pale, shiny, hairless skin).
- Fragile ‘tissue paper’ skin
- Oedematous legs

All patients must be assessed prior to application of stockings to identify the presence of any contra-indications to the application of stockings.

- Tissue viability Nurses (TVNs) to complete ABPI as this would rule out arterial insufficiencies.
- Prior to application of anti-embolism stockings, check contra-indications to rule out potential arterial impairment.
- Follow manufacturers sizing chart and fit appropriate size of stockings. Document size in electronic records.
- The calf and / or thigh should be measured at the greatest part.
- Leg length should be measured from the base of the buttocks to the heel for thigh length stockings.
- For knee length stockings measure from the heel to behind the knee.

	Incorrect measuring can cause tissue damage when stockings chosen are too small and therapeutic benefit is lost if the stockings are too large.
	As the position of the patient and the time of day may have an effect on the shape and size of the leg, where possible the measurement should be taken early in the morning and the patients should be standing, or if sitting the feet and knees should be at 90 degrees

USE OF ANTIEMBOLISM STOCKINGS

- Stockings should be worn for 24 hours a day unless otherwise instructed.
- Patient's feet and legs should be dry before stockings are applied.
- Stockings should be washed/changed every third day. Launder as per manufacturer's instructions.
- Stockings must be removed daily by patients or carer/nurse to allow for skin care, hygiene and assessment. Observe for marking/blistering/discolouration particularly over bony prominences and heels.
- Sensation, circulation and movement of the leg should be checked. The nurse/carer must check for the following symptoms;
    - discoloured toes
    - cold toes
    - tingling in the toes
    - swelling in the toes

	Pain or discomfort should be assessed, monitored and reported immediately and stockings removed. Check that stockings fit smoothly as wrinkles can cause constriction and tissue damage. Advise patients of the dangers of turning down stocking tops (thigh or knee length) and the resulting tourniquet effect.

Anti-embolism stockings should be continued until medically directed to cease, usually when patient fully mobile.

Measurement for anti-embolism stockings must be completed prior to ordering. TVN's can provide order codes and measuring guides for the compression hosiery.

Important points to remember about measuring patients for anti-embolism stockings

You will need to take three essential measurements in order to identify which are the correct size stockings to fit on a patient. The measurements may either be taken while the patient is lying down, or standing. These three measurements are:

- thigh circumference (at its widest point)
- calf circumference (at its widest point)
- leg length.

- When measuring the patient's thigh, ensure that the tape measure is positioned around the widest point. Write down the measurement.
- When measuring the patient's calf, ensure that the tape measure is positioned around the widest point. Write down the measurement
- When measuring the patient's leg length for thigh-length stockings, measure from the gluteal fold to the heel. Write down the measurement
- When measuring the patient's leg length for knee-length stockings, measure from the popliteal fold behind the knee to the heel. Write down the measurement.

Some manufacturers of anti-embolism stockings supply a size chart with their stockings. Once you have the patient's thigh, calf and leg length measurements, you will be able to use the chart to identify which size stocking is required. It may be necessary to measure both legs, particularly where there is a significant difference in leg size.

If the patient's thigh circumference is greater than the stocking manufacturer's maximum circumference, it would be better to use knee-length stockings instead. If a patient is unwilling or unable to wear thigh-length stockings, preferring to roll them down to the knee, it would better to fit them for knee-length stockings.

It's important to record the patient's measurements, as well as the size of stocking you have fitted, into the patients electronic care record.

Appendix 5 - LMWH in patients with religious beliefs

Most heparins are of porcine origin which is not appreciated by many doctors and nurses. This may be an issue for some patients who may not wish to receive a drug of porcine origin. Where there is no alternative than porcine based agents available and there is a risk to life, it is permissible for certain groups to receive an agent of porcine origin. Despite this, some patients may choose not to receive prophylaxis with either heparin or low molecular weight heparin and have the right to make the decision for themselves.

Fondaparinux is a synthetic alternative for some indications for which heparins are currently used, and it may have advantages over low molecular weight heparin in both efficiency and cost effectiveness.

The physician should balance the risks and benefits in patients refusing a heparin-based product before offering fondaparinux outside of its product licence.

DOACs are not currently licensed for VTE prophylaxis except for orthopaedic surgery.