

## Venous Thromboembolism Reducing the risk

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## **1.0 Introduction**

In August 2019 the National Institute for Health and Clinical Excellence (NICE) updated the guidelines on venous thromboembolism “Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism” NICE guideline [NG89]

East London NHS Foundation Trust will implement the NICE guidance, to ensure that all adult service users admitted are risk-assessed for VTE and, appropriately receiving thrombo-prophylaxis and treatment.

This policy describes the processes for:

- Identifying at risk patients on our inpatient wards and implementing the NICE guidance.
- Thromboprophylaxis implementation and management.

This policy should be read in conjunction with NICE guidance CG92 March 2010 Venous Thromboembolism

## **2.0 Venous Thromboembolism definition: (VTE)**

- Venous Thromboembolism (VTE) is a term used to include the formation of a blood clot (a thrombus) in a vein which may dislodge from its site of origin and travel in the blood, a phenomenon called embolism. A thrombus most commonly occurs in the deep veins of the legs; this is called deep vein thrombosis. A dislodged thrombus that travels to the lungs is known as a pulmonary embolism.
- VTE encompasses a range of clinical presentations. Venous thrombosis may be completely asymptomatic or it may cause pain and swelling in the leg. Part or all of the thrombus/clot can come free and travel to the lungs as a potentially fatal pulmonary embolism. Symptomatic venous thrombosis carries a considerable burden of morbidity, sometimes long-term due to chronic venous insufficiency. This in turn can cause venous ulceration and development of a post-thrombotic limb (characterised by chronic pain, swelling and skin changes).

## **3.0 Purpose**

The purpose of this policy is to ensure that patients in community bedded units and mental health in-patient units are appropriately assessed for their risk of developing a VTE, they receive appropriate treatment and that the level of risk is reviewed throughout their stay on any of the inpatient wards.

- To reduce the risk of VTE in service users / patients found to have risk factors.
- To ensure that all patients are assessed for their individual risk of VTE and that the outcome is documented with regard to appropriate risk-reduction measures.
- To ensure a provision of appropriate risk reduction measures including adequate information to staff and patients.

## **4.0 Duties**

### **4.1 Duties within the Organisation**

Trust directors are accountable for all procedures within their area of operation.

A director will nominate a procedure lead to carry out the development work in accordance with this policy. They will ensure that all new and revised policies are effectively implemented and monitored.

## 5.0 VTE prevention quality standard

- All patients, on admission, must receive an assessment of VTE and bleeding risk using the clinical risk assessment criteria described in the national tool.
- Patients/carers are offered verbal and written information on VTE prevention as part of the admission process.
- Patients are assessed within 14 hours of admission for risk of VTE and bleeding.
- Patients are re-assessed during admission whenever their ability to mobilise changes for risk of VTE and bleeding.
- Patients assessed to be at risk of VTE are offered VTE prophylaxis in accordance with NICE guidance.
- Patients/carers are offered verbal and written information on VTE prevention as part of the discharge process.

## 6.0 Risk Factors for VTE

Venous thromboembolism (VTE) includes several manifestations of the same disease process: deep-vein thrombosis (DVT), ischemic stroke, and pulmonary embolism (PE). Without thromboprophylaxis, the incidence of objectively documented DVT ranges from 16% to 55%

The assessment of a patient's risk is based on a number of risk factors that have been identified from epidemiologic studies. Some of the more defined risk factors are briefly summarized in the following

The risk of developing VTE depends on the condition and/or procedure for which the patient is admitted and on any predisposing risk factors (such as age, obesity and concomitant conditions).

NICE Guidance recommends that:

- Assess all patients on admission to identify those who are at increased risk of VTE.
- Regard medical patients as being at increased risk of VTE if they: have had or are expected to
- Have significantly reduced mobility for 3 days or more **or** are expected to have ongoing
- Reduced mobility relative to their normal state and have one or more of the risk factors shown in 6.1 below
- In mental health the risk factors may include being bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair. This could be secondary to prolonged seclusion, catatonia, rapid tranquilization or severe depression.
- Full details of risk factors for VTE can be found in the NICE Guidance on reducing the risk

### 6.1 VTE risk factors include:

- Recent immobility (greater than 24 hours)
- Obesity (BMI greater than 30kg/m<sup>2</sup>)
- Dehydration
- Seclusion(greater than 24 hours)
- Long term conditions
- Previous DVT
- intravenous drug user
- Long haul air flight
- Underlying malignant disease
- Family history thrombosis
- Known thrombophilic defect
- Use of HRT
- One or more significant medical co-morbidities
- Greater than 60 years old
- Recent surgery
- Recent injury or trauma

- Covid-19 infection

## 7.0 Clinical presentation of DVT

A diagnosis of DVT is usually suspected in patients who complain of a painful swollen limb.

However, the clinical picture can vary widely and none of the clinical features is sufficiently specific to be diagnostic. Less than a third of patients referred for tests after initial history and clinical examinations prove to have a DVT. Clinical diagnosis is notoriously difficult as the manifestations of venous thromboembolism (VTE) are constantly changing.

### 7.1 Common Presenting Features

- Pain or tenderness of the leg
- Swelling of calf or leg
- Pitting oedema
- Palpable venous thrombosis
- Increased temperature in the leg
- Fever
- Discoloration or erythema of the leg
- Venous distension

## 8.0 Risk Assessment for VTE

### 8.1 Community Health Services inpatient wards

For patients on the community bedded units an initial assessment must be completed **within 14 hours of admission**. Staff must use the NICE guidance VTE risk assessment and make referral to the GP/ward duty doctor if prophylaxis treatment is indicated.

### 8.2 Mental Health in-patient wards

- All patients admitted to mental health in-patient wards must have a baseline physical history, lifestyle and medication assessment and an initial physical examination by a doctor and baseline observations undertaken by a nurse **within 14 hours of admission**. Both the medical and nursing assessments should incorporate VTE risk assessment.
- The Physical Health Admission Template contains initial appropriate risk assessment Clients found to be at potential risk should have the adapted VTE risk assessment.
- The new NICE (2018) guidance has added the below for mental health in-patients wards.
  - Reassess all people admitted to an acute psychiatric ward for risk of VTE and bleeding at the point of consultant review or if their clinical condition changes. **[2018]**
  - Consider pharmacological VTE prophylaxis with LMWH for people admitted to an acute psychiatric ward whose risk of VTE outweighs their risk of bleeding. **[2018]**
  - 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]**
  - Continue pharmacological VTE prophylaxis for people admitted to an acute psychiatric ward until the person is no longer at increased risk of VTE. **[2018]**

*The below is also important in relation to pregnancy and the perinatal period for Mental Health in-patient Mother and Baby units.*

### 8.3 Interventions for pregnant women and women who gave birth or had a miscarriage or termination of pregnancy in the past 6 weeks

- Consider Low Molecular Weight Heparin (LMWH) (See point 9.1) for all women who are admitted to hospital or a midwife-led unit if they are pregnant or gave birth, had a miscarriage or had a termination of pregnancy in the past 6 weeks, and whose risk of VTE outweighs their risk of bleeding. **[2018]**
- Do not offer VTE prophylaxis to women admitted to hospital or a midwife-led unit who are in active labour. **[2018]**
- Stop pharmacological VTE prophylaxis when women are in labour. **[2018]**
- If using LMWH in pregnant women, start it as soon as possible and within 14 hours of the risk assessment being completed and continue until the woman is no longer at increased risk of VTE or until [discharge](#) from hospital or the midwife-led unit. **[2018]**
- If using LMWH in women who gave birth or had a miscarriage or termination of pregnancy, start 4 - 8 hours after the event unless contraindicated and continue for a minimum of 7 days. **[2018]**
- Consider combined prophylaxis with LMWH plus mechanical prophylaxis for pregnant women or women who gave birth or had a miscarriage or termination of pregnancy in the past 6 weeks and who are likely to be immobilised, or have [significantly reduced mobility](#) relative to their normal or anticipated mobility for 3 or more days after surgery, including caesarean section:
- Use [intermittent pneumatic compression](#) as first-line treatment. If intermittent pneumatic compression is contraindicated, use anti-embolism stockings. Continue until the woman no longer has significantly reduced mobility relative to her normal or anticipated mobility or until discharge from hospital. **[2018]**

### 8.4 Interventions for people having palliative care

- Consider pharmacological VTE prophylaxis for people who are having palliative care.
- Take into account temporary increases in thrombotic risk factors, risk of bleeding, likely life expectancy
- And the views of the person and their family members or carers (as appropriate):
- Use LMWH as first-line treatment.
- If LMWH is contraindicated, use fondaparinux sodium. **[2018]**
- Do not offer VTE prophylaxis to people in the last days of life. **[2018]**

For recommendations on shared decision-making in the last days of life, see the NICE guideline on [care of dying adults in the last days of life](#). **[2018]**

Review VTE prophylaxis daily for people who are having palliative care, taking into account the views of the person, their family members or carers (as appropriate) and the multidisciplinary team. **[2018]**

NICE. (2018). *venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism*. Available: <https://www.nice.org.uk/guidance/NG89>

Last accessed 15th August 2019.

## 8.5 Community Services

Most patients will present with symptoms to their GP either at the surgery or in their own home. **Community teams are not required to complete the risk assessment** but must **immediately** refer any patients they see to their GP if clinical features of DVT are present or suspected. This must be documented in the patients care record and communicated to the GP.

## 9.0 Preventative Regimes for Patients at Risk of Thromboembolism.

Following a positive risk assessment a decision will be made on management, utilising the guidelines below as recommended by the NICE and our local pharmacy team.

Prior to the development of low molecular weight heparins (LMWH) the traditional management of DVT was to treat the patient on an in-patient basis. However, uncomplicated DVT is now widely managed on an outpatient basis and most patients can be treated at home without problems (Winter et al, 2005).

### 9.1 Low Molecular Weight Heparin (LMWH)

LMWH is recommended for many patients at risk of developing venous thromboembolism and is used as a prophylaxis (NICE guideline 46, 2007). LMWH produces an immediate anticoagulant effect whereas oral anticoagulants act slowly and their effect builds up over 2-3 days.

LMWH will be prescribed by the GP/Responsible Medical Officer/medical prescriber and administered by the nursing staff. Treatment will generally last for the period of reduced immobility. There are a variety of available low molecular weight heparins available. Inpatients in East London NHS Foundation Trust should be prescribed

Drug	Patient's Weight	Dose
Enoxaparin (Clexane)	<50kg	20mg (Once daily)
Enoxaparin (Clexane)	51-100kg	20mg (Once daily)
Enoxaparin (Clexane)	101-150kg	40mg (Once daily)
Enoxaparin (Clexane)	>150kg	60mg (Once daily)

### 9.2 Reducing the risk of VTE in Covid - 19

There are increasing reports that patients infected with COVID-19 are at a heightened risk of venous thromboembolism (VTE). The following recommendations are for adult non-pregnant patients admitted to hospital with suspected or confirmed COVID-19. For pregnant patients please refer to the latest RCOG guidance.

Where patients are on therapeutic doses of oral anticoagulants at the time of admission this guidance does not apply, those patients should **continue** therapeutic anticoagulation.



### 1) On admission

- a. Assess patient risk for VTE utilising the VTE Risk Assessment form on RIO. The form for each patient is located on RIO under *Case Record > Risk Information > Risk Assessment for VTE*
- b. If Pharmacological VTE prophylaxis is indicated, and there are no contraindications, prescribe Enoxaparin as directed:

In those who are **low** risk (have a D-dimer **<3**):

Weight	CrCl > 30 ml/ml	CrCl < 30 ml/ml
<50kg	20mg OD	20mg OD
50-100kg	40mg OD	20mg OD
100-150kg	40mg BD	20mg OD

In those who are **high** risk (have a D-Dimer **>3**):

Weight	CrCl > 30 ml/ml	CrCl < 30 ml/ml
<50kg	40mg OD	20mg OD
50-100kg	40mg BD	40mg OD
100-150kg	60mg BD	60mg OD

### 2) During inpatient stay:

- a. If the patient's clinical condition changes, assess risk of VTE (via the form on RIO) reassess bleeding risk and review pharmacological VTE prophylaxis

### 3) At discharge

- a. Ensure that patients will be completing pharmacological VTE prophylaxis after discharge
- b. Prescribe an extra 14 days thromboprophylaxis if patient is expected to have reduced mobility (or considered high risk for VTE) after discharge.
  - i. 1<sup>st</sup> line – Apixaban PO 2.5mg BD

## 10.0 Mechanical prophylaxis

**Do not offer anti-embolism stockings to people 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 anti-embolism stockings may cause damage – for example, fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft
- known allergy to material of manufacture
- 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. **[2010, amended 2018]**
- Ensure that people who need anti-embolism stockings have their legs measured and that they are provided with the correct size of stocking. Anti-embolism stockings should be fitted and patients shown how to use them by staff trained in their use. **[2010]**
- Ensure that people who develop oedema or postoperative swelling have their legs re-measured and anti-embolism stockings refitted. **[2010]**
- If arterial disease is suspected, seek expert opinion before fitting anti-embolism stockings. **[2010]**
- 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 [BS 6612:1985 Specification for graduated compression hosiery](#) and [BS 7672:1993 Specification for compression, stiffness and labelling of anti-embolism hosiery](#).) **[2010]**
- Encourage people to wear their anti-embolism stockings day and night until they no longer have [significantly reduced mobility](#). **[2010]**
- Remove anti-embolism stockings daily for hygiene purposes and to inspect skin condition. In people with a significant reduction in mobility, poor skin integrity or any sensory loss, inspect the skin 2 or 3 times a day, particularly over the heels and bony prominences. **[2010]**
- Monitor the use of anti-embolism stockings and offer assistance if they are not being worn correctly. **[2010]**
- Stop the use of anti-embolism stockings if there is marking, blistering or discolouration of the skin, particularly over the heels and bony prominences, or if the person experiences pain or discomfort. If suitable, offer [intermittent pneumatic compression](#) as an alternative. **[2010, amended 2018]**
- Do not offer intermittent pneumatic compression to people with a known allergy to the material of manufacture. **[2010, amended 2018]**
- Advise the person to wear their device for as much time as possible. **[2010, amended 2018]**

## 11.0 Making the Decision not to treat with LMWH

LMWH such as Enoxaparin, Tinzaparin are contraindicated in groups of patients with the following physical health problems, it is recommended that advice is sought from the medical team for:

- Active bleeding patients or those at risk of bleeding
- Patients with renal impairment
- Patients at high risk of falls
- Those with a severe Hepatic disease
- Patients with a Platelet level of less than 75
- Patients with a BP > 200 systolic or > 120 diastolic
- If patient is already on anticoagulants or antiplatelet

## **12.0 Procedures to be followed if DVT is suspected**

If DVT is suspected, the responsible doctor should take bloods for D-dimer tests and organise an ultra-sound scan to image the leg. Ultrasound scan (USS) has become the investigation of choice in the diagnosis of DVT. It will detect more than 90% of proximal DVTs (i.e. popliteal vein and above). It is less sensitive for calf vein thrombosis (about only 50% are detected) but pulmonary embolism from this site is rare and unlikely to cause significant haemodynamic disturbance even if it occurs. While this is being organised, management under section 11 above is to be followed.

## **13.0 Discharging from Inpatient Units/Wards**

Discuss with the GP practice nurse, district nurses or Community Mental Health Team if on-going treatment is required and document in the care record.

Include the necessary information in their verbal transfer/handover information sheet prior to transfer clearly state the duration of treatment on discharge summary and transfer of care form.

## **14.0 Training**

All qualified nursing staff working in adult in-patient mental health wards and community in-patient units will receive training in completing the risk assessment and administering appropriate treatment as part of their local induction. For more details on the local induction process, please refer to the Induction Training Policy.

## **15.0 Audit**

An annual audit of the "Physical Health Assessment tool" on admission is carried out and reported to Physical Health group. As part of the record keeping process a Bi-annual audit of all adult, general admissions to will determine whether patients are being assessed for their risk of VTE and that appropriate preventative measures are in use. It is expected that each Division/Directorate has added this to their clinical audit plans. All outcomes of these audits should be fed back to Quality Group.

Audit of patients diagnosed with VTE will be collected as part of Datix.

## **16.0 Review**

This Policy will be reviewed every 3 years or sooner if appropriate as decided.

## FURTHER INFORMATION AND REFERENCES

August 2019 Updated in line with new guidance from the below.

NICE. (2018). *venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism*. Available: <https://www.nice.org.uk/guidance/NG89>  
Last accessed 15th August 2019.

Royal College of Obstetricians and Gynaecologists. (2015). *Reducing the Risk of Venous Thromboembolism during Pregnancy and the Puerperium*. Available: <https://www.rcog.org.uk/globalassets/documents/guidelines/gtg-37a.pdf>  
Last accessed 15th August 2019

*Venous thromboembolism in adults* Quality standard [QS201] Published: 19 August 2021  
<https://www.nice.org.uk/guidance/qs201>

1. VTE prevention quality standard: patient information



VTE prevention quality standard: patient information

29 June 2010 (60.93 Kb 17 sec @ 28.8Kbps)

2. Scottish Intercollegiate Guidelines Network (2010) SIGN Publication No122: *Prevention and management of Venous Thromboembolism* <http://www.sign.ac.uk/pdf/sign122.pdf> Geerts, W.H. Bergqvist D, Pineo, G.F, J.A, et al *Prevention of venous thromboembolism: the Eighth ACCP Conference on Antithrombotic and Thrombolytic Therapy*, Chest 2008; 133:381S-453S
3. House of Commons Health Committee 2nd report of session 2004-2005 (2005) *The Prevention of venous thromboembolism in hospitalised patients*. London: HMSO
4. National Institute for Health and Clinical Excellence (NICE) (2007) *Venous Thromboembolism – Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients undergoing surgery*, April 2007
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7. National Institute for Health and Clinical Excellence (NICE) (2010) *venous thromboembolism: reducing the risk. Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital. NICE clinical guideline 92* <http://www.nice.org.uk/nicemedia/live/12695/47195/47195.pdf>
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10. Last accessed 15th August 2019.
11. Partsch, H & Blattler, W (2000). *Compression and walking versus bed rest in the treatment of proximal deep vein thrombosis with low molecular weight heparin*. Journal of Vascular Surgery
12. Royal College of Obstetricians and Gynaecologists. (2015). *Reducing the Risk of Venous Thromboembolism during Pregnancy and the Puerperium*. Available:

<https://www.rcog.org.uk/globalassets/documents/guidelines/gtg-37a.pdf> Last accessed 15th August 2019

13. Winter et al (2005). *Procedures for the outpatient management of patients with deep vein thrombosis*. Clin. Lab. Haem, 2005, 27, 61-66
14. Nice.org.uk. 2021. *Reducing the risk of venous thromboembolism (VTE) in over 16s with COVID-19 pneumonia*. [online] Available at: <https://www.nice.org.uk/guidance/ng186/resources/covid19-rapid-guideline-reducing-the-risk-of-venous-thromboembolism-in-over-16s-with-covid19-pdf-66142025041093>
15. Barts Health NHS Trust Policy. 2020. Thromboprophylaxis and anticoagulation in COVID-19 infection in adults. V1.
16. East London NHS Trust Policy. 2019. Venous Thromboembolism reducing the risk. V1.

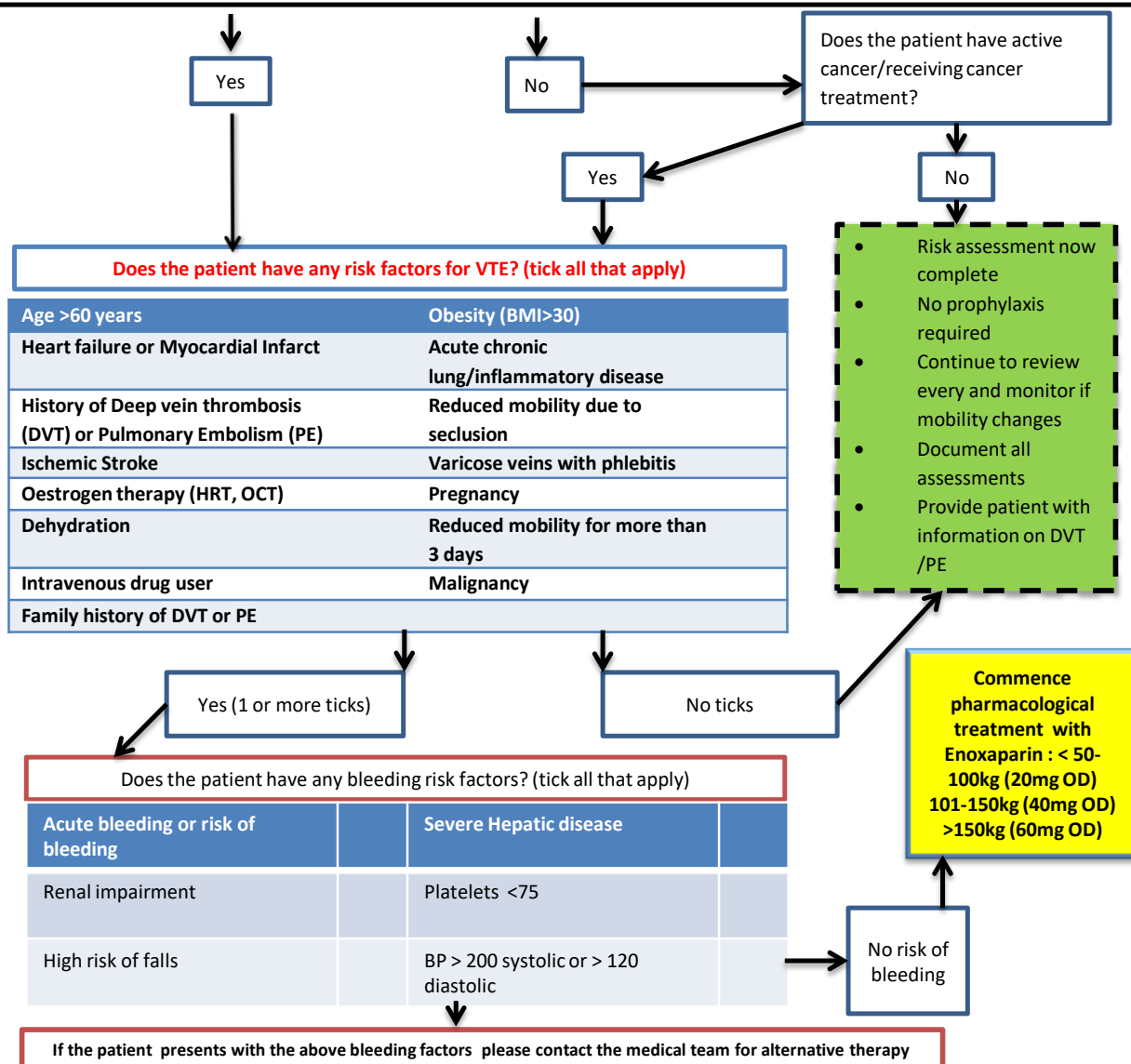
# RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)

East London **NHS**

NHS Foundation Trust

Name:	•Risk assessment should be completed for all patients on admission to the ward.		
NHS No:	Date of Admission:	•The patient must be reassessed within 24 hours or as soon as mobility decreases.	
Rio ID:	Date of First Assessment:		
DoB:	Assessed by:	Designation:	

**Is the patient expected to have significantly reduced mobility, relative to their normal state?  
eg. Rapid tranquilisation, severe depression, catatonic**



<http://www.nice.org.uk/guidance/CG92>

## 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.*

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### STEP ONE

Assess all patients admitted to hospital for level of mobility (tick one box). All surgical patients, and all medical patients with significantly reduced mobility, should be considered for further risk assessment.

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### STEP TWO

Review the patient-related factors shown on the assessment sheet against **thrombosis** risk, ticking each box that applies (more than one box can be ticked).

Any tick for thrombosis risk should prompt thromboprophylaxis according to NICE guidance.

The risk factors identified are not exhaustive. Clinicians may consider additional risks in individual patients and offer thromboprophylaxis as appropriate.

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### STEP THREE

Review the patient-related factors shown against **bleeding risk** and tick each box that applies (more than one box can be ticked).

Any tick should prompt clinical staff to consider if bleeding risk is sufficient to preclude pharmacological intervention.

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Guidance on thromboprophylaxis is available at:

*National Institute for Health and Clinical Excellence (2010) Venous thromboembolism: reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital. NICE clinical guideline 92. London: National Institute for Health and Clinical Excellence.*

<http://www.nice.org.uk/guidance/CG92>

This document has been authorised by the Department of Health  
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## Appendix 3

### RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)

Mobility – all patients (tick one box)	Tick		Tick		Tick
Surgical patient		Medical patient expected to have ongoing reduced mobility relative to normal state		Medical patient NOT expected to have significantly reduced mobility relative to normal state	
Assess for thrombosis and bleeding risk below				Risk assessment now complete	

Thrombosis risk			
Patient related	Tick	Admission related	Tick
Active cancer or cancer treatment		Significantly reduced mobility for 3 days or more	
Age > 60		Hip or knee replacement	
Dehydration		Hip fracture	
Known thrombophilias		Total anaesthetic + surgical time > 90 minutes	
Obesity (BMI >30 kg/m <sup>2</sup> )		Surgery involving pelvis or lower limb with a total anaesthetic + surgical time > 60 minutes	
One or more significant medical comorbidities (eg heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions)		Acute surgical admission with inflammatory or intra-abdominal condition	
Personal history or first-degree relative with a history of VTE		Critical care admission	
Use of hormone replacement therapy		Surgery with significant reduction in mobility	
Use of oestrogen-containing contraceptive therapy			
Varicose veins with phlebitis			
Pregnancy or < 6 weeks post partum (see NICE guidance for specific risk factors)			

Bleeding risk			
Patient related	Tick	Admission related	Tick
Active bleeding		Neurosurgery, spinal surgery or eye surgery	
Acquired bleeding disorders (such as acute liver failure)		Other procedure with high bleeding risk	
Concurrent use of anticoagulants known to increase the risk of bleeding (such as warfarin with INR >2)		Lumbar puncture/epidural/spinal anaesthesia expected within the next 12 hours	
Acute stroke		Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hours	
Thrombocytopenia (platelets < 75x10 <sup>9</sup> /l)			
Uncontrolled systolic hypertension (230/120 mmHg or higher)			
Untreated inherited bleeding disorders (such as haemophilia and von Willebrand's disease)			



**Table 1.** Risk factors for venous thromboembolism in pregnancy and the puerperium

See also Appendix I and Appendix II		
<b>Pre-existing</b>	Previous VTE	
	Thrombophilia	<i>Heritable</i> Antithrombin deficiency Protein C deficiency Protein S deficiency Factor V Leiden Prothrombin gene mutation
		<i>Acquired</i> Antiphospholipid antibodies Persistent lupus anticoagulant and/or persistent moderate/high titre anticardiolipin antibodies and/or $\beta_2$ -glycoprotein 1 antibodies
	Medical comorbidities e.g. cancer; heart failure; active SLE, inflammatory polyarthropathy or IBD; nephrotic syndrome; type I diabetes mellitus with nephropathy; sickle cell disease; <sup>49</sup> current intravenous drug user	
	Age > 35 years	
	Obesity (BMI $\geq$ 30 kg/m <sup>2</sup> ) either prepregnancy or in early pregnancy	
	Parity $\geq$ 3 (a woman becomes para 3 after her third delivery)	
	Smoking	
	Gross varicose veins (symptomatic or above knee or with associated phlebitis, oedema/skin changes)	
	Paraplegia	
<b>Obstetric risk factors</b>	Multiple pregnancy Current pre-eclampsia	
	Caesarean section Prolonged labour (> 24 hours) Mid-cavity or rotational operative delivery Stillbirth Preterm birth Postpartum haemorrhage (> 1 litre/requiring transfusion)	
<b>New onset/transient</b>  <i>These risk factors are potentially reversible and may develop at later stages in gestation than the initial risk assessment or may resolve and therefore what is important is an ongoing individual risk assessment</i>	Any surgical procedure in pregnancy or puerperium except immediate repair of the perineum, e.g. appendicectomy, postpartum sterilisation Bone fracture	
	Hyperemesis, dehydration	
	Ovarian hyperstimulation syndrome (first trimester only)	Assisted reproductive technology (ART), in vitro fertilisation (IVF)
	Admission or immobility ( $\geq$ 3 days' bed rest)	e.g. pelvic girdle pain restricting mobility
	Current systemic infection (requiring intravenous antibiotics or admission to hospital)	e.g. pneumonia, pyelonephritis, postpartum wound infection
	Long-distance travel (> 4 hours)	

Royal College of Obstetricians and Gynaecologists. (2015). *Reducing the Risk of Venous Thromboembolism during Pregnancy and the Puerperium*. Available: <https://www.rcog.org.uk/globalassets/documents/guidelines/gtg-37a.pdf>  
 Last accessed 15th August 2019

## Appendix 5 Audit Tool Nice 2018

People admitted to a psychiatric ward	
24	The risk of VTE and bleeding for people admitted to an acute psychiatric ward is assessed by the time of the <b>first consultant review</b> .
25	All people admitted to an acute psychiatric ward have their risk of VTE and bleeding <b>reassessed by the time of first consultant review</b>
26	When <b>pharmacological prophylaxis</b> is used for a person admitted to an acute psychiatric ward the treatment is <b>continued</b> until they are no longer at increased risk of VTE
Pregnant women and women who have given birth, had a miscarriage or termination of pregnancy in the past 6 weeks	
27	Women who are pregnant or have given birth, had a miscarriage or termination of pregnancy in the past 6 weeks have their risk of VTE and bleeding <b>assessed on admission</b> .
28	The risk of VTE and bleeding is reassessed <b>within 6 hours</b> of giving birth, having a miscarriage or termination of pregnancy.
29	VTE pharmacological prophylaxis is <b>not given</b> to women who are in <b>active labour</b> .
Mechanical prophylaxis in hospital	
46	People with any of the following <b>are not</b> offered anti-embolism stockings: <ul style="list-style-type: none"> <li>• suspected or proven peripheral arterial disease</li> <li>• peripheral arterial bypass grafting</li> <li>• peripheral neuropathy or other causes of sensory impairment</li> <li>• any local conditions in which anti-embolism stockings may cause damage – for example, fragile 'tissue paper' skin, dermatitis, gangrene or recent skin graft</li> <li>• known allergy to material of manufacture</li> <li>• severe leg oedema</li> <li>• major limb deformity or unusual leg size or shape preventing correct fit.</li> <li>• acute stroke.</li> </ul>
47	Any person wearing anti-embolism stockings has their <b>legs measured</b> for the correct size of anti-embolism stocking.
48	Any person wearing anti-embolism stockings and who develops <b>oedema or postoperative swelling</b> has their legs remeasured and anti-embolism stockings refitted.
49	Any person <b>wearing anti-embolism stockings</b> has them removed daily and their skin condition inspected.

50	Any person wearing anti-embolism stockings with <b>reduced mobility, poor skin integrity or any sensory loss</b> has their skin inspected more than once daily.
51	Any person with a known <b>allergy</b> to the manufacturing material of <b>intermittent pneumatic compression</b> is not offered intermittent pneumatic compression.
<b>Planning for discharge</b>	
52	Any person <b>discharged with VTE prophylaxis</b> (pharmacological and/or mechanical) and their family member and/or carer (as appropriate) are either able to use it correctly or, if not, arrangements are made for someone to help them.
53	The <b>GP of any person discharged with VTE prophylaxis</b> (pharmacological and/or mechanical) to be used at home is notified.

## Appendix 6 Venous Thromboembolism (VTE) Risk Assessment Audit

### Instructions

You should mark each question with a CROSS clearly inside one box [X] using a black or blue pen. If you make a mistake just scribble it out and put a cross in the correct box.

Sample criteria: Service Users on who have been transferred from hospital or admitted via Community; at least 10 service users to be audited

### Background

Patient admitted via

Transfer from Hospital ☐

Community ☐

### Standard 1 TRANSFER FROM HOSPITAL

Copy of VTE Risk Assessment from transferring Hospital is in patient record Yes ☐ No ☐

Where applicable, VTE prophylaxis has been prescribed Yes ☐ No ☐ N/A ☐

Where applicable, VTE prophylaxis has been reviewed weekly/  
as patient condition changes Yes ☐ No ☐ N/A ☐

### Standard 2 ADMISSION VIA COMMUNITY MATRON

Assessment form has been completed Yes ☐ ☐ No

Requirement/no requirement for prophylaxis indicated	Yes	<input type="checkbox"/>	<input type="checkbox"/>	No
Type of prophylaxis required indicated	Yes	<input type="checkbox"/>	<input type="checkbox"/>	No
Prophylaxis prescribed on medication chart	Yes	<input type="checkbox"/>	<input type="checkbox"/>	No
Patient reassessed at 24 hours after admission	Yes	<input type="checkbox"/>	<input type="checkbox"/>	No
Patient assessed at weekly intervals	Yes	<input type="checkbox"/>	<input type="checkbox"/>	No <input type="checkbox"/> N/A
Patient assessed if condition changed	Yes	<input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Standard 3			
Type of prophylaxis prescribed is correct for patient	Yes	<input type="checkbox"/>	No <input type="checkbox"/>
Prescribed prophylaxis administered as intended	Yes	<input type="checkbox"/>	No <input type="checkbox"/>

Comments:

## Appendix 7

All patients need screening for VTE Assessment. Where clinically indicated please

Please see below forms on Rio to carry out VTE assessment

Medical Physical Health Assessment

Nursing Physical Health Assessment Form

Psychotropic Medication Monitoring

Urine Tests Form

Observations and Measurements

Lifestyle Assessment Form

Investigations Form

COVID-19 Swab Record

Infection Screening Form (for inpatients)

Contraception - Brief Assessment

Pressure Ulcer Form Hyper Link

ZZTEST, Dummy (Ms) 1 Mar 2005 (16 years) Female NHS, 999 991 7690

Medical Physical Health Assessment

ClientZZTEST, Dummy Patient (Ms) - 1024059

Date/time

Referral / Admission

Is this an admission assessment?

Status of assessment

For tick boxes, please tick if the feature or abnormality is present, otherwise leave blank  
Please comment on any abnormalities noted in the free text boxes at the end of each section

Risk Assessment for Venous Thromboembolism (VTE)

Has the patient's mobility changed? (Consider restraint, catatonia, depression, seclusion)

Complete the Risk Assessment for Venous Thromboembolism (VTE) form by following the hyperlink

Risk Assessment for VTE form

Observations and Measurements

Please complete the relevant parts of the Observations and Measurements form (including pulse rate, respiratory rate and BP) by following this hyperlink

Hyperlink to Observations and Measurements form

General Condition:

Skin

Hydration

Anaemia

Cyanosis

Jaundice

Goitre

21