



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

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*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

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Risk Assessment

All patients

Assess all patients to identify the risk of venous thromboembolism (VTE) and bleeding (NG89: 1.1.1. 2018)

People admitted to hospital

Medical patients

All medical patients need to be assessed to identify the risk of VTE and bleeding: All patients should be assessed:

- i) as soon as possible after admission to hospital **or** by the time of the first consultant review
- ii) using a tool published by a national UK body, professional network or peer-reviewed journal. (NG89: 1.1.2. 2018)

DBTH's Generic VTE Risk Assessment can be used for most patients. Please see below. This Generic VTE Risk Assessment is reproduced from the Department of Health "Risk Assessment for Venous- Thromboembolism (VTE) © Crown copyright 2010 301292 1p March 10.

There are separate VTE risk assessments to be used in Maternity Services and in patients with lower limb casts. These will be discussed later in the document.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Balance the person's individual risk of VTE against their risk of bleeding when deciding whether to offer pharmacological thromboprophylaxis to medical patients. (NG89: 1.1.3. 2018).

If the **medical** patients, then start it as soon as possible and **within 14 hours of** decision is made to start pharmacological VTE prophylaxis for **admission**. (NG89: 1.1.4. 2018). Please be aware that there are patient-specific populations where this guidance will differ. These will be covered in later sections of the document.

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VTE RISK ASSESSMENT AND DEMENTIA SCREENING

NHS Number: AFFIX LABEL HERE IF AVAILABLE
 District Number:
 Surname:
 Forename(s):
 Address:
 D.o.B.:

Date: Time: Ward:
 Age: If the patient is aged 75 or over, complete Dementia Risk Assessment overleaf

Mobility – all patients	
☐ Surgical Patient	Acute illness ☐ Yes ☐ No
☐ Medical Patient	Patient expected to have ongoing reduced mobility relative to normal state ☐ Yes ☐ No

No + No = Low Risk
 Tick "low risk" below and sign the form.
 Give VTE information leaflet.
 One or more "Yes" complete full risk assessment, indicate risk level and sign the form.
 Give VTE information leaflet.

THROMBOSIS RISK			
Patient Related	Tick	Admission related	Tick
Active cancer or cancer treatment		Significantly reduced mobility for 3 days or more	
Age >60 years		Hip or Knee replacement	
Dehydration		Hip fracture	
Known thrombophilias		Total anaesthetic + surgical time > 90 minutes	
Obesity (BMI >30)		Critical Care admission	
One or more significant medical comorbidities (eg heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions)		Acute admission with inflammatory or intra-abdominal condition	
Personal history or first-degree relative with a history of VTE		Surgery involving pelvis or lower limb with a total anaesthetic + surgical time > 60 minutes	
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			

BLEEDING RISK			
Patient Related	Tick	Admission related	Tick
Active bleeding		Neurosurgery, spinal surgery or eye surgery	
Acquired bleeding disorder (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 next 12 hours	
Acute stroke		Lumbar puncture / epidural / spinal anaesthesia within the previous 4 hours	
Thrombocytopenia (platelets <75x10 ⁹ /l)		Smoker? ☐ Yes ☐ No	
Uncontrolled systolic hypertension (230 / 120 mmHg or higher)		Please note that this question does not form part of the risk assessment	
Untreated inherited bleeding disorders (such as haemophilia and von Willebrand's disease)		VTE Risk reviewed ☐ Yes ☐ No	
		Signature _____ Date _____	

Clinical Decision

☐ Low risk, no thromboprophylaxis required ☐ High risk, Thromboprophylaxis indicated
☐ Thromboprophylaxis contraindicated ☐ **VTE patient information leaflet given**

Reason for contraindication: _____

Signature: _____ Print Name: _____ Designation: _____

PTO for Dementia Risk Assessment



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 Sept 2014
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*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Surgical and Trauma patients

All surgical and trauma patients need to be assessed to identify the risk of VTE and bleeding. The assessment should:

- be as soon as possible after admission to hospital or by the time of the first consultant review
- use a tool published by a national UK body, professional network or peer-reviewed journal.(NG89: 1.1.5. 2018) DBTH's Generic VTE Risk Assessment should be used as this is in accordance with the Department of Health VTE risk assessment tool.

It is important to balance the person's individual risk of VTE against their risk of bleeding when deciding whether to offer pharmacological thromboprophylaxis to surgical and trauma patients. (NG 1.1.6. 2018).

If using pharmacological VTE prophylaxis for **surgical and trauma patients**, start it as soon as possible and **within 14 hours of admission** (NG 89: 1.1.7. 2018). Please be aware that there are patient-specific populations where this guidance will differ. These will be covered in later sections of the document.

Reassess all medical, surgical and trauma patients for risk of VTE and bleeding at the point of consultant review **or if their clinical condition changes**. (NG 89: 1.1.8.2018).

If patient's bleeding risk outweighs risk of VTE then consider mechanical thromboprophylaxis in the form of either anti-embolism stockings (TEDS) or Intermittent Pneumatic Compression (Flowtron Active Compression System is used in DBTH). These will be discussed in the later section entitled "Mechanical Thromoprophylaxis".

Pregnant women and women who gave birth or had a miscarriage or termination of pregnancy in the past 6 weeks

Assess all women on admission 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, to identify their risk of VTE and bleeding.

Use a tool published by a national UK body, professional network or peer-reviewed journal. The most commonly used tool is the [Royal College of Obstetricians and](#)

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[Gynaecologists risk assessment tool](#). (NG89: 1.1.9. 2018). At DBTH this risk assessment is available on the K2 online system used in maternity services.

Reassess risk of VTE and bleeding, and assess the need for thromboprophylaxis for all women:

- within 6 hours of giving birth, having a miscarriage or having a termination of pregnancy **or**
- if their clinical condition changes **and** they:
 - are pregnant **or**
 - gave birth, had a miscarriage or had a termination of pregnancy within the past 6 weeks. (NG 89: 1.1.10. 2018)

Thromboprophylaxis

Pharmacological Thromboprophylaxis

If, after completion of the VTE Risk Assessment the patient, is felt to be at a high risk of developing VTE **and** that this risk outweighs the bleeding risk, then offer pharmacological thromboprophylaxis.

i) First-line treatment should be LMWH*. Dalteparin is used in DBTH and the standard dose is 5000 units once a day, except in the following circumstances:

Patients who weigh less than 45kg – the dose will be 2500 units once a day in the evening

Patients who weigh 100-149kg- the dose will be 7500 units once a day in the evening.

Patients who weigh over 150kg - the dose will be 5000 units **twice** a day

For **all** patients with an estimated GFR of $\leq 20\text{ml/min/1.73m}^2$ then the dose is 2500 units once a day (**regardless of weight**)

iii) If LMWH* is contraindicated, use fondaparinux sodium 2.5mg OD

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

If, for example a patient has a severe needle phobia and declines LMWH* or Fondaparinux then a low dose DOAC (eg. Rivaroxaban 10mg OD) **could** be considered. At present though, there is no recommendation from NICE that a low dose DOAC be used in place of LMWH* for VTE prophylaxis in **medical** inpatients. The decision to use a low dose DOAC should be a shared decision between the patient and/ or their NOK/ LPA (Lasting Power of Attorney) for health and/or Care Giver and that of the prescribing clinician.

Please note that this does not relate to elective and trauma Orthopaedic patients, who have a separate recommendation.

Where a patient's bleeding risk outweighs their risk of VTE or pharmacological prophylaxis is contraindicated or the patient declines pharmacological prophylaxis then offer mechanical thromboprophylaxis.

Mechanical Thromboprophylaxis

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. (NG 89: 1.1.3.2018)

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. (NG 89: 1.3.2. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Ensure that people who develop oedema or postoperative swelling have their legs re-measured and anti-embolism stockings refitted. (NG 89: 1.3.3. 2018)

If arterial disease is suspected, seek expert opinion before fitting anti-embolism stockings. (NG 89: 1.3.4. 2018)

Use anti-embolism stockings that provide graduated compression and produce a calf pressure of 14 mmHg to 15 mmHg. (This relates to a pressure of 14 mmHg to 18 mmHg at the ankle (NG 89: 1.3.5. 2018)

Encourage people to wear their anti-embolism stockings day and night until they no longer have [significantly reduced mobility](#). (NG 89: 1.3.6. 2018)

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 (NG 89: 1.3.7. 2018)

Monitor the use of anti-embolism stockings and offer assistance if they are not being worn correctly. (NG 89: 1.3.8. 2018)

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. (NG 89: 1.3.9. 2018)

1.3.11 Advise the person to wear their device for as much time as possible. (NG 89: 1.3.11. 2018)

Intermittent pneumatic compression

A method of prophylaxis that includes an air pump and inflatable garments in a system designed to improve venous circulation in the lower limbs of people at risk of DVT or pulmonary embolism. The inflation–deflation cycle of intermittent pneumatic compression therapy simulates the thigh, calf and foot's normal ambulatory pump action increasing both the volume and rate of blood flow, eliminating venous stasis and replicating the effects of the natural muscle pump. Intermittent pneumatic compression devices can be thigh- or knee-length sleeves that are wrapped around the leg, or a garment that can be wrapped around or worn on the foot that is designed to mimic the actions of walking (NG 89. 2018)

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General Circumstances

All Surgery

Advise people to consider stopping oestrogen-containing oral contraceptives or hormone replacement therapy 4 weeks before elective surgery. If stopped, provide advice on alternative contraceptive methods. (NG 89: 1.3.13. 2018)

Nursing Care

Encourage people to mobilise as soon as possible and do not allow people to become dehydrated unless clinically indicated. (NG 89: 1.3.14-15. 2018)

People using anticoagulation therapy

Consider VTE prophylaxis for people at increased risk of VTE who are interrupting anticoagulant therapy. (NG 89: 1.3.17)

People using antiplatelet agents

Consider VTE prophylaxis for people who are having 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. (NG 89: 1.3.16)

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Condition-Specific Interventions

Acute coronary syndromes

Be aware that people receiving anticoagulant drugs as part of their treatment for an acute coronary syndrome do not usually need VTE prophylaxis. (NG 89: 1.4.1. 2018)

Acute stroke patients

Do **not** offer anti-embolism stockings for VTE prophylaxis to people who are admitted for acute stroke. (NG 89: 1.4.2. 2018)

Consider [intermittent pneumatic compression](#) for VTE prophylaxis for people who are immobile and admitted with acute stroke. If using, start it within 3 days of acute stroke. (NG 89: 1.4.3. 2018)

Explain to the person admitted with acute stroke and their family members or carers (as appropriate) that intermittent pneumatic compression:

- reduces the risk of DVT and may increase their chances of survival
- will not help them recover from stroke, and there may be an associated increased risk of surviving with severe disability. (NG 89: 1.4.4. 2018)

When using intermittent pneumatic compression for people who are admitted with acute stroke, provide it for 30 days or until the person is mobile or [discharged](#), whichever is sooner. (NG 89: 1.4.5. 2018)

At DBTH, the VTE risk assessment for **all** Stroke patients on ward 16 is completed digitally on Nervecentre. VTE prophylaxis is then prescribed digitally on Wellsky (electronic prescribing system)

Patients with Renal Impairment

If using pharmacological VTE prophylaxis for people with [renal impairment](#), choose either LMWH* or unfractionated heparin (UFH). (NG 89: 1.5.1. 2018)

If needed, reduce the dose of LMWH* and UFH for people with renal impairment. Base the decision on multidisciplinary or senior opinion, or locally agreed protocols. (NG 89: 1.5.2. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Patients with Cancer

Do not offer VTE prophylaxis to people with cancer who are receiving cancer-modifying treatments such as radiotherapy, chemotherapy or immunotherapy **and** who are mobile, except as outlined in recommendations below, **unless** they are also at increased risk of VTE because of something other than the cancer. (NG 89: 1.6.1. 2018)

Consider pharmacological VTE prophylaxis for people with myeloma who are receiving chemotherapy with thalidomide, pomalidomide or lenalidomide with steroids. Choose either:

- Aspirin (75 mg or 150 mg) **or**
- LMWH* (NG 89: 1.6.2. 2018)

Consider pharmacological VTE prophylaxis with LMWH* for people with pancreatic cancer who are receiving chemotherapy. (NG 89: 1.6.3. 2018)

If giving VTE prophylaxis to people with cancer (see recommendations above), continue for as long as they are receiving chemotherapy. (NG 89: 1.6.4. 2018)

Patients 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. (NG 89: 1.7.1. 2018)

Do **not** offer VTE prophylaxis to people in the last days of life. (NG 89: 1.7.2. 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](#). (NG89: 1.7.3. 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. (NG 89: 1.7.4. 2018)

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Patients admitted to Critical Care

For guidance on pharmacological VTE prophylaxis for people with COVID-19 pneumonia who are being treated in a hospital or community setting, see our [COVID-19 rapid guideline on managing COVID-19](#).

Assess **all** people admitted to the critical care unit for risk of VTE and bleeding. (NG 89: 1.8.1. 2018)

Provide LMWH* to people admitted to the critical care unit if pharmacological VTE prophylaxis is not contraindicated. For people with [renal impairment](#) (estimated glomerular filtration rate (eGFR) of less than 30 ml/min/1.73 m²) see section above. (NG 89: 1.8.2. 2018)

Consider mechanical VTE prophylaxis for people admitted to the critical care unit if pharmacological prophylaxis is contraindicated based on their condition or procedure. (NG 89: 1.8.3. 2018)

If using mechanical VTE prophylaxis for people admitted to the critical care unit, start it on [admission](#) and continue until the person no longer has reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.8.4. 2018)

Reassess VTE and bleeding risk daily for people in critical care units. (NG 89: 1.8.5. 2018)

Assess VTE and bleeding risk more than once a day in people admitted to the critical care unit if the person's condition is changing rapidly. (NG 89: 1.8.6. 2018)

Patients Undergoing Anaesthesia

Consider regional anaesthesia for individual patients, in addition to other methods of VTE prophylaxis, as it carries a lower risk of VTE than general anaesthesia. Take into account the person's preferences, their suitability for regional anaesthesia and any other planned method of VTE prophylaxis. (NG 89: 1.10.1. 2018)

If regional anaesthesia is used, plan the timing of pharmacological VTE prophylaxis to minimise the risk of epidural haematoma. If antiplatelet or anticoagulant agents are being used, or their use is planned, refer to the summary of product characteristics for guidance about the safety and timing of these in relation to the use of regional anaesthesia. (NG 89: 1.10.2. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Do **not** routinely offer pharmacological or mechanical VTE prophylaxis to people undergoing a surgical procedure with local anaesthesia by local infiltration with no limitation of mobility. (NG 89: 1.10.3. 2018)

Interventions for people having orthopaedic surgery

Authors: Lee Wilson, Consultant Pharmacist and Mr Vivek Panikkar, Consultant Orthopaedic Surgeon & VTE Lead for T&O

ELECTIVE:

High Risk Hip & Knee Replacement**

- Use regional anaesthesia when possible, consider calf mechanical prophylaxis
- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op and continued whilst patient in hospital
- Then Rivaroxaban 10mg once DAILY for 6 weeks started at discharge. If unable to have Rivaroxaban, Warfarin (target INR 2.5 range 2 to 3) for 6 weeks started the day following surgery (continue dalteparin until INR therapeutic for two consecutive days). In active cancer or treatment for cancer, continue with Dalteparin 5000units* s/c in the EVENING for 6 weeks following surgery.

**High risk= Previous PE/DVT, Active cancer or ongoing treatment for cancer, inherited or acquired thrombophilia

Standard Risk Hip & Knee Replacement

- Use regional anaesthesia when possible, consider mechanical prophylaxis
- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op and continued whilst patient in hospital.
- Then Rivaroxaban 10 mg once DAILY for 14 days for knee replacement and 35 days for hip replacement)

Hip Arthroscopy

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op, continued for 3 weeks.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Peri-acetabular Osteotomies

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op and continued for 3 weeks post-op.

Spinal Surgery/Fractures

- All patients to receive anti-thromboembolism (TED) stockings before going to theatre and continue with these until fully mobile/additional mechanical prophylaxis can be considered if appropriate
- If high risk (previous PE/DVT, inherited or acquired thrombophilia, active cancer or treatment for cancer), consider Dalteparin 5000units* s/c in the EVENING to start 48 hours after surgery and continued whilst patient in hospital.

Shoulder and Upper Limb Surgery

- No specific prophylaxis required. Consider calf pumps/anti-thromboembolism (TED) stockings.

Foot and Ankle Surgery

Use regional anaesthesia when possible and calf pumps on opposite leg

Fore-foot / Mid-foot Surgeries:

Dalteparin* (prophylactic) single dose post-op.:

- If Limited Weight Bearing (e.g. Heel weight Bearing) – No further prophylaxis unless high-risk patient.
- If Non-Weight Bearing (e.g. as in plaster) – Rivaroxaban 10 mg once DAILY x 6/52

Tendo Achilles injuries / TA reconstruction/ Ankle fusion / Ankle Replacement / Complex Hind foot Surgery:

- Dalteparin* (prophylactic) S/C to start 6 hours post-op in the EVENING until discharge.
- Then Rivaroxaban 10mg once DAILY x 6/52

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Ankle Fractures / Foot Trauma:

- Dalteparin* (prophylactic) S/C to start 6 hours post-op once DAILY until discharge.
- Then Aspirin 150 mg once DAILY (Rivaroxaban 10mg once DAILY, if high risk, i.e. previous PE/DVT, inherited or acquired thrombophilia, active cancer or treatment for cancer) x 6/52

Diabetic Feet (Treated in Total Contact Cast):

- Aspirin 150 mg once DAILY (Rivaroxaban 10mg DAILY, if high risk, i.e. previous PE/DVT, inherited or acquired thrombophilia, active cancer or treatment for cancer) while in cast

All patients should undergo a VTE Risk Assessment prior to prescribing.

This guidance is to be followed until UK-FATE (National trial for VTE prophylaxis) results are available

ORTHOPAEDIC TRAUMA:**Fractured Neck of Femur**

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op, continued whilst patient in hospital.
- Then Aspirin 150mg once DAILY for 6 weeks to commence on discharge.
- If aspirin inappropriate, Dalteparin 5000units* s/c in the EVENING for 6 weeks following surgery.

Pelvic Fracture

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op, continued whilst patient is still restricted in terms of mobility.

Lower Limb Fractures

- Guidance remains the same whether foot included in cast or not

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

- All patients should have the DBTH "Risk Assessment for VTE for patients with lower limb casts" completed. Please see below for example of form.

High Risk ** patients with Lower Limb Plaster Casts

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op, continued whilst patient in hospital (for those patients prescribed rivaroxaban).
- Then Rivaroxaban 10mg once DAILY for six weeks. If unable to have Rivaroxaban, Warfarin (target INR 2.5 (range 2 - 3) for 6 weeks started the day following surgery (continue dalteparin until INR therapeutic for two consecutive days).

**High risk= Previous PE/DVT, Active cancer or ongoing treatment for cancer, inherited or acquired thrombophilia

Standard Risk patients with Lower Limb Plaster Casts

- Dalteparin 5000units* s/c in the EVENING to start 6 hours post-op, continued whilst patient in hospital
- Then Aspirin 150mg once DAILY while patient is in a cast. Once plaster is removed, provided patient is fully weight bearing and ankle is free to mobilise Aspirin can be discontinued. Aspirin can be considered for a longer period of time, if patient continues to struggle with mobilisation and is non-weight bearing, up to a recommended maximum of 6 weeks.

For more information on VTE prophylaxis in those patients with lower limb immobilisation, who are being treated on an outpatient basis, please see Appendix 1.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Upper Limb Fractures/Surgery

- No specific prophylaxis required. Consider calf pumps/anti thromboembolism (TED) stockings intra operatively.

***For detailed Dalteparin dosing see section above entitled Pharmacological Thromboprophylaxis on P5**

Advice on Prescribing Aspirin

All patients with a history of peptic ulcer disease/reflux and or associated symptoms should be provided with GI protection for the duration of Aspirin treatment. This will usually be Lansoprazole 15 mg od.

For those patients already on Clopidogrel, Aspirin 75mg OD can be added. For patients admitted on dual antiplatelet therapy eg, Aspirin and Ticagrelor, seek advice from a consultant cardiologist.

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HMR 2

**Doncaster and **
Bassetlaw Hospitals
 NHS Foundation Trust
RISK ASSESSMENT FOR VTE
FOR PATIENTS WITH LOWER LIMB CASTS

AFFIX LABEL HERE IF AVAILABLE

NHS Number:
 District Number:
 Surname:
 Forename(s):
 Address:
 D.o.B.:

Date of Risk Assessment: Time:

Please state your approximate: Weight: Height:

Clotting Risk	Yes	No
Are you currently undergoing or, in the past received treatment for cancer?	☐	☐
Any personal history or family history of blood clots?	☐	☐
Do you have any known blood disorder? (e.g. Factor V Leiden, antithrombin deficiency, Protein C or S deficiency)	☐	☐
Any use of oral HRT (Hormone replacement therapy)?	☐	☐
Use of oestrogen-containing contraceptive therapy?	☐	☐
Have you had surgery on the lower limbs within the last six weeks?	☐	☐
Have you undertaken recent long-distance travel? (a journey by car / train / bus / plane lasting longer than 4 hours in the last 4 weeks)	☐	☐
Are you pregnant or less than 6 weeks post-delivery?	☐	☐
Do you have varicose veins with phlebitis?	☐	☐
Have you had an admission to hospital within the last 6 weeks?	☐	☐

Bleeding Risk	Yes	No
Do you have any active bleeding?	☐	☐
Do you have a bleeding tendency / disorder?	☐	☐
Have you had a stroke within the last 14 days?	☐	☐
Are you on any blood thinning medication? (e.g. Warfarin, dabigatran, clopidogrel, fondaparinux, rivaroxiban, etc)	☐	☐
Do you have Thrombocytopenia? (platelets <75x10 ⁹ /l)	☐	☐
Do you have uncontrolled high blood pressure? (230 / 120 mmHg or higher)	☐	☐
Do you have untreated inherited bleeding disorders? (such as haemophilia and von Willebrand's disease)	☐	☐

FOR MEDICAL USE ONLY

Is thromboprophylaxis indicated? ☐ Yes ☐ No

If 'No', specify reason why:

Has thromboprophylaxis been prescribed? ☐ Yes ☐ No

Drug:	Dose:	Duration:
Signature of prescriber:		Date:

WPR -
 May 2013
 COLOUR TBC

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Interventions for people with major trauma

Offer mechanical VTE prophylaxis with intermittent pneumatic compression on admission to people with serious or major trauma. Continue until the person no longer has [significantly reduced mobility](#) relative to their normal or anticipated mobility. (NG 89: 1.13.1. 2018)

Reassess risk of VTE and bleeding in people with serious or major trauma whenever their clinical condition changes and at least daily. (NG 89: 1.13.2. 2018)

Consider pharmacological VTE prophylaxis for people with serious or major trauma as soon as possible after the risk assessment when the risk of VTE outweighs the risk of bleeding. Continue for a minimum of 7 days. (NG 89: 1.13.3. 2018)

Patients having Abdominal surgery

Offer VTE prophylaxis to people undergoing abdominal (gastrointestinal, gynaecological, urological) surgery who are at increased risk of VTE. For people undergoing bariatric surgery, follow the [recommendations in the section on bariatric surgery](#). (NG 89: 1.14.1. 2018)

Start **mechanical VTE prophylaxis** on admission for people undergoing abdominal surgery. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.14.2. 2018)

Add **pharmacological VTE prophylaxis** for a minimum of 7 days for people undergoing abdominal surgery whose risk of VTE outweighs their risk of bleeding, taking into account individual patient factors and according to clinical judgement. Choose either:

- LMWH* **or**
- fondaparinux sodium. (NG 89: 1.14.3. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

- **Consider extending pharmacological VTE prophylaxis to 28 days postoperatively for people who have had major cancer surgery in the abdomen. (NG 28: 1.14.4. 2018)**

Patients having Bariatric surgery

Offer VTE prophylaxis to people undergoing bariatric surgery. (NG 89: 1.14.5. 2018)

Start **mechanical VTE prophylaxis** on admission for people undergoing bariatric surgery. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.14.6. 2018)

Add **pharmacological VTE prophylaxis** for people undergoing bariatric surgery for a minimum of 7 days for people whose risk of VTE outweighs their risk of bleeding. Choose either:

- LMWH* **or**
- fondaparinux sodium. (NG 89: 1.14.7. 2018)

Patients having Thoracic surgery

Consider VTE prophylaxis for people undergoing thoracic surgery who are at increased risk of VTE. (NG 89: 1.14.8. 2018)

Start **mechanical VTE prophylaxis** on admission for people undergoing thoracic surgery. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.14.9. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Consider adding pharmacological VTE prophylaxis for people undergoing thoracic surgery for a minimum of 7 days to people whose risk of VTE outweighs their risk of bleeding:

- Use LMWH* as first-line treatment.
- If LMWH* is contraindicated, use fondaparinux sodium. (NG 89: 1.14.10. 2018)

Patients having Oral and maxillofacial surgery

Consider pharmacological VTE prophylaxis with LMWH* for a minimum of 7 days for people undergoing oral or maxillofacial surgery whose risk of VTE outweighs their risk of bleeding. (NG 89: 1.14.11. 2018)

Consider mechanical VTE prophylaxis on admission for people undergoing oral or maxillofacial surgery who are at increased risk of VTE and high risk of bleeding. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.14.12. 2018)

Patients having ENT surgery

Consider pharmacological VTE prophylaxis with LMWH* for a minimum of 7 days for people undergoing ears, nose or throat (ENT) surgery whose risk of VTE outweighs their risk of bleeding. (NG 89: 1.14.13. 2018)

Consider mechanical VTE prophylaxis on admission for people undergoing ENT surgery who are at increased risk of VTE and high risk of bleeding. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.14.14. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Patients having Vascular surgery

Open vascular surgery or endovascular aneurysm repair

Consider pharmacological VTE prophylaxis with LMWH* for a minimum of 7 days for people who are undergoing open vascular surgery or major endovascular procedures, including endovascular aneurysm repair whose risk of VTE outweighs their risk of bleeding. (NG 89: 1.15.3. 2018)

Consider mechanical VTE prophylaxis on admission for people who are undergoing open vascular surgery or major endovascular procedures, including endovascular aneurysm repair, **if pharmacological prophylaxis is contraindicated**. Choose either:

- anti-embolism stockings **or**
- intermittent pneumatic compression.

Continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.15.4. 2018)

Lower limb amputation

Consider pharmacological VTE prophylaxis with LMWH* for a minimum of 7 days for people who are undergoing lower limb amputation whose risk of VTE outweighs their risk of bleeding. (NG 89A; 1.15.5. 2018)

Consider mechanical VTE prophylaxis with intermittent pneumatic compression on the contralateral leg, on admission, for people who are undergoing lower limb amputation and if pharmacological prophylaxis is contraindicated. (NG 89: 1.15.6. 2018)

For people undergoing lower limb amputation, continue mechanical VTE prophylaxis until the person no longer has significantly reduced mobility relative to their anticipated mobility. (NG 89: 1.15.7. 2018)

Varicose vein surgery

Be aware that VTE prophylaxis is generally not needed for people undergoing varicose vein surgery where:

- total anaesthesia time is less than 90 minutes **and**
- the person is at low risk of VTE. (NG 89: 1.15.8. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Consider pharmacological VTE prophylaxis with LMWH*, starting 6 to 12 hours after surgery and continuing for 7 days for people undergoing varicose vein surgery if:

- total anaesthesia time is more than 90 minutes **or**
- the person's risk of VTE outweighs their risk of bleeding. (NG 89: 1.15.9. 2018)

Consider mechanical VTE prophylaxis with anti-embolism stockings, on admission, for people undergoing varicose vein surgery:

- who are at increased risk of VTE **and**
- if pharmacological prophylaxis is contraindicated. (NG 89: 1.15.10. 2018)

If using anti-embolism stockings for people undergoing varicose vein surgery, continue until the person no longer has significantly reduced mobility relative to their normal or anticipated mobility. (NG 89: 1.15.11. 2018)

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

Consider LMWH* 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. (NG 89: 1.16.1. 2018)

Do **not** offer VTE prophylaxis to women admitted to hospital or a midwife-led unit who are in active labour. (NG 89: 1.16.2. 2018)

Stop pharmacological VTE prophylaxis when women are in labour. (NG 89: 1.16.3. 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. (NG 89: 1.16.4. 2018)

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

If using LMWH* in women who gave birth or had a miscarriage or termination of pregnancy, start 4 to 8 hours after the event unless contraindicated and continue for a minimum of 7 days. (NG 89: 1.16.5. 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. (NG 89: 1.16.6. 2018)

Discharging Patients Home

As part of the [discharge](#) plan, give patients and their family members or carers (as appropriate) verbal and written information on:

- the signs and symptoms of deep vein thrombosis (DVT) and pulmonary embolism
- how people can reduce their risk of VTE (such as keeping well hydrated and, if possible, exercising and becoming more mobile)
- the importance of seeking help if DVT, pulmonary embolism or other adverse events are suspected. (NG 89: 1.2.4. 2018)

Give people discharged with VTE prophylaxis and their family members or carers (as appropriate) verbal and written information on:

- the importance of using VTE prophylaxis correctly (including the correct administration and disposal of pharmacological prophylaxis)
- the importance of continuing treatment for the recommended duration
- the signs and symptoms of adverse events related to VTE prophylaxis
- the importance of seeking help and who to contact if people have problems using VTE prophylaxis. (NG89: 1.2.5. 2018)

Ensure that people who are discharged with anti-embolism stockings:

- understand the benefits of wearing them
- *Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

- understand the importance of wearing them correctly
- understand the need to remove them daily for hygiene purposes
- are able to remove and replace them, or have someone available who will be able to do this for them
- know what to look for if there is a problem – for example, skin marking, blistering or discolouration, particularly over the heels and bony prominences
- know who to contact if there is a problem
- know when to stop wearing them. (NG89: 1.2.6. 2018)

Ensure that people who are discharged with pharmacological and/or mechanical VTE prophylaxis are able to use it correctly, or have arrangements made for someone to be available who will be able to help them. (NG 89: 1.2.7. 2018)

Notify the person's GP if the person has been discharged with pharmacological and/or mechanical VTE prophylaxis to be used at home. (NG 89: 1.2.8. 2018)

For all DVT/ PE occurring within 3 months of a hospital admission then please complete DATIX.

Ensure all patients diagnosed with VTE have appropriate follow up arranged by referring to the VTE Clinic.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Appendix 1

Deep Vein Thrombosis (DVT) Prophylaxis Virtual Fracture Clinic (VFC) SOP

Purpose

To outline the process to determine DVT prophylaxis for any patient with lower limb immobilisation or who is not fully weight bearing and seen within the VFC

Scope

This SOP covers all members of staff working in the VFC. Once the patient is seen within the fracture clinic then they are no longer under the scope of this SOP.

Procedure

Any patient with lower limb immobilisation will complete the "Risk Assessment for VTE for patients with lower limb casts" over the phone and this will be reviewed by the physiotherapist within the VFC. If VTE prophylaxis is required then any medication advised within the VFC should be prescribed by a medical professional unless:

- The patient has already been prescribed the relevant medication as per the flow chart below and have an ample supply - check symphony for this. Advise the patient to continue with this medication.
- The patient has been advised to take aspirin, understands the risks of not taking the Aspirin and declined to attend to pick up the prescription. In this case the patient will be advised on the dose and frequency of the medication. The following key points will then be documented in the notes; **patient declined to attend for prescription, knows the risks of not taking the medication, agreed to buy locally.**

See the flow chart below.

Prescription

The doctor in the fracture clinic will be the initial person asked to sign the DVT risk assessment and prescribe the medication. If there is no fracture clinic running then a doctor in an orthopaedic clinic will be approached instead. If neither of these options are possible then the doctor covering the orthopaedic wards will be contacted via Bleep or found in person. Failing all of the above if the patient is unable to get the correct medication within 24hrs of the VFC then they will be asked to attend the emergency department to be assessed for VTE prophylaxis.

Medication administration

Only people trained to dispense medication can do so. At present this is only the nursing staff or doctors in the fracture clinic. It will be the role of the nurse in fracture clinic to do this and make sure the adequate documentation is completed and filed as needed.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Collection of the prescription/medication

If the patient is Doncaster based, either themselves or a nominated person will be asked to attend Doncaster Royal Infirmary Fracture Clinic for the prescription/medication as early as possible. If the patient is Bassetlaw based then they will be asked to attend the pharmacy at Bassetlaw Hospital and the prescription will be sent there via the Doncaster pharmacy. If the patient needs to be shown how to inject then the nursing staff in fracture clinic either at Doncaster or Bassetlaw will show them how to do this.

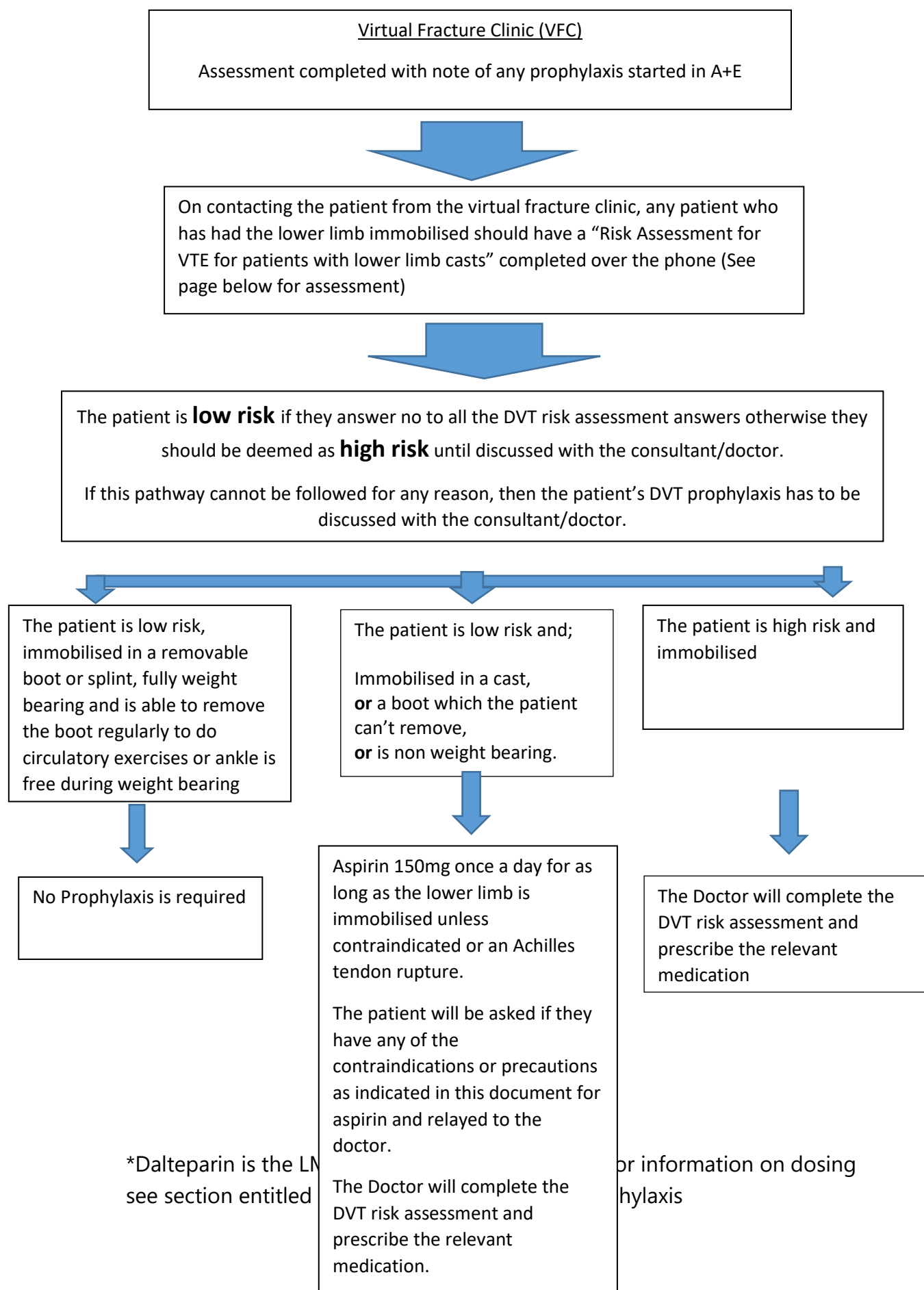
Regarding Aspirin, if the patient declines to attend the hospital and doesn't have anyone else who can pick up the medication on their behalf but willing to buy over the counter then the risks of not taking the medication and the importance of the medication will be reinforced. The dosage, when and how to take the medication will be made clear to the patient. If this is the case, then this will be documented on the VTE risk assessment form and filed into the notes.

The patient should have already been started on appropriate VTE prophylaxis by the Emergency Department and so normally any delays in getting the medication is not an issue. On the rare circumstance (weekend) that it is an issue then the patient may need to reattend ED for the appropriate medication to be prescribed and issued.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Deep Vein Thrombosis (DVT) Prophylaxis Virtual Fracture Clinic Pathway

This pathway should be followed for any patient who has the lower limb immobilised.



Aspirin

Contraindications

Atrial Fibrillation

Patients taking warfarin or other anticoagulants (including dabigatran, rivaroxaban, apixaban, edoxaban)

Patients with haemophilia or other coagulation defects (decreases platelet aggregation and increases bleeding time).

Previous or active peptic ulceration

Children under 16 years of age

Precautions

Patients already taking:

- NSAIDs (check OTC use)
- Lithium
- Corticosteroids
- Ciclosporin
- Methotrexate
- Tacrolimus
- SSRIs (citalopram, sertraline, escitalopram, venlafaxine)

Uncontrolled hypertension

G6PD deficiency (an inherited condition in which the body doesn't have enough of the enzyme G6PD, which helps red blood cells function normally).

Asthma (patient may be sensitive to NSAIDS)

Excessive alcohol consumption.

Possible side effects

Hypersensitivity reactions including skin rashes (common),

Angioedema and bronchospasm.

Gastro-intestinal discomfort, nausea, diarrhoea and occasionally bleeding and ulceration.

Systemic as well as local effects contribute to GI damage.

Haemorrhage

Action if aspirin is inappropriate: Discuss with medic in fracture clinic

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis



Doncaster and Bassetlaw
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Preventing blood clots while you're in hospital

What is deep vein thrombosis?

Whenever we cut ourselves, our blood hardens and a scab forms. This process is called blood clotting, or coagulation. Sometimes, a clot of blood can occur within a blood vessel, forming a 'plug' that can interrupt the normal flow of blood, a condition called thrombosis. When a clot forms in a vein deep within the leg, this is called deep vein thrombosis (DVT).

Why does blood clot?

Blood clotting is a natural, protective mechanism that is triggered by the body in response to a cut or wound and prevents you from bleeding too much. The blood-clotting process is a complex sequence of chemical reactions. Your blood contains blood clotting proteins, anti-clotting proteins and cells called platelets, all of which are important in this process. Thrombosis can occur as a result of inactivity (for example, prolonged bed rest) or inflammatory illnesses. Some people are born with abnormalities of the clotting or anti-clotting proteins in the blood that increase their risk - this is known as thrombophilia. This can sometimes be associated with a family history of blood clots.

Is a DVT serious?

If the blood clot stays in the leg, it may not cause serious problems and some clots cause no symptoms at all. After large clots, long-term swelling and discomfort in the leg can result. If a clot becomes dislodged from the vein in the leg, it can travel through the circulation to reach, and block, the blood vessels in the lungs, a condition called pulmonary embolism (PE).

This condition can be trivial or life threatening, depending on the size of the clot.

Because symptoms of a PE can be the first sign of a problem, it is very important to prevent clots from forming in the first place.



WPR30726 June 2018 Review date: June 2020

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Why might I be at risk of developing blood clots?

There are several risk factors that increase your chances of developing a DVT or PE. These are commonly seen in patients in hospital.

The main risk factors include:

- major operations
- reduced mobility
- pregnancy
- trauma (fractures)
- acute medical illness
- stroke or paralysis
- cancer and its treatments
- some oral contraceptives or Hormone Replacement Therapy (HRT) - see below*
- smoking
- previous blood DVT or PE
- a known blood abnormality causing a clotting tendency (thrombophilia) or family history of clots.

Current guidance for women on HRT or oestrogen-containing oral contraceptives undergoing any elective (non-emergency) surgery is to consider temporarily stopping these 1 month before surgery. You may wish to discuss this with your General Practitioner (GP) or surgeon. Women who do stop the oral contraceptive should be aware of the possibility of pregnancy and consider alternative methods of contraception. You are still likely to benefit from other forms of clot prevention.

What can be done to prevent blood clots?

When you are admitted to hospital, you will have a clotting risk assessment performed and, if you are found to be at risk, measures will be put in place to address this.

These include:

Anti-thrombotic stockings (TED stockings)

Unless there is a good reason not to, eg poor circulation or nerve damage to the feet and legs common in diabetes, all surgical patients will be given anti-thrombotic stockings to wear while in hospital, and for six weeks after the operation. They should be worn day and night and not removed for more than 30 minutes a day (for bathing). It is important that the stockings are fitted properly, so that they will have the desired effect in preventing clotting. If your stockings are falling down or too tight, speak to a trained nurse who will be able to measure your legs and issue a more appropriate stocking. The stockings are designed to be washed up to 30 times. Wash them by hand, using a mild detergent in warm water and dry naturally.

VTE Prophylaxis Group

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Anticoagulants

If you are felt to be at high risk of clotting, you will also be prescribed an anticoagulant or 'blood-thinner'. These work with the body's natural anti-clotting system to prevent blood clots.

What type of anticoagulant is used?

One commonly prescribed anti-coagulant is Dalteparin, a type of heparin. It is given by your nurse as an injection, once every day, while you are in hospital.

For most patients and most operations, you will be given Dalteparin until you are fully mobile. This will normally be less than a week. In certain cases, your doctor may decide that you need to continue with Dalteparin for a while after you go home from hospital. If this is the case, the doctor or nursing staff will discuss this with you before you are discharged. Dalteparin is easy to inject at home and can be done either by you or a relative. Do not hesitate to ask about anything that concerns you - injecting at home is easy, and it is important that you feel confident about doing so. If you are unable to manage this, a district nurse will be asked to visit to give you the injection.

If you are undergoing orthopaedic or podiatric surgery, you may be given aspirin (an oral antiplatelet tablet) or rivaroxaban (an oral anticoagulant) to take home. Aspirin is only recommended by NICE for certain types of operations (hip or knee replacements) but local guidelines (based on recommendations from the American College of Chest Physicians) suggest wider use of aspirin. You can choose to be treated in accordance with NICE guidance, if you would prefer, or you can discuss these options with your surgeon.

Are there any side effects with Dalteparin?

It is unlikely that you will experience any problems with Dalteparin.

However, you should contact your doctor immediately, day or night, if you:

- feel chest pains or develop shortness of breath
- injure yourself, particularly on your head, eyes or joints
- cut yourself and bleed heavily
- have nose bleeds or your gums bleed heavily
- have a very heavy menstrual period
- notice unexpected bruises, such as brown or black spots on the skin
- vomit blood or something that looks like coffee-grounds

VTE Prophylaxis Group

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

- pass blood in your urine or motions (either obvious blood or sticky, black stools)
- develop a sudden change in your general health, eg vomiting, diarrhoea, fever, etc.

What happens once I am out of hospital?

Continue to wear your compression stockings if you have been issued with them. Once your recovery is under way, the best thing to do is exercise. Blood that is moving is less likely to clot. Exercise, eg walking, helps the blood to circulate and can help to prevent DVT. Regular, gentle exercise is something you should try to incorporate into your daily routine, if your health allows you. Not only will it help you keep your weight down, but it will also make you feel fitter and more energetic. You should ask your doctor what exercise is safe for you to do and when you can start.

What are the signs and symptoms of a DVT or PE?

If you experience any of the following signs or symptoms, you should inform a member of the healthcare team or your GP immediately:

DVT

- calf pain in either leg (throbbing, tightness)
- swelling of one leg, which is new or increasing
- any redness/skin inflammation to your calf/thigh area.

PE

- breathlessness
- coughing up blood-stained phlegm
- chest pain or discomfort, especially worsened on deep breathing or coughing
- cyanosis (a bluish tinge to the complexion due to lack of oxygen)
- sudden collapse.

If you experience any of these symptoms, call a doctor immediately.

Patient Experience Team

The team are available to help with any concerns, complaints or questions you may have about your experience at the Trust. Their office is in the Main Foyer (Gate 4) of Doncaster Royal Infirmary. Contact can be made either in person, by telephone or email.

The contact details are: Telephone: 01302 642764 or 0800 028 8059
Email: dbth.pals.dbh@nhs.net

VTE Prophylaxis Group



*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis



**Doncaster and Bassetlaw
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Deep Vein Thrombosis (DVT)

Deep Vein Thrombosis occurs when blood clot (called a thrombus) forms in a vein. This usually occurs in the deep veins of the leg but can occur in most veins of the body.

The thrombus in the deep veins of the leg can cause obstruction to the blood flow leading to pain, swelling, and discolouration of the affected limb.

There is a chance that this clot might break off (this is called an embolus) and travel to the lungs (this is called Pulmonary Embolism) which is serious and can sometimes be fatal as it can block off the blood supply to parts of the lungs. Fortunately treatment is very effective in reducing the chance of this happening.

Risk Factors for DVT:

- Clotting abnormality in the blood (including family history).
- Pregnancy.
- Obesity.
- Underlying Cancer.
- Previous DVT.
- Immobility including long haul flights.
- Contraceptive pills.
- Recent surgery.
- Intravenous drug use.

Symptoms of DVT:

- Pain in the affected leg.
- Swelling/firmness of the leg.
- Warmth and redness of the leg.

WPR43192 May 2017 Review date by: May 2019

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

How is it diagnosed?

In some cases the condition can be excluded by a blood test without the need for special scans. If the test is not appropriate or does not exclude a blood clot, an ultrasound Doppler scan of the veins is usually required.

Treatment of DVT

The mainstay of treatment of DVT is 'anticoagulation' which means thinning of the blood. This reduces the risk of blood clots getting bigger, while the body's own systems dissolve the clot.

The duration of the anticoagulation treatment varies. The minimum duration of treatment should be three months.

Medications used to treat DVT:

- Low Molecular Weight Heparin (LMWH) such as dalteparin.
- Vitamin K antagonists (VKAs), such as warfarin.
- New Oral Anticoagulants (NOACs), such as rivaroxaban.

If warfarin is used you will also start treatment with low molecular weight heparin injections for a few days. This is because it takes a few days for the optimal effect of warfarin to be established.

The risk and benefits of treatment will be discussed with you by the doctor. Warfarin has special monitoring arrangements and you will need regular blood tests, this may be done by either your GP or the hospital.

The doctor or pharmacist will give more information, including an information pack before you are discharged.

When you are discharged it is important that you know when your next blood test is due and who will monitor your warfarin in the future. You will be given a form that will tell you this information and you should take it to your GP or the hospital when you have your next blood test.

In some cases of extensive DVT, a patient may need a filter to be placed in a main vein to stop the clot from travelling to the lungs. This is called an Inferior Vena Cava (IVC) filter. This decision is usually made by a senior clinician.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis



If you have any of these symptoms, please contact:

Doncaster Royal Infirmary, Acute Medical Unit (AMU),
Tel: 01302 642617.

Bassetlaw Hospital, Assessment and Treatment Centre (ATC),
Tel: 01909 502 186 (direct dial).

If you are very unwell, call 999 to get yourself to the hospital.

It is very important that you come back to the ward for daily Dalteparin injections for as long as the doctor or nurse thinks you need it, unless it has been arranged for the district nurse to administer it in the community.

If for any reason you cannot attend the ward for the injections or you do not receive a dose of the injection in the community please call the ward to inform them so that they can give you further advice.

Patient Experience Team

The team are available to offer advice or information on healthcare matters. Their office is in the Main Foyer (Gate 4) of Doncaster Royal Infirmary. Contact can be made either in person, by telephone or email. The team can visit inpatients on all Trust sites.

The contact details are:

Telephone: 01302 642764 or 0800 028 8059
Email: pals.dbh@dbh.nhs.uk.

Acute Medicine

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Pulmonary Embolism (PE)

Pulmonary embolism (PE) occurs when a blood clot dislodges from a vein, travels through the veins of the body, and lodges in the lung.

Most blood clots originally form in the deep veins of the legs, thighs, or pelvis and this condition is known as deep vein thrombosis (DVT).

The clot or clots block the blood flow to parts of the lung.

Pulmonary emboli are uncommon and range in severity but are important because large clots can be fatal if not identified and treated promptly.

Risk factors of PE:

- Clotting abnormality in the blood (including family history).
- Pregnancy.
- Obesity.
- Underlying cancer.
- Previous DVT.
- Immobility including long haul flights.
- Contraceptive pills.
- Recent surgery.
- Intravenous drug use.

Symptoms of PE:

- Shortness of breath.
- Sharp chest pain especially when taking a deep breath.
- Coughing up blood.
- Feeling dizzy/blacking out/crushing chest pain – may suggest presence of large clots.

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*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

How is it diagnosed?

In some cases the condition can be excluded by a blood test without the need for special scans. If the test is not appropriate or does not exclude a blood clot, a scan of the chest is usually required. In pregnancy a sound wave leg scan is often done instead to try to avoid the effects of X-rays on the unborn baby.

Treatment of PE

The mainstay of treatment of PE is 'anticoagulation' which means thinning of the blood. This reduces the risk of blood clots getting bigger, while the body's own systems dissolve the clot.

The duration of the anticoagulation treatment varies. The usual minimum duration of treatment should be six months.

Medications used to treat DVT:

- Low Molecular Weight Heparin (LMWH) such as dalteparin
- Vitamin K antagonists (VKAs), such as warfarin.
- New Oral Anticoagulants (NOACs), such as rivaroxaban.

If warfarin is used you will also start treatment with low molecular weight heparin injections for a few days this is because it takes a few days for the optimal effect of warfarin to be established. The risk and benefits of treatment will be discussed with you by the doctor. Warfarin has special monitoring arrangements and you will need regular blood tests, this may be done by either your GP or the hospital. The doctor or pharmacist will give more information, including an information pack before you are discharged. When you are discharged it is important that you know when your next blood test is due and who will monitor your warfarin in the future. You will be given a form that will tell you this information and you should take it to your GP or the hospital when you have your next blood test.

In some severe cases of PE patients need a 'clot busting treatment' called thrombolysis. This decision is usually made by a senior clinician.

*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis

Patients do not usually need to stay in the hospital for treatment. Some patients with PE can be treated either in the community or on an ambulatory basis.

Ambulatory (daily return to ward) treatment of patients with a diagnosis of PE

If the clinician decides to treat a patient with PE under the ambulatory pathway, the patient is commenced on treatment and may need to come back daily to the ward for dalteparin injections and a blood test, until the blood is adequately thinned.

If you are deemed suitable for ambulatory treatment for your PE, then you will need to be aware of some symptoms you need to look out for:

These are:

- Blackout.
- Dizzy spell.
- Coughing up blood.
- Worsening shortness of breath.
- Sharp chest pain especially when taking a deep breath in.
- Any bleeding that does not stop with simple measures.

If you have any of these symptoms, please contact:

Doncaster Royal infirmary, Acute Medical Unit (AMU),
Tel: 01302 642617.

Bassetlaw Hospital, Assessment and Treatment Centre (ATC),
Tel: 01909 502 186 (direct dial).

If you are very unwell, call 999 to get yourself to the hospital.

It is very important that you come back to the ward for daily Dalteparin Injections unless it has been arranged for the district nurse to administer it in the community.

If for any reason you cannot attend the ward for the injections or you do not receive a dose of the injection in the community, please call the ward to inform them so that they can give you further advice.

Acute Medicine



*Dalteparin is the LMWH currently used in DBTH. For information on dosing see section entitled Pharmacological Thromboprophylaxis