

Patient Sticker

# Lower Limb DVT Ambulatory Emergency Care Pathway

Patient Sticker

## Ambulatory Emergency Care (AEC) Unit

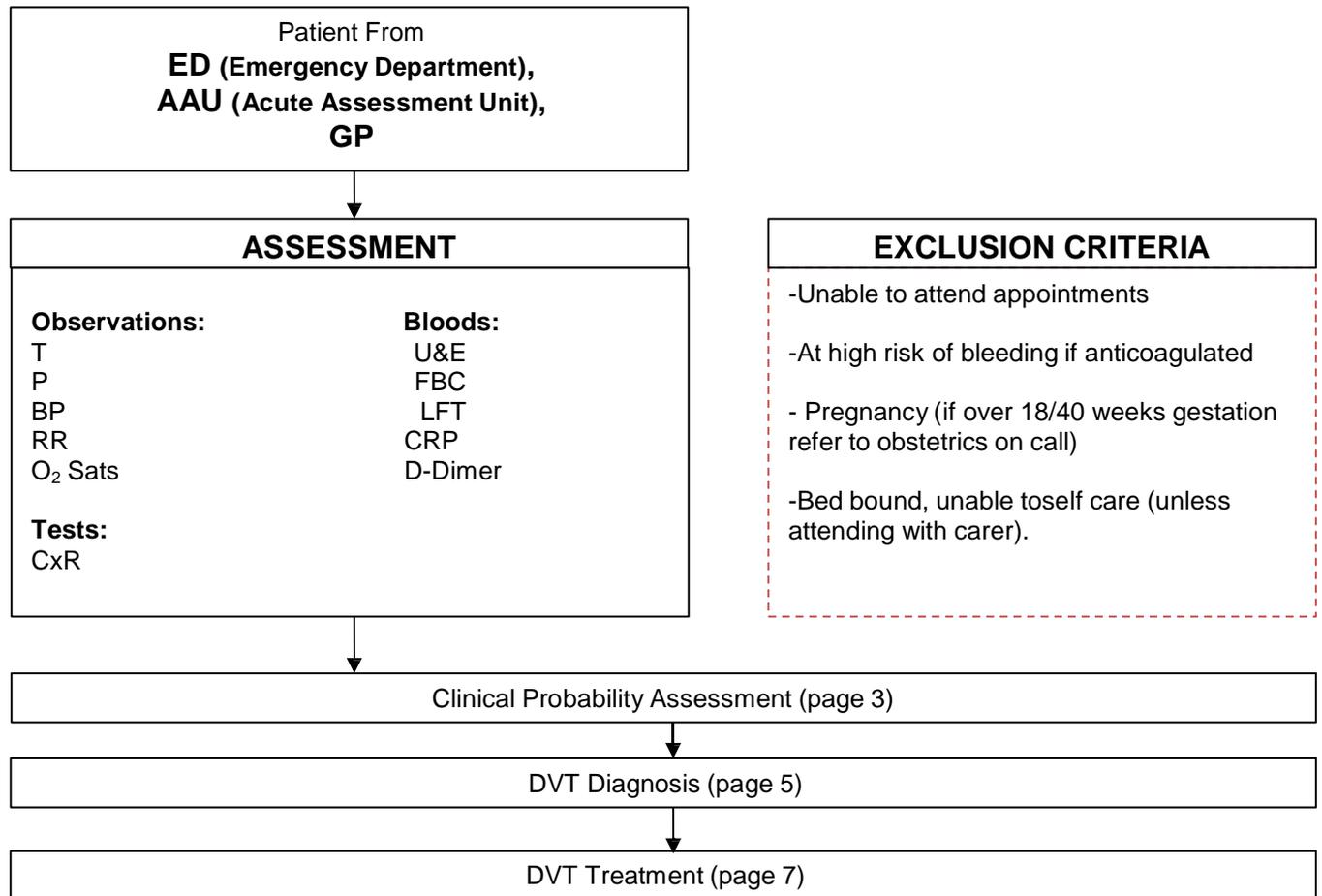
Open: Monday – Friday 9am – 6 pm

Consultant: Dr M Oldfield  
Consultant: Dr D Harris  
ANP: Andrew Mitchell

ANP: Bleep 390  
DVT Clinic: Ext 6416  
Fax: 0208 934 2923

Medical On Call Team  
SPR: 174 SHO:172/173

## DVT Service Monday – Friday 9am – 4pm



### Ambulatory Emergency Care (AEC)

**IN HOURS DVT Nurse  
09:00-16:00**

Ring extension 6416 to confirm AEC capacity

Copy of notes with patient to AEC Clinic

**OUT OF HOURS ED  
16:00 – 09:00**

Request ultrasound scan on CRS

Place notes in DVT slot in A&E reception

## Clinical Probability Assessment

(Affix addressograph label) <b>Hospital number:</b> <b>Name:</b> <b>Address:</b> <b>Postcode:</b> <b>Telephone number:</b> <b>GP name:</b> <b>Practice name:</b> <b>Practice telephone number:</b>	<b>Date:</b> <b>Time seen:</b> <b>Seen by – print name:</b> <b>Signature:</b> <b>Position:</b> <b>Allergies:</b>						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%; text-align: center;">T</td> <td style="width: 16.6%; text-align: center;">P</td> <td style="width: 16.6%; text-align: center;">R</td> <td style="width: 16.6%; text-align: center;">BP</td> <td style="width: 16.6%; text-align: center;">SO on air</td> <td style="width: 16.6%; text-align: center;">Weight kg</td> </tr> </table>	T	P	R	BP	SO on air	Weight kg
T	P	R	BP	SO on air	Weight kg		

### DVT IN PREGNANCY

If less than **18** weeks gestation can be scanned via A&E/MGPU route.

If more than 18 weeks gestation patient must be referred to the Maternity bleep holder – Bleep 552.

<b>Presenting Complaint:</b>		
<b>History of presenting complaint:</b>		
<b>Past Medical History:</b>		
<b>Clinical Probability Assessment Score</b>		
<b>Are there diagnoses present?</b>	<b>Are major signs PRESENT on examination?</b>	<b>Is a risk factor PRESENT?</b>
The following should be considered on clinical grounds (please tick) <input type="checkbox"/> Cellulitis <input type="checkbox"/> Superficial thrombophlebitis <input type="checkbox"/> Calf trauma or haematoma <input type="checkbox"/> Ruptured Baker's Cyst <input type="checkbox"/> Or any other diagnosis	Record whether the following are present: (please tick) <input type="checkbox"/> Unilateral calf swelling >3cm <input type="checkbox"/> Calf + Thigh both swollen <input type="checkbox"/> Tenderness along deep vein	Record whether there is a history of the following: (please tick) <input type="checkbox"/> Recent major surgery in last 90 days or lower limb trauma <input type="checkbox"/> Inpatient stay or procedure in last 90 days <input type="checkbox"/> Major medical illness including cancer <input type="checkbox"/> Previous proven DVT or PE <input type="checkbox"/> Known thrombophilic defect <input type="checkbox"/> Recent long haul travel > 4 hours <input type="checkbox"/> Recent immobilisation in plaster or in bed >3 days <input type="checkbox"/> Pregnancy or post partum (up to 6 weeks) <input type="checkbox"/> Use of HRT or oestrogen containing oral contraceptive pill <input type="checkbox"/> Strong first degree relative history of VTE
<b>If present score =0 OR If NOT PRESENT score =1</b>	<b>If one or more are PRESENT score =1</b>	<b>If one or more are PRESENT score =1</b>
<b>OVERALL SCORE = _____ Interpretation: Low =0; Intermediate =1; High =2/3</b>		

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**Medication:**

**Clinical examination of lower limbs:**

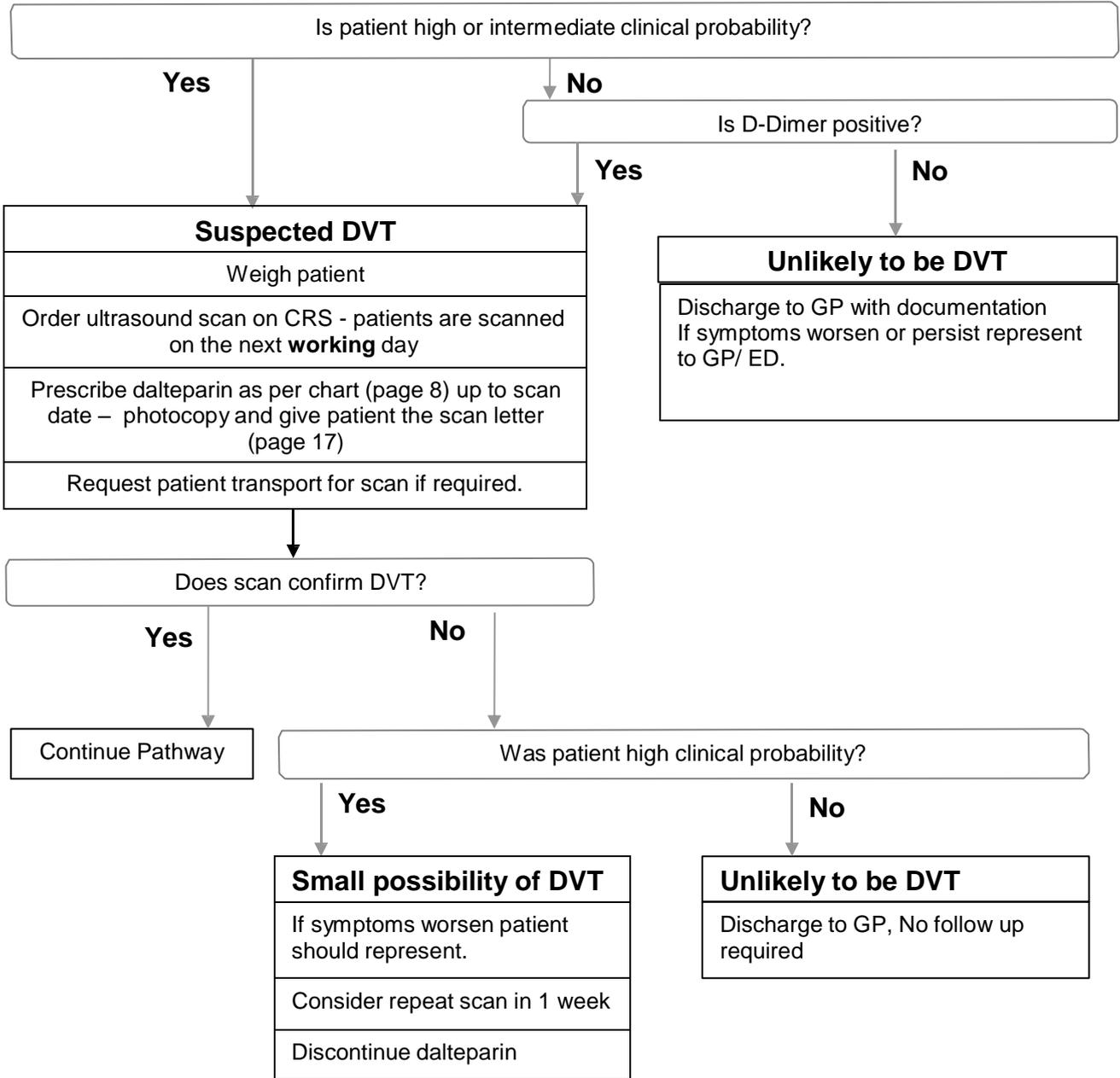
RESULTS	
Date & Time	
Na	
K	
Urea	
Creatinine	
Bilirubin	
Alk.Phos.	
ALT	
Albumin	
CRP	
WCC/diff	/
Hb	
MCV	
Plts	
INR	
D-Dimer	
Preg Test	

<b>Calf circumference (centimeters)</b>
R calf:
L calf:

Is there any evidence for pulmonary embolism?	YES / NO
Is there any evidence for alternative diagnosis to DVT?	YES / NO
Could the leg be ischemic? (consider referral to vascular surgeons)	YES / NO
Are there any symptoms and/or signs suggestive of underlying malignancy?	YES / NO

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## DVT Diagnosis



### Diagnosis / Problems

### Plan





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## Dalteparin (Fragmin) Dosing Guidelines

Dalteparin should be given for a **minimum of 5 days** and continued until the INR is **within** the targeted range (e.g. either 2.0-3.0 or 3.0-4.0)

**Single use, preloaded disposable syringes should be used.**

Weight	Dalteparin (Fragmin)
Under 46 kg	7,500 units daily
46 – 56 kg	10,000 units daily
57 – 68 kg	12,500 units daily
69 – 82 kg	15,000 units daily
83 kg and above	18,000 units daily
83 kg and over at <b>Increased risk of bleeding</b>	100 units/kg TWICE daily (maximum 18,000 units/24 hours)
Pregnancy	<ul style="list-style-type: none"><li>• Dosage regimen for dalteparin treatment of DVT is 100units/kg bd, maximum dose is 18,000 units/24 hours.</li><li>• When dosing these patients, the <u>actual pre-pregnancy body weight</u> is used.</li><li>• Monitoring anti-Xa is only required if at extremes of body weight (discuss with a haematologist).</li><li>• Inject dalteparin into the thigh, not abdomen.</li></ul>

**Women of childbearing age have urine pregnancy test prior to starting anticoagulation**

**The duration of Anticoagulation varies according to presenting features**

Presenting features	Recommended Duration	Target INR
Proximal DVT	6 +months	2.0-3.0 (2.5)
Calf vein thrombosis – post op no risk factors	6 weeks and review	
Calf vein thrombosis – non surgical no risk factors	3 months	
DVT plus continued risk factors	Long term or until risk resolved	
Recurrent DVT	Long Term	3.0-4.0 (3.5)
Recurrent DVT despite warfarin	Long Term	

All patients are reviewed at the end of their treatment duration in the Anticoagulant Clinic.

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Counselling Checklist

1. Rationale for treatment	DVT/PE	3/12 / 6/12 / long term / other
2. Importance of Regular Blood tests/Anticoagulant Clinic system		Appears to understand/ does not appear to understand
3. Warfarin dosing		Colours/ strengths/ dose/ time/missed doses
4. Yellow Anticoagulation NPSA book		Read through with patient/ patient's representative
5. Risks/Bleeding/Bruising Action to be taken		Appears to understand/ does not appear to understand Epistaxis lasting longer than 10 min, haematuria or haematemesis – <b>to go straight to A&amp;E</b>
6. Helpline telephone number		Identified and encouraged to use
7. Importance of informing Anticoagulation department if unwell		Appears to understand/ does not appear to understand (particularly if any diarrhoea or vomiting)
8. Medications/starting/stopping		Avoiding herbal medications, will inform us of changes
9. Repeat prescription info		GP to provide
10. Alcohol intake		Minimal/ None/ ___units daily To keep to DoH guidelines – no excessive intake.
11. Diet		Diet to remain unchanged, avoid cranberry juice
12. Importance of informing doctors and dentists of surgical procedures including dental work		Patient will inform Anticoag Clinic of any pending surgery or dental extractions. Also will inform doctors/dentists they are taking Warfarin
13. Sports/leisure activities		Minimal until therapeutic
14. Compression stockings		Prescription given/not given
15. Pregnancy – women of child bearing age		Counselled / N/A
16. District/practice nurse arrangements		N/A / Arranged To administer dalteparin ___units S/C OD/BD for duration of ___ days commencing _____@ ___:___ hrs
17. Heparin Induced Thrombocytopenia		Counselled, repeat FBC/U&E arranged/N/A
18. F/U outpatient appt with medics		Arranged /Not arranged / GP / N/A
19. Anticoagulation clinic appointment		Given _____ @ ___:___ hrs Kingston Hospital
20. Transport arrangements		N/A / Arranged
21. Discharge Summary		Sent/ Not Sent
22. Verbal Consent from patient		Yes, obtained/ No, not obtained
23. DVT/PE leaflet given		Yes/ No / N/A
<b>24. HOSPITAL ADMISSION OR DAY CASE IN THE LAST 90 DAYS</b>		<b>Yes/ No / N/A</b> <b>If yes, date, place and procedure</b> <b>**Please add to DAWN in 'events' using code HAT***</b>

Name of patient.....

Date of Birth.....

Signed .....Anticoagulation CNS

Date .....



## Information for Patients

**You have been asked to attend the Ambulatory Emergency Care clinic [AEC] at Kingston Hospital for continuing treatment for DVT**

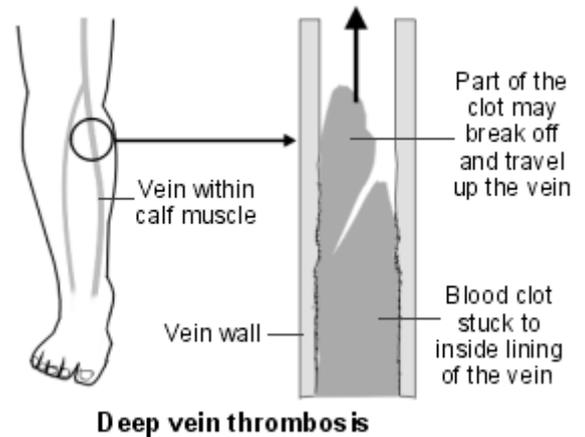
A deep vein thrombosis (DVT) is a blood clot in a leg vein. The common cause is immobility. A complication occurs in some cases where part of the blood clot breaks off and travels to the lung (pulmonary embolus). This is usually prevented if you are given anticoagulation treatment.

### What is a deep vein thrombosis?

A deep vein thrombosis (DVT) is a blood clot that forms in a deep leg vein. Veins are blood vessels that take blood towards the heart.

Deep leg veins are the larger veins that go through the muscles of the calf and thighs. (They are not the veins that you can see just below the skin.) When you have a DVT the blood flow in the vein is partially or completely blocked, depending on whether the blood clot partially or completely fills the width of the vein.

A calf vein is the common site for a DVT. A thigh vein is less commonly affected. Rarely, other deep veins in the body form blood clots.



### Why do blood clots form in leg veins?

Blood normally flows quickly through veins, and does not usually clot. Sometimes a DVT occurs for no apparent reason. However, the following increase the risk of having a DVT.

- **Immobility** which causes blood flow in the veins to be slow. Slow flowing blood is more likely to clot than normal flowing blood.
  - **A surgical operation which lasts more than 30 minutes** is the most common cause of a DVT. The legs become still when you are under anaesthetic. Blood flow in the leg veins can become very slow.
  - **Any illness or injury that causes immobility** increases the risk of a DVT.
  - **Long journeys by plane, train, etc**, are thought to cause a slightly increased risk of DVT. This is probably due to sitting cramped for long periods.
- **Damage to the inside lining of the vein** increases the risk of a blood clot forming. For example, a DVT may damage the lining of the vein. So, if you have a DVT, then you have a higher than average risk of having another one sometime in the future. Some conditions such as vasculitis (inflammation of the vein wall) and some drugs (for example, some chemotherapy drugs) can damage the vein and increase the risk of having a DVT.

**Conditions that cause the blood to clot more easily than normal** (thrombophilia) can increase the risk of having a DVT. Some medical conditions can cause the blood to clot more easily than usual. For example, nephrotic syndrome and antiphospholipid syndrome. Some rare inherited conditions can also

cause the blood to clot more easily than normal. For example, factor V leiden.

- **The contraceptive pill and hormone replacement therapy (HRT)** which contain oestrogen can cause the blood to clot slightly more easily. Women taking 'the pill' or 'HRT' have a small increased risk of DVT.
- **People with cancer or heart failure** have an increased risk of having a DVT.
- **Older people** are more likely to have a DVT, particularly if you have poor mobility or have a serious illness such as cancer.
- **Pregnancy** increases the risk. About 1 in 1000 pregnant women have a DVT.
- **Obesity** also increases the risk of having a DVT.

## How common is a deep vein thrombosis?

It is estimated that about 1 in 1000 people have a DVT each year in the UK. This ranges from less than 1 in 3000 in people under the age of 40 years to up to 1 in 500 in those over 80 years.

## What are the symptoms of a deep vein thrombosis?

The typical symptoms are pain, tenderness, and swelling of the calf. Blood that would normally go through the blocked vein is diverted to outer veins. The calf may then become warm and red. Sometimes there are no symptoms and a DVT is only diagnosed if a complication occurs such as a pulmonary embolus (see below).

## Do I need any tests?

Sometimes it is difficult for a doctor to be sure of the diagnosis from just the symptoms as there are other causes of a painful and swollen calf. For example, a muscle strain or infection. If you have a suspected DVT you will normally be seen urgently at hospital for assessment and tests to confirm or rule out the diagnosis. Two commonly used tests are:

- The D-dimer test. This is blood test that detects fragments of the breakdown products of a blood clot. The higher the level, the more likely that you have a blood clot in a vein.
- An ultrasound scan of the leg which can often detect a clot in a vein.

Sometimes these tests are not 100% conclusive and more detailed tests are necessary. For example, Contrast venography. In this test a dye is injected into the leg veins. X-ray tests can then detect the dye which shows to be not flowing if a vein is blocked by a clot.

## Is a deep vein thrombosis serious?

It can be. When a blood clot forms in a leg vein it usually remains stuck to the vein wall. The symptoms tend to settle gradually. However, there are two main possible complications:

- Pulmonary embolus (a blood clot which travels to the lung).
- Post thrombotic syndrome (persistent calf symptoms).

## Pulmonary embolus

In a small number of people who have a DVT, a part of the blood clot 'breaks off'. This travels in the bloodstream and is called an embolus. An embolus will travel in the bloodstream until it becomes stuck. An embolus that comes from a clot in a leg vein will be carried up the larger leg and body veins to the heart, through the large heart chambers, but will get stuck in a blood vessel going to a lung. This is called a pulmonary embolus.

A small pulmonary embolus may not cause any symptoms. A medium sized pulmonary embolus can cause breathing problems and chest pain. A large pulmonary embolus can cause collapse and sudden death. It is estimated that about 1 in 10 people with an untreated DVT develop a pulmonary embolus large enough to cause symptoms or death.

### **Post-thrombotic syndrome**

Without treatment, up to 6 in 10 people who have a DVT develop long-term symptoms in the calf. This is called 'post-thrombotic syndrome'. Symptoms occur because the increased flow and pressure of the diverted blood in other veins can affect the tissues of the calf. Symptoms can range from mild to severe and include: calf pain, discomfort, swelling, and rashes. An ulcer on the skin of the calf may develop in severe cases.

Post-thrombotic syndrome is more likely to occur if the DVT occurs in a thigh vein, or extends up into a thigh vein from a calf vein. It is also more common in people who are overweight, and in those who have had more than one DVT in the same leg.

### **What is the treatment for a deep vein thrombosis?**

The aims of treatment are:

- To prevent the clot spreading up the vein and getting larger. This prevents the possibility of a large embolus breaking off and travelling to the lungs.
- To reduce the risk of post-thrombotic syndrome developing.
- To prevent a further DVT in the future.

### **Anticoagulation - preventing the clot from getting larger**

Anticoagulation is often called 'thinning the blood'. However, it does not actually thin the blood. It alters certain chemicals in the blood to stop clots forming so easily. This prevents a DVT from getting larger, and prevents any new clots from forming. Warfarin is the usual anticoagulant. However, it takes a few days for warfarin tablets to work fully. Therefore, heparin injections are often used in the first few days for immediate effect. A serious embolus is rare if you start anticoagulation treatment early after a DVT.

The aim is to get the dose of warfarin just right so the blood will not clot easily, but not too much which may cause bleeding problems. You will need regular blood tests whilst you take warfarin. You need them quite often at first, but then less frequently once the correct dose is found. (If you are pregnant, regular heparin injections rather than warfarin tablets may be used.)

The length of time you will be advised to take anticoagulation for depends on various factors. For example, if you have a DVT during pregnancy or after an operation, then after the birth or when you are fit again the increased risk is much reduced and so the anticoagulation may be only for a few months. On the other hand, some people continue to have an increased risk of having a DVT in which case the anticoagulation may be long-term. Your doctor will advise.

### **Compression and raising the leg - to help prevent post-thrombotic syndrome**

You may be advised to wear a compression stocking. With this treatment the risk of developing post-thrombotic syndrome is much reduced. You should wear the stocking each day, for at least two years. (Symptoms of post-thrombotic syndrome may develop even several months or years after having a DVT, which is why you should wear the stocking long-term.)

The slight pressure from the stocking helps to prevent fluid seeping into the calf tissues from the outer veins which carry the extra diverted blood following a DVT. The stocking also reduces, and may prevent, calf swelling. This in turn reduces discomfort and the risk of skin ulcers forming.

If you are advised to wear a compression stocking, you should put it on each day whilst lying in bed before getting up. Wear it for the whole day until you go to bed, or until you rest in the evening with the leg raised. Take the stocking off before going to bed.

In addition, you may also be advised to do the following.

- Raise your leg when you are resting. This too reduces the pressure in the calf veins, and helps to prevent blood and fluid from 'pooling' in the calves. 'Raised' means that your foot is higher than your hip so gravity helps with blood flow returning from the calf. The easiest way to raise your leg is to recline on a sofa with your leg up on a cushion.
- Raise the foot of the bed a few inches if it is comfortable to sleep like this. This is so your foot and calf are slightly higher than your hip when you are asleep.

### **Preventing a first DVT - or a recurrence of a DVT**

A DVT is often a 'one-off' event after a major operation. However, some people have an ongoing risk of a further DVT. For example, if you have a blood clotting problem, or continued immobility. As mentioned above, you may be advised to take anticoagulation (usually with warfarin) long-term.

Other things that may help to prevent a first or recurrent DVT include the following.

- If possible, avoid long periods of immobility such as sitting in a chair for many hours. If you are able, get up and walk around now and then. A daily brisk walk for 30-60 minutes is even better if you can do this. The aim is to stop the blood 'pooling', and to get the circulation in the legs moving. Regular exercise of the calf muscles also helps. You can do some calf exercises even when you are sitting.
- Major surgical operations are known to be a risk for a DVT - particularly operations to the hip, lower abdomen, and leg. You may be given an anticoagulant such as a heparin injection just before and after an operation to help prevent a DVT. An inflatable sleeve connected to a pump to compress the legs during a long operation may also be used. It is also common practice to get you up and walking as soon as possible after an operation.
- When you travel on long plane journeys, train journeys, etc, you should have little walks up and down the aisle every now and then. Also, exercise your calf muscles every now and then whilst sitting in your seat. A separate leaflet called "Travellers' thrombosis" gives more details.

### **Other treatments**

Sometimes other treatments may be considered. For example:

- Thrombolytic therapy (often called 'clot busting') with drugs such as streptokinase or urokinase. These drugs may help to 'dissolve' a blood clot. This is not routine treatment as it is not clear how effective it is. However, it is sometimes used in people with a severe DVT or with a large pulmonary embolus.
- Sometimes an operation is done to remove a blood clot from the leg vein or pulmonary artery. These operations are not routine and it is not clear if they are an effective treatment in most cases.
- Occasionally, an operation is done to place a 'filter' in the large vein above the blocked leg vein. The aim is to stop any blood clots from traveling up to the lungs. This may be considered if anticoagulation cannot be given (for various reasons) or if anticoagulation fails to prevent clots breaking off and traveling up into the larger veins and up to the lungs.

### **In Summary**

- The main cause of DVT is immobility - especially during surgery.
- The most serious complication of DVT is a pulmonary embolus where part of the blood clot breaks off and travels to the lung.
- Persistent calf symptoms may occur after a DVT.
- With treatment, the risk of the above two complications is much reduced.
- Treatment includes anticoagulation, compression stockings, leg elevation, and keeping active.
- Prevention is important if you have an increased risk of DVT. For example, during long operations or when you travel on long journeys.

## Ambulatory Emergency Care Unit: Information for Patients and Carers

### What is Ambulatory Emergency Care?

Kingston Hospital Trust Ambulatory Emergency Care (AEC) Unit delivers a range of treatments which have historically been administered within the in-patient setting i.e. with you sitting in a hospital bed on a ward. However, evidence and experience has shown that for certain carefully selected conditions it is just as safe and the treatment is just as effective when given as an outpatient. Many people also prefer to have their treatment whilst staying in their own home.

Eligible patients receive their care in the AEC area situated on level 3 of the Surgical Unit and visit the unit on a daily basis during the course of treatment. Of course if you do require hospital admission during your treatment beds are available 24 hours a day on our associated wards.

### What advantages does Ambulatory Emergency Care offer me?

You will receive the same treatment as on the ward except that it is scheduled between the hours of 10 am and 6pm. This allows you to continue daily life at home.

You will continue to have 24 hours access to Medical and Nursing care despite not staying in a hospital ward. You will be given contact numbers telling you how to contact us throughout your treatment period.

### Is Ambulatory Emergency Care right for me?

As you will be required to take a more active role in you care, it is important to find out whether Ambulatory Emergency Care is suitable for you. Your nurse or doctor will discuss this with you.

### What can I expect?

You will be assessed and treated by an advanced nurse practitioner or clinical nurse specialist who has extensive experience in working with patients receiving treatments in ambulatory emergency care.

The unit is open 5 days a week: Monday to Friday – 10 am to 6 pm. Outside of these hours you continue to have access to medical support through contacts in the Accident and Emergency department. Of course the usual ways to access medical advice e.g. NHS direct and your GP will also still be able to advise you in an emergency.

What to expect in the Ambulatory Emergency Care Unit:

- You will be seen and assessed. Your AEC nurse will take your temperature, pulse, blood pressure and weight.
- Blood tests and other necessary investigations will be carried out
- You will receive your prescribed treatment, any additional investigations and consequent treatment.

*Treatments may sometimes run later than expected, you should allow some flexibility for this.*

- The details of the condition you are being treated for and what happens now will be given to you in writing along with contact numbers and details of any appointments.
- If you require hospital admission this will be arranged for you by the AEC nurse who will accompany you to the ward
- If you have any concerns or questions please don't hesitate to ask-we are here to help!

**Patient Sticker**

Date:

Dear Patient,

The doctor suspects that you have a deep vein thrombosis and, until you have a scan, you will be treated with **daily injections** of dalteparin (Fragmin). This will prevent any clot from enlarging.

- To arrange a scan, please phone the ultrasound department in the Rowan Bental Wing at Kingston Hospital between 9am and 10am on the **next working day**. Have this letter to hand when you phone and enter the details of your appointment below.

Telephone Number 020 8546 7711 extension 2824

Date of Scan	Day of Scan	Time of Scan

Go to the **Rowan Bental Wing** at the time you are given.

(Follow the Brown signs to Rowan Bental Wing. The wing is opposite A&E).

- At the weekend, the next available scan will be on a Monday so continue to give your own injection of dalteparin (Fragmin).
- Bring this letter with you to the Accident and Emergency department **only if you feel unwell**.
- After your scan you will attend the AEC (Ambulatory Emergency Care) Clinic for review.

Dalteparin (Fragmin) injections prior to scan					
Date	Time	Dose	Route	Prescribed by	Administered by
			<b>SC</b>		

Signed \_\_\_\_\_

Print Name \_\_\_\_\_

Position \_\_\_\_\_

Bleep No. \_

