Aneurin Bevan University Health Board

Pathway for Diagnosis and Management of Deep Vein Thrombosis (DVT)

The DVT service is a nurse led service with support from consultant haematologists. It is based on 3 sites within ABUHB – Royal Gwent Hospital, Nevill Hall Hospital, and Ysbty Ystrad Fawr. The contact details for all sites are :

RGH	**01633 238171**
NHH	**01873 732192**
YYF	**01443 802638**

To be eligible for the ambulatory DVT pathway, patients must be:

- 18yrs or over
- Registered with a local GP
- Suitable for ambulatory care with good mobility
- Patients must be medically stable with no concurrent acute illnesses which may require admission
- Patients must be concordant with treatment

Exclusion Criteria (refer directly to on-call medical team)

- Symptoms of > 6 weeks – consider referral to vascular team
- Bilateral symptoms – direct to MAU
- < 18yrs of age
- Suspicion of pulmonary embolism
- Suspicion of cardiac chest pain
- Underlying medical conditions requiring admission
- Gastro-intestinal , genitourinary or intra-cranial bleed within last 4 weeks
- Known liver disease
- Renal Insufficiency (creatinine > 200micromol/l)
- Inherited bleeding disorder
- Thrombocytopenia (platelet count < 100 x 10^9/l)
- **Pregnancy or within 6 weeks post partum – refer to obstetrics directly**

Diagnostic Algorithm for Suspected DVT

All patients should have a Wells score completed by the referring doctor. This is an integral part of the referral along with patient demographics and contact details

Pre-test probability assessment

An initial Wells Score will be used to risk stratify the patient as *likely* or *unlikely* to have a DVT in accordance with the NICE Clinical Guideline 144 June 2012 "Venous thromboembolic diseases: the management of venous thromboembolic diseases".

Clinical feature	Points
Active cancer (treatment ongoing, within 6 months, or palliative)	1
Paralysis, paresis or recent plaster immobilization of the lower extremities	1
Recently bedridden for > 3 days or more or major surgery < 12 weeks	1
Localized tenderness along the distribution of the deep venous system	1
Entire leg swollen	1
Calf swelling > 3 cm compared to the asymptomatic side (measure 10 cm below tibial tuberosity)	1
Pitting oedema confined to the symptomatic leg	1
Dilated (non-varicose) superficial veins in symptomatic leg	1
Previously DVT or PE	1
Alternative diagnosis* (as likely or more than that of DVT) – See below	−2
DVT *likely*	**2 points or more**
DVT unlikely	**1 point or less**

*Alternative diagnoses to consider

Cellulitis	Torn gastrocnemius (calf) muscle
Baker's cyst	Acute arterial ischaemia
Haematoma	Compartment syndrome
Fracture	Superficial thrombophlebitis
Arthritis	Post thrombotic syndrome
Lymphoedema	Hypoproteinaemia (e.g. cirrhosis, nephrotic syndrome)

D-Dimer

A d-dimer will be measured in those patients with an "unlikely" Well's score. Its utility is in its NEGATIVE predictive value in conjunction with a clinical score.

However, D-dimer cannot be used as part of the diagnostic algorithm in patients who have already received a dose of low molecular weight heparin (risk of false negative results) and therefore these patients will undergo Doppler ultrasound irrespective of their Well's score.

Obstetric patients and patients who have recently undergone surgery/been acutely unwell are also excluded in view of the false positives seen in these groups of patients.

Ultrasound

In accordance with Nice CG144 patients whose ultrasound scan will be delayed by > 4hrs will need to be given a treatment dose of LMWH or rivaroxaban if suitable. Patients referred to the DVT service will undergo a full leg Doppler ultrasound ideally within 48 hrs.

DVT not identified

Patients with a 'DVT unlikely' Wells score will be discharged from the DVT service and the result will be sent to the referring doctor.

Patients with a 'DVT likely' Wells score will have a D-dimer performed. If this is negative, the patient will be discharged from the DVT service and the result sent to the referring doctor. If the result is positive, the patient will undergo a further Doppler USS at one week. If this is negative, the patient will be discharged from the DVT service and the result sent to the referring doctor.

DVT Confirmed

- These patients will be reviewed by the Anticoagulation Nurse specialist
- Full blood screen including FBC, U+E/eGFR, LFT, Baseline coagulation screen and INR, Bone profile
- Urine dipstick (and Pregnancy test in women of child bearing age)

Unprovoked DVT:

The following investigations are required:

- CXR
- Urinalysis
- PSA
- Patients with an UNPROVOKED above knee DVT will be discussed weekly with the haematology team and further imaging organised as per NICE if deemed appropriate

OUT-PATIENT TREATMENT OF DVT - Will comprise one of the following:

1. LMWH (minimum 5 days) + warfarin

- Dalteparin sc according to weight daily until INR > 2 for 2 consecutive days

- Warfarin will be initiated a per the All Wales loading schedule, however elderly / underweight patients will receive lower loading doses

2. LMWH as an alternative to warfarin

- All pregnant patients (Dalteparin 100 IU/kg twice daily – use booking weight)
- Patients with an underlying malignancy will be considered for continuing LMWH for 6 months rather than warfarin. This carries a similar risk of bleeding but halves recurrences
- Cancer related thrombosis patients should be directly referred to Dr Simon Noble, Palliative Care Physician, Dr Sarah Lewis , or Dr Jessica Chilcott

3. Apixaban as an alternative to warfarin

- Apixaban 10mg bd for 7 days
- Apixaban 5mg bd for remainder of treatment (11 weeks)

4. Rivaroxaban as an alternative to warfarin

- Rivaroxaban 15mg bd for first 3 weeks
- Rivaroxaban 20mg od subsequent 9 weeks

Patients who have suffered a 1st **precipitated** DVT and only require 3 months anticoagulation will be offered the option of warfarin/ rivaroxaban/apixaban

Patients with poor venous access e.g. history of IVDU will be offered the option of LMWH or rivaroxaban/apixaban

Patients with a history of excessive alcohol consumption, in whom warfarin and INR monitoring will be difficult will be offered the option of LMWH/rivaroxaban/apixaban

Duration of anticoagulation

Indication	Duration	Follow up
1st idiopathic proximal DVT	≥ 3 months	Thrombosis Clinic
1st precipitated proximal DVT	3 months	*No follow up
1st idiopathic distal DVT	3 months	*No follow up
1st precipitated distal DVT	3 months	*No follow up
Recurrent DVT not on warfarin / sub-therapeutic INR	≥ 3 months	Thrombosis Clinic
Recurrent DVT on warfarin and therapeutic INR	Long-term	Thrombosis Clinic
DVT in patient with active cancer	6 months	Thrombosis Clinic
Upper limb DVT	3 months	Thrombosis Clinic

*Patients with a family history of DVT / PE will be followed up in Thrombosis Clinic

If the patient is on an anti-platelet medication a doctor should review whether this is to continue, whilst the patient is on anticoagulation

Long–term treatment will be *considered* for

- recurrent thromboses
- patients with an on-going risk factors such as cancer
- a first unprovoked proximal DVT (or PE). The ACCP and BCSH guidelines recommend long-term treatment for unprovoked VTE where there is a low risk of bleeding and where anticoagulant control is good.

These patients should all be referred to a consultant haematologist for review and decision making

This may be felt to be particularly the case:

- **if D-dimers are raised one month after discontinuing anticoagulation**
- **presence of antiphospholipid antibodies**
- **in a male**
- **in those with PTS (post thrombotic syndrome)**

<u>Compression stockings:</u>

- All patients with symptomatic proximal DVT (and those with severe symptoms with a distal DVT) will be assessed for below knee compression hosiery and prescribed if there are no contraindications (see below).
- European class 2 (25-32 mm Hg) below knee compression stockings are prescribed.
- Patients should be advised to wear the stocking during the day for two years.
- The patient should be re-measured for new stockings every six months.

Contra-indications are:

- Known / suspected peripheral arterial disease or peripheral neuropathy – do not use hosiery if suspected until investigations completed
- Leg oedema or pulmonary oedema from congestive cardiac failure (CCF)
- Slow capillary filling – (pinched nail bed or pad of toe that takes more than 3 seconds to return to normal colour)
- History of intermittent claudication or rest pain
- Known allergies to the components/materials of the stockings
- Diabetes – if there is known / suspected peripheral arterial disease or peripheral neuropathy
- Fragile ‘tissue paper’ skin
- Absent/weak foot pulses
- Cellulitis and/or leg/foot ulceration
- Pressure ulcers to heels or any area of foot or lower leg
- Trophic skin changes (cold, pale, shiny, hairless leg)

Suspected upper limb DVT:

- These patients will all have a Doppler ultrasound examination
- Patients will be considered for anticoagulation or thrombolysis
- ALL patients should be discussed with a vascular surgeon re: thrombolysis
- All patients should have a
    - CXR requesting "thoracic outlet views" and C-spine to look for cervical rib(s)
    - Doppler assessment for thoracic outlet compression
- Recurrence rates for upper limb DVT after anticoagulant treatment for three months are very low and it is likely that prolonged anticoagulation is not required for the majority of patients
- For most patients with upper limb DVT in association with an indwelling central or peripheral venous catheter, the catheter should not be removed if it is functional and there is an ongoing need for the catheter. If the catheter is removed anticoagulant treatment should not be shortened to less than 3 months.

Elastic compression is not used routinely but may be considered for patients who have persistent upper limb oedema and pain.

Local Lower Limb Thrombolysis:

Patients with **established,** extensive, **acute (Symptoms present for <2 weeks)** iliofemoral DVT and no contraindication to thrombolysis will be considered for local thrombolysis under the joint care of the Vascular Surgery, Interventional radiology and Haematology. Suitable patients should be considered early for treatment and discussed urgently with the vascular surgical consultant of the week, Dr Lewis or Dr Anderson (Haematology) or Interventional radiology.

References

NICE clinical guideline 144 (June 2012) Venous thromboembolic diseases: the management of venous thromboembolic diseases and the role of thrombophilia testing. http://www.nice.org.uk/CG144

NICE technology assessment (2012) rivaroxaban for the treatment of deep vein thrombosis and prevention of recurrent deep vein thrombosis and pulmonary embolism. http://www.nice.org.uk/guidance/TA261

Prandoni P. & Kahn SR. (2009) Post-thrombotic syndrome: prevalence, prognostication and need for progress. British Journal of Haematology. 145. 3. 286-295.

Nurse Led Ambulatory Care Pathway for Deep Vein Thrombosis

Patient details:
addressograph

Date of referral.....
Date of attendance.....
Time arrived.....
GP.....
GP Address.....
.....
Patient contact details.....
.....
ACNS.....

On call Medical Team ☐ Patient weight ☐

Presenting problem and relevant history including duration of symptoms
Current medications
Allergies

Risk factors			Pregnancy		Refer SJL
Previous VTE			Post partum		Consider DOAC
FH of VTE			COCP or HRT		Consider DOAC
Recent Surgery		Consider DOAC	Cancer		Needs LMWH
Medical IP stay		Consider DOAC	Travel >8hrs		Consider DOAC
POP cast		Consider DOAC	Raised BMI		**Warfarin only if >120kg**

Calf/Arm Measurements **Left** ☐ **Right** ☐

Wells pre-test score (tick all that apply)

	Tick if present	Score
Active cancer (treatment on-going or within 6 months, or palliative)		**+1**
Paralysis or recent plaster immobilisation of the lower extremities		**+1**
Recently bedridden for >3 days or major surgery <12 weeks ago		**+1**
Localised tenderness along the distribution of the deep venous system		**+1**
Entire leg (calf and thigh) swelling		**+1**
Calf swelling >3cm compared to the asymptomatic leg (measure 10cm below tibial tuberosity		**+1**
Pitting oedema confined to the symptomatic leg		**+1**
Previous DVT/PE documented		**+1**
Dilated (non-varicose) superficial veins in symptomatic leg only		**+1**
Alternative diagnosis (as likely or more than that of DVT)* - see below		**-2**
TOTAL SCORE:		
DVT LIKELY:		**>2**
DVT UNLIKELY:		**<1**

Request D-dimer YES/NO
(ensure score/ultrasound result included on request form or D-dimer test will not be processed)

NOTE: D-dimer cannot be used as part of the diagnostic algorithm in patients who have already received a dose of unfractionated or low molecular weight heparin (risk of false negative result).

***Alternative diagnoses to consider:**

Cellulitis	Torn gastrocnemius (calf) muscle
Baker's cyst	Acute arterial ischaemia
Haematoma	Compartment syndrome
Fracture	Superficial thrombophlebitis
Arthritis	Post thrombotic syndrome
Lymphoedema	Hypoproteinaemia (eg cirrhosis, nephrotic syndrome)

Activity		**Time**	**Initials**	**Comments**
Assessment Completed				
Wells Score				
D-dimer				
Patients with low Wells score and neg D-dimer Discharge to GP Advice to patient				
Patients with low Wells score and positive D-dimer				
Date of Doppler				

Result of Doppler	Negative:- Additional comments	Discharge to GP	
		Letter completed on MEDSECS	
	Positive	Proceed to appropriate pathway	

If Doppler delayed: LMWH dose to be given:

Dalteparin recommended dosage for adults : Single Dose Syringes

(a) Once daily administration

200 IU/kg body weight is administered sc once daily. Monitoring of the anticoagulant effect is not necessary. The single daily dose should not exceed 18,000 IU.

Day 1-5: A single daily dose of Dalteparin is administered subcutaneously once daily according to the following weight changes (monitoring of the anticoagulant effect is not usually necessary):

Weight	Dose	Colour
40-45kg	**7,500 IU (1)**	**Green**
46-56	**10,000 IU (2)**	**Red**
57-68	**12,500 IU (3)**	**Brown**
69-82	**15,000 IU (4)**	**Purple**
83 and over	**18,000 IU (5)**	**Grey**

- **The single daily dose should not exceed 18,000 IU.**
- **For patients with an increased risk of bleeding, it is recommended that Dalteparin be administered according to the twice daily regimen detailed for Dalteparin 10,000 IU/ml ampoules or Fragmin Multidose Vial.**

If >120kg split dose D/W SJL

Contra-indications : **Please discuss with a haematologist**	**DATE**	**YES**	**NO**
Active bleeding			
Acquired bleeding disorder (eg liver failure)			
Use of anticoagulant			
Platelets < 100			
Renal Failure (EGFR <30) **Please discuss with medical team**			
Untreated inherited bleeding disorder (eg haemophilia, Von Willebrand's)			

	Tick
District Nurse to give LMWH	
Patient to give LMWH	
Prescription given	
Prescription chart/sharps box given	
Patient/relative counselled and shown how to administer	

Pre-treatment bloods if no previous results within 1 week

Test	Result
Hb	
WCC	
Plts	
EGFR	
Creatinine	

PGD Data

Name of preparation	
Dose, frequency and quantity of medicine supplied	
Date of supply to patient	
Batch number and expiry date	
Signature of person supplying medicine	

PGD checklist – short term LMWH for delayed doppler scan

Ensure:

	Tick
Verbal consent obtained	
Dalteparin once daily – a pre-pack for 5 day supply and WP10HP for 10 day supply	
Dalteparin once daily – with instruction PGD 15 days supply	
Patient information sheet	
Any shortness of breath or chest pain patient advised to seek urgent medical advice	

Either:

Positive D-dimer patients:			
Negative doppler			
Discharged to GP			
Letter on MEDSECS			
Advise patient to return to GP if symptoms persist and no other cause found for raised D dimer. Consider repeat doppler after 1 week		***-***	

DVT Diagnosis confirmed (Wells score, D-dimer, Doppler scan)

Provoked DVT	**Unprovoked DVT**	**VTE with underlying cancer**
⇩	⇩	⇩
Pathway A	**Pathway B**	**Pathway C**
Rivaroxaban for 3 months **Apixaban for 3 months**	**Calf DVT - first proximal DVT or Unprovoked PE** **Patients with recurrent DVT/PE or significant on-going risk of VTE: indefinite treatment** **Please discuss unprovoked DVT with Doctor**	**LMWH for at least 6 months**

Nurse led DVT Service
Pathway A1
Apixaban Treatment Protocol for Provoked Thrombosis

Patient details

Nurse completing pathway .....
Date .....
Time .....

- **Patients who have suffered a 1st provoked DVT and only require 3 months anticoagulation will be offered the option of Apixaban**
- **Patients with poor venous access e.g. history of IVDU will be offered the option of Apixaban**
- **Patients with a history of excessive alcohol consumption, in whom warfarin and INR monitoring will be difficult will be offered the option of Apixaban**

- **If the patient has an obvious provoking risk factor, and /or has a calf DVT on Dopplers, then consider the use of Apixaban for treatment. If there are any queries please discuss patient with Dr Lewis or Dr Anderson.**

Exclusion criteria:

- Patients presenting with pulmonary embolus (PE)
- Patient with previous history of DVT, PE requiring **long term** anticoagulation
- Patients with risk factors for anticoagulation therapy, i.e. patients with a known history of bleeding disorders
- Patients who are totally immobile which precludes ambulatory care at home
- Patients with other medical conditions necessitating admission
- Obstetric DVT Pathway – referral to on-call obstetric team
- Oncology DVT Pathway Patients – need Dalteparin and referral to Dr Simon Noble
- Patients under 18 years old
- Patients with liver disease with associated coagulopathy
- Uncontrolled hypertension
- Severe renal impairment Stage 4/5 CKD
- GI, GU, and intracranial bleed
- Anticipated compliance problems

Doppler result **Date of scan ……**

Provoking Risk Factors			
Previous VTE	**Will usually need long term treatment** **Unprovoked DVT discuss with Doctor**	Pregnancy	**LMWH**
Recent surgery		Post partum	**Only Apixaban if not breastfeeding**
Medical IP stay		COCP or HRT	
POP cast		Cancer	**Needs LMWH**
IV drug use		Travel > 8hrs	

Please give Dalteparin to the patient with positive scan and bring back to clinic for counselling and commencing Apixaban the following day.

Activity	Time	Initials	Comments
Patient is able to understand the instructions for anticoagulation or who have carers who can manage this for them.			
Calf vein DVT			
Proximal DVT (above popliteal vein and into the femoral vein) that is not compromising the leg, and which is not associated with pulmonary embolus.			

Routine Bloods

Test	Result
Hb	
WCC	
Plts	
PT	
APTT	
Fibrinogen	
Creatinine	
eGFR	
Bilirubin	
ALT	
Albumin	
Pregnancy test on all women <50 yrs of age	

Please discuss any abnormal results with Dr Sarah Lewis or Dr Jessica Anderson

Treatment with Apixaban

First 7 days	Subsequent 11 weeks
Apixaban 10mg bd	Apixaban 5mg bd

Apixaban for Positive Doppler – Day 1 Date :	Time	Initials	Comments
Apixaban 10 mg bd prescribed for 1 week : prepack.			
Patient Information Leaflet on DVT/Symptoms to look out for			

Counselling on Apixaban			
Counselling and leaflet given regarding post thrombotic syndrome			
Appointment given for 1 week review			
Patient entered on DAWN			
Baseline bloods reviewed and documented			
GP letter sent and entered on MEDSECS			
Patient discussed in weekly meeting with SJL/JLA			

Apixaban Day 7 Review **Date :**	**Time**	**Initials**	**Comments**
Ensure compliance with treatment			
Patient issued with 5 mg bd for the duration of treatment: 11 weeks FP 10 given			
Clinical review of DVT			

Duration of anticoagulation

Indication	Duration	Follow up
1st idiopathic proximal DVT	≥ 3 months	Thrombosis Clinic
1st precipitated proximal DVT	3 months	*No follow up
1st idiopathic distal DVT	3 months	*No follow up
1st precipitated distal DVT	3 months	*No follow up
Recurrent DVT not on warfarin / sub-therapeutic INR	≥ 3 months	Thrombosis Clinic
Recurrent DVT on warfarin and therapeutic INR	Long-term	Thrombosis Clinic
DVT in patient with active cancer	6 months	Dr Simon Noble
Upper limb DVT	3 months	Thrombosis Clinic

Please ensure only unprovoked DVT patients are referred on to the haematologist.

PGD Data

Name of preparation	
Dose, frequency and quantity of medicine supplied	
Date of supply to patient	
Batch number and expiry date	
Signature of person supplying medicine	

Insert PDF Counselling

Apixaban (Eliquis) Counselling For Patients with VTE/PE

Document to be signed and filed in patient's medical record

Patient details: affix addressograph
Hospital Number
Name
Date of Birth
Address

Consultant

INDICATION: DVT ◯ PE ◯ Recurrent VTE ◯

	Tick once completed ✓
Reason for anticoagulation explained to patient	
Importance of taking treatment regularly as prescribed, as missing a dose will increase risk of treatment failure and risk of further blood clot	
Duration of anticoagulation: 3 months ◯ Long-term ◯ Other (specify): ◯	
Follow up plan: Discharge at end of treatment ☐ Discharging consultant ☐	
Apixaban (Eliquis) counselling	
Apixaban is contraindicated in pregnancy/breast feeding. Negative pregnancy test: Yes ☐ No ☐ N/A ☐	
Patient involved in and agrees to decision to treat with **Apixaban** as opposed to alternative treatment e.g. low molecular weight heparin and warfarin	
Apixaban is a tablet taken twice a day (12 hour apart). It can be taken with or without food, swallowed whole with a glass of water.	
If a dose is missed take **Apixaban** as soon as you remember and continue with regular dose at the usual time (do not double the next dose taken). Then continue with twice daily dosing as before.	
No routine coagulation monitoring, is required, however if patient is on long-term anticoagulation then they should have an annual anticoagulation review with their GP.	
Dosing regime explained: 1st 7 days it is 2 x 5mg tablet twice a day (at 12 hour intervals) (i.e – 10mg in the morning and 10mg in the evening)	
Dosing regime explained: At day 8 onwards it is one 5mg tablet twice daily (at 12hr interval) for the duration of treatment (i.e. – 5mg in the morning and 5mg in the evening)	
Explained to patient how the dose transition at day 8 will be managed. Date of appointment for transition :	
Patient counselled with regards to risk of treatment, including bleeding – management of this explained	
Common side effects of taking **Apixaban** include; Nausea, bruising and bleeding. Patient understands that if bleeding or suffers an injury, particularly head injury to attend emergency department immediately	
If patient suffers a non-bleeding related side effect they should **NOT** stop **Apixaban** but must seek advice from a Healthcare Professional (GP, nurse or pharmacist)	
Patient is aware that a number of different medicines that are prescribed or that can be brought over the counter from a pharmacy or herbalist might interact with **Apixaban**. Before starting any new medicines the patient must seek advice from a Healthcare Professional (GP, nurse or pharmacist)	
Patient has received written information regarding **Apixaban** and a patient alert card has been provided, which must be carried at all times and produced when seeing a Healthcare Professional (including GP, nurse, pharmacist or dentist)	

Counselling completed by: (sign and print)		Date
Patient's name	Signature	Date

Nurse led DVT Service
Pathway A
Rivaroxaban Treatment Protocol for Provoked Thrombosis

Patient details	Nurse completing pathway …… Date …… Time ……

- **Patients who have suffered a 1st provoked DVT and only require 3 months anticoagulation will be offered the option of warfarin or rivaroxaban**
- **Patients with poor venous access e.g. history of IVDU will be offered the option of LMWH or rivaroxaban**
- **Patients with a history of excessive alcohol consumption, in whom warfarin and INR monitoring will be difficult will be offered the option of LMWH rivaroxaban**

- **If the patient has an obvious provoking risk factor, and /or has a calf DVT on Dopplers, then consider the use of rivaroxaban for treatment. If there are any: queries please discuss patient with Dr Lewis or Dr Anderson.**

Exclusion criteria:

- Patients presenting with pulmonary embolus (PE)
- Patient with previous history of DVT, PE requiring **long term** anticoagulation
- Patients with risk factors for anticoagulation therapy, i.e. patients with a known history of bleeding disorders
- Patients who are totally immobile which precludes ambulatory care at home
- Patients with other medical conditions necessitating admission
- Obstetric DVT Pathway – referral to on-call obstetric team
- Oncology DVT Pathway Patients – need Dalteparin and referral to Dr Simon Noble
- Patients under 18 years old
- Patients with liver disease with associated coagulopathy
- Uncontrolled hypertension
- Severe renal impairment Stage 4/5 CKD
- GI, GU, and intracranial bleed
- Anticipated compliance problems

Doppler result **Date of scan ……**

Provoking Risk Factors			
Previous VTE	**Will usually need long term treatment** **Discuss with haematologist**	Pregnancy	**LMWH**
Recent surgery		Post partum	**DO NOT USE IF BREAST FEEDING**
Medical IP stay		COCP or HRT	
POP cast		Cancer	**Needs LMWH**
IV drug use		Travel > 8hrs	

Please give Dalteparin to the patient with positive scan and bring back to clinic for counselling and commencing Rivaroxaban the following day.

Activity	Time	Initials	Comments
Patient is able to understand the instructions for anticoagulation or who have carers who can manage this for them.			
Calf vein DVT			
Proximal DVT (above popliteal vein and into the femoral vein) that is not compromising the leg, and which is not associated with pulmonary embolus.			

Routine Bloods

Test	Result
Hb	
WCC	
Plts	
PT	
APTT	
Fibrinogen	
Creatinine	
eGFR	
Bilirubin	
ALT	
Albumin	
Pregnancy test on all women <50 yrs of age	

Please discuss any abnormal results with Dr Sarah Lewis or Dr Jessica Anderson

Treatment with Rivaroxaban

First 3 weeks	Subsequent 9 weeks
Rivaroxaban 15mg bd	Rivaroxaban 20mg od

Rivaroxaban for Positive Doppler – Day 1 **Date :**	**Time**	**Initials**	**Comments**
Rivaroxaban prescribed 42 tablet pack Rivaroxaban Dosing **15mg bd for 21 days**.			
Patient Information Leaflet on DVT/Symptoms to look out for			
Counselling on Rivaroxaban			
Counselling and leaflet given regarding post thrombotic syndrome			
Appointment given for 3 week review			
Patient entered on DAWN			
Baseline bloods reviewed and documented			
GP letter on MEDSECS			
If female <50, pregnancy letter given			
Patient discussed in weekly meeting with SJL/JLA			

Rivaroxaban Day 21 Review **Date :**	**Time**	**Initials**	**Comments**
Ensure compliance with treatment			
Patient issued with 20mg daily for the duration of treatment: 3 months total 9 week FP 10 given			
Clinical review of DVT			

Duration of anticoagulation

Indication	Duration	Follow up
1st idiopathic proximal DVT	≥ 3 months	Thrombosis Clinic
1st precipitated proximal DVT	3 months	*No follow up
1st idiopathic distal DVT	3 months	*No follow up
1st precipitated distal DVT	3 months	*No follow up
Recurrent DVT not on warfarin / sub-therapeutic INR	≥ 3 months	Thrombosis Clinic
Recurrent DVT on warfarin and therapeutic INR	Long-term	Thrombosis Clinic
DVT in patient with active cancer	6 months	Dr Simon Noble
Upper limb DVT	3 months	Thrombosis Clinic

Please ensure only unprovoked above knee DVT patients are referred on to the haematologist. Any women of child bearing age should be referred to a haematologist

PGD Data

Name of preparation	
Dose, frequency and quantity of medicine supplied	
Date of supply to patient	
Batch number and expiry date	
Signature of person supplying medicine	

Aneurin Bevan University Health Board: Rivaroxaban (Xarelto) Counselling

Document to be signed and filed in patient's medical record

Patient details: affix addressograph	**Consultant**
Hospital Number	
Name	
Date of Birth	
Address	

INDICATION: DVT ◯ PE ◯ Recurrent VTE ◯

Anticoagulation counselling	✓
Reason for anticoagulation explained to patient	
Importance of taking treatment regularly as prescribed, as missing a dose will increase risk of treatment failure and risk of further blood clot	
Duration of anticoagulation: 3 months ☐ 6 months ☐ Long-term ☐ Other (specify):	
Follow up plan: Discharge at end of treatment ◯ Haematology Clinic ◯ Respiratory Clinic ◯	
Rivaroxaban (Xarelto) counselling	✓
Rivaroxaban is contraindicated in pregnancy / breast feeding. Negative pregnancy test: Yes ☐ No ☐ N/A	
Patient involved in and agrees to decision to treat with rivaroxaban (Xarelto) as opposed to alternative treatment e.g. low molecular weight heparin and warfarin	
Rivaroxaban is a tablet and MUST be taken with food	
No routine coagulation monitoring	
Dosing regime explained: 1st 21 days it is 15mg tablet twice a day (at 12 hour intervals)	
Dosing regime explained: At day 22 onwards it is one 20mg tablet daily for the duration of treatment	
Explained to patient how the dose transition at day 22 will be managed. Specify:	
If a dose is missed take rivaroxaban (Xarelto) immediately and continue with regular dose on the following day. The dose must NOT be doubled within the same day to make up for a missed dose	
Patient counselled with regards to risk of treatment, including risk of bleeding and lack of antidote	
Patient understands that if bleeding or suffers an injury, particularly head injury to attend emergency department immediately	
Rivaroxaban (Xarelto) can cause dizziness / fainting and if these are experienced the patient should not drive or operate machinery	
If patient suffers a non-bleeding related side effect they should not stop rivaroxaban (Xarelto) but must seek advice from a Healthcare Professional (ideally from doctor prescribing rivaroxaban, GP, pharmacy)	
Patient has received written information regarding rivaroxaban (Xarelto)	
Patient **alert card** provided, must be carried **at all times** and produced when seeing a Healthcare Professional (including GP, pharmacy, dentist)	

Doctor's name	Signature	Date
Patient's name	Signature	Date

Version 17-06-13

Telephone consultation for end of treatment

Date:

Sign:

NURSE LED AMBULATORY CARE PATHWAY FOR DVT **PATHWAY B**

VTE TREATMENT WITH WARFARIN

Addressograph sticker

Date of Diagnosis: .....

Date Treatment Commenced: .....

GP Surgery: .....

Patient Telephone Number: .....

Result of Doppler Scan/CTPA: .....

Duration of Treatment .....

ROUTINE BLOODS

DATE	TEST	RESULT
	Hb	
	WCC	
	PL+s	
	PT	
	INR	
	APPT	
	FIBRINOGEN	
	CREATININE	
	eGFER	
	BILIRUBIN	
	PSA – CONSENT REQUIRED	
	ALT	
	ALBUMIN	
	PREGNANCY TEST (URINE)	

DAY 1	Sign	Date
Patient entered on DAWN		
Dalteparin prescribed as per weight		
Warfarin prescribed on WP10		
OATPACK given		
Patient adequately counselled (see counselling sheet)		
Baseline bloods reviewed		
Appointment given for Day 2		

DATE	INR RESULT	WARFARIN DOSE	LMWH

Maintenance dose of Warfarin

.....

Once Warfarin is >2 for 2 consecutive days & the patient has had5 days of LMWH, proceed to discharge.

DISCHARGE SUMMARY

Date of Discharge	
Next INR bloods due	
<u>Future INR monitoring</u>	
ABUHB DAWN monitoring	
Ensure patient understands the DAWN letter	
GP Own-dosing practice	
Practice informed & documentation sent	
MEDSECS letter completed	
Referral made to Haematologist (if unprovoked):	

NURSE LED AMBULATORY CARE PATHWAY FOR DVT

PATHWAY - C

LMWH (DALTEPARIN TREATMENT) FOR CANCER RELATED DVT

(Please ensure only unprovoked DVT patients are referred on to the haematologist)

For patients with cancer related thrombosis there is a shared care protocol for the prescribing of LMWH in primary care which can be found at:
http://www.wales.nhs.uk/sites3/Documents/814/DALTEPARINinTUMORS-ABUHBsharedCareProtocol%5BMay2013%5D.pdf

Addressograph sticker

Date of Diagnosis: .....
Date Treatment Commenced: .....
GP Surgery: .....
Patient Telephone Number: .....

Date of Doppler scan: .....
Result of Doppler Scan/CTPA: .....
Date referral made to SJL/SN: .....

Dalteparin recommended dosage for adults : Single Dose Syringes

(a) Once daily administration.

200 IU/kg body weight is administered sc. once daily. Monitoring of the anticoagulant effect is not necessary. The single daily dose should not exceed 18,000 IU.

Day 1 – 5: A single daily dose of Dalteparin is administered subcutaneously once daily according to the following weight ranges (monitoring of the anticoagulant effect is not usually necessary):

Weight (kg)	
<46	
46-56	
57-68	

PATIENT'S WEIGHT ☐

INITIAL DOSE OF DALTEPARIN ☐

- **The single daily dose should not exceed 18,000 IU.**
- **For patients with an increased risk of bleeding, it is recommended that Dalteparin be administered according to the twice daily regimen detailed for Dalteparin 10,000 IU/ml ampoules or Fragmin Multidose Vial.**

Dalteparin prescribed as per weight on WP10 ☐

District Nurse to give LMWH ☐

Prescription chart given (District nurse) ☐

Patient to give LMWH ☐

Patient/relative counselled and shown how to administer ☐

	SIGN	**DATE**
Patient counselled	.....	.....
Appointment given Day 14 for FBC	**.....**	**.....**
Appointment given for Day 30 to reduce dose	**.....**	**.....**
If transport required – (Booking number):	**.....**	

<u>Baseline bloods reviewed.</u>

HB	
WCC	
Platelets	
PT	
APTT	
Fibrinogen	
Creatinine	
eGFR	
Bilirubin	
ALT	
Albumin	
Is there any need to monitor anti Xa levels? (weight extremes or renal impairment)	
Have the medics completed the shared care pathway?	

Follow up visit at Day 30

Date of visit: ..... **Clinic review with SJL/SN: .....**

Reduce dose as per BNF guidance: .....

Weight	Dose
40 – 56	**7,500 IU (1)**
57 – 68	**10,000 IU (2)**
69 – 82	**12,500 IU (3)**
83 – 98	**15,000 I U (4)**
>99	**18,000 IU (5)**

GENERAL REVIEW OF PATIENT

- Have symptoms generally improved?
- Any bleeding, bruising, difficulty with injections?
- Check FBC (monitoring for HIT)

HAS PATIENT GOT SUPPLIES OF LMWH:

YES – GP SHARED CARE PATHWAY ☐

NO – FROM SJL//SN/DVT CLINIC ☐

NO – FROM M.A.U. TEAM ☐

PGD DATA

Name of preparation: .....

Dose, frequency & quantity of medicines supplied: .....

Date of supply to patient: .....

Batch number & expiry date: .....

Signature of person supplying the medicine: .....

INFORMATION / ADVICE CHECKLIST FOR ORAL ANTICOGULATION

(TO BE COMPLETED FOR **ALL** PATIENTS)

Addressograph sticker

NAME OF ANTICOAGULANT .....

Individual need for anticoagulation.
e.g. DVT/PE/AF/Valve replacement/Prophylaxis/Thrombophilia/Other

Comment…….....

Therapeutic range of INR	☐	☐
Duration of treatment	☐	☐
Effects	☐	☐
Correct method of taking tablets e.g. same time each day	☐	☐
Keeping appointments/regular blood tests	☐	☐
Side effects/related conditions e.g. bleeding, bruising	☐	☐
What to do if starting new/changing medication	☐	☐
Interactions with other drugs e.g. Aspirin, Antibiotics etc	☐	☐
Dietary Advice	☐	☐
Advice regarding head injury.	☐	☐
Alert Card & Information Leaflets given	☐	☐
INR Contact details given	☐	☐
Interpreting instructions on letter	☐	☐
Contraception instructions/negative pregnancy test for women of childbearing age	☐	☐
Advice letter if they become pregnant	☐	☐
CWS alert added	☐	☐

Any other comments/interaction

.....

.....

.....

Patient's Signature ..... Date .....

Nurses Signature ..... Date .....

Ambulatory Care Pathway ED / MAU for Deep Vein Thrombosis (Upper and Lower Limb)

OOH – outside 9-4pm Mon - Fri

Patient details:

addressograph

Date of attendance.....

Time of attendance.....

Seen by .....

Exclusion Criteria

1. Non ambulatory patients.
2. Pregnancy.
3. Active bleeding and/or platelet count <50.
4. Suspected PE.

Presenting Problem and relevant history including duration of symptoms.

Medication. **Allergies**

Baseline Blood tests U&E, clotting, LFT and FBC

Calf Measurements

Right cm | Left cm

Wells pre-test Score *(tick all that apply)*	**Tick if present**	**Score**
Active cancer (treatment ongoing or within 6 months, or palliative)	☐	+1
Paralysis or recent plaster immobilisation of the lower extremities	☐	+1
Recently bedridden for > 3 days or major surgery < 12 weeks ago	☐	+1
Localised tenderness along the distribution of the deep venous system	☐	+1
Entire leg (calf & thigh) swelling	☐	+1
Calf swelling > 3 cms compared to the asymptomatic leg (measure 10 cms below tibial tuberosity)	☐	+1
Pitting oedema confined to the symptomatic leg	☐	+1
Previous DVT/PE documented	☐	+1
Dilated (non varicose) superficial veins in symptomatic leg only	☐	+1
Alternative diagnosis (as likely or greater than that of DVT)	☐	-2
TOTAL SCORE *(FILL IN Box)*	☐	
DVT LIKELY	☐	≥2
DVT UNLIKELY	☐	≤1

NOTE: *D-Dimer **cannot** be used as part of the diagnostic algorithm in patients who have already received a dose of unfractionated or low molecular weight heparin, are taking Warfarin/DOAC or who have a cancer diagnosis.*

If Wells score is < 2, proceed with D-dimer.
If Wells score is > 2, proceed to Doppler scan.
ED patients start Dalteparin and refer to DVT clinic

D-dimer

Time taken: .....

Result: **Positive** ☐ **Negative** ☐

Patient details:

addressograph

Negative D-Dimer:- **If Negative, consider any alternative diagnosis, then discharge the patient, give advice leaflet and advise to visit GP in a week's time if symptoms have not improved or are any worse.**

Positive D-Dimer or Patients not suitable for D-Dimer:-

Please commence the patient on treatment dose of Dalteparin if Doppler scan is not available on the day of attendance.

After *checking the eGFR and FBC results*, provide the patient with an over-labelled pack of 5 x Dalteparin injections.
Phone the DVT Clinic (see over) with patient's details and ensure that a copy of the patient's pathway is sent to the Clinic. If out of hours, please leave a message on the Clinic answer phone.
Scan and email proforma to clinic or place notes and proforma in MAU Box

The Clinic will contact the patient and offer them the next available Doppler Scan appointment.

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83 and over	18,000 IU (5)

- **The single daily dose should not exceed 18,000 IU.**
- **For patients with an increased risk of bleeding, it is recommended that Dalteparin be administered according to the twice daily regimen detailed for Dalteparin 10,000 IU/ml ampoules or Fragmin Multidose Vial.**

DRUG ALLERGIES & SENSITIVITES	PLEASE CIRCLE AS APPROPRIATE: NONE KNOWN YES SIGNED: …… DATE: …….. NAME……	**Prescription chart (for Dalteparin only)**

DRUG/ALLERGEN:	DESCRIPTION OF REACTION:	WEIGHT (KG) DATE WEIGHT	PLTS	EGFR

DATE	MEDICINE (APPROVED AME)	DOSE	ROUTE	TIME TO BE GIVEN	PRESCRIBER'S SIGNATURE	PHARMACY	DATE	TIME GIVEN	GIVEN BY	CHECKED BY

Ambulatory Care Pathway for DVT (continuation)……..

Patient details:

addressograph

Discharge CHECKLIST

District Nurse to give LMWH ☐

Patient to give LMWH ☐

Overlabelled box of 5 Dalteparin given ☐

Patient/relative counselled and shown how to administer ☐

Patient referred to DVT Service ☐

Patient information leaflet given

Referral phoned and proforma/ notes scanned and emailed (or placed in MAU box)

DVT Service @ Nevill Hall Hospital, Abergavenny
Tel: 01873 732193 (9am – 4pm) Fax: 01873 732063
Tel: 01873 732192 (OoH voicemail)

DVT Service @ Royal Gwent Hospital, Newport
Tel: 01633 234632 (9am – 4pm) -
Tel: 01633 234632 (OoH voicemail)

DVT Service @ Ysbyty Ystard Fawr, Ystrad Mynach
Tel: 01443 802638 (10am – 3pm) - Fax: 01443 802643
Tel: 01443 802638 (OoH voicemail)