

# The DAWN 4S VTE module - an electronic tool and record for deep vein thrombosis (DVT) assessment, diagnosis, treatment and follow up.

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## Background

University Hospitals of Leicester acute ambulatory DVT service assesses ~3500 patients and treats 700 new patients annually. Service improvements were required to optimise administrative processes. Our paper-based system was inappropriately diverting our DVT nursing team from delivering a very busy clinical service and making audit difficult.

## Aims

We wanted to create an electronic DVT record within the same system as the computer aided anticoagulant dosing software. The vision of a paperless DVT module ( assessment, diagnosis, treatment and follow up ) with seamless referrals and communication with anticoagulation and primary care was born.

## Methods

The whole DVT pathway has been sequentially computerised and tested within the clinical environment.

Monday, May 18, 2015

Dear Dr Marshall,

**Outcome: Proximal DVT - unprovoked**

(please see below pathway of decision making)

**Re:** Linda Adams 12 Par  
**Hosp No:** 012378  
**NHS No:** 012345678  
**Date of Birth:** 11/12/1969

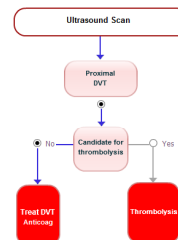
Linda Adams attended the DVT Clinic today with a suspected Deep Vein Thrombosis. The following diagnosis was made using the pathway shown.

**Diagnosis:** Proximal DVT - unprovoked

**Affected Veins:** popliteal vein, right leg  
 distal superficial femoral vein, right leg

**Treatment:** Anticoagulation with Rivaroxaban for a minimum of three months with follow up and further investigations where required.

**Follow Up:** Follow up clinic - appointment will be sent out.



All GP letters are generated within the system and sent electronically when possible

### ACTION REQUIRED BY GP:

1. Prescription for below knee graduated elasticated compression (GECs) hosiery (Class2) - 2 pairs on repeat prescription for replacement every 3 - 4 months
2. Reinforce healthy lifestyle advice

### INFORMATION GIVEN TO PATIENT:

1. To wear below knee class 2 GECs, put on first thing in am and take off when going to bed
2. Signs and Symptoms of DVT
3. DVT prevention measures at times of immobility
4. Anticoagulation information and follow up
5. Lifestyle advice

Linda Adams has been informed of these results and has now been referred back to you. The patient has been given the scan results. The signs and symptoms of thrombosis have been discussed with the Patient who has been advised to seek the advice of their GP if problems continue or worsen.

Dawn Adamson  
 DVT and Anticoagulation Specialist Sister  
 pp. Dr J Strong, Consultant Haematologist - Head of Service - Tel: 0116 258 3500  
 Trust Headquarters, Ovensden House, Ovensden Road, Leicester, LE5 4GF  
 Chairman: Mr Martin Heade, Chief Executive: Mr John Adler, Website: www.uhls.co.uk

Outcome: Proximal DVT - unprovoked

## Results

This went live in August 2013.

Between August 2013 and December 2015 we have assessed 7975 patients using the module:

- 1232 ( 15% ) were assessed as DVT unlikely with Wells score and d.dimers and did not proceed to scan
- 6743 had scans of which 1485 DVTs ( 22%)
- 318 cases of thrombophlebitis were diagnosed.

Rivaroxaban became first line treatment for first DVTs in our service in October 2014.

- A Rivaroxaban treatment module captures the assessment , treatment and follow up of these patients - 423 to date.

## Reports

### Time interval to scan report 2015

Interval to scan	Count
within 4 hours	2231
within 24 hours	145
over 24 hours	61
over 48 hours	15
over 72 hours	11

### SVT report 2015

Outcome	Treatment	Count
Superficial Thrombophlebitis - 3 months anticoag	LMWH (dalteparin)	4
Superficial Thrombophlebitis - 3 months anticoag	LMWH + warfarin	5
Superficial Thrombophlebitis - 3 months anticoag	Rivaroxaban	40
Superficial Thrombophlebitis - 6 wks anticoag	LMWH (Dalteparin)	50
Superficial Thrombophlebitis - 6 wks anticoag	LMWH + warfarin	3
Superficial Thrombophlebitis - 6 wks anticoag	Rivaroxaban	102
Superficial Thrombophlebitis requiring NOACs	NOACs	25

## Conclusions

Implementation of the DVT electronic tool and record has

- standardised and recorded each part of the patient pathway
- facilitated audit, lean accountable practice and continuous improvement in workflow, efficiency, quality and safety.
- served as a clinical database for benchmarking and research.

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