

## Patients with below knee DVT are at risk of both under and over-treatment: results from a retrospective review of cases identified at University Hospitals Bristol

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### INTRODUCTION

NICE guidance for the diagnosis of lower limb deep vein thrombosis (DVT) recommends:

- Proximal leg ultrasound scans for patients meeting the criteria for diagnostic imaging
- Repeat proximal leg scans at 6-8 days for the highest risk patients with no proximal thrombosis identified.

Below knee DVTs will therefore not be routinely diagnosed.

The Department of Vascular Science at UHBW NHS Foundation Trust (UHBW) performs a whole leg scan as standard, resulting in diagnosis of approximately three BK DVTs per week at the BRI site.

Patients are referred to the Department of Vascular Science through two main routes:

- The nurse-led thrombosis clinic (patients predominantly from general practice or the emergency department), or
- The relevant inpatient or outpatient team at UHBW

Prior to January 2018, most patients with below knee DVT received therapeutic anticoagulation.

Since January 2018, the thrombosis clinic has not routinely anticoagulated patients with below knee DVT, with a repeat scan at one week to assess for proximal extension.

In the absence of specific NICE guidance, we anticipated that the management of below knee DVTs outside the thrombosis clinic would be inconsistent, with the risk of over or under treatment of patients.

### AIM

To describe the management of below knee DVTs at UHBW (Bristol Royal Infirmary site), and repeat attendance rates within 3 months:

- Before and after January 2018
- By the thrombosis clinic and other clinical teams

### METHODS

The Vascular Science database was used to identify adult patients diagnosed with BK DVT on a first scan between:

- 01/09/2017 and 30/11/2017 (2017 cohort)
- 01/09/2018 and 30/11/2018 (2018 cohort)

Retrospective data collection was performed from the digital and paper patient records.

Referral categories were defined by the health care professional requesting the scan and acting on the result.

The following groups were excluded from analysis:

- Patients already on anticoagulation for any indication
- Patients with chronic thrombosis as determined by Doppler Ultrasound features

Summary statistical analysis was performed using GraphPad Prism

### REFERENCES

NICE guideline CG144: Venous thromboembolic diseases: diagnosis, management and thrombophilia testing.

Available at: <https://www.nice.org.uk/guidance/cg144>

### RESULTS

A total of 35 cases in 2017 and 24 cases in 2018 were identified for analysis. Patient demographics were similar across the cohorts (overall, 56% male, median age 58 years). 69% (2017) and 79% (2018) of patients were managed through the thrombosis clinic (Figure 1).

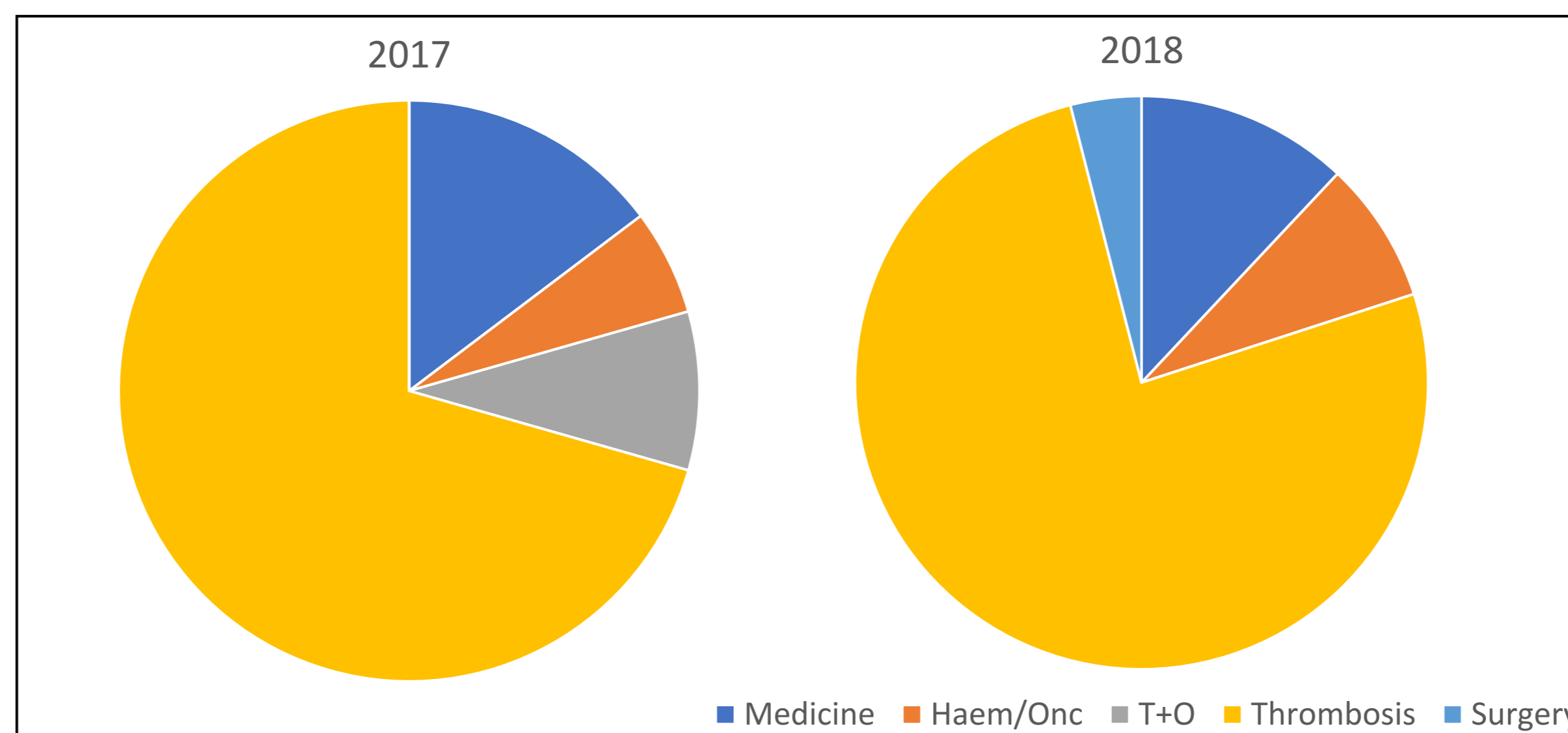


Figure 1. Source of patients referrals to the Department of Vascular Science.

The pattern of referrals was similar in 2017 and 2018, with the majority of patients referred from the thrombosis clinic. Scan requests were received in smaller numbers from general medicine, haematology / oncology, trauma and orthopaedics, general surgery.

In 2017, 91% of non-thrombosis clinic patients and 73% of thrombosis clinic patients were anticoagulated. By 2018, this had reduced to 60% and 38% respectively, resulting in the majority of patients with BK DVT remaining off anticoagulation (Figure 2).

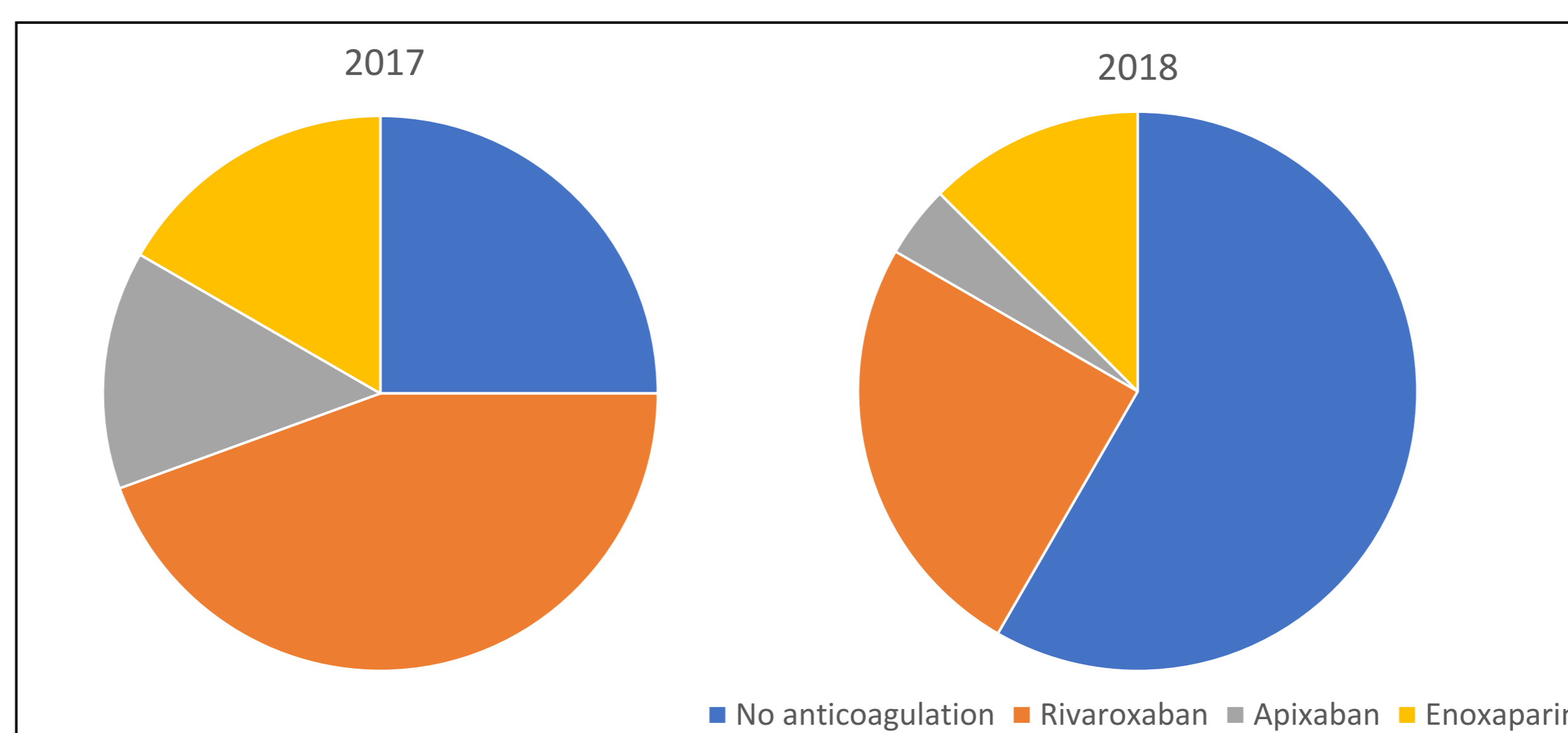


Figure 2. Anticoagulation decisions across all referral sources.

In 2017, 26% of all patients with BK DVT received no anticoagulation. This rose to 58% in 2018. Across both cohorts, and all referral sources, rivaroxaban was the most commonly used anticoagulant.

Of the patients not anticoagulated across both cohorts:

- 16/16 thrombosis clinic patients were given an appointment for a repeat scan within 7 days
- 1/6 patients managed outside the thrombosis clinic had a repeat scan organised (but the patient did not attend)

Of the 16 patients across both cohorts who had a repeat scan performed:

- 2 commenced anticoagulation because the thrombosis had extended above the knee
- 1 commenced low dose enoxaparin for symptomatic superficial thrombophlebitis

Across the two cohorts, 5 patients who did not receive anticoagulation represented to hospital within 3 months

- 1 case with unrelated urosepsis
- 4 cases with progressive or persistent symptoms (2 had radiologically resolved, 1 was stable and 1 had progressed).

### CONCLUSIONS

These results confirm that local management of BK DVT is variable, particularly outside the thrombosis clinic, and that patients are at risk of over and under treatment.

The rationale behind the non-thrombosis clinic management decisions was difficult to identify from retrospective analysis of the medical notes in all but two cases.

A significant minority of thrombosis clinic patients continued to be offered anticoagulation for a BK DVT after January 2018, but the reasons were clearly documented in all cases.

This work raises questions as to the underlying cause of the variable management of non-thrombosis clinic patients whilst indicating the success of a dedicated thrombosis clinic.

Further prospective work is required to understand the reasons for the observations reported here and to investigate whether a similar pattern is observed in other Trusts. This will ensure appropriately directed training to increase the consistency of BK DVT management and potentially improve patient safety.

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### CONTACT INFORMATION

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