

# Improving venous thromboembolism and steroid prescribing at an inpatient hospice unit: a quality improvement project

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**Abbreviated abstract:** Hospice patients are at risk of VTE, and should have risk assessments and treatment where indicated. Patients also often receive steroids for symptom control, and their use should also be regularly reviewed. We performed a quality improvement project to improve VTE and steroid review and prescribing at Wakefield Hospice. Changes to admission and MDT proformas increased the proportion of patients having documented and accurate risk assessments and review of VTE and steroid prescriptions.

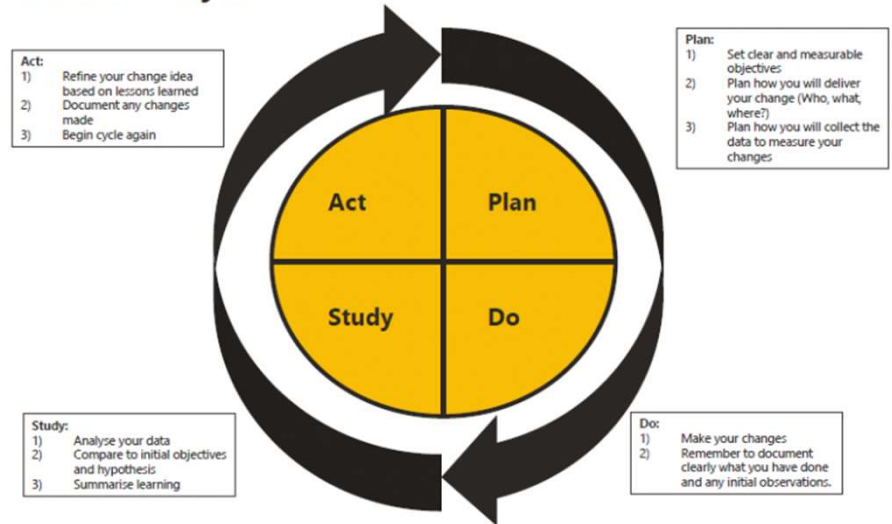
## **Related publications:**

- NICE clinical knowledge summary on steroids <https://cks.nice.org.uk/corticosteroids-oral#/scenario>
- NICE guideline [NG89] Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism

# Previous work, challenge, and approach

- Patients admitted to hospice are at high risk of developing venous thromboembolic events, due to risk factors such as advanced cancer, immobility and dehydration. Up to 52% of hospice patients may have asymptomatic VTE<sup>1</sup>, with 9.9% having symptoms<sup>2</sup>. These may contribute to symptoms such as breathlessness. However, at the end of life there may be limited benefit to providing thromboprophylaxis. Nevertheless, all patients should have a risk assessment and assessment of whether it is beneficial to give thromboprophylaxis (NICE guidance NG89).
- Steroids are commonly used for symptom control in palliative care; a large study in New Zealand estimated steroid usage at 61-69% of patients<sup>4</sup>. An estimated 15-45% of these patients suffered adverse events, and it is possible that this is an underestimate. However, many patients do not have their prescriptions reviewed in spite of this<sup>5</sup>. The Scottish Palliative Care guidelines suggest that “corticosteroids should be prescribed cautiously and the expected benefits and risks should be discussed with the patient”, with regular review<sup>6</sup>
- Wakefield Hospice is a 16-bed inpatient unit (usually with 8-12 patient occupancy) in West Yorkshire
- We sought to improve VTE risk assessment and prophylaxis review, and aspects of steroid prescribing, using quality improvement methods. This includes the PDSA cycle (Plan, Do, Study, Act). This was implemented to guide design of new MDT and admission proformas.

## The PDSA cycle



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- 1- Johnson M.J., Sproule M.W., Paul J. The prevalence and associated variables of deep venous thrombosis in patients with advanced cancer. Clin. Oncol. (R Coll Radiol). 1999;11:105–110
- 2- Soto-Cárdenas M.J. Venous thromboembolism in patients with advanced cancer under palliative care: Additional risk factors, primary/secondary prophylaxis and complications observed under normal clinical practice. Palliat. Med. 2008;22:965–968.
- 3- White C., Noble S.I.R., Watson M., et al. Prevalence, symptom burden and natural history of deep vein thrombosis in people with advanced cancer in specialist palliative care units (HIDDEN): A prospective longitudinal observational study. Lancet Haematol. 2019;6:e79–e88
- 4- Denton A, Shaw J. Corticosteroid prescribing in palliative care settings: a retrospective analysis in New Zealand. BMC Palliat Care. 2014; 13: 7.
- 5- Denton A, Shaw J. Corticosteroids in palliative care - perspectives of clinicians involved in prescribing: a qualitative study. BMC Palliat Care. 2014; 13: 50.
- 6- <https://www.palliativecareguidelines.scot.nhs.uk/guidelines/medicine-information-sheets/dexamethasone.aspx>

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# Techniques and Methods

## New assessment VTE proforma

Patient info		Mid Yorkshire Hospitals NHS Trust VTE Guidelines	
Name:		Weight (kg)	CrCl >20ml/min
DOB:		<50	2500
NHS number:		50-99	4500
		100-109	6000
		110-129	7000
		130-169	8000
		170-189	9000
		≥190	50 units/kg (nearest 1000)
			Enoxaparin s.c. OD 20mg (≤100kg) 40mg (101-150kg) 60mg >150kg

**IN-PATIENT PALLIATIVE CARE RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)**

**STEP 1**  
Is the patient actively dying? No  Yes   
If NO – move on to step 2 below.

**STEP 2**  
Mobility

A) Reduced compared to normal – LIKELY to recover	Tick	B) Reduced – UNLIKELY to recover	Tick	C) Not reduced	Tick
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If A) – move on to steps 3 and 4 below, document VTE decision.

**STEP 3: Thrombosis risk**

Active cancer or cancer treatment	Tick	Acute medical illness/infection	Tick
Age > 60		Significantly reduced mobility ≥ 3 days	
Dehydration		Hormone replacement therapy (HRT)	
Personal history or 1 <sup>st</sup> degree relative with history of VTE		Spinal cord compression (expected to recover mobility)	
Known thrombophilia		Hip fracture (expected to recover mobility)	
Obesity (BMI >30 kg/m <sup>2</sup> )		Recent surgery	
Significant medical co-morbidity e.g. heart, metabolic, respiratory, inflammatory disease			

**STEP 4: Bleeding risk**

Active bleeding	Tick	Uncontrolled systolic hypertension (>230mmHg)	Tick
Bleeding disorder		Cerebral tumour/ metastases	
Concurrent use of anticoagulants		Neuro, spinal, eye surgery	
Acute stroke		Other procedure with high bleeding risk	
Thrombocytopenia (platelets < 75 x 10 <sup>9</sup> /l)		Lumbar puncture/spinal/epidural analgesia	

**VTE decision**

Low Molecular Weight Heparin required?	Yes	No
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Sign and PRINT: .....  
Date: .....

Introduced boxes for weekly MDT to discuss steroid and VTE status for every patient

Improved layout of risk factors to allow for accurate recording

Larger and more prominent section for signing and dating

## New MDT proforma

**Hospice Palliative Care MDT outcome form**

Date of MDT: \_\_\_\_\_ Date of admission: \_\_\_\_\_

**Patient info**

Name: \_\_\_\_\_ Age: \_\_\_\_\_  
DOB: \_\_\_\_\_ NHS number: \_\_\_\_\_

**Summary:**

Medical progress since last MDT

Medication changes

**On VTE prophylaxis: Y / N**  
Assessment complete: Y / N  
Requires prophylaxis: Y / N

**On steroids: Y / N**  
Current regime: \_\_\_\_\_  
Plan: \_\_\_\_\_

If Yes, gastric protection prescribed? Y / N

Other progress, family or social issues

Discharge planning Fast track:

Advanced care planning PPDC: \_\_\_\_\_ Code: \_\_\_\_\_ Capacity concerns? \_\_\_\_\_ Barthel: \_\_\_\_\_ Karnofsky: \_\_\_\_\_

Action Plan:

ACIP codes: X: DNACPR Y: for CPR 1: transfer to hospital 2: max hospice care  
3: comfort measures only 4: discuss at time A: for antibiotics B: not for antibiotics C: discuss at time

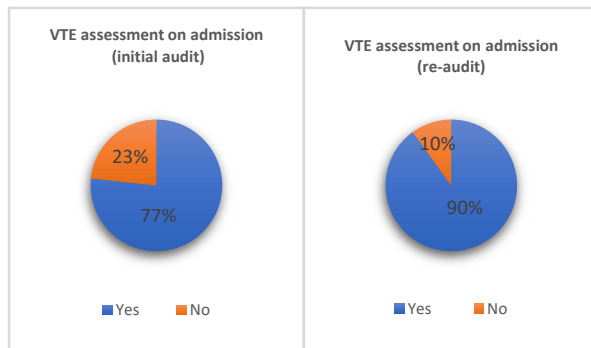
Signed: \_\_\_\_\_ Designation: \_\_\_\_\_

## Methods

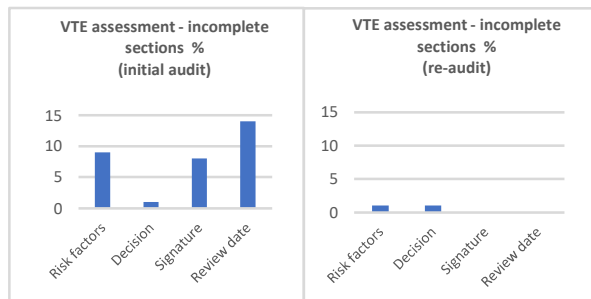
We retrospectively reviewed the notes of 30 consecutive admissions before implementing these changes. Once the changes were implemented, we then reviewed 30 consecutive admissions following the change, describing the differences in VTE and steroid prescribing. Where appropriate tests of statistical significance were applied.

# Results and Conclusions

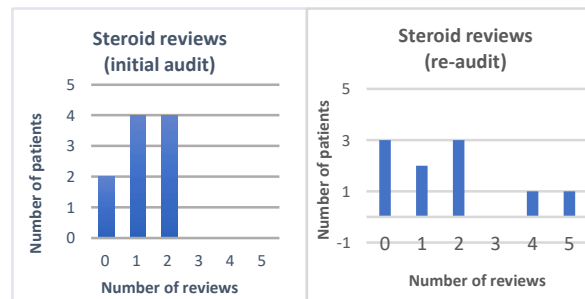
## 1. Changes to the admission proforma improved proportion of patients having a VTE risk assessment and the accuracy of the risk assessments



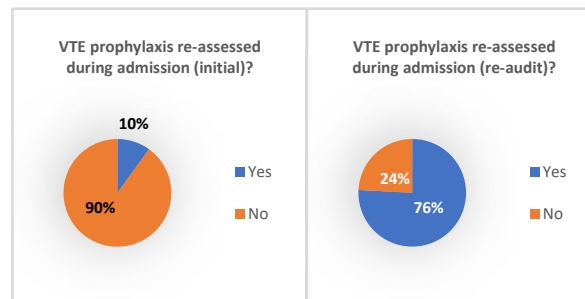
Increased from 10% to 76% (p<0.01, Fisher's exact test)



## 2. Changes to the MDT proforma increased the frequency of steroid review and VTE prophylaxis review



Steroid doses were reviewed on average every 2.6 days after intervention (compared with every 4.4 days before). This resulted in 11 dosage changes compared to 6 before the change. 100% patients discharged on steroids had a plan documented in the discharge summary compared to 50% before.



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## 3. Other results

The indication for steroid prescriptions was high both before (90%) and after (80%) the interventions. Co-prescription of a proton pump inhibitor remained static at 70%, but all patients without PPI had a documented reason why not.

The total duration of steroids reduced after the interventions (mean 5.8 days vs. 8.3 days before), and the cumulative dose reduced from 36.6mg (before; dexamethasone equivalent) to 27.3mg (after).

## 4. Conclusions and future directions

- Simple changes to an admission proforma improved VTE risk assessments at admission
- Adding sections to the MDT proforma for steroid and VTE review increased the frequency of review of steroids and VTE
- This increase in review led to reductions in the total duration and dosage of steroids, potentially minimising the side effects of these medicines
- During the audit we noticed that the VTE risk assessment was being missed for patients being re-admitted to the hospice (who had different admission packs); therefore these admission packs have been updated to include a section for VTE assessment