



# Impact on NHS workforce and resources

Resource impact

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This [NICE guideline on venous thromboembolic diseases: diagnosis, management and thrombophilia testing](#) has been reviewed for its potential impact on the NHS workforce and resources.

The guideline covers diagnosing and managing venous thromboembolic diseases in adults. It aims to support quick diagnosis and effective treatment for people who develop deep vein thrombosis (DVT) or pulmonary embolism (PE). It also covers testing for conditions that can make a DVT or PE more likely, such as thrombophilia (a blood clotting disorder) and cancer.

## Recommendations likely to have an impact on resources

The recommendations that are most likely to have the greatest resource impact nationally (for England) are listed below.

## Anticoagulation treatment for DVT or PE

- Offer either apixaban or rivaroxaban to people with proximal DVT or PE (but see recommendations 1.3.11 to 1.3.21 for people with any of the clinical features listed in recommendation 1.3.7). If neither apixaban nor rivaroxaban is suitable offer:
  - low molecular weight heparin (LMWH) for at least 5 days followed by dabigatran or edoxaban or
  - LMWH concurrently with a vitamin K antagonist (VKA) for at least 5 days, or until the INR is at least 2.0 in 2 consecutive readings, followed by a VKA on its own. **[recommendation 1.3.8]**

## Anticoagulation treatment for DVT or PE with active cancer

- Offer people with active cancer and proximal DVT or PE anticoagulation treatment for 3 to 6 months. **[recommendation 1.3.15]**
- Consider a direct-acting oral anticoagulant for people with active cancer and proximal DVT or PE. **[recommendation 1.3.17]**
- If a direct-acting oral anticoagulant is unsuitable consider LMWH alone or LMWH concurrently with a VKA for at least 5 days, or until the INR is at least 2.0 in 2 consecutive readings, followed by a VKA on its own. **[recommendation 1.3.18]**

## Investigations for cancer

- For people with unprovoked DVT or PE who are not known to have cancer, review the medical history and baseline blood test results including full blood count, renal and hepatic function, PT and APTT (prothrombin time and activated partial thromboplastin time), and offer a physical examination. **[recommendation 1.8.1]**
- Do not offer further investigations for cancer to people with unprovoked DVT or PE unless they have relevant clinical symptoms or signs (for further information see the [NICE guideline on suspected cancer](#)). **[recommendation 1.8.2]**

## Context

In venous thromboembolism (VTE), a blood clot forms in a vein, usually in the deep veins of the legs or pelvis. This is known as deep vein thrombosis, or DVT. The blood clot can dislodge and travel in the blood, particularly to the pulmonary arteries. This is known as pulmonary embolism, or PE. The term 'VTE' includes both DVT and PE.

Failure to diagnose and treat VTE correctly can result in fatal PE, in which the blood clot blocks the blood supply to the lungs. However, diagnosis of VTE is not always straightforward. The guideline includes advice on the Wells score, D-dimer measurement, ultrasound and radiological imaging. It also offers guidance on treating VTE, investigations for cancer in people with VTE and thrombophilia testing. The guideline covers adults with suspected or confirmed DVT or PE. It does not cover children or young people aged under 18, or women who are pregnant.

Services are commissioned by integrated care systems / clinical commissioning groups and providers are hospital trusts and primary care.

## Resource impact

The estimated financial impact of implementing this guideline for England in the next 5 years is a saving of around £0.8 million in year 1 rising to a saving of around £4.1 million in year 5. The year 5 saving for England is comprised of a cash saving of around £2.1 million and a non-cash saving of around £2 million. The non-cash saving is equivalent to £3,500 per 100,000 population, resulting from around 34 fewer CT scans and 19 fewer mammograms per year.

The impact on drug spend and capacity per 100,000 population is shown in tables 1 and 2 below.

**Table 1 Impact on drug spend per 100,000 population**

<b>Recommendation 1.3.8 treatment for people with VTE who are not known to have cancer</b>	<b>Unit cost</b>	<b>Current practice</b>	<b>Year 1</b>	<b>Year 3</b>	<b>Year 5</b>
People with a venous thromboembolism (VTE) each year		118	118	118	118

<b>People with VTE who are not known to have cancer who require anticoagulation therapy - 80%</b>		94	94	94	94
<b>% split of patients</b>					
People receiving apixaban	£559.24	20%	23%	29%	35%
People receiving rivaroxaban	£555.39	20%	23%	29%	35%
People receiving LMWH followed by either dabigatran or edoxaban	£526.30	35%	32%	26%	20%
People receiving LMWH with VKA, followed by VKA on its own	£82.87	25%	22%	16%	10%
		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Number of patients</b>					
People receiving apixaban	£559.24	19	22	27	33
People receiving rivaroxaban	£555.39	19	22	27	33
People receiving LMWH followed by either dabigatran or edoxaban	£526.30	33	30	25	19
People receiving LMWH with VKA, followed by VKA on its own	£82.87	24	21	15	9
<b>Total patients</b>		<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>
<b>Increase in costs £'000</b>			<b>£1</b>	<b>£4</b>	<b>£7</b>

<b>Recommendations 1.3.15, 1.3.17 and 1.3.18 treatment for people with VTE and cancer</b>	<b>Unit cost</b>	<b>Current practice</b>	<b>Year 1</b>	<b>Year 3</b>	<b>Year 5</b>
People with a venous thromboembolism (VTE) each year		118	118	118	118
<b>People with VTE and active cancer requiring anticoagulation therapy - 20%</b>		24	24	24	24
<b>% split of patients</b>					
People receiving apixaban	£432.06	8%	12%	21%	30%
People receiving rivaroxaban	£439.56	8%	12%	21%	30%
People receiving LMWH and VKA	£83.80	5%	5%	5%	5%
People receiving LMWH on its own	£1,467.60	80%	71%	53%	35%
		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Number of patients</b>					
People receiving apixaban	£432.06	2	3	5	7
People receiving rivaroxaban	£439.56	2	3	5	7
People receiving LMWH and VKA	£83.80	1	1	1	1
People receiving LMWH on its own	£1,467.60	19	17	13	8
<b>Total patients</b>		<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>

<b>Reduction in costs £'000</b>			<b>-£2</b>	<b>-£7</b>	<b>-£11</b>
<b>Overall impact - decrease in drug spend per 100,000</b>			<b>-£1</b>	<b>-£2</b>	<b>-£4</b>

Table 2 Impact on capacity per 100,000 population

<b>Rec 1.8.1 and 1.8.2 imaging screening in people with unprovoked VTE</b>	<b>Unit cost</b>	<b>Current practice</b>	<b>Year 1</b>	<b>Year 3</b>	<b>Year 5</b>
People with a venous thromboembolism (VTE) each year		118	118	118	118
<b>People with an unprovoked VTE who may be suspected of having cancer - 47%</b>		55	55	55	55
<b>% split of patients</b>					
People who have imaging screening along with having a medical history and a physical examination	£229.00	67%	55%	30%	6%
People who only have their medical history taken and have a physical examination	£125.00	33%	45%	70%	94%
		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Number of patients</b>					

People who have imaging screening along with having a medical history and a physical examination	£229.00	37	30	17	3
People who only have their medical history taken and have a physical examination	£125.00	18	25	39	52
<b>Total patients</b>		<b>55</b>	<b>55</b>	<b>55</b>	<b>55</b>
<b>Capacity benefit £'000</b>			<b>-£1</b>	<b>-£2</b>	<b>-£4</b>

The following costs and savings are anticipated from implementing these recommendations:

- An increase in drug costs for treating people with confirmed VTE (without active cancer) with anticoagulant therapy. Cash costs for both primary and secondary care prescribing budgets, depending on where the prescribing takes place.
- A decrease in drug costs for treating people with confirmed VTE (with active cancer) with anticoagulant therapy. Cash savings for secondary care prescribing budgets.
- A capacity benefit from a reduction in further investigations for cancer for people without symptoms or signs of cancer. This should result in non-cash savings for secondary care and may yield a cash saving for commissioners.

Environmental benefits are expected when injected low molecular weight heparin is replaced by orally administered direct-acting anticoagulants, which will reduce the use of plastics such as syringes and sharps bins.

# Support to put the recommendations into practice

## COVID-19

- The NICE guideline on venous thromboembolic diseases was developed before the COVID-19 pandemic and does not cover thrombosis after COVID-19 vaccination. For general advice on the management of anticoagulation during the covid-19 pandemic, see the [speciality guide on the management of anticoagulant services on NICE's speciality guides webpage](#). This guide, developed by NHS England and NHS Improvement, is an aid to helping services continue with essential care for patients during the pandemic. It should be used alongside clinical judgement, the clinician's knowledge of the patient and the prevalence of local COVID-19 infection.
- For guidance on VTE risk reduction in patients with COVID-19 see [NICE's rapid guideline on managing COVID-19](#).

## Outpatient treatment for suspected or confirmed low-risk PE

- Outpatient treatment for suspected or confirmed low-risk PE can be provided using a same day emergency care (SDEC) service (also known as an ambulatory emergency care unit). The [NHS Long Term Plan](#) sets out the aim for every hospital with a major accident and emergency department to provide SDEC services for at least 12 hours a day, 7 days a week. [NHS England and NHS Improvement's SDEC national programme](#) has been set up to facilitate implementation of these services.
- The [NHS Ambulatory Emergency Care Network](#) has additional resources and guidance on how to set up a same day emergency care service. [NHS England's transforming urgent and emergency care services in England](#) provides guidance on the design of these services. The [Royal College of Physicians' acute care toolkit on ambulatory emergency care](#) outlines the principles and highlights some of the benefits of this service.
- Guidance on quality improvement is available in the [British Thoracic Society guideline for the outpatient management of pulmonary embolism](#) and [quality standards for the outpatient management of pulmonary embolism](#).



## Support from NICE

- We are developing a [NICE quality standard on venous thromboembolic diseases](#). It will update and replace the existing NICE quality standards for venous thromboembolism (QS3 and QS29), and will be based on the [NICE guidelines on venous thromboembolic diseases: diagnosis, management and thrombophilia testing](#) and [venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism](#). The updated quality standard is expected to publish in August 2021.
- We have published a [visual summary of the recommendations on diagnosis and anticoagulation treatment from the NICE guideline on venous thromboembolic diseases: diagnosis, management and thrombophilia testing](#).
- For examples of best practice, see the [shared learning examples that accompany the NICE guideline on venous thromboembolic diseases: diagnosis, management and thrombophilia testing](#), for example, the City Health Care Partnership case study on implementing point-of-care D-dimer tests in their community DVT service.

## Additional support

- The [Getting it Right First Time \(GIRFT\) Thrombosis Survey](#) was launched on 1 October 2019 and is co-badged with the Royal College of Surgeons and the Royal College of Physicians. Data collection was extended to 31 August 2020 to help capture data on prevention of VTE diseases and hospital-acquired thrombosis during the COVID-19 pandemic. When the survey is completed GIRFT will provide participating trusts with their data to show how they are performing against the national average and produce a national picture of delivery with key recommendations for improvement.
- The [National Confidential Enquiry into Patient Outcome and Death's 2019 report Pulmonary embolism: know the score](#) highlights the quality of care for patients aged 16 and over with a new diagnosis of pulmonary embolism. It makes the following principal recommendations, which support the recommendations in the NICE guideline on venous thromboembolic diseases:
  - Give an interim dose of anticoagulant to patients suspected of having an acute PE when confirmation of the diagnosis is expected to be delayed by more than 1 hour.
  - Assess patients suspected of having an acute PE for their suitability for ambulatory care and document the rationale for selecting or excluding it in the clinical notes.
  - Provide every patient with a follow-up plan, patient information leaflet and at discharge, a discharge letter which should include details of the anticoagulant prescribed and its duration.
  - Calculate the clinical probability of PE in all patients presenting to hospital with a suspected new diagnosis of pulmonary embolism using a validated score, such as the Wells Score. Record the score in the clinical notes.

The guideline resource and implementation panel

The guideline resource and implementation panel reviews NICE guidelines that have a substantial impact on NHS resources. By 'substantial' we mean that:

- implementing a single guideline recommendation in England costs more than £1 million per year, or
- implementing the whole guideline in England costs more than £5 million per year.

Panel members are from NICE, NHS England, NHS Improvement, Health Education England, NHS Clinical Commissioners and when appropriate Public Health England and Skills for Care. Topic experts are invited for discussions on specific topics.

The panel does not comment on or influence the guideline recommendations outside NICE's usual consultation processes and timelines.