

# Venous thromboembolism in adults: diagnosis and management

Quality standard

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This standard is based on CG144 and TA261.

This standard should be read in conjunction with QS3 and QS15.

## Introduction and overview

### *Introduction*

Venous thromboembolism (VTE) is a condition in which a blood clot (a thrombus) forms in a vein, most commonly in the deep veins of the legs or pelvis. This is known as deep vein thrombosis, or DVT. The thrombus 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.

VTE is an important cause of death and its prevention and management is a priority for the NHS. It has been estimated that 25,000 people in the UK die every year from preventable hospital-acquired VTE<sup>[1]</sup>. Non-fatal VTE is also important because it can cause serious longer-term conditions such as post-thrombotic syndrome and chronic thromboembolic pulmonary hypertension.

The diagnosis of VTE is not always straightforward because other conditions have similar symptoms. Failure to diagnose a case of VTE may result in a patient not receiving the correct treatment and potentially developing post-thrombotic syndrome or a fatal PE as a result.

This quality standard covers the diagnosis and treatment of venous thromboembolic diseases in adults, excluding pregnant women. For more information see the [scope](#) for this quality standard. For prevention of VTE see the NICE quality standard for [venous thromboembolism in adults: reducing the risk in hospital](#).

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. They draw on existing guidance, which provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement. The quality standard, in conjunction with the guidance on which it is based, should contribute to the improvements outlined in the following framework:

- [NHS Outcomes Framework 2013–14](#) (Department of Health, November 2012)

The table below shows the outcomes, overarching indicators and improvement areas from the framework that the quality standard could contribute to achieving:

NHS outcomes framework 2013–14	
Domain 1: Preventing people from dying prematurely	<p><b>Overarching indicator</b></p> <p>1a Potential years of life lost (PYLL) from causes considered amenable to healthcare</p>
Domain 3: Helping people to recover from episodes of ill health or following injury	<p><b>Overarching indicator</b></p> <p>3a Emergency admissions for acute conditions that should not usually require hospital admission</p> <p>3b Emergency readmissions within 30 days of discharge from hospital* (PHOF 4.11)</p>
Domain 5: Treating and caring for people in a safe environment; and protecting them from avoidable harm	<p><b>Overarching indicators</b></p> <p>5b Safety incidents involving severe harm or death</p> <p><b>Improvement areas</b></p> <p><i>Reducing the incidence of avoidable harm</i></p> <p>5.1 Incidence of hospital-related venous thromboembolism (VTE)</p>

## Overview

The quality standard for diagnosis and management of venous thromboembolism in adults states that services should be commissioned from and coordinated across all relevant agencies encompassing the management of venous thromboembolism care pathway. A person-centred approach to provision of services is fundamental to delivering high quality care to adults with venous thromboembolism.

The Health and Social Care Act 2012 sets out a clear expectation that the care system should consider NICE quality standards in planning and delivering services, as part of a general duty to secure continuous improvement in quality. Commissioners and providers of health and social care should cross refer across the library of NICE quality standards when designing high-quality services.

Patients, service users and carers may use the quality standard to find out about the quality of care they should expect to receive; support asking questions about the care they receive; and to make a choice between providers of social care services.

The quality standard should be read in the context of national and local guidelines on training and competencies. All health and social care professionals involved in assessing, caring for and treating adults with venous thromboembolism (including those who assess remotely using algorithms written by medical professionals) should be sufficiently and appropriately trained and competent to deliver the actions and interventions described in the quality standard.

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<sup>[1]</sup> Department of Health and Chief Medical Officer. [Report of the independent expert working group on the prevention of venous thromboembolism in hospitalised patients \(2007\)](#).

## List of quality statements

Statement 1 People with suspected deep vein thrombosis are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

Statement 2 People with suspected deep vein thrombosis have all diagnostic investigations completed within 24 hours of first clinical suspicion.

Statement 3 People with suspected pulmonary embolism are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

Statement 4 This statement has been removed. For more details see [update information](#).

Statement 5 People with unprovoked deep vein thrombosis or pulmonary embolism who are not already known to have cancer are offered timely investigations for cancer.

Statement 6 People with provoked deep vein thrombosis or pulmonary embolism are not offered testing for thrombophilia.

Statement 7 People with active cancer and confirmed proximal deep vein thrombosis or pulmonary embolism are offered anticoagulation therapy.

Statement 8 People without cancer who receive anticoagulation therapy have a review within 3 months of diagnosis of confirmed proximal deep vein thrombosis or pulmonary embolism to discuss the risks and benefits of continuing anticoagulation therapy.

Statement 9 People with active cancer who receive anticoagulation therapy have a review within 6 months of confirmed proximal deep vein thrombosis or pulmonary embolism to discuss the risks and benefits of continuing anticoagulation therapy.

Other quality standards that should also be considered when choosing, commissioning or providing a high-quality venous thromboembolic diseases service are listed in [related NICE quality standards](#).



## Quality statement 1: Interim therapeutic dose of anticoagulation therapy for suspected deep vein thrombosis

### *Quality statement*

People with suspected deep vein thrombosis are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

### *Rationale*

It is important that people with suspected deep vein thrombosis (DVT) are treated promptly. In line with NICE guidance, people with suspected DVT should be offered interim anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion. This is to avoid adverse effects if a quick confirmation test is not available or possible because there is risk of pulmonary embolism (PE).

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with suspected DVT are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

**Process:** The proportion of people with suspected DVT whose diagnostic investigations take longer than 4 hours from the time of first clinical suspicion who receive an interim therapeutic dose of anticoagulation therapy.

**Numerator** – the number of people in the denominator who receive an interim therapeutic dose of anticoagulation therapy.

**Denominator** – the number of people with suspected DVT whose diagnostic investigations were not completed within 4 hours from the time of first clinical suspicion.

**Outcome:** Incidence of PE in people who have undergone diagnostic tests for DVT.

## *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with suspected DVT to be offered an interim dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

**Healthcare professionals** ensure they offer people with suspected DVT an interim dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

**Commissioners** ensure they commission services that offer people with suspected DVT an interim dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 4 hours from the time of first clinical suspicion.

**People who may have deep vein thrombosis** and whose confirmation test is expected to take longer than 4 hours from the time an appropriate healthcare professional requests it are offered a dose of an anticoagulant (a drug that helps to stop blood clots forming or enlarging, and makes it less likely that a blood clot will come loose and travel to the lungs).

## *Source guidance*

NICE guideline CG144 recommendations 1.1.1 (key priority for implementation), 1.1.2, 1.1.3 (key priority for implementation) and 1.1.4 (key priority for implementation).

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 [clinical audit tools](#) (diagnosis of deep vein thrombosis), standards 6 and 15.

**Outcome:** Local data collection.

## *Definitions*

**Suspected DVT**

NICE guideline CG144 recommendations 1.1.1 and 1.1.2 describe the features of suspected DVT and how to estimate clinical probability (two-level DVT Wells score).

**Diagnostic investigations** are outlined in the diagnostic algorithms in NICE guideline CG144 appendix C.

NICE guideline CG144 recommendations 1.1.3 and 1.1.4 recommend arranging diagnostic testing for people with suspected DVT according to clinical probability.

**First clinical suspicion** Clinical suspicion of DVT by an appropriate healthcare professional in community or hospital settings.

## Quality statement 2: Diagnosis of deep vein thrombosis

### *Quality statement*

People with suspected deep vein thrombosis have all diagnostic investigations completed within 24 hours of first clinical suspicion.

### *Rationale*

It is important that all diagnostic investigations for suspected deep vein thrombosis (DVT) are completed within 24 hours to ensure prompt treatment if the diagnosis is confirmed, and to avoid unnecessary repeat doses of anticoagulants if the diagnosis is excluded.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with suspected DVT have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**Process:** The proportion of people who have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**Numerator** – the number of people in the denominator who have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**Denominator** – the number of people with suspected DVT.

**Outcome:** Incidence of pulmonary embolism (PE) in people who have undergone all diagnostic tests for DVT.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with suspected DVT to have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**Healthcare professionals** ensure people with suspected DVT have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**Commissioners** ensure they commission services for people with suspected DVT to have all diagnostic investigations completed within 24 hours of first clinical suspicion.

**People who may have deep vein thrombosis** have all their diagnostic tests done within 24 hours of the tests being requested by an appropriate healthcare professional.

### *Source guidance*

NICE guideline CG144 recommendations 1.1.1 (key priority for implementation), 1.1.2, 1.1.3 (key priority for implementation), 1.1.4 (key priority for implementation) and 1.1.14. See also the diagnostic algorithms in NICE guideline CG144 appendix C.

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection.

**Outcome:** Local data collection.

### *Definitions*

#### **Suspected DVT**

NICE guideline CG144 recommendations 1.1.1 and 1.1.2 describe the features of suspected DVT and how to estimate clinical probability (two-level DVT Wells score).

**Diagnostic investigations completed** are outlined in the diagnostic algorithms in NICE guideline CG144 appendix C.

NICE guideline CG144 recommendations 1.1.3 and 1.1.4 recommend arranging diagnostic testing for people with suspected DVT according to clinical probability.

**First clinical suspicion** Clinical suspicion of DVT by an appropriate healthcare professional in community or hospital settings.

## Quality statement 3: Interim therapeutic dose of anticoagulation therapy for suspected pulmonary embolism

### *Quality statement*

People with suspected pulmonary embolism are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

### *Rationale*

The consequences of missing a diagnosis of pulmonary embolism (PE) are severe and if a PE is left untreated there is a high risk of mortality. Immediate interim treatment with an anticoagulant is recommended if PE is suspected and a confirmatory test is not immediately available.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with suspected PE are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

**Process:** The proportion of people with suspected PE whose diagnostic investigations take longer than 1 hour from the time of first clinical suspicion who receive an interim therapeutic dose of anticoagulation therapy.

**Numerator** – the number of people in the denominator who receive an interim therapeutic dose of anticoagulation therapy.

**Denominator** – the number of people with suspected PE whose diagnostic investigations take longer than 1 hour from the time of first clinical suspicion.

**Outcome:** Mortality from PE.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with suspected PE to be offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

**Healthcare professionals** ensure people with suspected PE are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

**Commissioners** ensure they commission services in which people with suspected PE are offered an interim therapeutic dose of anticoagulation therapy if diagnostic investigations are expected to take longer than 1 hour from the time of first clinical suspicion.

**People who may have a pulmonary embolism** whose test results are expected to take longer than 1 hour from the time the tests are requested by an appropriate healthcare professional are offered a dose of an anticoagulant (a drug that helps to stop blood clots forming or enlarging, and makes it less likely that a blood clot will come loose and travel to the lungs).

## *Source guidance*

NICE guideline CG144 recommendations 1.1.7, 1.1.8, 1.1.9 and 1.1.10 (key priorities for implementation).

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 clinical audit tools (diagnosis of pulmonary embolism), standard 5.

**Outcome:** Local data collection.

## *Definitions*

### **Suspected PE**

NICE guideline CG144 recommendations 1.1.7 and 1.1.8 describe the features of suspected PE and how to estimate clinical probability (two-level PE Wells score).

### **Diagnostic investigations**

As outlined in the diagnostic algorithms in NICE guideline CG144 appendix C.

NICE guideline CG144 recommendations 1.1.9 and 1.1.10 recommend immediate diagnostic testing for people with suspected PE according to clinical probability with appropriate use of anticoagulant.

### **First clinical suspicion**

Clinical suspicion of PE by an appropriate healthcare professional in community or hospital settings.



## Quality statement 4: Mechanical interventions

This statement has been removed. For more details see [update information](#).

## Quality statement 5: Investigations for cancer

### *Quality statement*

People with unprovoked deep vein thrombosis or pulmonary embolism who are not already known to have cancer are offered timely investigations for cancer.

### *Rationale*

A significant proportion of people with a new unprovoked deep vein thrombosis (DVT) or pulmonary embolism (PE) may have an undiagnosed cancer. In addition, the occurrence of cancer-related venous thromboembolic disease (VTE) is associated with a poorer prognosis. Therefore it is critical for the optimal management of unprovoked DVT or PE (in a person in whom no obvious risk factors for DVT or PE have been identified) to establish whether they may have an underlying cancer.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with unprovoked DVT or PE who are not already known to have cancer are offered investigations for cancer.

**Process:** The proportion of people with unprovoked DVT or PE who are not already known to have cancer who receive investigations for cancer.

Numerator – the number of people in the denominator who receive investigations for cancer.

Denominator – the number of people with unprovoked DVT or PE who are not already known to have cancer.

**Outcome:** Incidence of cancer detected after unprovoked DVT or PE.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with unprovoked DVT or PE who are not already known to have cancer to be offered investigations for cancer.

**Healthcare professionals** ensure people with unprovoked DVT or PE who are not already known to have cancer are offered investigations for cancer.

Commissioners ensure they commission services that offer people with unprovoked DVT or PE who are not already known to have cancer investigations for cancer.

People who have an unprovoked (with no obvious cause) deep vein thrombosis or pulmonary embolism and who are not already known to have cancer are offered tests for cancer.

### *Source guidance*

[NICE guideline CG144](#) recommendation 1.5.1.

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 [clinical audit tools](#) (treatment of venous thromboembolism and investigations for cancer), standard 5.

**Outcome:** Local data collection.

### *Definitions*

**Unprovoked deep vein thrombosis (DVT) or pulmonary embolism (PE)** is defined as a DVT or PE in a person with no antecedent major clinical risk factor for VTE who is not having hormonal therapy (oral contraceptive or hormone replacement therapy). People with active cancer or a family history of VTE should also be considered as having an unprovoked episode because these underlying risks will remain unchanged in the person. However people with active cancer are not included in this statement.

**Investigations for cancer** In this context, investigations for cancer refer to investigations in people with unprovoked deep vein thrombosis or pulmonary embolism who are not already known to have cancer to determine whether the VTE could be related to a previously undetected cancer. In the context of this quality statement the specific investigations are:

- a physical examination (guided by the patient's full history)
- chest X-ray (according to baseline risk)
- blood tests (full blood count, serum calcium and liver function tests)

- urinalysis.

### Timely investigations for cancer

The 2-week wait standard for cancers guarantees that everyone referred urgently with suspected cancer would be able to be seen by a specialist or in a diagnostic clinic within 2 weeks from the date of decision to refer. Therefore the investigations for cancer should be carried out within 2 weeks of being ordered.

## Quality statement 6: Thrombophilia testing

### *Quality statement*

People with provoked deep vein thrombosis or pulmonary embolism are not offered testing for thrombophilia.

### *Rationale*

Thrombophilia testing does not provide benefit and is unnecessary for people with provoked deep vein thrombosis (DVT) or pulmonary embolism (PE).

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with provoked DVT or PE do not have testing for thrombophilia.

**Process:** The proportion of people with provoked DVT or PE who are tested for thrombophilia.

Numerator – the number of people in the denominator who receive testing for thrombophilia.

Denominator – the number of people with provoked DVT or PE.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place to ensure that people with provoked DVT or PE are not tested for thrombophilia.

**Healthcare professionals** ensure people with provoked DVT or PE are not tested for thrombophilia.

**Commissioners** ensure they commission services that do not carry out testing for thrombophilia in people with provoked DVT or PE.

**People who have had a provoked (with an obvious cause) deep vein thrombosis or pulmonary embolism** are not offered tests for thrombophilia (a condition that makes the blood more likely to form clots).

## *Source guidance*

NICE guideline CG144 recommendation 1.6.4.

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 clinical audit tools (thrombophilia testing), standard 2.

## *Definition*

**Provoked DVT or PE** is defined as DVT or PE that occurred in the presence of an antecedent (within 3 months) and transient major clinical risk factor for VTE (for example surgery, trauma or significant immobility). The NICE Guideline Development Group also considered VTE that occurs in association with hormonal therapy (oral contraceptive or hormone replacement therapy) to be provoked because it has been shown that people having these therapies have a lower risk of VTE recurrence.

## Quality statement 7: Treatment of people with active cancer

### *Quality statement*

People with active cancer and confirmed proximal deep vein thrombosis or pulmonary embolism are offered anticoagulation therapy.

### *Rationale*

In people with cancer, anticoagulation can lead to improved prognosis including a reduction in the risk of recurrent deep vein thrombosis (DVT) or pulmonary embolism (PE).

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with active cancer and confirmed proximal DVT or PE are offered anticoagulation therapy.

**Process:** The proportion of people with active cancer and confirmed proximal DVT or PE who receive anticoagulation therapy.

**Numerator** – the number of people in the denominator who receive anticoagulation therapy.

**Denominator** – the number of people with active cancer and confirmed proximal DVT or PE.

**Outcome** – Incidence of recurrent DVT or PE in patients with cancer and VTE who have completed anticoagulation therapy.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with active cancer and confirmed proximal DVT or PE to be offered anticoagulation therapy.

**Healthcare professionals** ensure people with active cancer and confirmed proximal DVT or PE are offered anticoagulation therapy.

**Commissioners** ensure they commission services that offer people with active cancer and confirmed proximal DVT or PE anticoagulation therapy.

People with active cancer who have a deep vein thrombosis or pulmonary embolism are offered treatment with an anticoagulant (a drug that helps stop blood clots forming or enlarging and makes it less likely that a blood clot will come loose and travel to the lungs).

### *Source guidance*

[NICE guideline CG144](#) recommendation 1.2.2 (key priority for implementation).

[NICE technology appraisal guidance 261](#).

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 [clinical audit tools](#) (treatment of venous thromboembolism and investigations for cancer), standards 2a and 2b.

**Outcome:** Local data collection.

### *Definitions*

**Active cancer** was defined by the Guideline Development Group (after considering the evidence available) as cancer: receiving active antimitotic treatment; or diagnosed within the past 6 months; or recurrent or metastatic; or inoperable.

This definition excludes squamous skin cancer and basal cell carcinoma.

### **Proximal DVT**

DVT in the popliteal vein or above; proximal DVT in this context refers to 'above-knee DVT'.

**Anticoagulation therapy** For active cancer anticoagulation therapy can include treatment with LMWH or rivaroxaban given in accordance with the summary of product characteristics.



## Quality statement 8: Follow-up for people without cancer

### *Quality statement*

People without cancer who receive anticoagulation therapy have a review within 3 months of diagnosis of confirmed proximal deep vein thrombosis or pulmonary embolism to discuss the risks and benefits of continuing anticoagulation therapy.

### *Rationale*

As anticoagulation therapy carries potential risks such as bleeding there is a need to ensure the therapy remains beneficial. For people who have had a confirmed proximal deep vein thrombosis (DVT) or pulmonary embolism (PE) and who do not have cancer, a review should take place.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people without cancer who have had a confirmed proximal DVT or PE and receive anticoagulation receive a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Process:** The proportion of people without cancer who have had a confirmed proximal DVT or PE and receive anticoagulation therapy who have a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Numerator** – the number of people in the denominator who receive a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Denominator** – the number of people who have received anticoagulation therapy following a confirmed diagnosis of proximal DVT or PE at least 3 months previously and who do not have cancer.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people without cancer who have had a confirmed proximal DVT or PE and receive anticoagulation therapy to be offered a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy beyond 3 months.

**Healthcare professionals** ensure people without cancer who have had a confirmed proximal DVT or PE and receive anticoagulation therapy are offered a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Commissioners** ensure they commission services that offer people without cancer who have had a confirmed proximal DVT or PE and receive anticoagulation therapy a review within 3 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**People without cancer who have had deep vein thrombosis or pulmonary embolism and who are having treatment with an anticoagulant (a drug that helps stop blood clots forming or enlarging and makes it less likely that a blood clot will come loose and travel to the lungs) are offered a review within 3 months of diagnosis to discuss the risks and benefits of continuing treatment with an anticoagulant.**

## *Source guidance*

NICE guideline CG144 recommendation 1.2.3.

NICE technology appraisal guidance 261.

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 clinical audit tools (treatment of venous thromboembolism and investigations for cancer), standard 3d.

## *Definitions*

**Timing of review:** Healthcare professionals need to consider the summary of product characteristics to determine the timing of the review and duration of treatment required for the anticoagulant received.

**Proximal DVT:** DVT in the popliteal vein or above; proximal DVT in this context refers to 'above-knee DVT'.

## Quality statement 9: Follow-up for people with cancer

### *Quality statement*

People with active cancer who receive anticoagulation therapy have a review within 6 months of confirmed proximal deep vein thrombosis or pulmonary embolism to discuss the risks and benefits of continuing anticoagulation therapy<sup>[2],[3]</sup>.

### *Rationale*

As anticoagulation therapy carries potential risks such as bleeding there is a need to ensure the therapy remains beneficial. For people who have had a confirmed diagnosis of proximal deep vein thrombosis (DVT) or pulmonary embolism (PE) and who have cancer, a review should take place.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure people with cancer who have had a confirmed proximal DVT or PE and who receive anticoagulation are reviewed within 6 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Process:** The proportion of people with cancer who have had a confirmed proximal DVT or PE and receive anticoagulation therapy who have a review within 6 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Numerator** – the number of people in the denominator who receive a review within 6 months of diagnosis to discuss the risks and benefits of continuing anticoagulation therapy.

**Denominator** – the number of people who have received anticoagulation therapy following a confirmed diagnosis of proximal DVT or PE at least 6 months previously and who have a diagnosis of cancer.

### *What the quality statement means for each audience*

**Service providers** ensure systems are in place for people with cancer and who have had a confirmed proximal DVT or PE to be offered a review to discuss the risks and benefits of continuing anticoagulation therapy.

**Healthcare professionals** ensure people with cancer who have had a confirmed proximal DVT or PE are offered a review to discuss the risks and benefits of continuing anticoagulation therapy.

**Commissioners** ensure they commission services that offer people with cancer who have had a confirmed proximal DVT or PE a review to discuss the risks and benefits of continuing anticoagulation therapy.

People with cancer who have had deep vein thrombosis or pulmonary embolism and who are having treatment with an anticoagulant (a drug that that helps stop blood clots forming or enlarging and makes it less likely that a blood clot will come loose and travel to the lungs) are offered a review to discuss the risks and benefits of continuing treatment with an anticoagulant.

### *Source guidance*

[NICE guideline CG144](#) recommendation 1.2.2 (key priority for implementation).

[NICE technology appraisal guidance 261](#).

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within NICE guideline CG144 [clinical audit tools](#) (treatment of venous thromboembolism and investigations for cancer), standard 2c.

### *Definition*

**Timing of review:** Healthcare professionals need to consider the summary of product characteristics to determine the timing of the review and duration of treatment required for the anticoagulant received.

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<sup>[2]</sup> At the time of publication of NICE guideline CG144 (June 2012) some types of LMWH did not have a UK marketing authorisation for 6 months of treatment of DVT or PE in patients with cancer. Prescribers should consult the summary of product characteristics for the individual LMWH and make appropriate adjustments for severe renal impairment or established renal failure. Informed consent for off-label use should be obtained and documented.

<sup>[3]</sup> Although this use is common in UK clinical practice, at the time of publication of NICE guideline CG144 (June 2012) none of the anticoagulants had a UK marketing authorisation for the treatment of DVT or PE beyond 6 months in patients with cancer. Informed consent for off-label use should be obtained and documented.

## Using the quality standard

Other national guidance and current policy documents have been referenced during the development of this quality standard. It is important that the quality standard is considered by commissioners, providers, health and social care professionals, patients, service users and carers alongside the documents listed in [development sources](#).

NICE has produced a [support document to help commissioners and others](#) consider the commissioning implications and potential resource impact of this quality standard. Full [guides for commissioners](#) on venous thromboembolism that support the local implementation of NICE guidance are also available. [Information for the public](#) using the quality standard is also available on the NICE website.

The quality measures accompanying the quality statements aim to improve structures, processes and outcomes of care in areas identified as requiring quality improvement. They are not a new set of targets or mandatory indicators for performance management.

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, NICE recognises that this may not always be appropriate in practice when taking account of safety, choice and professional judgement and so desired levels of achievement should be defined locally.

We have illustrated where national indicators currently exist and measure the quality statement. National indicators include those developed by the Health and Social Care Information Centre through their [Indicators for Quality Improvement Programme](#). If national quality indicators do not exist, the quality measures should form the basis of audit criteria developed and used locally to improve the quality of care.

For further information, including guidance on using quality measures, please see [what makes up a NICE quality standard](#).

## *Diversity, equality and language*

During the development of this quality standard, equality issues have been considered. [Equality assessments](#) are available.

Good communication between health professionals and people with venous thromboembolic diseases is essential. Treatment and care, and the information given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English. People with venous thromboembolic diseases should have access to an interpreter or advocate if needed.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

## Development sources

### *Evidence sources*

The documents below contain recommendations from NICE guidance or other NICE-accredited sources that were used by the Topic Expert Group to develop the quality standard statements and measures.

[Venous thromboembolic diseases: diagnosis, management and thrombophilia testing \(2012\) NICE guideline CG144](#)

[Rivaroxaban for the treatment of deep vein thrombosis and prevention of recurrent deep vein thrombosis and pulmonary embolism \(2012\) NICE technology appraisal guidance 261](#)

### *Policy context*

It is important that the quality standard is considered alongside current policy documents, including:

Department of Health (2010) [Venous thromboembolism \(VTE\) risk assessment](#)

Department of Health (2009) [Venous thromboembolism prevention: a patient safety priority](#)

Department of Health (2008) [Using the commissioning for quality and innovation \(CQUIN\) payment framework](#) (see 'Guidance on national goals for 2011–12')

Department of Health (2007) [Report of the independent expert working group on the prevention of venous thromboembolism \(VTE\) in hospitalised patients](#)



## **Related NICE quality standards**

[Patient experience in adult NHS services \(2012\) NICE quality standard 15](#)

[Venous thromboembolism in adults: reducing the risk in hospital \(2010\) NICE quality standard 3](#)

## The Topic Expert Group and NICE project team

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## Update information

**April 2016:** Statement 4 on mechanical interventions (graduated compression stockings) for people with proximal deep vein thrombosis has been removed. This change has been made because the source guidance for this statement (NICE's guideline on [venous thromboembolic diseases: diagnosis, management and thrombophilia testing](#)) was updated in November 2015 and the advice on using compression stockings has changed.

## About this quality standard

NICE quality standards are a set of specific, concise statements and associated measures. They set out aspirational, but achievable, markers of high-quality, cost-effective patient care, covering the treatment and prevention of different diseases and conditions. Derived from the best available evidence such as NICE guidance and other evidence sources accredited by NHS Evidence, they are developed independently by NICE, in collaboration with NHS and social care professionals, their partners and service users, and address three dimensions of quality: clinical effectiveness, patient safety and patient experience.

The methods and processes for developing NICE quality standards are described in the [healthcare quality standards process guide](#).

This quality standard has been incorporated into the NICE pathway for [venous thromboembolism](#).

We have produced a [summary for patients and carers](#).

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## *Supporting organisations*

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or providing services are made aware of and encouraged to use the quality standard.

- [British Thoracic Society](#)
- [Lifeblood: The Thrombosis Charity](#)
- [Royal College of Nursing](#)
- [Royal Pharmaceutical Society](#)
- [Royal College of General Practitioners](#)