

# Venous thromboembolism in adults: reducing the risk in hospital

Quality standard

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[nice.org.uk/guidance/qs3](https://www.nice.org.uk/guidance/qs3)

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This standard is based on CG92.

This standard should be read in conjunction with QS72, QS16, QS22, QS29, QS35, QS37, QS46, QS93 and QS2.

## Introduction and overview

This quality standard covers the reduction in risk of venous thromboembolism (VTE) in adults admitted as hospital inpatients or formally admitted to a hospital bed for day-case procedures.

Pregnant women and women up to 6 weeks post partum who are admitted to hospital are also specifically covered by this quality standard. The prevention of VTE in pregnant women in primary and community settings is covered by the relevant Royal College of Obstetricians and Gynaecologists guidance ([Thrombosis and embolism during pregnancy and the puerperium, reducing the risk](#) [Green-top guidance 37], 2009).

### *Introduction*

VTE is an important cause of death in hospitalised patients, and treatment of non-fatal symptomatic VTE and related long-term morbidities is associated with a considerable cost to the health service. In 2004–5, there were around 64,000 finished consultant episodes (that is, periods of care under a consultant within an NHS trust) with a diagnosis of VTE. In 2005, VTE was registered as the underlying cause of death in more than 6500 patients, although this figure is likely to be an underestimate of the true incidence. The risk of developing VTE depends on the condition and/or procedure for which the patient is admitted and on any predisposing risk factors (such as age, obesity and concomitant conditions). This quality standard provides clinicians, managers and service users with a description of what a high-quality VTE prevention service should look like.

### *Overview*

The quality standard for VTE prevention applies to part of the care pathway for the prevention and management of VTE. Services across the care pathway should be commissioned from and coordinated across all relevant agencies. An integrated approach to provision of services is fundamental to the delivery of high-quality care to patients for preventing and managing VTE.

## List of statements

Statement 1. All patients, on admission, receive an assessment of VTE and bleeding risk using the clinical risk assessment criteria described in the national tool.

Statement 2. Patients/carers are offered verbal and written information on VTE prevention as part of the admission process.

Statement 3. Patients provided with anti-embolism stockings have them fitted and monitored in accordance with NICE guidance.

Statement 4. Patients are re-assessed within 24 hours of admission for risk of VTE and bleeding.

Statement 5. Patients assessed to be at risk of VTE are offered VTE prophylaxis in accordance with NICE guidance.

Statement 6. Patients/carers are offered verbal and written information on VTE prevention as part of the discharge process.

Statement 7. Patients are offered extended (post hospital) VTE prophylaxis in accordance with NICE guidance.

In addition, quality standards that should also be considered when commissioning and providing a high-quality VTE service are listed in [related NICE quality standards](#).

## Quality statement 1: VTE and bleeding risk assessment

### *Quality statement*

All patients, on admission, receive an assessment of VTE and bleeding risk using the clinical risk assessment criteria described in the [national tool](#).

### *Quality measure*

**Structure:** Evidence that patients receive a risk assessment for VTE and bleeding that uses the clinical risk assessment criteria described in the national tool.

**Process:** Proportion of patients assessed on admission for VTE and bleeding risk using the clinical risk assessment criteria described in the national tool.

**Numerator** – the number of patients assessed on admission for VTE and bleeding risk using the clinical risk assessment criteria described in the national tool.

**Denominator** – the number of inpatients and day cases admitted to hospital.

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

**Service providers** ensure patients, on admission, are assessed for risk of VTE and bleeding using the clinical risk assessment criteria described in the national tool.

**Healthcare professionals** assess all patients for risk of VTE and bleeding on admission using the clinical risk assessment criteria described in the national tool.

**Commissioners** ensure services assess all patients for risk of VTE and bleeding on admission using the clinical risk assessment criteria described in the national tool.

**Patients** can expect to have their risk of VTE and bleeding assessed when admitted to hospital using the clinical risk assessment criteria described in the national tool.

### *Definitions*

This statement applies to all patients admitted to hospital.

If the assessment for VTE and bleeding has been done at a pre-admission clinic, it should be reviewed for changes on admission using the clinical risk assessment criteria described in the national tool.

A day case is defined as a patient admitted electively during the course of a day with the intention of receiving care who does not require the use of a hospital bed overnight and who returns home as scheduled. If this original intention is not fulfilled and the patient stays overnight, such a patient should be counted as an ordinary admission.

The national tool is the Department of Health's Risk assessment for venous thromboembolism (March 2010).

### *Data source*

**Structure:** Local data collection.

**Process:** NHS England's VTE risk assessment statistics.



## Quality statement 2: Verbal and written information on VTE prevention

### *Quality statement*

Patients/carers are offered verbal and written information on VTE prevention as part of the admission process.

### *Quality measure*

**Structure:** Evidence of written patient/carer information on VTE prevention being available to patients/carers as part of the admission process.

**Process:** Proportion of patients/carers who are offered verbal and written information on VTE prevention as part of the admission process.

**Numerator** – the number of patients/carers who are offered verbal and written information on VTE prevention as part of the admission process.

**Denominator** – the number of inpatients and day cases admitted to hospital.

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

**Service providers** ensure verbal and written patient/carer information on VTE prevention is offered as part of the admission process.

**Healthcare professionals** offer all patients/carers verbal and written information on VTE prevention as part of the admission process.

**Commissioners** ensure services provide all patients/carers verbal and written information on VTE prevention as part of the admission process.

**Patients/carers** can expect to be offered verbal and written information on VTE prevention as part of the admission process to hospital.

### *Definitions*

Information should be provided on:

- the risks and possible consequences of VTE
- the importance of VTE prophylaxis and its possible side effects
- the correct use of VTE prophylaxis (for example, anti-embolism stockings, intermittent pneumatic compression devices or foot impulse devices)
- how patients can reduce their risk of VTE (such as keeping well hydrated and, if possible, exercising and becoming more mobile).

Information about NICE guidance written specifically for patients can be found in [Venous thromboembolism – reducing the risk: understanding NICE guidance](#) (NICE clinical guideline 92, 2010).

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection and [Admitted patient care commissioning data set](#). Contained within [NICE CG92 audit support](#), criterion 19.

## Quality statement 3: Anti-embolism stockings

### *Quality statement*

Patients provided with anti-embolism stockings have them fitted and monitored in accordance with [NICE guidance](#).

### *Quality measure*

#### **Structure:**

(a) Evidence of local arrangements to ensure patients provided with anti-embolism stockings have them fitted and monitored in accordance with NICE guidance.

(b) Evidence of local arrangements to ensure that staff are trained in the use and monitoring of anti-embolism stockings.

#### **Process:**

(a) Proportion of patients with anti-embolism stockings fitted and monitored in accordance with NICE guidance.

Numerator – the number of patients with anti-embolism stockings fitted and monitored in accordance with NICE guidance.

Denominator – the number of patients provided with anti-embolism stockings.

(b) Proportion of staff responsible for fitting and monitoring anti-embolism stockings who have received training on their use.

Numerator – the number of staff who have received training in the use and monitoring of anti-embolism stockings.

Denominator – the number of staff responsible for fitting and monitoring anti-embolism stockings.

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

**Service providers** ensure that services and protocols are in place to ensure that patients provided with anti-embolism stockings are fitted and monitored in accordance with NICE guidance by appropriately trained staff.

**Healthcare professionals** follow local protocols and are trained in fitting and monitoring patients with anti-embolism stockings in accordance with NICE guidance.

**Commissioners** ensure services are in place so that patients provided with anti-embolism stockings are fitted and monitored in accordance with NICE guidance.

**Patients** who require anti-embolism stockings can expect to have them fitted and monitored in accordance with NICE guidance by appropriately trained staff.

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection.

## Quality statement 4: Re-assessment

### *Quality statement*

Patients are re-assessed within 24 hours of admission for risk of VTE and bleeding.

### *Quality measure*

**Structure:** Evidence of local arrangements to ensure patients admitted for more than 24 hours are re-assessed for risk of VTE and bleeding within 24 hours of admission.

**Process:** Proportion of patients with a length of stay greater than 24 hours who are re-assessed within 24 hours of admission for risk of VTE and bleeding.

**Numerator** – the number of patients who are re-assessed for risk of VTE and bleeding within 24 hours of admission.

**Denominator** – the number of patients with a length of stay greater than 24 hours.

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

**Service providers** ensure all patients with a length of stay greater than 24 hours are re-assessed within 24 hours of admission for risk of VTE and bleeding.

**Healthcare professionals** re-assess patients within 24 hours of admission for risk of VTE and bleeding.

**Commissioners** ensure services re-assess patients' risk of VTE and bleeding within 24 hours of admission.

**Patients** can expect to have their risk of VTE and bleeding re-assessed within 24 hours of admission.

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection, and Admitted patient care commissioning data set. Contained with NICE CG92 audit support, criterion 3.

## Quality statement 5: VTE prophylaxis

### *Quality statement*

Patients assessed to be at risk of VTE are offered VTE prophylaxis in accordance with [NICE guidance](#).

### *Quality measure*

**Structure:** Evidence of local arrangements ensuring that the provision of VTE prophylaxis is in accordance with NICE guidance.

**Process:** Proportion of patients assessed to be at increased risk of VTE who are offered VTE prophylaxis in accordance with NICE guidance.

**Numerator** – the number of patients who are offered thromboprophylaxis in accordance with NICE guidance.

**Denominator** – the number of patients assessed to be at increased risk of VTE.

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

**Service providers** ensure VTE prophylaxis is offered in accordance with NICE guidance having regard for the complications of thromboprophylaxis.

**Healthcare professionals** offer VTE prophylaxis to all patients assessed as being at risk of VTE in accordance with NICE guidance having regard for the complications of thromboprophylaxis.

**Commissioners** ensure services comply with NICE guidance on the provision of VTE prophylaxis having regard for the complications of thromboprophylaxis.

**Patients** assessed as being at risk of VTE can expect to be offered VTE prophylaxis in accordance with NICE guidance having regard for the complications of thromboprophylaxis.

### *Definitions*

This statement applies to all patients admitted to hospital.

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection. Contained within the [All-Party Parliamentary Thrombosis Group Annual Review report](#).



## Quality statement 6: Information for patients and carers

### *Quality statement*

Patients/carers are offered verbal and written information on VTE prevention as part of the discharge process.

### *Quality measure*

**Structure:** Evidence of written patient/carer information on VTE prevention being available to patients as part of the discharge process.

**Process:** Proportion of patients/carers who receive verbal and written information on VTE prevention as part of the discharge process.

**Numerator** – the number of patients/carers who receive verbal and written information on VTE prevention as part of the discharge process.

**Denominator** – the number of inpatient and day case discharges.

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

**Service providers** ensure verbal and written patient/carer information on VTE prevention is available as part of the discharge process.

**Healthcare professionals** offer all patients/carers verbal and written information on VTE prevention as part of the discharge process.

**Commissioners** ensure services provide all patients/carers verbal and written information on VTE prevention as part of the discharge process.

**Patients/carers** can expect to be offered verbal and written information on VTE prevention as part of their discharge plan.

### *Definitions*

Information should include:

- the signs and symptoms of deep vein thrombosis and pulmonary embolism
- the correct and recommended duration of use of VTE prophylaxis at home (if discharged with prophylaxis)
- the importance of using VTE prophylaxis correctly and continuing treatment for the recommended duration (if discharged with prophylaxis)
- the signs and symptoms of adverse events related to VTE prophylaxis (if discharged with prophylaxis)
- the importance of seeking help and who to contact if they have any problems using the VTE prophylaxis
- the importance of seeking medical help if deep vein thrombosis, pulmonary embolism or other adverse events are suspected.

Information about NICE guidance written specifically for patients can be found in [Venous thromboembolism – reducing the risk: understanding NICE guidance \(2010\)](#).

### *Data source*

**Structure:** Local data collection.

**Process:** Local data collection and [Admitted patient care commissioning data set](#). Contained within [NICE CG92 audit support](#), criterion 20.

## Quality statement 7: Extended VTE prophylaxis

### *Quality statement*

Patients are offered extended (post hospital) VTE prophylaxis in accordance with [NICE guidance](#).

### *Quality measure*

**Structure:** Evidence of local arrangements to comply with NICE guidance on prescription of extended (post hospital) VTE prophylaxis.

**Process:** Proportion of patients offered extended (post hospital) VTE prophylaxis in accordance with NICE guidance.

**Numerator:** The number of patients offered VTE prophylaxis in accordance with NICE guidance.

**Denominator:** The number of patients eligible for extended (post hospital) VTE prophylaxis.

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

**Service providers** ensure patients are offered extended (post hospital) VTE prophylaxis in accordance with NICE guidance.

**Healthcare professionals** offer extended (post hospital) VTE prophylaxis to patients in accordance with NICE guidance.

**Commissioners** ensure services comply with NICE guidance on the provision of extended (post hospital) VTE prophylaxis.

**Patients** can expect to be offered extended (post hospital) VTE prophylaxis in accordance with NICE guidance.

### *Definitions*

This statement applies to patients who need extended (post hospital) prophylaxis to continue after the end of their hospital stay.

## *Data source*

**Structure:** Local data collection.

**Process:** Local data collection.

## Using the quality standard

It is important that the quality standard is considered alongside current policy and guidance documents listed in the development sources section.

### *Commissioning support and information for patients*

NICE has produced a [support document](#) to help commissioners and others consider the commissioning implications and potential resource impact of this quality standard. The [slide set](#) and [audit support](#) for [Venous thromboembolism – reducing the risk](#) (NICE clinical guideline 92) are also relevant to this quality standard. [Information for patients](#) using the quality standard is available on the NICE website.

### *Quality measures and national indicators*

The quality measures accompanying the quality statements aim to improve the structure, process and outcomes of healthcare. 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, and so aspirational achievement levels are likely to be 100% (or 0% if the quality statement states that something should not be done). However, it is recognised that this may not always be appropriate in practice taking account of patient safety, patient choice and clinical judgement and therefore desired levels of achievement should be defined locally.

We have indicated 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](#). For statements where national quality indicators do not exist, the quality measures should form the basis for audit criteria developed and used locally to improve the quality of healthcare.

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 were considered.

Good communication between health and social care professionals and people with dementia 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. Patients should have access to an interpreter or advocate if needed.

## Development sources

### *Evidence sources*

The documents below contain clinical guideline recommendations or other recommendations that were used by the TEG to develop the quality standard statements and measures.

[Venous thromboembolism – reducing the risk of venous thromboembolism \(deep vein thrombosis and pulmonary embolism\) in patients admitted to hospital](#). NICE clinical guideline 92 (2010; NHS Evidence accredited)

[Venous thromboembolism: reducing the risk of venous thromboembolism \(deep vein thrombosis and pulmonary embolism\) within in-patients undergoing surgery](#). NICE clinical guideline 46 (2007).

NICE clinical guideline 46 focuses on the management of surgical patients and is both incorporated into and partially updated by NICE clinical guideline 92. The timelines for development of this quality standard were adjusted due to changes in the development schedule of clinical guideline 92.

Department of Health (updated March 2010 to comply with NICE clinical guideline 92) [Risk assessment for venous thromboembolism](#).

### *Policy context*

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

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

## Related NICE quality standards

Patient experience in adult NHS services. NICE quality standard 15 (2012).



## The Topic Expert Group and NICE project team

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## Update information

### Minor changes since publication

**November 2016:** Data sources updated for statements 1 and 5.

## 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 [venous thromboembolism pathway](#).

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.

- [Royal College of Psychiatrists](#)
- [Royal College of Nursing](#)
- [Royal College of Anaesthetists](#)
- [Vascular Society](#)
- [British Orthopaedic Association](#)
- [Royal College of Physicians](#)
- [Lifeblood: The Thrombosis Charity](#)
- [Society for Acute Medicine \(SAM\)](#)
- [Intensive Care Society](#)