

# Venous thromboembolism in adults: reducing the risk in hospital

Quality standard

Published: 29 June 2010

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

# Contents

|   |    |
|---|----|
| Introduction and overview .....                             | 5  |
| Introduction .....  | 5  |
| Overview .....  | 5  |
| List of statements .....                                    | 6  |
| Quality statement 1: VTE and bleeding risk assessment ..... | 7  |
| Quality statement .....                                     | 7  |
| Quality measure .....                                       | 7  |
| What the quality statement means for each audience .....    | 7  |
| Definitions .....   | 8  |
| Data source .....   | 8  |
| Quality statement 2: Information about VTE prevention ..... | 9  |
| Quality statement .....                                     | 9  |
| Quality measure .....                                       | 9  |
| What the quality statement means for each audience .....    | 9  |
| Definitions .....   | 10 |
| Data source .....   | 10 |
| Quality statement 3: Anti-embolism stockings .....          | 11 |
| Quality statement .....                                     | 11 |
| Quality measure .....                                       | 11 |
| What the quality statement means for each audience .....    | 12 |
| Data source .....   | 12 |
| Quality statement 4: Reassessment .....                     | 13 |
| Quality statement .....                                     | 13 |
| Quality measure .....                                       | 13 |
| What the quality statement means for each audience .....    | 13 |
| Data source .....   | 14 |

|  |    |
|--|----|
| Quality statement 5: VTE prophylaxis.....                      | 15 |
| Quality statement.....   | 15 |
| Quality measure .....  | 15 |
| What the quality statement means for each audience .....       | 15 |
| Definitions.....   | 16 |
| Data source .....  | 16 |
| Quality statement 6: Information for patients and carers ..... | 17 |
| Quality statement.....   | 17 |
| Quality measure .....  | 17 |
| What the quality statement means for each audience .....       | 17 |
| Definitions.....   | 18 |
| Data source .....  | 18 |
| Quality statement 7: Extended VTE prophylaxis .....            | 19 |
| Quality statement.....   | 19 |
| Quality measure .....  | 19 |
| What the quality statement means for each audience .....       | 19 |
| Definitions.....   | 20 |
| Data source .....  | 20 |
| Using the quality standard.....                                | 21 |
| Quality measures and national indicators .....                 | 21 |
| Diversity, equality and language .....                         | 21 |
| Development sources.....                                       | 22 |
| Evidence sources.....  | 22 |
| Policy context .....   | 22 |
| Related NICE quality standards .....                           | 23 |
| The Topic Expert Group and NICE project team .....             | 24 |
| Topic Expert Group.....  | 24 |
| NICE project team .....  | 25 |

|                                  |    |
|----------------------------------|----|
| Update information.....          | 26 |
| About this quality standard..... | 27 |

This standard is replaced by QS201.

This standard is based on NG89.

This standard should be read in conjunction with QS16, QS22, QS29, QS35, QS37, QS46, QS93, QS2 and QS15.

## 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 6,500 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 Medical, surgical or trauma patients have their risk of VTE and bleeding assessed using a national tool as soon as possible after admission to hospital.

Statement 2 Patients who are at increased risk of VTE, are given information about VTE prevention on admission to hospital.

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

Statement 4 Medical, surgical or trauma patients have their risk of VTE reassessed at consultant review or if their clinical condition changes.

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

Medical, surgical or trauma patients have their risk of VTE and bleeding assessed using a national tool as soon as possible after admission to hospital.

## Quality measure

### Structure

Evidence that medical, surgical and trauma patients have their risk of VTE and bleeding assessed using a national tool as soon as possible after admission to hospital.

### Process

Proportion of medical, surgical and trauma patients who have their risk of VTE and bleeding assessed using a national tool as soon as possible after admission to hospital.

Numerator – the number in the denominator who have their risk of VTE and bleeding assessed using a national tool as soon as possible after admission to hospital.

Denominator – the number of medical, surgical or trauma patients admitted to hospital.

## What the quality statement means for each audience

**Service providers** ensure that systems are in place for medical, surgical and trauma patients to be assessed for risk of VTE and bleeding using a national tool as soon as possible after admission.

**Healthcare professionals** assess medical, surgical and trauma patients for risk of VTE and bleeding using a national tool as soon as possible after admission.

**Commissioners** ensure services assess medical, surgical and trauma patients for risk of VTE and bleeding using a national tool as soon as possible after admission.

Medical, surgical and trauma patients have their risk of VTE and bleeding assessed using a national tool as soon as possible after they are admitted to hospital.

## Definitions

This statement applies to medical, surgical and trauma 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 a national tool (published by a national UK body, professional network or peer-reviewed journal). A tool commonly used to develop a treatment plan for medical patients is the [Department of Health and Social Care VTE risk assessment tool](#).

## Data source

### Structure

Local data collection.

### Process

[NHS Improvement's VTE risk assessment statistics](#).



## Quality statement 2: Information about VTE prevention

### Quality statement

Patients who are at increased risk of VTE, are given information about VTE prevention on admission to hospital.

### Quality measure

#### Structure

Evidence of patient information on VTE prevention being available to patients on admission to hospital.

#### Process

Proportion of patients who are at increased risk of VTE who are given information about VTE prevention on admission to hospital.

Numerator – the number in the denominator who are given information about VTE prevention on admission to hospital.

Denominator – the number of patients who are at increased risk of VTE.

### What the quality statement means for each audience

**Service providers** ensure that systems are in place for patient information on VTE prevention to be given on admission to hospital.

**Healthcare professionals** give information about VTE prevention to patients at increased risk of VTE on admission to hospital.

**Commissioners** ensure services provide information about VTE prevention to patients at increased risk of VTE on admission to hospital.

Patients are given information about VTE prevention on admission to hospital if they are at risk of VTE.

## Definitions

Verbal and written 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).

## Data source

### Structure

Local data collection.

### Process

Local data collection.

## 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: Reassessment

### Quality statement

Medical, surgical and trauma patients have their risk of VTE reassessed at consultant review or if their clinical condition changes.

### Quality measure

#### Structure

Evidence of local arrangements to ensure medical, surgical or trauma patients have their risk of VTE reassessed at consultant review or if their clinical condition changes.

#### Process

Proportion of medical, surgical and trauma patients who have their risk of VTE reassessed at consultant review or if their clinical condition changes.

Numerator – the number in the denominator who have their risk of VTE reassessed at consultant review or if their clinical condition changes.

Denominator – the number of medical, surgical and trauma patients.

### What the quality statement means for each audience

**Service providers** ensure systems are in place for medical, surgical and trauma patients to have their risk of VTE reassessed at consultant review or if their clinical condition changes.

**Healthcare professionals** reassess the VTE risk of medical, surgical and trauma patients at consultant review or if clinical condition changes.

**Commissioners** ensure services reassess the VTE risk of medical, surgical and trauma patients at consultant review or if their clinical condition changes.

**Medical, surgical and trauma patients** have their risk of VTE and bleeding reassessed when they have a review with their specialist or if their condition changes.

## Data source

### Structure

Local data collection.

### Process

Local data collection.

## 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.



# 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.

## Data source

### Structure

Local data collection.

### Process

Local data collection.

## 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.

## 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.

For further information, including guidance on using quality measures, see [NICE's how to use quality standards](#).

## 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

- [Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism. NICE guideline NG89 \(2018, updated 2019\)](#)
- [Risk assessment for venous thromboembolism. Department of Health \(2008, updated 2010\)](#)

### Policy context

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

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

## Related NICE quality standards

- [Venous thromboembolism in adults: diagnosis and management. NICE quality standard 29 \(2013, updated 2016\)](#)
- [Patient experience in adult NHS services. NICE quality standard 15 \(2012, updated 2019\)](#)

# The Topic Expert Group and NICE project team

## Topic Expert Group

**Dr Steven Barden**

Emergency Care Consultant, College of Emergency Medicine

**Mrs Kim Carter**

VTE Nurse Specialist, Portsmouth Hospitals NHS Trust

**Dr Nicholas Chalmers**

Consultant Vascular Radiologist, Central Manchester NHS Foundation Trust

**Mr Steve Finney**

Consultant Podiatric Surgeon, Derbyshire County PCT and Kirklees County PCT

**Dr Jim Gardner**

Medical Director and Professional Executive Chair, NHS North Lancashire

**Dr Nandan Gautam**

Consultant in Medicine and Critical Care, University Hospital Birmingham

**Professor Beverley Hunt**

Professor of Thrombosis and Haemostasis, King's College London and Consultant, Departments of Haematology, Pathology & Rheumatology Lead in Blood Sciences, Guy's & St Thomas' NHS Foundation Trust

**Mr Donald McBride**

Consultant Orthopaedic Surgeon, University Hospital North Staffordshire

**Ms Sarah McDiarmid**

NHS Information Centre representative

**Mr Carlos Sharpin**

Senior Information Scientist and Research Fellow, National Clinical Guidelines Centre



**Professor Gerard Stansby (Chair)**

Professor of Vascular Surgery, Newcastle Hospitals NHS Foundation Trust

**Dr Peter Walton**

Patient/lay member

## **NICE project team**

**Val Moore**

Director

**Nicola Bent**

Associate Director

**Tim Stokes**

Consultant Clinical Adviser

**Richard Diaz**

Lead Analyst

## Update information

**March 2018:** Changes have been made to align this quality standard with the updated [NICE guideline on venous thromboembolism in over 16s](#). Statement 1 on VTE and bleeding assessment, statement 2 on information about VTE prevention and statement 4 on reassessment have been updated.

### Minor changes since publication

**January 2021:** The definition for statement 1 has been updated to reflect changes to recommendation 1.1.2 in [NICE's guideline on venous thromboembolism in over 16s](#).

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

## About this quality standard

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. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

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

Information about [how NICE quality standards are developed](#) is available from the NICE website.

See our [webpage on quality standard advisory committees](#) for details of standing committee members who advised on this quality standard. Information about the topic experts invited to join the standing members is available from the [webpage for this quality standard](#).

This quality standard has been included in the [NICE Pathway on venous thromboembolism](#), which brings together everything we have said on a topic in an interactive flowchart.

NICE has produced a [quality standard service improvement template](#) to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

ISBN: 978-1-4731-2199-7

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