1 Guideline title

Reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital

1.1 Short title

Venous thromboembolism – prevention

2 Background

a) The National Institute for Health and Clinical Excellence (‘NICE’ or ‘the Institute’) has commissioned the National Collaborating Centre for Acute Care to develop a clinical guideline on reducing the risk of venous thromboembolism (VTE) in patients admitted to hospital, for use in the NHS in England and Wales. This follows referral of the topic by the Department of Health (see appendix). The guideline will provide recommendations for good practice that are based on the best available evidence of clinical and cost effectiveness.

b) The Institute’s clinical guidelines will support the implementation of National Service Frameworks (NSFs) in those aspects of care where a Framework has been published. The statements in each NSF reflect the evidence that was used at the time the Framework was prepared. The clinical guidelines and technology appraisals published by the Institute after an NSF has been issued will have the effect of updating the Framework.

c) NICE clinical guidelines support the role of healthcare professionals in providing care in partnership with patients, taking account of their individual needs and preferences, and ensuring that patients (and
their carers and families, where appropriate) can make informed decisions about their care and treatment.

3 Clinical need for the guideline

a) VTE is a spectrum of disease, ranging from asymptomatic calf vein thrombosis to symptomatic deep vein thrombosis (DVT), which may lead to potentially fatal pulmonary embolism (PE). Symptomatic VTE is common in hospital patients and brings a considerable burden of morbidity. Non-fatal VTE may produce long-term morbidity including chronic venous insufficiency, which may cause venous ulceration and development of a post-thrombotic limb (chronic pain, swelling and skin changes in the affected limb following a DVT). The incidence and prevalence of asymptomatic VTE in the community outside hospital is unknown.

b) 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.

c) In 2004–05, 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 underestimation of the true incidence.

d) The incidence of VTE in different groups of hospital patients varies greatly in the literature. The risk of PE in the absence of prophylaxis has been estimated at 5% following surgery in the highest risk groups, and around 1% in acutely ill medical patients.

e) The risk of developing VTE will depend on the condition for which the patient is admitted and on any predisposing risk factors (such as age, obesity and concomitant conditions). Both of these types of risk will be assessed within the guideline.
f) Thromboprophylaxis reduces the risk of developing VTE, and a number of different interventions have been investigated. The prophylactic methods to be reviewed in this guideline are detailed in section 4.3c. The guideline will evaluate the clinical and cost effectiveness of, and risks associated with, each method.

g) There is no current worldwide consensus on which patients should receive thromboprophylaxis. The inconsistent use of preventative measures for VTE has been widely reported. A recent UK survey suggested that 71% of patients assessed to be at medium or high risk of developing DVT did not receive any form of pharmacological or mechanical thromboprophylaxis.

h) The guideline will incorporate the published NICE guideline ‘Venous thromboembolism: reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in inpatients undergoing surgery’ (NICE clinical guideline 46). Because the 2-year review for NICE clinical guideline 46 is due during the development period for the new guideline, the review will be completed according to the latest evidence before the guideline is incorporated. A single piece of guidance will then be produced for all patients.

4 The guideline

a) The guideline development process is described in detail in two publications that are available from the NICE website (see ‘Further information’). ‘The guideline development process: an overview for stakeholders, the public and the NHS’ describes how organisations can become involved in the development of a guideline. ‘The guidelines manual’ provides advice on the technical aspects of guideline development.

b) This document is the scope. It defines exactly what this guideline will (and will not) examine, and what the guideline developers will
consider. The scope is based on the referral from the Department of Health (see appendix).

c) The areas that will be addressed by the guideline are described in the following sections.

4.1 **Population**

4.1.1 **Groups that will be covered**

a) Adults (18 years and older) admitted to hospital as inpatients or formally admitted to a hospital bed for day case procedures, including:

- surgical inpatients
- inpatients with acute medical illness (for example, myocardial infarction, stroke, spinal cord injury, severe infection or exacerbation of chronic obstructive pulmonary disease)
- trauma inpatients
- patients admitted to intensive care units
- cancer inpatients
- people undergoing long-term rehabilitation in hospital
- patients admitted to a hospital bed for day case medical or surgical procedures.

b) Within this population, pregnant women admitted to hospital have been identified as a group requiring special consideration.

c) During the review of the evidence, any additional groups that are shown to have particular clinical needs will be given special consideration.

4.1.2 **Groups that will not be covered**

a) People younger than 18 years.

b) People attending hospital as outpatients.
c) People presenting to emergency departments without admission.

d) Elderly or immobile people cared for at home, or in external residential accommodation, unless admitted to hospital.

e) Patients admitted to hospital with a diagnosis of, or suspected diagnosis of, DVT or PE.

4.2 Healthcare setting

a) Secondary and tertiary care.

b) Primary care after hospital discharge.

4.3 Clinical management

a) Risk factors associated with development of VTE in the groups listed in section 4.1.1 will be examined. The likelihood of a patient developing VTE will be assessed according to the condition for which the patient is admitted and any predisposing risk factors they may have.

b) The clinical and cost effectiveness, and possible adverse effects, of interventions to reduce the risk of VTE in patients admitted to hospital as outlined in section 4.1.1 will be evaluated.

c) Interventions that will be considered include:

- mechanical:
  - graduated elastic compression stockings
  - intermittent pneumatic compression devices, such as foot compression and calf compression
  - vena caval filters
- drugs/pharmacological:
  - low-dose unfractionated heparin
  - low molecular weight heparin
  - synthetic pentasaccharides, such as fondaparinux
  - oral anticoagulants, such as warfarin
- antiplatelet therapy, such as aspirin

- nursing care/physiotherapy:
  - early mobilisation
  - foot elevation
  - hydration

- recent advances, for example, drugs licensed during the course of guideline development.

Note that guideline recommendations will normally fall within licensed indications; exceptionally, and only where clearly supported by evidence, use outside a licensed indication may be recommended. The guideline will assume that prescribers will use a drug’s summary of product characteristics to inform their decisions for individual patients.

d) The guideline development group will consider making recommendations on the principal complementary and alternative interventions or approaches to care relevant to the guideline topic.

e) The guideline development group will take reasonable steps to identify ineffective interventions and approaches to care. If robust and credible recommendations for re-positioning the intervention for optimal use, or changing the approach to care to make more efficient use of resources, can be made, they will be clearly stated. If the resources released are substantial, consideration will be given to listing such recommendations in the ‘Key priorities for implementation’ section of the guideline.

4.4 Status

4.4.1 Scope

This is the final scope.

Associated NICE guidance:
Published


Under development

- Stroke: the diagnosis and acute management of stroke and transient ischaemic attacks. NICE clinical guideline (publication expected July 2008.)

4.4.2 Guideline

The development of the guideline recommendations will begin in September 2007.

5 Further information

Information on the guideline development process is provided in:

- ‘The guideline development process: an overview for stakeholders, the public and the NHS’
- ‘The guidelines manual’.

These booklets are available as PDF files from the NICE website (www.nice.org.uk/guidelinesmanual). Information on the progress of the guideline will also be available from the website.
Appendix: Referral from the Department of Health

The Department of Health asked the Institute:

To prepare a clinical guideline on the prevention of VTE in all patients admitted to hospital.