



# The College of Emergency Medicine

Patron: HRH The Princess Royal

Churchill House  
35 Red Lion Square  
London WC1R 4SG

Tel +44 (0)207 404 1999  
Fax +44 (0)207 067 1267  
[www.collemergencymed.ac.uk](http://www.collemergencymed.ac.uk)

## CLINICAL EFFECTIVENESS COMMITTEE

### NICE Guidance:

# Venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital<sup>1</sup>

#### Reason for development

Effective dissemination of a NICE guideline with relevance to emergency medicine.

#### Introduction

In 2010 NICE published guidance on preventing venous thromboembolism in patients admitted to hospital. This document is to aid implementation of the guideline. The validity of the guideline is limited in the Emergency Department setting because:

1. Emergency Medicine was not represented in the guideline development group
2. The guideline does not cover people presenting to emergency departments who are not admitted to hospital
3. The guideline does not cover patients admitted to hospital with a diagnosis of, or suspected diagnosis of, deep vein thrombosis (DVT) or pulmonary embolism (PE).

#### NICE recommendations of relevance to Emergency Medicine<sup>1,2</sup>

- All patients should be assessed on admission to hospital to identify those who are at increased risk of venous thromboembolism (VTE)
- Regard all medical patients presenting as being at increased risk of VTE if one of the following applies:
  - Expected to be bed bound, unable to walk unaided, or spend a substantial part of their day in bed or in a chair for three days or more
  - Expected to have ongoing reduced mobility relative to their normal state and have one or more risk factors for VTE (e.g. active cancer or cancer treatment, age > 60years, dehydration, known thrombophilia, body mass index over 30 kg/m<sup>2</sup>; see Appendix 1)
- Where medical patients are offered pharmacological VTE prophylaxis one of the following agents should be chosen:
  - fondaparinaux sodium
  - low molecular weight heparin (LMWH)

*Excellence in Emergency Care*

- unfractionated heparin (UFH) (for patients with renal failure)
- Regard surgical patients and patients presenting with trauma as being at increased risk of VTE if they meet one of the following criteria:
  - Surgical procedure with a total anaesthetic and surgical time of more than 90 minutes, or 60 minutes if the surgery involves the pelvis or lower limb
  - Acute surgical admission with inflammatory or intra-abdominal condition
  - Expected substantial reduction in mobility
  - Presence of one or more risk factors for VTE (e.g. active cancer or cancer treatment, age > 60years, dehydration, known thrombophilia, body mass index over 30 kg/m<sup>2</sup>; see Appendix 1)
- All patients should be assessed for risk of bleeding before offering pharmacological VTE prophylaxis
- Prophylactic drugs for VTE should not be offered to patients with risk factors for bleeding (e.g. active bleeding, acquired bleeding disorders such as acute liver failure; see Appendix 2) unless the risk of VTE outweighs the risk of bleeding
- Pharmacological VTE prophylaxis should be started as soon as possible after risk assessment has been completed
- Pharmacological VTE prophylaxis should be continued until the patient is no longer at increased risk of VTE
- Before starting VTE prophylaxis, patients should be offered verbal and written information concerning:
  - The treatment and care they should be offered
  - The importance of VTE prophylaxis and its possible side effects
  - The correct use of VTE prophylaxis (for example, anti-embolic stockings, foot impulse or pneumatic compression devices)
  - How patients can reduce their risk of VTE (such as keeping well hydrated and, if possible, exercising and becoming more mobile).

### **Additional CEM recommendations**

The College of Emergency Medicine (CEM) recognises the importance of preventing VTE in patients admitted to hospital. However given the inpatient focus of this guideline, and the operational pressures on Emergency Departments, CEM recommends that patient assessment and prophylaxis is undertaken by the admitting hospital team, rather than Emergency Department staff.

Where a patient is admitted to hospital under the care of a consultant in Emergency Medicine (for example to an Observation Ward or Clinical Decision Unit, CDU) then patient assessment and prophylaxis, according to NICE recommendations, should be undertaken by the admitting ED team.

## References

1. National Institute of Health and Clinical Excellence. Venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital. 2010. <http://guidance.nice.org.uk/CG92>
2. Hill J, Treasure T, on behalf of the National Clinical Guideline Centre for Acute and Chronic Conditions. Reducing the risk of venous thromboembolism in patients admitted to hospital: summary of NICE guidance. BMJ 2010;340:c95
3. National Institute of Health and Clinical Excellence. Stroke: diagnosis and management of acute stroke and transient ischaemic attack (TIA). 2008. [www.nice.org.uk/nicemedia/pdf/CG68NICEGuideline.pdf](http://www.nice.org.uk/nicemedia/pdf/CG68NICEGuideline.pdf)

## Contributing Authors

Prepared for the Clinical Effectiveness Committee of the College of Emergency Medicine by Abel Wakai and Adrian Boyle (April 2010)

## Review

For review in April 2012, or sooner if important information becomes available.

## Disclaimers

The College recognises that patients, their situations, Emergency Departments and staff all vary. This guidance cannot cover all possible scenarios. The ultimate responsibility for the interpretation and application of this guidance, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

## **Appendix 1: Risk factors for VTE**

- Active cancer or cancer treatment
- Age over 60 years
- Admission to critical care
- Dehydration
- Known thrombophilia
- Obesity (body mass index over 30 kg/m<sup>2</sup>)
- One or more significant medical comorbidities (for example, heart disease, metabolic, endocrine, or respiratory pathologies; acute infectious diseases; inflammatory conditions)
- Personal history or first degree relative with a history of VTE
- Use of hormone replacement therapy
- Use of oestrogen containing contraceptives
- Varicose veins with phlebitis.

## Appendix 2: Risk factors for bleeding

- Active bleeding
- Acquired bleeding disorders (such as acute liver failure)
- Concurrent use of anticoagulants known to increase the risk of bleeding (such as warfarin with international normalised ratio (INR) higher than 2)
- Lumbar puncture, epidural anaesthesia, or spinal anaesthesia expected within the next 12 hours
- Lumbar puncture, epidural anaesthesia, or spinal anaesthesia within the previous 4 hours
- Acute stroke, in line with NICE clinical guideline 68<sup>3</sup>
- Thrombocytopenia (platelets  $<75 \times 10^9/l$ )
- Uncontrolled hypertension ( $\geq 230/120$  mm Hg)
- Untreated inherited bleeding disorders (such as haemophilia and von Willebrand's disease).