Implementing the National VTE Prevention Programme in England

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VTE Exemplar Centres
Providing leadership in thrombosis care
The National VTE Prevention Programme in England

• Systematic approach:
  – Comprehensive guidelines for VTE prevention
  – Uniform VTE risk assessment tool

• VTE in Quality Framework:
  – Quality Standards for VTE prevention
  – Commissioning for Quality
  – NHS Litigation Authority Risk Management Standard

• Leadership:
  – ‘Four Professions’ leadership
  – National VTE exemplar centre network
RISK ASSESSMENT FOR VENOUS THROMBOEMBOLISM (VTE)

All patients should be risk assessed on admission to hospital. Patients should be reassessed within 24 hours of admission and whenever the clinical situation changes.

STEP ONE
Assess all patients admitted to hospital for level of mobility (tick one box). All surgical patients, and all medical patients with significantly reduced mobility, should be considered for further risk assessment.

STEP TWO
Review the patient-related factors shown on the assessment sheet against thrombosis risk, ticking each box that applies (more than one box can be ticked).

Any tick for thrombosis risk should prompt thromboprophylaxis according to NICE guidance.

The risk factors identified are not exhaustive. Clinicians may consider additional risks in individual patients and offer thromboprophylaxis as appropriate.

STEP THREE
Review the patient-related factors shown against bleeding risk and tick each box that applies (more than one box can be ticked).

Any tick should prompt clinical staff to consider if bleeding risk is sufficient to preclude pharmacological intervention.

Guidance on thromboprophylaxis is available at:

http://www.nice.org.uk/guidance/CG92

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Care pathway

Patient admitted to hospital
  Assess VTE risk.
  Assess bleeding risk.
  Balance risks of VTE and bleeding.
  Offer VTE prophylaxis if appropriate. Do not offer pharmacological VTE prophylaxis if patient has any risk factor for bleeding and risk of bleeding outweighs risk of VTE.
  Reassess risks of VTE and bleeding within 24 hours of admission and whenever clinical situation changes.

Assessing risks of VTE and bleeding

Patients who are at risk of VTE

Medical patients
- If mobility is significantly reduced for >3 days or
- If expected to have ongoing reduced mobility relative to normal state plus any VTE risk factor.
- Surgery:
  - Total anaesthetic duration 4 hours or more and total anaesthetic duration > 60 minutes
  - If surgery involves pelvic or lower limb and total anaesthetic duration > 60 minutes
  - If acute surgical admission with inflammatory or intra-abdominal condition or
  - If expected to have significant reduction in mobility or
  - If any VTE risk factor present.
- VTE risk factors:
  - Active cancer or cancer treatment
  - Age > 60 years
  - Critical care admission
  - Dehydration
  - Known thrombophilia
  - Obesity (BMI > 30 kg/m²)
  - One or more significant medical comorbidities (e.g., 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 HRT
  - Use of estrogen-containing contraceptive therapy
  - Varicose veins with phlebitis

For women who are pregnant or have given birth within the previous 6 weeks see page 23.

Surgical patients and patients with trauma

Patients who are at risk of bleeding

All patients who have any of the following:
- Active bleeding
- Acquired bleeding disorders (such as acute liver failure)
- Concomitant use of anticoagulants known to increase the risk of bleeding (such as warfarin with INR > 2)
- Lumbar puncture/epidural/spinal anaesthesia within the previous 4 hours or expected within the next 12 hours
- Acute stroke
- Thrombocytopenia (platelets < 75 x 10⁹/µL)
- Uncontrolled systolic hypertension (≥ 230/120 mmHg)
- Untreated inherited bleeding disorders (such as haemophilia or von Willebrand’s disease)

Medical patients

General medical patients
- Does risk of VTE outweigh risk of bleeding?
- If pharmacological VTE prophylaxis contraindicated?
- Has patient been admitted for stroke?
- Offer pharmacological VTE prophylaxis with any one of:
  - Fondaparinux
  - LMWH
  - UFH
- Continue until patient no longer at increased risk of VTE

Consider offering mechanical VTE prophylaxis with any one of:
- Anti-embolism stockings (thigh or knee length)
- Hose impulse devices
- Intermittent pneumatic compression devices (thigh or knee length)

Reassess risks of bleeding and VTE within 24 hours of admission and whenever clinical situation changes.
Commissioning for Quality & Innovation (CQUIN) 2010/2011

- **National CQUIN goal:** reduce avoidable death, disability and chronic ill health from VTE

- **Quality indicator:** > 90% of all adult inpatients risk assessed for VTE on admission to hospital, using the national tool

- **NHS Standard Contract for Acute Services:** Clinical audit of appropriate prophylaxis and root cause analysis of hospital-associated thrombosis
% adult admissions risk assessed for VTE
CQUIN data
VTE PREVENTION PATHWAY

1. Identify at-risk patient
2. Counsel at-risk patient
3. Prescribe thromboprophylaxis

NICE Quality Standard
NICE VTE Quality Standard

1. VTE risk assessment on admission

2. Verbal/written info on VTE prevention on admission

3. Anti-embolism stockings

4. VTE/bleeding risk reassessed within 24 h of admission

5. VTE prophylaxis administered according to risk

6. Verbal/written info on VTE prevention on discharge

7. Extended thromboprophylaxis
Preventing VTE

- Thrombosis team
- Staff education
- Supportive managers
- VTE Prevention
- Link Nurse/Midwives
- Patient information
- Electronic VTEp systems
- RCA of HAT cases
- Audit programme

VTE Assessments
MRSA Swabs
MRSA Results
eDrug Charts
VTE prevention: Patient-centred approach

- Risk assessed for VTE
- Patient information
- Care plan
- Suitable prophylaxis
- Mobilisation and physio
- Extended prophylaxis
- Advice on discharge
The National VTE Exemplar Centres Network

Key:
- CURRENT EXEMPLAR CENTRE
- PROSPECTIVE EXEMPLAR CENTRE

Locations:
- South Tyneside
- North Lancashire
- Sheffield
- Chesterfield
- Burton upon Trent
- Leicester
- Norfolk & Norwich
- James Paget
- East of England SHA
- Colchester
- The London Clinic
- King’s Thrombosis Centre
- South West SHA
- Salisbury
- Plymouth
- Southampton
- Portsmouth
Working networks

UKCPA | HAT
HAEMOSTASIS, ANTICOAGULATION AND THROMBOSIS

NNMN
National Nursing & Midwifery Network

VTE Exemplar Centres
Providing leadership in thrombosis care
Web-based resources

Our mission is to share best practice and improve patient care through more effective prevention and treatment of VTE. This website provides our centre’s resources integrated with those of the National VTE Exemplar Centre Network, the National Nursing & Midwifery Network and the National VTE Prevention Programme, to offer a single resource for healthcare professionals involved in thrombosis management.
E-learning on VTE prevention

Venous Thromboembolism (VTE) Prevention
A 15-minute e-learning course designed for hospital induction training programmes

AUTHORS: Dr Roopen Arya
Dr Lara Roberts

This e-learning resource is designed to help nurses, pharmacists and junior doctors understand quickly the concept of hospital-associated venous thromboembolism, how to prevent it and to identify which steps of the prevention pathway are necessary to audit.
Developing a systems-based approach to the prevention of VTE in hospitalised patients

1. Patient admitted to hospital
2. Professional workforce aware of VTE risk
3. Individual patient risk assessed for VTE
4. Appropriate preventative strategy implemented
5. Evaluation of outcome
Determining outcomes:
Quality Observatory data on VTE rates

Acquired VTE rates per 1,000 admissions at risk (2007-9)

- Data
- Average
- 2SD limits

Source: HES
Determining outcomes:
Root cause analysis of cases of HAT

- Coding
- Diagnostics
- Autopsies
- Bereavement
- Other hospitals
- DVT/AC clinic
- Thrombosis Team
  - Data collection
  - Notification
  - Learning

Admitting consultant

Trust Quality Framework
Findings from RCA programme 2010/11

• Data from a London teaching hospital
  900 beds

• 239 episodes
  – 62.3% fully investigated (149 cases)

• ~53 000 admissions

• Incidence
  – 4.5 events per 1000 admissions
Patient / admission characteristics

- Mean patient age 62.7 +/- 16.8 years
- Males n=157, 53.6%
Timing of HAT

Median 16 days
IQR 7 – 30
VTE characteristics

- 121 (50.6%) DVT, 128 (49.6%) PE
- 171 (67.4%) prior to discharge
- 78 post discharge events
  - 60 (70.9%) required re-admission
  - 2 (2.6%) fatal events
## Mortality

<table>
<thead>
<tr>
<th>Category</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall within 90 days</td>
<td>51 (21.3)</td>
</tr>
<tr>
<td>Fatal PE</td>
<td>16 (6.7)</td>
</tr>
<tr>
<td>Diagnosed at PM</td>
<td>11</td>
</tr>
<tr>
<td>Radiological imaging</td>
<td>2</td>
</tr>
<tr>
<td>Clinical diagnosis</td>
<td>4</td>
</tr>
<tr>
<td>VTE non-contributory</td>
<td>25</td>
</tr>
<tr>
<td>Cause unknown</td>
<td>10</td>
</tr>
</tbody>
</table>

Incidence of fatal PE: 0.3 per 1000 admissions
Common underlying themes

- RCA analysis is a valuable tool to help define outcomes and improve VTE prevention practice
- Nearly one third of cases were potentially preventable
- 27% cases were attributable to failure of prophylaxis
UK experience: Improved outcomes with better VTE prevention practice

VTE-related maternal mortality figures - CMACE 2011
To access resources from the National VTE Prevention Programme in England:

www.kingstthrombosiscentre.org.uk

E-mail: roopen.arya@nhs.net