Trust Guideline for
Thromboprophylaxis in Adult Medical Inpatients ≥16 years of age

A clinical guideline recommended for use

For Use in:	All wards with medical inpatients
By:	Nurses and medical staff
For:	Medical inpatients
Division responsible for document:	Medical Division
Key words:	Deep Vein thrombosis, DVT, heparin, HIT, Pulmonary embolism, PE, LMWH, medical inpatients, thromboprophylaxis, venous thromboembolism
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Supported by:	Dr Hamish Lyall, Consultant Haematologist The Thrombosis and Thromboprophylaxis Committee
Assessed and approved by the:	Reviewed by the Thrombosis and Thromboprophylaxis Committee 26/11/2019 Clinical Guidelines Assessment Panel chair's action ✓
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Ratified by or reported as approved to (if applicable)**:**	Clinical Safety and Effectiveness Sub-Board
To be reviewed before: This document remains current after this date but will be under review	29/11/2019
To be reviewed by:	Drs Kamath and Lyall
Reference and / or Trust Docs ID No:	1211
Version No:	8
Description of changes:	Guidance on Neurological Injury (excluding stroke) and Patients Repatriated following Neurosurgery added.
Compliance links: *(is there any NICE related to guidance)*	NICE guideline (NG89) 2018: Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism
If Yes - does the strategy/policy deviate from the recommendations of NICE? If so why?	Thromboprophylaxis not offered to medical patients after discharge. This is consistent with other NHS trusts and has been agreed by the Thrombosis and Thromboprophylaxis Committee.

Trust Guideline for Thromboprophylaxis in Adult Medical Inpatients over the age of 16

Trust Guideline for
Thromboprophylaxis in Adult Medical Inpatients ≥16 years of age

Objective

To ensure that the risk of venous thromboembolism (VTE) is minimised in hospitalised medical patients.

Quick reference guideline/s

This guideline should be used in conjunction with General Principles of the Prevention of Venothromboembolism (VTE) in Adult Patients Trustdocs Id: 7539

Risk Assessment

1. All patients should have risk assessment as soon as possible after admission to hospital
2. Reassessment of risk of VTE and bleeding to be carried out at consultant review or if clinical condition changes.
3. Risk assessment should be done on EPMA TRA.
4. The initial step in the TRA requires 'medical patient expected to have ongoing reduced mobility relative to normal state' to be assessed. The NICE definition of reduced mobility is 'patients who are bed bound, unable to walk unaided or likely to spend a substantial proportion of their day in bed or in chair'. Most medical patients will fulfil this definition and should have this box ticked, and the remainder of the assessment completed.

Thromboprophylaxis

Do not use anti-embolism stockings (AES) routinely in medical patients.

When indicated, start pharmacological VTE prophylaxis as soon as possible after risk assessment has been completed and within 14 hours of admission.
Check FBC before starting LMWH.

Acute coronary syndromes:

Be aware that people receiving anticoagulant drugs as part of their treatment for an acute coronary syndrome do not usually need VTE prophylaxis.

Acute stroke patients:

Please refer to Acute Stroke and Transient Ischaemic Attack in Adults Trustdocs Id; 1367

Acutely ill medical patients:

NICE recommends offering pharmacological VTE prophylaxis for a minimum of 7 days to acutely ill medical patients whose risk of VTE outweighs their risk of bleeding.
For medical patients whose hospital stay is < 7 days NNUH guidance is that post discharge prophylactic LMWH is not routinely required.

- Use LMWH as first-line treatment.
- If LMWH is contraindicated, use fondaparinux sodium.

Renal impairment

If using LMWH VTE prophylaxis for people with renal impairment, see Dosing Advice Sheet LMWH for guidance on dose reduction: Trustdocs Id: 1697.

Palliative care: (NICE guidance)

Consider pharmacological VTE prophylaxis for people who are having palliative care. Take into account temporary increases in thrombotic risk factors, risk of bleeding, likely life expectancy and the views of the person and their family members or carers (as appropriate):

- Use LMWH as first-line treatment.
- If LMWH is contraindicated, use fondaparinux sodium.

Do not offer VTE prophylaxis to people in the last days of life. Review VTE prophylaxis daily for people who are having palliative care, taking into account the views of the person, their family members or carers (as appropriate) and the multidisciplinary team.

Patients admitted to Critical Care:

Reassess VTE and bleeding risk daily for people in critical care units.
TRA to be done on Metavision.

Neurological Injury (excluding stroke)

NG89 recommends for patients with spinal injury, thromboprophylaxis with LMWH should be given, starting 24 hours after admission (unless having surgery in next 24-48 hours) and continuing for 30 days or until the person is mobile or discharged, whichever is sooner. However, current practice in rehabilitation units is to recommend a longer duration (3 months).

NNUH guidance is to consider VTE prophylaxis for up to 12 weeks (including on discharge or transfer to other units) for patients with NEW neurological injury resulting in substantial immobility (paraparesis, wheelchair or bed bound, WHO performance status 3 or 4).

For patients with acute stroke please refer Acute Stroke and Transient Ischaemic Attack in Adults Trustdocs Id1367

Patients repatriated following neurosurgery

LMWH for minimum 7 days (from surgery)
Stockings for 30 days or until discharge – whichever is sooner

Dose of LMWH – see Trust dosing advice sheet for LMWH Trustdocs Id 1697

Routine monitoring of FBC is not required but a platelet count should be performed if a patient develops evidence of bleeding or bruising, an allergic/anaphylactic reaction to heparin, a new thrombotic event (arterial or venous) or skin necrosis at injection sites in case heparin induced thrombocytopenia (HIT) has developed. HIT is rare in medical patients, incidence estimated at <1% - see guideline Heparin Induced Thrombocytopenia in Adults Trustdocs Id 1251. Discontinue LMWH if HIT is suspected and seek haematological advice.

Note

- Treatment should continue until patient is fully mobile without VTE risk factors or discharged (licensed for 6 to 14 days but longer durations are used routinely).

General measures

Encourage mobilisation and ensure adequate hydration in all patients.

Rationale

Venous thromboembolism is relatively common in medical inpatients, with an estimated incidence of fatal pulmonary embolism (PE) of ~5% in one study [1]. Without antithrombotic treatment, asymptomatic deep venous thrombosis (DVT) occurs in ~24% patients with myocardial infarction and ~50% stroke patients [2]. The incidence of DVT in general medical patients is uncertain, but the THRIFT II consensus group estimated it at 10-40% [3]. A meta-analysis of randomised trials of unfractionated heparin (UFH) and low molecular weight heparin (LMWH) suggested reductions in the incidence of DVT and clinical PE of 56% and

58% respectively [4]. LMWH had a smaller risk of major haemorrhage compared to UFH. A more recent meta-analysis suggested that anticoagulant prophylaxis significantly reduced PE and fatal PE in medical patients, relative risks 0.42 and 0.38 respectively [5]. Dalteparin at a dose of 5000 units once daily has been shown to reduce the risk of venous thromboembolism (VTE) in patients with acute medical illnesses [6].

The Chief Medical Officer's working group on thromboprophylaxis in hospitalised patients [7] and, more recently, the National Institute for Health and Clinical Excellence (NIHCE) have recommended thrombosis risk assessment (TRA) and pharmacological thromboprophylaxis for those at risk and without significant bleeding risk [8].

Although a high risk group, heparin cannot be recommended routinely in ischaemic stroke patients because reduction in VTE is offset by an increased risk of haemorrhage [9]. The NICE guideline recommends that LMWH prophylaxis be considered in acute stroke if high risk for thrombosis, haemorrhagic stroke is excluded and risk of haemorrhagic transformation is deemed to be low [8]. The latter is clearly a specialist decision and, therefore, acute stroke remains a contraindication for LMWH Thromboprophylaxis in our general risk assessment tool.

Anti-embolism stockings are no longer recommended in stroke or other medical patients because of lack of evidence of effectiveness [7, 8].

Broad recommendations

See Quick Reference Guideline

Clinical audit standards

- All medical patients should undergo a Thrombosis Risk Assessment, as documented on EPMA, on admission to hospital. Audit of compliance with this standard to be carried out at least annually.
- Appropriate pharmacological thromboprophylaxis should be prescribed for those patients in whom it is indicated (and not contraindicated) according to the Thrombosis Risk Assessment. Audit of compliance with this standard to be carried out at least annually.

Summary of development and consultation process undertaken before registration and dissemination

The original guideline was written by Dr. Peter Woodhouse on behalf of the then Haemostasis and Thrombosis Committee who approved its content. It was subsequently distributed in draft form to all consultant physicians for comments. Suggested amendments were incorporated. The document was revised in May 2007 in the light of the report from the DOH working group on thromboprophylaxis [(7)] and, again, in June 2010 following the publication of NICE guideline 92 [(8).] The guideline has been re-worked to comply with the Department of Health's latest version of their risk assessment tool for venous thromboembolism ([(10).] A minor edit to the audit standards was carried out in October 2010. Version 6 was approved by the Thrombosis and Thromboprophylaxis Committee in November 2014. The guideline was updated by Dr Ajay Kamath to align with updated NICE Guidance published in March 2018 (11) and Version 7 was supported by the Thrombosis and Thromboprophylaxis Committee in May 2019.

Distribution list/ dissemination method

Trust intranet.

References/ source documents

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7. Report of the independent expert working group on the prevention of venous thromboembolism in hospitalised patients. DOH. March 2007.
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11. Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism NICE guideline (NG89) 2018.

    NICE Guideline (NG89): Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism NICE guideline (NG89) 2018

Changes made

Date	Updated version	Previous version	Page number/ section	Details
November 2014	V6	V5	Page 3	Dalteparin replaced by LMWH and reader referred to Trust LMWH advice sheet for dosing advice
			Page 3	Requirement for FBC monitoring removed
			Page 2 & 3	Reader referred to guideline CA5034 for advice regarding patients who have had an acute stroke
May 2019	V7	V6	Full review	Updated to align with NICE guideline: Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism (NG89) issued in March 2018
November 2019	V8	V7	Page 3	Guidance on Neurological Injury (excluding stroke) and Patients repatriated following neurosurgery added.