King's College Hospital NHS
NHS Foundation Trust

Venous Thromboembolism Policy

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Sept 12	2	Minor amendments	Minor	Gayle Porter
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Target audience(s)	Method	Person responsible
All Staff	Place on KWIKI, Launch on Kingsweb	Gayle Porter
All Staff	Place on KWIKI, Launch on Kingsweb	Cara Doyle

Contents

1. Introduction

King's believes that VTE prevention is a top clinical priority for all hospitalised patients and when VTE is suspected or diagnosed, patients should have access to high quality diagnostic and treatment services. Our VTE policy is underpinned by many of the King's Values (always aiming higher, inspiring confidence in our care, working together) and incorporates recommendations from national guidance related to VTE.

The policy outlines best practice and pathways to guide clinicians in their delivery of VTE care whilst providing a framework of measures for performance to be determined. Analysis of performance will be regularly undertaken through clinical audit and, where appropriate, recommendations for improvement will be implemented. Learning from audit and taking action as necessary will be an ongoing process as we strive to provide the best possible care for our patients.

2. Definitions

AES	Anti-embolism Stockings
BCSH	British Committee for Standards in Haematology
CTPA	CT pulmonary Angiogram - used to diagnose PE
DAWN	Database for recording oral anticoagulation management
DH	Denmark Hill Site
DOAC	Direct Oral Anticoagulant
DVT	Deep vein thrombosis - a blood clot in any deep vein of the body
ED	Emergency department
EDT	Education, Development and Training team
EPMA	Electronic prescribing and medication administration
GP	General Practitioner
HAT	Hospital associated thrombosis - any in-patients or patients who develop VTE within 90 days of hospital discharge
INR	International Normalised Ratio – blood test to measure the level of oral anticoagulation such as warfarin
IPC	Intermittent Pneumatic Compression e.g. sequential compression devices or foot pumps
KCH	Kings College Hospital NHS Foundation Trust
MDT	Multidisciplinary team (with specific reference to the anticoag MDT)
NICE	National Institute for Health and Care Excellence
NPSA	National Patient Safety Agency
PE	Pulmonary embolism - A blood clot in the pulmonary arteries
PIMS	Patient information management system
PRUH	Princess Royal University Hospital

PTS	Post Thrombotic Syndrome
RCA	Root cause analysis
TP	Thromboprophylaxis – can be either mechanical (i.e. AES or IPC) or pharmacological (e.g. low molecular weight heparin)
TTA	Tablets to take away
USS	Ultrasound scan
VTE	Venous thromboembolism – term encompasses either DVT and PE, or both
VQ	Ventilation /perfusion scan - used to diagnose PE

Significantly reduced mobility: Bed bound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or chair (NICE, Clinical Guideline 92, 2010)

3. Purpose and Scope

The purpose of this document is to standardise VTE prevention, diagnosis and management across KCH. The policy should ensure that all patients receive evidence based VTE care which is aligned to NICE VTE Prevention Clinical Guideline NG89 (2018), the BCSH guidance on oral anticoagulation (2011), NPSA (2007) guidance on the safe management of patients on oral anticoagulants and NICE Thromboembolic diseases: The management of Venous Thromboembolic diseases and the role of thrombophilia testing Clinical Guideline 144 (2012).

This policy is applicable to all KCH sites. The policy applies to KCH staff and outlines the responsibilities and duties they hold related to aspects of VTE prevention, diagnosis and management. The policy applies to the care of KCH hospitalised patients and outpatients with suspected or confirmed VTE (except patients under 18 years of age).

Specific advice on VTE in patients who are less than 18 years of age should be sought from the paediatric haematology team (contact paediatric haematology SpR via switchboard). If requiring low molecular weight heparin (LMWH), refer to the paediatric LMWH guideline 2018.

Paediatric patients who require anticoagulation can be referred to the appropriate anticoagulation clinic (DH/PRUH) for on-going monitoring.

4. Duties

Chief Executive and Trust Board

- The organisation has overall accountability for ensuring that there is an approved documented process for managing the risks associated with the prevention, diagnosis and management of VTE, that it is implemented and monitored.

Thrombosis Committee Chair (VTE)

- Providing professional expertise and ensuring that the KCH VTE policy and related guidance is aligned with NICE guidance and other evidence based practice/guidance (e.g. American College of Chest Physicians/National Patient Safety Agency/British Committee for Standards in Haematology)
- Provide leadership within the trust for; VTE prevention, the diagnosis, treatment and aftercare of VTE, and for feeding back analysis and recommendations from the RCA of HAT through the trust clinical governance structures (Patient Safety Committee/Risk Management Group)
- Act as a point of contact for external bodies concerning VTE
- Lead the VTE team in meeting trust VTE targets as required by governing bodies and/or commissioners
- Chair Thrombosis Committee meetings

VTE Team

- Responsible for promoting practice aligned with KCH VTE policy
- Act as a point of contact for multi-disciplinary advice on VTE.
- Attendance and involvement at the Thrombosis Committee meetings which typically take the format of discussions around:
    - local VTE prevention challenges; audit results and action plans

    - outpatient treatment of patients who have been diagnosed with DVT
    - patients requiring complex management for VTE
    - clinical research trials related to VTE
    - HAT RCA feedback from Consultants and what learning can be gained and disseminated from this
    - VTE guideline review as necessary
- Attend the anticoagulation multi-disciplinary team ward rounds and provide patients who are newly diagnosed with VTE with advice on anticoagulation treatment

Anticoagulation and Thrombosis Clinical Nurse Specialists

- Promote VTE prevention throughout the trust
- Monitor compliance of VTE prevention measures throughout the trust by leading/supporting clinical audits and action plans where necessary
- Provide training and education for clinical staff
- Work with link practitioners to provide education and resources
- Identify cases of HAT, request RCA of these and collate the feedback
- Ensure VTE resources are updated (KWIKI and EPR) and evidence based/available for use (e.g. IPC in equipment library or in high VTE risk areas)
- Promote electronic VTE prevention solutions (e.g. electronic recording of risk assessment tool, care of AES/IPC, VTE patient information)
- Highlight areas of good practice and disseminate learning gained from appreciative inquiry to other areas (e.g. VTE champion articles, league tables of VTE risk assessment rates)
- Manage the nurse-led DVT diagnostic and treatment out-patient service
- Manage the early discharge PE service and after care
- Manage the safe anticoagulation of patients with VTE

Clinical Managers

- Ensure that staff providing direct patient care receive regular updates on VTE
- Ensure each clinical area has a VTE link nurse/midwife to disseminate information from the VTE team to front line staff
- Should be familiar with the VTE policy.
- Act when necessary on; VTE risk assessment performance recorded on their Performance Scorecards, clinical audit results related to VTE quality standards, and on HAT outcome data

Medical Staff

- Ensure inpatients are assessed for their risk of VTE and bleeding using the KCH risk assessment tool on admission (See appendices including general RA and obstetric RA)
- Ensure that patients' VTE and bleeding risk are reassessed whenever their clinical condition changes
- Ensure that patients are prescribed appropriate/extended thromboprophylaxis in accordance with KCH guidance
- Clearly document any deviation from the guidance in the patient's clinical notes.
- Inform and educate patients about VTE prevention
- Follow the diagnostic pathway and management plan for VTE/PE if either condition is suspected / confirmed or document any reasons for deviating from the guidance
- Assist their Consultant with HAT RCA if requested

Link Practitioners

- Complete one day study day on VTE and/or complete the VTE e learning module

- To work as a link between the VTE team and the ward staff
- Act as a learning resource for ward staff
- Complete regular audits on their ward/unit to determine whether patients were risk assessed, whether appropriate TP was given and if verbal/written information on VTE was given on admission and discharge. Use data to inform improvement projects
- To have an understanding of the symptoms, diagnosis and management of patients with VTE
- Coagulation link practitioner role description: http://kingsdocs/docs/kchdocs/Link%20Nurse%20Role.doc

Registered Nurses/Midwives

- Ensure they are up to date with VTE training
- Ensure that all patients in their care have been assessed for their risk of VTE and bleeding by prompting medical staff if these are outstanding on admission or whenever the patients clinical condition changes
- Administer mechanical and pharmacological TP as prescribed by medical staff in accordance with an updated VTE/bleeding risk assessment
- Ensure that patients prescribed mechanical compression have these fitted and monitored in accordance with NICE guidelines and manufacturer's recommendations
- Ensure that patients are given written and verbal information on VTE on admission and discharge (including signs and symptoms of VTE and the importance of reporting these should they occur)
- Should be aware of the diagnosis and management of patients with suspected/confirmed VTE

Registered Pharmacists

- Ensure that all patients in their care have been prescribed appropriate pharmacological thromboprophylaxis (dose, frequency, route, duration) in accordance with an up to date VTE risk assessment and in line with trust guidance
- Ensure that pharmacological treatment for suspected or confirmed VTE is prescribed appropriately (dose, frequency, route, duration)
- Ensure contra-indications for pharmacological agents have been checked (e.g. renal/liver function, heparin induced thrombocytopenia)

All Clinical Staff

- Comply with the KCH VTE policy or document sound clinical reasoning for deviation from this
- Access education and learning resources as appropriate to their clinical area/role
- Report any adverse VTE events via datix system

The Patient and /or Carer

- The patient and/or carer will be provided with patient information leaflets on the prevention and management of VTE to work in partnership with health care professionals
- The patient should be informed of how they can contact a health care professional if they have any concerns

Divisional Risk & Governance Committees

- Responsible for receiving monthly reports from the VTE team on matters relating to the trusts VTE strategy

- Responsible for taking action based on the received reports to ensure VTE quality measures are monitored and action plans are developed where necessary

5. Policy Specific Information

5.1 VTE Prevention	
5.1.1	All adult patients admitted to KCH* will be individually assessed on admission** for their risk of VTE and bleeding using the KCH VTE risk assessment tool on epr. Day surgery units at both sites use paper versions of the risk assessment tool. Obstetric patients will be risk assessed using the KCH obstetric VTE risk assessment tool on epr.
5.1.2	E-vte risk assessment should be completed by clinical staff** Paper risk assessments should be used in the event of epr downtime.
5.1.3	Clinical staff should re-assess patients VTE and bleeding risk whenever their clinical condition changes.
5.1.4	Appropriate TP and extended TP (after discharge) should be offered/considered in accordance with trust guidance.
5.1.5	Any contraindications to either pharmacological or mechanical prophylaxis must be clearly documented in the patient's notes.
5.1.6	Patients at risk of VTE should be given verbal and written information during their hospital admission and on discharge. Access the KCH patient information leaflet here. Maternity VTE prevention leaflet Use the VTE prevention animation as appropriate: Want to know more about your risk of blood clots in hospital? - YouTube
5.1.7	Patients who are treated conservatively with lower limb immobilisation in the outpatient setting will be individually assessed for the risk of VTE and bleeding using the KCH VTE risk assessment tool for outpatient lower limb immobilisation. Access the KCH lower limb immobilisation risk assessment here.
*Admission is defined as a hospital stay (DH 2010), data to be collected from BIU and monitored via monthly link nurse audits ** Excluding patients identified VTE low risk cohort groups as agreed by the VTE team or Clinical Lead and Medical Director.	

5.2 Prophylactic Treatment Regime	
5.2.1	All patients should be adequately hydrated and early mobilisation encouraged
5.2.2	High risk surgical and medical patients should be prescribed pharmacological VTE prophylaxis (enoxaparin) daily unless high bleeding risk or contraindicated. (Patients with eGFR >15ml/min and weighing 50 – 100kg should prescribed 40mg enoxaparin OD, patients weighing over 100kg should be prescribed 80mg enoxaparin OD (or 40mg BD), patients weighing over 150kg should be prescribed enoxaparin 120mg OD (or 60mg BD), patients weighing less than 50kg should be given 20mg enoxaparin OD) (Appendix 2). Acute stroke patients with a high risk of bleeding and thrombosis should be offered an

	intermittent pneumatic compression device if immobile (as long as not contra-indicated), for up to 30 days or until the person is mobile or discharge, whichever is sooner.
5.2.3	Refer to the VTE risk assessment document for guidance on timings of pharmacological thromboprophylaxis and other related considerations.
5.2.4	All high risk surgical patients should be offered AES+/- intermittent pneumatic compression device unless contraindicated. For a list of contraindications, refer to the VTE risk assessment document. AES should be fitted and monitored in accordance with NICE NG 89 (2018).
5.2.5	Intermittent pneumatic compression devices should be fitted at the start of a patient's admission/intra-operatively. If removed for any length of time the patient should be assessed for signs and symptoms of DVT or PE prior to reapplying the device. Treatment should be continued until the patient no longer has significantly reduced mobility.
5.2.6	For hospitalised high risk VTE patients, TP should continue until the patient no longer has significantly reduced mobility.
5.2.7	Extended prophylaxis should be prescribed for certain high risk groups: • Elective knee replacement (14 days) • Elective hip replacement and hip fracture (28 days) • High risk abdominal/pelvic surgery i.e. major cancer surgery (28 days) • Gastric Bypass (28 days or discretion of surgeon) • Gastric banding (14 days or discretion of surgeon) • Certain obstetric patients (ranging from 10 days to 6 weeks) • Lower limb immobilisation post operatively Selected patients with lower limb immobilisation according to risk assessment, for the duration of immobilisation. This will be monitored via monthly link nurse audit at DH and PRUH sites.

5.3 Procedure to be followed if VTE is suspected

DVT – inpatients	
5.3.1	Send bloods for FBC, LFT, U&E, Coag and D-dimer
5.3.2	If pre-test probability is ≥2 (see Wells score on appendix 3) then USS should be requested on EPR
5.3.3	Review results of USS and treat accordingly. For management of patients with incomplete distal views on ultrasound, refer to this guidance. For management of upper limb DVT and superficial vein thrombosis, refer to this guidance. If needing additional advice, contact the haematology registrar on bleep 266 (DH site) or 156 (PRUH site) for advice on; the need for repeat USS/treating on clinical suspicion/complex cases/superficial thrombophlebitis where the thrombus is near a junction of a deep vein.
DVT – outpatients	
5.3.4	Medical staff and advanced nurse practitioners can make referrals to the DVT nurse-led clinic.
5.3.5	Patients with suspected DVT should be offered an appointment to be seen on day of referral during working hours (generally Mon-Fri) or the next working day
5.3.6	For DH site, between 9am – 3.00 pm Mon-Fri (excluding bank/public holidays) patients should be referred to the DVT clinic (bleep 7300DVT1 or via extension 32733, internal or 07623 901 822: call sign 'DVT1', external).

	ED request the duplex USS and advise patients to attend the vascular laboratory at 9am the next working day.
5.3.7	For PRUH site, between 9am – 3.00 pm Mon-Fri (excluding bank/public holidays) patients should be referred to the DVT clinic via extension 64273 or kch-tr.br-PRUHDVT@nhs.net. GPs can refer by calling 01689 864273. ED/AMU submit an epr referral and DVT clinic will contact the patient the following day to arrange an appointment.
5.3.8	Outside of Monday to Friday 9am-3.00pm patients should be commenced on anticoagulation as per the DVT proforma until the next working day.
5.3.9	At weekends patients may need to return to ED/UCC for daily enoxaparin injections if unsuitable for rivaroxaban and unable to self administer.
5.3.10	A DVT proforma is to be completed for all patients with suspected DVT, see links below. Denmark Hill PRUH
5.3.11	Send bloods for FBC, Coag, U&E (and D-dimer if low pre-test probability).
5.3.12	If D-dimer is raised or pre-test probability is ≥2 (see Wells score on DVT proforma) then DVT scan of the affected limb should be requested on EPR (in hours ext. 33711 (DH) or ext. 65166 (PRUH), out of hours request on EPR at DH site), alternatively refer to the appropriate DVT clinic.
5.3.13	DVT clinic staff will review results of USS and treat accordingly. For management of patients with incomplete distal views, refer here. For management of upper limb DVT and superficial vein thrombosis, refer here. If needing additional advice, contact the haematology registrar on bleep 266 (DH site) or 156 (PRUH site) via switchboard for advice on; the need for repeat USS/treating on clinical suspicion/complex cases/superficial thrombophlebitis where the thrombus is near a junction of a deep vein.
PE – inpatient	
5.3.14	Follow PE diagnostic pathway
5.3.15	Review results of investigations and if diagnosis is still in doubt then contact the haematology registrar on bleep 266 (DH), 156 (PRUH) for advice.
PE – outpatients	
5.3.16	The decision for outpatient management must be made by a CT2 doctor or above. If patient is suitable for outpatient management, ensure they are given the appropriate leaflet below: Suspected PE patient advice sheet DH Suspected PE advice sheet PRUH Confirmed PE advice sheet DH Confirmed PE advice sheet PRUH

5.4 Management of the patient once a positive VTE diagnosis has been made – inpatients

DVT - inpatients	
5.4.1	Treatment dose direct oral anticoagulant or enoxaparin and warfarin if DOAC not suitable should be commenced. Rivaroxaban is the Trust's first line DOAC for VTE. Consider using apixaban instead in women who have menstrual bleeding. See anticoag quick reference guide for enoxaparin dosing.
5.4.2	Consider patient's suitability for discharge as patients with DVT can be managed as outpatients.
PE Intermediate/High Risk - inpatients	
5.4.3	Treat as per guidance. The rationale for any deviation from this guidance needs to be clearly documented in the patient's notes.
PE (Non-massive) - inpatients	
5.4.5	Treatment dose DOAC (or enoxaparin and warfarin if DOAC unsuitable) should be commenced (assuming there are no contraindications to such treatment). Rivaroxaban is the Trust's first line DOAC for VTE. Consider using apixaban instead in women who have menstrual bleeding. See anticoagulation drug chart for enoxaparin dosing.
5.4.6	Assess patient's suitability for early discharge using the criteria in the diagnosis and management of non-massive PE guideline. NB: All patients must be assessed by a CT2 doctor, or above, to be managed as an outpatient. If patient is suitable for outpatient management, ensure they are given the PE patient advice sheet for DH and Confirmed PE advice sheet for PRUH.
All in-patients with VTE	
5.4.7	**DH**: All in-patients with newly diagnosed VTE who require anticoagulation should be referred to the Anticoag MDT via EPR. **PRUH** Please refer any patients meeting the criteria below to the anticoagulation MDT via EPR : • Complex patients, e.g. recent major bleed, recurrent VTE on anticoagulation

	• Housebound patients/reside in nursing home (unable to attend outpatient clinics) • Extremes of body weight (<40kg, >140kg) • Malabsorption, PEG/NG fed • Patients on unfractionated heparin infusions • Significant cognitive impairment
5.4.8	The MDT consists of a doctor, pharmacist and/or nurse from the thrombosis team and their ward rounds take place 3 times weekly at DH (Mon/Wed/Fri) and twice weekly at PRUH (Tues/Fri).
5.4.9	The MDT will: • Review the diagnosis and indication for anticoagulation • Assess suitability for anticoagulation and anticoagulation agents for individual patients • Provide support with anticoagulation dosing and duration of anticoagulation • Provide advice on warfarin initiation and INR range • Provide verbal and written anticoagulation information to the patients • Provide advice on management of drug interaction with warfarin/DOACs • Assist in the discharge process and continued follow up of patients on anticoagulation • Provide details of relevant anticoagulation clinics (which encompasses Primary or Secondary care clinics) for referral of out of area patients
5.4.10	All patients on warfarin will need an INR check on the day of discharge (unless agreed with the anticoagulation team).
5.4.11	All patients discharged from hospital on warfarin must be referred to an anticoagulation clinic for continued INR monitoring and dosing. This is the responsibility of the discharging doctor. The clinic should offer an anticoagulation appointment according to when the patient requires an INR check, this must be no later than 7 days after discharge (BCSH guidance, 2008). Details of follow up arranged should be documented in the electronic discharge notification. Patients newly initiated on a DOAC or with a change to their DOAC or dosage should also be referred prior to discharge.
5.4.12	For advice on referring patients on discharge, please refer to the appropriate document: • Discharging patients on warfarin • Anticoagulation referral form to Boots (Bromley patients only) • Out of area referral form
5.4.13	All patients on warfarin should be counselled before discharge by the discharging Nurse/Midwife/Doctor/Pharmacist and should include: • warfarin comes in 3 different strengths/colours • what dose to take - this will be written on their yellow anticoagulation form • the date and location of their next INR test • the procedure for their next INR test i.e. they need to bring their yellow form and have a blood test

5.4.14	All patients on a DOAC should be counselled before discharge by the discharging Nurse/Doctor/Pharmacist and should include: • importance of compliance • if on Rivaroxaban, must be taken with food • date of their follow-up appointment • side effects – bleeding At discharge all patients going home with an anticoagulant must have their TTAs carefully checked against the **final** drug list to ensure no concomitant anticoagulants, contraindicated drugs or LMWH if on warfarin and INR >2 .

5.5 Management of the patient once positive diagnosis has been made – outpatients

DVT – outpatients

5.5.1	Patients on warfarin/DOACs will be reviewed in the DVT clinic and will subsequently be followed up in the anticoagulation clinic. The DVT nurse will; • check that the patient is adherent to, and able to, manage their treatment plan (e.g. injections and titration of warfarin dose/DOAC administration) • put systems in place for safe management as necessary • monitor blood results • act as an expert knowledge base for passing information to the patient relating to their DVT and treatment plan
	All patients are seen in DVT clinic or have a telephone follow up appointment 1 week after diagnosis to check symptoms, medication adherence and perform cancer screening on patients with unprovoked VTE over the age of 40 yrs. Selected patients will be offered a 3 week appointment to manage rivaroxaban dose change, recheck bloods if necessary and provide support as required.
5.5.3	Patients on LMWH only will be seen 1 week after diagnosis/discharge in the DVT clinic for a FBC and to check injection technique and tolerance. They will be given enough supply of LMWH to last until their thrombosis clinic OPA if switching to an oral agent not appropriate.
5.5.4	Patients will be offered an appointment in the haematology thrombosis clinic to review risk factors and to individualise the duration of their treatment in line with evidence based practice.
5.5.5	Patients on warfarin will be managed by the anticoagulation clinic for the duration of their treatment and this management will be documented on the DAWN database*.
5.5.6	Patients will be given advice on stopping warfarin/DOAC when they have completed their duration of anticoagulation.
5.5.7	Patients may be offered thrombophilia testing where clinically indicated. Patients stopping anticoagulation will be offered advice on the need for future thromboprophylaxis during times of increased VTE risk.

*patients on a DOAC for VTE will be prescribed treatment by the anticoagulation team for three months, and then prescribing will be transferred to the GP

PE - outpatients	
5.5.7	Patients will be referred to the DVT clinic (DH ext 32733 or page 07623 901822 Call sign 'DVT1') or anticoagulation clinic (PRUH) (01689 864263, kch-tr.br-anticoag@nhs.net) for follow up on discharge from hospital.
5.5.8	Patients will be offered an appointment in the haematology clinic to review risk factors for PE and to individualise the duration of their treatment in line with evidence based practice.
5.5.9	Patients' anticoagulation will be managed by the anticoagulation clinic for the duration of their treatment and this management will be documented on the DAWN database*
5.5.10	Patients will be given advice on stopping anticoagulation when they have completed their duration of anticoagulation.
5.5.11	Patients may be offered thrombophilia testing where clinically indicated.
*patients on a DOAC for VTE will be prescribed treatment by the anticoagulation team for three months, and then prescribing will be transferred to the GP	
All in-patients/out-patients with VTE	
5.5.12	May be considered for enrolment into clinical research trials. (Please contact Dr Lara Roberts Haematology Consultant, lara.roberts@nhs.net for an update on current clinical trials.
5.5.13	The management of patients diagnosed with VTE will be monitored via annual audit.

5.6 Anticoagulation Management

5.6.1	For patients requiring pre-admission perioperative management of their anticoagulation, please refer to their local anticoagulation clinic. King's College Hospital anticoagulation patients will be managed according to the perioperative bridging guidelines. A perioperative bridging template will be completed. Copies will be sent to the patient and relevant team (when possible) and uploaded onto EPR.
5.6.2	For patients requiring perioperative management, who are managed by Boots anticoagulation clinic, please refer here.
5.6.3	For patients requiring anticoagulation management for endoscopic procedures, please refer here.
5.6.4	For management of over anticoagulation or major haemorrhage, follow the relevant guideline below: • Octaplex guideline • Rivaroxaban - Edoxaban & Apixaban haemorrhage protocol for DH and for PRUH • Dabigatran haemorrhage protocol

5.7 Hospital Associated Thrombosis (HAT)

5.7.1	All potential HAT cases will be identified by the thrombosis team in the following ways: • Weekly report from SECTRA will generate all CTPA, V/Q scans and USS doppler scans • VTE CNS will find the positive reports and cross check these with admission records using the PiMS system • Anticoagulant/DVT clinic to provide details of patients with new VTE diagnosis if prior inpatient within 90 days or diagnosed in a surgical patient or after 48 hours of a medical admission (weekly). • Bereavement team to notify thrombosis team of any patients with PE/DVT on death certificate
5.7.2	VTE prevention nurse to undertake a preliminary investigation. Where potentially preventable HATs are identified, DATIX will be raised.
5.7.3	All potentially preventable cases to be discussed with a Haematology consultant as identified (within 14 days).
5.7.4	Anonymised collated results to be presented at Safer Care Forum quarterly and divisional governance meetings quarterly.
5.7.5	Breakdown by ward of pure numbers of potentially preventable HATs to be added to monthly patient safety harms dashboard.
5.7.6	Where an error in care has been identified and the thrombosis team feel the HAT was potentially preventable, the duty of candour process must be triggered. The Patient Safety team will liaise with the responsible consultant and the patient will receive a letter within 10 days stating an investigation will begin. A final report will then be sent to the patient.
5.7.7	For more information, see the thematic review by the patient safety team

5.8 Training needs analysis

See appendix 1

5.9 Staff Education

5.9.1	The VTE team will provide ongoing staff training on VTE prevention (e.g. preceptorship programme, local induction programmes)
5.9.2	AES training is incorporated as part of the nursing/midwifery and health care assistant corporate induction programme. Training on mechanical compression is also supported by the manufacturers who supply the compression devices. Refresher training is also provided – 2 days per month.
5.9.3	VTE e learning module forms part of the statutory mandatory learning modules and rates of compliance will be monitored by the EDT and the thrombosis team.
5.9.4	Annual VTE study days will be run by the VTE team.
5.9.5	Anticoagulation training is part of the medication safety training for new doctors who join the trust.
5.9.6	Records of training are either captured electronically or via hand written registers, these are held centrally by the EDT team.

6. Circulation of the VTE policy

The policy will be placed on the trust intranet (KWIKI and Kingsdocs) making it accessible to all KCH staff.

The policy will be circulated to all clinical leads, divisional leads, consultants, head of pharmacy, heads of nursing and other relevant stakeholders.

An item will be placed on Kingsweb informing all KCH staff that the policy has been updated and approved.

7. Monitoring Compliance

Measurable policy objectives i.e. what will be monitored	Monitoring/ audit method	Frequency of monitoring	Responsibility for performing the monitoring	Monitoring reported to groups/committees, inc responsibility for action plans
All adult inpatients will have their VTE and bleeding risk assessed on admission in accordance with trust guidance	% of patients risk assessed will be collated form EPR/ PiMS/ (submitted to DH UNIFY) VTE link nurses/midwives will provide quality assurance audit data on VTE risk assessment rates via the audit database accessible through BIU web	Monthly Monthly	BIU VTE link nurses/midwives Ward managers are responsible for ensuring the audit	Figures of % patients risk assessed sent to: DH via UNIFY, to commissioners as per Quality Schedule, to trust board as part of quality accounts and to trust performance management team. Divisional managers are responsible for action plans at a divisional level. VTE team responsible for action plans at a trust level Ward managers, lead pharmacists and senior management will be sent results monthly Monthly results will be disseminated at link nurse meetings.

Measurable policy objectives i.e. what will be monitored	Monitoring/ audit method	Frequency of monitoring	Responsibility for performing the monitoring	Monitoring reported to groups/committees, inc responsibility for action plans
			is performed if the VTE link nurse/midwife is unavailable	Ward managers and link nurses/midwives are responsible for local action plans
Patients with a positive diagnosis of VTE will receive the correct management	All newly diagnosed VTE patients will be discussed with a haematology consultant. Periodic audits against NICE standards will be undertaken.	Periodically	VTE team (although audit can be performed by a nominated clinician)	Data analysis will be presented at the Thrombosis Committee Meeting and the VTE team will be responsible for action plans
Patients with suspected VTE will follow the appropriate diagnostic pathway	The VTE team will facilitate an audit of quality indicators which will measure whether the appropriate diagnostic pathway was followed in patients suspected of having VTE. All newly diagnosed VTE patients who have been added to the DAWN database for a one month period will be audited.	Annually	VTE team (although audit can be performed by a nominated clinician)	Data analysis will be presented at the Thrombosis Committee Meeting and the VTE team will be responsible for implementing improvement plans where necessary

8.Associated Documents

Equality Impact Assessments http://kweb/kwiki/Equality_and_diversity

Information governance policy http://kweb/kwiki/Information_Governance

Guidance on writing policies http://kweb/kwiki/Guidance_on_writing_policies

9.Appendix

1. Training Needs Analysis

H:\ANTICOAG Referrals\Anticoag\Anticoag MDT\VTE policy appendcies\Venous Thromboembolism (VTE) TNA.xlsx

2. Dosing of LMWH for extremes of body weight

Dosing for extremes of body weight (eGFR >30ml/min):	
Weight	Dose
<50kg	20mg Enoxaparin daily
50-100kg	40mg Enoxaparin daily
101-150kg	40mg Enoxaparin bd or 80mg daily
>150kg	60mg Enoxaparin bd or 120mg daily

eGFR 15-30ml/min*	
Weight	Dose
<40kg	Contact haematology for advice
40-150kg	20mg Enoxaparin daily
>150kg	Contact haematology for advice

eGFR <15ml/min or dialysis*	
Weight	Dose
<100kg	Unfractionated heparin 5000 units bd
>100kg	Unfractionated heparin 5000 units tds

*See separate guidance for renal patients on Fisk and Cheere

3. WELLs score (Pretest probability – PTP)

Active cancer (ongoing treatment, within 6 months or palliative)	1 ☐
Paralysis, paresis or recent plaster cast immobilisation of lower limbs	1 ☐
Recently bedridden for ≥3 days or major surgery within 12 weeks	1 ☐
Localised tenderness along deep venous system	1 ☐
Entire leg swollen	1 ☐
Calf swelling >3cm compared to asymptomatic leg	1 ☐
Pitting oedema confined to symptomatic leg	1 ☐
Collateral superficial veins	1 ☐
Previous DVT	1 ☐
Alternative diagnosis as likely as DVT	-2 ☐

Total score determines risk of DVT

0 or 1, ☐ DVT 'unlikely';

≥2 ☐ DVT 'likely'

4. Treatment of DVT/PE without haemodynamic compromise with enoxaparin

The enoxaparin dose banding below is based on **1.5mg per kg** body weight to be given subcutaneously **ONCE** daily in to the **ABDOMEN** for a **minimum of 5 days** and until the INR is therapeutic. If INR > 3.0 in first 5 days of treatment please consult haematology.

RECORD OF ENOXAPARIN FOR TREATMENT OF DVT or PE

Subcutaneous enoxaparin ONCE DAILY							
Body Weight (kg)	**Syringe Size**	Date					
40-47kg	**60mg**	Dose (mg)		6			
48-59kg	**80mg**	Start Date	Valid Period	8			
60-73kg	**100mg**	Signature		12			
74-88kg	**120mg**			14			
89-109kg	**150mg**	Pharmacy		18			
110-125kg	**180mg***			22			
>125kg	**Contact haematology**						

*180mg syringes are not available therefore use a combination of available syringes as appropriate

5. Guide to the link practitioner role and audit

http://kingsdocs/docs/kchdocs/Guide%20to%20the%20VTE%20link%20practitioner%20audit.pdf

10. Links to documents referred to in the policy

- VTE Prevention Link Practitioner role and audit
- VTE Prevention risk assessment tool
- VTE Prevention Patient Information Leaflet
- Lower limb immobilisation VTE risk assessment
- Incomplete distal ultrasound scan views
- Management of upper limb DVT and superficial vein thrombosis
- DVT proforma (DH)
- DVT proforma (PRUH)
- PE pathway- diagnosis and management of suspected non-massive PE
- Anticoagulation drug chart
- PE patient advice sheet for DH and for PRUH
- Intermediate and high risk PE management
- Discharging patients on warfarin for DH and for PRUH (pg. 6)
- Anticoagulation referral form to Boots (Bromley patients only)
- Out of area referrals

- HAT Policy
- Management of VTE in the outpatient thrombosis clinic
- Perioperative bridging guidelines
- Perioperative bridging template
- Boots referral for perioperative bridging
- Endoscopy guidelines
- PRUH Rivaroxaban screening tool for VTE
- Octaplex guideline
- Rivaroxaban/Edoxaban/Apixaban Therpay: Haemorrhage Protocol
- Apixaban haemorrhage protocol
- Dabigatran haemorrhage protocol

References

DH (2010) Guidance notes to accompany VTE risk assessment data collection

Guidelines for process, format and distribution of all policies and guidelines – V1: Michaela Hooper, Frimley Park Hospital NHS Foundation Trust, 2006.

NHSLA Risk Management Standards for Acute Trusts, Primary Care Trusts and Independent Sector Providers of NHS Care: NHSLA, 2010-11.

Keeling, D., Baglin, T., Tait, C., Watson, H., Perry, D., Baglin, C., Kitchen, S., and Makris, M,. British Committee for Standards in Haematology (2011) Guidelines on oral anticoagulation with warfarin – 4th edition. British Journal of Haematology. pp. 1-14.

NICE (2018) Venous thromboembolism in over 16s: reducing the risk of hospital-acquired deep vein thrombosis or pulmonary embolism
https://www.nice.org.uk/guidance/NG89

NICE (2012) Venous thromboembolic diseases: the management of venous thromboembolic diseases and the role of thrombophilia testing

National Patient Safety Agency (2007) Actions that can make anticoagulant therapy safer. 28th March.

NHSLA (2010) An organisation-wide document for the development and management of procedural documents.

Policy for the approval and implementation of trust-wide policies – version 3: Sara Elkin, Poole Hospital NHS Trust, 2006.

Policy for the development and management of organisation wide policies and other procedural documents – Version 4a: Head of Risk, Assurance and Legal Services/Trust Secretary, East Kent Hospitals University NHS Foundation Trust, 2009.

10. Equality impact assessment

Service/Function/Policy	Directorate / Department	Assessor(s)	New or Existing Service or Policy?	Date of Assessment
Kings Venous Thromboembolism Policy	Haematology	Gayle Porter/Lynda Bonner	New policy	3 September 2012

1.1 Who is responsible for this service / function / policy? King's Executive

1.2 Describe the purpose of the service / function / policy? Who is it intended to benefit? What are the intended outcomes?

The aim of this document is to ensure that King's has a comprehensive and consistent approach to VTE risk assessment, diagnosis treatment and management and to reduce the incidence of HAT

1.3 Are there any associated objectives? E.g. National Service Frameworks, National Targets, Legislation

Compliance with NHSLA Risk Management Standards, Care Quality Commission, NICE clinical guidance, NICE quality standards.

1.4 What factors contribute or detract from achieving intended outcomes?

Successful implementation and compliance with the policy

1.5 Does the service / policy / function / have an impact in terms of race, disability, gender, sexual orientation, age and religion? Details: [see Screening Assessment Guidance]

A positive impact on all groups through improvement of services and patient care, and in particular through the reduction of HAT.

1.6 If yes, please describe current or planned activities to address the impact.

To review regularly to address and possible health inequalities in service provision

1.7 Is there any scope for new measures which would promote equality?

No

1.8 Equality Impact Rating [low, medium, high*]:

Low for all

Race	☐	**Age**	☐	**Disability**	☐
	Gender	☐ **Religion**		☐	**Sexual**
Orientation	☐				

If you have rated the policy, service or function as having a high impact for any of these equality dimensions, it is necessary to carry out a detailed assessment and then complete section 2 of this form

1.9 Date for next review September 2018

11. Checklist for the review and approval of trust-wide policies

1.	**Style and format:**		
	Is the trust logo correct?	Yes	
	Does the policy follow King's corporate identity guidelines, i.e. language concise and clear, is text in Frutiger, Tahoma or Arial and at least 12pt font, are pages numbered?	Yes	
2.	**Information on Front Cover**		
	Are all of the following details present: • Version and version date • Ratified by and date ratified • Author/s (name and job title) • Responsible director • Responsible committee • Date policy comes into effect • Review date • Target audience • Location of document	Yes	
3.	**Document history:**		
	Is it clear what, if any, document this policy replaces?	Yes	
	Has the policy been consulted upon?	Yes	
	Is there a dissemination schedule?	Yes	
4.	**Definitions:**		
	Are all unclear terms defined?	Yes	
5.	**Purpose and scope:**		
	Is there a clear aim including the justification for the policy and how it links with trust priorities?	Yes	
	Is the scope of the policy clear (what is included & excluded)?	Yes	
6.	**Duties**	Yes	
	Are duties included?		
7.	**Policy specific information: minimum requirements**		

	As a minimum does the policy address the appropriate NHSLA Risk Management Standards at Level 1 where relevant?	Yes	
8.	**Review date**		
	Has the review date been made explicit?	Yes	
9.	**Control of documents, including archiving arrangements**		
	Is it described in the document where it will be held/stored?	Yes	
	Have the archive details of any superseded document been described in the document?	Yes	
10.	**Implementation:**		
	Is implementation described, including any training and /or support implications?	Yes	
11.	**Process for monitoring compliance**		
	Is it clear how compliance with the policy will be monitored?	Yes	
12.	**Associated documents**		
	Are associated King's documents listed?	Yes	
13.	**References**		
	Are supporting references listed?	Yes	
14.	**Equality Impact Assessment:**		
	Is an equality impact assessment included?	Yes	