Neurosurgery QI and Audits
ARI

2024

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Introduction

This work was carried out by junior doctors in the department—Ibrahim, Andra, Rebecca, and Melania. It includes two Quality Improvement (QI) projects and one audit:

- **QI Project:** Medication reconciliation documentation
- **QI Project:** Documentation of long-term anticoagulant/antiplatelet guidance in discharge summaries
- **Audit:** Venous thromboembolism (VTE) prophylaxis assessment and prescribing

Data collection took place over two cycles:

- **First cycle:** 15/01/24 – 28/01/24
- **Second cycle:** 26/06/24 – 07/07/24

This report presents the final results of these initiatives.

QI project: Medicine reconciliation documentation

Introduction

• **Medication reconciliation ("Med Rec") documentation**: Best practice dictates that medication reconciliation should be documented for every patient. Since the implementation of HEPMA, this process has been conducted within the system. It is required to reference at least two sources of information, typically the patient's records on Trakcare and the patient themselves.

• **Purpose of Med Rec**: Medication reconciliation forms list the medications a patient was taking before hospital admission. These forms guide inpatient care and ensure appropriate medication adjustments upon discharge.

• **Audit Objective**: This audit aimed to assess the completion rate of medication reconciliations on HEPMA as part of standard clerking practice.

Process

1. Identified all patients admitted during a two-week period.
2. Checked whether medication reconciliations were completed for these patients, regardless of whether one or two sources were used.
3. Implemented three interventions to improve documentation rates:
    a. Departmental Presentation – Findings and recommendations were shared with the team (See Attachment 3).

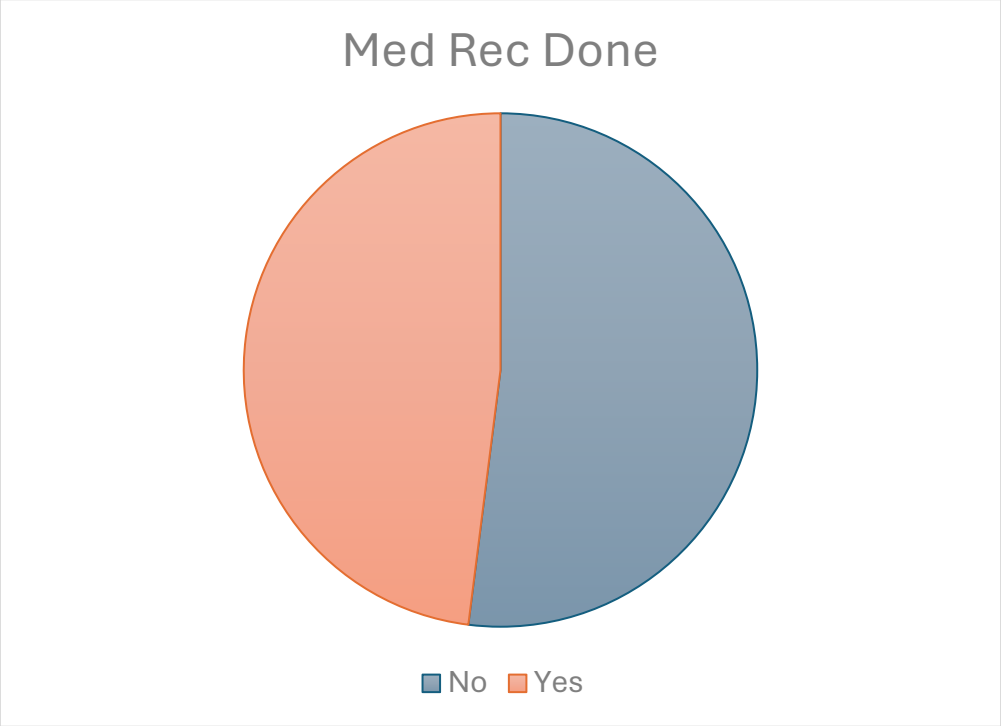
b. Email Communication – Findings and recommendations were sent to junior doctors* (See Attachment 2).
c. Direct Engagement – Encouraged dialogue with junior doctors to understand challenges and promote best practices.

4. Selected another two-week period and repeated the data collection process.
5. Analyzed and compared the results.

**Junior doctors were the primary focus of this initiative due to their key role in completing medication reconciliations.*

Data analysis

- Findings: For 23 patients (out of 44) – **52%** - did not have med rec done.



Second cycle

- Findings: For 21 patients (out of 40) – **52.5%** - did not have med rec done.

Conclusions and recommendations:

- Our interventions were not successful, as the percentage of patients without medication reconciliation remained unchanged.

- Alternative strategies should be explored to improve medication reconciliation completion rates.
- Engaging in discussions with junior doctors could provide insights into barriers and potential solutions for enhancing this practice.
- A follow-up project should be conducted to analyze the frequency of medication reconciliation, ensuring that two independent sources are used as required.

QI project: Documentation of long-term anticoagulant / antiplatelet guidance.

Introduction

- When a patient is regularly prescribed an anticoagulant (ACO) before admission, a clear plan or guidance must be documented for its management upon discharge, regardless of any changes during their hospital stay.
- This project analyzed whether patients who were on ACO therapy prior to admission had a documented plan specifying when, how, and if they should resume their medication after discharge.

Process

1. Identified all patients admitted during a two-week period.
2. Determined which patients had an ACO prescription before admission.
3. Implemented three interventions to improve documentation rates:
    a. Departmental Presentation – Shared findings and recommendations with the team (See Attachment 3).
    b. Email Communication – Sent findings and recommendations to *junior doctors** (See Attachment 2).
    c. Direct Engagement – Encouraged discussions with junior doctors to address challenges and promote best practices.
4. Selected another two-week period and repeated the data collection process.
5. Analyzed and compared the results.

**Junior doctors were the primary focus of this initiative due to their key role in completing medication reconciliations.*

Data analysis

First cycle: Total amount of patients that came with clopidogrel / aspirin was 7 (out of 44) = 16%.

- 3 patients left with a plan
- 1 passed away
- 2 Discharge letter was not able to be obtained
- 1 end-of-life care

Second cycle:

Two patients were admitted with ACO and two with antiplatelet. The four of them left with a plan in their discharge letter.

Conclusions and recommendations:

- First Cycle: Two patients did not require anticoagulant (ACO) or antiplatelet guidance, as they were either receiving end-of-life care or had passed away. Of the remaining five patients, three had a documented plan, while discharge letters were unavailable for the other two. This suggests a potential compliance rate of 100%, but confirmation was not possible.
- Second Cycle: Compliance was confirmed at 100%. As a result, no further recommendations were made for this patient group or topic.

Audit: Venous thromboembolism prophylaxis assessment and prescription

Introduction

Aberdeen Royal Infirmary has a **venous thromboembolism prophylaxis (VTEp) guideline** for surgical patients (**see corresponding section for details**). This guideline mandates completion within **24 hours** of patient admission.

The assessment begins with three screening questions regarding:

1. Hospital stay of **three or more days**
2. **Active cancer and/or ongoing cancer treatment**
3. **Use of chemoprophylaxis**

- If the patient answers **"yes"** to any of these, a **full VTEp assessment** is required.
- If **"no"**, the patient is evaluated for compression stocking use and should be reassessed **within 48 hours** or if their condition changes.

For patients requiring full VTEp assessment:

- A **risk factor assessment** (16 risk factors) and **bleeding risk assessment** (11 risk factors) must be completed.
- Patients with no pharmacological contraindications are categorized as follows:

  Low Risk → No pharmacological prophylaxis recommended.

  Intermediate Risk →

  - **1 risk factor + BMI < 30** → 2,500 units **dalteparin daily**.
  - **Medical risk present & not undergoing surgery** → 5,000 units **dalteparin daily**.

  High Risk →

  - **1 risk factor + BMI > 30** → 5,000 units **dalteparin 12 hours preoperatively**, then daily.
  - **eGFR < 20 + 1 risk factor** → **Unfractionated heparin** 5,000 units **twice daily**.

Due to **time and resource constraints**, this audit focused on specific elements of the algorithm. Recommendations for **more comprehensive audits** are provided in the corresponding section.

Process

1. We compiled a list of patients over a two-week period.
2. We searched for any documentation of a VTE prophylaxis (VTEp) assessment in Trakcare.
    a. No patients had a comprehensive assessment documented.
    b. To broaden our criteria, we included postoperative indications and ward round notes, assuming that in these cases, a rapid assessment may have been conducted informally by medical staff.
    c. We searched Trakcare, including postoperative notes, using keywords: "VTE," "dalt," and "LMWH."
    d. If any mention of VTE prophylaxis was found, we classified it as “VTEp assessment done.” If no mention was found, we classified it as “VTEp assessment not done.”
    e. However, this classification does not confirm whether a full, comprehensive assessment was performed.
3. We identified patients who had been prescribed pharmacological VTEp, recording the dose, BMI, and length of hospital stay (in days).
4. In the absence of specific documentation, we assumed no medical risk factors were present. We then analyzed two key elements:
   a. Contraindications – Whether any contraindication to pharmacological prophylaxis had been documented.
   b. Dose Appropriateness – Whether the prescribed VTEp was correct based on the patient's weight.
   c. Indication Compliance – Whether VTEp was prescribed for patients hospitalized three or more days (as this alone qualifies as a risk factor).
   d. Renal Function – We did not analyze eGFR, which may have affected the accuracy of the results.
5. Implemented three interventions to improve documentation rates:
    a. Departmental Presentation – Shared findings and recommendations with the team (See Attachment 3).
    b. Email Communication – Sent findings and recommendations to *junior doctors** (See Attachment 2).
    c. Direct Engagement – Encouraged discussions with junior doctors to address challenges and promote best practices.
6. We selected another 2-week period and repeated the search.
7. We analyzed the data.

**We decided to focus on Junior Doctors as typically they are in charge of prescribing VTEp with the advise of senior staff.*

Data analysis

	First cycle	%	Second cycle	%
Amount of patients	45	100	40	100
Total of patients VTEp Assessment Documented on TrakCare	16	35,55555556	22	55
Amount of patients which VTEp prescribed	15	33,33333333	11	27,5
VTEp assessment not documented but VTEp prescribed	5	11,11111111	1	2,5
Patients that qualified for VTEp based on hospital stay (1 risk factor, no explicit contraindications) and were indeed prescribed	15	33,33333333	10	25
Patients that qualified for VTEp based on hospital stay (1 risk factor, no explicit contraindications) and were not prescribed	10	22,22222222	15	37,5
Correct dalteparin dose	10		6	
Incorrect dalteparin dose prescribed	5		3	
Dose prescribed without BMI calculated	3	6,666666667	1	2,5
amount of patients exempt from being prescribed:	7	15,55555556	5	12,5
Amount of patients that stayed >= 3 days ?	32	71,11111111	30	75

- The number of patients analyzed in both cycles was comparable.
- **VTEp assessments:**
  - In the first cycle, **only 36%** of patients had a VTEp assessment documented. This **increased to 55%** in the second cycle, which is an improvement.
  - However, this still highlights a significant gap in practice—**full VTEp assessments were not routinely conducted for any of the 85 patients analyzed.**
  - The low documentation rate suggests that either **VTEp assessments are not being performed regularly or are not being properly recorded.**
  - Additionally, the current documentation process may not be optimal.
- **VTEp prescriptions:**
  - A similar proportion of patients were prescribed VTEp in both cycles (**33% in the first and 27.5% in the second**).

    - In the **first cycle**, **11% of patients (5 patients)** were prescribed VTEp **without a documented assessment**. This improved in the second cycle, decreasing to **2.5% (1 patient).**
- **Patients meeting VTEp criteria but not prescribed prophylaxis:**
    - Among patients who **qualified for VTEp** based on hospital stay (≥3 days, no explicit contraindications), there was a **concerning increase in missed prescriptions**:
        - **22% in the first cycle**
        - **37.5% in the second cycle**
    - This suggests that between **one-fifth and over one-third** of eligible patients were **not receiving appropriate VTE prophylaxis** despite meeting the criteria.
- **Incorrect dosing of VTEp:**
    - Among patients who were prescribed VTEp, **1 in 3 (33%) received an incorrect dose** in both cycles.
    - Additionally, **3 patients in the first cycle were prescribed VTEp without BMI documentation**, which is crucial for correct dosing. This **decreased to 1 patient in the second cycle**.

Key Takeaways:

- While documentation of VTEp assessments improved, **full assessments are still not routinely conducted**.
- A **substantial number of eligible patients are not receiving VTE prophylaxis**, and this **worsened in the second cycle**.
- **Dosing errors remain consistent**, affecting 1 in 3 patients prescribed VTEp.
- Improvements were seen in **reducing undocumented VTEp prescriptions** and ensuring BMI was recorded before prescribing.

Conclusions and recommendations:

- Initial VTEp assessment:
    - Every admitted patient should be screened for a full VTEp assessment using the three qualifying questions. This process takes 1-2 minutes and ensures appropriate risk stratification.
- Documentation of VTEp assessment:
    - If VTEp is prescribed, a full VTEp assessment should ideally be completed beforehand.
    - If a full assessment is not conducted at the time of prescription, a clear plan for it should be documented in TrakCare.
- Dosing accuracy:
    - Before prescribing VTEp, ensure BMI is documented in TrakCare, as dosing depends on weight.
- Reassessment for prolonged hospital stays:

    - Patients on their third day of hospital stay should be reassessed, as they almost certainly qualify for VTE prophylaxis.
- Future audits:
    - More comprehensive audits should be conducted to gain a deeper understanding of departmental performance, including:
        - Tracking how many assessments are completed within the first 24 hours of admission.
        - Evaluating adherence to risk and bleeding factor assessments.

Attachment 1: Risk assessment for venous tromboembolism

SURGICAL
Risk Assessment for Venous Thromboembolism (VTE)
COMPLETE WITHIN 24HRS OF ADMISSION

NHS Grampian

Pt Addressograph SURGICAL	Date of admission: Date of first assessment: Assessed by: Designation: Provide all patients with VTE information leaflet

Is the patient known, or expected to have, significantly reduced mobility relative to normal state? (≥ than 3 days)	Yes	No
Does the patient have active cancer / receiving cancer treatment?	Yes	No
Does local or national policy exist that dictates the use of chemoprophylaxis?	Yes	No

If NO to all of above, risk assessment is complete and no chemoprophylaxis is required at present ☐
Assess patient for anti embolism stockings
Continue to review every 48hrs or sooner if condition changes.

YES TO ANY OF THE ABOVE, COMPLETE RISK ASSESSMENT BELOW
DOES THE PATIENT HAVE ANY RISK FACTORS FOR THROMBOSIS?
↓TICK ALL THAT APPLY↓

☐	Immobility known or predicted for ≥ 3 days	☐	Use of oestrogen-containing contraception, hormone replacement therapy, or assisted reproduction therapy
☐	Significant medical co-morbidities e.g. heart disease, metabolic, endocrine or respiratory disorders, acute infection, inflammatory condition, sickle cell anaemia.	☐	Personal history of VTE or a first degree relative with a history of unprovoked VTE
☐	Active cancer or receiving cancer treatment.	☐	Pregnancy or < 6 weeks post partum
☐	Dehydration	☐	Varicose veins with a history of phlebitis
☐	Known thrombophilia*	☐	Hip fracture or hip or knee replacement
☐	Obesity (BMI>30 kg/m^2)	☐	Total anaesthetic time > 90 mins
☐	Critical care admission e.g. HDU/ITU	☐	Surgery involving pelvis or lower limb with a total anaesthetic + surgical time > 60 mins.
☐	Age >60 years	☐	Acute surgical admission with inflammatory or intra abdominal condition.

YES TO ONE OR MORE RISK FACTORS, NOW ASSESS BLEEDING RISK
AND CONTRAINDICATIONS TO PHARMACOLOGICAL PROPHYLAXIS?
↓TICK ALL THAT APPLY↓

☐	Active bleeding	☐	Thrombocytopenia (<75,000/ul)
☐	Acquired or suspected bleeding disorder (e.g. liver failure)	☐	Untreated inherited bleeding disorder (e.g. haemophilia or von Willebrand disease)
☐	Concurrent therapeutic use of anticoagulants such as warfarin, rivaroxaban, apixaban and dabigatran	☐	Planned or recent surgery or intervention with high bleeding risk. Seek expert advice.
☐	On acute coronary syndrome (ACS) protocol, treatment dose of Dalteparin or Fondaparinux, while waiting for results of Troponin, VQ and/or Doppler	☐	Lumbar puncture, epidural/spinal procedure expected within the next 12 hours or carried out in the previous 4 hours.
☐	Uncontrolled hypertension (≥ 230/120 mmHg)	☐	Heparin induced thrombocytopenia
☐	Acute stroke		

SEE OVER FOR PHARMACOLOGICAL PROPHYLAXIS.

RE-ASSESSMENT OVERLEAF.

ACTION BOX NO CONTRAINDICATIONS TO PHARMACOLOGICAL PROPHYLAXIS				
RISK LEVEL	IDENTIFIED RISKS	CHEMOPROPHYLAXIS	MECHANICAL PROPHYLAXIS UNLESS CONTRAINDICATED	
Low Risk	No Risk Factors	No Prophylaxis	Yes	No
Intermediate Risk	1 Risk Factor + BMI < 30	Dalteparin 2,500 units daily	Yes	No
	Medical Risk Factor Present - not for surgery	Dalteparin 5000 units daily	Yes	No
High Risk	1 Risk Factor + BMI > 30	Dalteparin 5000 units 12 hours pre op then daily @ 1800 hours	Yes	No
	eGFR < 20mls/min + 1 Risk Factor	Unfractionated heparin 5000 units twice daily	Yes	No
CONTRAINDICATIONS TO PHARMACOLOGICAL THROMBOPROPHYLAXIS				
All Risk Levels	All	No	Yes	No

SURGERY – EXCLUDING ORTHOPAEDICS

- Risk assessment should be completed for **ALL** patients on admission to hospital.
- Risk assessment to be completed by designated health care practitioner.
- If medical risk factors are present and patient is not for operation, then apply medical dosing schedule.
- If a patient is admitted after 1800hrs and requires thromboprophylaxis then prescription of a one-off dose is required.
- Ensure nursing staff are notified once prophylaxis is prescribed.
- If low molecular weight heparin is contraindicated speak to senior staff for advice.
- Anti embolism stockings should be considered for all patients on admission. Stockings should be worn until normal pre-admission level of mobility is restored.

CONTRAINDICATIONS TO ANTI EMBOLISM STOCKINGS

- MASSIVE LEG OEDEMA
- PULMONARY OEDEMA
- PERIPHERAL ARTERIAL DISEASE OR NEUROPATHY
- MAJOR LEG DEFORMITY
- DERMATITIS

- Use of pneumatic compression boots should be considered in all cases but may be omitted in local anaesthetic cases or for patients in Trendelenburg position (consideration during surgical brief / pause is advised).
- Reasons for the use or omission of prophylaxis out with this guidance must be documented in the case record.
- Post discharge prophylaxis may be required. Specify the modality, dose and duration
- Incorporation of discussion regarding risk assessment and VTE prophylaxis into "standard business" (i.e. ward rounds and / or surgical briefing/ pause) is recommended.
- Place Risk Assessment Form in Drug Kardex for follow-up and re-assessment.

*__THROMBOPHILIAS:__ Anti-thrombin deficiency; Protein C deficiency; Protein S deficiency; Factor V Leiden; Prothrombin gene variant; Antiphospholipid syndrome.

VTE RE-ASSESSMENT Re-assess patient every 48hrs until condition changes or discharged. Re-assessment required every 24hrs if patient is on ACS Protocol.		
DATE	COMMENT	SIGNATURE

Attachment 2: Mail to junior doctors.

Dear Junior Doctors,

We are previous Jr Drs from the Neurosurgery department (Ibrahim, Andra, Rebecca and Melania). We have done a few audits that basically are quite simple and look forward to do minor improvements to patient care by doing minor changes to our daily tasks. The main reason to choose these topics is because

these are things that can be tackled at Junior Doc level while having a good impact in care provision. In this mail, we would like to share with you some of the findings and recommendations. We also attach the presentation for you to have.

The audits we have done are:

- (a) Medicine reconciliation documentation
- (b) Venous thromboembolism prophylaxis dose & prescribing
- (c) Documentation of long-term anticoagulant / antiplatelet guidance for patients in discharge summary

Basically, the aim is to:

(a) Complete medicine reconciliation from two different sources as a standard clerking practise.
(b) Assess every patient in order to see whether they require VTE prophylaxis and calculate correctly which dose.
(c) Provide patients with a clear plan regarding how, when and if they should return to the anticoagulation plan they had before being admitted.

We retrieved the data from 15.01.24 – 28.01.24, with a total of 44 patients. We have found:

(a) For 23 patients (out of 44) – 52% - did not have med rec done.
(b)
    - VTEp Assessment is not documented on HEPMA except for pharmacy notes
    - Out of the 44 patients, 15 were prescribed VTEp – 5 of which did not have a VTEp plan written on trakcare or post op note.
    - 3 out of 15 (20%) were prescribed wrong dose (5000) when BMI <30 or BMI not written.
    - 1 patient was written 2500 without having BMI.
    - 6 patients stayed >3days (average 7.7 days) and were not prescribed VTEp
(c) Total amount of patients that came with clopidogrel / aspirin was 7 (out of 44) = 16%.
    - 3 patients left with a plan.
    - 1 passed away.
    - 2 discharge letter was not able to be obtained.
    - 1 end of life care pathway.

Therefore, our recommendations ahead of a second cycle, are:

(a) Complete med rec as a standard clerking practise. With HEPMA, this ensures medications are prescribed using two different sources (typically this is the patient and primary care record).

(b) Given the fact that Junior Docs are the ones typically prescribing VTEp:
    - Assess whether any patient in the ward needs VTEp by using NHS Grampian Guidelines, particularly immobilization > 3 days. (https://scottish.sharepoint.com/sites/GRAM-Guidance/Shared%20Documents/Venous%20Thromboembolism%20-%20Surgical%20Risk%20Assessment.pdf).
    - When VTEp is prescribed, please make sure there is a clear plan for it written in trakcare.
    - When VTEp is prescribed, please make sure the BMI is written in trakcare and VTEp dosage is calculated accordingly.

(c) No recommendations made for this set of patients.

We will start the second cycle on Monday 24/6. Wish us luck!

Thanks so much and if any questions please do not hesitate to ask.

Andra

Ibrahim

Rebecca

Melania

Attachment 3: presentation with the findings and recommendations done in the neurosurgery department

Neurosurgery Team Audit

Supervisor: Mr Bhatt

Registrar: Ms Arshad

FYs: Drs Andra Ciutac, Ibrahim Ali Ibrahim, Rebecca Kelly, Melania Geymonat Ramirez

NHS Grampian

Audit Topics – Neurosurgery Department

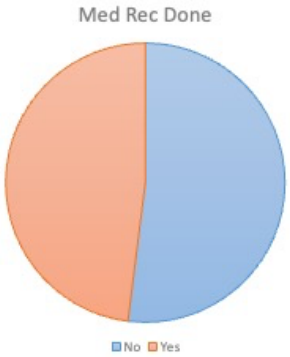
- Medicine reconciliation documentation
- Venous thromboembolism prophylaxis assessment & prescribing
- Documentation of long-term anticoagulant / antiplatelet guidance for patients in discharge summary

  - Duration First cycle: 15.01.24 – 28.01.24
  - Number of patients: 44

NHS Grampian

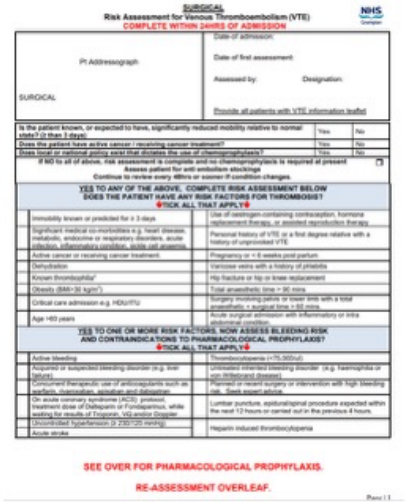
Medicine Reconciliation

- "Med Rec" forms are a list of medications patients were taking immediately prior to hospital admissions, used to guide inpatient care and discharge amendments.
- This audit sought to check how many patient's med recs were being completed on HEPMA as a standard clerking practise
- **Findings:** For 23 patients (out of 44) – **52%** - did not have med rec done.



NHS Grampian

Venous thromboembolism prophylaxis assessment and prescription



SURGICAL

Risk Assessment for Venous Thromboembolism (VTE)

COMPLETE WITHIN 24HRS OF ADMISSION

NHS Grampian

Pt Addressograph

SURGICAL

Date of admission:

Date of first assessment:

Assessed by: Designation:

Provide all patients with VTE information leaflet

Is the patient known, or expected to have, significantly reduced mobility relative to normal state? (≥ than 3 days)	Yes	No
Does the patient have active cancer / receiving cancer treatment?	Yes	No
Does local or national policy exist that dictates the use of chemoprophylaxis?	Yes	No

If NO to all of above, risk assessment is complete and no chemoprophylaxis is required at present
Assess patient for anti-embolism stockings
Continue to review every 48hrs or sooner if condition changes.

YES TO ANY OF THE ABOVE, COMPLETE RISK ASSESSMENT BELOW
DOES THE PATIENT HAVE ANY RISK FACTORS FOR THROMBOSIS?
♦TICK ALL THAT APPLY♦

	Immobility known or predicted for ≥ 3 days		Use of oestrogen-containing contraception, hormone replacement therapy, or assisted reproduction therapy
	Significant medical co-morbidities e.g. heart disease, metabolic, endocrine or respiratory disorders, acute infection, inflammatory condition, sickle cell anaemia		Personal history of VTE or a first degree relative with a history of unprovoked VTE
	Active cancer or receiving cancer treatment		Pregnancy or < 6 weeks post-partum
	Dehydration		Varicose veins with a history of phlebitis
	Known thrombophilia*		Hip fracture or hip or knee replacement
	Obesity (BMI>30 kg/m²)		Total anaesthetic time > 90 mins
	Critical care admission e.g. HDU/ITU		Surgery involving pelvis or lower limb with a total anaesthetic + surgical time > 60 mins
	Age >60 years		Acute surgical admission with inflammatory or intra-abdominal condition

YES TO ONE OR MORE RISK FACTORS, NOW ASSESS BLEEDING RISK
AND CONTRAINDICATIONS TO PHARMACOLOGICAL PROPHYLAXIS?
♦TICK ALL THAT APPLY♦

	Active bleeding		Thrombocytopenia (<75,000/ul)
	Acquired or suspected bleeding disorder (e.g. liver failure)		Untreated inherited bleeding disorder (e.g. haemophilia or von Willebrand disease)
	Concurrent therapeutic use of anticoagulants such as warfarin, rivaroxaban, apixaban and dabigatran		Planned or recent surgery or intervention with high bleeding risk. Seek expert advice
	On acute coronary syndrome (ACS), protocol, treatment dose of Dalteparin or Fondaparinux, while waiting for results of Troponin, VQ and/or Doppler		Lumbar puncture, epidural/spinal procedure expected within the next 12 hours or carried out in the previous 4 hours
	Uncontrolled hypertension (≥ 230/120 mmHg)		Heparin induced thrombocytopenia
	Acute stroke		

SEE OVER FOR PHARMACOLOGICAL PROPHYLAXIS.

RE-ASSESSMENT OVERLEAF.

ACTION BOX
NO CONTRAINDICATIONS TO PHARMACOLOGICAL PROPHYLAXIS

RISK LEVEL	IDENTIFIED RISKS	CHEMOPROPHYLAXIS	MECHANICAL PROPHYLAXIS UNLESS CONTRAINDICATED	
Low Risk	No Risk Factors	No Prophylaxis	Yes	No
Intermediate Risk	1 Risk Factor + BMI < 30	Dalteparin 2,500 units daily	Yes	No
	*Medical Risk Factor Present + not for surgery	Dalteparin 5000 units daily	Yes	No
High Risk	1 Risk Factor + BMI > 30	Dalteparin 5000 units 12 hours pre op then daily @ 1800 hours	Yes	No
	>2VTE * Stroke/mi + 1 Risk Factor	Unfractionated heparin 5000 units twice daily	Yes	No
CONTRAINDICATIONS TO PHARMACOLOGICAL PROPHYLAXIS			YES	
All Risk Levels	All	No	Yes	No

SURGERY – EXCLUDING ORTHOPAEDICS

- Risk assessment should be completed for ALL patients on admission to hospital.
- Risk assessment to be completed by designated health care practitioner.
- If medical risk factors are present and patient is not for operation, then apply medical dosing schedule.
- If a patient is admitted after 1830hrs and requires thromboprophylaxis their prescription of a one-off dose is required.
- Ensure nursing staff are notified once prophylaxis is prescribed.
- If low molecular weight heparin is contraindicated speak to senior staff for advice.
- Anti-embolism stocking should be considered for all patients on admission. Stockings should be worn until normal pre-admission level of mobility is restored.

CONTRAINDICATIONS TO ANTI-EMBOLISM STOCKINGS

- SEVERE PERIPHERAL ARTERIAL DISEASE
- PULMONARY OEDEMA
- PERIPHERAL ARTERIAL DISEASE OR NEUROPATHY
- MAJOR LEG DEFORMITY
- DERMATITIS

- Use of pneumatic compression boots should be considered in all cases but may be omitted in local anaesthetic cases or for patients in Trendelenburg position (consideration during surgical brief / pause is advised).
- Reasons for the use or omission of prophylaxis out with this guidance must be documented in the case record.
- Post discharge prophylaxis may be required. Specify the modality, dose and duration.
- Incorporation of discussion regarding risk assessment and VTE prophylaxis into 'standard business' (i.e. ward rounds and / or surgical briefing/ pause) is recommended.
- Refer Risk assessment Form in Drug Kardex for follow-up and re-assessment.

*THROMBOPHILIA: Anti-thrombin deficiency; Protein C deficiency; Protein S deficiency; Factor V Leiden; Prothrombin gene variant; Antiphospholipid syndrome.

VTE RE-ASSESSMENT

Re-assess patient every 48hrs until condition changes or discharged.
Re-assessment required every 24hrs if patient is on AGS Protocol.

DATE	COMMENT	SIGNATURE

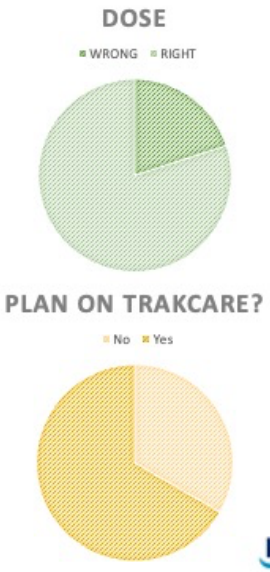
Page | 2

Text of change: SPSP Quality Improvement Version 2.3 January 2013

NHS Grampian

Findings

- VTEp Assessment is not documented on HEPMA except for pharmacy notes.
- Out of the 44 patients, 15 were prescribed VTEp.
  - 5 of which did not have a plan written on trakcare.
  - 3 were prescribed wrong dose (5000u) when BMI <30 or BMI not written.
  - 1 patient was written 2500u without BMI.
  - 6 patients stayed > 3days (average 7.7 days) and were not prescribed VTEp nor assessed.



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Documentation of long-term anticoagulant / antiplatelet guidance

- Out of the patients that had ACO before being admitted, we analysed whether they had an ACO plan or guidance for when, how and if to reassume their medication.
- Total amount of patients that came with clopidogrel / aspirin was 7 (out of 44) = 16%.
  - 3 patients left with a plan
  - 1 passed away
  - 2 Discharge letter was not able to be obtained
  - 1 End of life care

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Recommendations

- Medicine reconciliation documentation:
  - Complete med rec as a standard clerking practise.
- Venous thromboembolism prophylaxis assessment & prescribing:
  - Assess whether any patient in the ward needs VTEp by using NHS Grampian Guidelines, particularly immobilization > 3 days.
  - When VTEp is prescribed, please make sure there is a clear plan for it written in trakcare.
  - When VTEp is prescribed, **please make sure** the BMI is written in trakcare and VTEp dosage is calculated accordingly.
- Documentation of long-term anticoagulant / antiplatelet guidance for patients in discharge summary:
  - No recommendations made for this set of patients.

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Interventions

- Med rec, VTEp prescription and discharge letters (where ACO plans are written) are done by Junior Doctors. Therefore, we consider followings measures to be appropriate:
  - Presentation in the Neurosurgery department.
  - Work with Junior Doctors onsite to address the topics. We will convey the findings and recommendations via mail and in Doctors office as a reminder.

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What is next?

- Second cycle of audits between 24/6-7/7.
- Data analysis.
- Presentation of results in July.

- Thanks ☺