SCOPE: National

RED Unsuitable for community admission to HATH. Refer to ED/ Inpatient management. (May become suitable for HATH after inpatient stabilisation)	• Co-existing medical conditions requiring hospital admission. • Known or suspected hypersensitivity to warfarin or enoxaparin (unless under the governance of a consultant Haematologist or thrombosis clinic). • Pregnancy (warfarin is contraindicated in pregnancy).
ORANGE Requires discussion with Medical Governor and/or Haematologist prior to acceptance.	Conditions that increase risk of bleeding: • Recent major surgery • History of familial bleeding disorders • Peptic ulcer disease • Increased risk of falling • Thrombocytopaenia. • Uncontrolled hypertension.
GREEN Accepted for HATH protocol.	• Confirmed uncomplicated DVT. • Client's medical condition has been assessed as stable, has a clear diagnosis/prognosis and is at low risk of deterioration. • Over 13 years, suitable for adult dosing and not under the care of a Paediatrician.

ASSESSMENT

- Check target INR.
- Check current INR
- Check Warfarin dose given to date (including the brand)
- Confirm client not on any other oral anticoagulants
- Check weight.

PATHOLOGY WORK UP

Verify if any recent pathology has been ordered prior to requesting the below:

- Baseline blood tests:
    - Full blood picture (FBP) for baseline platelet counts
    - Urea & electrolytes to assess renal function
    - Coagulation profile (INR, APTT, fibrinogen)
    - Liver function tests
- Day 5, repeat FBP to assess platelet count for heparin induced thrombocytopenia.

Calculate creatinine clearance using Cockcroft – Gault equation.

GENERAL MANAGEMENT

- Access blood results from referral source.
- Obtain last INR and Warfarin dose from referral source.
- Collaborate with medical governance doctor regarding any abnormal test results.
- Nursing assessment as per Deep Vein Thrombosis (DVT) Assessment Tool. Collaborate with medical governance doctor if any deterioration in client's condition.
- Monitor INR daily (utilising Coagucheck) and liaise with medical governance doctor for dosing of warfarin (*If INR reading >3.5, formal blood test is required for confirmation).
- For management of bleeding and/or high INR in a patient taking warfarin refer to APPENDIX 1.
- Administer enoxaparin sodium as per medical authority.
- Enoxaparin sodium should be continued for a minimum of 5 days and until INR is within therapeutic range for 24 hours.
- Advise client regarding warfarin use, including its potential complications and interactions with diet and alcohol as per *Living with Warfarin* booklet.
- Encourage gentle ambulation and legs elevation when resting.

TREATMENT

Recommended warfarin nomogram

Day	INR	Suggested Dose
1	1.0 – 1.4	5mg
2 and 3	Below 1.8 Above or equal 1.8	5mg 1mg
4 and 5	Below 1.5 1.5 – 1.9 2.0 – 2.5 2.6 – 3.5 3.5 – 4.5 Above 4.5	7mg 5mg 4mg 3mg 2mg (formal INR required) 0mg (formal INR required)

Recommended enoxaparin dose

Renal function	Treatment dose
Normal renal function CrCl > 30mL/min	• 1.5 mg/kg SC daily* ** or • 1 mg/kg SC BD
Severe renal impairment CrCl < 30mL/min	• 1 mg/kg SC daily
* Twice-daily dosing of enoxaparin is preferred for patients at high risk of bleeding or of thrombus extension, such as patients who are older, obese or have a malignancy. **If dose required is greater than 150mg, dose must be given as twice daily dose.	

MEDICAL GOVERNANCE

- The client has access to medical governance support for 24 hours per day, 7 days per week.
- Primary medical governance can be by referring medical specialists, credentialed referring GPs or by Silver Chain medical staff.
- When governance is retained by a Silver Chain medical officer the client will have a medical review within 48 hours of admission and the medical officer will determine when the scheduled follow up and discharge will occur.
- Where the primary medical governor is unavailable the Silver Chain medical officer can provide the medical governance.
- Care delivery is planned and provided in consultation with the client, medical officer/specialist holding medical governance and nursing staff.
- In the instance when a client's condition deteriorates the Silver Chain medical officer or nursing staff will confer with an emergency department medical officer.
- A summary of the episode of care is sent to the referrer or the client's GP at discharge.

FOLLOW UP

- Ensure the client has an appointment arranged with own General Practitioner (GP) prior to discharge to ensure continuity of care.
- Fax protocol with client discharge summary to GP.

REFERENCES

- Winter M, Keeling D, Sharpens F, Cohen H, Vallance P. Procedures for the outpatient management of patients with deep vein thrombosis. Clin Lab Haem 2005; 27:61-66.
- Deep Vein Thrombosis, Therapeutic Guidelines Ltd (eTG March 2017 edition) Therapeutic Guidelines Available from: deep-vein-thromobosis-and-pulmonary-embolism-treatment&guideline
- WA TAG Information for Patients. Living with Warfarin. Department of Health 2016. http://www.watag.org.au/wamsg/docs/Living_with_Warfarin.pdf

APPENDIX 1: MANAGEMENT OF BLEEDING AND/OR HIGH INR (OVERANTICOAGULATION)

Principles

- INR > 3.5 on Point of Care (POC) machine e.g. Coagulochek mandates laboratory specimen to be taken.
- Laboratory specimen is considered as 'gold standard' and should be utilised in preference to POC machine.

High Bleeding Risk

- Recent major bleed (within 4 weeks)
- Major surgery (within 2 weeks)
- Thrombocytopaenia (platelet count < 50 x 10^9/L)
- Known liver disease
- Concurrent antiplatelet therapy

Management of patients on warfarin therapy with bleeding*

Clinical setting	Recommendation
INR ≥ 1.5 with life threatening bleeding	Cease warfarin and transfer immediately to hospital
INR ≥ 2.0 with clinically significant bleeding	Cease warfarin and transfer immediately to hospital
Any INR with minor bleeding	Omit warfarin, repeat INR following day and adjust warfarin dose to maintain INR in the target therapeutic range If bleeding risk is high or INR > 4.5 refer to hospital for administration of vitamin K

*indication for warfarin therapy should be reviewed; if clinically appropriate, consider permanent cessation.

Management of patients on warfarin therapy with high INR and no bleeding

Clinical setting	Recommendation
INR higher than the therapeutic range but < 4.5 and no bleeding	Lower or omit the next dose of warfarin Resume therapy at a lower warfarin dose when the INR approaches therapeutic range if INR ≤ 10% above therapeutic range dose reduction generally not necessary
INR 4.5-10.0 and no bleeding	Cease warfarin therapy; consider reasons for elevated INR and patient-specific factors. Measure INR within 24h Resume warfarin at reduced dose once INR approaches therapeutic range If bleeding risk is high, send patient to hospital for medical review and +/- administration of vitamin K
INR > 10.0 and no bleeding	Cease warfarin therapy Transfer immediately to hospital

Source: Tran H, et al. An Update of Consensus Guidelines for Warfarin Reversal. MED J AUST 2013; 198 (4): 198-199**.**