The Sheffield Area Prescribing Group

Shared Care Protocol for the prescription and supply of Enoxaparin

for patients aged 16 years and older

Version 1

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Version history

Contents *(click blue text for book-marked sections and linked documents)*

Appendices

1. Quick Reference to the Sheffield Shared Care Protocol for Enoxaparin

	Treatment of VTE	Prophylaxis of VTE
Patients included (≥16 years old)	Selected patients with VTE (some cancer patients, those unstable on, unsuitable for, or with a contra-indication to oral anticoagulants, those with recurrent VTE whilst on oral anticoagulant, injectable drug users). Pregnant women with VTE	High-risk surgical patients, those with a history of thrombosis associated with central venous access, certain cancer patients, pregnant women at high-risk of VTE & for management of the antiphospholipid syndrome (recurrent miscarriage/ adverse pregnancy outcome)
Dosage & duration of therapy (see below for doses in renal impairment)	**Pregnant and post-partum women where CrCl ≥ 30mL/min** Dose based on renal function and early booking weight: **Initial dose:** < 50kg: 40mg BD 50 – 69kg: 60mg BD 70 – 89kg: 80mg BD 90 – 109kg: 100mg BD 110 – 125kg: 120mg BD >125kg: 1mg/kg BD (rounded to the nearest syringe) **Ongoing -** may be prescribed as once daily in patients weighing ≤125kg following review by a Thrombosis Nurse/ Haematologist: **Ongoing dose** <50kg: 60mg OD 50 – 69kg: 100mg OD 70 – 89kg: 120mg OD 90 – 109kg: 150mg OD 110 – 125kg: 180mg OD >125kg: continue 1mg/kg BD (rounded to nearest syringe) Continued throughout pregnancy & for at least 6 weeks post-partum as advised by Haem/Obs clinic **All other patients:** where **CrCl ≥ 30mL/min** Dose based on indication, weight and renal function (CrCl) Dose for **high-risk patients** (those with body weight ≥ 126kg, recurrence or extension of VTE whilst on anticoagulation, pulmonary emboli, antiphospholipid syndrome, luminal cancers who are at high risk of bleeding) **1mg/kg BD**. ≤ 47kg: 40mg BD 48 – 73kg: 60mg BD 74 – 88kg: 80mg BD 89 – 109kg: 100mg BD 110 – 130kg: 120mg BD 131 – 159kg: 150mg BD 160 – 199kg: 180mg BD 200+ kg: discuss with haematology May be reduced after 5-10 days to once daily (see below). Continue for 3-6 months if 1st event; long-term if recurrent idiopathic event; consider using long-term if ongoing risk factor **Standard dose (1.5mg/kg OD**): ≤47kg: 60mg OD 48 – 59kg: 80mg OD 60 – 73kg: 100mg OD 74 – 88kg: 120mg OD 89 – 99kg: 150mg OD 100 – 125kg: 180mg OD	**In pregnancy for those at risk:** Dose based on renal function and early booking weight. Weight used should not change: **eGFR ≥ 30 ml/min/1.73m²:** < 50kg: 20mg OD 50 - 90kg: 40mg OD 91-130kg: 60mg OD 131-170kg: 80mg OD >170kg: 0.6mg/kg/day in 2 divided doses Rounded to nearest syringe Continued throughout pregnancy and for 6 weeks postpartum. May be stopped at term in antiphospholipid syndrome associated with recurrent miscarriages. Note: women with previous recurrent VTE or previous VTE associated with high-risk antithrombin deficiency or antiphospholipid syndrome require higher doses of LMWH for thromboprophylaxis and will receive enoxaparin at 50%, 75% or full treatment dose. **All other patients:** Dose based on weight and renal function (eGFR ml/min/1.73m²): **eGFR ≥ 30ml/min/1.73m²:** ≤44kg: 20mg OD 45-99kg: 40mg OD 100-149kg: 40mg BD ≥150kg: 60mg BD High-risk surgical patients usually receive a 28-day course post-operatively or post-discharge. Patients who have surgery to repair a fractured neck of femur receive a 28-day course post-operatively. Other at-risk patients (e.g. bariatric or vascular surgery) may receive 7-10 days post-discharge. Therapy continued for duration of increased risk for other patients e.g. as long as central line is in-situ

<table>
<tr><td>Renal Impairment</td><td><u>Pregnant and postpartum women where CrCl < 30 mL/min</u>
Discuss with haematology

<u>All other patients where CrCl 15-29 mL/min use 1mg/kg OD</u>
≤ 48kg: 40mg OD
48 – 73kg: 60mg OD
74 – 88kg: 80mg OD
89 – 109kg: 100mg OD
110 – 130kg: 120mg OD
131 – 159kg: 150mg OD
160 – 199kg: 180mg OD
200 + kg: discussed with haematology

Contraindicated in CrCl < 15 mL/min or in patients on haemodialysis</td><td><u>Pregnancy</u>
eGFR < 30ml/min/1.73m^2
all weights: 40mg OD and monitor anti-Xa levels, in discussion with haematology

<u>All other patients</u>

eGFR 15 – 29ml/min/1.73m^2:
up to 99kg: 20mg OD
100 – 149kg: 40mg OD
150kg & above: 60mg OD

eGFR < 15ml/min/1.73m^2 or on haemodialysis:
all weight: 20mg OD</td></tr>
<tr><td>Hospital supply</td><td colspan="2">First 28 days of prophylaxis or therapeutic dose (high-risk surgical patients receive the total course from hospital)</td></tr>
<tr><td>Secondary care monitoring</td><td colspan="2">Baseline FBC, coagulation screen (for treatment doses only), U&E, LFT*.
Measurement and documentation of body weight at initiation of treatment.

Repeat FBC within 24hrs and every 2-3 days for the first 14 days of receiving LMWH, ONLY in patients who have had cardiopulmonary bypass or any surgical procedure and exposure to heparin/LMWH in the previous 100 days.
Regular potassium levels in patients at risk of hyperkalaemia i.e. those with diabetes mellitus, chronic renal failure, acidosis, raised potassium levels, on potassium-sparing drugs or potassium supplements or on long-term enoxaparin treatment.

*Baseline blood tests are not required in otherwise healthy pregnant and postpartum women on LMWH for extended prophylaxis</td></tr>
<tr><td>Primary care monitoring</td><td colspan="2">Regular potassium monitoring in high-risk patients i.e. those with diabetes mellitus, chronic renal failure, acidosis, raised potassium levels, on potassium-sparing drugs or potassium supplements or on long-term enoxaparin treatment).
Patients weight – adjust enoxaparin dose as above if weight alters, except during pregnancy.
Monitor renal function – dose may need adjusting if renal function deteriorates.</td></tr>
</table>

Patients/ carers will be taught to administer; otherwise a referral will be made for administration by the Community Nursing team.

GPs will not be asked to initiate therapy;
requests for shared care will be made via the Enoxaparin Shared Care Form

Background and supporting information

The use of low molecular weight heparins (LMWH) to prevent and treat venous thromboembolism (VTE) has increased significantly in recent years. The availability of LMWHs has permitted the treatment of VTE on an outpatient basis, and NICE guidelines concerning the prevention of VTE have led to an increase in the use of prophylactic LMWH. LMWHs are now widely used for a number of licensed and unlicensed indications.

Choice of LMWH
Recently, the availability of biosimilar preparations of LMWHs has enabled the use of cost-effective preparations, in line with the SY biosimilar position statement. From April 2026, patients at Sheffield Teaching Hospitals will be initiated on the biosimilar enoxaparin preparation, Inhixa®. This SCP uses the generic name enoxaparin throughout. However, **prescribing by brand is essential in primary care** to ensure continuity of supply to the patient who will have been trained in administration of this device.

Purpose of the shared care protocol
This shared care arrangement has been developed to facilitate the prescribing and supply of LMWHs in the community and to provide a reference source for those involved in prescribing, supplying and monitoring patients who need LMWH, for treatment or prevention of VTE.

Exclusions from the shared care protocol
Patients with the following conditions are excluded from this guideline:

- History of Heparin Induced Thrombocytopenia (HIT)
- Significant hepatic impairment
- Active gastric or duodenal ulceration or oesophageal varices
- Haemophilia and other inherited bleeding disorders / major bleeding disorders
- Thrombocytopenia with platelets less than $75x10^9$/L
- Recent cerebral haemorrhage
- Severe hypertension (i.e. 230/120mmHg or higher)
- Recent neurosurgery or eye surgery
- Acute bacterial endocarditis
- Hypersensitivity to heparin, enoxaparin or other low molecular weight heparins
- Peri-procedural bridging anticoagulation
- Children under 16 years

Administration of enoxaparin
In most circumstances the patient or carer is advised on how to perform the administration of enoxaparin. If this is not possible a referral is made to the community nursing team to administer the injection.

Clinic Review
The medical team initiating treatment or prophylaxis is responsible, where required, for ensuring that the patient attends for regular disease review at intervals determined by their clinical status. This would normally be carried out by that medical team. If haematology input is desired, the GP or medical team must make a referral to one of the haemostasis and thrombosis consultants at STH.

Contacts
If any problems or concerns arise, please contact the relevant specialist:
Consultant initiating enoxaparin treatment (contact details on referral form / clinic letters):

Anticoagulant Clinic RHH:	(0114) 2713820
Haemostasis & Thrombosis Consultants (secretary)	(0114) 2712500
On-call haematology SpR via RHH switchboard (including out of hours):	(0114) 2711900

Summary of Responsibilities

Responsibilities of the specialist

- Initiate treatment with enoxaparin and provide the first 28-days of treatment, or the whole course for high-risk surgical patients needing extended thromboprophylaxis post-operatively
- Instruct patient or carer on administration (or arrange for community nursing team to administer where this is not possible)
- Ensure patient has been given adequate written and verbal information about what enoxaparin is, why it is being used, awareness of side effects, what to do if the side-effects occur and what the arrangements are for further prescriptions
- Monitor for heparin-induced thrombocytopenia and/or hyperkalaemia during the first 14 days of treatment-dose enoxaparin where necessary – see here for details.
- Make formal referral to primary care provider using the Enoxaparin Shared Care Form
- Keep the patient under clinical review by the consultant initiating enoxaparin, assessing need for ongoing enoxaparin treatment for up to 6 months or arranging referral to consultant haematologist to assess need for longer-term treatment
- Provide advice and support if problems occur during treatment
- Give written direction to the GP as to when treatment should be discontinued
- Conduct annual audit / review as deemed appropriate

Responsibilities of Primary Care

- Accept referral from secondary care to take on continued prescribing of enoxaparin under this shared care agreement after initial 28 days (or sooner if agreed).
- Be aware that there are a number of different preparations of enoxaparin injection; **only pre-filled syringes of the brand Inhixa®** should be prescribed under the terms of this shared care protocol.
- Reinforce educational points provided by the hospital.
- Monitor for hyperkalaemia in those patients at higher risk of raised plasma-potassium concentrations (those with diabetes mellitus, chronic renal failure, acidosis, raised potassium concentrations, those taking potassium-sparing drugs / potassium supplements or patients on long-term treatment). Monitoring U/Es should be done up to 3 monthly in these patients and according to clinical judgment.
- **Re-weigh non-pregnant patients on long-term enoxaparin at a frequency according to clinical judgement** e.g. more often if rapid weight loss (e.g. cancer patients) **and change weight-adjusted doses as appropriate** (see appendix 1).
- Monitor renal function and seek advice if deterioration becomes evident.
- Keep records or a register (using appropriate Snomed codes) of all patients for whom enoxaparin has been prescribed. Records should include relevant details such as indication, concurrent conditions, dose, start date, expected duration, monitoring details, adverse incidents, consultants involved in treatment, any advice or actions.
- Discontinue treatment if the patient experiences severe side effects and the relevant contact at the hospital is not available.
- Confirmation letter to patient and/or carer if treatment is discontinued.
- Conduct audit / annual review as deemed appropriate.

Enoxaparin for Treatment of VTE disease

The categories of patient suitable for primary care continuation of prescription of enoxaparin for treatment of VTE disease are as follows**:**

- Patients with a contra-indication to oral anticoagulants
- Patients in whom it has not been possible to stabilise on oral anticoagulant therapy
- Some patients with recurrent VTE whilst on oral anticoagulant
- Pregnant patients with VTE disease

Such patients who are referred to primary care providers under the shared care arrangements will have been prescribed enoxaparin for more than 28 days by a secondary care specialist. Where it is necessary, arrangements for monitoring for heparin induced thrombocytopenia (HIT) will usually have been completed before referral to primary care.

Initial prescription & monitoring
A decision is made for a patient to be commenced on enoxaparin by the patient's STHFT clinical team following discussion with the patient. Baseline investigations will be undertaken, and, if satisfactory, the patient will be commenced on treatment. At discharge, the patient will be given a prescription for a 28-day supply of the drug. Monitoring for heparin induced thrombocytopenia (HIT) will only be necessary in patients who have had cardiopulmonary bypass or any surgical procedure and exposure to heparin/LMWH in the previous 100 days. They should have their full blood count (FBC) monitored every 2-3 days for the first 14 days of receiving enoxaparin. If the platelet count falls by 30% or more, OR symptoms of thrombosis develop, contact the on-call haematologist for advice. Those who require HIT monitoring after discharge should be referred to the STH anticoagulation clinic via ICE by the specialist team. The patient's GP will be informed of the proposed management plan and monitoring arrangements.

Referral method from secondary to primary care for continuation of supply
A formal referral to the patient's GP will be made from the STHFT medical team initiating enoxaparin treatment using the Enoxaparin Shared Care Form. If HIT monitoring is necessary and has not been completed, the patient will be referred to the anticoagulant clinic for monitoring.

At the point of transfer, a medical and medication history will be provided to the GP, including:

- Consultant and contact details
- Indication for enoxaparin, dose prescribed & proposed duration of treatment, including intended dose changes if applicable
- Patients weight, baseline creatinine, platelet and potassium results
- Date treatment started
- Other relevant clinical information, including concurrent medication
- Interval before patient next due to be seen by STHFT for disease review
- Any specific instructions for the practice, e.g. for continued monitoring of potassium

Treatment should only be discontinued prematurely by the primary care clinician after discussion with the responsible hospital clinician, unless there are exceptional circumstances. Treatment discontinuation must be confirmed by letter from the GP practice to the hospital clinician and patient and/or carer.

Primary care monitoring
Once the patient has been accepted by their primary care provider the responsibility for re-prescribing the drug and further monitoring of renal function and for hyperkalaemia, if appropriate, will pass to the patient's practice (see "Responsibilities of Primary Care"). This will be communicated via the enoxaparin shared care form. It is advised that this monitoring is done regularly up to 3 monthly and according to clinical judgment, and action taken as appropriate. **Since the dose of enoxaparin for treatment of VTE is calculated based on weight, non-pregnant patients on long-term therapy should be re-weighed** (at a frequency determined by clinical judgement e.g. more often if rapid weight loss) **and the dosage of enoxaparin adjusted accordingly** see appendix 1).

Enoxaparin for Prophylaxis of VTE disease

The patients who may be discharged from secondary care on thromboprophylaxis with enoxaparin are:

- High risk surgical patients requiring extended prophylaxis according to NICE and STHFT guidelines
- Those with a history of thrombosis associated with central venous access lines
- Pregnant women requiring prophylaxis
- Cancer patients undergoing cancer therapies or with metastatic malignancies

High risk surgical patients discharged on extended thromboprophylaxis:
Prescription & monitoring
All high risk surgical patients who need extended thromboprophylaxis following discharge will be given sufficient enoxaparin on the discharge prescription to complete the full course of prophylaxis.
Monitoring for heparin induced thrombocytopenia (HIT) will only be necessary in patients who have had cardiopulmonary bypass or any surgical procedure and exposure to heparin/LMWH in the previous 100 days. They should have their full blood count (FBC) monitored every 2-3 days for the first 14 days of receiving enoxaparin. If the platelet count falls by 30% or more, OR symptoms of thrombosis develop, contact the on-call haematologist for advice. Those who require HIT monitoring after discharge should be referred to the STH anticoagulation clinic via ICE by the specialist team.

Other patients on prophylactic enoxaparin:
Initial prescription & monitoring
Other patients than those above will be given a 28-day supply of prophylactic enoxaparin by the STHFT clinical team responsible for their care. Where it is necessary arrangements will be made for monitoring for heparin induced thrombocytopenia to be performed by the STH Anticoagulation Clinic. The patient's GP will be informed of the proposed management plan and monitoring arrangements.

Referral method from secondary to primary care for continuation of supply
A formal referral to the patient's GP will be made from the STHFT medical team initiating enoxaparin treatment using the Enoxaparin Shared Care Form. A full history of the patient will be provided, including:

- Name of responsible consultant and contact details
- Indication for enoxaparin, dose prescribed & proposed duration of treatment, including intended dose changes if applicable
- Date treatment started
- Other relevant clinical information, including concurrent medication
- Baseline creatinine, platelet and potassium results
- Interval before patient next due to be seen by STHFT for disease review
- Any specific instructions for the practice, e.g. for continued monitoring of potassium

Treatment should only be discontinued by the primary care clinician after discussion with the responsible hospital clinician, unless there are exceptional circumstances. Treatment discontinuation must be confirmed by letter from the GP practice to the hospital clinician and patient and/or carer.

Primary Care monitoring
Once the patient has been accepted by their primary care provider the responsibility for re-prescribing the drug and further monitoring of renal function & for hyperkalaemia (if appropriate, see "Responsibilities of Primary Care"), will pass to the patient's practice. This will be communicated via the enoxaparin transfer form. It is advised that this monitoring is done regularly, according to clinical judgment.

References

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6. STH Thromboprophylaxis Guidelines http://nww.sth.nhs.uk/STHcontDocs/STH_CGP/Haematology/PreventionOfVenousThromboembolicDiseaseGuidelines.doc

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Version history

This SCP for enoxaparin has been developed from the Shared Care Guideline between Sheffield Teaching Hospitals NHS Foundation Trust and NHS Sheffield Clinical Commissioning Group for the prescription and supply of Dalteparin (Fragmin®); last updated June 2019

Appendix 1: Guideline for Enoxaparin Use

The Summary of Product Characteristics documents for enoxaparin can be found at:
https://www.medicines.org.uk/emc/search?q=inhixa

Licensed indications included in this shared care protocol

- Prophylaxis of venous thrombosis in surgical and orthopaedic patients
- Prophylaxis of venous thrombosis in medical patients who are bedridden due to acute illness
- Treatment of venous thromboembolism (deep vein thrombosis and pulmonary embolism) until oral anticoagulant treatment has been initiated and is therapeutic
- Treatment of deep vein thrombosis or pulmonary embolism in patients with cancer

Unlicensed indications included in this shared care protocol

- In pregnancy for the prevention and treatment of venous thrombosis in pregnancy, and for treatment of the antiphospholipid syndrome
- Treatment of deep vein thrombosis or pulmonary embolism in those in whom it has not been possible to stabilise oral anticoagulants or in whom oral anticoagulants are thought to be unsuitable.
- Prophylaxis if thrombosis associated with central lines

Treatment of VTE in the following patient groups (aged 16 years and older):

- Those with a contra-indication to oral anticoagulants
- Those who it has not been possible to stabilise on oral anticoagulants
- Those with recurrent VTE whilst on oral anticoagulant

Doses in normal renal function (defined locally as calculated creatinine clearance of 30 ml/min and above)**:**

Standard risk (1.5mg/kg OD)		**High-risk (1mg/kg BD) ***	
Weight (Kg)	**Initial treatment dose**	**Weight (Kg)**	**Initial treatment dose**
≤47	60mg once daily	≤47	40mg twice daily
48 – 59	80mg once daily	48 – 73	60mg twice daily
60 – 73	100mg once daily	74 – 88	80mg twice daily
74 – 88	120mg once daily	89 – 109	100mg twice daily
89 – 99	150mg once daily	110 – 130	120mg twice daily
100 – 125	180mg once daily **	131 – 159	150mg twice daily
		160 – 199	180mg twice daily
		200 +	Discuss with haematology

**High-risk: These include patients at high risk of recurrence or extension of clot (body weight ≥ 126kg, recurrence or extension of VTE whilst on anticoagulation, patients with antiphospholipid syndrome, patients with luminal cancers who are at high risk of bleeding).*
*** this dose is made up of one 100mg and one 80mg syringe*

Doses in patients with creatinine clearance between < 30 mL/min

CrCl 15 – 29 mL/min	
Weight (Kg)	**Initial treatment dose (1mg/kg OD)**
≤47	40mg once daily
48 – 73	60mg once daily
74 – 88	80mg once daily
89 – 109	100mg once daily
110 – 130	120mg once daily
131 – 159	150mg once daily
160 – 199	180mg once daily
200 +	Discuss with haematology
CrCl < 15 mL/min or haemodialysis	
Contraindicated	

Duration:

- First event 3-6 months as instructed
- Recurrent idiopathic event: long-term
- Ongoing risk-factors: consider continuing long-term if ongoing risk factor (e.g. cancer/ cancer therapies/very unstable oral anticoagulation- consider reducing to prophylactic dosages)

Treatment of venous thromboembolism in pregnancy (aged 16 years and older):

Dose: The dose is calculated using the booking weight and is **not** adjusted during the pregnancy. Pregnant or post-partum women with a CrCl < 30 mL/min should be discussed with haematology.

Booking weight (Kg)	Initial dose	Once daily dose* (if applicable)
< 50	40mg twice daily	60mg once daily
50 – 69	60mg twice daily	100mg once daily
70 – 89	80mg twice daily	120mg once daily
90 – 109	100mg twice daily	150mg once daily
110 – 125	120mg twice daily	180mg once daily
>125	1mg/kg twice daily (rounded to the nearest syringe)	Continue 1mg/kg twice daily (rounded to the nearest syringe)

*The dose in patients who weigh 125kg or less may be changed to once daily dosing following review by a Thrombosis Nurse Specialist or a Haematologist.

Duration: throughout pregnancy and for at least 6 weeks postpartum as advised by haematology/ obstetrics at joint clinic.

Prophylaxis of VTE

Prevention of VTE in high-risk surgical patients, those with a history of thrombosis associated with central venous access and certain cancer patients (aged 16 years and older):

Dose: Dosed according to weight and renal function (eGFR ml/min/1.73m^2)

Weight (Kg)	Dose		
	eGFR≥30 ml/min/1.73m^2	**eGFR 15-29** ml/min/1.73m^2	**eGFR < 15** ml/min/1.73m^2 **or on HD**
≤44	20mg once daily	20mg once daily	20mg once daily
45 – 99	40mg once daily		
100 – 149	40mg twice daily	40mg once daily	
≥150	60mg twice daily	60mg once daily	

Duration:

- High-risk patients usually receive a 28 course post-operatively or post-discharge (bariatric surgery patients receive a 10-day course post-discharge, fractured neck of femur patients receive a 28-day course post-operatively). Patients undergoing varicose vein surgery who have thrombosis risk factors receive a 7-day course post-operatively.
- For other patients, prophylaxis is continued for the duration of increased risk e.g. for the duration central line is in-situ

In pregnancy in the prevention of VTE or the management of the antiphospholipid syndrome (recurrent miscarriage/ adverse pregnancy outcome) (aged 16 years and older):

Dose: based on early pregnancy booking weight:

Booking weight (Kg)	Dose	
	eGFR ≥ 30 ml/min/1.73m^2	**eGFR < 30** ml/min/1.73m^2
< 50	20mg once daily	40mg once daily and monitor anti-Xa levels, in discussion with haematology
50-90	40mg once daily	
91-130	60mg once daily	
131-170	80mg once daily	
>170	0.6mg/kg/day in 2 divided doses	

Note: women with previous recurrent VTE or previous VTE associated with high-risk antithrombin deficiency or antiphospholipid syndrome require higher doses of LMWH for thromboprophylaxis and will receive enoxaparin at 50%, 75% or full treatment dose.

Duration: throughout pregnancy and for 6 weeks postpartum. Consideration can be given to stopping at term in antiphospholipid syndrome associated with recurrent miscarriages – as advised by Haem/Obs clinic.

Monitoring

Secondary care

- Baseline FBC, coagulation screen (for treatment doses only), U&Es, accurate body weight. Baseline blood tests are not required in otherwise healthy pregnant and postpartum women on LMWH for extended prophylaxis.
- Repeat FBC within 24 hours and every 2-3 days for the first 14 days of receiving LMWH, only if the patient has had a cardiopulmonary bypass, and other surgical patients who have been exposed to heparin/LMWH within the previous 100 days.
- Patients and risk of hyperkalaemia* should have their potassium level checked weekly for the first 2 weeks of LMWH use.

**(those with diabetes mellitus, chronic renal failure, acidosis, raised potassium levels, on potassium-sparing drugs, or potassium supplements, or on long-term LMWH treatment.*

Primary care

- Check potassium level regularly up to 3monthly and according to clinical judgement if patient is at high risk of hyperkalaemia (i.e. patients with diabetes mellitus, chronic renal failure, acidosis, raised potassium levels, on potassium-sparing drugs, potassium supplements or on long-term LMWH treatment.
- Re-weigh patients on enoxaparin for treatment of VTE disease according to clinical judgement e.g. more often if rapid weight loss (e.g. cancer patients). Alter weight-adjusted doses as appropriate
- Monitor renal function and seek advice if deterioration becomes evident

Prescribing in Renal Impairment

Usually, enoxaparin therapeutic doses are avoided in patients with a creatinine clearance less than 15mL/min. In selected patients it may be appropriate to continue with LMWH therapy and clear prescription guidance should be provided by secondary care with respect to dosage and monitoring. Any queries can be directed to the haemostasis and thrombosis consultants (see below).

Contra-indications to enoxaparin

See current BNF entry for comprehensive list or follow the link to the SPC.

Heparin Induced Thrombocytopenia (HIT)

It is only necessary to monitor for HIT in patients who have had cardiopulmonary bypass, and other surgical patients if they have been exposed to heparin/LMWH within the previous 100 days. HIT usually presents between 5 and 14 days after starting therapy. This should be considered if platelet count falls below normal range, or to less than 30% of baseline platelet count. STHFT will undertake monitoring for HIT during first 2 weeks of VTE treatment with enoxaparin. HIT monitoring is not necessary in pregnant women on prophylactic enoxaparin.

If patient develops thrombocytopenia, skin reaction or new thrombosis within 14 days of starting therapy, HIT should be considered. If HIT is suspected, discuss as an emergency with a Haematologist

Some common side-effects of enoxaparin: (for full list follow the link to the SPC)

- Hyperkalaemia: Heparin inhibits aldosterone secretion and may cause hyperkalaemia. Patients with diabetes, chronic renal failure, acidosis, raised potassium or taking potassium-sparing drugs or potassium supplements are most susceptible. The risk increases with duration of LMWH therapy.
- Haemorrhage
- Thrombocytopenia
- Injection site reactions (consider change to alternative low molecular weight heparin following discussion with On-call for Haematology)
- Osteoporosis with prolonged therapy
- Skin necrosis and hypersensitivity reactions

Drug interactions

See current BNF entry for comprehensive list or follow the link to the SPC.

If any problems or concerns arise please contact the relevant specialist:

Consultant initiating LMWH treatment (contact details on referral form / clinic letters)

On-call haematology SpR via RHH switchboard (including out of hours)	(0114) 2711900
Haemostasis and Thrombosis Consultants (secretary)	(0114) 2712500
Anticoagulant Clinic RHH:	(0114) 2713820

ENOXAPARIN (Inhixa)® SHARED CARE FORM

Sheffield Teaching Hospitals NHS
NHS Foundation Trust

Name:

DoB:

Affix patient label here

Hosp No.:
NHS No.:
Consultant:

For all patients requiring ongoing enoxaparin therapy: email this referral to GP for ongoing prescription according to the Sheffield Enoxaparin Shared Care Protocol

Hospital to provide initial 28-day supply of enoxaparin and to undertake heparin-induced thrombocytopenia (HIT) monitoring if required (see below).

Patient's medical care remains with the hospital consultant who initiated enoxaparin. GP to continue prescribing and monitor potassium levels, renal function and weight as appropriate.

1) REFERRING CONSULTANT DETAILS

Referring consultant:_____ NGH: RHH: □ WPH: □ JW: □

Consultant email address:_____

Next consultant clinic appointment date: _____ GP/practice receiving referral:_____

2) INDICATION FOR ENOXPARIN

a) Thromboprophylaxis: In pregnancy □ Central line □ Cancer □

b) Deep vein thrombosis/ Pulmonary embolism: In pregnancy □ Injectable drug user □
Associated with cancer/ cancer therapies □ Unsuitable for oral anticoagulation □

3) TREATMENT INFORMATION

Patient's weight:_____ (kg) Dose of enoxaparin:_____ mg ONCE/TWICE daily *(delete as appropriate)* Date started:_____

Intended dose changes (if on treatment dose, as per guideline):

Dose to change to: _____ mg, ONCE/TWICE daily on: _____ Reason:_____
(delete as appropriate) *(date)*

Proposed duration of treatment
6 weeks □ 3 months □ 6 months □ long term □ Other duration □ (please give details):_____
Enoxaparin to be administered by: Patient or carer □ Community Nurse (email this form along with SPA referral) □

Further relevant information (clinical problems, concurrent medication):_____

4) MONITORING REQUIREMENTS

Is monitoring for hyperkalaemia required (see full protocol for details)? Yes □ No □

Is monitoring for heparin-induced thrombocytopenia (HIT) required? Yes □ No □
If yes, refer to the STH anticoagulation clinic via ICE and email this form to: **sht-tr.anticoagulationclinic@nhs.net**

Baseline results
Creatinine:_____(μmol/L) Creatinine clearance:_____(mls/min) Platelets:_____($x10^9$/L) Potassium:_____(mmol/L)

FORM COMPLETED BY:

Signature: _____ Print name: _____

Designation: _____ Contact No.(bleep/ext.): _____ (RHH/NGH/WPH/JHW) Date: _____

Emailed to: _____ **GP/ Practice** at Time: _____ Date: _____

By: _____ Time: _____ Date: _____

PRIMARY CARE TO COMPLETE:

I _____ (*insert name of primary care clinician*) can confirm I:

□ **Accept** the request to participate in shared care for the patient named above and will complete the monitoring as set out in the cared care protocol for this medicine/ condition
□ **Reject** the request to participate in shared care; the reason for this being (*optional)*…….

Signature of primary care clinician: _____ Date: _____

Name of primary care clinician (Doctor/ Nurse/ Other):_____

GP/ practice receiving referral: _____ **Emailed by**: _____ Date: _____