

## GUIDELINE DETAILS: Clinical

Document Name:	Shared Care Agreement Low Molecular Weight Heparin (LMWH)
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Distribution to:	All Trust staff via the Trust Intranet

***Please be advised that the Trust discourages the retention of hard copies of policies and procedures and can only guarantee that the policy on the Trust Intranet is the most up to date version***

Risk Rating		
Who will be affected by this Procedure?	Trust Employees / Patients / Visitors / General practitioners	
Have any existing risk assessments related to this procedure been appropriately updated	No	
Is a new risk assessment required by this procedure?	No	
Does this procedure require Health and Safety training?	No	
Does this procedure require specialist equipment?	No	
Karen Thomas		Date: 18 <sup>th</sup> September 2017

	A Potential Severity (1-5)	B Likelihood of	C Risk Rating (A x B = C)
Raw Risk Rating	5	3	15
Final Risk rating	5	2	10

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## **1 Introduction / Purpose**

This shared care agreement is to promote the ongoing care and support of patients prescribed long term treatment with low molecular weight heparin (LMWH).

These guidelines have been agreed upon by the Joint Medicines Management Group in consultation with GPs and the CCGs

The guidance is felt to represent a safe level of clinical care for patients requiring treatment with LMWH.

After initial prescribing under hospital supervision, under certain circumstances monitoring and prescribing can be undertaken in general practice.

It is the policy of the Trust that no one will be discriminated against on grounds of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex or sexual orientation. The Trust will provide interpretation services or documentation in other mediums as requested and necessary to ensure natural justice and equality of access.

## **2 General Document Principles**

LMWHs are considered to be safer and more effective than warfarin and other oral anticoagulants for the treatment and prophylaxis of venous thromboembolism (VTE) in certain groups of patients. Shared care agreements between primary and secondary care are in place for the following patients groups

- Cancer patients who are not currently undergoing active treatment (for example palliative patients)
- Patients in which oral anticoagulants are contraindicated or unsuitable (for example patients with liver disease or patients who have had recurrent venous thromboembolisms whilst taking oral anticoagulants)

### Exclusions from the shared care protocol

Patients with the following conditions are excluded from this protocol:

- History of Heparin Induced Thrombocytopenia (HIT)
- Significant hepatic impairment
- Thrombocytopenia with platelet count less than 100
- Severe hypertension
- Recent cerebral haemorrhage
- Recent neurosurgery or eye surgery
- Active gastric or duodenal ulceration or oesophageal varices
- Haemophilia and other inherited bleeding disorders
- Hypersensitivity to heparin, low molecular weight heparins or any other constituent
- Acute bacterial endocarditis
- Children under 16

Tinzaparin is the LMWH of choice at MCHFT.

However other LMWHs may be prescribed for patients who are intolerant of tinzaparin.

**The tinzaparin doses for treatment and prophylaxis of VTE for patient groups are as follows**

Prophylaxis (using 10,000 units/mL syringes):

<b>Medical &amp; Surgical patients</b> (patients with one or more VTE risk factor)	
<b>Body weight (Kg)</b>	<b>No adjustment required for renal impairment</b> <i>(use outside product license)</i>
<b>Under 50</b>	2,500units in 0.25mL ONCE daily
<b>50 – 99</b>	4,500units in 0.45mL ONCE daily
<b>Over 100</b>	50units/Kg ONCE daily (round to the nearest 1,000units)

Treatment (using 20,000 units/mL syringes):

eGFR greater than 20mL/min				eGFR less than 20mL/min	
Body weight (Pregnancy Booking weight)	175units/Kg ONCE daily	Injection volume	Syringe size and colour		125units/Kg ONCE daily
Kg	units	mL			units / mL
Under 32	175units/Kg		Orange		125units/Kg
32 – 36	6,000	0.3	Orange		4,000 in 0.2mL
37 – 44	7,000	0.35	Orange		5,000 in 0.25mL
45 – 49	8,000	0.4	Orange		6,000 in 0.3mL
50 – 54	9,000	0.45	Yellow		6,000 in 0.3mL
55 – 59	10,000	0.5	Yellow		7,000 in 0.35mL
60 – 64	11,000	0.55	Brown		8,000 in 0.4mL
65 – 69	12,000	0.6	Brown		8,000 in 0.4mL
70 – 74	13,000	0.65	Yellow		9,000 in 0.45mL
75 – 84	14,000	0.7	Yellow		10,000 in 0.5mL
85 – 89	15,000	0.75	Green		11,000 in 0.55mL
90 – 94	16,000	0.8	Green		11,000 in 0.55mL
95 – 99	17,000	0.85	Dark Blue		12,000 in 0.6mL
100 – 104	18,000	0.9	Dark Blue		13,000 in 0.65mL
105 – 109	19,000	0.5mL	AND	0.45mL	13,000 in 0.65mL
110 – 114	20,000	0.5mL	AND	0.5mL	14,000 in 0.7mL
115 – 119	20,000	0.5mL	AND	0.5mL	15,000 in 0.75mL
120 – 124	21,000	0.6mL	AND	0.45mL	15,000 in 0.75mL
125 – 129	22,000	0.6mL	AND	0.5mL	16,000 in 0.8mL
130 – 134	23,000	0.6mL	AND	0.55mL	16,000 in 0.8mL
135 – 139	24,000	0.6mL	AND	0.6mL	17,000 in 0.85mL
140 – 144	25,000	0.7mL	AND	0.55mL	18,000 in 0.9mL
145 – 149	26,000	0.7mL	AND	0.6mL	18,000 in 0.9mL
Over 149Kg	175unit/Kg ONCE daily	mL = $\frac{175 \times \text{body weight}}{20,000}$			125units/Kg ONCE daily

Patients who are commenced on LMWH at MCHFT must be fully informed of their treatment and, if appropriate be trained on how to administer the subcutaneous injection.

On initiating LMWH, the consultant must ensure the following is documented on the discharge or clinic letter:

- Clear indications and/or clear rationale for commencing LMWH
- Clear duration or review date
- Dose and weight, if applicable). Any calculated dose should be rounded up or down to the nearest measurable dose.
- Clear monitoring requirements and frequency.

As part of this shared care agreement, it is MCHFTs responsibility to ensure that patients/carers have been trained on how to inject the medication as well as being given required equipment such as sharp bins and swabs. If the patient/carer is unable to administer the injection, MCHFT must refer the patient to the community district nursing team.

MCHFT clinicians must ensure the patient/carer has been provided with information regarding the dose and frequency of the injections as well as any side-effects and warning signs and who to contact if any side-effects or warning signs occur.

For newly initiated patients, MCHFT is responsible for supplying 14 days of LMWH and arranging monitoring within the first 14 days of treatment if required (see below).

#### MCHFT monitoring requirements - platelets

- Heparin induced thrombocytopenia (HIT) is a rare side effect of heparin including LMWH. Thrombocytopenia, should it occur, usually appears between days 5 and 14 of treatment. The British Committee for Standards in Haematology guideline states routine monitoring of platelets is not required.
- All patients must have a platelet count before starting treatment.
- Post-cardiopulmonary bypass patients receiving LMWH should have platelet count monitoring performed every 2–3 days from days 4 to 14 or until heparin is stopped.
- Post-operative patients and cardiopulmonary bypass patients who have been exposed to heparin in the previous 100 days and are receiving any type of heparin should have a platelet count determined 24 hours after starting heparin.
- All inpatients on prophylactic doses will have the following monitored: renal function, signs of bruising and bleeding and plasma potassium. Patients receiving treatment doses should have platelet counts on days 1, 5 and 10 (with the exception of obstetrics).

#### MCHFT monitoring requirements – general (all patients)

Patients must have a recent eGFR to ensure they are prescribed the correct dose.

Heparin can suppress adrenal secretion of aldosterone leading to hyperkalaemia. Potassium should be monitored before and during treatment in patients at risk e.g. renal impairment, diabetes mellitus and patients taking potassium sparing drugs. The referring consultant will specify if and with what frequency potassium should be monitored.

Routine anti-Xa activity monitoring is not usually required but may be considered in patients at risk of under or over anticoagulation, e.g., in those with renal or hepatic impairment. The referring consultant will specify if and with what frequency anti-Xa should be monitored.

Drugs affecting haemostasis, e.g., antiplatelets, NSAIDs, systemic glucocorticoids, thrombolytics and anticoagulants, If the combination cannot be avoided, LMWH should be used with careful clinical and laboratory monitoring.

#### Primary care monitoring requirements

Regular potassium monitoring in high risk patients i.e. diabetes mellitus, chronic renal failure, acidosis, raised potassium levels, patients taking potassium-sparing drugs or potassium supplements or patients on long-term treatment.

Patients weight – adjust dose of LMWH if required, accordingly if weight alters.

Monitor renal function – dose may need adjusting if renal function deteriorates (please refer to product literature).

#### Side effects

Most common side effects from LMWH are related to bleeding and the increased tendency to bleed. Localised pain, bruising and irritation at the injection site are common.

LMWH may cause hypoaldosteronism resulting in hyperkalaemia, but this is unlikely in the absence of an additional cause of hyperkalaemia.

Heparin-Induced thrombocytopenia (HIT) can occur with LMWH. It usually presents between 5 and 14 days after starting therapy. This should be considered if platelet count falls below the normal range, or to less than 30-50% of baseline platelet count.

Other rare adverse effects include systemic allergic reactions including anaphylactoid reactions, skin necrosis at the injection site, increase in liver enzymes, and osteoporosis with prolonged therapy.

This guidance does not replace the SPC, which should be read in conjunction with this guidance.

#### Unlicensed prescribing of tinzaparin

Tinzaparin is unlicensed in the following indications

- Acute coronary syndrome
- Dosing in renal impairment (eGFR is less than 20mL/min)

MCHFT Joint Medicines Management Group approves the prescribing of tinzaparin in the above unlicensed indications in accordance with established clinical practice.

### **3 Definitions**

LWMH – Low weight molecular heparin – a low molecular weight heparin DVT – deep vein thrombosis

PE – pulmonary embolism

JMMG – Joint Medicines Management Group

### **4 Associated Documents**

MCHFT Medicines Policy

### **5 Duties**

#### JMMG

To develop, disseminate and review this shared care documentation.

#### Clinicians at MCHFT

- Ensure the patient has been given all the required information and that they have been informed of side-effects and monitoring requirements.
- Ensure the patient has undergone the required blood tests.
- Ensure that all relevant investigations have been performed prior to transfer of the patient back to primary care.
- Ensure a comprehensive care summary is provided to primary care including the indication/rationale for treatment, dose, duration and monitoring arrangements
- Advise on dosage alterations where appropriate.
- Respond to primary care queries in a timely manner

#### Pharmacy at MCHFT

- Ensure the discharge letter has been completed correctly and appropriately.
- Ensure the patient has a supply of LMWH as indicated in the discharge letter or as per this shared care agreement

### General practitioners

- Provide the patient with prescriptions for LMWH as required
- Ensure systems are in place for daily administration of LMWH if the patient is not self-administering.
- Monitor the patient's bloods, renal function and potassium as requested by the shared care agreement or as per consultant advice.
- Check dose is appropriate for patient's weight and renal function
- Ensure the medication is added to the GP patient record
- Monitor the patients overall health and wellbeing
- Monitor the patient for adverse drug reaction and remain vigilant to risk of potential drug interaction

### **Associated Documents**

British National Formulary

Summary of Product Characteristics – Tinzaparin

### **6 Consultation and Communication with Stakeholders**

- JMMG
- General Practitioners

Referred to [Governance.policies@mcht.nhs.uk](mailto:Governance.policies@mcht.nhs.uk)

### **7 Implementation**

This shared care agreement will be implemented via the Trust Intranet and the CCG JMMG members.

### **8 Education and Training**

This shared care agreement will be made available to secondary care and primary care prescribers when patients are commenced on long term LMWH.

### **9 Monitoring and Review**

Standard/process/issue required to be monitored	Monitoring and Audit			
	Process for monitoring e.g. audit	Responsible individual /group	Frequency of monitoring	Responsible committee
Adherence to shared care agreement	By exception	JMMG	3 years	JMMG

## 10 References / Bibliography

1. [http://www.bcsghguidelines.com/documents/HIT\\_2012.pdf](http://www.bcsghguidelines.com/documents/HIT_2012.pdf) accessed Feb 2015.

## 11 Version Control

VERSION CONTROL SHEET			
Date dd/mm/yy	Version	Author	Reason for changes
December 2013	1	Karen Thomas	New document
December 2015	2	Karen Thomas	Renewal of document
August 2017	3	Karen Thomas	Change of LMWH at MCHFT

**NOTE:** Should the Guideline be a cross divisional document then approval must be sought from all affected divisions to ensure it is a valid and sufficient document. It is the responsibility of the lead division to ensure that this is completed and evidence of such is obtained.

## Equality Impact Assessment

Please read the Guide to Equality Impact Assessment before completing this form.  
The completed assessment is to form part of the policy/proposal/business case appendices when submitted to [governance-policies@mcht.nhs.uk](mailto:governance-policies@mcht.nhs.uk) for consideration and approval.

### POLICY/DOCUMENT/SERVICE - Shared care agreement – Low molecular weight heparin

#### SECTION A

A	Does the document, proposal or service affect one group less or more favourably than another on the basis of:	Yes/No	Justification & data sources. Include nature of impact. Also record provisions already in place to mitigate impact.
1	Race, ethnic origins (including gypsies and travellers) or nationality	X	
2	Sex	X	
3	Transgender	X	
4	Pregnancy or maternity	X	
5	Marriage or civil partnership	X	
6	Sexual orientation including lesbian, gay and bisexual people	X	
7	Religion or belief	X	
8	Age	X	
9	Disability - learning disabilities, physical disability, sensory impairment and mental health problems	X	
10	Economic/social background	X	
<b>B</b>	<b>Human Rights – are there any issues which may affect human rights</b>		
1	Right to Life	X	
2	Freedom from Degrading Treatment	X	
3	Right to Privacy or Family Life	X	
4	Other Human Rights (see guidance note)	X	

**Where an impact has been identified in Section A, please outline the actions that have been agreed to reduce or eliminate risks in Section B.**

**If there are no impacts identified in Section A, completion of Section B is not necessary.**

## SECTION B

Please expand tables below as necessary

SECTION B NUMBER A1-10, B1-4	NATURE OF IMPACT	EVIDENCE	STAKEHOLDER INVOLVEMENT	ACTION	COST	LEAD	TIMESCALE	RISK SCORE