Drug Specific Monitoring Document:

LITHIUM

TARGET AUDIENCE	Board-wide
PATIENT GROUP	All patients aged 12 years and older taking Lithium

Clinical Guidelines Summary

This document outlines the responsibilities of Mental Health & Learning Disabilities (MHLD) services and the **Drug Initiation Service (DIS)** to support the initiation of lithium as an outpatient within NHS Lanarkshire prior to lithium prescribing and monitoring transferring to Primary Care services.

The **DIS** is a pharmacy led prescribing and monitoring hub which facilitates the prescribing and monitoring of drugs on the High Risk Medicines Monitoring Local Enhanced Service (LES) including lithium **during the initiation phase.**

Following the initiation period, once a target lithium level is reached and the patient is established on a maintenance dose of lithium, prescribing and monitoring of lithium can be transferred to the patient's primary care team for ongoing management in line with the medicines monitoring LES.

The safe use of lithium has been a long-term national priority since the NPSA issued a Patient Safety Alert in 2009. In more recent years, the Chief Medical Officer issued national guidance for lithium in 2017 and 2019[1] which define the minimum standards for physical health monitoring for all individuals taking lithium in Scotland. NHS Lanarkshire's lithium drug specific monitoring document is in line with the CMO guidance and the most recent NICE guidance (CG185)[2].

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Medication Name	LITHIUM

Actions by specialist mental health team before initiation	• Assess for contraindications/ cautions and relevant interactions with currently prescribed medication.
	
	• Using a shared decision making approach; discuss the benefits and risks of lithium treatment with the patient and/or their carer and provide the appropriate counselling to enable the patient to reach an informed decision. Obtain and document patient consent. Provide an appropriate patient information leaflet.
	
	• Serum calcium
	• Thyroid function tests
	  ○ patients should be euthyroid before initiation
	• Urea and electrolytes including Sodium, Potassium, Urea, Creatinine & eGFR
	  ○ Patients must have adequate renal function (eGFR>60ml/min) before initiation
	
	• ECG for patients with existing cardiovascular disease (CVD) or risk factors
	
	• For women of child-bearing potential, there should be a discussion of childbearing intentions and contraceptive status. Advice on risks and benefits must be discussed fully.
	
	Ideally, baseline monitoring parameters would be captured within previous 4-6 weeks

Actions by DIS on starting treatment and following dose titration during initiation period	Lithium is available as two salts, lithium carbonate and lithium citrate, **which are not dose equivalent**.
	
	Lithium should always be prescribed by the brand Priadel®, as the NHS Lanarkshire preferred formulary choice.
	
	Priadel® 200mg and 400mg tablets have score lines and can be divided accurately to provide dosage requirements as small as 100mg within product licence.
	
	In the event that the solid oral dosage form (lithium carbonate) is not suitable for the individual, the DIS will liaise with the NHS Lanarkshire mental health pharmacy team for bespoke arrangements for managing the prescribing of lithium solution as lithium citrate.
	
	Lithium levels
	• Trough samples
	  ○ approximately 12 hours post dose in once daily dosing
	  ○ immediately before the morning dose in twice daily dosing.
	
	• should be taken 5-7 days after the initial dose, after any dose or formulation change or introduction/discontinuation of interacting medication, and if there is a suspicion of toxicity.

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	The DIS will assume responsibility for prescribing of lithium as well as lithium level monitoring during the titration phase, until a target lithium level has been obtained within the patient's target lithium level range and the dose has been adequately optimised.

Ongoing monitoring in Primary Care once stable	**Every 3 months**
	• Lithium levels - Trough samples
	  ○ approximately 12 hours post dose in once daily dosing.
	  ○ immediately before the morning dose in twice daily dosing.
	• should be taken 5- 7 days after any dose or formulation change or introduction/discontinuation of interacting medication, and if there is a suspicion of toxicity.
	
	Every 6 months
	• Serum calcium
	• Thyroid function tests
	• Urea and electrolytes incl. eGFR

Action if monitoring is outside reference range [3,4]	**Lithium level – below target range**
	• Ensure level was taken 12 hours after lithium dose. • Assess adherence with lithium. • Review treatment and adjust dose if clinically indicated.
	Lithium level – above target range
	• Lithium toxicity is defined as any lithium level greater than 1.2mmol/L. However, it should be noted that some patients may exhibit toxicity at lower levels e.g. over 65 year olds. • Ensure level was taken 12 hours after lithium dose. • Check for potential interactions, hydration, patient's physical and mental status and features of toxicity. • Repeat level if necessary. • Withhold lithium if features of toxicity and/ or level > 1.2mmol/l.
	U&Es or calcium out of range
	• Investigate and correct for hyponatraemia/hypernatraemia. • Treat calcium levels out with normal range as necessary. • Changes in calcium levels may reflect parathyroid dysfunction and input from endocrinology may be indicated. • Consider ECG in those at risk for QT prolongation.
	eGFR <45ml/min, or rapidly falling eGFR or gradual decline in eGFR
	• The response to impaired or deteriorating renal function should be individualised. • Contact specialist team for advice, which may include input from renal medicine. • Consider increased frequency of monitoring to assess for trends. • Dose adjustments and/or cessation of lithium may be indicated.

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	Thyroid dysfunction
	• Treat impaired thyroid function as necessary. • Overt hypothyroidism should be managed with thyroid hormone. replacement (hypothyroidism is not usually a reason for stopping lithium treatment). • Hyperthyroidism should be managed in consultation with endocrinology.
	Consult specialist mental health team for further guidance if required.
Actions to take if restarting medication after treatment break	• If impairment in renal function has been implicated in treatment break, urea and electrolytes should be measure prior to recommencing. • Lithium levels (trough samples taken approximately 12 hours after the last dose) ○ should be taken 5 -7 days after recommencing treatment
	Consult specialist mental health team for further guidance if required

References

1. Directorate of Chief Medical Officer. National guidance for monitoring lithium. March 2019 https://www.sehd.scot.nhs.uk/cmo/CMO(2019)04.pdf
2. NICE; Bipolar disorder: assessment and management (CG185), September 2014 (last updated Sep25) https://www.nice.org.uk/guidance/cg185/resources/bipolar-disorder-assessment-and-management-pdf-35109814379461
3. NICE Clinical Knowledge Summaries. Bipolar disorder. Last revised Sep 2025 https://cks.nice.org.uk/topics/bipolar-disorder/prescribing-information/lithium/
4. Lithium for patients within adult services. National shared care protocol. NHS England and Specialist Pharmacy Service. July 2022

Appendices

1. Governance information for Guidance document

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