Ref No. E042

Essential Shared Care Agreement:
Lithium

Please complete the following details:

Patient's name, address, date of birth
Treatment (indication, dose regimen, brand name)
Monitoring (proposed therapeutic range, last recorded level, when next level due)
Consultant's contact details (p.3)
And send One copy to:

1. ***the patient's GP***
2. ***put one copy in care plan***
3. ***give one copy to the patient***

Patient's name:	
Patient's address:	
Patient's Date of Birth:	
Lithium: Indication, Dose regimen, Brand	
Proposed therapeutic range (if not 0.6-0.8mmol/l):	
Last recorded level:	
When next level due:	

Note:
Guidelines will only be written when it has been agreed that shared care is or maybe an appropriate option in individual cases, and will include a statement of Specialist Unit /GP responsibilities.
Shared Care Guidelines will ensure that all GPs have sufficient information to enable them to undertake responsibility for specialist therapies and other therapies which may affect/interact with specialist therapies.
It is not the intention to insist that GPs prescribe such a therapy and any doctor who does not wish to undertake the clinical and legal responsibility for a Shared Care Drug is not so obliged. Acceptance of the Shared Care Guidelines will be endorsed by the prescribing departments of the CCG.

The information contained in this guideline is issued on the understanding that it is the best available from the resources at our disposal at the time of issue. For further information please refer to the relevant Summary of Product Characteristics and NICE guidance or contact your local Specialist or Drug Information Centre.

Further copies of this guideline may be obtained from:

- South Staffordshire & Shropshire Healthcare Foundation NHS Trust
- CCG Prescribing Advisers.

Produced: Dec 2015
Review date: Dec 2017

SHARED CARE GUIDELINES FOR LITHIUM

Referral Criteria

- In some cases, prescribing will have been initiated by a GP, and in these cases, shared care is not appropriate, and prescribing responsibility remains with the GP.
- When initiation is by the Trust, the patient will receive supplies of lithium on a hospital or community prescription form until shared care is agreed.
- The patient will have an individual care programme defined for them and the GP will receive a copy of this. A named key worker will have been organised and mental health team input organised.

Specialist Services Responsibilities

- Assess the patient, establish a diagnosis and determine a management strategy to include the establishment of a Care Programme Approach and involvement of the CPN/community mental health teams
- Baseline tests will be the responsibility of the specialist before transfer to shared care. Results of baseline (or other) tests should be copied to the patient's GP.
- Ensure that the key worker has drawn up a Care Programme involving the GP
- Send a letter to the GP suggesting that the patient's condition now seems appropriate for a shared care approach, and that shared care is assumed to be formally agreed for this patient, unless the practice responds differently within 2 weeks.
- The patient will receive supplies of lithium from the hospital for 2 weeks.
- Specialist services will review the patient as appropriate after start of lithium therapy, and upon referral.
- On initiating lithium, complete and give the patient a lithium record book, booklet and alert card; document the provision of this, in each patient's notes. Patients are also instructed to carry their record books when they visit prescribers (in general practice or specialist services) and when lithium is being dispensed for them. Patients are told to expect prescribers to document the results of recent tests in their record books, and for pharmacists to ask to look at their record book before dispensing lithium. Highlight side effects, signs & symptoms of toxicity, and risk factors for toxicity as part of this process. In women of child-bearing age, provide and document advice given on the potential adverse effects of Lithium on the foetus.
- Alteration of (or advice about) lithium dosage according to clinical parameters
- Evaluation of adverse events reported by the GP, and identification of any specific monitoring required.
- Restarting lithium therapy should this be necessary.

GP Responsibilities

- Reply to the request for shared care as soon as practicable by faxing back the signed agreement at Annex A.
- Monitoring the patient's overall health and well-being. Highlight side effects, signs & symptoms of toxicity, and risk factors for toxicity as part of each medication review. In women of child-bearing age, provide and document advice given on the potential adverse effects of Lithium on the foetus.
- For existing patients on lithium (if not already using a book): complete and give the patient a lithium record book, booklet and alert card; document the provision of this, in each patient's notes. Patients are also instructed to carry their record books when they visit prescribers (in general practice or specialist services) and when lithium is being dispensed for them. Patients are told to expect prescribers to document the results of recent tests in their record books, and for pharmacists to ask to look at their record book before dispensing lithium.

- Specific monitoring agreed with the specialist (see below).

Lithium level (sample at 12-18 hours post-dose- try to stick at a constant time interval for sampling)	Typically 3 monthly *****	Normal therapeutic range 0.6-1mmol/l (unless otherwise stated)
U&Es (including calcium)	6 monthly **Request with lithium level in over 65's**	
Serum creatinine	6 monthly Request with lithium level in over 65's	
BP/ weight/ pulse/urine dipstick	12 monthly	
TFTs (T_4/TSH)	6 monthly	

- **Copying specialist services into the results of clinical tests**
- Prescribing Lithium by brand
- Adverse drug reaction/Interaction monitoring

- Follow specialist advice on any changes in treatment.
- Report to and seek advice from the specialist on any aspect of patient care which is of concern to the GP and may affect treatment.
- Rapid referral of patient to specialist in the event of deteriorating clinical condition.
- Keeping the key worker/mental health team informed of progress
- Inform specialist of all relevant medical information regarding the patient and any changes to the patient's medication irrespective of indication.

*** More frequently (e.g. 2-monthly) if clinical indications arise and in "high risk" patients, e.g. over 65s (especially if raised urea, creatinine), those on interacting drugs, those with or at risk of renal/thyroid/cardiac disease.**

Back-up advice on the above is available at all times: South Staffordshire & Shropshire Healthcare Foundation NHS Trust – Contact Details

Contact	Speciality	Available	☎	Out of Hours
		Mon-Fri 8.30 – 5.00		On call pharmacist via switchboard

Lithium

Adverse Effects

Common side effects include GI disturbances (e.g. nausea, dry mouth, diarrhoea), weight gain, oedema, fine tremor, polyuria, polydipsia, hypothyroidism. Side effects may be short-term and dose dependent. They can often be prevented or relieved by moderate reduction in dose.

If there are **signs of toxicity**, e.g. blurred vision, muscle weakness, drowsiness, coarse tremor, dysarthria, ataxia, confusion, convulsions, nausea, vomiting, ECG changes, **stop lithium immediately**, do U&Es, lithium and creatinine levels, and refer to hospital if clinically indicated.
Ask about side effects at every consultation.

Drug Interactions

Some medicines may result in increased lithium levels and increase risk of toxicity. These include:

- Diuretics (mainly thiazides)
- NSAIDs (e.g. ibuprofen)
- ACE inhibitors
- SSRIs (e.g. fluoxetine) and other psychotropic medicines
- Theophylline

Refer to Appendix 1 in BNF for further details and full list of interacting medication.

Practice Points

1. Different preparations of lithium may vary widely in **bioavailability** i.e. the amount absorbed into the blood.

- Check that patient continues on same brand of lithium. (All prescriptions for lithium should be written in proprietary form, i.e. brand name)
- If changing between brands or between tablets and liquid, more frequent monitoring may be required initially as the change may result in alterations in lithium levels
- Take particular care when changing from tablets to liquid or vice versa e.g. Lithium *carbonate* tablet 200mg (Li +5.4 *mmol*) is approx. equal to Lithium *citrate* liquid 509mg/5ml (Li +5.4 *mmol*) i.e. Lithium *carbonate* tablet 200mg does not equal Lithium *citrate* liquid 200mg

2. Blood lithium levels should be monitored typically **3 monthly**:

- Sample should be taken at 12-18 hours post dose
- If twice daily liquid prescribed, a 12 hour post dose sample should be taken, i.e. before next dose administered
- The time interval should be the same at each measurement. If out-with these times, this should be stated clearly on the request form

Certain patients may require more frequent monitoring:

- if clinical indications arise

- "high risk" patients e.g. *over 65's, those on interacting medicines (see above), those with, or at risk of, renal / thyroid / cardiac disease*

If further concerns re creatinine clearance, contact renal Physicians

Cockcroft & Gault Equation

Creatinine Clearance (ml/min) = $\frac{F \times (140 - Age) \times Weight\ (kg)}{Serum\ creatinine\ (micromol/l)}$

where F = 1.23 (male) F = 1.04 (female)

Normal ranges for CrCl

90 – 140ml/min (male)

80 – 125ml/min (female)

Note

The calculation has limitations in some patient groups e.g. obese, elderly, emaciated, Oedematous

3. If **urine dipstick** shows more than trace of blood or protein, the dipstick should be repeated on an early morning sample. In the absence of a urinary infection, a positive dipstick (for blood or protein), should prompt discussion with renal physicians about possible referral and further investigation

4. Managing Lithium Levels

(Always check that the timing of the blood sample has been appropriate)

If the level is low (typically < 0.6 mmol/l)

- If the patient is well and the levels are consistently low but within the desired specified range for that patient, do not alter dose
- If the patient is unwell and pattern of levels have been bordering on the lower end of the range:
    - assess compliance
    - increase the dose if appropriate
    - recheck the level in 5 days
- If the low level is inconsistent with the trend, i.e. a one off:
    - *assess compliance*
    - *consider other factors, e.g. drug interactions, excess intake of fluid, brand change*
    - *recheck the level*

If the level is within therapeutic range (typically 0.6-1.0 mmol/l)

- If the patient is well and tolerating lithium, *do nothing!*
- If the patient is well but complaining of side effects, e.g. polyuria, polydipsia, reduce the dose and check:
    - if change in diet e.g. dietary salt restriction or crash diets can cause blood lithium to rise
    - initiation of interacting medicines by doctor or use of OTC products.
    - if the patient is clinically unwell, liaise further with CPN / psychiatrist

If the level is high (typically > 1.0 mmol/l), but with no signs of toxicity

- If there is an explanation for the high level e.g. dehydration, timing of level, interacting medicines, brand change, correct where possible and recheck level
- If the level is part of a pattern of levels which have bordered on being too high:
    - decrease the dose
    - encourage fluids
    - recheck the level in 5 days
- If there is no clear explanation for high level:
    - recheck level
    - investigate renal function

Annex A

South Staffordshire and Shropshire Healthcare NHS
NHS Foundation Trust
A Keele University Teaching Trust

Shared Care Agreement for Lithium

Name of Prescriber:

Specialist Area:

Telephone Number:

Fax Number:……

Signature: Date:

Patient's Name:

Address:

Drug and dose:

Name of GP:

Signature: Date:

Practice Address