BNSSG Shared Care Guidance
Please complete all sections

AMBER 3 month

Section 1: Heading

Trust(s)	Avon & Wiltshire Mental Health Partnership NHS Trust
Speciality / Department	Mental Health
Drug	Agreement for Lithium (please prescribe by brand name and specify formulation: Priadel, Camcolit®, Liskonum®, Li-Liquid®)
Indication	1. The management of acute manic or hypomanic episodes. 2. The management of episodes of recurrent depressive disorders where treatment with other antidepressants has been unsuccessful. 3. The prophylaxis against bipolar affective disorders. 4. Control of aggressive behaviour or intentional self harm.

Section 2: Treatment Schedule

Usual dose and frequency of administration	Dosage is adjusted based on serum-lithium concentration. Lithium levels must be taken 12 hours post dose, otherwise clinical value is lost. Lithium has a narrow therapeutic range necessitating blood levels between 0.4-1.2mmol/L. The lower end of this range is used for elderly and infirmed patients and the upper end for younger patients, particularly those being treated for an episode of mania. Clinicians should aim for levels of 0.6-0.8 mmol/L, with higher levels possibly being of benefit for patients with predominantly manic symptoms. Rarely 1.2mmol/L may be used. The starting dose is usually 400mg at night (200mg in the elderly), adjusted to achieve the desired serum-lithium concentration. Bloods should be taken 12 hours post dose. For tablet preparations dose is usually given as a single dose at night; for liquid preparations, the dose may be spilt to twice a day. Liquids containing lithium citrate are sometimes prescribed. Each 5.4mmol of lithium citrate is roughly equivalent to 200mg

	of lithium carbonate. Changes in the brand of liquid or tablets or swapping between liquid and tablets require careful monitoring of the serum lithium level.
Route and formulation	Lithium is taken orally and is available in different brands and formulations. It is essential to prescribe by consistent brand and formulation. Lithium carbonate: Priadel® m/r 200mg & 400mg tablets (usual brand); Others include:Camcolit ® f/c 250 & 400 tablets; Liskonum® m/r f/c 450 tablets; Lithium citrate: Li-liquid ® oral solution 509mg/5mL (Li+ 5.4mmol/ 5mL) Li-liquid® oral solution 1.018g/5ml (Li+ 10.8mmol/5mL) Please note that each 5mL dose of 509mg/5ml of lithium citrate is equivalent to 200mg of lithium carbonate. Priadel liquid ® Lithium citrate 520mg/5ml (Li+ 5.4mmol/5mL) Please note that each 5mL dose of priadel liquid is equivalent to 204mg lithium carbonate.
Duration of treatment	Depends on response & tolerability. Full benefit may not occur for 6 to 12 months. In those with a positive response, treatment is likely to be long-term (approx 5 years).

Section 3: Monitoring

Please give details of any tests that are required before or during treatment, including frequency, responsibilities (please state whether they will be undertaken in primary or secondary care), cause for adjustment and when it is required to refer back to the specialist.

Baseline tests - where appropriate

1. The Specialist must ensure that arrangements of appropriate blood tests are made. Blood tests may be taken at the GP surgery providing appropriate communication with the GP and the GP is in agreement with this. AWP specialist team is responsible for the interpretation and monitoring of these blood test results for the first 3 months of treatment. Baseline parameters include:
    - Calcium (corrected)
    - Thyroid function tests (TFTs) - patients should be euthyroid prior to starting lithium therapy.
    - eGFR - renal function should be normal prior to starting lithium therapy.
    - Weight - annually and if the patient appears to gain weight rapidly.
    - ECG & blood pressure - ECG should be done at the start if there are risk factors for or existing cardiovascular disease; may need more frequent monitoring in those with cardiovascular disease or risk factors for it.
    - Lithium plasma level 4 – 7 days after starting treatment and when stable dose has been reached

Subsequent tests - where appropriate

1. Lithium level every 3 months.
2. Calcium, TFTs and U&Es every 6 months.
3. Weight - annually and if the patient appears to gain weight rapidly.
4. Lipid profile (in all those over 40 even if no other indication or risk), plasma glucose, smoking status and alcohol use & BP as part of annual review (NICE CG38)
5. If dose is changed - check levels weekly until four weeks after stabilisation at the new level, and

then three monthly testing may be resumed. 6. Full blood count – only if clinically indicated.

Section 4: Side Effects

Please list the most common side effects and management. Please provide guidance on when the GP should refer back to the specialist.

Side effects and management	Side effects are usually related to serum lithium concentration and are less common in patients with plasma lithium concentrations below 1.0 mmol/l. The adverse reactions usually subside with a temporary reduction or discontinuation of lithium treatment. Nausea, general GI discomfort and vertigo may occur initially but frequently disappear after the first few days of treatment. Symptoms of neurotoxicty include; paraesthesia, ataxia, vomiting diarrhoea, increasing anorexia, tremor, cognitive impairment, nausea, uncontrolled eye movement, slurred speech and coma. Neurotoxicity can occur at therapeutic levels. Serious suspected reactions (even if well recognised or causal link uncertain) should be reported to the MHRA.
Referral back to specialist	Refer patient back to the specialist if any of these side-effects cause concern. Refer to the SPC for a full list of adverse effects & further information http://www.medicines.org.uk.

Section 5: Drug Interactions

Please list clinically significant drug interactions (eMC link please click here)

Significant Drug Interactions	ACEI: Can reduce thirst which can lead to mild dehydration and increase renal sodium loss causing increased sodium reabsorption by the kidney and hence increased Li levels - up to a 4 fold increase (7-fold in the elderly). Can take several weeks to develop. Risk increased in those with heart failure, dehydration and renal impairment. A2RAs: Care is needed when co-prescribed with lithium Diuretics: Can reduce renal clearance of lithium. This is more significant with thiazides than loop diuretics: Lithium levels usually rise within 10 days of a thiazide being prescribed. Risk with loop diuretics can take up to a month for Lithium levels to rise. NSAIDs: NSAIDs inhibit the synthesis of renal prostaglandins hence reducing renal blood flow and possibly increasing renal reabsorption of sodium and hence lithium. Aspirin does not usually affect serum lithium levels. Ibuprofen is usually safe for short term use on a 'when required' basis but should be used cautiously if other analgesics (e.g. paracetamol) are not appropriate. Check if patient is taking OTC products. The following may also increase lithium levels:

	Alcohol, dehydration, sodium chloride, systemic steroids. Drugs that may decrease lithium levels include: Theophylline, caffeine, sodium bicarbonate containing products (e.g. non-prescription antacids) and diuretics. Interactions which may cause neurotoxicity include: antipsychotics (although the combination may be useful), methyldopa, triptan derivatives, SSRIs (although the combination can be useful), verapamil, diltiazem, carbamazaepine. Diet and concomitant minor illnesses which may increase lithium levels: Nausea/vomiting or other conditions leading to salt/water depletion Excessive sweating leading to sodium loss and retention of lithium by renal system Dietary changes in sodium intake See SPC for full list of interactions.
Reminder to ask patient about specific problems	1. Ask women of child bearing age of any intention of becoming pregnant as lithium is a known teratogen. Effective contraception must be taken whilst on this drug. 2. Please also refer to Section 7.

Section 6: Contra-indications, Cautions and Special Recommendations

Please list

Contraindications:

1 Hypersensitivity to lithium or to any of the excipients.

2 Cardiac disease

3 Cardiac insufficiency.

4 Severe renal impairment.

5 Untreated hypothyroidism.

6 Breast-feeding.

7 Patients with low body sodium levels, including for example dehydrated patients or those on low sodium diets.

8 Addison's disease.

9 Brugada syndrome or family history of Brugada syndrome.

Cautions and special warnings:

Caution should be exercised to ensure that diet and fluid intake are normal in order to maintain a stable electrolyte balance. This may be of special importance in very hot weather or work environment. Infectious diseases including colds, influenza, gastro-enteritis and urinary infections may alter fluid balance and thus affect serum lithium levels. Treatment discontinuation should be considered during any intercurrent infection

Elderly patients are particularly liable to lithium toxicity and may exhibit adverse reactions at serum levels ordinarily tolerated by younger patients. Caution is also advised since lithium excretion may be reduced in the elderly due to age related decrease in renal function

Lithium therapy should not be used during pregnancy, especially during the first trimester, unless

considered essential. It is recommended that lithium is discontinued shortly before delivery and re-started a few days post-partum. Please ask your local Medicines Information service for more information.

Caution is advised if lithium is co-administered with other drugs that prolong the QT interval or that lower the seizure threshold.

Section 7: Advice to the patient

Advice for prescribing clinician to inform patient

1. Must agree to attend clinic/GP practice for bloods/tests relating to lithium treatment to be done and signs the patient agreement monitoring form (Appendix 1 - see below)
2. To report to the specialist or GP if the patient does not have a clear understanding of treatment with lithium.
3. To be aware of the risks and symptoms of toxicity associated with lithium treatment.
4. To share any concerns in relation to treatment with lithium medication.
5. To read the Lithium Therapy Patient Pack, carry the “Lithium Alert Card” at all times and present the “Lithium Therapy Record Book” (issued by AWP Specialist when treatment is initiated) to healthcare professionals involved with prescribing or dispensing lithium and at any hospital specialist appointments or in-patient stays .
6. Inform the pharmacist that they take lithium before they purchase any Over The Counter (OTC)/Pharmacy (P) medicine.
7. Inform the specialist and GP of any other medication being taken (e.g. diuretics, NSAIDs, ACE-I, A2RAs), including over-the-counter products. In these cases, lithium dosage should be closely monitored and reduction of dosage may be necessary
8. Report any adverse effects or warning symptoms to the specialist or GP whilst taking lithium e.g. polyuria or polydipsia.
9. To maintain adequate fluid intake and avoid dietary changes which may affect salt/ water intake. Inform the specialist and GP if any e.g. diarrhoea, vomiting or sweating occurs. Caution should be exercised to ensure that diet and fluid intake are normal in order to maintain a stable electrolyte balance. This may be of special importance in very hot weather or work environment. Infectious diseases including colds, influenza, gastro-enteritis and urinary infections may alter fluid balance and thus affect serum lithium levels. Treatment should be discontinued during any intercurrent infection and should only be restarted after the patient's physical health has returned to normal.
10. Lithium tablets cannot be crushed or chewed.
11. Notify the specialist / GP when & if lithium treatment is stopped

Section 8: Responsibilities for Secondary Care

Core responsibilities

1. Initiating treatment and prescribing the 3 months of treatment
2. Undertaking the clinical assessment and monitoring for the 3 months of treatment.
3. Communicate details of the above in 1 and 2 to GP within the first month of treatment. This information should be transferred in a timely manner.
4. Refer patients to GP and provide information of further action where appropriate e.g. blood test is due.
5. To provide advice to primary care when appropriate.
6. Review concurrent medications for potential interaction prior to initiation of Lithium.
7. Stopping treatment where appropriate or providing advice on when to stop.
8. Reporting adverse events to the MHRA and GP.
9. Reminder to ask patients about particular problems see section 5.

Other specific to drug

1. Assess patient, establish diagnosis and develop care plan. Ensure care plan contains correct

contact details for care co-ordinator/ key worker and consultant psychiatrist.

2. Forward copy of care plan to patients GP including clear information around target serum lithium level and advice on action required when lithium level is outside range.

3. To undertake physical health screen and assessment when patient is admitted to mental health services.

4. Ensure that arrangements of appropriate blood tests are made. Blood tests may be taken at the GP surgery providing appropriate communication with the GP and the GP is in agreement with this. Secondary care is responsible for the interpretation and monitoring of these blood test results for the first 3 months of treatment.

5. Be fully aware and understand the advice given as per the NPSA lithium alert issued in December 2009 http://www.nrls.npsa.nhs.uk/alerts/?entryid45=65426&p=2

6. Provide written information on lithium to patient / carer so that an informed decision on taking lithium and consent to treatment can be made. Information on mental health conditions, treatments and medication can be found at: http://www.choiceandmedication.org/awp/

7. Inform patient of symptoms of toxicity and to report immediately to doctor / healthcare professional. Treatment should be discontinued immediately on the first signs of toxicity.

8. Record in the care plan that the 'Checklists' as per page 14 and 17 of the Procedure for the prescribing and monitoring of lithium in AWP have been done. Record in progress notes that baseline monitoring has been done as per NICE guidance CG38.

9. To prescribe the first 3 months of lithium treatment, prescribing by brand name and specifying formulation.

10. Issue a lithium therapy patient pack (can be sourced from pharmacy or from NPSA website) and ensure it is completed and explained to the patient. Advise the patient to carry the lithium alert card at all times whilst on lithium treatment and to present the record book to healthcare professionals involved in the prescribing / dispensing of lithium. Document this in patient records on Rio.

11. Inform patients to tell community pharmacists that they take lithium before they purchase medicines

12. To ensure that the patient is fully informed about their treatment. For women of child bearing potential, this should also include a discussion about contraception and any plans they may have for pregnancy (as lithium is a known teratogen).

13. Inform patient to maintain adequate fluid intake and avoid dietary changes which reduce or increase sodium intake, particularly be aware of sweating (e.g. after exercise, hot climates, fever) or if they are immobile for long periods or any condition leading to salt or water depletion e.g. vomiting or diarrhoea. In the case of the elderly, to report to the Specialist if they develop chest infections or pneumonia.

14. Discuss the proposal of lithium agreement with the patient. If possible obtain consent (verbal is fine) and document in notes. If patient declines then please document this too.

15. Obtain patients agreement that he/she will attend clinic/GP practice for bloods/ tests to be done relating to lithium treatment and to sign the patient agreement monitoring form (end of document)

16. Ensure that the GP has a copy of the 'lithium agreement' and a signed copy of the 'Agreement signature sheet for lithium'. The dose, formulation and brand of lithium must be given

17. To liaise with the GP and agree how the relevant tests are to be communicated between themselves and the patient.

18. Check there are reliable systems to ensure blood test results are communicated efficiently between laboratories and prescribers.

19. Communicate promptly with the GP when treatment is changed.

20. To review the patient and treatment at least once a year until the patient is discharged from the mental health service where this is possible.

21. To review patient / provide advice as requested via the GP or Primary Care Liaison Service as necessary.

22. Advise the GP on when to adjust the dose, stop treatment (assuming no relapse in patients condition), or consult with the specialist.

23. Inform GP of concurrent therapy (as this may interact with other medication patient gets from GP).

24. Inform GP if any appointments are not attended.

25. Ensure that clear backup arrangements exist for GPs to obtain advice and support. (See 'Back-up advice and support' for contact details).

26. Any verbal communication between primary and secondary care should be confirmed in writing

Section 9: Responsibilities for Primary Care

Core responsibilities

1. Responsible for taking over prescribing after the first 3 months of treatment
2. Responsible for the clinical assessment and monitoring after the first 3 months.
3. Review of any new concurrent medications for potential interactions with Lithium.
4. Reporting adverse events to the MHRA and specialist.
5. Refer for advice to specialist where appropriate.
6. Reminder to ask patients about particular problems see section 5.

Other specific to drug

1. Reply to the request for lithium agreement within 3 weeks of receipt of request using the 'Agreement signature sheet for lithium'.

2. Be fully aware and understands the advice given as per the NPSA lithium alert issued in December 2009 http://www.nrls.npsa.nhs.uk/alerts/?entryid45=65426&p=2

3. If the GP decides not to prescribe lithium, it should still be added to the patients repeat medication as a "non issued' item for information and safety purposes. For EMIS The quantity should be set to *0 or 1. On the dose line it should read: 'Hospital prescribing only. Do not prescribe.' This process should also be done during the stabilisation period before the GP takes over the prescribing.

4. Be alert to drug interactions, especially diuretics, NSAIDs, ACEIs and ,A2RBs (See Table 4)

5. Adjust the dose/stop drug as advised by the specialist. Please note that lithium should not be stopped suddenly. It should be discontinued over 4 weeks. If it is stopped suddenly there is a 50% chance of relapse within 3 months.

6. Review patient as agreed in the patients care plan and lithium agreement.

7. Inform specialist team of any change in the patient's medication that may interact with medication patient receives from the specialist team.

8. Check patients bloods are up to date. The prescriber who is signing the prescription for lithium is responsible for ensuring that the relevant tests and monitoring of lithium therapy is undertaken as per NICE guidance CG38.

9. Check there are reliable systems to ensure blood test results are communicated efficiently between laboratories and prescribers

10. Prescribe and monitor levothyroxine if required.

11. Monitor patients overall health and compliance. Re-enforce use of the "Lithium Therapy Record Book", re-issue if required.

12. Refer promptly to specialist when any loss of clinical efficacy is suspected (e.g. worsening of disease-related symptoms, new symptoms suggestive of disease recurrence or progression) or intolerance to therapy occurs.

13. Check patient for adverse effects and signs of toxicity at each appointment and inform any significant adverse effects to the specialist.

14. Remind patient to maintain adequate fluid intake and avoid dietary changes which reduce or increase salt/ water intake e.g. be aware of the impact of vomiting or diarrhoea, sweating (e.g. after

exercise, hot climates, fever) or if they are immobile for long periods.

15. To request specialist review or seek specialist advice when necessary. (see ' Back-up advice and support for contact details)

16. Once the patient has been discharged from specialist MH services, advice may be sought from the Primary Care Liaison Service on any aspect of patients mental health that is of concern to the GP (see 'Back-up advice and support for contact details)

17. Any verbal communication between primary and secondary care should be confirmed in writing

Section 10: Responsibilities for Primary Care Liaison Service (PCLS)

1. Accept referrals by registered GPs in line with DoH guidance.
2. To advise the GP on appropriate action regarding any issues they may have on patients management regarding shared care.
3. To try and resolve the issue(s) raised by the GP or to refer to the specialist team as appropriate.
4. Rapid & prioritised specialist mental health assessment with recommendation/s for care & treatment within multiple care pathways.
5. Determination of the nature & severity of mental health needs with consequent sign posting and pathway facilitation
6. Provide rapid and accessible ongoing support & advice to the non-specialist workforce

Section 11: Contact Details

Name	Organisation	Telephone Number	E mail address
Specialist	AWP		
Care co-ordinator	AWP		
Bethan Shepherd, Formulary Pharmacist	AWP	07775562391	bethan.shepherd@awp.nhs.net bethan.shepherd@awp.nhs.uk
Primary Care Liaison Service: Bristol	Intensive and Primary Care Liaison – interim to Speedwell then to Callington Road	0117 9195670	0117 9195625
Primary Care Liaison Service: North Somerset	Intensive and Primary Care Liaison – Long Fox Unit	01934 836406	01934 836405
Primary Care Liaison Service: South Gloucestershire:	Intensive and Primary Care Liaison – Bybrook Lodge, Blackberry Hill Hospital	01173 787960	0117 3787941

Section 12: Document Details

Date prepared	AWP version approved at AWP MMG on September 2012 for dissemination to local formulary groups
Prepared by	Bethan Shepherd, Formualry Pharmacist, AWP Mental Health Trust
Date of review	June 2015, or earlier if guidance changes
Document Identification	Lithium Agreement for BNSSG April 2013.

Section 13: Collaboration

Specialists in any one discipline are encouraged to collaborate across the health community in preparing shared care guidance. Please give details

1. This Agreement for Lithium was developed by the Formulary Pharmacist with feedback from the Medicines Management Group for disemination to the local Acute Trust formulary groups.

Section 14: References

Please list references

1 Effective Shared Care Agreement (for the prescribing of lithium) Suffolk NHS Trust July 2010

2 Effective Shared Care Agreement for Lithium Therapeutic Management North Staffordshire NHS Trust, Stoke on Trent NHS Trust Dec 2010. Review Dec 2012.

3 Procedure for the prescribing and monitoring of lithium in AWP.

4 Shared Care Agreement Theresa Turner AWP Specialist Pharmacist for BNSSG Dec 2009

5 Patient Safety Alert, Safer Lithium Therapy, NPSA/2009/PSA005

6 NICE Clinical Guidance 38 The management of bipolar disorder in adults, children and adolescents, in primary and secondary care Issue date: July 2006

7 Summary Product Characteristics www.medicines.uk.org

8 BNF 63 March 2012

Appendix 1

Avon and Wiltshire NHS
Mental Health Partnership NHS Trust

Patient Agreement Monitoring Form

I name of patient date of birth agree to attend the clinic / GP practice to allow the necessary tests relating to lithium treatment to be taken.

I agree that if I cannot attend an appointment for whatever reason, I will let the specialist / GP practice know.

Signed:_____

PRINT:_____

Date: _____