Cheshire and Wirral Partnership NHS
NHS Foundation Trust

Document level: Trustwide (TW)
Code: MP4
Issue number: 4

Lithium Policy

Lead executive	Medical Director
Authors details	Lead Clinical Pharmacist - 01244 397 379

Type of document	Policy
Target audience	All clinical staff
Document purpose	Aim for safe prescribing of lithium including action to be taken to maintain lithium levels within the therapeutic range, to standardise the monitoring Trust wide and provide suitable patient information to reduce the risk of toxicity.

Approving meeting	Medicines Management Group	30-Jul-15
Implementation date	30-Jul-15 followed by an annual compliance review	

CWP documents to be read in conjunction with	
MP1	Medicines policy
MP3	Guidance on the recommended psychotropic agents for use in pregnancy and lactation

Document change history	
What is different?	References updated throughout text to current NICE guidance Section 5 monitoring updated to reflect current NICE guidance Section 13 pregnancy and breastfeeding updated to reflect current NICE guidance Section 16 shared care responsibilities updated to reflect current NICE guidance Appendix 3 6 monthly monitoring template letter added
Appendices / electronic forms	Rofecoxib removed from Appendix 1 as this medicine has been withdrawn
What is the impact of change?	Change to recommended frequency of lithium- fewer monitoring visits for people. Review required to ascertain whther people are in 6 monthly or 3 monthly monitoring groups

Training requirements	No - Training requirements for this policy are in accordance with the CWP Training Needs Analysis (TNA) with Learning and Development (L&D)

Financial resource implications	None

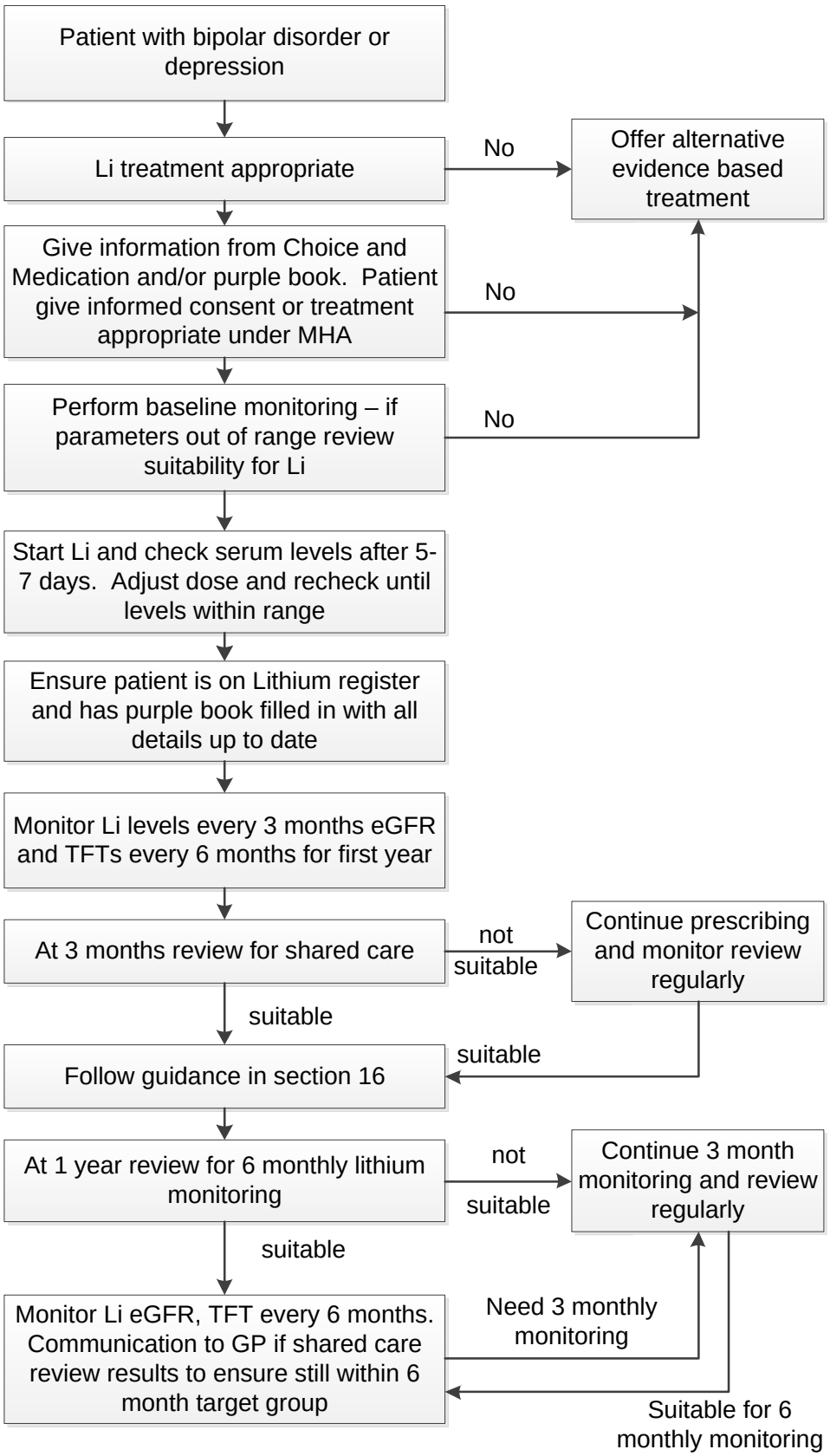
External references

1. Summary of Product Characteristics for Priadel at www.medicines.org.uk
2. eBNF April 2015
3. Psychotropic Drug Directory 2014, Stephen Bazire
4. Maudsley Prescribing Guidelines 2009 (11th Edition)
5. NICE CG192 Antenatal and Postnatal Mental Health: Clinical management and service guidance. December 2014.
6. NICE CG185 Bipolar disorder: the assessment and management of adults, children and young people in primary and secondary care. September 2014
7. Lithium alert NPSA 2009/PSA005

Equality Impact Assessment (EIA) – Initial assessment	Yes/No	Comments
Does this document affect one group less or more favourably than another on the basis of:		
- Race	No	
- Ethnic origins (including gypsies and travellers)	No	
- Nationality	No	
- Gender	No	
- Culture	No	
- Religion or belief	No	
- Sexual orientation including lesbian, gay and bisexual people	No	
- Age	No	
- Disability - learning disabilities, physical disability, sensory impairment and mental health problems	No	
Is there any evidence that some groups are affected differently?	No	
If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable? N/A		
Is the impact of the document likely to be negative? - If so can the impact be avoided? - What alternatives are there to achieving the document without the impact? - Can we reduce the impact by taking different action?	No N/A N/A N/A	
Where an adverse or negative impact on equality group(s) has been identified during the initial screening process a full EIA assessment should be conducted. If you have identified a potential discriminatory impact of this procedural document, please refer it to the human resource department together with any suggestions as to the action required to avoid / reduce this impact. For advice in respect of answering the above questions, please contact the human resource department.		
Was a full impact assessment required?	No	
What is the level of impact?	Low	

Content

Quick reference flowchart – Lithium guidelines



1. Introduction

Lithium salts have been used for the treatment of bipolar affective disorder and depression for many years and use of lithium is recommended in NICE CG185 Bipolar disorder: the assessment and management of bipolar disorder in adults, children and young people in primary and secondary care

Lithium should be initiated by a specialist and requires regular ongoing monitoring to maintain a therapeutic level and avoid toxicity. Lithium serum levels must be checked as well as thyroid and renal function.

Lithium interacts with other medicines which affect renal function and so caution is required when any new medication is started. Since lithium is a salt changes in diet and fluid balance can also affect lithium serum levels.

It is important for maintaining safe lithium serum levels that the patient receives information about lithium and potential signs of toxicity.

2. Background

Various monitoring forms and documentation have been available across the Trust but there is need to standardise this guidance following the issue of NPSA / 2009 / PSA005 (http://www.nrls.npsa.nhs.uk/alerts/?entryid45=65426).

Prescribing of lithium should be monitored closely and information for prescribers and patients is important to reduce the risk of lithium toxicity. The interaction checklist (appendix 1) has been previously issued by the Medicines Management Group in response to a series of incidents involving interacting medicines being prescribed with lithium. This trustwide policy is required to minimise the multiple risks involved with lithium treatment.

3. Pre-treatment

Before treatment is commenced by the consultant or staff grade the following checks should be made and the results documented in the notes and included in any correspondence to the GP.

- Assessment of cardiac function (BP, P, HR, heart sounds), including an ECG if a history or a risk of cardiac disease and / or on other psychotropics;
- Weight and height in order to calculate the BMI;
- Urea and Electrolytes / eGFR;
- Thyroid function test (TSH, free thyroxine);
- FBC;
- Calcium (as lithium may affect the level).

4. Starting treatment

The usual starting dose of lithium is 400mg for adults and 200mg for older people (age >65). Patients should take lithium for at least 6 months to establish its effectiveness as a long term treatment.

Lithium levels should be checked 5-7 days after starting treatment and then weekly until two similar results are obtained at the same dose. The dose is normally increased in 200mg increments. There is a linear response between dosing and serum levels, so for example if the serum level is 0.3mmol/l at a 400mg dose it will be approximately 0.6mmol/l at an 800mg dose.

The blood sample taken for lithium levels should be taken 12 hours post dose (this is why lithium is usually given as a bedtime dose). If using divided dosing for the liquid preparation then a sample is taken 12 hours post evening dose and just before the morning dose. When requesting lithium levels it

is good practice to document the last lithium dose and time it was taken, along with the time when the blood sample was taken.

5. Routine monitoring

For guidance, adult patients will usually be maintained between 0.4-1.0mmol/l and older people and those with medical co-morbidity will be maintained at the lower end of the range.
There is a need to investigate and monitor any upward trend in lithium levels since lithium levels within the normal range may be toxic for some patients. Note that lithium is cleared by the renal system and so a deterioration of renal function may lead to an increase in serum levels and plasma lithium levels should be monitored more frequently.

When starting lithium all patients must be added to the electronic CWP lithium register on CareNotes. If lithium is started as an in-patient this will be done by the ward staff or ward pharmacist and then up dated by the care coordinator / lithium specialist nurse or specialist. If lithium is started as an out-patient this will be done by the care coordinator / lithium specialist nurse or specialist. Patients once stable will have regular blood tests as a minimum at the following intervals (see table below). These will be requested by the specialist or GP once transferred to shared care (see section 16).

All lithium levels, eGFR, TFTs and weight must be written in the patient's lithium record booklet by the consultant, lithium specialist nurse, CPN or GP. Lithium information booklets, record books and alert cards can be ordered through supplies from 3M SPSL. All out-patient clinics and in-patient units must keep supplies of them. Copies of these be found on http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=65426

Laboratory test	Minimum frequency
Lithium	3 Months*
Thyroid Function Test (TFTs)	6 Months
Urea and Electrolytes (UandEs)	6 Months

* NICE Guidance CG 185 states: after the first year, measure plasma lithium levels every 6 months, or every3 months for people in any of the following groups:

- older people
- people taking drugs that interact with lithium
- people who are at risk of impaired renal or thyroid function, raised calcium levels or
- other complications
- people who have poor symptom control
- people with poor adherence
- people whose last plasma lithium level was 0.8 mmol per litre or higher.

Suitability of patients for 6 monthly monitoring should be assessed by the specialist, documented in the clinical notes and on the lithium register and communicated to the GP.

Monitor the person at every appointment for symptoms of neurotoxicity, including paraesthesia, ataxia, tremor and cognitive impairment, which can occur at therapeutic levels of lithium.

In conjunction with the above monitoring, patients with Bipolar disorder should also have an annual physical health check undertaken by the GP, as per NICE guidelines. This should include:

- Lipid levels, including cholesterol in all patients over 40 even if there is no other indication of risk;
- Plasma glucose levels;
- Weight / BMI;
- Smoking status and alcohol use;
- Blood pressure.

6. Abnormal results

If there has been no dose change and serum lithium levels have increased or decreased then repeat the blood test. If the level is outside of the therapeutic range discuss with the responsible consultant promptly.

Abnormalities in other results would usually indicate a repeat blood test, however if there is any doubt discuss with the specialist. Lithium therapy can often cause a slightly low T4 result but this does not automatically indicate thyroid hormone replacement treatment if TSH is normal. Monitoring the clinical presentation is very important. Repeat the TFTs at least every 3 months and consider hormonal replacement depending on the clinical presentation and TFTs. Lithium therapy may also mildly increase the calcium level.

All serum lithium results exceeding 1.20 mmol/L will be telephoned to the requesting doctor between 0900hrs - 1800hrs (GPs) or 0900hrs – 1700hrs (CWP clinician). Out of hours the GP out of hours service will be contacted (after 1830hrs) and the CWP on call consultant (after 1700hrs).

7. Toxicity and dehydration

Symptoms of toxicity reliably occur when the blood lithium concentration is greater than 1.5mmol/L. (Usual therapeutic range is 0.4 – 1.0mmol/L).

Symptoms of toxicity include:

- Severe nausea, vomiting or diarrhoea;
- Coarse tremor;
- Myoclonus (unexplained involuntary jerks);
- Blurred vision;
- Drowsiness;
- Confusion;
- Convulsions;
- Renal failure;
- Arrhythmias.

If any of the symptoms of toxicity occur then lithium should be stopped immediately and serum lithium levels checked and the patient re-hydrated with an increased sodium intake. The consultant should be informed on the next working day.

A level of 2mmol/L or more is a medical emergency and the patient will require admission to Accident and Emergency.

8. Interactions with lithium

Lithium is a salt and is excreted unchanged in the urine in the same way as sodium. Any medicines or diets which change the salt or fluid balance in the body can affect the amount of lithium excreted and so affect the level of lithium in the blood stream. Any medication which is used in addition to lithium should be checked in the BNF for possible interactions before taking. This includes medicines (conventional or herbal) which can be purchased by the patient.

Diuretic medicines, especially the thiazide type e.g. bendroflumethiazide, ACE Inhibitors and Angiotensin II Inhibitors can significantly increase lithium levels. It is best to avoid using these medicines with lithium and careful consideration is needed before they are used. If the combination is necessary the lithium levels and renal function should be monitored carefully.

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) can increase lithium levels and risk of toxicity and should be avoided if possible. Ibuprofen and aspirin can be purchased in shops and it is important for patients to know that paracetamol is a much safer option if they need simple analgesia. Use of regular

NSAIDs for a chronic condition such a rheumatoid arthritis, where alternative pain killers are ineffective, is easier to manage with increased monitoring than those taken on an ad-hoc basis.

Other medicines also interact with lithium e.g. amiodarone, metronidazole, antidepressants, carbamazepine, phenytoin, antipsychotics, diltiazem verapamil, methyldopa, baclofen, muscle relaxants, theophylline, parasympathomimetics, (sodium containing) antacids.

The consequences of taking any of these medicines with lithium can be serious and the specialist and pharmacist should be contacted for advice before taking / administering / prescribing the combination.

It is important to check for interactions with all medicines prescribed or purchased which may be taken in combination with lithium by consulting the current edition of the BNF. Also see the interaction alert (appendix 1) which should be displayed in all clinical areas.

Wherever possible, strategies should be used to make prescribing safer, such as electronic prescribing with computer alerts. In the absence of this the role of ongoing education of medical staff by the clinical pharmacy staff is paramount.

9. Discontinuation of lithium

Any plan to discontinue lithium should involve a discussion with the specialist and the community mental health team (CMHT). It should be done slowly over at least 4 weeks, but preferably over 3 months, to help reduce the risk of relapse, particularly if the patient has a history of manic episodes. Lithium should not be stopped suddenly unless there is an urgent reason such as overdose or toxicity. Restarting lithium after toxicity or overdose should be done under the direction of the specialist, supported by the same appropriate verbal and written advice when initiating lithium.

10. Information for patients

All new and known patients must receive a lithium information booklet, record book, alert card from CWP. Only those patients who are currently being wholly monitored by GP will receive their documents from GP. Patient information leaflets from www.choiceandmedication.org.uk are useful sources to support verbal information given about monitoring, side effects, cautions and signs of toxicity before starting lithium. Patients should be informed of the importance of compliance with lithium to prevent relapse symptoms and the importance of carrying their lithium record book with them to enable pharmacies to dispense lithium.

Patients must be told to seek advice before taking any other medicines (prescribed or purchased, conventional or herbal) when on lithium in order to avoid potentially dangerous interactions.

Patients also require information on the following lifestyle factors from a health professional:

- Salt and fluid balance and the need for a good fluid intake (on average 2 litres a day is recommended) so that risks of toxicity are reduced i.e. no crash dieting;
- Suffering from vomiting or diarrhoea;
- Advice about alcohol intake;
- Increased sweating due to hot weather or increased exercise.

11. Lithium and anaesthesia

11.1 Lithium and surgery

Surgical and anaesthetic teams are encouraged to involve the psychiatric teams if they are considering surgery.

Lithium medication should be discontinued 24 hours prior to **major** surgery.

Lithium medication need not be discontinued prior to **minor** surgery. However, careful monitoring of fluids and electrolytes is needed.

There is no clinical evidence of interaction between lithium and anaesthetic agents, although lithium may prolong the action of muscle relaxants e.g. atracurium, suxamethonium.

Lithium treatment can decrease the renal concentrating ability in some patients and as a consequence they can develop polyuria and polydipsia. These patients can therefore become dehydrated rapidly if fluid intake is restricted. Dehydration can reduce lithium clearance and increase the risk of toxicity. Patients who have lithium-induced polyuria, should be given parenteral fluids the night before their operation, thus preventing dehydration and lithium toxicity.

Potassium sparing diuretics and NSAIDs should be avoided and if medication is altered during the admission advice should be taken from the ward pharmacist with regards possible interactions with lithium.

11.2 Recommencing lithium following anaesthetic

Lithium should be recommenced post-operatively once kidney function and fluid-electrolyte balances have become normal. The patient is usually eating and drinking again at this point.

It may be possible to restart at the usual dose if lithium has only been omitted for a few days; otherwise it is necessary to re-titrate the dose with appropriate monitoring as per at initiation.

It is usual to re-check renal function after 3 days and then 7 days of restarting lithium to ensure kidney function and fluid / electrolyte balance have returned to normal. Lithium levels need to be checked 5-7 days after restarting.

Such monitoring is the responsibility of the acute hospital which they must communicate to the GP and consultant psychiatrist.

12. Lithium and ECT

There are conflicting opinions regarding lithium and ECT. There are reports that ECT may facilitate lithium toxicity, but this needs to be balanced against risks of stopping lithium. Some authorities suggest reducing the lithium dose during the course of ECT. Patient specific advice should be taken from the specialist in charge of the patient's care.

13. Lithium and pregnancy and breastfeeding

13.1 Contraception, pregnancy and lithium

Lithium should be avoided in pregnancy if possible. The major teratogenic risk (Epstein's anomaly) occurs between weeks 2 – 6, i.e. by the time pregnancy is detected it is too late. In women of child-bearing potential the risks of lithium in pregnancy should be discussed and adequate contraception should be ensured. If pregnancy is planned there should be pre-conceptual discussions regarding the risks / benefits of lithium in pregnancy. Abrupt discontinuation of lithium should be avoided (50% risk of relapse). Women on lithium in pregnancy should be referred for a fetal echocardiography scan at about 22 weeks gestation. More frequent plasma level monitoring is needed when lithium is used in the second and third trimester- refer to NICE CG192 Antenatal and postnatal mental health: clinical management and service guidance for details of management of bipolar disorder in pregnancy Also see MP3 Guidance on the recommended psychotropic agents for use in pregnancy and lactation.

13.2 Breastfeeding and lithium

Lithium should not be used in breastfeeding as it is present in breast milk and toxicity in baby can occur. There is a need to balance risks of discontinuing lithium in post-natal period (high risk of relapse) with mother's desire to breastfeed. The mother's preference, after careful explanation of risks, to stop lithium and breastfeed or continue on lithium and stop breastfeeding should be considered in the treatment plan. Refer to MP3 and NICE CG192 as above.

14. Lithium and psoriasis

Lithium can significantly exacerbate psoriasis. Lithium should therefore, only be prescribed to patients if all other suitable therapeutic options have been exhausted.

15. Changing brand or formulation

Prescribers must only prescribe by the brand name. Priadel is the only brand prescribed by CWP unless there are exceptions to this (i.e. the patient has historically taken a different brand or can't tolerate Priadel). It is important for patients to remain on the same brand of lithium (Priadel, Camcolit or Liskonum) as there is a difference in bioavailability between the different brands.

If it is necessary to change from tablets to liquid or vice versa it is important to note that these preparations contain different salts of lithium (lithium carbonate in the tablets and lithium citrate in the liquid) and a change in dose will be necessary. Priadel (Lithium carbonate 200mg M/R) is approximately equivalent to Priadel (lithium citrate 520mg/5ml), but see individual preparations in the BNF. Compare the number of "mmol" of lithium in the preparations as this is a measure of the number of lithium molecules (Li^+) each preparation contains.

i.e. Lithium carbonate 200mg (Priadel) contains approx 5.4mmol Li^+
Lithium citrate 520mg/5ml (Priadel) contains approx 5.4mmol Li^+

So a 200mg Priadel tablet is equivalent to 5mls of Priadel liquid as each contains 5.4mmol Li^+.
So a patient taking 800mg of Priadel tablets once at night would be switched to 10ml twice a day of Priadel liquid.

Other preparations:

- Lithium citrate 509mg/5ml (Li-Liquid) contains 5.4mmol Li^+
- Lithium carbonate 250mg (Camcolit) contains 6.8mmol Li^+
- Lithium carbonate 450mg (Liskonum) contains 12.2mmol Li^+

When changing brand, or switching between liquid and tablets, the same precautions and serum monitoring should be carried out as when lithium is initiated (see section 4). The reasons for changing brands or formulations should be discussed with the consultant.

Note: Priadel liquid is licensed for a twice a day dosing where as Priadel tablets are licensed as a single dose or in two divided doses.

16. Shared care responsibilities

The consultant psychiatrist or staff grade will initiate the lithium prescription and carry out initial monitoring. Only once shared care has been agreed with Primary Care will the GP provide the ongoing prescription and ongoing monitoring. Shared care is usually appropriate after around 3-6 months.

16.1 Circumstances when shared care is appropriate

Prescribing responsibility will only be transferred when the specialist and GP are in agreement that the patient's condition is stable and predictable;

- The patient will only be referred to the GP once the GP has agreed in each individual case.
- The specialist will continue to monitor blood levels and provide prescriptions until successful transfer of responsibilities.

16.2 Role of the specialist

- To establish the diagnosis and determine a treatment plan;
- To undertake baseline tests and initiate therapy only following a discussion with the patient of the benefits and risks;
- To request a full list of medication from the GP surgery before prescribing lithium as an out-patient on an FP10 pad;
- Inform GP of the diagnosis, the treatment plan and initiation of lithium therapy promptly, in order for it to be recorded on the GP system to prevent inadvertent prescribing of potentially harmful medicines;
- Add the patient to the CWP Trust lithium register, if lithium specialist nurse, care coordinator, ward staff or pharmacist not available;
- To communicate with the lithium specialist nurse or care coordinator if available to advise lithium therapy has been started;
- To issue a lithium information booklet, record book and alert card and explain and document its role and the side effects of lithium;
- Record lithium blood levels, e-GFR, TFTs, weight in the patient's lithium record book;
- For female patients of child bearing potential there should be a documented discussion about plans for pregnancy and contraception;
- To communicate with the care co-ordinator and lithium specialist nurse to advise lithium therapy has been stopped and remove the patient's name from CWP Trust lithium register;
- To review the use of lithium in a patient who fails to attend for regular blood tests;
- Continue and monitor lithium status until the patient's overall condition is stabilised. This monitoring by secondary care will usually be for 3 months;
- To advise the GP if levels are outside the normal range;
- Continue to prescribe until the dose of medication is predictable. Note that assessment of appropriate monitoring should be undertaken prior to issuing the prescription to the patient;
- To review the patient at least once a year including review of monitoring frequency of lithium
- Once stable to invite the primary care prescriber to continue the prescribing by way of a letter;
- To communicate to the GP by a letter:
    - Dosage, form and brand of lithium to be prescribed;
    - Current lithium blood level;
    - Desirable blood level range to be maintained;
    - Frequency of follow up appointments;
    - Contact details for care co-ordinator, key worker, lithium specialist nurse, community mental health team and specialist should the GP need prompt advice or intervention.
- Acknowledge and send a prompt verbal and fax reply for abnormal blood results received from the GP;
- To communicate with the GP whether lithium is being monitored 3 monthly or 6 monthly and any changes in frequency using the letter in Appendix 3
- To communicate with the GP if lithium has been discontinued.

16.3 Role of the GP

- When notified by the specialist that a patient has been initiated on lithium to promptly add to the patient's medication list the dose and 'issued by secondary care';
- To update the patient 's medication list with changes in lithium dose as communicated by the specialist;
- Acknowledge in writing to the specialist, within 14 days, as to whether or not the shared care arrangement for stable patients is acceptable (appendix 2). If the answer is NO to outline the reasons why;
- Continue with prescribing once shared care accepted by GP;
- Transfer patients details onto a primary care lithium register held within each GP practice for follow up blood monitoring and prescribing;
- Adjust dosage if required as advised by the specialist. In most cases this will be in response to changes in drug therapy, serum lithium level or changes in mental health state as identified by specialist;
- Carry out an annual Physical Health Check;
- Carry out routine blood monitoring according to shared care agreement;
- Carry out a fail-safe call and recall system within the practice for patients due to collect a new prescription;
- Inform the specialist if non compliance is identified;
- Inform the specialist if deterioration in the patient's mental health is suspected;
- Notify specialist of any relevant changes in medication or clinical status particularly those which would result in a change of monitoring frequency (see section 5)
- Record lithium blood levels in the patient's lithium record book or appoint a designated member of staff in the practice to do this. Abnormal results MUST be communicated by phone and fax to the specialist to ensure they are received. Need acknowledgement and a prompt reply by the specialist;
- Report adverse drug reactions caused by lithium to the specialist;
- Seek specialist advise on whether or not to continue lithium if renal impairment occurs;
- Check required monitoring has been carried out (as documented in section 5) and the patient's lithium record book has been updated before issuing a new prescription;
- Have a system in place within the practice to check and follow up with specialist / CMHTs if patients haven't collected their medication via the GP call and recall system.

16.4 Role of the GP practice

- When a GP is notified that a patient has been initiated on lithium by secondary care, "lithium issued by secondary care" must be added promptly to that patient's medication list;
- Once shared care has been agreed, staff that generate prescriptions at the GP practice should segregate requests for lithium and know what procedure to put in place if monitoring is not up-to-date or compliance is poor;
- A designated member of staff should have overall responsibility for checking the lithium register is up-to-date and that patients are compliant with therapy and appropriate monitoring is carried out;
- An alert message on the GP's computer screen should highlight that a patient is taking lithium;
- Patients should be encouraged to bring their lithium record book into the surgery with every request for lithium;
- A GP should only issue a prescription for lithium if they are sure blood monitoring is up-to-date, lithium levels are within the target range and the lithium record book is up-to-date. The exception to this would be if the patient presented for a prescription of lithium and they didn't bring their record book with them and they confirmed that they had no lithium left. In these circumstances it would be professionally acceptable to issue a prescription for a

smaller supply of lithium this would enable the prescriber time to check the current status of their blood results.

16.5 Role of the lithium specialist nurse

All patients that are started on lithium must be referred to the lithium specialist nurse if available within each locality for their first lithium blood test. Referrals may come from ward staff discharging patients from the in-patient wards or from doctors in an out-patient clinic. The lithium specialist nurse will:

- Take and report blood results to the specialist;
- Update the trust wide lithium register;
- Counsel the patient generally about lithium and its side effects;
- Remind the patient of the importance of carrying the patient's lithium book;
- Notify the prescriber if there are any concerns in the patient's mental health;
- Advise the care coordinator on the monitoring requirements for lithium and where to get the bloods taken;
- Supply advice to the care coordinator on lithium and the importance of recording lithium monitoring in the patient's hand held records;
- Act as a link for GPs to access if they have concerns regarding patients that are under shared care;
- Record lithium blood levels, e-GFR, TFTs, weight in the patient's lithium record book, if not done by the specialist.

16.6 Role of the care coordinator looking after a patient on lithium

- To ensure patients have their bloods monitored according to the guidelines (see section 5);
- To liaise with the specialist and GPs regarding blood levels and changes in lithium doses;
- To make the specialist aware if the necessary tests are not being carried out according to the guidelines so that treatment with lithium can be reviewed;
- Update the trust wide lithium register;
- Record lithium blood levels, e-GFR, TFTs, weight in the patient's lithium record book, if not done by the specialist.

16.7 Role of the community pharmacist

To ensure that every request for lithium is processed in a safe and timely manner according to this policy, community pharmacists should work seamlessly with GP practices and pharmacists should:

- Follow their standard operating policy (SOP) at all times http://www.nrls.npsa.nhs.uk/alerts/?entryid45=65426) (for NPSA reference SOP);
- Educate patients to bring in their lithium record book into the pharmacy with every request or prescription for lithium. Similarly to GP practices, the community pharmacist would be acting professionally if they issued a small supply of lithium until they could confirm current lithium blood results in the event of the record book not being presented with the prescription.
- Set up an alert message on their dispensing computer screen highlighting that a patient is taking lithium so that appropriate procedures are followed.

17. Communication and support

Out of hours contacts and procedures

The on call psychiatrist at the local hospital can be contacted via the hospital switch boards:

- Wirral University Teaching Hospital (WUTH) 0151 678 5111
- Countess of Chester Hospital (COCH) 01244 365000
- Macclesfield DG Hospital (MDGH) 01625 421000
- Leighton Hospital 01270 255141

Normal working hours

During working hours additional information on any aspects of lithium treatment is available from CWP pharmacists (via mobile phone) through contacting the hospital switch board:

- Lead Pharmacist for Wirral WUTH 0151 678 5111
- Lead Pharmacist for Chester COCH 01244 365000
- Lead Pharmacist for Crewe / Macclesfield MDGH 01625 421000

Appendix 1 - Lithium Interactions Alert

Thiazide diuretics e.g. bendroflumethiazide (bendrofluazide) and NSAIDs (Non-Steroidal Anti-Inflammatory Drugs) e.g. diclofenac, ibuprofen, Aspirin (at analgesic doses 300mg and above) Cox II Inhibitors e.g. celecoxib should not routinely be used with Lithium. Risk of increased Lithium levels and toxicity.

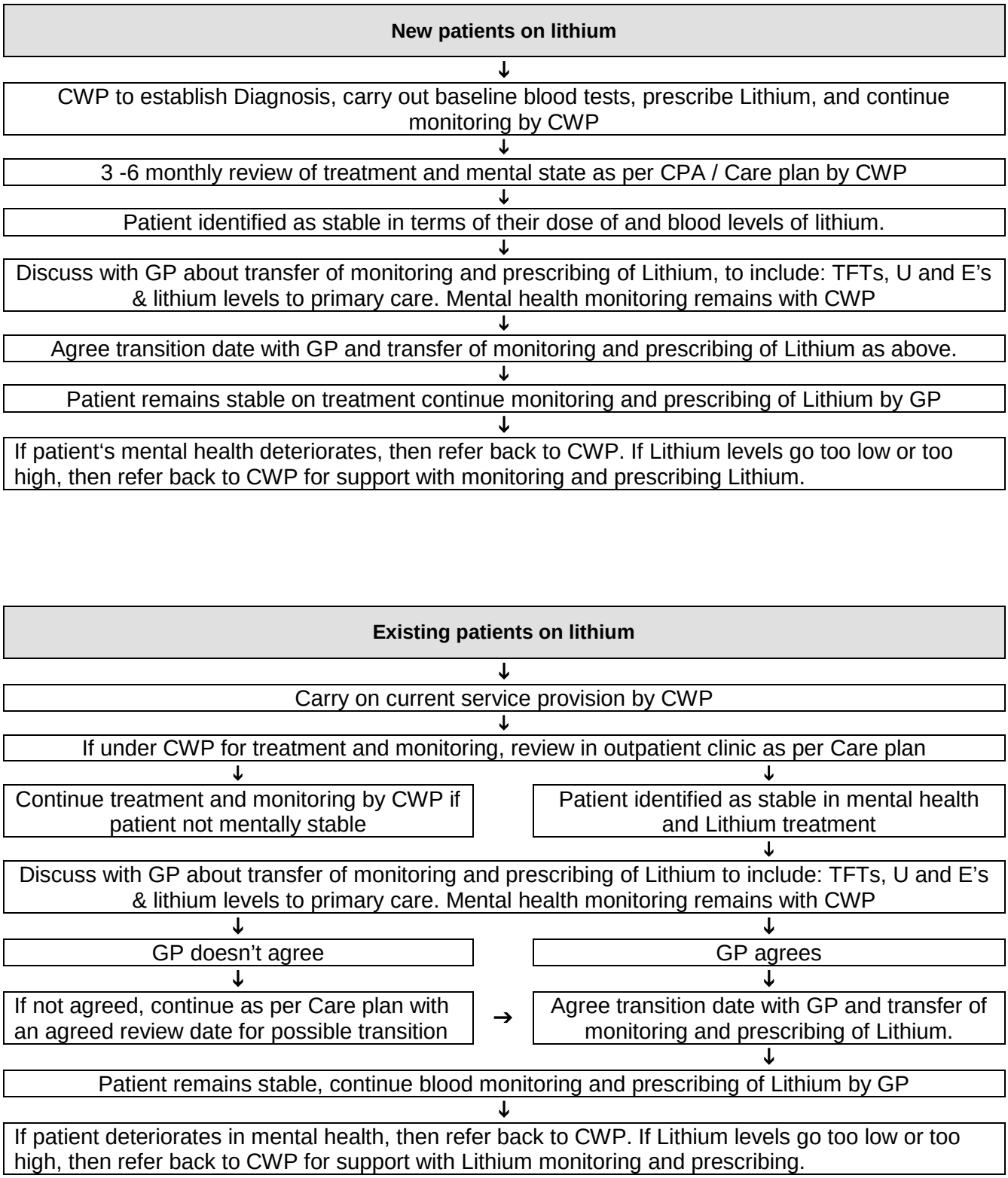
The consequences of administering these combinations are potentially dangerous. Contact the prescriber and the pharmacist for advice before administering.
Paracetamol based painkillers are safe to use with Lithium.

Loop diuretics e.g. Furosemide (frusemide), bumetanide, and Potassium Sparing Diuretics e.g. amiloride, spironolatone are safer than thiazide diuretics but not without risks of Lithium toxicity. ACE Inhibitors e.g. lisinopril, enalapril, ramipril and Angiotensin II Inhibitors e.g. losartan, candesartan, can also reduce Lithium excretion and cause toxicity. You must seek advice about using these medicines for a patient taking Lithium.

SSRI antidepressants, methyldopa, antipsychotics, diltiazem and verapamil can all increase Lithium toxicity without affecting Lithium levels and the patient should be monitored for signs of CNS toxicity.

The concomitant use of a drug that may exhibit nephrotoxic synergy with lithium requires close monitoring of renal function

Appendix 2 - Shared care lithium pathway



Appendix 3 - template monitoring frequency letter

Team Base (Wch, Sch, Vch)
House Name/Number & Road Name
Town/City
POSTCODE

Telephone No
Fax No

Your Ref:
Our Ref:

Date

Private & Confidential (Delete Row if not needed)
Name Of Recipient
House Name/Number & Road Name
Town/City
County
POSTCODE

Dear Dr

RE:

Lithium monitoring review

Your patient has been reviewed and is suitable for 6 monthly plasma lithium level monitoring within the shared care guidelines (CWP medicines policy MP4). This can continue as long as plasma level and general mental and physical health remain stable.

Monitoring frequency should be increased to 3 monthly if patients come into any of the following categories:

- older people
- people taking drugs that interact with lithium
- people who are at risk of impaired renal or thyroid function, raised calcium levels or other complications
- people who have poor symptom control
- people with poor adherence
- people whose last plasma lithium level was 0.8 mmol per litre or higher.

If this is the case please increase the monitoring frequency to 3 monthly and contact secondary care for advice on management if required.

Yours sincerely

TYPE SENDERS NAME
TYPE SENDERS JOB TITLE

TYPE SENDERS NAME
TYPE SENDERS JOB TITLE

Overtype with Enc or cc Persons Name (Delete if not needed)