Pharmaceutical Care Risk Assessment (Lithium)

Care issues with the appropriateness of the medicine/s?	**Licensed indications:**
Does patient understand what the medicine is for? Is it controlling their symptoms?	• Acute mania or hypomania • Resistant depression • Bipolar affective disorders • aggressive behaviour or self-harm (Priadel only) Lithium is usually taken for many years. Some improvement may be felt within 4-7 days in acute depression and mania, but it may take several months to control mood swings.
Care issue with the formulation of the medicine/s?	
Is the dosage form suitable? **Is the patient aware that they should not crush or chew tablets?**	Tablet and Liquid formulations are available. Differences in bioavailability between lithium preparations therefore must be prescribed by brand (If the formulation is changed lithium blood levels should be monitored after one week).
Care issue with the dosage and frequency of the medicine/s?	Common dose range is 400mg to 1200mg (lithium dose is normally titrated to achieve a blood level of 0.4 - 1.0mmol/l in adults and 0.4 - 0.8mmol/l in the elderly). Elderly patients generally require lower doses.
Is the patient aware that the doses should be taken at the same time each day (preferably evening/night)	Ensure that liquid preparations are always prescribed twice daily. Lithium doses are normally taken in the evening to facilitate monitoring (lithium levels must be measured at least 12 hours after last dose). If twice daily dosing is used, lithium blood levels should be measured before the morning dose.
Care issue in relation to contraindications?	**Contraindications:**
Consider Precautions	• Hypersensitivity to lithium or to any of the excipients • Cardiac disease • Cardiac insufficiency • Severe renal impairment • Untreated hypothyroidism • Breast-feeding • Addison's disease • Brugada syndrome or family history of Brugada syndrome • Patients with low body sodium including dehydrated patients or those on low sodium diets **Precautions:** • Renal impairment • Pregnancy • Epilepsy • Elderly
Drug interaction with one or more medicines?	
Consider Rx and OTC medicines **If the patient is taking interacting medicines are they taking them regularly or intermittently?**	• ACE inhibitors and Angotensin-II Antagonists • NSAIDs • Diuretics – loop diuretics safer than thiazides • Steroids • Metronidazole • Tetracyclines • Antiepileptics (carbamazepine, phenytoin) • Antipsychotics (particularly high dose flupentixol, and haloperidol) • Calcium channel blockers • SSRIs • Methyldopa • Theophylline • Caffeine • Sodium containing products (e.g. antacids, effervescent products, health salts)

Side effects with one or more medicines?	**Side effects may be short term and are usually dose dependent:**
Is the patient experiencing any side effects? **Does the patient know what the signs of toxicity are and what to do?**	• Gastrointestinal disturbances • Fine tremor • Weight gain • Oedema • Polydipsia • Polyuria • Hypothyroidism **Signs of toxicity include:** • Blurred vision • Increasing gastrointestinal disturbances (anorexia, vomiting, diarrhoea) • Muscle weakness • CNS disturbances • Coarse tremor • Dysarthria • Drowsiness • Lack of co-ordination • Coarse tremor
Problems with concordance?	**What to do if a dose is missed:**
Does the patient know what to do if a dose is missed? **Does the patient understand the risk of relapse due to abrupt discontinuation?** **Is the patient aware of the NPSA advice and booklet?**	▪ If it is within 3 or 4 hours it is OK for patient to take the dose as soon as they remember. Otherwise, they should omit and take next dose at correct time. ▪ Patient must not double the next dose. ▪ Patient should tell doctor or nurse of missed dose(s) if a blood test is taken during the following week. Encourage patient to carry their lithium booklet.
Care issue in relation to polypharmacy?	Evident from PMR
Pharmacokinetic risk factors?	**Lithium levels affected by:**
	• Reducing renal function • Dehydration • Salt level intake changes
Pharmacodynamic risk factors?	**Lithium can cause:**
	• Hypothyroidism or Hyperthyroidism • Hypercalcaemia • Renal impairment
Disease risk factor?	Bipolar disorder or depression may affect concordance
Taking one or more medicines with a narrow therapeutic range?	**Lithium has a narrow therapeutic index therefore:**
Does the patient understand the need for monitoring of lithium levels, thyroid & renal function?	• Lithium blood level should be monitored every 3 months • Thyroid function should be monitored every 6 months • Renal function should be monitored every 6 months • Weight and BMI should be monitored every 12 months
Taking one or more black triangle medicines?	Lithium is not a black triangle medicine
Duplication of medication	Evident from PMR
Summary:	
Are there any pharmaceutical care issues of note?	Summarise any issues which are apparent from answers to the questions above. This will aid the preparation of a pharmaceutical care plan if required.