Title	**Subcutaneous levomepromazine for refractory nausea in the palliative care patient and agitation in the terminal phase**
Area where Protocol/Guideline applicable	SESLHD inpatient settings (including Calvary hospital)
Indications for use	Must be under the supervision of a Palliative Care Specialist. Refractory nausea and vomiting not responding to first line treatments (metoclopramide, cyclizine or haloperidol) Refractory agitation not responding to the following first line treatments in the terminal phase: Midazolam 60-200mg per 24 hours and/or Haloperidol 10mg per 24 hours
Place in Therapy	Low dose levomepromazine is considered a second line therapy for refractory nausea and vomiting Levomepromazine is considered a second line drug in the management of refractory agitation in the imminently dying with the intention to reduce a patient's level of consciousness.
Precautions & Relative Contraindications	Hepatic & renal Impairment Cardiac disease, particularly heart block & known QT interval prolongation/arrhythmia Parkinson's disease Dementia Epilepsy and seizure activity – lowers seizure threshold Encephalopathy
Drug Interactions	Caution is advised with the concurrent use of drugs metabolized by CYP2D6 e.g. tricyclic antidepressants, some beta-blockers, as theoretically levomepromazine may cause plasma concentrations to increase, or reduce conversion of pro-drugs to the active metabolite, e.g. codeine to morphine
Preparations	Levomepromazine 25mg / mL injection
Dose conversion for oral to subcutaneous route	A ratio of 1:1 between oral and subcutaneous routes should be used
Dosing	<u>Refractory nausea and vomiting:</u> **Low dose only -** 6.25 mg daily and every 2 hours PRN to a maximum of 25mg in 24hours <u>Terminal agitation:</u> The usual starting dose is 25mg BD and 25mg every 2 hours PRN to a maximum of 200mg in 24 hours.

	Titrate regular dose according to need. Usual dose range: 50mg to 200mg daily (**maximum dose 200mg in 24 hours).** Total daily dose can be administered via continuous subcutaneous (CSCI) or bolus subcutaneous injections in two to four divided doses Consider reduced starting doses in the elderly and in hepatic and renal failure.
Administration	Dilute to the largest practical volume
Diluents	Water for Injection (WFI)
Drug Compatibility	Check Syringe driver drug compatibilities in SESLHDPR/175 Administration of subcutaneous medications in Palliative Care (Table 1)
Known Adverse Effects	Drowsiness, sedation Postural hypotension Extrapyramidal side effects Dry mouth
Monitoring requirements	Monitor level of sedation and titrate dose accordingly. Monitor for injection site reactions. If administered via continuous infusion, perform 4 hourly infusion site checks as per Subcutaneous Syringe Driver Inpatient Management form SES130.021
Practice Points	Levomepromazine should be diluted as much as is practical to avoid site irritation. Protect product, syringes and lines from direct sunlight or heat. Discard if discolouration occurs.
Basis of Protocol/Guideline (including sources of evidence, references)	Palliative Care Formulary 7th Ed, 2020 p256, 198-200 Therapeutic Guidelines – Palliative Care eTG, July 2018 Dickman A, Schneider J. The syringe driver: continuous subcutaneous in palliative care. Oxford University Press; 2016
Consultation	St George Palliative Care Team SESLHD Palliative Care working party:

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GOVERNANCE	
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