Palliative Medicine Pocketbook

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This guideline is available online and as an app, a paper pocketbook and a hyperlinked PDF:

- Android and i-OS apps available via their respective app stores
- Windows application and PDF available at www.palliativewiki.com
- Online at www.palliativewiki.com/pocketbook
- Paper pocketbook – available via the palliative care team at Robina Hospital, Gold Coast

By

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This book has drawn significantly from the Isle of Wight Palliative Medicine Symptom Guidelines with modifications to reflect local practices and service design.

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Gold Coast Specialist and Supportive Palliative Care Unit

Community Palliative Care Contact Details

Address: Community Office, H1S, Robina Hospital, 2 Bayberry Lane, Robina, 4226

Telephone: 1300 763 218

Fax: 5668 6759

Consultant Advice Email (for GPs): gchpallcareconsultant@health.qld.gov.au

After Hours Medical Phone Advice (for GPs): 5668 6000 (ask for registrar or consultant on call)

Robina Inpatient Palliative Care Unit

Address: Inpatient Unit, H1S, Robina Hospital, 2 Bayberry Lane, Robina, 4226

Phone: 5668 6022

Fax: 5668 6029

Hospital Consult Team

Robina Hospital Consult Phone: 5668 6047

Gold Coast Consult Hospital Phone: 5687 0000

After hours medical advice (hospital doctors): Via switch (ask for registrar or consultant on call)

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Introductory Comments

"You matter because you are you, and you matter to the end of your life. We will do all we can not only to help you die peacefully, but also to live until you die." – Dame Cicely Saunders

"There is a time for everything, and a season for every activity under the heavens: a time to be born and a time to die, a time to plant and a time to uproot, a time to kill and a time to heal, a time to tear down and a time to build, a time to weep and a time to laugh, a time to mourn and a time to dance, a time to scatter stones and a time to gather them, a time to embrace and a time to refrain from embracing, a time to search and a time to give up…" - Ecclesiastes 1

This guideline is intended to support symptom management for all patients receiving palliative care

Palliative care is the care of patients who have an advanced, progressive illness that is not curable, and in general, will probably result in death within weeks or months (as opposed to many years). As such there is an emphasis on quality of life and symptom control. At times there will also be a focus on active interventions to reverse acute complications of illness and, in doing so, prolong a person's life. At other times there will be a focus on maintaining comfort and so avoiding interventions and instead allowing a natural death. Palliative care extends past the physical to embrace emotional, spiritual and psychosocial aspects of the care of patients and their families. This is what makes it an art as well as a science. The emphasis of this book is about succinct principles and medication guidelines only, with the assumption that other aspects of the biopsychosocial determinants of health are also being explored and managed.

This book is intended for use by primary and secondary care clinicians in the Gold Coast (and beyond)

It is not meant to be a replacement of other textbooks – how could a book this small ever do that! Nor is it intended as a set of strict protocols that should always be followed. Rather, this book is intended for health professionals who have a good background knowledge of general medicine and pharmacology and can use that background knowledge and their experience in conjunction with the advice found on these pages.

The treatments suggested in this book will not be appropriate in all circumstances. This book supplements, but should not replace, other sources (e.g. the AMH; education and training; seeking advice from the palliative care team). Medication adverse effects, contra-indications and drug-drug interactions are not discussed in any significant detail in this book. This means that the usual competencies of clinicians and prescribers are assumed. If in doubt, seek advice from other sources.

Need a palliative care nurse +/- doctor to assess an inpatient in Robina or Gold Coast Hospital?

Email or fax a referral form to gc_palcare_referral@health.qld.gov.au or 5668 6759

During business hours please also phone 5668 6047 at Robina Hospital or 5687 0000 at Gold Coast Hospital

If you wish to urgently speak to the palliative care registrar (or consultant) please call switch

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Need a palliative care nurse +/- doctor to assess a patient in the community?

For a new referral, email or fax the referral form to gc_palcare_referral@health.qld.gov.au or 5668 6759 (referral forms available via Medical Director or via calling 1300 763 218)

For a patient already known to the team, call 1300 763 218 and ask to speak to a community nurse

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Need to speak specifically to a palliative care doctor for urgent advice?

Call Robina Hospital (5668 6000) and ask to speak to the palliative care registrar (or consultant) on call

A few PBS tips

Prescribing medications frequently used in palliative care (especially ones at the end of life) within the hospital setting is usually relatively straight-forward however in the community it can be more problematic because certain drugs are not covered by the PBS (i.e. private prescriptions are required). Some helpful tips for prescribing in the community that are accurate for January 2017 are listed below. These tips primarily, although not exclusively, relate to medications for end-of-life care in the home setting.

For injectable opioids:

- Injectable oxycodone and fentanyl are not available through the PBS whereas injectable morphine and hydromorphone are.

For benzodiazepines:

- Injectable midazolam is not available through the PBS. Prescription of injectable clonazepam is restricted for epilepsy only. Many palliative care patients are at high risk of seizures, especially if there are cerebral metastases.

For anti-secretory agents:

- Injectable glycopyrrolate and hyoscine hydrobromide are not available through the PBS whereas injectable hyoscine butylbromide (Buscopan) through a streamlined authority number is.

For co-analgesics:

- Gabapentin is an authority-required drug whereas pregabalin is a stream-lined authority drug.
- Methadone is a restricted-benefit medication ("severe disabling pain unresponsive to non-opioid analgesics")
- Amitriptyline and valproate are available without PBS restrictions.

Abbreviations and Symbols Used

Abbreviations are not used frequently in this book, but where they are used, they are consistent with ones in common usage (e.g. DVT stands for deep venous thrombosis). The following abbreviations and symbols are relatively frequent in this book:

Abbreviation	Stands For
CSCI	Continuous subcutaneous infusion
IV	Intravenous
IM	Intramuscular
PBS	Pharmaceuticals Benefit Scheme
PRN	As required
SAS	Special Access Scheme
Subcut (Or SC)	Subcutaneous (Note that SC is not an approved abbreviation but is used in this book to save space. It can be misunderstood as sublingual therefore always use "subcut" on prescriptions.

Care in the Last Few Days of Life

This page offers advice to doctors providing care for people who they believe are in their last few days of life and a decision has been made that the focus of care is ensuring patient comfort and family support.

- It is usually very hard to be 100% sure that a person is dying, especially in non-cancer patients with multiple general medical co-morbidities
- Remain flexible. Sometimes it is reasonable to be giving basic ward treatments whilst also giving palliative-type symptom control medications
- Communicate clearly with the family about the expected prognosis and any uncertainty and document both your thoughts on prognosis and the contents of any discussion with family.
- Anticipate symptoms and write up PRN medications before they are needed. Ensure all PRN drugs have a clear indication documented on the drug chart. Seek advice if 2 or more doses are ineffective or if benefit lasts less than 1 hour. (See Appendix 1 for general information on maximum doses)

Analgesia

- For opioid naïve patients, dose is age dependent.
    - For the elderly – half the dose
    - For young adults – increase dose by 50%
- In renal failure, consider avoiding morphine
    - Hydromorphone for renal failure
    - (Or fentanyl for severe renal failure)

Initial doses for opioid-naïve patients
Morphine 5mg hourly subcut **PRN** - 1st line
OR hydromorphone 1mg hourly subcut **PRN** – if mild or moderate renal impairment
OR Fentanyl (non-PBS) 50micrograms hourly subcut **PRN** – if severe renal impairment
In opioid tolerant patients, these doses will be inadequate. In these patients, change oral background opioids to CSCI pump and ensure appropriate subcut **PRN** doses (pages 9-11)

Restlessness and Agitation (see also page 23)

- Relieve reversible causes (e.g. urinary retention with catheterization)
- Benzodiazepines are ideal for anxiety and restlessness
- Anti-psychotics are ideal for hallucinations
- In refractory terminal restlessness, phenobarbitone is an option

First line agents and doses:
Midazolam (non-PBS) 2.5-5mg hourly subcut **PRN**
Haloperidol 0.5-2.5mg hourly subcut **PRN**
Second-line agent and dose:
Levomepromazine (SAS) 12.5-25mg hourly subcut **PRN**
Seek advice if 2 or more doses are ineffective, or if benefit lasts less than 1 hour

Respiratory Secretions

- Can be very distressing for relatives although unlikely to distress drowsy patients
- Once too weak to expectorate, give hyoscine butylbromide (Buscopan) 20 mg SC 4-hourly PRN and 60mg via CSCI over 24 hours
- Persisting noisy secretions can be treated with a regular dose +/- PRN doses

Nausea and Vomiting

- If already on an effective anti-emetic, continue this SC if possible
- Otherwise, haloperidol is a good first line option

Haloperidol 1mg hourly SC PRN (up to 5mg/day)

Dyspnoea

- Dyspnoea often improves with opioids
- Benzodiazepines also help dyspnoea, especially when anxiety plays a role

Options for dyspnoea include:
Morphine 2.5-5 mg hourly SC PRN
AND/OR Midazolam (non-PBS) 2.5-5 mg hourly SC PRN

Adjust opioid dose if already opioid tolerant (page 10)

Starting and Using a Continuous Subcutaneous Infusion (CSCI or Syringe Pump): see page 13

Nutrition and Fluids

- Allow an awake patient to take sips of fluids and small mouthfuls of food if the patient requests it
- Keeping the mouth moist is believed to minimize thirst
- Parenteral fluids are usually ineffective for thirst and may worsen distressing respiratory secretions. Reserve for severe thirst refractory to optimal mouth care, or where oral route is lost before the desire to drink has reduced (e.g. due to an occluding oesophageal tumour)
- Taper any supplemental nutrition (e.g. via a PEG) as this is usually inappropriate

Long-term Medications

- Long-term medications (e.g. oral hypoglycaemic drugs) should usually be ceased unless they reduce symptoms (e.g. a GTN patch)
- To reduce seizure risk in patients with epilepsy, give clonazepam 2mg over 24 hours via CSCI
- For patients with type I diabetes, to reduce symptoms of diabetic ketoacidosis, give half the previous total daily dose of insulin as a single daily dose of glargine insulin, checking blood glucose levels once daily, and modifying glargine insulin dose to maintain glucose levels between 5 and 20
- Steroids should be continued if used for symptom control. Dexamethasone can be given subcutaneously (1mg SC dexamethasone ≈ 1mg oral dexamethasone ≈ 7mg oral prednisolone)
- Continue anti-Parkinsonians until oral route lost. In the imminently dying, use midazolam *(non-PBS)* 10mg over 24 hours via CSCI for rigidity. If it is desirable to avoid midazolam's sedating effects, alternatives include continuing existing medications via a PEG or NG or transdermal rotigotine (but seek specialist advice: can exacerbate delirium and hallucinations)

Implanted Cardiac Defibrillators (ICDs)

- If a patient has one, implanted cardiac defibrillators should be turned off if this has not already been done: call the patient's cardiologist for advice on switching the ICD off.
- In urgent situations, a strong magnet placed on the chest over the defibrillator temporarily deactivates the defibrillator (once the magnet is removed, the defibrillator will be active again).

Place of Care

- Asking about wishes ahead of time allows plans and preparations to be made. Record these wishes in the patient's medical records and/or medical letters.
- If a patient is not where they want to be cared for, or you need help coordinating their care, the local palliative care often offer advice on options.
- Palliative care inpatient units often endeavour to admit people in their last days of life if they wish to die there but these units are not able to offer long term placement as an alternative to nursing homes. Promising a palliative care inpatient unit admission when no bed is available can cause further distress - if in doubt, please seek advice first.

Subcutaneous Medications and Syringe Drivers

The *injectable preparations* of the following medicines can be given subcutaneously.
Many are only licensed for IV or IM use and thus the ampoule will be labelled 'for IV or IM use only'.
Note that syrups or solutions intended for oral use *cannot* be given by injection.

Medication	Comparative dosing	Diluent/ Flush*	Comments
Alfentanil	N/A	WFI/NaCl	
Clonidine	50mcg oral ≈ 50mcg SC	NaCl	
Cyclizine	50mg oral ≈ 50mg SC	WFI	
Dexamethasone	4mg oral ≈ 4mg SC	WFI/NaCl	Generally given as a stat morning dose rather than via CSCI to avoid sleep disturbance
Diclofenac	150mg oral ≈ 75mg SC	NaCl	By SC infusion only (i.e. via CSCI). Do not give stat SC injections (tissue necrosis reported)
Fentanyl	N/A	WFI/NaCl	
Frusemide	40mg oral ≈ 20mg SC	WFI/NaCl	Either SC infusion or stat SC injection (but the overnight diuresis from CSCI can be problematic unless catheterized)
Glycopyrrolate	Seek advice	WFI/NaCl	
Granisetron	2mg oral ≈ 1mg SC	WFI/NaCl	
Haloperidol	2mg oral ≈ 1mg SC	WFI/NaCl	
Hydromorphone	3mg oral ≈ 1 mg SC	WFI/NaCl	
Hyoscine butylbromide	20mg oral ≈ 20mg SC (for intestinal pain)	WFI/NaCl	Oral tablets act locally in the gut but have no systemic effects (0% bioavailability)
Hyoscine hydrobromide	N/A	WFI/NaCl	
Ketamine	10mg oral ≈ 10mg SC	NaCl	
Ketorolac	10mg oral ≈ 10mg SC	WFI/NaCl	
Levetiracetam	250mg oral ≈ 250mg SC	WFI	By subcut infusion only (i.e. CSCI) diluting IV preparation with water
Levomepromazine	25mg oral ≈ 12.5mg SC	WFI/NaCl	Minimum dilution 15mg/1ml
Lignocaine	N/A	NaCl	See Appendix 6
Methadone	10mg oral ≈ 10mg SC	WFI/NaCl	Bioavailability typically about 80%
Metoclopramide	10mg oral ≈ 10mg SC	WFI/NaCl	
Midazolam	N/A	WFI/NaCl	
Morphine	15mg oral ≈ 5mg SC	WFI/NaCl	
Octreotide	N/A	WFI/NaCl	
Ondansetron	8mg oral ≈ 4mg SC	WFI/NaCl	
Oxycodone	10mg oral ≈ 5mg SC	WFI/NaCl	
Phenobarbitone	100mg oral ≈ 100mg SC	WFI	
Ranitidine	100mg oral ≈ 50mg SC	WFI/NaCl	
Valproate	200mg oral ≈ 200mg SC	WFI	By SC infusion only (i.e. CSCI) diluting IV preparation with a minimum of 24ml water. Do not give stat SC injections.

* WFI = water for injections; NaCl = sodium chloride 0.9%

Subcutaneous Infusions and Medication Compatibilities

Mixing medications in subcutaneous infusions can cause problems if there are drug incompatibilities that cause reactions. Always use caution when mixing medications looking especially for crystallization. The following tables lists some compatible combinations – these are not an exhaustive list. If unsure about a combination, speak to a palliative care pharmacist, physician or nurse specialist.

Sodium chloride 0.9% is the diluent used routinely in Australia and is used as the diluent throughout these guidelines unless otherwise stated.

Some important considerations:

- Cyclizine is **only** diluted with Water for Injection. There is a risk of precipitation when cyclizing is mixed with drugs formulated in a solution containing chloride ions or if pH > 6.8. Cyclizine is incompatible with hyoscine butylbromide and fentanyl.
- Glycopyrrolate is acidic (pH 2.3-4.3) and should not be added to mixtures where pH > 6
- Haloperidol > 1mg/mL in sodium chloride 0.9% may precipitate
- Ranitidine has shown to be incompatible with midazolam and levomepromazine (may be concentration dependent)

Opioid	Compatible Combinations	References	Comment
MORPHINE	Cyclizine	1,2,3,4	
	Cyclizine, midazolam	1,2,3,4	
	Cyclizine, midazolam, ondansetron	2,4	
	Cyclizine, octreotide	2,3,4	
	Cyclizine, glycopyrrolate	1,2,3	
	Cyclizine, haloperidol	1,2,3,4	
	Cyclizine, haloperidol, octreotide	1,4	
	Cyclizine, haloperidol, ranitidine (add ranitindine last)	4	Caution
	Glycopyrrolate	1	
	Glycopyrrolate, levomepromazine	1,2,3	
	Glycopyrrolate, midazolam	1,2,3	
	Glycopyrrolate, metoclopramide	1,3	
	Hyoscine hydrobromide	1,2	
	Hyoscine hydrobromide, levomepromazine	1,2	
	Hyoscine hydrobromide, midazolam	1,2	
	Hyoscine hydrobromide, levomepromazine, midazolam	1,2	
	Haloperidol	1,2,3,4	
	Haloperidol, hyoscine butylbromide	1,2,3,4	Caution
	Haloperidol, ketamine	1,3,4	
	Haloperidol, midazolam	1,2,3,4	
	Haloperidol, midazolam, cyclizine	1,2,4	
	Haloperidol, hyoscine butylbromide, midazolam	2,4	
	Haloperidol, octreotide	2,3,4	
	Haloperidol, ranitidine	2,4	Add ranitidine last
	Hyoscine butylbromide	1,2,3,4	
	Hyoscine butylbromide, midazolam	1,2,3	
	Hyoscine butylbromide, octreotide	1,2,3,4	

MORPHINE	Hyoscine butlybromide, ranitidine	2,3,4	
	ketamine	1,3	
	Levomepromazine	1,2,3,4	
	Levomepromazine, hyoscine butylbromide	1,2,3,4	
	Levomepromazine, hyoscine butylbromide, midazolam	1,2,4	
	Levomepromazine, hyoscine butylbromide, octreotide	1,4	
	Levomepromazine, midazolam	1,3,4	
	Levomepromazine, ondansetron	1	
	Metoclopramide	1,2,3,4	
	Metoclopramide, midazolam	1,2,3,4	
	Metoclopramide, ranitidine	2,3,4	
	Midazolam	1,2,3,4	
	Midazolam, hyoscine butylbromide	1,2,3,4	
	Midazolam, hyoscine butylbromide, octreotide	1,4	
	Midazolam, ketamine	2,3,4	
	Midazolam, octreotide	1,2,3	
OXYCODONE	Cyclizine (may precipitate if > 3mg/mL)	1,2	**Caution**
	glycopyrrolate	2,3	
	Glycopyrrolate, levomepromazine	1,3	
	Glycopyrrolate, midazolam	1,2,3	
	Glycopyrrolate, metoclopramide	1,2,3	
	Haloperidol	1,2,3,4	
	Haloperidol, hyoscine butylbromide	1,2,3,4	
	Haloperidol, hyoscine butylbromide, midazolam	1,2	
	Haloperidol, hyoscine butlybromide, ranitidine	2,4	
	Haloperidol, ketamine	1,2,3,4	
	Haloperidol, midazolam	1,2,3,4	
	Haloperidol, octreotide	2,3,4	
	Haloperidol, ranitidine	2,3,4	
	Hyoscine butylbromide	1,2,3,4	
	Hyoscine hydrobromide	1,2	
	Hyoscine hydrobromide, levomepromazine	1	
	Hyoscine hydrobromide, midazolam	2	
	Hyoscine hydrobromide, midazolam, levomepromazine	2	
	Ketamine	2,3,4	
	Ketorolac, ranitidine		
	Levomepromazine	1,2,3,4	
	Levomepromazine, hyoscine butylbromide	1,2,3,4	
	Levomepromazine, hyoscine butylbromide, midazolam	1,2,4	
	Levomepromazine, midazolam	1,2,3,4	
	Levomepromazine, octreotide	1,2,3,4	
	Levomepromazine, ondansetron	1,2,3,4	
	Metoclopramide	1,2,3,4	
	Metoclopramide, midazolam	1,2,3,4	
	Metoclopramide, ranitidine	2,3,4	Caution
	Midazolam	1,2,3,4	

OXYCODONE	Midazolam, hyoscine butylbromide	1,2,3,4	
	Midazolam, ketamine	2,3,4	
	Midazolam, octreotide	1,2,3,4	
	Midazolam, ketamine	2,3,4	
	Octreotide, ondansetron	1,2,3,4	
HYDRO-MORPHONE	Cyclizine (conflicting evidence)	2,3	Caution
	Glycopyrrolate	1	
	Haloperidol	1,2,3	
	Haloperidol, ketamine	2,3	
	Haloperidol, midazolam	2,3	
	Haloperidol, ranitidine	2,3	
	Hyoscine butylbromide	2,3	
	Hyoscine butlybromide, levomepromazine	2,3	
	Hyoscine butylbromide, midazolam	2,3	
	Hyoscine hydrobromide	1	
	Ketamine	1,2,3	
	Ketamine, levomepromazine	2,3	
	Ketamine, midazolam	1,2,3	
	Levomepromazine	1,2,3	
	Levomepromazine, midazolam	2,3	
	Metoclopramide	1,2,3	
	Metoclopramide, midazolam	1,2,3	
	Midazolam	1,2,3	
FENTANYL	Haloperidol	1,2,4	
	Haloperidol, hyoscine butylbromide, midazolam	2,4	
	Haloperidol, midazolam	1,2,3,4	
	Hyoscine butylbromide	2,4	
	Hyoscine butylbromide, midazolam	1,2,3,4	
	Hyoscine hydrobromide	1,2	
	Metoclopramide	1,2,4	
	Metoclopramide, midazolam	1,3,4	
	Midazolam	1,2,4	
	Levomepromazine	1,2,4	
	Levomepromazine, midazolam	2,4	
OPIOID-FREE combinations	Levomepromazine, ondansetron	1,2,3	
	Haloperidol, hyoscine butylbromide, midazolam	1,2,3	Conflicting evidence
	Haloperidol, hyoscine butylbromide, octretide, ranitidine	2	
SPECIALIST-ONLY	Methadone – See Appendix 5 Ketamine – See Appendix 7		

The following drugs *cannot be combined in the same syringe* with other drugs		
Diclofenac	Frusemide	Levetiracetam
Phenobarbitone	Lignocaine	Valproate

(1 – Dickman and Schneider. The Syringe Driver 3rd Edition. 2015; 2 - www.palliativedrugs.com; 3 - Eastern Metropolitan Region Palliative Care (Victoria). Syringe Driver Drugs. 2016; 4 - Isle of Wight Syringe Driver Compatibility Guidelines. 2016)

Prognostication

Predicting life expectancy is not easy and it is as much an art as a science. Of course none of us know the future and so it is not helpful to be too definite about a patient's prognosis. None-the-less, being able to make a reasonable, educated guess about a patient's illness trajectory and the likely prognosis is important because:

- Some patients (and their relatives) want to know this (although it is equally true that some do not)
- It helps inform decisions regarding how aggressively to treat complications as they arise

If discussing prognosis and life expectancy with a patient, be sensitive, compassionate and honest in your approach. Do not be afraid to be unsure and to defer to other doctors and specialists who have more experience in treating the patient's particular illness.

A key element to determining prognosis is to understand the natural history of the particular disease that the patient suffers from. It is helpful to remember that new treatments are changing the trajectory and course of many illnesses.

Australia-modified Karnofsky Performance Scale (AKPS)*	
100	Normal No complaints No evidence of disease
90	Able to do normal activities Minor symptoms of disease
80	Normal activity with effort Some symptoms of disease
70	Cares for self but unable to carry work or do normal activities
60	Able to care for most needs but requires occasional assistance
50	Considerable assistance and frequent medical care required
40	In bed more than 50% of the time
30	Almost completely bedfast
20	Totally bedfast and requiring extensive nursing care by nurses, carers or families
10	Comatose or barely rouseable

* Similar to Palliative Prognositc Scale (PPS)

The following information boxes, tools and rules of thumb may be helpful in determining prognosis. None of them is perfect, however, so use them in conjunction with common sense. Additional tools that help prognosticate include the SPICT tool and PCOC scores (see Appendices 2 and 3 for details of these).

Patients gradually declining with advanced, metastatic cancer

Palliative Prognostic Index (PPI)

- If the PPI > 6 → death is likely within a month

Specific complications and scenarios

- If a patient develops acute renal failure with anuria due to obstructive uropathy and this is not relieved via stenting → creatinine will typically rise 50-100 daily with death likely within weeks, especially once creatinine passes 1,000
- If a patient develops bile duct obstruction due to tumour and this is not relieved via stenting → bilirubin will typically rise 15-30 daily with death is likely within weeks, especially once bilirubin passes 400
- If a patient has a rapidly rising white cell count and a short doubling time of a few days in the context of untreated acute myeloid leukaemia → death likely within weeks, especially once the total white cell count passes 400

Palliative Prognostic Index (PPI)	
PPS (or AKPS)	If 10-20 → Score 4 If 30-50 → Score 2.5 If > 50 → Score 0
Oral Intake	If severely down → Score 2.5 If moderately down → Score 1 If normal → Score 0
Oedema	If present → Score 1 If absent → Score 0
Dyspnoea at rest	If present → Score 3.5 If absent → Score 0
Delirium	If present → Score 4 If absent → Score 0
* Add the scores together to determine the total	

Prognostication in end-stage organ failure

The course and natural history of end-stage organ failure (e.g. liver failure due to cirrhosis) is very variable and it is harder to be reasonably sure about the prognosis when compared to advanced metastatic cancer. Acute deteriorations are more often reversible and so knowing when to withdraw (or not offer) treatment can be quite difficult.

The following categories and classification systems should be used as a very broad and general guide only.

Cirrhosis: The Child-Pugh scoring system is helpful in determining prognosis:

- Child's A (Score < 7) cirrhosis → 80% 1-year survival
- Child's B (Score 7-9) cirrhosis → 60% 1-year survival
- Child's C (Score > 9) cirrhosis → 40% 1 year survival

Score for:	1	2	3
Ascites	None	Mild	Severe
Encephalopathy	None	Mild	Severe
Bilirubin	< 34	35-49	> 50
Albumin	> 35	29-34	< 28
INR	< 1.7	1.8-2.3	> 2.4

Special cases:

- Hepatorenal syndrome is associated with a particularly poor prognosis with a 50% death rate within 1-month. There are treatments available so seek specialist advice regarding this.

Chronic Kidney Disease: The GFR is helpful in determining prognosis:

- Stage 5 → 70% 1-year survival for patients who elect to *not* have dialysis

Stage	eGFR	Impairment
1	> 90	Normal function
2	60-90	Mild
3	30-60	Moderate
4	15-30	Severe
5	< 15	End-stage

Special cases:

- Anuria is associated with a particularly poor prognosis (when compared to oliguria)
- Severe hyperkalaemia may cause fatal cardiac arrhythmias and sudden death

Congestive Cardiac Failure: The New York Heart Association Classification is helpful in determining prognosis:

- NYHA Class 4 with a hospital admission due to cardiac failure within the last 6-months → 50% 1-year survival

Class	Symptoms
1	None
2	Mild dyspnoea on ordinary activities
3	Marked limitation in activity
4	Almost bed-bound due to symptoms

Special cases:

- Hypotension and a raised creatinine is associated with a particularly poor prognosis

Chronic Obstructive Pulmonary Disease: Frequent admissions for acute exacerbations is helpful in determining prognosis:

- Patients admitted at least twice for exacerbations of COPD in the last 12 months → 80% 1-year survival

Negative prognostic factors for COPD
FEV1 < 35% predicted
Frequent admissions for exacerbations
Hypercapnia
Home oxygen
Cor pulmonale
Multiple medical comorbidities

Opioids – Starting, Titrating and Troubleshooting

Before starting opioids

- Is there a treatment (e.g. radiotherapy) to target the cause specifically?
- Has allied health input been considered (e.g. physio, OT, social work, psychology and spiritual care)?
- Should a non-opioid be tried first?
    - Is the patient's prognosis many months or years? If so, exhaust non-opioid options first
    - Is the pain unlikely to respond fully to an opioid? (See table below)

Type of pain	Helpful adjuvant agents include:
Neuropathic	Pregabalin (PBS streamlined authority)
Muscular spasms	Baclofen
Colicky abdominal pain	Hyoscine butylpromide (PBS authority)
Bone pain	Non-steroid anti-inflammatory drugs Bisphosphonates (non-PBS)

Renal impairment	Opioid choice
None	Morphine
Moderate	*Hydromorphone
Severe	*Fentanyl (non-PBS)

* = metabolites less toxic

Starting opioids

- All opioids have similar efficacy and side-effects
- Morphine is a good first choice except in renal failure or if a patch is preferable
- Start with low doses and titrate up as needed using both a regular long acting opioid and a PRN immediate release formulation (see below). Initial doses are based on age and frailty

For young adults	Immediate release oral morphine 5-10 mg 2-hourly PRN +/- Modified release morphine 10mg twice daily
For elderly, frail adults	Immediate release oral morphine 2.5-5 mg 2-hourly PRN +/- Modified release morphine 5 mg twice daily

- Always follow-up patients closely to avoid toxicity when starting and changing doses. Advise patients to seek medical advice if they are requiring ≥ 3 break-through (PRN) doses of opioid a day.
- Prophylactic laxatives are almost always indicated (e.g. docusate + sennosides)

Side-effects

- Drowsiness and respiratory depression are very serious and are dose-related
- If problematic side effects develop, consider these two options:
    - *Is a non-opioid more appropriate (e.g. neuropathic)?* → Reduce opioid dose + add a non-opioid agent
    - *Is it worth trying a different opioid?* → Opioid switch (e.g. from morphine to oxycodone)
- Helpful treatments for adverse effects include:

Nausea	PRN anti-emetics, e.g. metoclopramide
Constipation	Increase or combine laxatives (e.g. add a softener if colicky pain)
Confusion	Reduce opioid dose. If significant agitation, haloperidol may be necessary.

Long-acting opioids (e.g. MS Contin, Jurnista, OxyContin, Durogesic)

- Are given to provide continuous background pain relief
- Can be given orally (via slow released tablets), subcutaneously (via continuous infusions) or topically (via patches – see Appendix 4)

Short-acting opioids (e.g. Oramorph, Oxynorm, Sevredol)

- Are given to provide analgesia for breakthrough pain
- For patients on long-acting opioids, a dose of one-sixth to one-tenth of the total daily dose of opioid is usually required as the PRN dose (e.g. a person taking twice daily 60 mg of slow-release oral morphine will probably require breakthrough doses of 20 mg immediate-release oral morphine 2-hourly PRN)
- (See Appendix 4 for details on sublingual and buccal fentanyl)

Approximate Equianalgesic Doses

Morphine (milligrams)		**Oxycodone** (milligrams)		**Hydromorphone** (milligrams)		**Fentanyl** (***micro***grams)
Oral	**SC**	**Oral**	**SC**	**Oral**	**SC**	**SC**
7.5	2.5	5	2.5	1.5	0.5	37.5
15	5	10	5	3	1	75
30	10	20	10	6	2	150
45	15	30	15	9	3	225
60	20	40	20	12	4	300
90	30	60	30	18	6	450
120	40	80	40	24	8	600
Consider seeking advice if titrating above 120mg of morphine daily or equivalent, particularly if anticipating longer term (≥months) use:						
180	60	120	60	36	12	900
240	80	160	80	48	16	1200
300	100	200	100	60	20	1500

Use the tabled information to determine the appropriate dose when converting one opioid to another. Choosing a dose a little lower than the converted dose is generally the safest option.

Approximates at a glance

For Morphine

*1mg **SC** morphine*
*≈ 3mg **oral** morphine*
≈ 1mg SC oxycodone
≈ 2mg oral oxycodone
≈ 0.2mg SC hydromorphone
≈ 0.6mg oral hydromorphone
≈ 15microgram SC fentanyl

For Oxycodone

*1mg **SC** oxycodone*
≈ 1mg SC morphine
≈ 3mg oral morphine
*≈ 2mg **oral** oxycodone*
≈ 0.2mg SC hydromorphone
≈ 0.6mg oral hydromorphone
≈15microgram SC fentanyl

For Hydromorphone

*1mg **SC** hydromorphone*
≈ 5mg SC morphine
≈ 15mg oral morphine
≈ 5mg SC oxycodone
≈ 10mg oral oxycodone
*≈ 3mg **oral** hydromorphone*
≈ 75micrograms SC fentanyl

For Fentanyl

*1microgram **SC** fentanyl*
≈ 0.067mg SC morphine
≈ 0.2mg oral morphine
≈ 0.067mg SC oxycodone
≈ 0.13mg oral oxycodone
≈ 0.013mg SC hydromorphone
≈ 0.04mg oral hydromorphone

25 micrograms/*hour* patch of fentanyl = *daily* dose of 24x25 = 600 micrograms of fentanyl

Titrating Doses

If pain is poorly controlled but opioids are having some benefit, the long-acting background opioid dose can be gradually increased taking the previous 24-hour breakthrough requirements into account. In general it is safest to increase the background dose of opioid by no more than 33% in one go. If increasing doses of opioids are not helping, think about other analgesic options. For example, if a patient on 100mg of daily long-acting oral morphine has 3 breakthroughs of 10mg oral morphine in 24-hours, the oral long-acting dose could be increased to 130mg daily.

Starting and titrating a continuous subcutaneous infusion (CSCI)

In patients who are unable to swallow (e.g. near the end of life) or who are not absorbing oral medications (e.g. vomiting), it is often helpful to give medications via a continuous subcutaneous infusion.

In an opioid-tolerant patient who can no longer take oral opioids:

Convert the total daily oral dose of opioid to its subcutaneous equivalent and reduce the dose by a small amount (e.g. 25%) if any concerns that oral absorption is poor

Where possible also convert other oral medications to subcutaneous route.

Write up the infusion.

Ensure any PRN medications are also written up SC

Worked Example:

A patient on 30mg oral twice daily MR morphine
= 60mg total daily dose of oral morphine
= 20mg total daily dose of SC morphine
→ Reduce to 15mg daily SC morphine

+ is on 10mg oral three times daily metoclopramide
= 30mg total daily dose of oral metoclopramide
= 30mg total daily dose of SC metoclopramide

Write up the infusion as:
Morphine 15mg via CSCI over 24 hours
Metoclopramide 30mg via CSCI over 24 hours

Write up any PRN analgesia:
Morphine 5mg SC 2-hourly PRN

Worked Example:

In an opioid-naïve elderly patient entering the terminal phase of an illness who has agitation and grimacing, write up the infusion as:
Morphine 10mg via CSCI over 24 hours
Midazolam 10mg via CSCI over 24 hours

Write up appropriate PRN medications:
Morphine 2.5mg 1-hourly SC PRN for pain
Midazolam 2.5mg 1-hourly SC PRN for agitation

In an opioid-naïve patient for whom opioids via CSCI are appropriate:

Start the infusion at a low dose (e.g. 10mg of daily SC morphine.

Determine if any other medications are needed via CSCI.

Write up the infusion.

Ensure any PRN medications are also written up.

Titrating up the dose in a patient with poorly controlled pain:

Ensure the PRN doses of opioid are having some effect (if not, this may be an opioid-resistant pain), then determine the total dose of PRN opioid over the last 24 hours.

Increase the dose of the CSCI by a maximum of either the total dose of PRN opioid over the last 24 hours OR 33% of the total daily CSCI dose (whichever is lower)

Ensure new PRN opioid dose remains between about one-sixth to one-tenth of the 24-hour CSCI dose of opioid.

Worked example:

A patient is on 100mg of morphine via CSCI over 24 hours. He used 3 x PRN doses of 10mg of SC morphine yesterday
= 30mg of PRN morphine in 24 hours

Rewrite the new morphine infusion
Morphine 130mg over 24 hours via CSCI

Rewrite the new PRN morphine dose
Morphine 15mg hourly SC PRN for pain

Difficult Pains – Incident, Neuropathic, Bony and Muscular

Incident Pain

This is pain that occurs predictably on specific activities (e.g. pain that occurs when standing up and walking).

Aim to reduce underlying causes and triggers if possible, e.g.

- Bony instability (e.g. splints, orthopaedic surgery)
- Painful ulcers (e.g. treat infection)
- Movement induced pain (e.g. an OT and physiotherapy review to assess suitability for equipment)

Optimise regular analgesia for background pain, remembering that neuropathic pain and muscular spasms are common.

Example treatment for incident pain:

Immediate release oral morphine PRN 30-minutes prior to getting out of bed for a shower in the morning

If pain persists, specialist-initiated options include: rapid onset opioids; topical opioids; interventional anaesthesia; identifying additional targets for non-opioid adjuvants

Treatment with a short acting (immediate release) opioid 15 to 30 minutes prior to any activity that causes pain can be particularly helpful.

Neuropathic Pain

This is pain that occurs due to direct damage to the peripheral or central nervous system (e.g. due to a tumour invading the nerve). Common characteristics include shooting, stabbing or burning style pain. Allodynia (pain on light touch) is sometimes also present.

If neuropathic-sounding pain is not responding to simple analgesia, consider adding an adjuvant agent:

Common first-line agent: Pregabalin or amitriptyline

Common second-line approach:
If partial response to first-line, combine both amitriptyline *and* pregabalin together.
If first line brought no benefit, switch to the other agent.

Common third-line approach: add an alternative membrane stabiliser (e.g. valproate, carbamazepine) +/- withdraw other agents

Amitriptyline or nortryptiline
Starting dose: 10mg at night *Titrate if necessary:* up to 50mg at night over 2-4 weeks. Only increase further if partial benefit already seen
Pregabalin
Starting dose: 75mg at night *Titrate if necessary:* up to a maximum of 300mg twice daily over 2-4 weeks (less if frail or renal impairment)
Valproate
Starting dose: 100mg twice daily Titrate if necessary: up to a maximum of 500mg twice daily over 2-4 weeks

If pain control remains poor, refer to the palliative care team. Specialist options include:

- Methadone via CSCI or orally (see Appendix 5)
- Lignocaine via CSCI (see Appendix 6)
- Ketamine via CSCI or orally (see Appendix 7)

Painful Bony Metastases

Bony metastases often respond well to anti-inflammatory medications such as NSAIDs and steroids (e.g. dexamethasone 4mg each morning)

Both NSAIDs and steroids have their difficulties in terms of side effects, so consider these carefully prior to initiating. Consider using a proton pump inhibitor when commencing an NSAID or steroid.

For incident pain (e.g. pain on walking) → consider a PRN quick-acting opioid prior to exertion (see pages 11 and 14)

For pain unresponsive to medications → consider referring for radiotherapy

For ongoing pain unresponsive to radiotherapy → newer modalities of treatment such as radiofrequency ablation may be appropriate to consider

Think about the fracture risk

- Mirel's score ≥ 9 associated with ≈ 33% fracture risk
- *In cases of high fracture risk* → consider referral to an orthopaedic surgeon for prophylactic operative intervention
- *SINS ≥ 7* indicates possibility of an unstable spinal lesion
- *In cases of high spinal instability* → consider referring to spinal surgeon +/- interventional radiologist to review options such as surgical stabilization or vertebroplasty

If there is worsening back pain or reduced mobility → think about the possibility of spinal cord compression

In cases with severe widespread bony pain not responding to usual analgesia, specialist options include:

- Lignocaine infusion
- Bone-seeking radio-isotopes (e.g. strontium or lutetium)

Spine Instability Neoplastic Score (SINS)	
Spine location	
C1-2, C7-T2, T11-L1, L5-S1	3
C3-C6, L2-L4	2
T3-T10	1
S2-S5	0
Pain with movement / loading	
Yes	3
No	1
Pain-free at all times	0
Bone lesion type	
Lytic	2
Mixed	1
Blastic	0
Radiographic spinal alignment	
Subluxation	4
De novo deformity	2
Normal alignment	0
Vertebral body collapse	
> 50% collapse	3
< 50% collapse	2
> 50% of body involved (but no collapse)	1
None of the above	0
Posterolateral involvement	
Bilateral	3
Unilateral	1
None	0

Mirel's Scoring System (for upper and lower limbs)				
Score	**Size**	**Site**	**Radiographic nature**	**Pain**
1	< $^1/_3$ of cortex	Upper limb	Osteoblastic	Mild
2	$^1/_3$ - $^2/_3$ of cortex	Lower limb	Mixed	Moderate
3	> $^2/_3$ of cortex	Peritrochanteric region	Osteolytic	Severe

Muscular spasms in neurological conditions

Are common in advanced neurological conditions (such as motor neuron disease)

Consider trialling regular baclofen (which is a muscle relaxant)
- Initial dose is 5mg orally, three times a day (dose reduction needed in renal failure)
- Titrate up if necessary by 5mg orally three times a day every 3 days to 20mg orally three times a day
- When stopping baclofen, do so slowly over 2 weeks to avoid withdrawal symptoms

In muscular spasms associated with soft tissue injury, NSAIDs are a good first choice

Other options include neuropathic medications (e.g. pregabalin) and medical acupuncture.

Colicky abdominal pain

Consider trialling hyoscine butylbromide (Buscopan) *(PBS streamlined authority)*
- 20mg four times daily orally or SC, regularly or PRN
- Can be given by CSCI (60mg over 24 hours via CSCI; titrate to 120mg over 24 hours if necessary)

Other options include peppermint water and simethicone

If constipation is contributing → reduce stimulant laxatives and increase softener laxatives

If bowel obstruction might be contributing → investigate and treat this as appropriate (page 24)

Rectal pain

Refer early as this is often difficult to treat. Options include:

First-line:
- Opioids (page 9-10)
- Steroids or NSAIDs (e.g. diclofenac 100mg suppository)

If pain persists, consider:
- Neuropathic agents (e.g. pregabalin *(PBS streamlined authority)*)
- GTN (try sublingually initially, or topically if sphincter spasm suspected)
- Topical anaesthetics
- Specialist referral (options include nifedipine, methadone or lignocaine)

Refractory pain

Pain that remains severe despite simple analgesia, opioids and adjuvant agents may require specialist medications or procedural interventions. Seek specialist advice in these instances, but options may include:
- Psychological support and counselling
- Specialist medications (e.g. methadone or lignocaine)
- Procedural interventions (e.g. coeliac plexus block and other nerve blocks via interventional radiology)

Systemic Symptoms

Fatigue

Is often a sign of progressive disease. Causes are usually multiple. Consider reversible causes.

Non-pharmacological management may include:
- Mild exercise programs and routines
- Education and counselling → Accepting fatigue as part of the illness + Modifying activities and goals appropriately

Pharmacological management:
- Steroids improve energy and appetite in some patients
    - Trial dexamethasone for 1 week at 4mg orally daily
    - If no improvement, cease dexamethasone
    - If significant improvement, continue dexamethasone. Use for only a few weeks and/or reduce dose to 2mg daily to reduce risk of side effects
- Specialist options include psychostimulants

Cause	Potential treatment
Anaemia of chronic disease	Transfusion
Hypercalcaemia of malignancy	Bisphosphonate IV fluids
Steroid-induced diabetes mellitus	Reduce steroid dose Insulin
Infection	Antibiotics
Mood and adjustment disorders	Counselling Supportive care Antidepressants

Anorexia (poor appetite)

Is a sign of advanced disease that is often more distressing to relatives than it is to patients. Before treating with medications, try exploring the patient's and family's concerns.

If depression is playing a role, consider an antidepressant (e.g. mirtazepine has appetite-stimulant effects)

A trial of steroids as described above in the "Fatigue" section may be worthwhile where appetite rather than weight loss is the primary concern (steroids *do not* improve muscle mass or strength).

Peripheral oedema and lymphoedema

Swollen lower limbs often reflect multiple underlying aetiologies.

In patients with acutely worsened oedema (especially if unilateral) →
- Consider a DVT (even when bilateral) and investigate with ultrasound if appropriate. The presence of a PICC line in a swollen upper limb should raise the suspicion of an upper limb DVT
- Consider cellulitis and treat with antibiotics (for a *14-day course* if associated with lymphoedema)

In patients where peripheral oedema may be connected to right heart failure or hypoalbuminaemia (usually bilateral) → Consider a trial of diuretics (e.g. frusemide 40 mg orally in the morning).

Refer patients early if thought to have lymphoedema due to lymphatics obstruction (often unilateral) → In addition to hosiery, manual lymphatic drainage and compression bandaging, patient education is important

Anaemia and transfusions

Know the cause of anaemia - this guides management. Often in palliative patients, anaemia is due to chronic disease/inflammation. Transfusion can improve quality of life in patients with symptomatic anaemia. Be clear about the *aim* of blood transfusions. If symptoms don't improve as hoped, it may be that anaemia is not the main cause of the dyspnoea or fatigue. Future transfusions are thus unlikely to help.

Skin Symptoms

Itch (pruritus)

Pruritus has many causes and in a palliative care patient experiencing an itch, there may be no connection between the itch and the palliative illness. Thinking carefully about the cause often helps guide treatment.

Before trying oral medications, try emollients and other measures →

General measures
Treat the underlying cause if possible and appropriate
Remove precipitants (e.g. medications)
Stop using soap
Try moisturizer / emollient creams

If the itch might be histamine-related → try a non-sedating anti-histamine, e.g.
- Cetirizine 10mg daily regularly or PRN +/- ranitidine 150mg twice daily

If the itch is related to opioid use → consider one or more of the following options
- Converting to a different opioid
- An anti-histamine, e.g. cetirizine 10mg daily
- An SSRI, e.g. sertraline *(non-PBS indication)* or mirtazapine *(non-PBS indication)*

If itch is thought due to cholestatic jaundice → one of the following agents may be tried:
- Cholestyramine 4g orally three times daily
- Sertraline *(non-PBS indication)* 50mg in the morning
- Specialist options include rifampicin *(non-PBS indication)* 150mg twice daily and naltrexone *(non-PBS indication)*

If itch is associated with dialysis or renal failure despite optimising electrolyte balance → one of the following agents may be tried:
- Sertraline *(non-PBS indication)* 50mg daily
- A sedating anti-histamine, e.g. chlorphenamine (especially if disturbing sleep)
- Consider referral. Specialist options include low-dose gabapentin *(non-PBS indication)*

Referring for specialist help in difficult cases:
- If a primary skin problem is suspected and a rash is present, refer to dermatology
- If a systemic problem is suspected, refer to palliative care

Wounds

If a wound related to cancer (e.g. from local invasion of the skin) develops, consider the following:
1. Discuss with a radiation oncologist to see if radiotherapy may be appropriate
2. Refer to a wound care nurse for follow-up and appropriate dressings

If pain is an issue
Treat secondary infection
Systemic analgesia is appropriate
Pre-emptive analgesia 30 minutes prior to dressing change may help
For difficult cases, consider specialist referral. Options include topical opioids or lignocaine

If bleeding is an issue
Consider referral for radiotherapy opinion as this may control bleeding
Dress with gauze soaked in 1:1000 adrenaline (Avoid using at extremities due to risk of ischaemic damage) or tranexamic acid (use contents of an ampoule)
Tranexamic acid 500mg orally three times a day can reduce bleeding
If a massive, terminal bleed anticipated, ensure midazolam is available

If malodour is an issue
Metronidazole topically often reduces smell
If topical therapy ineffective, try metronidazole 400mg orally twice daily

Gastrointestinal Symptoms

Nausea and Vomiting

Treat, if possible, underlying contributing factors (e.g. hypercalcaemia, constipation, bowel obstruction)

Parenteral treatment (e.g. via CSCI) is typically required in patients who are vomiting. Converting to oral anti-emetics is often then appropriate after the patient has been stable for a few days. Sometimes nausea improves only slightly with mono-therapy and, in these cases, combination therapy with multiple drugs of different classes acting on different receptors is usually effective.

Be alert to extra-pyramidal side effects with dopamine antagonist.

Acute dystonic reactions can be reversed with benztropine 2 mg IV or IM

If metabolic or toxic causes are suspected (e.g. uraemia, medication-induced) → haloperidol is a good first option, e.g.

- Haloperidol 0.5mg twice daily orally (or 1mg via CSCI daily)
  AND/OR haloperidol 0.5mg 4-hourly PRN orally or subcut

If gastric stasis or distension is probably the main mechanism (or the main mechanism is unclear) → metoclopramide is a good first option (or domperidone if at risk of extrapyramidal symptoms), e.g.

- Metoclopramide 10mg three times daily pre-meals orally (or 30mg/24hrs via CSCI)
  AND/OR Metoclopramide 10mg three times daily PRN orally or subcut

If vestibular pathology is the main mechanism (e.g. movement induced or vertigo) → antihistamine-antiemetics are good first options, e.g.

- Prochlorperazine 5mg orally three times a day
- Cyclizine *(non-PBS)* 50mg three times a day orally or subcut either regularly or PRN (or 150mg via CSCI daily)

Further options for nausea include →

- Steroids, e.g. dexamethasone (especially if nausea related to raised intra-cranial pressure)
- Benzodiazepines, e.g. lorazepam *(non-PBS)* 0.5mg 6-hourly sublingually PRN (if anxiety is contributing)

If nausea persists → consider *add*ing or changing to an anti-emetic that works on different receptors

- Ondansetron *(non-PBS indication)* 8mg orally or 4mg subcut or sublingual twice daily
  OR Levomepromazine *(special access scheme)* 6.25mg orally or subcut twice daily

Hiccups

If appropriate, treat the underlying cause if it is known (e.g. dexamethasone for cerebral metastases).

First-line:
If caused by gastric distension → try metoclopramide If cause is neurogenic → try gabapentin (non-PBS indication)
Second-line:
Haloperidol 1mg twice daily orally or subcut
Third-line:
Baclofen 5mg twice daily (maximum 10mg three times)

For difficult cases, additional options include nifedipine, benzodiazepines and valproate.

Constipation

Anticipate constipation, especially in patients prescribed opioids, and start prophylactic laxatives where appropriate. If appropriate encourage increased fluids and fruit intake and encourage mobilization if appropriate. Avoid ispaghula (e.g. Fybogel) as it worsens constipation if fluid intake is inadequate.

Initial therapy → oral therapy with a softener and/or stimulant is appropriate

- Docusate 1 tablet twice daily regularly (or PRN) (a softener for hard stools)
  AND/OR
  Sennoside 1 tablet twice daily (or PRN) or picosulfate oral 10 drops twice daily (a stimulant)

(Doses can be titrated up or down based on level of constipation. Titrate up the softener if stool hard and/or colic present; titrate stimulants up if patient struggling to expel soft stool)

If constipation continues → consider rectal treatments, e.g.

- Bisacodyl 1 suppository daily PRN (if stools soft)
- Microlax 1 enema daily PRN (if stool hard)

For severe, refractory constipation → options include

- High dose softener (PicoPrep)
- High bowel intervention, e.g. Fleet enema
- Methylnaltrexone *(streamlined authority)* if opioid-induced
- Manual evacuation (ensure PRN analgesia / sedation available)
- If obstruction suspected, see page 26

In constipation associated with spinal cord compression →

- Oral laxatives
  PLUS
  Bisacodyl suppository each morning (or every second morning)

Methylnaltrexone
Peripherally acting opioid antagonist
Used for opioid-induced constipation refractory to appropriately titrated laxatives and enemas
Dose: - 12mg subcut (if > 62 kg) Repeat on day 2 if required
Can result in a massive bowel action within an hour. Is a commode required?
Can cause severe abdominal cramps. Ensure subcut hyoscine butylbromide (Buscopan) + subcut opioids available
Contraindicated in bowel obstruction
Dose reduction required in renal failure

Diarrhoea

If constipation with overflow could be the cause → treat the constipation

Is there a treatable cause →

- Medication side-effect (e.g. due to antibiotic) require modification of medications
- Infections (e.g. *Clositridium difficile*) may require antibiotics
- Pancreatic insufficiency as suggested by steatorrhoea (e.g. due to pancreas cancer) requires Creon

For diarrhoea requiring symptomatic treatment →

- *First-line:* loperamide 2-4mg PRN initially (consider a regular dose based on PRN requirements)
- *Second-line:* Hyoscine butylbromide *(steamlined authority)* (Buscopan) 60-120mg via CSCI over 24 hours

For refractory diarrhoea, refer. Specialist options include octreotide (PBS restrictions).

Respiratory Symptoms

Dyspnoea

Consider the aetiologies of dyspnoea and treat these as appropriate, taking the patient's overall state and prognosis into consideration. Thinking about the diagnosis is important when there is dyspnoea that worsens without good explanation. In particular, consider →

- Pulmonary emboli (think of this especially if dyspnoea out of proportion to extent of disease)
- Pleural effusion (or a pericardial effusion or massive ascites)
- Acute respiratory infection
- Superior vena cava obstruction (look for oedema and distended veins in the head and upper limbs)

Treating the above conditions can bring significant symptomatic relief and prolong a person's life.

A written breathlessness management plan can help patients deal with acute episodes of worsened dyspnoea.

Finally consider symptomatic treatments regardless of cause →

Movement of air (e.g. via a fan) usually helps.

If there is dyspnoea at rest → low doses of opioids may help, e.g. for opioid-naïve patients

- Morphine SR 5 mg orally twice daily
  PLUS
  Immediate release morphine 2.5 mg orally 2-hourly PRN
  (See the pages 11-12 for information on dosing and opioid choice)

If there is significant anxiety and fear associated with dyspnoea → anxiolytics may help; choice partially depends on life expectancy *(non-PBS indication for both)*

- Months → Citalopram 10mg orally daily
- Weeks → Clonazepam drops 3 drops sublingually or orally 4-hourly PRN

If there is evidence of hypoxia → oxygen may help

- Oxygen continuously for dyspnoea at rest (titrate to symptoms)
  OR
  Oxygen 2-4 litres on exertion and PRN for exertional dyspnoea
  (Use oxygen cautiously in patients who are at risk of CO2 retention, e.g. those with COPD)

Condition specific symptomatic treatments to consider
Options for pulmonary oedema:
- Increase diuretic therapy. Frusemide can be given via CSCI (see page 5). Higher doses are needed in severe renal failure - Control rapid atrial fibrillation (e.g. with digoxin) - Long-acting nitrates, especially at night (e.g. isosorbide dinitrate) if blood pressure permits
Options for exacerbation of COPD:
- Short burst of increased dose of steroids, e.g. prednisolone 37.5mg daily for a week - Antibiotics - Optimise bronchodilator therapy (e.g. review inhaler technique; salbutamol more frequently)
Options for motor neuron disease:
- Non-invasive ventilation (NIV). Assessment usually accessed by referral to a respiratory team. Deciding to have or not have NIV is a huge decision and involves delicate discussions. NIV may be appropriate if any of these present: ○ Abnormal nocturnal oximetry OR ○ FVC < 50% predicted OR ○ Orthopnoea
Options for anaemia:
- Transfusion (e.g. if Hb < 85) – see page 15
Options for multiple pulmonary metastases or lymphangitis carcinomatosis:
- Dexamethasone 8 mg daily

Cough

- In a patient with cough, think about the cause and treat any reversible causes (e.g. pantoprazole for gastro-oesophageal reflux)
- Aim to either enhance expectoration OR suppress the cough

*For ongoing troubling **productive** coughs* → aim to aid expectoration by
- Chest physiotherapy
- Nebulized sodium chloride 0.9% 5-10ml four times daily
- Nebulized N-acetylcysteine *(non-PBS)* 800mg three times daily
- Oral N-acetylcysteine *(special access scheme)* 600mg three times a day
- If too weak to expectorate (e.g. in a dying person) dry secretions with hyoscine butylbromide *(PBS authority)* and suppress cough with opioids

*For ongoing troubling **dry** coughs* → consider cough suppression with low-dose opioids, e.g. for opioid-naïve patients
- Morphine immediate release 2.5mg 2-hourly PRN (see pages 11-12 for details on opioid dosing)
- If due to large airway irritation (e.g. hilar lymphadenopathy), consider dexamethasone 8mg daily
- If cough persists, further options include sodium cromoglycate, SSRIs *(non-PBS)* and gabapentin *(non-PBS)*

Bronchorrhoea
= Severe high-volume respiratory secretions occasionally occurring in alveolar cell and other lung cancers
Treatment options include: - Octreotide - Sedation

Haemoptysis

If appropriate, refer for a radiation oncology opinion (if due to malignancy) and/or investigate for other causes (e.g. pulmonary emboli)

If haemoptysis is bothersome, consider:
- Tranexamic acid 500mg orally three times a day
  (This increases risk of DVT and stroke. Use with caution in renal failure)

In an acute, massive bleed, immediate treatment directed at comfort is usually appropriate (see "Massive, terminal haemorrhage" box below)

In an acute massive bleed where procedural intervention is appropriate, however, consider:
- Referral to a respiratory physician for an opinion regarding bronchoscopic treatment of bleeding source
- OR referral to an interventional radiologist for angiogram and bronchial artery embolization
  WHILST
  Giving supportive care (e.g. oxygen, blood replacement and correcting any clotting defects)

Massive, terminal haemorrhage
Be present with the patient and family
Use dark coloured towels and sheets (as these make blood less visible)
If time permits and patient distress is great then give parenteral (IV if easily accessible; otherwise IM): - High dose benzodiazepines, e.g. midazolam 10mg immediately, repeated every 10 minutes until comfortable - Opioids, e.g. morphine 10mg, repeated after 10 minutes if needed (higher doses if tolerant)

Acute airways obstruction
If life-saving acute treatment is appropriate
- Get immediate help to maintain the airway from a paramedic, anaesthetist or ENT specialist - For malignant causes (when histology is already known) give high dose steroids (dexamethasone 16mg SC) and get urgent advice from an oncologist
If terminal care is appropriate
Treat with high doses of opioids and benzodiazepines (similar to the treatment for massive, terminal haemorrhages)

Neurological Symptoms

Contributing factor	Possible treatment
Hypercalcaemia	Bisphosphonate IV or SC fluids
Hyponatraemia (due to SIADH)	Fluid restriction Salt tablets Demeclocycline
Cerebral primary or metastases	Increase dexamethasone dose
Medications (e.g. dexamethasone, morphine)	Reduce dose or change to an alternative
Sepsis (e.g. UTI)	Antibiotics
Hepatic encephalopathy	Lactulose Rifamixin (PBS authority)
Dehydration	Rehydrate

Agitated delirium

Agitated delirium is common in advanced illnesses. It is a bad prognostic marker in patients with advanced cancer and, if not caused by an easily reversible aetiology, it may indicate that the patient is entering the last few weeks of life.

Consider the underlying causes and treat these if appropriate and possible.

Non-pharmacological measures such as reassurance, orientation and lighting, close contact by loved ones and a quiet environment are very important.

Short-term low-dose antipsychotics may reduce distressing symptoms but may not improve outcomes (e.g. the likelihood of returning to live independently). Haloperidol is often a good first-line option. The following doses are low and may require titration up:

- Haloperidol 0.5mg at night orally or SC
  AND
  Haloperidol 0.5mg PRN three times daily orally

If sleep disturbance is a prominent problem, quetiapine *(non-PBS indication)* or olanzapine *(non-PBS indication)* may be preferred to haloperidol

If anxiety is playing a large role, adding a benzodiazepine may be appropriate.

Terminal restlessness

Is the term used to describe agitation and delirium in an imminently dying patient. Use of continuous subcutaneous infusions (with additional PRN subcutaneous benzodiazepines and anti-psychotics) is often required. Start with low doses initially and titrate up as needed. A typical starting CSCI order may look like this (for benzodiazepine-naïve patients):

- Haloperidol 2.5mg via CSCI over 24 hours
  AND
  Midazolam 10mg via CSCI over 24 hours
- PLUS PRN medications:
  Midazolam 2.5-5mg subcut hourly PRN for distress or agitation
  AND
  Haloperidol 1 to 2.5mg subcut 4-hourly PRN for hallucinations or agitation

For terminal restlessness that is refractory to treatment with high doses of midazolam and haloperidol (e.g. >30mg/day and >10mg/day respectively), consider switching haloperidol to levomepromazine *(special access scheme)* 12.5 to 25mg SC 2-hourly PRN and/or adding phenobarbitone.

Seizures

Focal seizures with secondary generalization are a complication of brain tumours, both primary and secondary. In most cases[1], primary prophylaxis with anti-epileptics does not reduce the risk so is not usually recommended in patients with cerebral tumours. However, preventative anti-epileptic medications are usually appropriate after a first seizure because further seizures are likely.

Seizures may also occur because of metabolic disturbances (e.g. hyponatraemia) or as part of a pre-existing epilepsy. As with all problems in palliative care, the management needs to be tailored to the individual patient based on the stage of illness and patient's function and previously expressed wishes.

Treating a seizure – the acute setting

A quick-acting benzodiazepines is usually the best initial treatment.

If outside of hospital →
- Clonazepam 1mg subcut (or IM) or clonazepam drops 1mg (10 drops) sublingually
- Exclude hypoglycaemia
- Repeat the dose of clonazepam 15 minutes later if the seizure is ongoing
- If the cause is unknown, hospital admission is appropriate. It may be appropriate to call an ambulance, especially if the seizure is still happening. If the cause is known and the seizure has stopped, hospital admission may not be required.

If in a hospital setting →
- Get help / discuss with an experienced doctor
- Midazolam 5mg *slowly* IV until seizure stops (or midazolam 5mg subcut or IM)
- Watch SaO2 and support the airway
- Exclude hypoglycaemia
- If seizure has not settled within 15 minutes →
    - Repeat the benzodiazepine dose
- If the seizure continues, further benzodiazepines are unlikely to be effective. Seek urgent advice from a senior doctor regarding the appropriateness of referral to the intensive care unit
    - If intensive care is appropriate, call intensive care whilst giving IV phenytoin
    - If the patient is thought to be imminently dying, prepare the family that death may be near. Phenobarbitone can be used for seizures refractory to midazolam

Preventing further seizures

Treat any underlying precipitants. If already on anti-epileptics, modify dose if appropriate.

For seizures due to cerebral tumours, sodium valproate or levetiracetam are good options:
- 1st line - Sodium valproate 200mg twice daily (typical maximum 800mg twice daily)
- 2nd line - Levetiracetam *(streamlined authority)* 500mg orally twice daily (maximum dose: 1,500 mg twice daily)

Remember to advise a patient against driving following a seizure.

For seizures in a patient entering the last days of life, replace oral anti-epileptics with:
- Clonazepam 2mg over 24 hours via CSCI + Clonazepam 1mg subcut PRN for any further seizures

[1] Except possibly in patients with melanoma with multiple cerebral deposits with haemorrhage

Treating Complications of Advanced Cancer

Hypercalcaemia

Hypercalcaemia can worsen energy levels, pain, confusion and constipation. Corrected levels > 3.0 mmol/L *almost always* cause symptoms. Corrected levels > 2.75 mmol/L *may* contribute to symptoms.

Give:

- Haloperidol 0.5mg SC if nausea or agitated delirium present (titrate up if needed)
- IV or SC fluids if dehydrated
- Pamidronate *(PBS streamlined authority)* 60-90mg IV over 2 hours or Zoledronic acid *(PBS streamlined authority)* 4mg IV over 15 minutes (denosumab *(non-PBS indication)* can be used if severe renal impairment)

Recheck calcium 3-5 days later. Repeat doses of bisphosphate can be given every one to two weeks, but if this is required it suggests the patient is nearing the very end of life and continued attempted treatment may be inappropriate.

Spinal Cord Compression

Suspect this in any patient with advanced malignancy who develops weakness or problems with mobility acutely. Usually also associated with new or worsening back pain.

Investigation of choice is an urgent MRI (that day). Image the entire spine +/- brain. If meningeal metastases are suspected (e.g. multiple unrelated nerve roots affected), image with gadolinium contrast.

Usual treatment:
- Dexamethasone 16mg daily (or in divided doses) (also give a proton pump inhibitor)
- Urgent referral for consideration of emergency spinal surgery and/or radiotherapy

Do not delay investigating and treating possible spinal cord compression unless active treatment is inappropriate because early treatment may save a patient from paraplegia or quadriplegia.

Cerebral metastases

Present in a variety of ways (e.g. confusion, drowsiness, headache, vomiting, hiccups, seizures). If symptoms are problematic, give dexamethasone 8 or 16mg daily (plus a proton pump inhibitor). Arrange *contrast-enhanced* CT or an MRI in patients where treatment would be considered.

For solitary lesions, neurosurgery may be an option. If there are multiple lesions or if neurosurgery is not appropriate for a single lesion, treatment with radiotherapy can sometimes improve symptoms and prolong life by a number of months. Wean dexamethasone post-radiotherapy over 4 weeks unless symptoms flare-up. Adverse effects of cerebral irradiation include memory loss, change in personality and hair loss.

Malignant Bowel Obstruction

It is wise to consult early with a palliative care consultant as bowel obstruction in malignancy is a dynamic and complex situation. The underlying pathology may cause a physical obstruction ("mechanical bowel obstruction") or there may be pathology causing a predominantly ileus type scenario where the bowel stops working properly ("functional bowel obstruction"). There is often a combination of both.

"Functional bowel obstruction"

Suspect this in patients with peritoneal disease with vomiting, markedly reduced frequency of bowel movement and *an absence of* colicky abdominal pain. Up to 50% of women with ovarian cancer will experience a degree of "functional obstruction" because the abdominal and pelvic cavity becomes matted and stuck down with autonomic dysfunction due to tumour infiltration. Bowel sounds may be quiet.

First-line treatment includes:

- Consider NG tube and IV or subcut fluids if there is significant vomiting
- Metoclopramide 30mg CSCI over 24 hours to promote peristalsis. Titrate up to 60mg daily if necessary. If colicky pains occurs, stop metoclopramide as this worsens colic and manage as a mechanical bowel obstruction.
- Stool softeners such as sodium docusate 200mg twice daily orally or macrogol as tolerated
- Dexamethasone 8mg subcut daily (orally it won't be absorbed)

"Mechanical Bowel Obstruction"

A mechanical bowel obstruction may develop de novo (e.g. due to mass effect in colorectal cancer or pancreas cancer) or a "functional bowel obstruction" may develop into a more typical mechanical obstruction. Patients present with colicky abdominal pain, worsening vomiting abdominal distension, and absolute constipation. Investigating with a CT scan and considering stenting or surgery is often appropriate.

To also consider:
Imaging with a CT scan can (a) confirm the diagnosis and (b) determine if obstruction is unifocal or multifocal
If unifocal obstruction on CT scan, consider asking for advice regarding whether the lesion is amenable to endoscopic stenting or surgical intervention
In intractable nausea and vomiting, consider a venting gastrostomy (speak to a gastroenterologist or interventional radiologist)

Treat vomiting and distension with anti-secretory agents:
- Consider NG tube insertion + IV or subcut fluids
- Hyoscine butylbromide *(PBS authority)* 80mg via CSCI over 24 hours *and* Ranitidine *(non-PBS)* 150mg via CSCI over 24 hours

Additional symptomatic relief is important, including:
- Haloperidol for any ongoing nausea (e.g. 0.5mg 2-hourly PRN)
- An opioid for analgesia

If the aim is to try and restore bowel movements, consider:
- Dexamethasone 8mg SC daily (reduce peri-tumour oedema)
- Sodium docusate orally and softeners per rectum in case constipation / hard stools are playing a role

If vomiting persists:
- If minimal oral intake, add octreotide *(special access scheme)* 500mcg via CSCI over 24 hours (an anti-secretory agent)
- Anti-secretory drugs will be less effective if eating and drinking – consider an NG tube or venting PEG

If nausea persists, switch haloperidol to levomepromazine *(special access scheme)* 12.5mg via CSCI over 24 hours.

Ascites

Common in both cancer and cirrhosis. Treatment varies depending on the stage and cause of a patient's illness and may include:

1. Simple measures (e.g. "no added" dietary salt in patients with cirrhosis)
2. Medications (e.g. diuretics)
3. Procedures (e.g. ascitic taps)

Recurrent ascites can be treated with repeat taps or an indwelling drain (e.g. a PleurX catheter – usually inserted by interventional radiologist). The cost of ongoing drainage bottles needs to be considered before insertion.

See Appendix 9 for guidance on ascitic taps.

Diuretics for ascites in portal hypertension:

Spironolactone
First-line agent Initial dose: 100 mg daily Maximum dose: 400 mg daily
Frusemide
Second-line agent Initial dose: 40 mg daily Maximum dose: 80 mg

Ensure appropriateness of diuretics by first checking creatinine and electrolytes.

Reduce dose or stop diuretic therapy if creatinine rises > 150 or sodium > 125 or significant potassium abnormalities develop whilst on therapy.

Pulmonary embolism

When suspected, CT-PA is the investigation of choice. If contraindicated (e.g. raised creatinine or contrast allergy) then a VQ scan +/- US leg of veins is an alternative.

First-line treatment is long-term enoxaparin 1.5mg/kg subcut daily. Dose reduction required in renal failure or for thrombocytopaenia. If very high bleeding risk, IVC filter insertion (speak to interventional radiologist) may be considered instead of anti-coagulation

Superior Vena Cava Obstruction

When suspected, a CT venogram of the chest is warranted if investigating and treating is appropriate.

Dexamethasone 16mg daily and urgent referral to an interventional radiologist for stenting and/or a radiation oncologist for radiotherapy is the active treatment of choice.

Miscellaneous Problems

Problem	Potential intervention	Who to call for advice on interventions
Obstructive uropathy	Ureteric stenting	Urology or interventional radiology
Obstructive jaundice	ERCP + stent	Gastroenterology or interventional radiology
Pericardial effusion	Drainage	Cardiology

Appendix 1 – Gold Coast Recommended Maximum Doses

The following table lists common maximum doses and frequencies prescribed for end-of-life care patients in the Gold Coast Health Service. If prescribing outside these recommendations, consider contacting your local specialist palliative care service for advice.

Product	Frequency – example of prn doses	Maximum daily dose
Hyoscine butylbromide 20mg/mL inj	20mg subcut 2hourly PRN	120mg – secretions 240mg – colic, bowel obstruction
Glycopyrrolate 0.2mg/mL inj	0.4mg subcut 2hourly PRN	1.6mg – secretions
Hyoscine hydrobromide 0.4mg/mL inj	0.4mg subcut 2hourly PRN	1.6mg – secretions
Clonazepam 1mg/mL inj	0.5mg subcut 2hourly PRN	8mg – anxiety, restlessness
Midazolam 5mg/mL inj	2.5mg subcut 1hourly PRN	60mg – anxiety, restlessness
Haloperidol 5mg/mL inj	0.5mg subcut 4 hourly PRN	5mg – nausea 10mg - terminal agitation
Lorazepam 1mg tab	0.5mg po/subling twice daily PRN	6mg – anxiety

For community patients on hourly PRN opioids, consider noting a maximum of 10 doses per day as well as advising contacting GP or community nurse for advice if pain not relieved after 3 consecutive doses.

Pre-emptive prescribing for patients near the end of their life:

Symptom	Medication	Instructions
Pain	Morphine 10mg/mL inj	Subcut 1-hourly PRN*
Anxiety	Midazolam 10mg/mL inj	2.5mg subcut 1-hourly PRN
Nausea	Haloperidol 5mg/mL inj	0.5mg subcut 4-hourly PRN
Terminal agitation	Haloperidol 5mg/mL inj	2mg subcut 4-hourly PRN
Secretions	Hyoscine butylbromide 20mg/mL inj	20mg subcut 2-hourly PRN

* Use appropriate dose based on regular opioid usage

Appendix 2 – Supportive and Palliative Care Tool (SPICT)

The University of Edinburgh's SPICT is used to help identify people whose health is deteriorating. Assess them for unmet supportive and palliative care needs. Plan care. Look for any general indicators of poor or deteriorating health, as well as for the specific clinical indicators noted below:

Unplanned hospital admission(s)
Performance status is poor or deteriorating, with limited reversibility (e.g. the person stays in bed or in a chair for more than half the day)
Depends on others for care due to increasing physical and/or mental health problems. The person's carer needs more help and support
The person has had significant weight loss over the last few months, or remains underweight
Persistent symptoms despite optimal treatment of underlying condition(s)
The person (or family) asks for palliative care; chooses to reduce, stop or not have treatment; or wishes to focus on quality of life

Cancer
Functional ability deteriorating due to progressive cancer.
Too frail for cancer treatment or treatment is for symptom control.

Dementia/ frailty
Unable to dress, walk or eat without help.
Eating and drinking less; difficulty with swallowing.
Urinary and faecal incontinence. Not able to communicate by speaking; little social interaction.
Frequent falls; fractured femur.
Recurrent febrile episodes or infections; aspiration pneumonia.

Heart/ vascular disease
Heart failure or extensive, untreatable coronary artery disease; with breathlessness or chest pain at rest or on minimal effort.
Severe, inoperable peripheral vascular disease.

Respiratory disease
Severe, chronic lung disease; with breathlessness at rest or on minimal effort between exacerbations.
Persistent hypoxia needing long term oxygen therapy.
Has needed ventilation for respiratory failure or ventilation is contraindicated.

Kidney disease
Stage 4 or 5 chronic kidney disease (eGFR < 30ml/min) with deteriorating health.
Kidney failure complicating other life limiting conditions or treatments.
Stopping or not starting dialysis.

Liver disease
Cirrhosis with one or more complications in the past year: diuretic resistant ascites, hepatic encephalopathy, hepatorenal syndrome, bacterial peritonitis, recurrent variceal bleeds
Liver transplant is not possible.

Neurological disease
Progressive deterioration in physical and/or cognitive function despite optimal therapy.
Speech problems with increasing difficulty communicating and/or progressive difficulty with swallowing.
Recurrent aspiration pneumonia; breathless or respiratory failure.
Persistent paralysis after stroke with significant loss of function and ongoing disability.

Review current care and care planning including: *review medications, consider specialist assessment, agree current and future plan with person and family, support carers, and record and communicate the care plan.*

Appendix 3 – Palliative Care Outcomes Collaboration Scores

The Palliative Care Outcomes Collaboration (PCOC) is a national program that uses standardised clinical assessment tools to measure and benchmark patient outcomes in palliative care.

Phase of Illness (Clinician rated)

1 - Stable	Symptoms are adequately controlled
2 – Unstable	Development of a new problem or a rapid increase in severity of an existing problem
3 - Deteriorating	Gradual functional decline, worsening of existing symptoms or development of new expected problem
4 - Terminal	Death likely within days

Australia-modified Karnofsky Performance Status (Clinician rated AKPS)

100	Normal, no complaints or evidence of disease
90	Able to carry normal activities, minor symptoms of disease
80	Normal activity with effort, some symptoms of disease
70	Care for self, unable to carry normal activities or do work
60	Occasional assistance, but able to care for most needs
50	Requires considerable assistance and frequent medical/nursing care
40	In bed more than 50% of the time
30	Almost completely bedfast
20	Totally bedfast, requiring nursing care by carers or family
10	Comatose

Resource Utilisation Group – Activities of Daily Living (Clinician rated RUG-ADL)

For bed mobility, toileting and transfers	**For eating**
1 – Independent or supervision only	1 – Independent or supervision only
	2 – Limited assistance
3 – Limited physical assistance	3 – Extensive assistance, total dependence, tube fed
4 – Other than two personal physical assist	
5 – Two or more person physical assist	*Total score out of 18*

Problem Severity Score (Clinician rated PSS)

0 = Absent | 1 = Mild | 2 = Moderate | 3 = Severe

Pain: Overall severity of pain problems for the patient

Other symptoms: Overall severity of problems relating to any symptoms other than pain

Psychological / spiritual: Severity of problems relating to the patient's psychological or spiritual wellbeing

Family / care: Problems associated with a patient's condition or palliative care needs.

Symptom Assessment Scale (Patient rated SAS)

The SAS describes the patient's level of distress relating to individual physical symptoms.

Best practice is for the patient to rate distress either independently or with the assistance of a clinician or family member using a visual scale. Symptom distress may be rated by proxy if the patient is unable to. A proxy is defined as a family member, carer or clinician who rates symptom distress on behalf of the patient.

The patient is to consider their experience of the individual symptom or problem over the last 24 hours.

The symptom is rated from 0 to 10 where 0 means that the problem is absent, 1 means the symptom is causing minimal distress, all the way up to 10 which means that the problem is causing the worst possible distress.

Appendix 4 – Fentanyl

Fentanyl patch prescribing tips
Fentanyl patches hold the drug in a matrix. The amount of drug delivered is related to the surface area of the patch, so a 50mcg/hour patch is twice the surface area of a 25mcg/hour patch.
The patch needs to be in contact with the skin completely, for the correct amount of fentanyl to be absorbed. If the edges are lifting up, the patient will be receiving sub optimal fentanyl.
Fentanyl patches work by releasing fentanyl into the subcutaneous fat which is then absorbed into the systemic circulation. If the patient is significantly cachexic, the drug will not be absorbed. This is important to understand. For example, when swapping from a 100mcg/hour patch to oral morphine you would generally consider prescribing somewhere near 300mg of oral morphine in 24hours, however in a cachectic patient where the drug wasn't being absorbed well, the patient may only need a much smaller oral morphine equivalent of say, for example 60mg over 24 hours.
PRN or "as required" breakthrough fentanyl comes in injection (non-PBS), lozenge, sublingual and buccal formulations. These doses bear no relation to patch size. For example, a breakthrough of sublingual 100mcg fentanyl does NOT equate to 100mcg/h patch.
When the patch is applied the first time, analgesia will emerge in the first 24 hours, but can take many days to start to approach steady state. Therefore do not titrate up the patch dose rapidly over a few day because doing so will significantly risk causing opioid overdose.
Never commence an opioid naïve patient on a fentanyl patch; there is significant risk of opioid overdose.
Applying heat on a patch will increase its rate of absorption, causing opioid toxicity.
For some patients, the patches only last 48 hours instead of 72 hours. In this instance change the patch every 48 hours, rather than increasing the dose.

Sublingual and buccal fentanyl prescription tips
There are various formulations of buccal and sublingual fentanyl available that are marketed as rapid acting opioids.
Do not use in opioid naïve patients. Rapid acting fentanyl preparations should only be used if a patient is already on a regular long-acting opioid (equivalent to at least 60mg of daily oral morphine).
The effective dose of rapid acting fentanyl preparations cannot be estimated by considering the background oral opioid as can usually be done for other immediate release opioids. Therefore when starting rapidly acting fentanyl preparations, the usual advice is to start at the lowest possible dose (e.g. 100 micrograms) and titrate upwards as necessary, regardless of the background long-acting opioid dose.
Mouth ulcers and mucositis can affect the absorption of sublingual and buccal fentanyl.
Rapid acting fentanyl preparations typically have a more rapid onset of action than oral hydromorphone, morphine and oxycodone and therefore are worth considering for patients with predictable incident pain. For example, consider prescribing 15-minutes prior to dressing for a patient who has severe arm pain from a humerus metastasis each day when getting dressed.

Appendix 5 – Methadone

Methadone in palliative patients should only be used under the direction of a palliative care specialist. Speak to one before initiating methadone.

Methadone often provides good analgesia in patients with terminal illnesses. It has unusual pharmacokinetics with a very long half-life of days and toxicity can occur unexpectedly after a week or more of an apparently well tolerated dose regimen.

Indication: Pain refractory to other treatment, especially pain associated with a neuropathic component, opioid-tolerance or central sensitisation

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Some advantages of methadone

Dosing unaffected by renal failure.

Often brings significant benefits at low doses allowing for major reduction in the dose other opioids. It may also be beneficial in opioid-induced hyperalgesia.

Commencing methadone

Guidelines for using methadone in the palliative context vary widely. This guideline suggests a conservative approach where low-dose methadone is added on top the patient's current analgesia.

Before starting exclude a prolonged QTc by performing an ECG.

Start at 5mg orally at night. Continue any pre-existing regular and PRN analgesia.

Increasing the dose

If inadequate analgesia is achieved within 3-5 days, the dose can be increased to 5mg twice daily. Monitor for adverse effects.

The dose can be increased further in small 5mg increments ever 5-7 days if necessary however speak to a senior palliative care doctor.

Recheck the ECG after 2-4 weeks to ensure that the QTc interval remains < 0.5.

Consider gradually reducing the dose of other background opioids such as a fentanyl patch whilst titrating up the methadone, especially if adverse effects or a poor response to these opioids (or opioid-induced hyperalgesia) is suspected.

Long-term dosing and stopping methadone

If significant side effects occur (e.g. sedation and reduced respiratory rate) then stop the methadone and reduce other opioids. In serious cases naloxone may be needed.

If there is no apparent improvement with methadone cease it.

If there is good analgesia, consider reducing the dose of other long-acting opioids and continuing the methadone longer term.

Precautions
Previous arrhythmias
Prolonged QTc > 0.5
Any reason to be cautious with any opioid

Adverse Effects
Sedation
Respiratory depression
Arrhythmias associated with QT prolongation
Constipation
Nausea

SC Methadone
10mg oral ≈ 10mg SC
Give as twice daily SC boluses or a CSCI
Compatible with:
Cyclizine (use water for injection)
Haloperidol
Ketamine
Levomepromazine
Midazolam
Haloperidol + midazolam
Ketamine + midazolam
Levomepromazine + hyoscine butylbromide
Levomepromazine + midazolam
Levomepromazine + hyoscine butylbromide + midazolam

Appendix 6 – Lignocaine

Lignocaine in palliative patients should only be used under the direction of a palliative care specialist. Speak to one before initiating lignocaine.

A subcutaneous infusion of lignocaine *(non-PBS)* is a useful treatment option in patients with a terminal illness who have severe pain refractory to other treatments. It requires careful assessment, consent and monitoring by a clinician familiar with its place, use and evidence-base relative to alternatives.

Indication: Pain (especially neuropathic pain) refractory to other analgesia.

Before starting

Exclude contraindications by performing an ECG. Do not use in patients with a history of an arrhythmia without first discussing with a cardiologist. Exhaust all other available treatment options before using in patients in the "precautions" group.

Check the blood pressure, heart rate, respiratory rate and sedation and pain scores.

Communicate and gain consent.

Commencing an infusion

Start at a dose of 500mg via continuous subcutaneous infusion over 24 hours. In a thin and elderly person, consider beginning at 250 mg over 24 hours.

Monitor HR, RR, BP and sedation score at 2, 6 and 12 hours and thereafter three times daily. Perform an ECG the day following infusion.

Increasing the dose

If inadequate analgesia is achieved, consider increasing the infusion rate by 250-500mg every 24-48 hours to a maximum dose of 2,000mg per day. With each increase in dose, recheck the ECG within 24 hours.

Stopping an infusion

If bradycardia, hypotension, a cardiac arrhythmia or any other significant adverse effects occur, cease the infusion.

If, 24-hours after reaching the maximum dose, there has been no improvement in pain, cease the infusion.

If good analgesia occurs, consider gradually tapering the infusion by reducing in 250-500 mg increments every 24-48 hours. Consider complementing the reduction in lignocaine with a corresponding increase in other analgesic agents, e.g. methadone.

Absolute Contraindications
AV block
Stokes-Adams attacks
Wolf-Parkinson-White syndrome
Previous sensitivity

Precautions
Arrhythmias
Cardiac failure
Seizures
Liver failure
Renal failure

Adverse Effects
Most are dose-related and are unlikely with doses under 2mg/kg/hour.
Cardiovascular – hypotension, bradycardia
Neuromuscular – light-headedness, tingling, muscle spasm, dysphasia, seizures, drowsiness
Respiratory arrest

Appendix 7 – Ketamine

Ketamine in palliative patients should only be used under the direction of a palliative care specialist. Speak to one before initiating ketamine.

Ketamine *(non-PBS)* is an option in patients with a terminal illness who have severe pain refractory to other treatments although the evidence is mixed and conflicting.

Indication: Pain (especially neuropathic pain) refractory to other analgesia.

Before starting

Check blood pressure, heart rate, respiratory rate and conscious level. Exclude contraindications. If longer term use (>weeks) is anticipated, ensure hepatotoxicity and urotoxicity are considered when obtaining consent and arranging monitoring.

Prescribe PRN haloperidol and PRN midazolam for hallucinations and anxiety respectively.

Continue to check blood pressure, heart and respiratory rate and conscious level three times daily.

Subcutaneous administration regimen

Commence 100mg via continuous SC infusion over 24 hours. In a thin and elderly person, consider beginning at 50mg over 24 hours.

PRN ketamine 25mg 4-hourly can be prescribed in addition to PRN opioids.

If inadequate analgesia is achieved, consider increasing the infusion rate by 100mg every 24-48 hours to a maximum dose of 500mg per day. Continue to monitor blood pressure, heart rate, respiratory rate and conscious level.

Oral administration regimen

Ketamine can also be taken orally but dosing protocols vary widely.

Commence 10mg orally three times daily and 10mg PRN 4 hourly. If inadequate analgesia is achieved, consider increasing in 10mg increments every 24-48 hours to a maximum dose of 100mg three times daily. Continue to monitor blood pressure, heart rate, respiratory rate and conscious level

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Stopping ketamine

If significant side effects occur (especially sedation and reduced respiratory rate) then stop the ketamine. If, 24 hours after reaching the maximum dose, there has been no improvement in pain, stop the ketamine (tapering is not required).

If good analgesia occurs, consider gradually tapering the dose by similar increments and rate as the above titration. If pain recurs, consider either an oral or SC maintenance dose (discuss monitoring arrangements for hepatotoxicity and urotoxicity with a consultant) or another analgesic agent, e.g. methadone.

Absolute Contraindications
Previous serious reaction
Recent or poorly controlled seizures
Raised intracranial pressure
Uncontrolled hypertension

Precautions
Brain metastases
Possible raised ICP
Previous strokes
Severe cardiac failure
Tachyarrhythmias
History of glaucoma

Adverse Effects
Improved efficacy of other opioids resulting in opioid toxicity
Sympathomimetic effects - raised blood pressure, tachycardia
Psychomimetic effects – vivid dreams, hallucinations, agitation, sedation
Urotoxicity – suspect if recurrent UTI-like symptoms

SC Ketamine
5mg oral ≈ 5mg SC
Compatible with: (use NaCl 0.9% unless otherwise stated):
Fentanyl
Haloperidol
Hydromorphone
Levomepromazine
Methadone
Midazolam
Morphine
Haloperidol + midazolam
Morphine + haloperidol
Morphine + midazolam

Appendix 8 – Phenobarbitone

Phenobarbitone in palliative patients should only be used under the direction of a palliative care specialist. Speak to one before initiating phenobarbitone.

Indications:

- Terminal agitation refractory to other treatments (e.g. midazolam > 60mg/day *and* either haloperidol > 10mg/day *or* levomepromazine > 100mg/day) *(non-PBS indication)*
- Status epilepticus or recurrent seizures in an imminently dying patient that has been refractory to benzodiazepine therapy

For Refractory Terminal Restlessness: (see also page 21)

Initial dose:

Give phenobarbitone 200mg IM or subcut

If agitation continues, give up to 2 further doses IM or subcut, 30 minutes apart

Starting a continuous subcutaneous infusion:

Commence an infusion at a dose of between 800mg and 1,200mg over 24 hours via CSCI (diluent is water). Use the higher dose for large patients or those who required a larger loading dose. Use the lower dose for other patients.

Additional medications:

Prescribe phenobarbitone 200mg IM or subcut 2-hourly PRN for ongoing agitation

Continue antipsychotics and midazolam initially – these can be discontinued once agitation is well controlled.

For Refractory Seizures: (see also page 22)

Initial dose:

Give phenobarbitone 100mg IV / IM

Starting a continuous subcutaneous infusion:

Commence an infusion at a dose of 200mg over 24 hours via CSCI.

For additional seizures:

Give phenobarbitone 100mg IM / IV or subcut.

Titrate the infusion up a further 100mg.

Phenobarbitone Precautions
Stat doses of phenobarbitone subcut have been reported to cause tissue necrosis, therefore IM is preferred
Phenobarbitone is incompatible with other drugs therefore use a separate syringe pump
Dilute to the maximum volume possible to reduce site irritation. Manufacturer recommends diluting 10 times.
Phenobarbitone cannot be mixed with any other medications subcutaneously.

Appendix 9 – Ascitic Taps

Indication: To relieve abdominal discomfort (and dyspnoea) due to significant amounts of ascites.

Technique

- Exclude contra-indications. Gain consent
- Lie the patient supine with the abdomen exposed
- Select a site where there is shifting dullness. Confirm the presence of a deep pocket of ascites here with an ultrasound and note its depth. Mark the skin clearly with a pen
- Wash your hands and put on sterile gloves
- Clean the skin with anti-septic solution
- Draw up lignocaine. Using a small-gauge needle, insert the needle at a right-angle to the skin, drawing back as you proceed until you get a flash-back of ascites. If you do not get a flash-back then abandon the procedure (and organize via radiology), otherwise slowly inject the anaesthetic whilst withdrawing the needle. Wait a few minutes.
- Insert the drainage catheter at a right-angle to the skin. On getting flash-back or feeling the "give" of insertion through the peritoneum, insert the needle another centimetre and then withdraw it whilst inserting the plastic tube fully.
- Ascitic fluid should now be draining. Attach a drainage back. Ensure the catheter and bag tubing is attached firmly to the abdominal wall (e.g. with sticky-tape).
- Allow drainage to occur. You may need to empty the bag a number of times. Drainage may take several hours. For ascites due to portal hypertension, albumin replacement is recommended if draining more than 5 litres

> **Albumin Replacement Formula:**
>
> Give 100ml of 20% albumin for every 2.5 litres drained

- Once the drainage stops or slows significantly, remove the catheter and cover the wound site with a dressing. If leakage of ascites occurs in the hours and days following the procedure, a colostomy bag can be used to prevent soaking of shirt and sheets.
- Monitor blood pressure and pulse hourly for 4-hours post procedure and review the patient if these become abnormal.

Equipment Required
Sterile gloves
Iodine scrub (to wash hands)
Basic dressing pack
Anti-septic solution (e.g. chlorhexadine)
Small gauge needle (e.g. 23 gauge)
Smalll syringe (e.g. 5 or 10 ml)
Local anaesthetic (e.g. 1% lignocaine)
Large gauge long IV line or equivalent (e.g. 14 gauge AngioCath or Yueh Centesis Catheter)
Drainage bag (e.g. 2 litre drain bag with male connection)
Sticky-tape (e.g. Leukopor)
Dressing (e.g. Tegaderm)
Sharps container
PLUS
Hand-held or portable ultrasound

Potential complications include:
Infection (e.g. cellulitis)
Bleeding
Bowel perforation or organ damage
Hypotension
Leakage of ascites

The first 4 complications are rare and risk can be minimized by:

1. Using a sterile technique
2. Checking for bleeding risks and INR and platelets prior to procedure
3. Using an ultrasound to confirm a deep pocket of ascites
4. Albumin replacement (for large taps of ascites due to portal hypertension)

Be cautious if:	
INR > 1.5	Platelets < 100
Consider correction if:	
INR > 2	Platelets < 50

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