Sunnybrook
VETERANS CENTRE

Palliative Care Medication Dosing Guide

A Medication Dosing Guide for the Management of Common Symptoms in Palliative Care

Palliative Care Unit & Veterans Centre
Sunnybrook Health Sciences Centre

1. Pain

Principles

- Assess for multiple pain sources
- Treat potential reversible causes
- WHO ladder for prescribing analgesics
- Consider adding co-analgesics:
  - Bone pain, Non-infective pleuritic pain, Liver capsule pain, Neuropathic pain
- Review analgesic requirements every 24h
- Treat
  - by mouth (preferred)
  - by the clock
  - by the WHO ladder
  - by the patient
  - always provide PRN analgesia for 'breakthrough pain'

Medications and Doses

Step 1: Non-Opioids

Acetaminophen: up to 4 g daily
NSAIDs: avoid in heart failure and renal failure. If used, consider gastric protection.
Topical analgesic: Antiphlogistine A535 Heat, diclofenac (Voltaren Emulgel, Pennsaid liquid).

Step 2. Opioids for mild to moderate pain

Codeine ('weak opioid"), codeine/acetaminophen, tramadol, tramadol/acetaminophen

Note: Opioid toxicity can increase with renal or liver impairment

Step 3. Opioids for Moderate to Severe Pain

hydromorphone (preferred), morphine, oxycodone, fentanyl, sufentanil

OPIOID : Single Dose Opioid Equivalence to Morphine 10 mg PO or 5 mg IV/SC		
	Oral (mg)	SC (mg)
*HYDROmorphone	2	1
*Oxycodone	5	--
*Morphine	10	5
*Codeine	100	60
**Fentanyl injection		50 – 100 mcg
**Sufentanil injection		5 – 10 mcg
*** Fentanyl injectable, when administered buccally is approximately 35% bioavailable		
**Fentanyl patch- See chart in CPS for conversion from the oral morphine maintenance dose		
Methadone- see page 3		

Note: Dose comparison is an estimate. Determination of the appropriate dose of opioid by CADD pump requires individual titration.

*http://sunnynet.ca/ see opioid dose equivalence
** eCPS Opioid Monograph
***Pain Medicine 2010;11:1017-23

Opioid dosing considerations:

- Use (immediate release) opioid tablet q4h with access to PRN doses q1h. (or liquid formulation)
- Prescribe both po and sc routes.
- The sc dose is ½ of the po dose.
- Monitor response every 24 hours, if in pain or using more than 3 breakthrough doses/24hrs and no toxicity, increase regular dose and PRN by 25-30% daily until pain control achieved.
- Recommended PRN dose is 1/6 of the total 24hr dose, and can be given q1h.
- If pain is under control using an immediate release oral opioid product, consider switching to an oral controlled release opioid product (CR/ER/SR/PR).
- Caution when converting from fentanyl patch due to uncertain absorption through the skin.

Opioid Product Availability

HYDROmorphone
Injection: 2 mg/ml, 10 mg/ml and others
Tablet: 0.5*,1, 2, 4, 8 mg
(*2.5 mg/half-tablet is prepared by Pharmacy)
CR po cap: 3, 4.5, 6, 9, 12, 18, 24, 30 mg **Hydromorph Contin®** (bid dosing)
PR po tab: 4, 8, 16, 32 mg **Jurnista®** (daily dosing)
Liquid: 1 mg/ml

Morphine
Injection: 1, 2, 5, 10 and 15 mg/ml
Tablet: 2.5*, 5, 10, 20, 25, 30, 40, 50, 60 mg
(*2.5 mg/half-tablet is prepared by Pharmacy)
SR po tab: 10, 15, 20, 30, 40, 50, 60 mg **MS Contin®** (bid dosing)
ER po cap: 10, 20, 50, 100 mg **M-Eslon®** (bid dosing)
SR po cap: 10, 20, 50, 100 mg **Kadian** (daily dosing)
Liquid: 1mg/ml (other strengths, but not used in VC)

Oxycodone
Tablet: 5, 10, 20 mg
CR po tab: 10, 15, 20, 30, 40, 60, 80 mg **OxyNEO®** (bid dosing)

Fentanyl
Injection: 50 mcg/ml
Transdermal Patch: 12, 25, 50, 75, 100 mcg/hr
Duragesic® Change patch q 72 hrs.

Sufentanil
Injection: 50 mcg/ml

Codeine
Tablet: 15, 30 mg
CR po tab: 50, 100, 150, 200 mg **Codeine Contin®** (bid dosing)
Liquid: 5 mg/ml

Methadone
Tablet: 1, 5, 10, 25 mg
Liquid: 10 mg/ml (1 mg/mL not used in VC)

Opium & Belladonna suppository
65 mg/15 mg suppository

Legend- long-acting oral opioid formulations:
CR= controlled-release; ER= extended-release;
SR= sustained-release; PR= prolonged-release

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2. Common Opioid Side Effects

Constipation, nausea, vomiting, dry mouth, drowsiness, confusion, urinary retention, itchiness

Opioid toxicity

Consider if patient is:

- More drowsy
- Restless, confused or delirious**, or has:
- Visual hallucinations
- Severe myoclonic jerks
- Respiratory depression
- Signs of hyperalgesia

If toxicity occurs:

- Review analgesia and co-analgesia use
- Assess for cause, e.g. infection
- Check kidney & liver function and serum calcium
- Reduce the opioid maintenance dose
- Naloxone only for severe respiratory depression; use a low dose

Example dosing

Opioid naive patient
Hydromorphone 0.5 –1 mg po or 0.2 – 0.5 mg sc Repeat q1h PRN until pain relieved. Begin hydromorphone 0.5 – 1 mg po or 0.2 – 0.5 mg sc q4h. PRN dose can be equal to or half of the q4h dose. See opioid dose equivalency table. **Note:** Dose range is provided for reference. Prescribe a specific dose (not a range) Prescribe a specific frequency (not a range)
Opioid treated patient
If pain uncontrolled, increased fixed schedule dose by 25-30%. If renal impairment, reduce dose by 25% or consider using hydromorphone. If side effects occur with increased dose, reduce the opioid and add a co-analgesic drug (eg, gabapentin, dexamethasone, acetaminophen, IV bisphosphonate, antidepressant).

3. Naloxone Use

Note: naloxone will reverse the effects of the opioid, including respiratory depression, but may precipitate a pain crisis.

- Available as injection 0.4 mg/ml
- Prepare a dilute solution in syringe as follows: Mix 0.4 mg naloxone in 9 ml Normal Saline to yield a 0.04 mg/ml concentration in a 10 ml syringe.
- Administer 1 or 2 ml sc doses q5 minutes to avoid precipitating a pain crisis.
- Onset can be anticipated in 2 to 5 minutes.
- May need to repeat doses q 20 to 60 minutes.
- Titrate to respiratory rate ≥ 10/minute.

4. A. Delirium Assessment
(CAM short Version)

1. Acute onset
2. Fluctuating course
3. Inattention (spell "world" backward or recite "days of the week" backward)
4. Disorganized thinking
5. Altered level of consciousness

Also monitor for psychomotor agitation/ retardation, altered sleep-wake cycle, change in pattern of eating/drinking.

4. B. Delirium Treatment

- Consider reversible causes: hypercalcemia, infection, sepsis, hypoxemia, CNS mets, medications, opioid toxicity.
- If hyperactive delirium, consider antipsychotic treatment with haloperidol; if sedation is required consider methotrimeprazine; if intractable may require continuous palliative sedation, see CPST Policy on Sunnynet.

5. Co-Analgesics

- Acetaminophen, NSAIDs
- Gabapentin and pregabalin
- Dexamethasone po or sc
- Duloxetine, venlafaxine; amitriptyline, nortriptyline; methylphenidate
- Carbamazepine
- Pamidronate, zoledronic acid IV
- Nabilone
- Baclofen
- Hyoscine butylbromide po or sc
- Lidocaine topical (4% spray, 5% ointment)
- Topical Analgesic Compounds

Note: seek advice from the PCU clinical staff before any increase in the dose of methadone or ketamine.

5. Co-Analgesics, continued

Gapapentin

- Usual frequency is tid.
- Start 100 mg po tid; titrate up over 2 - 3 days.
- Dose can be increased every 2 to 3 days.
- Reduce dose in renal impairment.
- Common dose range is 300 – 600 mg po tid.
- Consider reducing opioid dose as gabapentin dose is titrated up.
- Bioavailability is lower with higher doses.

Pregabalin

- Usual frequency is bid (or tid).
- Start at 25 mg po bid; titrate up over 2 days.
- Common dose is 50 – 100 mg po bid, up to 150 mg bid. Max dose is 300 mg bid.
- Reduce dose in renal impairment.
- Consider reducing the opioid dose as gabapentin dose is titrated up.

Pamidronate intravenous

- 90 mg in 250 mL NS or D5W IV over 4 hrs.
- Administer every 4 weeks or longer.
- Do serum calcium before and 3 days after.
- Supplement po calcium if hypocalcemia occurs.
- Reduce dose in renal impairment.

Zoledronic acid intravenous

- 4 mg in 100 mL NS or D5W IV over 15 min.
- Administer every 4 weeks or longer.
- Do serum calcium before and 3 days after.
- Supplement po calcium if hypocalcemia occurs.

Reduce dose in renal impairment.

Nabilone oral

- Available as 0.25, 0.5 and 1 mg capsules.
- Initial dose 0.25 mg po bid.
- Titrate up to 1 – 2 mg po bid.

  Side effects include: drowsiness, vertigo, psychological high or dysphoria, dry mouth.

Dexamethasone po or sc

- Usual dose: 4 – 8 mg daily. Titrate up to 8 mg bid. If no effect taper or discontinue.
- If dosing bid, give at breakfast and supper; avoid bedtime dosing due to insomnia.
- Consider ranitidine or PPI for cytoprotection.
- May increase to 12 – 16 mg daily for spinal cord compression or brain edema.
- Higher doses may be used.

Lidocaine Topical

- Available as spray, gel and ointment
- Consult APN or MD with wound care specialization or PCU clinical staff.

Antidepressants

- Antidepressants with specific analgesia properties include duloxetine and venlafaxine.
- Duloxetine 30 mg po daily, titrate up to 60 or 90 mg daily
- Venlafaxine 37.5 mg daily, (up to 150 mg daily)

  Other antidepressants:
- Amitriptyline or nortriptyline 10 – 25 mg po qhs (up to 75 mg/daily).
- SSRI or mirtazapine

Methylphenidate- psychostimulant

- Start with 2.5 or 5 mg po daily and titrate up.
- Usual dose: 5 mg po at breakfast and lunch.
- Dose higher than 20 mg bid is rare.

Carbamazepine

- Indicated for trigeminal neuralgia.
- Start with 100 mg po once or twice daily.
- Usual dose is 200 mg po qid, but response can be seen at doses as low as 50 mg daily.

Baclofen

- Effective for pain due to muscle spasms.
- Start at 5 mg po tid. Titrate q3 days.
- Usual dose 10 mg po tid or qid.
- Maximum dose 20mg qid.
- Avoid abrupt withdrawal

Hyoscine butylbromide-antispasmodic

- Buscopan® is available as 10 mg tablet and 20 mg/ml injection.
- Can be used to treat pain due to smooth muscle spasm or to reduce GI secretions in malignant bowel obstruction.
- Usual dose 10 mg po/sc tid or qid or q4h while awake.
- Anticipate anticholinergic side effects.

Other antispasmodic choices

- Darifenacin, solifenacin, trospium, tolterodine, fesoterodine (anticholinergics)
- Mirabegron (B_3-agonist)
- Opium & Belladonna suppository 65/15

NSAIDs

- Several agents in this class:

  Oral: e.g. ibuprofen, naproxen, diclofenac, meloxicam, celecoxib, ketoprofen;

  Topical: diclofenac 1.16%, 2.32% gel, 1.5% drop
- Limited applicability for oral NSAIDS in palliative care due to adverse effects. Therefore consider short term or PRN use.
- Use with caution in the elderly or in heart failure or renal impairment.
- Consider GI protection.
- Consider underlying bleeding risk.
- Topical agents may be preferred

Methadone Note:

- Only those physicians authorized to prescribe methadone may initiate or increase methadone.
- On-call physicians may reduce, temporarily suspend or discontinue methadone as appropriate, but should not increase the dose.
- The dose conversion from oral morphine to oral methadone is a process not a calculation. Never exceed 30mg oral methadone per day initially.
- For analgesia, dose frequency is tid or qid.
- As a co-analgesic, dose frequency is daily to qid.

Methadone oral or rectal

- Tablet is preferred. If liquid is necessary, Pharmacy prepares unit dose oral syringe using 10mg/ml concentration.
- Rectal suppositories are prepared extemporaneously by Pharmacy and the strength can be customized.
- 5 and 10 mg suppository are common strengths.
- Oral and rectal products are dosed equally.

Direct Morphine-Methadone Conversion, based on the 24 hour total dose of oral morphine.
Conversion from oral morphine to oral methadone is not linear. The more morphine equivalent the patient is on, the lower the percentage of methadone needed to give an equianalgesic effect. Various conversion methods have been used in practice.

Total daily oral morphine dose	Estimated oral methadone as a % of total daily morphine
Less than 100 mg	20% to 30%
100 to 300 mg	10% to 20%
300 to 600 mg	8 to 12 %
600 to 1000 mg	5% to 10%
Greater than 1000 mg	Less than 5%

Source: McPherson ML. Demystifying opioid conversion calculations. ASHSP 2010
Handbook of Cancer Chemotherapy. 6th ed., Phil, Lippincott, 2003, p 663)

Ketamine Note:

- Ketamine is not a routinely prescribed analgesic agent.
- On-call physicians may reduce, temporarily suspend or discontinue ketamine as appropriate, but should not increase the dose.

Ketamine oral or sc

- IV product available as 10 and 50 mg/ml
- IV product may be given orally.
- Available as 30 mg capsules (prepared in-house),
- Oral solutions of lower strength are prepared in-house for Palliative Care Unit.
- Titrate up from 10 mg po or sc tid.
- Usual dose: 25 mg po tid (use IV product) or 30 mg po tid po (use in-house capsule)
- Oral route results in the active metabolite norketamine, making the oral route more potent compared to the sc route.
- Continuous sc infusion via CADD pump 20 mg/mL; titrate up from 0.2 mg/hr
- Side effects: sedation, dizziness, dry mouth, hallucinations, floating feeling, altered vision & hearing, sensory illusions, euphoria.

Note: For an extemporaneous compound or specialty prepackaged item such as methadone or ketamine, there may be a delay in supplying the product.

6. Topical Analgesic Compounds

GAK in PLO gel	
Gabapentin 5% Amitriptyline 2% Ketoprofen 5%	(Standardized formulation)

7. Constipation

- Anticipate this common problem.
- Always prescribe a regular laxative when starting opioids.
- Titrate laxative to achieve optimum stool frequency and consistency and use the lowest regular dose.
- Limit Fleet enema use to occasional PRN doses.
- Use a combination of stimulant (sennosides) and osmotic laxatives (polyethylene glycol or lactulose).
- Consider adding prunes to the diet

Constipation Treatment	
Stimulant	Sennosides 1-2 tab bid (May titrate up to 4 tab bid)
Osmotic	Polyethylene glycol 17 g daily
	Lactulose 30 ml daily (May titrate up to qid)
	Magnesium hydroxide 30 ml daily PRN
Acute constipation	
Suppository	Glycerin suppository daily PRN
	Bisacodyl suppository daily PRN
Enema	Fleet enema daily PRN
	Fleet Mineral Oil enema PRN
Anti-opioid (peripherally acting) Subcutaneous injection	Methylnaltrexone sc q2 days PRN <60 kg = 8 mg >60 kg = 12 mg • lower dose in renal impairment • contraindicated in MBO
Anti-opioid (peripherally acting)	Naloxegol 12.5 or 25 mg po daily, 1hr pre or 2hrs post morning meal.
GI secretagogue	Linaclotide 72 or 145 mcg po daily 30 minutes prior to morning meal.

Docusate Na 100mg capsule is not available on the Sunnybrook Formulary.

8. Nausea and vomiting

- Consider the various mechanisms causing N&V and choose an anti-emetic based on the most likely cause (eg, the 11 M's of N&V in Am Fam Physician 2001;64:807-14).
- Consider non-pharmacologic* strategies, eg. ginger. See ***Suggestions for Relief of N&V***.
- Most patients require a regularly scheduled anti-emetic as well as PRN doses.
- Re-evaluate daily for efficacy and adjust dose to the lowest effective dose and frequency to avoid side effects.
- May combine anti-emetic medications.
- Consider the impact of organ dysfunction and frailty when selecting drug doses.
- If usual approaches are unsuccessful, consider methotrimeprazine.

General approach

*Haloperidol 0.5 – 1 mg po/sc tid or qid, **or**
Metoclopromide 10 mg po or sc ac meals & qhs, **or**
*Olanzapine 2.5 – 5 mg po/ODT daily or bid, **or**
Domperidone 10 mg po 30 min ac meals **or

- may combine a neuroleptic with a prokinetic
- also prescribe a PRN dose for "breakthrough" N/V

Alternate neuroleptic with sedative properties:
*Methotrimeprazine 5 – 25 mg po/ 6.25 – 25 mg sc q4-6h PRN.

Consider using a PPI, eg, pantoprazole 20 – 40 mg daily or in dysphagia lansoprazole 15 – 30 mg daily.

Other medications with anti-emetic effect:

- Dexamethasone 4 – 8 mg po/sc daily
- Ondansetron 4 – 8 mg po/ODT/sc bid-tid
- Scopolamine patch 1.5 mg apply q 3 days (may be poorly tolerated in the elderly)
- Dimenhydrinate 25 – 50 mg po/pr in selected cases
- Lorazepam 0.5 to 1 mg SL/sc q4h prn in selected cases

*Bioavailability of neuroleptics by the sc route may be up to double that achieved by the po route.
**The combination of domperidone and a neuroleptic may prolong the QT interval. Limit dose of domperidone to tid in patients > 65yrs. (ODT=oral disintegrating tablet)

Octreotide 100 – 500 mcg sc tid, and
Dexamethasone 4 – 8 mg po/sc daily, and
Haloperidol 0.5 – 1mg po/sc tid or qid, **or**
Olanzapine 2.5 – 5 mg po/ ODT daily or bid, or
Ondansetron 4 – 8 mg po/ODT/sc bid or tid
Metoclopramide 5-10mg po/sc q6h* (or q6h prn)

Other agents to consider: lansoprazole 30 mg po daily, hyoscine butylbromide 10 mg sc qid, ranitidine 50mg sc q8h, methotrimeprazine 5 – 25 mg po/ 6.25 – 25 mg sc q4-6h PRN.
*Note: prokinetic agents may cause colic in MBO

9. Confusion and Anxiety

- Rule out or address causes of delirium

Haloperidol 0.5 – 1 mg po/sc q4h PRN, or
(In acute delirium, haloperidol 0.5mg po/sc q 30- 60 minutes until acute psychotic symptoms decrease.)
Olanzapine 2.5 – 5 mg po/ODT daily or bid PRN or
Quetiapine 12.5 – 50 mg po daily or bid PRN
Note: maintenance dosing may be necessary

10. Dyspnea

- Treat underlying medical conditions
- Avoid overhydration
- **Simple measures**- fan, well ventilated space, avoid crowding around the bed, re-positioning, energy conservation, breath control, reassurance, relaxation techniques
- Psychological & spiritual support
- Supplemental oxygen if hypoxic

Pharmacological treatment

- Opioids are the mainstay of treatment. Use regular and PRN dosing (as for pain)
- Bronchodilator, for treatment of reversible bronchoconstriction.
- For the anxiety component, consider any of: benzodiazepine/ antidepressant/ neuroleptic.
- Anti-inflammatory therapy can be an effective adjunct (dexamethasone).

Opioid naive
Hydromorphone 0.5 –1 mg po or 0.2 – 0.5 mg sc q1h PRN until SOB relieved. When symptoms improve begin hydromorphone 0.5 – 1 mg po or 0.2 – 0.5 mg sc q4h **and** q1h PRN.
Opioid treated patient
Increase scheduled dose by 25 –30% as needed
If still breathless, add:
Benzodiazepine PRN: Midazolam 0.5 – 2.5 mg sc q1h PRN (use 5 mg/ml) or via CADD pump (2mg /ml) Lorazepam 0.5 – 2 mg SL/sc q2-4h PRN (4mg/ml) Clonazepam 0.5 mg po od- bid PRN (max 8 mg/d)
Dexamethasone 4 – 24 mg po/sc daily
Neuroleptic: Methotrimeprazine 5 mg po/6.25 mg sc q8h, may titrate up to 25 mg po/sc q 4h Or haloperidol, olanzapine, quetiapine, risperidone (see MBO box)
Bronchodilator: Salbutamol 2 puffs q4h PRN via spacer (preferred) or Salbutamol 2.5 mg by nebulizer q4h prn
Antidepressant: e.g., Citalopram 10 mg po daily and titrate up

11. Depression

If predicted survival is weeks: antidepressant e.g.
Citalopram 10 mg po daily, titrate up to 20 mg /d or
Venlafaxine 37.5 mg daily, titrate up to 75 or 150/d
Mirtazapine 15 mg daily, titrate up.
If demoralization or apathy or survival is days:
Methylphenidate 2.5 mg po q am & noon;
May increase daily to 5 – 10 mg per dose.

12. Seizure

Intermittent seizure
Lorazepam 2 mg sc stat; if still seizing after 20 minutes, administer a 2nd dose; If still seizing after 20 minutes, call MD. Consider maintenance tx.
Status epilepticus
Midazolam 2.5-5mg sc stat, followed by 0.5mg/hr sc infusion (CADD pump), titrate q1h. (see CPST policy)

13. Anxiety/ Insomnia

Anxiety
Lorazepam 0.5 – 1 mg po/SL/sc daily, bid or tid PRN Midazolam 0.5 – 2 mg sc q4h PRN Clonazepam 0.5 mg po od to bid
Insomnia
Lorazepam 0.5 – 1 mg po/SL qhs PRN Temazepam 15 – 30 mg po qhs PRN Zoplicone 2.5 – 5 mg po qhs PRN (may use up to 7.5 mg for patients < 65yr old)

14. Hiccups

- For any of the medication options, may use PRN or regular dosing for 1 to 2 days.
- Hiccups may stop after the first dose.

Baclofen 5 – 10 mg po tid
Metoclopramide 10 mg po/sc tid
Chlorpromazine 10 – 25 mg po tid
Haloperidol 0.5 – 1 mg po/sc tid or qid
Gabapentin 100 mg po tid or qid, max 1200 mg/day

15. Fever

- Anticholinergic medications can contribute to fever.

Acetaminophen 650 mg po/pr q 4h PRN

16. Diarrhea

- Rule out C. difficile diarrhea.

Loperamide 2 mg po q4h PRN
Cholestyramine 4 g po daily, up to tid
Diphenoxylate/atropine sulfate 2.5 mg/0.025 mg po prn, up to qid
Note: Probiotics are not recommended

17. Pruritus

Diphenhydramine 25 – 50 mg po/SC tid PRN
Dexamethasone 1 mg po/sc daily, titrate up
Hydrocortisone 1% cream to affected area tid
HC 1% with menthol 0.5% cream tid prn
Betamethasone 0.1% cream to affected area bid

19. Cough

- If current opioid for pain does not control cough, consider adding:

Codeine syrup 25 mg po q4h prn
Hydrocodone syrup 5 mg po q4h prn
Lidocaine by inhalation up to tid PRN (by mask) (Mix one (1) ml of lidocaine 1% with salbutamol 2.5 mg nebule for nebulization [= 0.25% lidocaine]). The 3.5 ml volume can be nebulized over approximately 10-15 minutes at flow of 6 L/min.

20. Terminal respiratory secretions

- Also referred to as 'Death rattle"
- Secretions pool in the oropharynx due to impaired swallowing.
- Treatment may not be necessary if patient is not in distress from these secretions.
- Anticholinergic treatment can reduce formation of additional oropharyngeal secretions, but the effect on existing secretions is not immediate. Undesirable effects include reducing saliva and ocular tears, and slowing bladder and bowel function, and may cause confusion and an increase in temperature. These effects can be immediate.
- Glycopyrrolate is preferred because it has less effect on CNS and heart rate.
- Avoid atropine due to systemic toxicity (ie., increase in HR and temperature, confusion).

Glycopyrrolate 0.2 mg sc q4h PRN (max 1.2 mg/day)
Scopolamine (Hyoscine hydrobromide) 0.4 mg or 0.6 mg sc q4h PRN (max 2.4 mg/day)

21. Mouth Care

- Inspect the patient's mouth daily.
- A dry mouth predisposes to oral thrush.
- Dysphagia or food sticking in the esophagus can indicate esophagitis due to candida.
- Use topical antifungal solution for ≥ 7 days.
- If infection returns consider prolonged therapy.
- Provide mouth case before and after meals
- Brush teeth with a soft toothbrush. Encourage family involvement.
- Protect the lips using Lypsyl or Vaseline

Moisturizer
Oral Balance gel before meals and PRN
Anti-fungal
Nystatin suspension 500,000 units/5 ml po qid. Swish and Swallow
Fluconazole 100mg po daily x 14 days
Antifungal/anti-inflammatory/analgesic
Sunnybrook Mouthwash 5 ml po qid (Nystatin/Diphenhydramine/Dexamethasone) Swish and Spit or Swallow
Antifungal/analgesic
Mucositis Mouthwash 5 ml po qid (Nystatin/Lidocaine) , Swish and Spit or Swallow
Analgesic
Lidocaine Viscous 2% 5 ml po qid Swish & spit or swallow Caution- may impair gag reflex, avoid food/liquid for 1 h after use. Note: may be painted on sore areas in the mouth
Other
Sodium bicarbonate Rinse mouth with solution of 5 ml sodium bicarb in a Dixie cup of water as often as needed

22. Terminal Restlessness

- See the **Continuous Palliative Sedation Protocol,** on Sunnynet
- Continue maintenance opioid therapy:

Midazolam (via CADD) If ≥65: 1 – 2.5 mg sc STAT, followed by continuous sc infusion at 0.2 mg/hr, and titrate. If <65: 2.5 – 5 mg sc STAT, then 0.4-0.8 mg/hr sc
Lorazepam 1– 4 mg sc q4-6h PRN to establish effective dose, then give qid regularly. (an option if CADD not available)
Methotrimeprazine 12.5 – 50 mg sc q4-6h PRN to establish effective dose, then give regularly.
Phenobarbital 15 – 60 mg sc q4-6h PRN. Once daily dose may be effective due to long half-life. Dilute dose with equal parts of NaCL

24. Surface Bleeding

- Consider stopping prophylactic antithrombotic therapy (warfarin, LMWH, thrombin inhibitors), platelet inhibitors (ASA, clopidogrel), SSRIs.
- Topical tranexamic acid may be used in the nose (soak a cotton ball) or applied as a rinse to skin surface wounds daily or more often.
- The extemporaneously prepared tranexamic acid 5% solution is a non-sterile product. Refrigerate; 14 day expiry. May be prepared in 50 or 100 ml volumes depending on the requirements of the site of application.

Tranexamic acid 5% topical solution Apply topically daily up to tid. Reassess daily.

25. Internal Bleeding

- Tranexamic acid 500 – 1000 mg po bid or tid
- Octreotide 100 – 500 mg sc tid

26. Catastrophic bleeding

- Midazolam 5 mg sc stat, repeat q5min PRN
- See **Continuous Palliative Sedation Policy,** on Sunnynet. **http://sunnynet.ca/default.aspx?cid=129628**

27. Ascites fluid treatment options

- Spironolactone
- Furosemide
- Dexamethasone

28. Wound Care

Consult APN or wound care specialist.
www.Dressings.org

29. Eye Care

- Protect the eyes in case of weak eyelid seal or infrequent blinking.

Tears Naturale 1-2 drops in each eye q4h PRN
Lacrilube apply ¼ inch in each eye at bedtime

30. Anal fissures

Anusol ointment	Apply bid and prn after BM
Anusol HC ointment	Apply bid and prn after BM
Diltiazem 2% ointment	Apply bid- tid
Lidocaine 5% ointment	Apply bid-tid

31. Fungal Infections

Oral

Fluconazole is available in 50 mg, 100 mg, 150 mg and 200 mg strengths

Dose & Duration of treatment based on site of infection

Oropharyngeal	100-200 mg po daily	7-14 days
Esophagitis	200-400 mg po daily	14-21 days
Bladder	200 mg po daily	14 days
Vaginal candidiasis	150 mg po daily	One dose

Topical:

- Clotrimazole 1% cream tid x 14 -21 days
- Clotrimazole 1% powder tid
- Ketoconazole 2% cream daily x 21 days
- Terbinafine cream bid x 7-14 days

Vaginal candidiasis:

Application: use intravaginal applicator

- Clotrimazole 1% vaginal cream daily x 7 days
- Clotrimazole 2% vaginal cream daily x 3 days
- Clotrimazole 10% vaginal cream x 1 dose
- Clotrimazole 200 mg vaginal tablet daily x 3 days
- Clotrimazole 500 mg vaginal tablet x 1 dose

32. Topical Estrogen for Atrophic Vaginitis

Estragyn vaginal cream

(Estrone vaginal cream with applicator calibrated in 0.5 g increments up to 4 grams.)
Application: intravaginal and/or introitus
Dose: 2-4 g daily x 2 weeks, then 2 or 3 times per week

Premarin vaginal cream

(Conjugated estrogens vaginal cream with applicator calibrated in 0.5 g increments up to 2 grams.)
Application: intravaginal and/or introitus
Dose: 0.5 to 2 g daily x 2 weeks, then 2 or 3 times per week

Vagifem 10 mcg vaginal tablet

(17-beta estradiol vaginal tablet with applicator)
Application: intravaginal
Dose: 10 mcg tablet daily x 2 weeks, then twice weekly

33. Continuous Palliative Sedation Therapy

See **Continuous Palliative Sedation Policy** on Sunnynet
http://sunnynet.ca/default.aspx?cid=129628

Benzodiazepine

- Midazolam 0.2 – 1 mg/hr continuous sc infusion via CADD pump
- Lorazepam 1mg sc q6h and 1mg q2h PRN

Antipsychotic

- Methotrimeprazine 12.5-25 mg sc q6h + q4h PRN
- Or haloperidol 2 mg sc q6h + 2 mg q2h PRN
- Or olanzapine 5 mg sc BID + 5 mg q4h PRN

Opioid

- Continue current sc opioid order
  or
- HYDROmorphone 0.2mg sc q4h + q1h PRN

34. Overview of Terminal Care, Comfort Measures

Terminal Care	
Symptom	**Example order**
Pain	*Hydromorphone 0.2 mg sc q4h and 0.2 mg q 1h PRN
Dyspnea	*Hydromorphone 0.2 mg sc q4h and 0.2 mg q 1h PRN ***Midazolam 1 mg sc q2h PRN or Lorazepam 1mg sc q4h PRN
Nausea & Vomiting	*Haloperidol 0.5 mg sc q4h PRN or **Methotrimeprazine 12.5 mg q4h PRN
Agitation	*Haloperidol 0.5 mg sc q4h PRN or **Methotrimeprazine 12.5 mg q4h PRN ± ***Midazolam 1 mg sc q2h PRN or Lorazepam 1mg sc q4h PRN
Respiratory Tract Secretions	Glycopyrrolate 0.2 mg sc q4h PRN
Eye Care	Tears Naturale 1 drop in each eye qid and q4h PRN and /or Lacrilube apply ¼ inch in each eye at bedtime
Mouth Care	Oral Balance Gel Apply in the mouth q4h PRN

*For all medications, adjust dose as necessary based on efficacy and side effects.
** Methotrimeprazine is more sedating than haloperidol.
***Midazolam has a short duration of action, frequent sc injections may be needed or use a continuous infusion.

35. Important Prescribing Notes

- Prescribe a **specific** dose and a **specific** frequency, e.g., 0.5 mg q4h; or q4h PRN (Not 0.5-1 mg q4-6h PRN).
- Monitor and adjust the dose every 24 hours or sooner based on efficacy and side effects. Maintenance of symptom control may be achieved with a reduced dose after a few days.
- Max sc injection volume is 2 mL. Max sc infusion rate is 2 mL/hr, but 1 mL/hr is preferred.
- Olanzapine subcutaneous use is restricted
- Treatment strategies beyond those listed here may exist. The reference text "Care Beyond Cure" is a useful resource.
- For assistance with symptom management, staff may contact the Palliative Care Unit clinical staff or the Palliative Care Consult Team (PCCT).

Note: For list of medications approved for subcutaneous administration, see '**Subcutaneous Drug Administration in Patients with a Palliative Focus of Care' on Sunnynet**

Note:
Medications and doses suggested here reflect practice at Sunnybrook Health Sciences Centre and should be used in conjunction with other resources (e.g., product monograph), clinical judgment and prevailing treatment practices when making decisions about care for an individual patient.

36. Communication Tips

- Prior to the visit, consider your own feelings
- Anticipate questions you might be asked
- Assure privacy
- Make sure the patient and you are comfortable
- Find out what they know and what they want to know
- Use language they can understand
- Give any bad news sensitively
- Be truthful
- Acknowledge their feelings
- As them to summarize what you told them
- Allow time for questions
- Provide psychological support
- Set a time for the next visit.

37. Potentially useful questions

- What concerns you most about your illness?
- What has been the most difficult for you?
- What are your hopes, expectations and fears for the future?
- Is faith (spirituality, religion) important to you in this illness?
- Is there someone you can talk to about spiritual issues?
- What do you still want to accomplish during your life?
- What might be left undone if you were to die today?
- What do you want others to remember about you?

Acknowledgment
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38. Goals of Care Discussion
(From the Sunnybrook Veterans Centre GOC Discussion Template)

1. **Assess understanding: explore and listen**
   a. Tell me in your own words what is happening with your health?
   b. What is your understanding of your current illness? (document patient's responses)
2. **Ask for permission to give additional information about your health status**
   a. I would like to share some information that is important for the decisions you need to make, is that OK?
   b. What other information would be helpful to you? (document information you provided to the patient/SDM)
3. **Goals & Values: What matters to the patient? Reminder: ask gently**
   a. What are you hoping to achieve?
   b. What are your most important goals?
   c. What are your biggest fears or worries about the future?
   d. How much does your family know about your goals and priorities? (document answers in patient's/SDM's words)
4. **Make a plan: Based on goals and values**
   a. Share and discuss patient's/SDM's goals and values with the care team and propose feasible treatment plan options aligned with goals. (document treatment options discussed)
   b. Document mutually agreed upon next steps.
   c. Meet to review plan at patient's or SDM's request or as needed.