

# GUIDELINES & PROTOCOLS

## ADVISORY COMMITTEE

### Palliative Care for the Patient with Incurable Cancer or Advanced Disease Part 2: Pain and Symptom Management *Pain Management*

Effective Date: September 30, 2011

#### Scope

This section presents assessment and management strategies for dealing with cancer pain and pain associated with advanced disease.

#### *Salient Principles in this Section:*

- Opioid management principles
- Utilizing adjuvant medication for pain-specific management

#### *Included in this Section:*

- A - Pain management algorithm
- B - Tables for opioid conversion
- C - Analgesic medication reference tables

#### **Pain Assessment (Refer Appendix A - Cancer Pain Management Algorithm)**

a) Symptom assessment. Use the OPQRSTUV mnemonic to assess pain:

O	Onset	e.g., When did it start? Acute or gradual onset? Pattern since onset?
P	Provoking / palliating	What brings it on? What makes it better or worse, e.g., rest, meds?
Q	Quality	Identify neuropathic pain (burning, tingling, numb, itchy, etc.)
R	Region / radiation	Primary location(s) of pain, radiation pattern(s)
S	Severity	Use verbal descriptors and/or 1-10 scale
T	Treatment	Current and past treatment; side effects
U	Understanding	Meaning of the pain to the sufferer, "total pain"
V	Values	Goals and expectations of management for this symptom

b) Physical exam: Look for signs of tumor progression, trauma, or neuropathic etiology: hypo- or hyper-esthesia, allodynia (pain from stimuli not normally painful).

#### **Pain Management Strategies (Refer Appendix A)**

- Continuous pain requires continuous analgesia; prescribe regular dose versus prn.
- Start with regular short-acting opioids and titrate to effective dose over a few days before switching to slow release opioids.
- Once pain control is achieved, long-acting (q12h oral or q3days transdermal) agents are preferred to regular short-acting oral preparations for better compliance and sleep.
- Always provide appropriate breakthrough doses of opioid medication, ~10% of total daily dose dosed q1h prn.
- Incident pain (e.g., provoked by activity) may require up to 20% of the total daily dose, given prior to the precipitating activity.
- Use appropriate adjuvant analgesics at any step (e.g., NSAIDs, corticosteroids).
- Record patient medications consistently.

*Palliative Care Part 1: Approach to Care* is available at [www.bcguidelines.ca/guideline\\_palliative1.html](http://www.bcguidelines.ca/guideline_palliative1.html),

*Palliative Care Part 3: Grief and Bereavement* is available at [www.bcguidelines.ca/guideline\\_palliative3.html](http://www.bcguidelines.ca/guideline_palliative3.html)

## Opioid Selection

Issue	Preferred Opioid Medication	Avoid
Difficult constipation	fentanyl transdermal or methadone <sup>a</sup>	
Renal failure	fentanyl transdermal or methadone <sup>a</sup>	morphine <sup>b</sup> , codeine, meperidine <sup>c</sup>
Compliance & convenience	time release formulations, e.g., morphine, hydromorphone, oxycodone	
Neuropathic pain	oxycodone or methadone <sup>d</sup> (anecdotal evidence)	
Opioid naïve	low dose morphine, hydromorphone or oxycodone	fentanyl transdermal patch (risk of delayed absorption and overdose potential), sufentanil
Injection route (e.g., SC)	morphine, hydromorphone, (methadone <sup>e</sup> : second line)	oxycodone (injectable) is not available in Canada

a. Fentanyl is primarily (75%) cleared as inactive metabolites by the kidney and methadone is cleared hepatically.

b. Morphine is the **least** preferred in renal failure because of renally cleared active metabolites.

c. Meperidine (Demerol®) should not be used for the treatment of chronic pain.

d. If a patient in your practice is started on methadone by a palliative care physician, in order to renew prescriptions, it is possible to obtain individual patient methadone prescribing authorization through the College of Physicians and Surgeons of British Columbia.

e. Injectable methadone may be obtained through the Health Canada Special Access Program at [www.hc-sc.gc.ca/dhp-mps/acces/drugs-drogués/index-eng.php](http://www.hc-sc.gc.ca/dhp-mps/acces/drugs-drogués/index-eng.php). Consultation with a palliative care physician is suggested prior to initiation.

## Opioid Switching (“rotation”)

- Switch to another opioid when inadequate analgesia is obtained despite dose-limiting adverse effects (AEs). This allows for clearance of opioid metabolites and possibly more effective opioid receptor agonist profile from the new drug.
- Switch to an equianalgesic dose of the second opioid, bearing in mind that published ratios are only a guide and that reassessment and dose modification are required.
- When switching because of AEs (e.g., delirium or generalized hyperalgesia), determine the equianalgesic dose and reduce this dose by 25%. Observe closely, allowing for onset of the new and wearing-off of the previous drug.
- Refer Appendix B – Equianalgesic Conversion for Morphine.

## Opioid AEs (switch if not managed symptomatically and AE persists for > 1 week)

- Constipation:  
Stepwise escalation of regular oral stimulant or osmotic laxative on opioid initiation. Consider methylnaltrexone\* for refractory cases. Refer to Part 2 Section: Constipation, and the associated Appendix A – Constipation Management Algorithm.
- Nausea:  
Resolves after ~ 1 week. Consider metoclopramide\* first line; avoid dimenhydrinate (Gravol®).
- Sedation:  
Stimulants may be helpful if sedation persists, e.g., methylphenidate, dextroamphetamine, or modafanil.
- Myoclonus:  
May respond to benzodiazepines but may be a sign of opioid toxicity requiring hydration, opioid dose reduction or rotation.
- Delirium:  
Assess for other causes, e.g., hypercalcemia, UTI.
- Pruritus, sweating:  
Try opioid rotation.

\*Cancer, GI malignancy, GI ulcer, Ogilvie’s syndrome and concomitant use of certain medications (e.g. NSAIDs, steroids, and bevacizumab) may increase the risk of GI perforation in patients receiving methylnaltrexone. [Health Canada MedEffect Notice: [www.hc-sc.gc.ca/dhp-mps/alt\\_formats/pdf/medeff/advisories-avis/prof/2010/relistor\\_hpc-cps-eng.pdf](http://www.hc-sc.gc.ca/dhp-mps/alt_formats/pdf/medeff/advisories-avis/prof/2010/relistor_hpc-cps-eng.pdf)]

## Adjuvant Analgesics

- Select based on type of pain and AE profile. Optimize dosing of one drug before trying another. Discontinue adjuvant drug if ineffective.

## Severe opioid-resistant cancer pain

- Consult a palliative care specialist for advice.

## Abbreviations

AEs	adverse effects
GI	gastrointestinal
NSAIDs	non-steroidal anti-inflammatory drugs
SC	subcutaneous
TENS	transcutaneous electrical nerve stimulation
UTI	urinary tract infection

## Appendices

- Appendix A – Cancer Pain Management Algorithm
- Appendix B – Equianalgesic Conversion for Morphine
- Appendix C – Medications Used in Palliative Care for Pain Management

This guideline is based on scientific evidence current as of the Effective Date.

The guideline was developed by the Family Practice Oncology Network and the Guidelines and Protocols Advisory Committee. The guideline was approved by the British Columbia Medical Association and adopted by the Medical Services Commission.

A mobile version of this and other guidelines is also available at [www.BCGuidelines.ca](http://www.BCGuidelines.ca)

### The principles of the Guidelines and Protocols Advisory Committee are to:

- encourage appropriate responses to common medical situations
- recommend actions that are sufficient and efficient, neither excessive nor deficient
- permit exceptions when justified by clinical circumstances

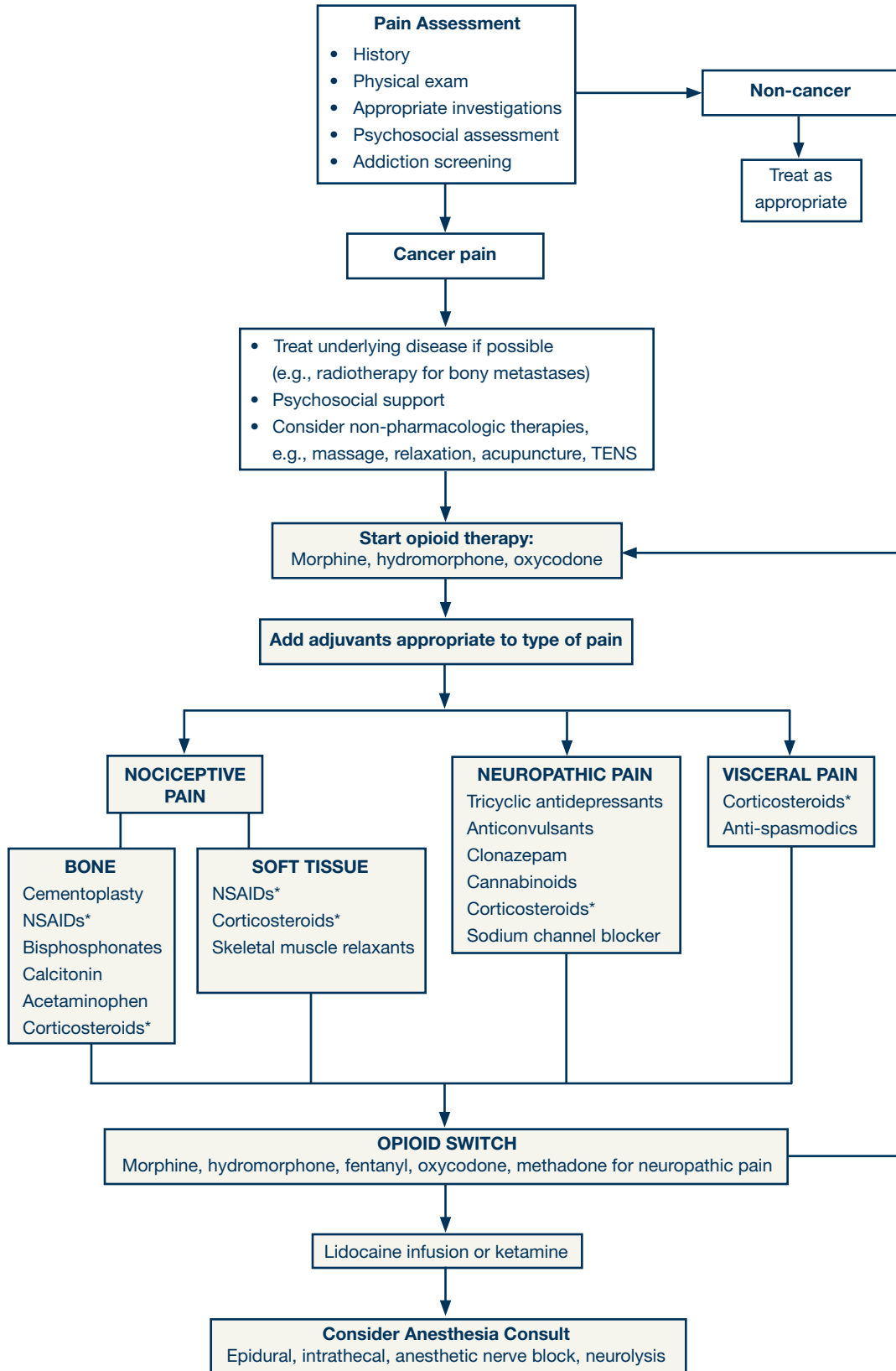
### Contact Information

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## DISCLAIMER

The Clinical Practice Guidelines (the "Guidelines") have been developed by the Guidelines and Protocols Advisory Committee on behalf of the Medical Services Commission. The Guidelines are intended to give an understanding of a clinical problem and outline one or more preferred approaches to the investigation and management of the problem. The Guidelines are not intended as a substitute for the advice or professional judgment of a health care professional, nor are they intended to be the only approach to the management of clinical problems. **We cannot respond to patients or patient advocates requesting advice on issues related to medical conditions. If you need medical advice, please contact a health care professional.**

# Appendix A: Cancer Pain Management Algorithm



\*Use gastric cytoprotection (refer Appendix C - Medications Used in Palliative Care: Gastric Cytoprotection)

## Appendix B: Equianalgesic Conversion for Morphine

Opioid Equianalgesic Dose For 20 mg Oral Morphine (for chronic dosing)			
DRUG	SC/IV (mg)	PO (mg)	COMMENTS
morphine	10	20*	
codeine	120	200	metabolized to morphine
fentanyl patch	see table below – useful when PO / PR routes not an option		
fentanyl	0.1 (100 mcg)		usually dosed prn less than 1 hour effect
hydromorphone	2	4	
methadone	available through <i>Special Access Programme</i>	1 (1-7)	variable equivalence: <i>palliative or pain consultation advised</i>
oxycodone	not available in Canada	13.3 (6.7-20)	variable equivalence
sufentanil	0.02 (20 mcg)		usually dosed prn less than 1 hour effect

\* Clinical experience in chronic pain suggests that 10 mg SC/IV is equivalent to 20 to 30 mg PO morphine (1:2 to 1:3 conversion ratio). In practice, many centers use the conversion of 10 mg SC/IV = 20 mg PO (1:2). In 2010 Health Canada recommended using the conversion of 10 mg SC/IV morphine = 30 mg PO (1:3) particularly when converting from morphine to fentanyl transdermal systems. In addition, Health Canada advises that there is insufficient data available to guide conversion to fentanyl transdermal systems from IV/IM morphine doses greater than 90 mg and such conversions should be done carefully and conservatively. Refer [http://hc-sc.gc.ca/dhp-mps/alt\\_formats/pdf/medeff/advisories-avis/profi/2010/fentanyl\\_2\\_hpc-cps-eng.pdf](http://hc-sc.gc.ca/dhp-mps/alt_formats/pdf/medeff/advisories-avis/profi/2010/fentanyl_2_hpc-cps-eng.pdf)

### Fentanyl Transdermal Equianalgesic Conversion Chart<sup>‡</sup>

Morphine PO (mg/day)	Hydromorphone PO (mg/day)	Oxycodone PO (mg/day)	Fentanyl Patch (mcg/hr)
60 – 134	12 – 26	40 – 89	25
135 – 179	27 – 35	90 – 119	37.5
180 – 224	36 – 44	120 – 149	50
225 – 269	45 – 53	150 – 179	62.5
270 – 314	54 – 62	180 – 209	75
315 – 404	63 – 80	210 – 269	100
405 – 494	81 – 98	270 – 329	125
495 – 584	99 – 116	330 – 389	150
585 – 674	117 – 134	390 – 449	175
675 – 764	135 – 152	450 – 509	200
765 – 854	153 – 170	510 – 569	225
855 – 944	171 – 188	570 – 629	250
945 – 1034	189 – 206	630 – 689	275
1035 – 1124	207 – 224	690 – 749	300

<sup>‡</sup>The Dose Conversion Guidelines are to be used to convert adult patients from their current oral or parenteral opioid analgesic to the fentanyl patch only. The Dose Conversion Guidelines are unidirectional for use in chronic pain only. They should not be used to convert patients from the fentanyl transdermal system to other opioids, as this may result in overdose and toxicity. Refer to Health Canada website: [http://hc-sc.gc.ca/dhp-mps/alt\\_formats/pdf/medeff/advisories-avis/profi/2010/fentanyl\\_2\\_hpc-cps-eng.pdf](http://hc-sc.gc.ca/dhp-mps/alt_formats/pdf/medeff/advisories-avis/profi/2010/fentanyl_2_hpc-cps-eng.pdf)

Approximate Breakthrough Doses Recommended for Fentanyl Transdermal Patch Breakthrough should be 10% of the total daily opioid dose			
Patch Strength mcg/hour	Oral Morphine Immediate Release (mg)	Oral Hydromorphone Immediate Release (mg)	Oral Oxycodone Immediate Release (mg)
12*	5	1	2.5 to 5
25	10	2	5 to 7.5
50	20	4	10 to 15
75	30	6	15 to 25
100	40	8	20 to 30

\* fentanyl patch is labelled 12 mcg/hr but delivers 12.5 mcg/hr

Tables adapted from: Analgesic approximate equivalence charts. Fraser Health Hospice Palliative Care Clinical Practice Committee, May 30, 2005 [document on file] and Fraser Health Hospice Palliative Care Program. Principles of Opioid Management. November 24, 2006. [cited September 7, 2010]. Available from: [www.fraserhealth.ca/media/16FHSymptomGuidelinesOpioid.pdf](http://www.fraserhealth.ca/media/16FHSymptomGuidelinesOpioid.pdf)

## Appendix C: Medications<sup>a</sup> Used in Palliative Care for Pain Management

Analgesics	GI Medications	Other
Acetaminophen, NSAIDs Opioids Neuropathic Pain Adjuvants Antispasmodics, Skeletal Muscle Relaxants	Gastric Cytoprotection and Dyspepsia	Bone Pain Adjuvants

<sup>a</sup>Refer to guideline and/or algorithm for recommended order of use.

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information: <http://webprod.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp>

ACETAMINOPHEN, NSAIDs						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose <sup>A</sup>	Drug Plan Coverage <sup>B</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
acetaminophen	Tylenol <sup>®</sup> , Panadol <sup>®</sup> , G	<b>IR tabs, caplet:</b> 325, 500 mg	325 to 650 mg PO q4-6 h	Yes, LCA	No	\$2-5 (G) \$11-34
		<b>SR tabs:</b> 650 mg	650 to 1300 mg PO q8h	Yes	No	\$6-12 <sup>C</sup> (G) \$11-21 <sup>C</sup>
		<b>Supps:</b> 325, 650 mg	650 mg PR q4-6h [max: 4 g PO/PR per day]	Yes	No	\$99-149(G)
celecoxib	Celebrex <sup>®</sup>	<b>Caps:</b> 100, 200 mg	100 to 200 mg PO bid	Yes	Special Authority	\$42-84
diclofenac	Voltaren <sup>®</sup> , G	<b>IR tabs:</b> 25, 50 mg	25 to 50 mg PO tid	Yes, LCA	Yes, RDP	\$26-38 (G) \$82
		<b>SR tabs:</b> 75, 100 mg	75 to 100 mg PO once daily	Yes, LCA	Yes, RDP	\$18-26 (G) \$38-54
		<b>Supps:</b> 50, 100 mg	50 mg PR tid	Yes, LCA	Yes, LCA	\$60 (G) \$124
ibuprofen	Advil <sup>®</sup> , Motrin <sup>®</sup> , G	<b>Tabs:</b> 200, 300, 400, 600 mg	200 to 400 mg PO q4h [max: 2400 mg per day]	Yes, LCA	Yes, LCA	\$5-9 (G) \$31-61
indomethacin	G	<b>Caps:</b> 25, 50 mg	25 to 50 mg PO tid	No	Yes, RDP	\$15-24 (G)
		<b>Supps:</b> 50, 100 mg	50 to 100 mg PR bid	No	Yes	\$53-58 (G)
ketorolac	Toradol <sup>®</sup> , G	<b>Tabs:</b> 10 mg	10 mg PO qid [limit duration]	No	No	\$10 (G) \$15 per 5 days
		<b>Inj:</b> 10, 30 mg per mL	10 to 30 mg IM/IV*/SC* q6h [limit duration]	No	No	\$34 (G) \$19-58 per 2 days
naproxen	Naprosyn <sup>®</sup> , G	<b>IR tabs:</b> 250, 375, 500 mg	250 to 500 mg PO bid	Yes, LCA	Yes, LCA	\$7-14 (G) \$17-31
		<b>EC tabs:</b> 250, 375, 500 mg		Yes, RDP	Yes, RDP	\$13-31(G) \$27-63
		<b>SR tab:</b> 750 mg	750 mg PO daily	Yes, RDP	Yes, RDP	\$33 (G), \$42
		<b>Supp:</b> 500 mg	500 mg PR bid	Yes, LCA	Yes, LCA	\$ 56 (G)

Abbreviations: **caps** capsules; **EC** enteric coated; **G** generics; **IM** intravenous; **inj** injection; **IR** Immediate Release; **IV** intravenous; **LCA** subject to low cost alternative program; **max** maximum dose; **PO** by mouth; **PR** per rectum; **RDP** subject to reference drug program; **SR** slow release; **SC** subcutaneous; **supps** suppositories (rectal); **tabs** tablets

<sup>A</sup> Preferred route of administration for NSAIDs is oral or rectal.

<sup>B</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information About Provincial Drug Coverage

<sup>C</sup> Retail cost (without prescription)

\* This route of administration is used in practice, but not approved for marketing for this indication by Health Canada.

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information:

OPIOIDS						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose <sup>A</sup>	Drug Plan Coverage <sup>B</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
fentanyl	Duragesic MAT <sup>®</sup> , G	<b>Patch:</b> 12, 25, 37, 50, 75, 100 mcg per h	12 to 100 mcg per h applied to skin every 72 hours	Yes, LCA	Special Authority, LCA	\$24-186 (G) \$113-372 <sup>C</sup>
	G	<b>Inj:</b> 50 mcg per mL	25 to 100 mcg sublingual* per dose PRN	Yes	No	\$2-4 (G) per dose
hydromorphone	Dilaudid <sup>®</sup> , G	<b>IR tabs:</b> 1, 2, 4, 8 mg	2 to 8 mg PO q4h	Yes, LCA	Yes, LCA	\$28-62 (G) \$28-69
	Hydromorph Contin <sup>®</sup>	<b>SR caps:</b> 3, 6, 12, 18, 24, 30 mg	3 to 30 mg PO q12h	Yes	Special authority	\$42-242
	Dilaudid <sup>®</sup> , G	<b>Inj:</b> 2, 10, 20, 50, 100 mg per mL	2 to 10 mg SC q4h	Yes, LCA	Yes, LCA	\$184-455 (G) \$221-541
morphine	M.O.S. <sup>®</sup> , MS-IR <sup>®</sup> , Statex <sup>®</sup> , G	<b>IR tabs:</b> 5, 10, 25, 30, 40, 50, 60 mg	5 to 60 mg PO q4h	Yes, LCA	Yes, LCA	\$21-114 (G) \$24-343
	M-Eslon <sup>®</sup> , M.O.S. SR <sup>®</sup> , MS Contin <sup>®</sup> , G	<b>SR tabs:</b> 10, 15, 20, 30, 60, 100, 200 mg	10 to 200 mg PO q12h	Yes, LCA	Yes, LCA	\$18-84 (G) \$18-156
	G	<b>Inj:</b> 1,2, 5, 10,15, 25, 50 mg per mL	2 to 25 mg SC q4h	Yes	Yes	\$171-512 (G)
methadone	Metadol <sup>™</sup>	<b>Tabs:</b> 1, 5, 10, 25 mg	1 to 25 mg PO q8h	Yes	No	\$16-161
	Metadol <sup>™</sup> , compounded	<b>Oral Solution:</b> 1, 2, 5, 10, 20, 25 mg per mL		Yes	No, Yes	\$2-8 (compounded) \$4-88
oxycodone	Oxy.IR <sup>®</sup> , Supeudol <sup>®</sup> , G	<b>IR tabs:</b> 5, 10, 20 mg	5 to 20 mg PO q4h	Yes, LCA	Yes, LCA	\$25-64 (G) \$51-130
	OxyContin <sup>®</sup>	<b>SR tabs:</b> 5, 10, 15, 20, 30, 40, 60, 80 mg	5 to 80 mg PO q12h	Yes	Special Authority	\$40-270
sufentanil <sup>D</sup>	G	<b>Inj:</b> 50 mcg per mL	For incident pain: 12.5 mcg sublingual* <sup>D</sup> /dose PRN; incremental doses titrated q2h PRN up to 75 mcg	Yes	Yes	\$7 (G) per dose

Abbreviations: **G** generics; **h** hour; **inj** injection; **IR** Immediate Release; **PO** by mouth; **PRN** as needed; **SC** subcutaneous; **SR** slow release; **tabs** tablets

<sup>A</sup> Dosage requirements may go beyond range shown in table i.e. there is no maximum dose for opioids, unless limited by side effects or toxicity.

<sup>B</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information on Provincial Drug Coverage

<sup>C</sup> Lower cost of range represents 25 mcg Duragesic<sup>®</sup> patches

<sup>D</sup> Sufentanil is a potent opioid, initiation by a primary care provider for opiate naïve patients is not recommended, instead refer for Palliative Care Consult. Sublingual sufentanil may be considered for patients receiving at least 60 mg PO morphine equivalents over the last 7 days. Refer to Fraser Health Guideline: Sublingual sufentanil for management of incident pain in palliative patients (this is expected to be available in the future at [http://fraserhealth.ca/EN/hospice\\_palliative\\_care\\_symptom\\_guidelines/](http://fraserhealth.ca/EN/hospice_palliative_care_symptom_guidelines/)).

\* This route of administration is used in practice, but not approved for marketing for this indication by Health Canada.

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information:

NEUROPATHIC PAIN ADJUVANTS						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose	Drug Plan Coverage <sup>A</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
cannabidiol, D-9-T	Sativex <sup>®</sup>	<b>Buccal spray:</b> single combination product strength	1 spray buccally/sublingual BID, increase by 1 spray per day up to 8 to 12 sprays per day	No	No	\$652-978
clonazepam <sup>†</sup>	Rivotril <sup>®</sup> , G	<b>Tabs:</b> 0.25, 0.5, 1, 2 mg	0.5 mg PO at bedtime, up to 2 mg qid	Yes, LCA	Yes, LCA	\$3-22 (G) \$6-44
desipramine <sup>†</sup>	G	<b>Tabs:</b> 10, 25, 50, 75, 100 mg	10 to 25 mg PO at bedtime; increase q3-7 days up to 150 mg per day	Yes, LCA	Yes, LCA	\$12-58 (G)
dexamethasone <sup>†</sup>	G	<b>Tabs:</b> 0.5, 0.75, 2, 4 mg	2 mg PO/SC <sup>‡</sup> daily to 8 mg bid (am & noon)	Yes, LCA	Yes, LCA	\$14-79 (G)
		<b>Inj:</b> 4, 10 mg per mL		Yes, LCA	Yes, LCA	\$55-83 (G)
duloxetine <sup>†</sup>	Cymbalta <sup>®</sup>	<b>Caps:</b> 30, 60 mg	30 to 60 mg PO daily	No	No	\$59-118
gabapentin <sup>†</sup>	Neurontin <sup>®</sup> , G	<b>Tabs:</b> 100, 300, 400, 600, 800 mg	300 to 1200 mg PO tid	Yes, LCA	Yes, LCA	\$49-176 (G) \$99-353
nortriptyline <sup>†</sup>	Aventyl <sup>®</sup> , G	<b>Caps:</b> 10, 25 mg	10 to 150 mg PO at bedtime	Yes, LCA	Yes, LCA	\$4-43 (G) \$7-87
pregabalin <sup>†</sup>	Lyrica <sup>®</sup>	<b>Caps:</b> 25, 50, 75, 150, 300 mg	75 mg PO bid, increase q7 days up to 300 mg bid	No	No	\$102-140
topiramate <sup>†</sup>	Topamax <sup>®</sup> , G	<b>Tabs:</b> 25, 100, 200 mg	25 mg PO daily increase q7 days up to 200 mg bid	No	Yes, LCA	\$20-115 (G) \$41-229
		<b>Sprinkle caps:</b> 15, 25 mg		No	Yes	\$39-622
valproic acid <sup>†</sup>	Depakene <sup>®</sup> , G	<b>Caps/tabs:</b> 250, 500 mg	250 mg PO at bedtime increase q3 days up to 500 mg tid	Yes, LCA	Yes, LCA	\$8-48 (G) \$18-106

Abbreviations: **caps** capsule; **G** generics; **inj** injection; **LCA** subject to low cost alternative program; **PO** by mouth; **SC** subcutaneous; **tabs** tablets, **D-9-T** Delta-9-Tetrahydrocannabinol

<sup>A</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information on Provincial Drug Coverage

<sup>†</sup> This indication (i.e. neuropathic pain) not approved by Health Canada; duloxetine approved for treating diabetic neuropathy.

<sup>‡</sup> This route of administration is used in practice, but not approved by Health Canada.

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information:

ANTISPASMODICS						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose	Drug Plan Coverage <sup>A</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
belladonna & Opium	G	<b>Supps:</b> Belladonna 15 mg, Opium 65 mg	1 supp PR qid	Yes	Yes	\$330 (G)
hyoscine butylbromide	Buscopan <sup>®</sup>	<b>Tab:</b> 10 mg	10 mg PO qid up to 60 mg per day	Yes	Yes	\$42-63
	Buscopan <sup>®</sup> , G	<b>Inj:</b> 20 mg per mL	10 to 20 mg SC q6h [max: 100 mg per day]	Yes, LCA	Yes, LCA	\$511 (G) \$557
tizanidine	Zanaflex <sup>®</sup> , G	<b>Tab:</b> 4 mg	2 mg PO daily increase q3-4 days up to 4 to 12 mg tid	No	Special Authority, LCA	\$6-107 (G) \$12-221
SKELETAL MUSCLE RELAXANTS						
baclofen	Lioresal <sup>®</sup> , G	<b>Tab:</b> 10, 20 mg	5 mg PO bid increase q3 days up to 20 mg tid	Yes, LCA	Yes, LCA	\$9-55 (G) \$21-124
cyclobenzaprine	Flexeril <sup>®B</sup> , G	<b>Tab:</b> 10 mg	5 mg PO tid to 10 mg qid	No	Yes, LCA	\$18-49 (G)

Abbreviations: **G** generics; **inj** injection; **LCA** low cost alternative program; **max** maximum dose; **PO** by mouth; **SC** subcutaneous; **supps** suppositories (rectal); **tabs** tablets

<sup>A</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information on Provincial Drug Coverage

<sup>B</sup> Flexeril<sup>®</sup> brand no longer available

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information:

GASTRIC CYTOPROTECTION and DYSPEPSIA						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose	Drug Plan Coverage <sup>A</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
esomeprazole	Nexium®	DR Tabs: 20, 40 mg	20 mg to 40 mg PO daily	No	Special Authority	\$68
		DR Granules: 10 mg				\$136-272
lansoprazole	Prevacid®, G	DR Caps: 15, 30 mg	15 mg to 30 mg PO daily	No	Special Authority, LCA	\$27 (G), \$65
		FasTabs: 15, 30 mg				\$65
misoprostol	G	Tabs: 100, 200 mcg	100 to 200 mcg PO qid	No	Yes	\$33-56
omeprazole	Losec®, G	DR caps: 10, 20 mg	20 mg PO daily	No	Special Authority, LCA	\$36 (G), \$36
omeprazole magnesium	Losec®, G	DR tabs: 10, 20 mg	20 mg PO daily	No		\$36 (G) \$72
pantoprazole	Pantoloc®, G	EC Tabs: 40 mg	40 mg PO daily	Yes, LCA	Special Authority, LCA	\$33 (G) \$66
		Inj: 40 mg	40 mg IV daily	No		No
pantoprazole magnesium	Tecta®	EC Tabs: 40 mg	40 mg PO daily	Yes	Special Authority	\$45
rabeprazole	Pariet®, G	EC Tabs: 10, 20 mg	10 to 20 mg PO daily	Yes, LCA	Special Authority, LCA	\$11-21 (G) \$22-43
ranitidine	Zantac®, G	Tabs: 75, 150, 300 mg	150 mg PO bid <b>NSAID cytoprotection:</b> 300 mg PO bid	Yes, LCA	Yes, LCA	\$12-23 (G) \$12-23
		Inj: 25 mg per mL	50 mg SC <sup>†</sup> q8h	Yes, LCA	Yes, LCA	\$246 (G) \$272

Abbreviations: **caps** capsule; **DR** delayed release; **EC** enteric coated; **FasTabs** delayed-release tablets; **G** generics; **inj** injection; **IV** intravenous; **PO** by mouth; **SC** subcutaneous; **tabs** tablets

<sup>A</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information on Provincial Drug Coverage

<sup>†</sup> This route of administration is used in practice, but not approved for marketing for this indication by Health Canada

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult the most current product monograph for this information:

<b>BONE PAIN ADJUVANTS for Nociceptive bone pain (without hypercalcemia)</b>						
For treating malignancy related hypercalcemia see <a href="http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/SupportiveCare/default.htm">www.bccancer.bc.ca/HPI/ChemotherapyProtocols/SupportiveCare/default.htm</a>						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose	Drug Plan Coverage <sup>A</sup>		Approx. cost per 30 days
				Palliative Care	Fair PharmaCare	
calcitonin	Miacalcin <sup>®</sup>	<b>Nasal spray:</b> 200 units per spray	<b>Nociceptive bone pain:</b> one nasal spray daily up to two sprays bid	No	No	\$69-277
	Calcimar <sup>®</sup>	<b>Inj:</b> 200 units per mL (2 mL multi-dose vial)	<b>Nociceptive bone pain:</b> 50 units SC* at bedtime up to 200 units bid	No	Yes	\$215 - 1723
	Caltine <sup>®</sup>	<b>Inj:</b> 100 units per 1 mL ampule				\$253 - 1013
clodronate	Bonefos <sup>®</sup> , Clasteon <sup>®</sup>	<b>Caps:</b> 400 mg	800 mg PO bid or 1600 mg PO daily [max: 3200 mg per day]	Yes, LCA	Yes, LCA	\$157 (Clasteon <sup>®</sup> ) \$242 (Bonefos <sup>®</sup> )
pamidronate	Aredia <sup>®</sup> , G	<b>Inj:</b> 90 mg per 10 mL	90 mg IV monthly	Yes, LCA	Special Authority, LCA	\$281 (G) \$523
zoledronic acid	Zometa <sup>®</sup>	<b>Inj:</b> 4 mg per 5 mL	4 mg IV monthly	Yes	No	\$598

Abbreviations: **caps** capsules; **G** generics; **inj** injection; **IV** intravenous; **LCA** low cost alternative program; **max** maximum dose; **PO** by mouth; **SC** subcutaneous

<sup>A</sup> PharmaCare coverage and cost as of November 2010 (subject to revision). Cost does not include dispensing fee. Generic and brand name cost separated as indicated by (G). Obtain coverage, eligibility, medication coverage information and explanations in Palliative Care Part 2 - Information on Provincial Drug Coverage

\* Caltine<sup>®</sup> not approved for subcutaneous route for marketing for this indication by Health Canada.

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