Guidelines for the Management of Cancer-Related Pain in Adults

Quick Reference Version
Treatment of Cancer Pain - Step 1

Screen ALL cancer patients for pain at each visit
If Pain is identified as a focus of care, conduct Pain Assessment

Pain Assessment

<table>
<thead>
<tr>
<th>Patient/Family Member (if willing and able)</th>
<th>Health Care Professionals (interdisciplinary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Pain Inventory (BPI)</td>
<td>Pain Assessment and Care Plan (PACP)</td>
</tr>
<tr>
<td>Ongoing Assessment</td>
<td>Pain Management Flowsheet</td>
</tr>
</tbody>
</table>

Complete Pain Assessment and Care Plan, including:
- Assess all causes of pain (total pain).
- Determine pain location(s), pain intensity, and other symptoms.
- Complete full history and physical exam
- Document all previous analgesics (including opioids) and response to each
Consider renal function (eg. BUN, creatinine, electrolytes, Ca\(^{2+}\)), hepatic function (eg. transaminases, LDH), CBC, albumin

Pain Intensity

- Currently on regular opioid
  - No
  - Yes
    - On weak opioid with moderate-severe pain, go to Strong Opioid Regimen (below)
    - On strong opioid, see Step 2

Background Discomfort (0-1)

Mild Pain (2-3)
- If pain is not stable may start with weak opioid

Moderate Pain (4-6)
- If pain is not stable may start with strong opioid

Severe Pain (7-10)

Non-Opioid Regimen

Weak Opioid Regimen
- Use with prophylactic laxatives and antiemetic as needed (see Strong Opioid Regimen)

Strong Opioid Regimen
- Use with prophylactic laxatives (Sennosides (eg. Senokot) 8.6mg 1-2 tablets PO QHS alone OR in combination with Docusate Sodium (eg. Colace) 100mg 1-2 caplets PO BID) and antiemetic as needed (Metoclopramide 10mg PO q4h ATC and 10mg PO q2h PRN for nausea)

If no Response

If no Response


For the Full Version of this guideline, see the Cancer Care Nova Scotia web site at www.cancercare.ns.ca -1
**Strong Opioid Regimen (from Step 1)**
- Morphine 5 mg PO or 2.5 mg SC / IV q4h ATC\(^2\) and 2.5 mg PO or 1.25 mg SC / IV q1h PRN BTP\(^2\) - OR
- Hydromorphone 1 mg PO or 0.5 mg SC / IV q4h ATC and 0.5 mg PO or 0.25 mg SC / IV q1h PRN BTP - OR
- Oxycodone 5 mg PO q4h ATC and 2.5 mg PO q1h BTP - OR
- Acetaminophen 325 mg & Oxycodone 5 mg (eg. Percocet) 1-2 tablets q4h ATC and 1 tablet q2h BTP; not to exceed 12 tablets per day
- Use with prophylactic laxatives (Sennosides (eg. Senokot) 8.6 mg 1-2 tablets PO QHS alone OR in combination with Docusate Sodium (eg. Colace) 100 mg 1-2 caplets PO BID) and antiemetic as needed (Metoclopramide 10 mg PO q4h ATC and 10 mg PO q2h PRN for nausea)

**Response**
- No
- Yes

**Pain Intensity**
- Mild Pain (2-3)
- Moderate Pain (4-6)
- Severe Pain (7-10)

**Dose Titration of Opioid**
Calculate the total 24 hour dose (include all regular and PRN doses), divide by 6 for q4h dose

**For Mild Pain:**
- Consider increasing dose by 10% q4h ATC
- Reassess at least every 48-72 hours (upto 1 week later)

**For Moderate Pain:**
- Increase dose by 10-25% q4h ATC
- Reassess at least every 24 hours

**For Severe Pain:**
- Increase dose by 25-50% q4h ATC
- Reassess at least every 12 hours

**Breakthrough Doses:**
- 10% of new 24h dose, give q1h PRN

Reassessment may be needed more frequently; this may be done by the patient or health caregiver
- Continue antiemetics and laxatives

**Consider consult to palliative care service / pain specialist**

**Opoid Maintenance**
- Continue current analgesic
  - OR
- Change to slow-release oral opioid (same opioid as initial regimen)
  - Calculate total 24 hour dose (include all regular and PRN doses)
  - Divide by 2
  - Give this dose as slow release oral opioid q12h
  - BTP dose - 10% of total 24 hour dose, give q1h PRN
  - OR
  - Change to transdermal fentanyl (see conversion chart\(^1\))
  - Continue antiemetics and laxatives
  - Reassess at appropriate intervals

**Response**
- Yes
- No

**Opioid toxicity or side effects**
- Yes

**See Step 3 for opioid toxicity or Management of Side Effects**

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2 - For the Full Version of this guideline, see the Cancer Care Nova Scotia web site at www.cancercare.ns.ca
Opioid Rotation
Opioid rotation is changing from one opioid to another opioid. Opioid rotation may be considered if pain is or has been relieved with original opioid, but actual or predicted toxicity limits further dose titration.
• Select an alternate opioid
• Calculate equianalgesic equivalent dose of new opioid - See Conversions (below)
• Adjust starting dose of new opioid - consider decreasing initial dose by 25-50% if pain controlled by old opioid (no reduction if pain not controlled by old opioid)
• Titrate dose, as in Step 2

NOTE: It is strongly recommended that Meperidine (Demerol), Pentazocine (Talwin) or Propoxyphene (Darvon) NOT be used for cancer pain management

Addition of Adjuvant(s)
Adjuvant agents may be considered to augment the analgesic effect of an opioid, or to produce analgesia by a different mechanism. Adjuvant agents may be considered for malignant bone pain, neuropathic pain, incident pain, pain from compression or distension of tissues, or other related pain problems.
• Adjuvant analgesic agents and doses (See page 117 in Full Version)

Opioid Dose Reduction
Reduction of dose may be considered instead of opioid rotation if it is suspected that the opioid toxicity is due to excessive dosage and pain may be controlled with a lower dose.
• Careful dose reduction may eliminate opioid toxicity - Monitor pain control
• Dose reduction may include the concurrent addition of adjuvant analgesics

Change Route of Opioid
Sometimes changing the route of administration may reduce toxicity or side effects. Consider changing administration route if there are absorption concerns or if the oral route is limited by symptoms (eg. nausea or vomiting). Choice of alternate route is a clinical decision.
• Routes of administration include oral (recommended first choice), rectal or parenteral (eg. subcutaneous, intravenous), transmucosal (eg. sublingual/buccal, nasal) or transdermal.

Manage Side Effects or Opioid Toxicities
See Management of Side Effects from Opioid Therapy - Page 5

NOTES
1. Opioid toxicity refers to symptoms related to opioid dose (eg. neurological symptoms) whereas side effects are symptoms which may occur at any opioid dose (eg. constipation), see full version for more details
2. See full version of the guideline for discussion of management options and criteria for selection
## Opioid Dose Conversions

### Opioid Equianalgesic Dose Conversions

<table>
<thead>
<tr>
<th>Drug</th>
<th>Oral Dose</th>
<th>Parenteral Dose</th>
<th>Ratio PO to IV/SC</th>
<th>Ratio PO to Morphine PO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine*</td>
<td>20 mg</td>
<td>10 mg</td>
<td>2:1</td>
<td>1:1</td>
</tr>
<tr>
<td>Hydromorphone*</td>
<td>4 mg</td>
<td>1 mg</td>
<td>2:1</td>
<td>1:5</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>15 - 20 mg</td>
<td>20 mg</td>
<td>1 or 1.5:1</td>
<td>1.5 or 2:1</td>
</tr>
<tr>
<td>Codeine</td>
<td>200 mg</td>
<td>120 mg</td>
<td>2:1</td>
<td>12:1</td>
</tr>
<tr>
<td>Levorphanol</td>
<td>4 mg</td>
<td>2 mg</td>
<td>2:1</td>
<td>1:5</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>5–10 mg (PR)</td>
<td>1 - 1.5 mg</td>
<td>1:3 to 1:10</td>
<td>1 or 1.5:10</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>For conversion to transdermal dose, see Transdermal Fentanyl Dosing Table below</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methadone</td>
<td>For conversion, see Dosing of Oral Methadone in Full Version</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dosing of Transdermal Fentanyl

- To convert from an opioid to transdermal fentanyl (Duragesic), first calculate the 24 hour oral morphine equivalent dose, then locate the equivalent fentanyl dose on the chart below.
- Continue the original opioid for 12-24 hours after the first transdermal patch is applied, to allow the patch to create a reservoir under the skin.

#### Transdermal Fentanyl Dose Conversion from Morphine

<table>
<thead>
<tr>
<th>Oral Morphine Dose per 24 hrs.</th>
<th>Parenteral Morphine Dose per 24 hrs.</th>
<th>Fentanyl Patch Dose (mcg/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-134 mg</td>
<td>15-44 mg</td>
<td>25</td>
</tr>
<tr>
<td>135-224 mg</td>
<td>45-74 mg</td>
<td>50</td>
</tr>
<tr>
<td>225-314 mg</td>
<td>75-104 mg</td>
<td>75</td>
</tr>
<tr>
<td>315-404 mg</td>
<td>105-134 mg</td>
<td>100</td>
</tr>
<tr>
<td>405-494 mg</td>
<td>135-164 mg</td>
<td>125</td>
</tr>
<tr>
<td>495-584 mg</td>
<td>165-194 mg</td>
<td>150</td>
</tr>
</tbody>
</table>

- For ease of conversion, consider 50-100 mg of oral morphine in 24 hours equal to 25mcg/hr transdermal fentanyl.
- Breakthrough opioid medication- use 5-10 mg morphine/ 1-2 mg hydromorphone q1 hr PRN for each 25 mcg/hr fentanyl.

### Dosing of Oral Methadone for Cancer Pain

- Prescribers are required to have a methadone licence (from Health Canada) to prescribe this agent.
- It is suggested to consult with a prescriber with methadone expertise when considering the use of methadone.
- Equianalgesic conversion ratios from other opioids to methadone may vary based upon the dose of the opioid at time of conversion.
- There are several methods for converting from another opioid to methadone. See the Full Version of this guideline for details on conversion.
Management of Common Side Effects and Opioid Toxicities

Nausea and Vomiting

- Prophylactic treatment of nausea not recommended
- If nausea is a consistent problem, consider prokinetic antiemetic drugs (metoclopramide or domperidone 5-20 mg PO TID-QID)

See CCNS Guideline on Management of Nausea & Vomiting

Constipation

- Continue prophylactic dose of 1 to 2 sennoside 8.6mg tablets QHS with/without stool softener (docusate)
- Increase dose of sennoside (up to 12 tablets daily) and/or Docusate (up to 8 caplets daily) - divided doses
- Consider addition of Lactulose (15-30 mL PO BID, then titrate as required)
- Consider use of Bisacodyl, laxative enemas or suppositories

- Consider rotation or dose reduction of opioid
- Assess for other sedating medications
- Assess for other causes for sedation (eg. exhaustion, metabolic disorders,)
- Consider steroids- Dexamethasone 4-8 mg PO/SC QD
- Consider psychostimulant- Methylphenidate (Ritalin) 2.5-5mg PO QD-BID

Sedation

- Consider rotation or dose reduction of opioid
- Assess for other sedating medications
- Assess for other causes for sedation (eg. exhaustion, metabolic disorders,)
- Consider rotation or dose reduction of opioid
- Consider reversible causes (eg. metabolic disorders, liver or renal dysfunction) or irreversible causes (eg. organic brain disease)
- Specific symptoms:
  - Myoclonus- Consider Clonazepam 0.5-1 mg PO QD-TID or Valproic Acid 5 mg/Kg PO TID (increase in increments of 5-10 mg/Kg/day)
  - Nightmares- Consider Clonazepam 0.5-1 mg PO QD-TID, Haloperidol 2.5-5 mg HS
  - Hallucinations- Consider Haloperidol 1-5 mg q4h PRN
  - Delirium or agitation- Consider Haloperidol 2.5-5 mg PO/SC q6-12h PRN or Midazolam 2-5 mg SC stat then 30 mg/24 hr SC infusion or 5 mg SC q1h

Consider consult to appropriate specialist (eg. palliative care service/pain specialist) for specific symptoms

Neurological Symptoms (eg. myoclonus, hyperalgesia/alodynia, hallucinations, delirium, nightmares)
Management of Pain Crisis

Pain crisis may occur with any patient at any point in time. Pain crisis is acute, severe pain which is overwhelming and exceeds the coping strategies of the patient and family. During crisis, there is no time for the usual dose titration. Pain crisis is an emergency situation.

Identification of Pain Crisis
1. Patient/family call
2. Telephone assessment and advice to patient (by attending physician or nurse to determine if crisis and to suggest immediate measures until visit)

Patient Visit
- Urgent visit - arrange as soon as possible (do not defer)
- Preferably within 1 to 2 hours of call

Assessment
- Assess pain level and recent history (including medications)
- Assess distress level and recent history of distress

Treatment of Pain Crisis
Manage BOTH pain and distress

New Pain Syndrome
Identify any specific syndromes (e.g. spinal cord compression, SVC syndrome)
- Treat as per guidelines appropriate to specific syndrome(s)

Exacerbation of Underlying Pain
- No new pain pathology
- Rapid titration of short-acting opioid (e.g. Morphine 5-10 mg or Hydromorphone 1-2 mg SC/IV -not PO; repeat q10 min PRN for ongoing severe pain)
- Titrate until pain relief or sedation

Distress
- Anxiolytic agent for acute distress (parenteral route preferred)
- Treatment plan per CCNS Distress Management Guideline

EXAMPLE
- Calculate the total 24 hour opioid dose (include all regular and PRN doses), increase by 25-50%, divide by 6, convert to parenteral equivalent (usually 50% of oral dose); Give this as a bolus opioid dose SC and give lorazepam 0.5-1 mg SC or midazolam 1 mg (up to 5 mg) SC for immediate distress management
- Repeat doses of both opioid and anxiolytic agent q30 minutes until pain relief or sedation intervenes
- Maximum 3 doses of each agent - if no relief, re-assess and consider palliative care/pain specialist consultation
- Caution - monitor respiratory rate, and SaO₂ (if available)
- If respiratory depression with low O₂ saturation, administer O₂, provide verbal & tactile stimulation; if inadequate response consider giving low dose naloxone (0.4 mg diluted in saline to 10 mL, give 1 mL q1-2 minutes until adequate SaO₂)

Follow-Up
- Consider admission to hospital until pain crisis is stabilized (unless patient is actively dying or wishes to remain at home)
- When pain crisis is stabilized, recalculate new q4h dosing of opioid
- Reassess within 24 hours of stabilization of pain crisis; educate patient/family on new expectations
- Refer to appropriate other services for long-term distress management

Calls may be to:
1. Family doctor or other attending physician or nurse
   - After hours - call physician, if on-call available
2. Palliative care or oncology service, if attending with this service
   - After hours - call service, if on-call available
3. Emergency room - only if no other call is available


6. For the Full Version of this guideline, see the Cancer Care Nova Scotia website at www.cancercare.ns.ca
## Management of Special Pain Problems

### Spasms (cramps)

For muscular or skeletal spasms:
- Baclofen 5 mg PO TID (may titrate q3d up to 20 mg PO TID)
- Diazepam 2 mg PO TID (may titrate up to 10 mg PO TID)
- Midazolam 1-3 mg SC q30 min PRN (or lorazepam 0.5-2 mg SC q1 hr PRN)

For visceral spasms or cramps:
- Loperamide 1-2 mg PO TID to QID
- Buscopan (hyoscine butylbromide) 10 mg PO TID-QID
- Scopolamine patch 1.5 mg transdermally q3d
- Glycopyrrolate 0.2-0.4 mg SC q4-8h
- Consider Octreotide 200 mcg SC q8h (may increase to 800 mcg)

### Acute Pain Problems (e.g. burns)

- Most radiation-induced pain responds to usual opioid therapy; see Steps 1 & 2 (pages 108-109 in Full Version)
- If severe, consult with radiation oncologist for management

### Pain Flares

- Rapid upward titration of opioid when pain increases
- Careful monitoring, decrease opioids when pain decreases

### Drug-Related Neuropathies

- Consult with oncologist (chemotherapy may be altered)
- Treatment like neuropathic pain (see page 117 in Full Version)
- Educate patient/family
- Explore psychosocial support groups, complementary treatment options

### Hand-Foot Syndrome (Palmar-Plantar Erythrodysaesthesia)

- Consult with oncologist (chemotherapy may be altered)
- Symptomatic relief with topical moisturizing creams (e.g. BagBalm, Udder Cream)

### Mucositis Pain

- See CCNS Guidelines for the Management of Oral Complications from Cancer Therapy

### Chronic Pain in Cancer Patients

- Cancer patients may also suffer from pain due to other causes
- Treat each type of pain, as appropriate
- Pain may be due to cancer treatment (e.g. surgery, radiation therapy)
- Consider referral to appropriate sub-specialist (e.g. gastroenterology, neurology, urology, ENT), or pain specialist
- Consider non-pharmcological approaches (e.g. physiotherapy, nerve blocks, TENS, distraction methods, guided imagery)
- Consider appropriate support groups

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For the Full Version of this guideline, see the Cancer Care Nova Scotia web site at [www.cancercare.ns.ca](http://www.cancercare.ns.ca)
Adjuvant Therapies

Malignant Bone Pain

**Acetaminophen** 325-650 mg q4h PO
- To a maximum of 4 g/day (less with renal or hepatic impairment).

**Non-Steroidal Anti-Inflammatory Agent PO (NSAID)**
- Common Examples:
  - Ibuprofen 200-800 mg TID (available without prescription)
  - Naproxen 250-500 mg BID
  - Diclofenac 25-50 mg TID or 75 mg daily
  - Celecoxib 100-200 mg QD-BID
- May co-administer cytoprotectant agent (eg. Misoprostol) in patients with risk of ulceration or concurrently on NSAIDs and steroids

**Corticosteroid**
- Dexamethasone 4 mg PO qAM (may use higher or lower doses)
- May be added to NSAID/Acetaminophen, or replace NSAID
- Use cytoprotectant if corticosteroid and NSAID given concurrently
- Plan use for limited period, monitor for effects; taper dose to discontinue

**Bisphosphonate**
- Pamidronate 60-90 mg IV or Zoledronic Acid 4-8 mg IV every 3-4 weeks

**Non-Pharmacologic Approaches:**
Consider radiotherapy, physiotherapy, prophylactic subluxation, or fixation (if fracture present)

Neuropathic Pain

**Tricyclic Antidepressant**
- Amitriptyline 10 to 25 mg qHS
- Nortriptyline 10 to 25 mg qHS or Desipramine 25 mg qHS
  (fewer anticholinergic side effects)

**Antiepileptic drugs**
- Gabapentin 100-300 mg qHS
- Carbamazepine 100-200 mg BID
- Valproate 250 mg daily to TID

**Corticosteroid** (as above)

**Ketamine** 5-10 mg PO BID (refer to pain specialist for initiation and titration)

**Non-Pharmacologic Approaches:**
- Consider radiotherapy, surgical decompression, TENS, nerve blocks

Note: drug listings are examples with suggested starting doses

Incident Pain
(Pain on mobilization)

**Sufentanil** 25-50 mcg SL/buccal, **Fentanyl** 50 mcg SL/buccal prior to mobilization

**Non-Pharmacologic Approaches:**
- Sling, splint, crutches, cane, walker, physiotherapy/occupational therapy

Pain from Compression or distention of tissues

**Corticosteroid** (as above)

**Non-Pharmacologic Approaches:** Consider radiotherapy, surgical decompression

1. Methadone may be a more effective opioid in neuropathic pain treatment
See: Table 5.22 in Full Version for more details on drug dosing
