



**Ian Anderson Continuing Education Program  
in End-of-Life Care**

**Module 2**

**PAIN MANAGEMENT**



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## Introduction

- Pain is a common but not inevitable consequence of illnesses at the end of life.
  - In cancer, the prevalence of pain in advanced disease is 70-90%.
  - In HIV disease, pain prevalence is about 50%.
  - In other illnesses there are limited data but patients with multiple sclerosis, strokes, amyotrophic lateral sclerosis, end-stage heart disease and other illnesses may have significant pain.
- The suffering from pain can mostly be avoided but studies have shown that pain control is far from adequate.
  - The reasons for the lack of adequate pain control and the unnecessary suffering of patients is complex but a number of the factors are listed in the table below:

<b>Barriers to Pain Management</b>	
<b>Source</b>	<b>Issues</b>
<b>Care Providers incl. Physicians</b>	<ul style="list-style-type: none"> <li>□ Inadequate education in pain management.</li> <li>□ Fears and myths about pain and opioids analgesics.</li> <li>□ A lack of priority for pain management.</li> <li>□ Failure to manage adverse effects of analgesics effectively.</li> <li>□ Lack of integrated interdisciplinary care.</li> <li>□ Inadequate follow-up processes.</li> <li>□ Poor communication of care plans to other care providers.</li> <li>□ Limited accessibility to drugs and resources for pain control.</li> <li>□ A failure to consult with palliative care &amp; other pain management resources.</li> </ul>
<b>Patients and Families</b>	<ul style="list-style-type: none"> <li>□ Myths about the inevitability of pain.</li> <li>□ Fears about opioids including the issues of addiction, inevitable side effects, and mental confusion.</li> <li>□ A lack of priority for pain management in the face of terminal illnesses.</li> <li>□ Adverse effects of opioids.</li> <li>□ Culture and religious issues.</li> <li>□ Social and economic factors.</li> </ul>
<b>System</b>	<ul style="list-style-type: none"> <li>□ A lack of standards in pain control.</li> <li>□ A lack of priority for pain.</li> <li>□ Funding for and costs of analgesics.</li> <li>□ A lack of palliative care and other specialized pain management resources.</li> <li>□ A lack of consumer advocacy groups.</li> <li>□ Triplicate prescriptions.</li> </ul>

- Pain is a complex biological event that has psychological, emotional, family and social components. Other suffering and issues of death and dying also

complicate the meaning of pain in a terminal illness. This accounts for the terminology “total pain”.

- Physicians have a central role to play in ensuring that pain is managed effectively.
- This module provides an outline of a comprehensive approach to pain management at the end-of-life.

## Objectives

The participant will be able to:

1. Describe the prevalence of pain in cancer and other terminal illnesses.
2. Describe the components of a pain history.
3. Describe a classification of pain and the characteristics of.
4. List the basic principles of pain management.
5. Discuss the use of opioids in pain, including the pharmacology, classification, effective use, and routes of administration.
6. Manage opioid toxicity.
7. Manage common side effects of opioids in palliative patients.
8. Use adjuvant agents for neuropathic pain.
9. List other useful modalities in the management of pain.
10. Discuss ethical issues in pain management.
11. Describe a process of monitoring pain management.
12. Discuss the management of incident pain in palliative patients.

## The **CAR<sub>x</sub>E** Approach<sup>1</sup>

### Comprehensive Care Considerations

1. Successful pain management requires attention to the concept of “total pain”.

<b>Components of Total Pain</b>	
<b>Physical/biological</b>	<ul style="list-style-type: none"> <li>➤ differ from person to person</li> <li>➤ previous pain experience</li> </ul>
<b>Psychological</b>	<ul style="list-style-type: none"> <li>➤ emotional state</li> <li>➤ personality</li> <li>➤ self-esteem</li> <li>➤ previous mental illness</li> </ul>
<b>Family</b>	<ul style="list-style-type: none"> <li>➤ family systems</li> <li>➤ family fears</li> <li>➤ culture</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>➤ economic factors</li> </ul>

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	<ul style="list-style-type: none"> <li>➤ education</li> <li>➤ social class</li> <li>➤ culture/ethnicity</li> </ul>
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2. Educate patient and family and ensure their active participation in the pain management plan. The education should be through conversations that may need to be repeated and through supportive literature that is comprehensive and comprehensible.
3. Be flexible in your approach. Template or algorithmic approaches or guidelines need to be tempered by individual patient factors and by physician reflective experience.
4. Use an interdisciplinary team effectively.
5. Develop standards of pain control that may effectively prevent unnecessary suffering.

## Assessment

Appropriate assessment of a patient's "total" pain will lead to effective management.

### A Clinical Classification of Pain

1. There are many causes of pain and often more than one cause of a pain in a patient and often more than one pain in a patient with advanced diseases like cancer and AIDS.
2. Pain can be divided into *nociceptive* and *neuropathic* types of pain

#### **Nociceptive pain:**

- ❑ Caused by invasion and destruction of or pressure on superficial somatic structures like skin, deeper skeletal structures such as bone and muscle and visceral structures and organs.
- ❑ Types: superficial, deep, visceral
- ❑ Superficial and deep nociceptive pain is usually localized and non-radiating.
- ❑ Visceral pain is more diffuse over the viscera involved.

### **Neuropathic pain:**

- ❑ Caused by pressure on or destruction of peripheral, autonomic or central nervous system structures.
- ❑ Radiation of pain along dermatomal or peripheral nerve distributions
- ❑ Often described as burning and/or deep aching.
- ❑ May be associated with dysesthesia, hypesthesia, hyperesthesia and allodynia.
- ❑ May also be accompanied by lightning like jabs of brief sharp pain (lancinating pain).

**Pain can be a mixture of these two types.**

3. The distinction of these types of pain relies on the history, supportive physical signs, abnormalities on investigations or just clinical intuition about the nature of the disease process.

It is of clinical importance to try and distinguish the types or components of a patient's pain since this assessment has clinical management implications in the use of analgesics, adjuvant drugs and other analgesic modalities.

## **The Pain History**

The pain history remains the key to understanding the patient's pain and directing the management scheme.

- ❑ The usual questions of location, duration, radiation of pain, and aggravating and relieving factors need to be asked.
- ❑ There are several important additional questions to be asked:
  - What is the quality of the pain?
  - Let the patient express this in his/her own terms?
  - Listen for typical features of nociceptive and neuropathic pain?
  - What is the response to past and current analgesic therapy?
  - What have been the adverse effects encountered and how have they been dealt with?
  - What has been the effect of the pain on the patient's activities of daily living?
  - Are they keeping any kind of diary or record about the pain?
  - What fears do they have about analgesics?

- Are there any cultural/family beliefs that pertain to pain and its management?
- What is their understanding about their illness?

### **SOME QUESTIONS PARTICULARLY HELPFUL IN THE HOME SETTING**

- ❑ What analgesics do they have at home?
- ❑ How much medication do they have on hand?
- ❑ Who looks after dispensing the medication?
- ❑ Have medications been prepped and/or preloaded?
- ❑ Are doses left out?
- ❑ How many breakthrough doses have been taken in the last two days?
- ❑ What is their pharmacy phone number? Does the pharmacy deliver? The number of the nearest 24-hour pharmacy if one is available?
- ❑ How do they pay for medication?
- ❑ How do they renew medications?

## **Pain Assessment Tools**

### **Verbal Analogue Scales**

- ❑ An effective simple tool
- ❑ For example, ask the patient “On a scale of 1 to 10 (or 1 to 5) with 10 being the worst possible pain and 1 being little or no pain”
- ❑ What is your current pain level?
- ❑ What is your worst pain level and when?
- ❑ What is your best pain level and when?
- ❑ Can be administered by family members.

### **Visual Analogue Scales**

- ❑ A pictorial description using an analogue scale of numbers, and/or word descriptors, and/or colours to record a patient’s assessment of his/her own pain.
- ❑ Can be administered by family members.

## **Pain Assessment in the Elderly and the Cognitively Impaired**

1. Pain is a common symptom in the elderly. One U.S. survey of nursing homes showed that 70-80% suffered from significant pain. Of these, 1/3 had constant pain and less than 1/3 of those had orders for regular pain medication.

### Myths About Pain in the Elderly

- ❑ Pain is normal or expected.
- ❑ Pain sensitivity or perception decrease with age
- ❑ If someone does not complain, they are not in pain
- ❑ Opioids are not appropriate for use in the elderly with non-malignant pain
- ❑ Opioids are dangerous to use in the elderly

2. Assessment of pain in elderly cognitively impaired patients may be difficult but not impossible.
3. There is a need for multiple assessment tools and approaches including:
  - ❑ Verbal or visual analog scales.
  - ❑ The “faces” scale.
  - ❑ The pain thermometer.
  - ❑ Team and/or family observation for increasing agitation, moaning, or pain on movement (incident pain).
4. There is a need for a high index of suspicion when those that are cognitively impaired have diseases like cancer and others associated with significant pain like arthritis and ischemia.

### Pain Diaries

- ❑ Variety of possibilities but basically should include information about patient pain levels, medications administered regularly and as breakthrough, special features of the pain, adverse effects experienced
- ❑ Effective in involving patient and family in care and also in providing consistent communication about pain to all health care providers.

### The Use of Placebos

Some physicians have advocated the use of placebos to see if patients are really in pain. While 30% to 70% of patients will appear to experience some response, there is no ethical or scientific basis for the use of placebos to assess or treat pain. The Agency for Health Care Policy and Research (AHCPR), American Pain Society (APS), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and the American Nursing Association (ANA) have all issued position statements to this effect.



## Rx-Management

### 1. Patient and Family Education

This is a most critical first step in managing pain.

Education to be effective should:

1. Occur in a setting that is appropriate – quiet room, sufficient time allotted, good eye contact.
2. Be done in person with patient and, in best circumstances, in the presence of family or caregiver who will be assisting the patient.
3. Use language that is appropriate for the patient and/or family's level of education and culture.
4. Be supported by patient education written materials.
5. Be repeated as necessary since patient and family anxiety and other concerns may interfere with comprehension and retention of information.
6. Be supported by easy access to a care provider team that is knowledgeable about pain management.
7. Describe the cause of the pain and review options for management.

### 2. Basic Principles

1. Investigate wisely and effectively.
2. Do not delay treatment. Treat the pain immediately.
3. Use a pain diary and objective measures of pain control
4. Have a good understanding of the pharmacology of analgesics and adjuvant medications.
5. Give medication orally whenever possible and it is possible in the majority of patients.
6. Give medication regularly according to its analgesic duration of effect.
7. Prescribe an analgesic that matches the severity of the pain.
8. Always prescribe a breakthrough dose.
9. Titrate the dose upwards on a daily basis using immediate-release forms of analgesics until pain is mostly relieved or intractable adverse effects occur.
10. Always consider adjuvant modalities and medication in every patient.
11. Take a preventive approach to avoid the adverse effects of the medication.

### 3. Choosing the Appropriate Analgesic

#### Basic Issues

1. Match the severity of pain to the strength of the analgesic i.e. strong analgesics for severe pain.
  - The WHO has developed 3-step model to guide analgesic choice depending on the severity of the patient's pain.

### The WHO Ladder

The **non-opioid** analgesics that characterize **Step 1 (Mild Pain)** of the WHO ladder (acetaminophen, NSAIDs) all have a ceiling effect to their analgesia. Start with moderate to maximal doses to achieve optimal efficacy quickly. The Step 1 analgesics have the greatest risk of severe adverse effects. Anticipate and monitor for them carefully.

**Step 2 and 3 (Moderate to Severe Pain) opioid** analgesics (e.g. codeine, hydrocodone, hydromorphone, morphine, oxycodone) follow first-order kinetics. They reach their peak effect and plasma concentration (C<sub>max</sub>) approximately 60 to 90 minutes after oral or rectal administration, 30 minutes after subcutaneous or intramuscular injection, and 6 minutes after intravenous injection.

2. Is there any evidence that one opioid is better than another?
  - Evidence of some differential stimulation of opiate receptors among opiates.
  - Good clinical evidence lacking so far about clinical significance of these differences.
  - Also limited clinical evidence about differences in adverse effect profiles between different opioids.
  - There is a general difficulty in doing effective studies in this area because of difficulty in enrolling fairly ill patients, small patient numbers in most centers, dissimilar patients and limited numbers of “head-to-head” studies of opioid analgesics.

Effective treatment requires a clear understanding of the pharmacology, potential impact, and adverse effects associated with each of the analgesics prescribed, and how these may vary from patient to patient.

## Analgesics – Non-Opioids

There are three types of non-opioid analgesics:

### SALICYLATES

Salicylates		
Generic name	Brand Name Examples	Dosage
acetylsalicylic acid (ASA)*	Aspirin Entrophen	650mg q4h to q6h for pain or fever 975mg q6h for anti- inflammatory effect
choline magnesium salicylate**	Trisilate	0.5mg t.i.d. to 1gm b.i.d.
diflunisal**	Dolobid	250-500mg q12h

\* the enteric-coated preparations are recommended  
 \*\* less gastrointestinal effects, no effect on platelet function

### NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

Recommended Dosages of Some Common NSAIDs	
	Dosage (p.o.)
<b>Propionic Acids</b>	
ibuprofen	200 to 600mg t.i.d. to q.i.d.
flurbiprofen	50 to 100mg b.i.d. or t.i.d.
ketoprofen <sup>†</sup>	50 to 100mg b.i.d. to t.i.d.
naproxen <sup>**†</sup>	250 to 375mg t.i.d.
tiaprofenic acid <sup>**</sup>	300mg b.i.d.
<b>Indoles</b>	
indomethacin <sup>**†</sup>	25 to 50mg t.i.d.
sulindac	50 to 100mg t.i.d.
<b>Acetic Acids</b>	
tolmetin	200 to 600mg t.i.d.
diclofenac <sup>**†</sup>	25 to 50mg t.i.d.
diclofenac(50-75mg) +misoprostol(200µg)	1 tab b.i.d./t.i.d.
ketorolac <sup>*</sup>	
<b>Oxicams</b>	
piroxicam <sup>†</sup>	10 to 20mg once daily

Recommended Dosages of Some Common NSAIDs	
Partially Selective COX 2 Inhibitors	
nabumetone	1000-2000mg in single/divided dose
<b>Selective COX-2 Inhibitors</b>	
celecoxib	100mg b.i.d or 200mg. once daily p.o.
rofecoxib	25- 75mg once daily
* only NSAID with parenteral formulation ** sustained-release preparations available † rectal suppository available	

- Nonsteroidal anti-inflammatory drugs (NSAIDs, including salicylates) are effective step 1 analgesics.
- They may also be useful coanalgesics.
- They work, at least in part, by inhibiting cyclo-oxygenase, the enzyme that converts arachidonic acid to prostaglandins.
- There are several classes of NSAIDs. Some patients respond better to one class of NSAIDs than to another, and serial “n of 1” trials may be needed to find one that is efficacious for a given patient.
- NSAIDs can have significant adverse effects.
  - There are substantial differences among NSAID classes as to the likelihood of adverse effects. This may in part be due to their relative COX-2 selectivity.
  - Gastropathy, renal failure, and inhibition of platelet aggregation can occur, irrespective of the route of administration, with any of the nonselective medications.
  - Some drugs, however, such as ibuprofen, nabumetone, celecoxib and valdecoxib, appear to be relatively safer.
  - Gastric cytoprotection with misoprostol may be needed in patients with significant risk factors, particularly those with a history of gastric ulcers or bleeding, current nausea/vomiting, or protein wasting, cachexia, and for the elderly.
  - To minimize the risk of renal failure, including papillary necrosis, ensure adequate hydration and good urine output in all patients on NSAIDs.
  - The nonselective medications are relatively contraindicated in the setting of significant preexisting renal insufficiency. If bleeding is a problem, or coagulation or platelet function is impaired, NSAIDs may be contraindicated.
  - The new COX-2 selective inhibitors have less of these toxicities and may be indicated in high-risk patients.

## ACETAMINOPHEN

Acetaminophen Dosage Forms	
Tablets or capsules	80mg, 325mg, 500mg 160mg chewable tablets SR products.
Liquid	160mg/5ml
Suppositories	650mg
<b>Maximum dosage for adults is 1000mg q4h suggested for short term use only</b>	

- ❑ Acetaminophen is an effective step 1 analgesic for mild to moderate pain. It may also be a useful coanalgesic in many situations, including headache.
- ❑ Its site and mechanism of action are not known. It does not have significant anti-inflammatory effects and is presumed to have a central mechanism.
- ❑ Chronic doses > 4.0 g/24 h or acute doses > 6.0 g/24 h are not recommended as they may cause hepatotoxicity. Hepatic disease or heavy alcohol use increases the risk further.

### Important issues in the use of non-opioid analgesics:

1. Use in full doses for the most part. Exercise caution in patients in renal failure.
2. The non-opioid analgesics that characterize step 1 of the WHO ladder all have a ceiling effect to their analgesia (a maximum dose past which no further analgesia can be expected).
3. Use cytoprotection with NSAIDs only in patients who have symptoms suggestive of GI distress or who are at high risk of ulcer formation e.g. recent history of ulcers, concomitant use of corticosteroids. For cytoprotection use sulcrafate or misoprostol. Acid antagonists are not cytoprotective (H2 antagonist). The use of proton pump inhibitors is controversial.

## Opioid Analgesics

Opioid analgesics (formerly termed “narcotic” analgesics) are potent and safe medications to use for the treatment of moderate to severe pain.

Table of Opioids			
** <b>NB:</b> These dosage equivalents of immediate-release opioids to morphine 10mg s.c. have been based mainly on single dose studies. They are guidelines only in patients requiring chronic administration. See text for further information.			
Drug	Dose s.c. (mg)	Dose p.o. (mg)	Dose Frequency <sup>1</sup>
<b>USEFUL WEAK OPIOIDS</b>			
codeine	120	200mg	q4h
oxycodone combination products	n/a	2 tabs	q4h
<b>NOT RECOMMENDED</b>			
dextropropoxyphene	n/a	n/a	n/a
<b>USEFUL STRONG OPIOIDS</b>			
fentanyl (transdermal)	n/a	25µg/hr	every 2-3 days
heroin <sup>1</sup>	6	12-20	q4h
oxycodone	n/a	5-10mg	q4h
hydromorphone	2	4-6	q4h
methadone <sup>2</sup>	See specific section	See specific section	See specific section
morphine	10	20-30	q4h
<b>NOT RECOMMENDED</b>			
anileridine	25	75-100	q-3h
butorphanol *	2	n/a	q3-4h
levorphanol	2	4	q6h
Meperidine <sup>3</sup>	75	200-300	q2-3h
nalbuphine *	10	n/a	q3-6h
oxymorphone	1.5	5 (p.r.)	q4h
pentazocine *	60	180	q3-4h
<sup>1</sup> not available in Canada for oral use			
<sup>2</sup> recommended only if familiar with the special features of this drug			
<sup>3</sup> should be used for short term in acute pain only			
* agonist-antagonist drugs			

## Opioid Pharmacology

### Basic Issues

1. Opioids (codeine, hydrocodone, hydromorphone, morphine, oxycodone, etc) all follow first-order kinetics and pharmacologically behave very similarly.

2. They reach their peak plasma concentration (C<sub>max</sub>) approximately 60 to 90 minutes after oral (including enteral feeding tube) or rectal administration, 30 minutes after subcutaneous or intramuscular injection, and 6 minutes after intravenous injection.
3. They are eliminated from the body in a direct and predictable way, irrespective of the dose. The liver first conjugates them. Then the kidney excretes 90% to 95% of the metabolites.
4. Their metabolic pathways do not become saturated.
5. Each opioid metabolite has a half-life (t<sub>1/2</sub>) that depends on its rate of renal clearance.
6. When renal clearance is normal, codeine, hydrocodone, hydromorphone, morphine, oxycodone, and their metabolites all have effective half-lives of approximately 3 to 4 hours. When dosed repeatedly, their plasma concentrations approach a steady state after 4 to 5 half-lives. Thus, steady-state plasma concentrations are usually attained within a day and therefore increases in dose can be done **DAILY**.
7. Metabolites may be active. Morphine-6-glucuronide (M6G) is known to be analgesic. Normorphine and morphine-3-glucuronide may have some responsibility for neurotoxicity. Morphine is a metabolite of codeine and oxymorphone is a metabolite of oxycodone. These therefore may be wholly or partially responsible for the analgesic effect of the root drug. Normeperidine, a metabolite of meperidine and anileridine, is neurotoxic. Other opioids have metabolites that are generally not very active or accumulate in such small quantities that they are not an issue.
8. Increasingly, oral extended- or sustained-release formulations of the commonly used opioids are becoming widely available for routine usage. Less frequent dosing with either these preparations or opioids with long half-lives (e.g. methadone, t<sub>1/2</sub> 12–24 hours, sometimes longer) is likely to improve patient compliance and adherence.
9. Extended- or sustained-release opioid tablets are specifically formulated to release medication in a controlled fashion over 8, 12, or 24 hours (depending on the product). They must be ingested whole, not crushed or chewed.
10. Extended-release capsules containing time-release granules can be swallowed whole, or the granules can be mixed with fluid and flushed down a feeding or other tube into the upper GI tract. Best possible pain control for the dose will be achieved within 2 to 4 days (once steady state has been reached).
11. Methadone has a long and variable half-life. Although the half-life usually approaches a day or longer, the effective dosing interval for analgesia is usually as frequently as q8h; it is often q6h and sometime even q4h. Given the variability of methadone's half-life and the unexpected potency that this medication often demonstrates, it is prudent to increase the dose only every 4 to 7 days, or less often, if possible. Methadone should be used only by those skilled in the use of opioids.

## Addiction, Tolerance, Physical Dependence

The perception that the administration of opioids and analgesics for pain management causes addiction is a prevalent myth that inhibits adequate pain control.

- Addiction is a complex phenomenon. Its hallmark is psychological dependence on drugs and a behavioral syndrome characterized by compulsive drug use and continued use despite harm.
- Distinguish between true addiction, pseudo-addiction caused by under-treatment of pain, behavioral/family/psychological dysfunction, and drug diversion with criminal intent.

Opioids do not cause the psychological dependence involved in addiction.

- Physical dependence is the result of neurophysiologic changes that occur in the presence of exogenous opioids. Similar outcomes occur in the presence of exogenous hormones and other medications (beta-blockers, alpha-2 agonists, etc). Abrupt opioid withdrawal may result in an abstinence syndrome characterized by tachycardia, hypertension, diaphoresis, piloerection, nausea and vomiting, diarrhea, body aches, abdominal pain, psychosis, and/or hallucinations.
- Physical dependence is not the same as addiction. Physical dependence is not evidence of addiction. Its presence does not mean that opioids cannot be discontinued. If the pain stimulus decreases or disappears, opioid doses usually can be reduced in decrements of 50% or more every 2 to 3 days, and finally stopped. If the dose is lowered too quickly and abstinence symptoms occur, a transient increase in the opioid dose, treatment with clonidine, or a small dose of a benzodiazepine (e.g. lorazepam) may be necessary to settle distressing symptoms.
- Pharmacologic tolerance is defined as the reduced effectiveness of a given dose of medication over time. Clinical importance is rare. When increasing doses are required, suspect worsening disease rather than pharmacologic tolerance.
- Since patients with histories of substance abuse can also develop significant pain, they deserve compassionate treatment of their pain when it occurs. Most will need to adhere to strict dosing protocols, and contracting may become necessary. Physicians who are unfamiliar with these situations may need the help of specialists in pain management and/or addiction medicine.

Physical dependence is not the same as addiction.



## Adverse Effects Of Opioids

- ❑ Opioids have a number of predictable and common unwanted effects – adverse or side effects.
- ❑ Addiction (psychological dependence), tolerance, and physical dependence are not considered adverse effects of opioid analgesics.
- ❑ Often patients and their physicians give the fear of these unwanted effects, especially nausea and constipation, as one of the major reasons for avoiding taking these powerful analgesics.
- ❑ The approach to using opioids must include identification of these fears and a preventive approach to the most common side effects.
- ❑ Concerns about the double effect of opioids are overrated. The term is frequently misused.
- ❑ If opioid dosing guidelines are followed, the risk of a secondary, potentially severe, unintended consequence is minimal.
- ❑ A severe and predictable adverse effect such as death is almost unknown.
- ❑ Many people believe that opioid-induced nausea/vomiting, constipation, drowsiness and even confusion are allergic reactions. They are in fact adverse effects, not allergic reactions.
- ❑ Adverse effects of opioids can be managed. Patients generally develop pharmacologic tolerance to all but constipation within a relatively brief period.

Teach the patient and family about potential adverse effects. Unexpected or poorly controlled adverse effects may cause the patient to refuse any further opioid therapy.

<b>Adverse Effects of Opioids</b>		
<b>Common</b>	<b>Less Frequent</b>	<b>Rare</b>
<ul style="list-style-type: none"> <li>❑ constipation</li> <li>❑ nausea</li> <li>❑ sedation</li> <li>❑ dry mouth</li> </ul>	<ul style="list-style-type: none"> <li>❑ urinary retention</li> <li>❑ pruritus</li> <li>❑ severe myoclonus</li> <li>❑ confusion</li> <li>❑ psychotomimetic effects such as hallucinations &amp; nightmares</li> <li>❑ postural hypotension</li> <li>❑ vertigo</li> </ul>	<ul style="list-style-type: none"> <li>❑ allergy</li> <li>❑ respiratory depression</li> </ul>
**for full management of these symptoms see appropriate sections in the manual		

## Special Issues in Managing Adverse Effects

1. Urticaria and pruritus are usually the result of mast cell destabilization by opioids that lead to histamine release. This can be managed by the routine administration of long-acting non-sedating antihistamines or mast cell stabilizers. Doxepin is a potent H1 histamine antagonist and can be used for management of this problem. Can also use antihistamines such loratidine and cetirizine. Switching opioids may occasionally be effective.
2. Constipation secondary to opioid administration is almost universal. When starting opioid therapy, prevent it by prescribing a routine stimulant laxative and escalate the dose to effect.

Constipation is easier to prevent than treat.

3. Detergent stool softeners alone (e.g. docusate) at conventional doses do not counteract the constipating effect of opioids. Osmotic laxatives along with bowel stimulants are the best combination of effective laxatives for this problem.
4. Many patients starting opioids (up to 30%) experience nausea with or without vomiting. Tolerance develops. Treat with antiemetics effective in inhibiting the CTZ or if necessary change to a different opioid.
5. Opioid induced sedation usually disappears over a few days as tolerance develops. For patients with far-advanced disease near the end-of-life, pain may, in fact, be the primary stimulant keeping them alert. Once pain is managed, the patient's "natural" level of sedation may become apparent. Encourage patients and families to clearly articulate their goals and priorities in order to develop a pain management plan that balances alertness and pain control. A potential pitfall is the failure to distinguish sleepiness caused by exhaustion once pain is relieved from sedation caused by overmedication
6. Psychostimulants such as dexedrine or methylphenidate may be useful adjuncts to counteract sedation.

Opioids are poor sedatives unless given in toxic doses. They should never be used as single agents for sedation.

7. The onset of confusion, bad dreams, hallucinations, restlessness, agitation, myoclonic jerks, a significantly depressed level of consciousness, or seizures suggests the syndrome of **opioid toxicity**
8. Sepsis may present as delirium caused by opioid toxicity.
9. Mismanaging terminal delirium with opioids may make it worse.
10. Physicians often have an inordinate fear of respiratory depression caused by opioids. Pain is a potent stimulus to breathe. Pharmacologic tolerance to respiratory depression develops quickly. Somnolence always precedes respiratory depression.

Unfounded fear of respiratory depression and lack of skill with opioid dosing leading to significant unnecessary pain, loss of function, and suffering.

### Opioid Allergy

- Allergy to codeine expressed as urticaria and other severe anaphylactic reactions is relatively common but there does not seem to be any cross-reactivity with other opioids.
- **True allergy to morphine and other potent opioids is extremely rare** and patients saying they are “allergic” have experienced side effects like nausea, sedation or confusion and have been mislabeled as “allergic”.
- Allergy to one opioid may not mean that the patient is allergic to others. Cross-reactivity is rare.

## Choice of Opioids

### Factors in the Choice of Opioids

<p><b>Factor 1: Pain severity</b></p>	<ul style="list-style-type: none"> <li>□ According to the WHO stepped approach (see above) but recognition that severe pain should require potent opioids from the onset.</li> <li>□ Requires good pain assessment.</li> </ul>
<p><b>Factor 2: Opioid Metabolites</b></p>	<ul style="list-style-type: none"> <li>□ What is known:             <ul style="list-style-type: none"> <li>▪ Water-soluble metabolites such as M6G are excreted by kidneys mostly.</li> <li>▪ Role of M3G and normorphine not clear but suspect related to CNS adverse effects.</li> <li>▪ Decreased renal clearance may therefore be a factor in toxicity seen with morphine.</li> </ul> </li> <li>□ There are reports in the literature about toxicity in renal failure with hydromorphone &amp; fentanyl.</li> <li>□ Toxic metabolites for each but less of a problem.</li> <li>□ Should all elderly patients be started on fentanyl transdermal or hydromorphone?             <ul style="list-style-type: none"> <li>▪ No definitive answers and therefore an issue of best practice.</li> </ul> </li> <li>□ In summary, the issue of metabolites mostly related to morphine as choice but others may also be problematic.</li> </ul>
<p><b>Factor 3: Adverse Effects</b></p>	<ul style="list-style-type: none"> <li>□ Is there a significant difference in side-effect profile that would lead one to choose one product over the other?             <ul style="list-style-type: none"> <li>▪ No clear evidence that adverse effects differ between opioids.</li> </ul> </li> <li>□ Are there patient related individual differences in tolerating opioids?             <ul style="list-style-type: none"> <li>▪ No definitive evidence, only anecdotal evidence.</li> <li>▪ Some patients will not tolerate oral opioids at all.                 <ul style="list-style-type: none"> <li>• Will tolerate SC forms or transdermal fentanyl</li> </ul> </li> </ul> </li> </ul>

	<p>well.</p> <ul style="list-style-type: none"> <li>❑ CNS effects that may be related to a certain drug may require change or different choice.</li> <li>❑ Physiologic/pharmacologic reasons but not tested clinically.</li> <li>❑ Is there allergy? <ul style="list-style-type: none"> <li>▪ With codeine definitely.</li> <li>▪ With morphine &amp; others allergy rare.</li> </ul> </li> </ul>
<b>Factor 4: Patient Related</b>	<ul style="list-style-type: none"> <li>❑ Previous experience with opioids.</li> <li>❑ Compliance. <ul style="list-style-type: none"> <li>▪ Reduced frequency of dosing, number of tablets or capsules, formulation of drug (e.g. liquid) and convenience are factors.</li> </ul> </li> <li>❑ Fears &amp; myths about opioids.</li> <li>❑ Family issues.</li> <li>❑ Economic factors.</li> </ul>
<b>Factor 5: Physician Related</b>	<ul style="list-style-type: none"> <li>❑ Knowledge.</li> <li>❑ Reflective practice.</li> <li>❑ Anecdotes.</li> <li>❑ Recent experience.</li> <li>❑ Marketing.</li> <li>❑ Availability of 3<sup>rd</sup> party payers.</li> </ul>

**Opioids to Avoid**

1. Meperidine is not recommended for routine dosing because of the high risks of adverse effects from accumulation of the metabolite normeperidine.
2. Propoxyphene is typically administered at doses that produce relatively little analgesia and is not recommended as a routine analgesic.
3. The mixed opioid agonist-antagonists, such as pentazocine, butorphanol, and nalbuphine should not be used in the patient already taking a pure agonist opioid as there is a high risk they will precipitate withdrawal.

### Choosing the Right Dose

**Important:**

- ❑ The following sections describe dosage guidelines using morphine as the example strong opioid of choice. If using other opioids, then use the dose as per the suggested guidelines in the preceding table.
- ❑ All strong opioids are equally effective and there is little evidence to support a difference in adverse effects or analgesic efficacy for any of these potent drugs over the others.

1. **In the opioid naïve patient**, or if the patient is on small doses of weak opioids, begin with immediate-release morphine, hydromorphone or oxycodone orally at a dose of 10-20mg morphine equivalence q4h. Reduce this dose if the patient is very elderly, frail or has one of the metabolic disturbances listed below under the section describing dose modification.

**Starting Doses of Potent  
Opioids In Opioid Naïve Patients**

10-20mg IR morphine q4h.

2-4mg IR hydromorphone q4h.

5-10mg IR oxycodone q4h.

2. **If the patient has been on strong opioids** but this has been ineffective or the drug has been given PRN, calculate the total daily dose of opioid in morphine equivalence orally, increase by 25% and divide by 6 to get the suggested initial 4-hourly dose.
3. **In patients with unstable or poorly controlled pain**, titrate the dose upwards until pain is mostly controlled. Titration can be done on a daily basis. The total daily dose of opioid including regular doses and breakthrough doses should be calculated. The new regular dose should incorporate this total daily dose plus a 25% increase to account for pain that is not controlled:
4. A double dose can be given safely at bedtime so the patient does not have to wake up to take a middle of the night dose.
5. Prescribe a breakthrough dose of 50-100% of the regular q4h oral dose (5-15% of the 24-hour total dose) also of immediate-release opioid. This can be given orally every hour if necessary (1/2 hr parenterally) so that up to 3 doses can be given in between each regular dose. See guidelines below.
6. For example, if a patient takes 20mg q4h of morphine and has had 6 doses of 10mg of breakthrough morphine, the total daily dose is 180mg. If the pain is still not controlled add 25% i.e. 45mg to give 225mg. Therefore the next regular dose will be  $225/6=36\text{mg}$  and the breakthrough dose about 25-50% of that dose i.e. 10-20mg q1h PRN
7. Increase the dose after 4 dosage intervals or at least daily until pain is well controlled. This of course requires daily monitoring of patients by the physician, nurse and family.
8. When the patient has stabilized, switch to a sustained-release preparation, at an 8-12 hourly interval for best control and ease of administration. The breakthrough dose should always be of the same immediate-release opioid.

9. Remember to take a preventive approach to managing side effects as described below.
10. Adjust the dose of morphine and place the patient on PRN immediate-release morphine if the patient is in severe renal failure or in liver failure.

**IMPORTANT:** Remember that opioid refills must be by written or verified faxed prescription.

### Breakthrough Pain

- ❑ Transitory flares of pain, called “breakthrough pain,” can be expected both at rest and during movement.
- ❑ When such pain lasts for longer than a few minutes, extra doses of analgesics, i.e. breakthrough or rescue doses, will likely provide additional relief.
- ❑ To be effective and to minimize the risk of adverse effects, consider an immediate-release preparation of the same opioid that is in use for routine dosing.
- ❑ When methadone or transdermal fentanyl is used, it is best to use an alternative short-acting opioid, e.g. morphine or hydromorphone, as the rescue dose. It is possible to use sublingual fentanyl (see section on Incident Pain for guidelines).
- ❑ As peak analgesic effect correlates with peak plasma concentration (C<sub>max</sub>), a breakthrough dose can be offered once C<sub>max</sub> has been reached.

### Breakthrough Dose Guidelines

1. For each breakthrough dose, offer 5% to 15% of the 24-hour dose.
2. Codeine, hydrocodone, morphine, oxycodone, and hydromorphone all behave similarly. And therefore, **an extra breakthrough dose can be offered:**
  - ❑ ONCE EVERY 1 HOUR if administered ORALLY, or possibly less frequently for frail patients,
  - ❑ EVERY 30 MINUTES if administered SUBCUTANEOUS OR INTRAMUSCULAR
  - ❑ EVERY 10 TO 15 MINUTES if administered INTRAVENOUSLY. Longer intervals between breakthrough doses only prolong a patient’s pain unnecessarily.
3. Fentanyl: see below

## Transdermal Fentanyl: Guidelines for Use

- Transdermal fentanyl is a relatively new and effective way of delivering potent opioids. The guidelines for the patch are well described by the manufacturer. There are a few issues to note:
  - Fentanyl patches are not recommended unless the prescriber is very comfortable with handling strong opioids.
  - Dosage equivalence guidelines that are recommended by the manufacturer are rough guidelines only and it seems response is very individualized as it is to all strong opioids. These are the current recommended guidelines:

Recommended Initial Transdermal Fentanyl Dose			
Oral 24hour morphine (mg)	Transdermal fentanyl (µg/h)	Oral 24hour morphine	Transdermal fentanyl (µg/h)
45-134	25	585-674	175
135-224	50	675-764	200
225-314	75	765-854	225
315-404	100	855-944	250
405-494	125	945-1034	275
495-584	150	1035-1124	300

- Instructions for applying the patches should be followed exactly so that skin contact with the membrane is maximized.
- Dosage increases should usually only occur at 2-3 day intervals.
- It often takes at least 24 hours to reach a steady state after the patch is first applied and with dose increases.
- A significant skin depot remains after the patch is removed.
- In general this is not an appropriate way to manage severe escalating pain.
- The breakthrough dose generally should be of an oral strong opioid such as morphine or hydromorphone.
- However, breakthrough sublingual fentanyl (use the IV solution of 50µg/ml) in a dose of 10-50µg can be used every 30-45 minutes. It is effective usually within 15 minutes and lasts about 45 minutes.
  - These small volume doses must be measured out carefully by syringe or appropriate measuring spoon or device.
- A maximum dose of 300-400µg/hr is suggested.

## Finding the Right Dose – Severe Pain Emergencies

- Rapid pain escalation unusual but usually means something major is happening. e.g. impending fracture, intraperitoneal bleeding, etc.
- Titrate with parenteral drugs.
- Subcutaneous route best especially continuous infusion.

## Alternate Routes for Administration of Opioids

### Parenteral-Intermittent

Possible Indications for Parenteral Opioids	
<ul style="list-style-type: none"><li><input type="checkbox"/> Inability to swallow</li><li><input type="checkbox"/> Rapidly escalating pain</li><li><input type="checkbox"/> Intractable adverse effects such as nausea with oral opioids</li><li><input type="checkbox"/> Cognitive dysfunction</li></ul>	<ul style="list-style-type: none"><li><input type="checkbox"/> Compliance problems</li><li><input type="checkbox"/> Large doses of opioids with many tablets to swallow</li><li><input type="checkbox"/> Bowel obstruction</li><li><input type="checkbox"/> Severe stomatitis</li></ul>

1. Parenteral administration using intermittent injections can be very useful in selected patients over limited periods of time. If renal function is normal, provide routine parenteral bolus doses every 3-4 hours and adjust the dose every 12 to 24 hours once steady state is reached.
2. Doses are effectively the same for subcutaneous, intravenous, or intramuscular administration. Intermittent subcutaneous doses are much less painful and just as effective. Intramuscular injections are not recommended.
3. Either 25- or 27-gauge needles (butterfly type or specific subcutaneous infusion sets) can be used for both bolus dosing and infusions. The needles can be left in place for 7 days or more under a semi-permeable transparent dressing as long as there is no sign of infection or local irritation. Family members can be taught to administer medication and occasionally be taught to change needles and catheters.

### Parenteral-Continuous

1. If a parenteral route will be used for some time, continuous infusions may produce a more constant plasma level, reduce the risk of adverse effects, be better tolerated by the patient, and require less intervention by professional staff. Patient-controlled analgesia has been shown to be both effective and well tolerated by patients. They may allow an increased sense of control in some patients.
2. While intravenous infusions may be preferable if intravenous access is already established and in use for other medications, all opioids available for parenteral use may be administered subcutaneously. The discomfort associated with searching for an IV site or the risk of serious infection should limit the IV route. If the IV route is the route of choice, long-lasting catheters should be used.
3. Occasionally, patients may develop induration and, rarely, necrotic ulcers at the site of subcutaneous injections or infusions. This problem will interfere with absorption of opioid. The exact cause of this problem is uncertain. Adding small amounts of dexamethasone (e.g. 1-2 mg to a cassette or syringe) or using



antihistamines may be helpful. However, if the problem persists, switching to the IV route is necessary.

4. Continuous infusion devices should be standardized in communities so that implementation and maintenance is easiest for care providers.
5. Determining the dose rate:
  - Determine the 24h total dose of opioids.
  - Divide by  $\frac{1}{2}$  if oral.
  - Divide by 24 to get the hourly rate.
  - If pain not controlled,  $\uparrow$  by 25%.
  - Bolus dose generally  $\frac{1}{2}$  the rate q30min(2/h).
  - Use a concentration of opioid that is sufficient to deliver a minimum of 0.2ml/h.

### **Enteral**

1. Immediate-release opioids (liquids/crushed tablets) can be administered through enteral feeding tubes. Sustained release opioids in granular form can also be administered this way with flushing of the tube before and after administration.

### **Rectal**

- Opioids can be absorbed through the rectal route and special suppositories with immediate-release or sustained-release morphine or immediate-release hydromorphone are available.
- Some patients and/or families have difficulty with this route and absorption may not be as reliable as with the oral route.

### **Nebulized Opioids**

- Nebulized opioids are not effective in light of all the alternatives available.
- The intranasal route is an option but again there is little need in light of another options and patient tolerance.

### **Oral Transmucosal**

- The sublingual or transmucosal route may be useful for short periods of time while waiting for parenteral setups. The best drug is one that is lipophilic and so hydromorphone and fentanyl are best. Morphine seems at times to be effective by this route but this may be due to swallowing.

### **Intraspinal**

- Epidural or intrathecal opioids may be required in small numbers of cases.
- Opioids for this route should be preservative free.
- Opioids can be given by intermittent doses or by constant infusion.
- Indications include intractable pain or pain unresponsive to opioids usually at least below mid-thoracic area.
- Catheters should be tunneled under the skin to minimize the chance of the catheter being pulled out.

- Opioids are often combined with a local anesthetic such as bupivacaine for maximum relief.

## Specific Pain Problems and the Use of Adjuvant Medication

Adjuvant analgesics (or coanalgesics) are medications that, when added to primary analgesics, further improve pain control. They may themselves also be primary analgesics (e.g. tricyclic antidepressant medications for postherpetic neuralgia). They can be added into the pain management plan at any step in the WHO ladder.

### Neuropathic Pain and Complex Neuropathic Pain

1. The features of neuropathic pain have been described previously.
2. When pain is neuropathic there is good evidence for treating with adjuvant medication rapidly.
3. Always remember the potential of using radiotherapy, chemotherapy and surgery as adjuvant modalities with neuropathic pain but they should not replace drug adjuvants completely.
4. Epidural/subdural administration of opioids and local anesthetics should also be considered especially if pain is not responsive to other adjuvants.
5. An adequate trial of 2-4 weeks at full dosage should be tried for each drug.
6. Opioid responsiveness is a continuum in neuropathic pain. Well-established neuropathic pain of long duration is generally most resistant to opioids. But, opioids may still work if higher doses are used.
7. No good evidence to suggest using cyclic antidepressants over anticonvulsants based on the presence of dysesthetic type pain or lancinating pain.
8. The selective serotonin reuptake inhibitors (SSRIs) have shown disappointing clinical efficacy as analgesics and are less effective as adjuvants to manage neuropathic pain than the tricyclic antidepressants
9. Early neuropathic pain may respond to dexamethasone probably by a mechanism of decreasing perineural edema.

Some Common Adjuvant Drugs for Neuropathic Pain			
Drug	Dose Range	NNT	Adverse Effects
<b>Cyclic Antidepressants</b>			
amitriptyline desipramine nortriptyline maprotyline	75-150mg h.s. p.o.	3	<ul style="list-style-type: none"> <li>• Dry mouth, constipation, sedation, confusion, urinary retention.</li> <li>• Cardiac arrhythmias with severe toxicity</li> <li>• Do not use with carbamazepine to avoid toxicity</li> </ul>
<b>Anticonvulsants</b>			
carbamazepine	200-300mg t.i.d./q.i.d.	3	<ul style="list-style-type: none"> <li>• Nausea, sedation.</li> </ul>
valproic acid	250mg t.i.d/q.i.d.	3	<ul style="list-style-type: none"> <li>• Sedation</li> </ul>
gabapentin	300-800mg q.i.d	3	<ul style="list-style-type: none"> <li>• Some sedation</li> <li>Ataxia at higher doses.</li> </ul>
<b>Local Anesthetics</b>			
mexiletine	200 mg q.i.d.	4	Frequent GI side effects
<b>Corticosteroids</b>			
dexamethasone	2-4mg q.i.d.	?	<ol style="list-style-type: none"> <li>1. Gastritis &amp; gastric ulceration</li> <li>2. Diabetes</li> <li>3. Oral candidiasis.</li> </ol>

### Incident Pain and Bone Pain

1. Bone pain from cancer metastases is exceedingly common. Bone metastases are a significant source of morbidity with decreased mobility and function and pathological fractures.
2. Bone pain is well localized, dull and constant in character with sharp flares with movement or pressure (incident pain). There may also be associated muscle spasm. Bone pain is often worse at night.
3. Incident pain can be defined as an intermittent exacerbation of pain triggered by movement, weight bearing or increased pressure or procedures such as dressing changes.
4. May get incident pain at times from other sources such as nerves tethered by tumour, large tumours that cause pressure phenomena on movement or with upright posture or sensitive skin edges on skin ulcers.

5. Need to consider all therapeutic options including radiation, chemotherapy and surgery and add appropriate assessments for behaviour modification, support surfaces, and for aids from an occupational therapist.

<b>Therapeutic Options for Incident Pain</b>			
<b>Therapeutic Approach</b>	<b>Description</b>	<b>Advantages</b>	<b>Disadvantages</b>
Radiation	Single point/ multiple points Hemibody radiation radiopharmaceuticals	Fairly rapid response. Reduce tumour size & stabilize bone.	Access & transport may be a problem. Limits to radiation to each area.
Chemotherapy	Dependent on tumour type	Reduce tumour involvement & stabilize bone.	Slow response.
Opioids	Increase dose until some signs of toxicity.	Will control rest pain.	May not relieve incident pain without unacceptable side effects.
Breakthrough Opioids	Multiple routes.	If given before movement, can reduce pain. Quickest response to sublingual fentanyl.	Slow response to oral and SC routes.
Surgery	Sophisticated surgery to stabilize bones or spine.	Long-term relief.	Patient must be fit for surgery.
Coricosteroids	Dexamethasone preferred	Inexpensive Rapid response	Long-term adverse effects. Response often short-term.
Bisphosphonates	Pamidronate Clodronate (Oral or IV)	Easy to administer IV. Low toxicity. Oral clodronate often poorly tolerated.	Response limited to certain cancers (breast, myeloma)- use in other tumours unproved efficacy. Response may be limited in amount & duration. Expensive.

<b>Drug Options for Incident Pain</b>			
<b>Opioids</b>	Fentanyl	10-50µg sublingual 10-15 minutes prior to procedure or movement. Can be repeated if not effective in 10 minutes.	Need careful administration using small syringe or appropriate measuring device. Lasts up to 45 minutes. Dose not dependent on dose of other opioids.
	Morphine Hydromorphone Oxycodone	Usual breakthrough dose before movement or procedure: 1h. oral ½h s.c ¼h IV	May produce peak adverse effects. Limited flexibility.
<b>Bisphosphonates</b>	Pamidronate	90-120mg IV q3- 4wk.	Relatively expensive. Can be administered at home.
	Clodronate	500-1000mg q.i.d. p.o.	Medication must be taken on an empty stomach.
	Clodronate	1000-1500mg IV q-3-4wk.	Can be administered at home. Less expensive than pamidronate.
<b>Corticosteroids</b>	Dexamethasone	4mg. 2-4 times/day	Long-term use associated with adverse effects.
<b>NSAIDs</b>	See previous list.	See previous list.	No clear evidence that any more effective in bone pain or incident pain than other types of pain.

### **Bowel Obstruction**

1. Relatively common complication of multiple intra-abdominal malignancies.
2. Mechanical bowel obstruction, due to internal blockage from constipation or external compression by tumor or adhesions, can lead to significant abdominal pain as the bowel wall is stretched or inflamed.

3. The pain is frequently described as constant, sharp, and cramping. It may be associated with considerable bloating, distention, gas, or even nausea/vomiting.
4. Relief of constipation or surgical removal or bypass of external blockages may be definitive; in some patients, the obstruction will be irreversible.
5. Most patients will find the abdominal pain associated with bowel obstruction to be distressing.
6. While some people will find opioids sufficient to manage this pain, many will need adjuvant medications to effectively relieve their discomfort.
7. Corticosteroids or NSAIDs may be helpful.
8. Anticholinergic medications (e.g. scopolamine) or octreotide will reduce the volume of fluid entering the intestine, thus relieving the bowel wall stretch and the pain.
9. Crampy pain may be alleviated by loperamide or diphenoxylate.
10. Early consultation with a pain management expert can reduce patient distress even when awaiting definitive intervention.

### **Tenesmus**

1. Can be a consequence of rectal tumours or radiation proctitis.
2. Opioids may be helpful.
3. Calcium channel antagonists such as nifedipine may be helpful.
4. Injection of botulinum toxin into anal muscles is being investigated as an option.

### **Nerve Blocks and Ablative Neurosurgical Procedures**

1. Nerve blocks, epidural blocks and ablative neurosurgical tractotomies may be effective in pain management.
2. Such procedures may be associated with return of pain after a number of months so that timing of procedures may be important.
3. Celiac plexus block at the time of surgical procedures, particularly pancreatic procedures may be effective in preventing pain or reducing pain.

### **Intractable Severe Pain Syndromes**

1. Rarely a patient will have pain that is totally intractable to good control.
2. This type of suffering is difficult for patient, family and care providers.
3. Counselling services must be available.
4. Consultation with pain management experts must be sought.
5. Terminal sedation may be the only option close to death.

### **Evaluation**

1. Pain outcomes must be evaluated in each patient.
2. The outcomes to be evaluated include:
  - Pain level.
  - Adverse effects of medication.
  - Patient and family knowledge of and participation in pain management.
  - Development of other pains.

- Monitoring for progression of pain that may signal complications such as impending fracture or spinal cord compression.
- 3. The care plan should specifically state a monitoring plan by the interdisciplinary team.
- 4. Access to care providers should be on a 24-hour per day basis.
- 5. Programs, agencies and institutions should regularly evaluate pain management against set standards.

## Case Scenario

### JONATHAN – GENERAL PAIN

#### PART 1

Dr. James Wills  
1001 Main St. E.  
Bradford ON L4G 7G5

#### **Re: Mr. Jonathan Semple**

Dear Doctor Wills:

Please see this pleasant 69-year-old gentleman regarding his palliative care needs. I first saw him in January of 1996 after he presented to Dr. Campbell with hematuria. Biopsy showed adenocarcinoma. At surgery we found lymph node metastases and the planned prostatectomy had to be abandoned. Since then he has had an orchidectomy and hormonal treatments.

He did well until about one month ago when he came in with abdominal discomfort. His PSA is now 467, and the CT shows multiple pelvic mets, mild ascites, and liver mets. Bone scan shows multiple bone mets. in his thoracic spine, R. Femur, and R. lateral ribs and shoulder.

Percocet seems to control his pain.

Thank you for seeing him

Dr. Harold Henry, MD, FRCP (Urol)

HH/tb

CC: Dr. Wm. Campbell, CCFP, Bradford



# JONATHAN – GENERAL PAIN

## PART 2

The loud barking of a dog begins as you approach the steps of the modest home in the old part of Aurora. It gets louder after you ring the doorbell. Moments later an elderly, tired looking man opens the door. The dog charges out, but is quickly satisfied that you aren't a threat. "Down, Max, bad dog. Sorry doctor, I don't have the energy to control him anymore. Please come inside so I can close the door."

"Thank you. I'm Dr. Wills. Are you Mr. Semple?"

"I am. It's good of you to come. I'm sorry I took so long to come to the door. My wife and daughter went out for the afternoon to do some shopping, and it takes me a while to get moving these days."

He indicates a chair for you to take at the kitchen table where the newspaper is open at a partly completed crossword. The house is comfortably furnished, and family pictures are everywhere.

"Dr. Henry sent me a letter summarizing your situation, and asked me to see you. I'm sorry to hear about all your trouble."

"Oh, that's all right, doctor. I've kind of adjusted to it now, I think. I knew trouble was coming sooner or later when they said they couldn't get the cancer out. It was just a matter of trying to enjoy every day till it caught up with me. Now I think it would be better if I could just get on with it. Life's hardly worth living when you feel lousy all the time."

"It sounds like you're feeling pretty rotten. Are you having pain?"

**At this point, your facilitator will take you through a role-playing exercise to get the history of Jonathan's pain.**

## PART 3

"It sounds like you're feeling pretty rotten. Are you having pain?"

"That's the main problem. I've got a steady, sickening pain, like an ache, in my right side around toward the back, and up under my ribs, and a constant discomfort, not really a pain, all over my belly. I feel sick to my stomach most of the time, but I don't throw up. The oxycocet helps a bit, but I still always have some pain."

"How much oxycocet are you taking?"

“I take one or two every four hours, like Dr. Henry said. Probably 12-15 a day. Isn't that a lot?”

“It is quite a lot. We may want to try something else. Any other problems?”

“I'm constipated, even though I'm taking the laxatives.”

“Anything else?”

“I feel a bit sick to my stomach, but I haven't been throwing up. My ankles are swollen, and I feel tired all the time.”

“Are you on any other medication?”

“I get a shot every month for the cancer. I take lorazepam 1 mg. every night to help me sleep, and senekot and colace, one pill of each twice a day.”

Your physical exam shows a pale, thin elderly man who moves about with some obvious discomfort, but is nevertheless cheerful and seems pleased to have your company. He has bony tenderness in his right chest, shoulder, and femur. Abdominal exam shows a large liver (slightly tender) and some distension suggesting ascites.

## **PART 4**

You phone him to follow up three days later. He reports that he is feeling much better with the changes you recommended. You both agree that a return visit is not necessary, but that he will call if he feels he needs you.

Two weeks later you receive a call at your office from Mrs. Semple. “Doctor, Jonathan asked me to call you to let you know what has happened. He was out walking the dog on Saturday when he got a terrible pain in his hip. We took him to the hospital, where they said he had a fracture from the cancer. He's in Toronto now. They operated to fix the hip. He thinks he'll be home in a few days. He's getting some radiation now.”

“I'm very sorry to hear about that. It sounds like he's received all the best care, though. I'll look forward to seeing him when he gets back. Will you call me as soon as he comes home?”

“I will, Doctor. Thanks very much.”

One week later you see him at home. Mrs. Semple greets you at the door.

“Thank you for coming today, Doctor. He's so tired after the trip yesterday. He hasn't even got out of bed. He's awfully discouraged.” She escorts you to the bedroom.

“Hello, Mr. Semple. It's good to see you back home.”

“Thanks, Doctor. It's good to be here. I wasn't sure I was going to make it. It sure beats being in hospital.”

“How are you feeling?”

“Lousy. I’m so weak. I can’t do anything for myself. My poor wife has to take time off work to look after me. I hate what’s happening here. I feel so useless.” His eyes begin to fill up. “I hope I’ll feel stronger in a few days. But I’ve still got a lot of pain. The sleeping pills aren’t working anymore either. Can you help me, doctor? I don’t want to keep living like this.”

“ I’ll do my best. There are probably a few things we can do to make you feel better. May I see the medications you’re taking?” You check the vials and find that he is on long acting morphine 30mg po q8h, breakthrough morphine 5mg q2h prn (taking 6-8 tablets a day), lorazepam 1mg qhs, Zoladex s/c q12 weeks, senekot 3 tabs bid, and colace 2 tabs bid.

“Can you tell me about the pain please, John?”

“It’s the same dull ache I used to have in my side. But also I have constant pain in my right thigh, my chest on the right side, and my right shoulder. They are all worse when I move, and quite sharp. Sometimes I can hardly stand it. I’m taking a lot of the Breakers...about 6 a day...but I’m still having pain.”

## **PART 5**

One month later, on your weekly visit, Mrs. Semple says, “I didn’t call you because I knew you were coming today, but lately he hasn’t been making sense sometimes. Yesterday he got mad at me because I tried to tell him we weren’t in France! He’s never been to France in his life!”

“Oh boy. Let’s go and talk with him.”

Your patient greets you cheerfully as you enter his room. He still looks sick, but appears comfortable in his chair. He seems alert and oriented, and his conversation is appropriate.

“ How are you today, John?”

“Feeling OK, thanks, doctor.”

“Any pain?”

“Nope. It’s pretty good now. I haven’t been having trouble with pain now for quite a while.”

“Actually, John,” says Mrs. Semple, “It’s been several weeks since he had the bad pain. Now he just gets some pain when he moves around.”

“That’s great. Have you had any hallucinations, John?”

“No. I don’t think so. What do you mean?”

“Do you see things that aren’t really there?”

“No.”

“Now John,” says Mrs. Semple, “Remember yesterday when you were telling me you were in France.”

John looks puzzled. “I was in France. I must have just got back.”

You decide to step in. “John, have you ever noticed that it seems like someone is in the room with you, but when you look around there’s no one there?”

“You know, doctor, now that you mention it, I have had that feeling. Quite a few times lately. Is that what you mean by a hallucination?”

“Yes. That, and your trip to France.”

## **EPILOGUE**

The next day Mrs. Semple phones you to say that he appears to be much better, with no more confusion or hallucinations.

In the ensuing three weeks, however, he becomes much weaker, gradually spending more and more time in his bed. His need for morphine diminishes, and he becomes dehydrated. He sleeps almost constantly near the end, and finally dies with his wife at his side one evening.

## CASE 2

### JONATHAN – GENERAL PAIN

#### LEARNING OBJECTIVES

**After working in a group with this case, participants will be able to:**

1. Describe the prevalence of pain in cancer and other terminal illness.
2. Describe the components of a pain history.
3. Describe a classification of pain.
4. List the basic principles of pain management.
5. Discuss the use of opioids in cancer pain, including the pharmacology, classification, effective use, and routes of administration.
6. Manage opioid toxicity.
7. Manage common side effects of opioids in palliative patients.
8. Use adjuvant agents for pain in palliative patients.
9. List other useful modalities in the management of pain (e.g. chemo, radiation)
10. Discuss ethical issues in pain management.
11. Describe a process of monitoring pain management.
12. Discuss the diagnosis and treatment of depression in palliative patients.
13. Discuss the diagnosis and management of oedema in palliative patients.
14. Discuss the management of insomnia in palliative patients.
15. Discuss the management of incident pain in palliative patients.

## **SESSION 2**

### **CASE 2**

#### **JONATHAN – GENERAL PAIN**

##### **Facilitator's Guide**

**For this case, the pages are to be given to the participants one at a time, with discussion to be completed on each page prior to release of the next.**

##### **Part 1**

Be sure that at some point a note is made of the doctor's organization of his practice to allow time for house calls. Do members of the group feel this is possible in their own practices? Do they make home visits to dying patients? Is this an essential part of good family medicine practice?

What does this letter lead them to expect when they visit the patient? What problems might need attention?

##### **Part 2**

The end of this page leads to a role-play. As the facilitator, you should play Jonathan, using the role outline provided. A volunteer from the group will play the doctor, modeling the best possible pain history they can. If the volunteer gets stuck, a time-out may be called, so he can receive suggestions from the others, or another volunteer can resume the interview. No more than 15 minutes should be spent on this exercise.

The learning issue here is the taking of a complete and thorough pain history.

##### **Part 3**

##### **Some learning issues from this page:**

1. The cause(s) of the pain. (?liver enlargement, ?rib mets)
2. The cause(s) of nausea. (mets to liver?, oxycocet?)
3. The cause(s) of ankle oedema. Need to treat?

4. How much oxycocet is too much? Why? (10-12/day, acetaminophen toxic to liver).
5. What should be offered for treatment at this point? (antinauseant, stop oxycocet, start morphine, dexamethasone?, adjust laxative dose)

#### **Part 4**

##### **Some learning issues:**

1. How to manage his post-op pain.
2. Diagnosis and management of insomnia in palliative patients.
3. Diagnosis and management of depression in palliative patients.
4. Family dynamics: Mrs. Semple staying at home. Does she want to? Does she need to? Are there other options?
5. Management of incident pain.

#### **Part 5**

##### **Some learning issues:**

1. Recognition of opioid toxicity. What are some other symptoms? Why has it occurred now, in this case?
2. How to manage this situation.

## **CASE 2**

### **JONATHAN – GENERAL PAIN**

#### **Role Play – “Jonathan Semple”**

##### **Jonathan (Role to be played by the facilitator of the group)**

You have had cancer of the prostate since 1996. Your history is summarized in the referral letter. You are meeting a new physician for the first time. You aren't entirely clear why he is coming to see you, or what role he will play in your care. You have been quite satisfied with all of your medical care up until now. Your family doctor has said he would make home visits if you ask him to.

You are very attached to your home, your dog, and your family. You know that you have a life-limiting illness, but are hoping for as much time as you can get. You've been feeling “sick”, “lousy”, “rotten”, etc. lately, and you know that the cancer has spread to other organs. You know you want to stay at home as long as possible, but you don't know how long that might be, and that makes you worry.

You hate to complain, especially to doctors who tend to take things too seriously, and to make you have tests or go to hospital whenever they want to know more about your condition. This makes you want to be vague in your description of symptoms, and to minimize their severity.

Your pain is abdominal, on the first visit. You call it “uncomfortable, annoying, sickening” at first. When pressed for better adjectives, you call it “steady, aching, in my right side around toward the back, up under my ribs,” and indicate the region of your liver. Oxycocet relieves the pain only partially. At some point you express concern about how much you are taking: “two tablets every three hours, round the clock”.

You are also constipated and nauseated. Gravol makes you sleepy, so you don't take it. You take one senekot and one colace a day. Lorazepam 1mg qhs helps you sleep.



## **CASE 2**

### **JONATHAN – GENERAL PAIN**

#### **Role Play – “The Doctor”**

**Your goal in this interview is to obtain a thorough description of Jonathan’s pain.**

At the beginning of the scenario, you are seeing this patient for the first time. You know only the information provided in the referral letter below. You have taken the Ministry of Health course in palliative care, and are providing home-based palliative care to patients in your area. You see new referrals on Thursday afternoons, at time that you have always kept aside for home visiting.

## Session 2

### CASE 2

### JONATHAN – GENERAL PAIN

### ROLE PLAY

Dr. James Wills  
1001 Main St. E.  
Bradford ON L4G 7G5

#### **Re: Mr. Jonathan Semple**

Dear Doctor Wills:

Please see this pleasant 69-year-old gentleman regarding his palliative care needs. I first saw him in January of 1996 after he presented to Dr. Campbell with hematuria. Biopsy showed adenocarcinoma. At surgery we found lymph node metastases and the planned prostatectomy had to be abandoned. Since then he has had an orchidectomy and hormonal treatments.

He did well until about one month ago when he came in with abdominal discomfort. His PSA is now 467, and the CT shows multiple pelvic mets, mild ascites, and liver mets. Bone scan shows multiple bone mets. in his thoracic spine, R. Femur, and R. lateral ribs and shoulder.

Percocet seems to control his pain.

Thank you for seeing him

Dr. Harold Henry, MD, FRCP (Urol)

HH/tb

CC: Dr. Wm. Campbell, CCFP, Bradford