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Evidence-based Series 16-2 EDUCATION AND INFORMATION 2011

Cancer-Related Pain Management

*A Quality Initiative of the
Program in Evidence-based Care (PEBC), Cancer Care Ontario (CCO)*

Practice Guideline Report 16-2 was reviewed and put in the Education and Information section in September 2011. The PEBC has a formal and standardized process to ensure the currency of each document ([PEBC Assessment & Review Protocol](#)).

The reviewed report consists of:

- Section 1: Guideline Report Overview
- Section 2: Clinical Practice Guideline
- Section 3: Evidentiary Base
- Section 4: EBS Development Methods and External Review Process

and is available on the CCO Web site (<http://www.cancercare.on.ca>)
PEBC Nursing page at

<https://www.cancercare.on.ca/toolbox/qualityguidelines/clin-program/nursing-eb/>

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Evidence-based Series 16-2 EDUCATION AND INFORMATION 2011

Cancer-Related Pain Management

Guideline Report History

GUIDELINE VERSION	SYSTEMATIC REVIEW		PUBLICATIONS	NOTES AND KEY CHANGES
	Search Dates	Data		
Original version March 2008	2000-2006	Full Report	Web publication	Not applicable (NA)
Reviewed Version April 2012	N/A	N/A	Updated Web publication	Guideline ARCHIVED



Evidence-based Series 16-2 ARCHIVED 2011

Cancer-Related Pain Management

Guideline Review Summary

Review Date: September 2011

The 2008 guideline recommendations are

ARCHIVED

This means that the recommendations will no longer be maintained but may still be useful for academic or other information purposes.

OVERVIEW

Evidence-based Series History

This guidance document was originally released by the Program in Evidence-based Care (PEBC), Cancer Care Ontario (CCO) in 2008. In September 2011, the PEBC guideline update strategy was applied, and the recommendations were archived. The Clinical Practice Guideline and Evidentiary Base in this version are the same as 2008 version.

Update Strategy

The PEBC update strategy includes an annual screening of our guidelines and if necessary, an updated search of the literature is completed with the review and interpretation of new eligible evidence by the clinical experts from the authoring panel and consideration of the guideline and its recommendations based on the new available evidence.

Impact on Guidelines and Its Recommendations

During the annual screening process, it was agreed that this document will no longer be maintained by PEBC therefore no update search was conducted. The 2008 guideline and its recommendations on cancer-related pain management have been [ARCHIVED](#).



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Evidence-Based Series #16-2: Section 1

Cancer-Related Pain Management: A Report of Evidence-Based Recommendations to Guide Practice

Cancer-related Pain Management Working Panel

A Quality Initiative of the
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

Report Date: March 17, 2008

QUESTION

What are the evidence-based recommendations for the management of cancer-related pain that guide the practice of health care providers?

Recommendations focus on:

- Assessment of pain
- Assessors of pain
- Time and frequency of assessment
- Components of pain assessment
- Assessment of pain in special populations
- Plan of care
- Pharmacological intervention
- Non-pharmacological intervention
- Documentation
- Education
- Outcome measures

METHODS AND EVIDENCE

The Cancer-related Pain Management Working Panel identified eight relevant and high-quality pain guidelines listed below. From these guidelines, the Panel articulated core principles of the management of cancer pain and selected or adapted specific recommendations through consensus to become a part of the cancer-related pain guide for practice.

1. Control of Pain in Patients with Cancer: Scottish Intercollegiate Guidelines Network, 2000.
2. The Management of Persistent Pain in Older Persons: American Geriatrics Society, 2002.
3. Assessment and Management of Pain: Registered Nurses Association of Ontario, 2002.

4. Clinical Practice Guidelines for the Psychosocial Care of Adults With Cancer: National Breast Cancer Centre and National Cancer Control Initiative, Australia, 2003.
5. Cancer Pain Management Manual: Canadian Association of Nurses in Oncology (CANO-ACIO), 2004.
6. Guideline for the Management of Cancer Pain in Adults and Children: American Pain Society, 2005.
7. Accreditation Pain Standard; Making It Happen: Canadian Pain Society, 2005.
8. Best Practice Guidelines for the Management of Cancer-Related Pain in Adult: Cancer: Care Nova Scotia, 2005.

UNDERLYING PRINCIPLES OF THE MANAGEMENT OF CANCER PAIN

1. *Expectation of Patient-centered Care and Family-centered Care*

Patient-centered care is integral to ensuring the quality of pain management. Patient-centered care has been defined as “an approach that consciously adopts the patient’s perspective about what matters” (1). It includes the elements of respect for the patient’s values, preferences and needs; coordination and integration of care; information, education and communication; physical comfort; emotional support; involvement of family and friends; transition and continuity; and access to care.

Similarly, family-centered care ensures the health and well being of a patient of any age, and their family, by recognizing the patient and their family as important partners in the assessment, planning, delivery, and evaluation of health care. Therefore, the principles of providing family-centered care include respect for:

- the patients’ and families’ culture, values, beliefs, knowledge, perspectives, and choices and,
- their need to participate, collaborate, and communicate in the care and decision making, made in the best interests of the patient.

We know we are practising patient and family centered care when patients and families report that they:

- had opportunities to discuss the things most important to them,
- felt listened to and respected and received meaningful information and,
- received personalized and meaningful care.

and health care professionals document and report:

- patients’ and families’ perspectives, hopes, and plans,
- actions taken to address patients’ concerns and hopes and,
- patients’ and families’ evaluation of the quality of care provided (2).

2. *Care is Individualized for Each Patient*

This document is a consensus statement that integrates the major guiding principles of palliative care when assessing and managing pain. Because the authors of this document recognize the importance of preserving a patient’s dignity, the impact of emotional, cultural, and spiritual issues that may contribute to the patient’s experience of total pain are given full consideration (2).

3. *Need for Interdisciplinary Team*

People with cancer-related pain have many needs, and it takes a dedicated team to address them. Although the typical team starts with the physician and nurse, many other health professionals can help the patient, the pharmacist may be the one individual best prepared and informed to address medication-related issues. The social worker, spiritual care provider,

psychologist, and other counsellors are involved in psychosocial supportive care. In addition, occupational therapists and physiotherapists can be important team members for some patients. Specialists may already be involved in patient care or may be needed, on referral, for specific interventions. Many other caregivers, professionals, and volunteers can be helpful. The team may be as unique as the needs of each individual patient. Clear communication is imperative, as people from various backgrounds may be involved in the care team. Most important, however, is the involvement of the patient and family in the team.

4. *Recognition of Variation in Patient Experience*

The pain experience includes an individual's perception of pain, evaluation of the meaning of pain, and response to pain. The perception of pain refers to whether an individual notices a change in the way he or she usually feels or behaves. A person evaluates their symptoms by making judgements about the severity, cause, treatability, and effect of such symptoms on their lives. Responses to pain include physiological, psychological, sociocultural, and behavioural components. A person's response to pain is determined by their age, cognitive abilities, cultural background, and previous experience and exposure to pain. Understanding the interaction of these components of the pain experience is essential if the pain is to be effectively managed. Additional information about and descriptions of different populations are discussed in Section 2: Evidentiary Base (page 7).

RECOMMENDATIONS

Assessment of Pain

1. The most reliable indicator of pain is the patient's self-report.
2. For effective pain control, the physical, functional, psychosocial, and spiritual dimensions should be assessed.
3. Validated assessment tools need to be used and need to be age and population appropriate.
4. Valid assessment tools are listed in Section 2: Appendix A (list of population-specific tools and descriptions)

Assessors of Pain

1. Patient self-report
2. Proxy report from the family or caregiver
3. Health care professional for in-depth assessment of patient's pain
4. A specialized pain team for complex pain assessment,

Timing and Frequency of Assessment

1. All patients with cancer-related pain need to be screened at each encounter with a health care professional and at least once per shift for inpatients in acute care settings. Patients with cancer-related pain in long-term care settings should be screened for pain in the same way. Pain should be monitored before, during, and after procedures which might induce discomfort or pain.
2. When a change occurs in the patient's pain or when a new pain occurs, the comprehensive pain assessment and diagnostic evaluation should be repeated
3. Sudden onset of severe pain in patients with cancer should be recognized by all health professionals as a medical emergency, and patients should be seen and assessed immediately.

Components of Pain Assessment

1. The preferred pain screening tool is the Edmonton Symptom Assessment System (ESAS; see Section 2: Appendix B), but assessment tools also need to be age and population appropriate (see Section 2: Appendix A).
2. A comprehensive pain assessment should assess the intensity, distress, and meaning of pain and should include:

Pain Information

- Location of the pain (diffuse or localized, point to location[s])
- Characteristics of the pain (descriptive words, e.g., burning, throbbing, sharp, aching)
- Temporal component of the pain (e.g., onset, duration, variation, pattern)
- Pain intensity—use a patient appropriate measurement tool
- Exacerbating and alleviating factors (what makes it better or worse)
- History of the pain, including response to medications (and adverse effects)

Patient Information

- Current pain medications, past pain medications (effectiveness)
- Current and past treatments for pain (physiotherapy, occupational therapy, chiropractic therapy, acupuncture, heat, cold)
- Associated symptoms (nausea, vomiting, constipation, sweating, tiredness)
- Cognitive impairment and memory deficits
- Presence of psychosocial distress, and other factors that affect the pain experience
- Cultural, family, and religious beliefs and practices that affect pain
- Social history (psychosocial impact of the pain on family, work, social life)
- Family history (mental illnesses, alcoholism)
- Results of physical exam, lab investigations, and diagnostic imaging
- Level of function; how does the pain impact upon the patient (Activities of Daily Living Scale, performance status, mood, sleep patterns, mental concentration)
- Fears or concerns about pain and medications; financial concerns; patient and family educational needs

Assessment of Pain in Special Populations

1. Use appropriate strategies to assess pain in special patient populations, including the very young and the very old, the cognitively impaired, known or suspected substance abusers, and non-English-speaking persons (see Section 2: Appendix A for a list of assessment tools).

Plan of Care

1. Establish a written plan for pain management, in collaboration with other interdisciplinary team members, that is consistent with individual and family goals for pain relief, taking into consideration the following factors:
 - assessment findings
 - baseline characteristics of pain
 - in pediatrics, the words and/or behaviours most commonly used or displayed by the patient to either describe and/or indicate that they may be in pain
 - physical, psychological, and sociocultural factors shaping the experience of pain
 - etiology
 - most effective pharmacological and non-pharmacological management interventions
 - current and future primary treatment plans

2. All patients, family members, and caregivers should receive a written pain management plan that includes information about:
 - the cause of the patient's pain
 - the types and rationale for analgesic medications
 - specific instructions on how to dose and titrate analgesic medications
 - instructions on how to manage analgesic side effects
 - instructions for the storage and safe keeping of medications
 - instructions for filling and renewing prescriptions for analgesic medications
 - whom to call if pain is not relieved or increases in intensity or if side effects occur
 - when and how to use non-pharmacologic approaches for pain management
 - realistic goals, expectations of pain control and timelines
3. Because the plan needs to be updated upon reassessment:
 - reassess the patient at regular intervals after initiating the treatment plan
 - reassess with each new report of pain
 - determine the patient's level of adherence to the pain management plan
 - once other therapies (i.e., radiation therapy and co-analgesics) have been implemented and are determined to be effective, reassess the patient for a change in opioid requirements that may include opioid reduction

Pharmacological Intervention

1. Cancer pain management may require the use of non-opioids, opioids, and co-analgesics.
2. A key principle for pharmacological pain management is to titrate the analgesic dose to achieve the desired pain relief, while minimizing unwanted side effects.
3. Always base the treatment of cancer pain on the severity and analgesic history of the pain the patient reports.
4. Selection of appropriate analgesics, dosages, and routes depends on multiple factors, including the following patient considerations:

Pain Intensity

- Mild pain may be managed with a non-opioid alone.
- Mild–moderate pain may be managed with any opioid but is usually managed with an opioid–non-opioid combination such as codeine or oxycodone, combined with a non-opioid such as acetaminophen.
- Moderate–severe pain is usually managed with a strong opioid agonist that can be titrated upward as needed with non-opioid adjuvants.

Patient Age

Younger patients (with no major organ failure): any opioid agonist

- Oral or intravenous (IV) is the preferred route for medication administration. Subcutaneous and intramuscular injections and rectal formulations are not recommended due to their uncomfortable and invasive administration.
- Rectal formulations are contraindicated in children who are thrombocytopenic or neutropenic, because of the risks of bleeding and infection.
- Transdermal patches are not widely available in pediatric doses and therefore are not recommended for use in children. Cutting or tampering with patches in an effort to alter the pediatric dosage and/or absorption can result in serious dosage inaccuracies and is definitely not recommended. In addition, febrile children exhibit greater drug absorption of transdermal preparations.

Elderly and Pediatric patients (especially those with major organ failure)

- Opioids with a short half-life are recommended (e.g., morphine, hydromorphone, oxycodone).
- Use opioids with a long half-life with caution (e.g., methadone).
- Avoid opioids with active metabolites (e.g., meperidine, propoxyphene).

Comorbidities

For the patient with significant hepatic and/or renal dysfunction, consider consulting with a pharmacist and/or physician about analgesic selection and dosing. Be advised that the medications will be absorbed differently from that seen normally. Patients with previous upper gastrointestinal bleeding, hypertension, and renal function impairment should use non-steroidal anti-inflammatories (NSAIDs) with caution.

Hepatic failure

- All opioid drugs are metabolized by the liver
- Liver disease: opioid clearance decreased; bioavailability and half-life increased
- May increase adverse effects, because of higher-than-expected plasma concentrations
- Metabolism of morphine and methadone: not significantly altered in liver disease
- Reduce the total daily dose or avoid the use of acetaminophen if the patient has liver disease or a history of moderate-to-heavy alcohol intake

Renal disease

- May accumulate the active metabolites of meperidine (normeperidine), propoxyphene (norpropoxyphene), morphine (orphine-6-glucuronide [M6G], morphine-3-glucuronide [M3G], and normorphine), and hydromorphone (hydromorphone-3-glucuronide)
- High levels of M3G may interfere with analgesia and cause hyperalgesia and myoclonus in some patients (such as those with renal insufficiency) (3)
- M6G may contribute to a substantial part of the analgesia in long-term oral morphine therapy.
- Hydromorphone-3-glucuronide (H3G) may have adverse neurostimulant properties; use hydromorphone cautiously in renal failure patients **Error! Bookmark not defined.**
- Transdermal fentanyl may be the opioid of choice (should not be used in the opioid-naive patients); oral methadone may be considered as an alternative due to its lack of active metabolites and dual route of excretion
- Normeperidine causes central nervous system (CNS) stimulation that may lead to seizures. Meperidine should not be used in patients with renal insufficiency

Concurrent Drugs

Drug interactions

- A medication history is necessary to determine concurrent drug therapy; modify the medication choice if a potential interaction is identified.

Prior Treatment Outcomes

The medication history should include any previous experience with the drug, including:

- Unmanageable side effects; explore whether the side effects were actually unmanageable or simply unmanaged.
- True allergy to an opioid is extremely rare. Itchiness/rash is a side effect of opioids.

- If intolerable and/or unmanageable side effects occur, switch to another medication.
- Patients who demonstrate substance dependence require frequent assessment and tighter control over prescribing.

Patient Preferences and Convenience

- Respect the patient's preferences (e.g., for the choice of opioid, route of administration, scheduling of doses) whenever feasible.
- Preferences may be based on myths and misconceptions; ensure the patient has accurate information, including an accurate understanding of pain management.
- Make the opioid treatment regimen convenient; this could improve patient compliance with the treatment plan:
 - Use a long-acting opioid in place of a short-acting opioid to reduce the number and frequency of pills taken, or consider the fentanyl transdermal patch.
 - Schedule opioid doses concurrently with other medications, if possible.

Cost

- The cost of medications and the amount of prescription insurance coverage can vary.
- Choose the less expensive opioids whenever possible.
- Single opioids in sufficient doses may provide adequate pain control and minimize cost.
- Consider options to minimize any cost to patients and family; non-adherence to the plan is possible if drugs are not affordable.
- Refer the patient or family to a social worker or patient assistance programs if they are unable to afford analgesic medications.
- All cancer-related pain treatment options should be offered to the patient, regardless of the cost or ability to pay.

Selecting the Appropriate Dosage and Routes

Use the simplest analgesic dosage schedules and least invasive pain management modalities:

- While the oral route is the preferred route for chronic pain and for acute pain as healing occurs, using the subcutaneous or intravenous route for immediate relief is appropriate.
 - Tailor the route to the individual pain situation and the care setting.
 - Intravenous or subcutaneous administration is the route of choice after major surgery (since an IV is usually in place) given via bolus and continuous infusion.
 - The intramuscular route is **not recommended** for adults, children, or infants because it is painful and unreliable.
5. If severe pain is anticipated postoperatively, routine rather than 'as requested' administration will be needed for a period of time.
 6. Opioids should be administered on an "around-the-clock" basis, according to their duration of action.
 7. Long-acting opioids are more appropriate when dose requirements are stable.
 8. Use the principles of dose titration specific to the type of pain experienced to reach the analgesic dose that relieves pain with a minimum of side effects, according to:
 - cause of pain
 - individual's response to therapy
 - clinical condition
 - concomitant drug use
 - onset and peak effect
 - duration of the analgesic effect

- age
 - known pharmacokinetics and pharmacodynamics of the drugs administered. Doses are usually increased every 24 hours for persons with chronic pain on immediate-release preparations and every 48 hours for persons on controlled-release opioids. The exception to this is transdermal fentanyl, which can be adjusted every three days.
9. Breakthrough doses should be available. Promptly treat pain that occurs between regular doses of analgesic (breakthrough pain), using the following principles:
 - Breakthrough doses of analgesic are dependent on the routine dose of the analgesic and the side effects experienced.
 - Breakthrough doses should be administered on an “as needed” basis, according to the peak effect of the drug and the route.
 - The same opioid for breakthrough pain should be used as that being given for “around-the-clock” dosing.
 - For individuals with chronic pain:
 - A short acting opioid should be available for breakthrough pain, the pain that occurs between the regular administration times of the “around the-clock” medication.
 - Breakthrough analgesic doses should be calculated as being 10 to 15 percent of the total 24-hour dose of the routine “around-the-clock” analgesic.
 - Breakthrough analgesic doses should be adjusted when the regular “around-the-clock” medication is adjusted.
 - Adjustment to the “around-the-clock” dose is necessary if more than two to three doses of breakthrough analgesic are required in a 24-hour period, and pain is not controlled.
 10. Consider opioid rotation (switching opioids) for patients who experience inadequate pain relief or an unacceptable level of side effects from a specific opioid that limits dose escalations.
 11. Use an equianalgesic table to ensure equivalency between analgesics when switching analgesics. Recognize that the safest method when switching from one analgesic to another is to reduce the dose of the new analgesic by 25-50%, depending on the clinical condition of the patient.

Safety and Efficacy

1. To prevent barriers to pain relief, health providers should know the difference between drug addiction, tolerance, and dependency.
 - *Addiction* is a primary, chronic neurobiological disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviours that include one or more of the following: impaired control over medication use, compulsive use, continued use despite harm, and craving.
 - *Physical dependence* is a state of adaptation that is manifested by a drug–class-specific withdrawal syndrome produced by abrupt cessation, rapid dose reduction, the decreasing level of the medication in the blood, and /or administration of an antagonist.
 - *Tolerance* is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug’s effects over time.
2. In patients with normal respiratory function, respiratory depression is usually not a clinically significant problem, even after initial doses of opioids. Patients with respiratory impairment (e.g., CO₂ retention, pneumonia, chronic obstructive pulmonary disease) are at greater risk for respiratory depression and must be monitored closely after receiving initial doses of opioid analgesics. Opioid treatment, however, should not be withheld from these patients

because of fear of respiratory depression. Patients receiving chronic opioid therapy usually develop a tolerance to the depressant effects of these agents within days to weeks.

3. Establish a protocol for the use of naloxone to manage opioid-induced respiratory depression.

Common Side Effects of Opioids

Health professionals should anticipate and monitor individuals taking opioids for common side effects such as nausea and vomiting, constipation, and drowsiness, and institute prophylactic treatment as appropriate, because the side effects of opioid analgesics can become a barrier to adherence and may be more distressing to individuals than the pain.

Co-analgesic Agents

- Co-analgesic drugs are important adjuncts in the treatment of specific types of pain.
- Co-analgesic drugs such as anticonvulsants and antidepressants provide independent analgesia for specific types of pain.
- Extra caution is needed in administering antidepressant and anticonvulsant drugs to the elderly, who may experience significant anticholinergic and sedative side effects.

Procedural Pain

- Treat pain prophylactically with appropriate analgesics.
- Provide safe, monitored procedural sedation to children and adults who experience distress from painful procedures associated with the diagnosis and treatment of cancer.
- Offer patients who decline to have procedural sedation non-pharmacologic interventions to decrease pain.

Non-pharmacological Intervention

- Combine pharmacological and non-pharmacological methods to achieve effective pain management, and base these on individual preference and goals of treatment.
- Promote access to and understanding of psychosocial oncology support services.
- Utilize health care professionals such as social workers or spiritual or religious care providers, who may assist in helping patients who are experiencing extremely stressful situations.

Specialized Interventions

If there is a complex pain problem, it is important to have access to a specialist for care such as palliative radiation, pulse chemotherapy, spinal infusion, nerve blocks, the implantation of drug infusion systems, bone stabilization, neurological ablation techniques, pain service, or terminal sedation.

Documentation

1. Documentation should include all components of a pain assessment, plan of care, intervention, the patient's response to pain intervention, and the education provided to the patient and family, as often as pain is assessed or changes occur.
2. Pain control diaries may be considered as a means of assisting patients and families to communicate with the interdisciplinary team (provided the patient consents).
3. Documentation needs to be accessible to all interdisciplinary team members involved in the patients' care.

Education

1. Clarify myths and misconceptions about pain and pain management and reassure patients and family caregivers that addiction and tolerance are not problems associated with effective cancer pain management.
2. Patients and family members and other informal health care providers should be offered information and education regarding the principles of pain and its management in order to promote their increased involvement in effective pain management.
3. Where possible, use appropriate teaching materials, particularly for low-literacy learners or where English is a second language.
4. Prepare clinicians, organizations, and health care professionals, through both basic and ongoing professional education, to assess and manage cancer pain effectively.

Outcome Measures

1. Implement a formal process to evaluate and improve the quality of cancer pain management across all stages of the disease process and across all practice settings. Outcomes that should be measured include the patient's perspective (pain levels, functional status, quality of life), the organizational perspective (direct and indirect costs, patient satisfaction, length of stay for pain control, re-admission rates), and the system perspective (hospital and home care costs).

RELATED GUIDELINES

Program in Evidence-based Care Evidence-based Series (EBS):

1. EBS 16-1 Managing Central Venous Access Devices in Cancer Patients
2. EBS 13-8 The Use of Gabapentin and Tricyclic Antidepressants in the Treatment of Neuropathic Pain in Cancer Patients

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3. Jovey Roman D, editor. Managing pain: the Canadian healthcare professional's reference. 2nd ed. Toronto (CA): The Canadian Pain Society; 2002.

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Evidence-Based Series #16-2: Section 2

Cancer-Related Pain Management: A Report of Evidence-Based Recommendations to Guide Practice: Evidentiary Base

Cancer-related Pain Management Working Panel

A Quality Initiative of the
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

Report Date: March 17, 2008

QUESTION

What are the evidence-based recommendations for the management of cancer-related pain that guide the practice of health care providers?

Recommendation domains of interest include:

- Assessment of pain
- Assessors of pain
- Time and frequency of assessment
- Components of pain assessment
- Assessment of pain in special populations
- Plan of care
- Pharmacological intervention
- Non-pharmacological intervention
- Documentation
- Education
- Outcome measures

INTRODUCTION

Cancer may be associated with many symptoms, but pain is the one most feared by patients. Pain is experienced by one third of patients receiving treatment for cancer and about two thirds of those with advanced cancers. Quality care is most often associated with the comprehensive assessment of symptoms, appropriate interventions, management of side effects associated with some interventions, and evaluation of whether the interventions are effective in controlling pain, from the patient's and family's perspective. Patient-centered care has been defined as "an approach that consciously adopts the patient's perspective about what matters" (1).

The reasons for unrelieved cancer-related pain are numerous and may include a lack of knowledge and skill on the part of health care professionals regarding pain assessment and management; misguided fears (of health professionals, patients, or family members), myths, and attitudes regarding the use of opioids; and myths and misunderstanding by the public,

patients, and family caregivers. Unrelieved pain due to these barriers affects all aspects of an individual's life; their physical functioning, emotional well being, and quality of life.

In 2004, Cancer Care Ontario in partnership with the Integrated Cancer Programs and several hospitals in Ontario implemented the Ambulatory Oncology Patient Satisfaction Survey (AOPSS). The AOPSS was based on earlier work by Picker et al (2) to assess the patient's experience with care. The Picker satisfaction tool was based on the following domains: Access to Care; Physical Comfort; Coordination and Continuity; Information, Communication, and Education; Emotional Support; Respect for Patient Preferences; and Overall Rating of Satisfaction. With respect to 'physical comfort,' there are specific items related to patients' experience with pain management. The items are: In the past six months, if you had pain, was it usually severe, moderate, or mild? and, Do you think the staff did everything they could to control your pain or discomfort? Twenty percent of the respondents reported they had severe pain, 43.5% reported moderate pain, and 36.5% reported mild pain. With respect to their experience of pain relief, 70% had complete relief, 25% had moderate relief, and 5% had none. What these data indicate is that there is room to improve cancer-related pain management for at least 30% of the cancer population.

The goals for pain management include relief of pain, prevention and alleviation of side effects of pain treatment, and enhanced quality of life. Integral to effective pain management is the recognition that pain is multidimensional and has not only physiological but also sociological, psychological, developmental, and cultural dimensions. People with unrelieved pain suffer greatly, as do their family members and professional caregivers.

There are a number of practice guidelines that have been developed for use by professionals to control cancer-related pain. The purpose of this document is to assess the existing guidelines in order to develop recommendations that can be applied in all environments in which people with cancer-related pain may be seen. Cancer Care Ontario's Cancer-related Pain Management Working Panel recognized the need for comprehensive guidelines for Ontario cancer programs that would be available to and used in multiple settings for different populations. The settings would include ambulatory clinics, hospital inpatient units, long-term care, and home care. The experience with cancer-related pain applies to children, adolescents, adults, the elderly, and those with developmental or cognitive impairments. This document describes the findings and recommendations developed by the Panel (Appendix C). The Panel included clinicians from the areas of nursing, palliative medicine, pediatrics, and pharmacy, in recognition of the fact that many professionals are involved in the management of cancer-related pain. The implementation of evidence-based practice in all environments by all professionals is essential to establish the best pain control for adults and children with cancer-related pain.

Symptom Management Conceptual Model

Cancer pain is a multidimensional issue that needs to be managed from a holistic perspective. To facilitate this approach, Dodd et al (3) provide a conceptual model giving direction for selecting clinical interventions or management strategies that can be applied to the practice setting (see Figure 1). The model is based on the premise that effective management of any given symptom or group of symptoms must consider the symptom experience, symptom management strategies, and outcomes. All three dimensions are interrelated. The symptom experience (i.e., pain) includes the person's perception of the symptom, evaluation of its meaning, response to the symptom, and self-report of that experience. Management strategies may be targeted at the individual, a group, a family, or the work environment. Strategies are dynamic and are modified by individual outcomes and the influences of the person, health and/or illness, or environmental spheres. Outcomes emerge from management strategies as well as from the symptom experience itself. Outcomes are multidimensional (i.e., functional status and quality of life) and may be related to each other as well as to symptom status. The

duration of symptom evaluation ultimately depends upon the response to treatment. The model continues to be applicable for as long as continued intervention is necessary.

Ultimately, individual members of the interdisciplinary health care team are accountable for promoting and upholding standards of care and practice, as well as for being able to track the results of their care to achieve quality outcomes. The outcomes of major concern for patients with cancer include symptom control, whether it is related to the cancer itself or to treatment-related adverse effects. Utilizing a symptom management model like the Dodd model captures the impact of symptoms and enhances clinicians' understanding of the experiences of patients. This model considers the thorough assessment of a given symptom within the context of related outcomes. More specifically, the model helps describe and measure the relationship between the symptom experience (frequency, severity, distress, duration, quality, aggravating factors, alleviating factors, and temporal pattern), symptom management strategies, and potentially related symptom outcomes (quality of life, emotional status, functional status, self care, mortality/morbidity, and costs). The model provides direction for selecting interventions and delineates cultural, disease-related, and individual differences in symptoms. This model can guide team members' practice in the home-care setting, community, ambulatory outpatient centre, cancer centre, hospital inpatient setting, and long-term care.

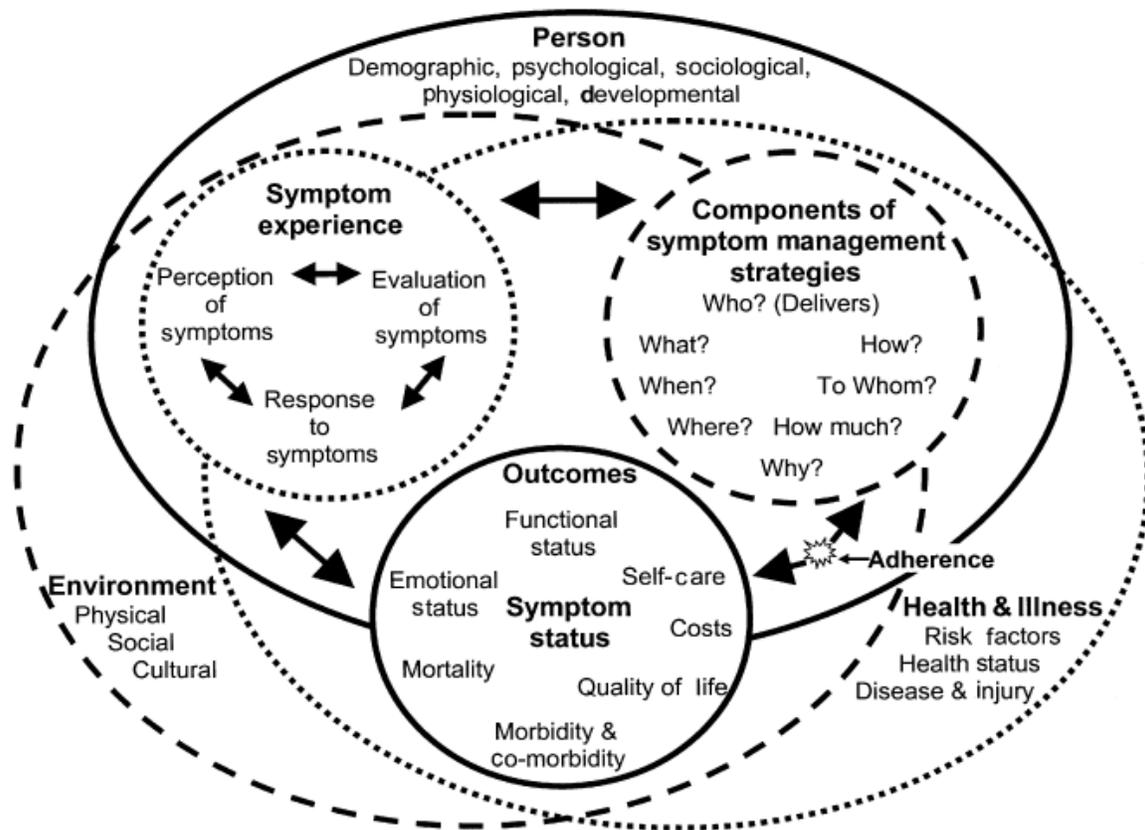


Figure 1.0 Revised Symptom Management Conceptual Model

With permission from: Dodd et al, Advancing the science of symptom management. J Adv Nurs. 2001;33(5):668-76.

METHODS

This systematic evidentiary review was developed by Cancer Care Ontario's Program in Evidence-Based Care (PEBC), using the methods of the Practice Guidelines Development Cycle (4). Evidence was selected and reviewed by 20 members of the PEBC Cancer-related Pain Management Working Panel.

This review is a convenient and up-to-date source of the best available evidence on cancer-related pain management. The body of evidence in this review is primarily comprised of guidelines from pain management groups and health institutions. That evidence forms the basis of the clinical recommendations developed by the Panel.

The Section 2: Evidentiary Base and companion Section 1: Recommendations are intended to promote evidence-based practice in Ontario, Canada. The PEBC is supported by the Ontario Ministry of Health and Long-Term Care through Cancer Care Ontario. All work produced by the PEBC is editorially independent from its funding source.

Environmental Scan

Unpublished sources were sought by conducting an Internet search for Canadian and international health organizations providing information on their cancer-related pain management guidelines, as well as searches for guidelines on the National Guidelines Clearinghouse, the Guideline International Network, and the McMillan Group. In addition, Panel members were polled about relevant guidelines or manuals known to them.

Literature Search Strategy

A literature search for published guidelines relevant to the topic of cancer pain management focussed on MEDLINE (OVID; 2000 through May 2006, Week 3), using the terms "pain", "pain management", "neoplasm", "pediatric", "aged", "guideline", and "practice guideline".

Inclusion Criteria

Both non-cancer and cancer-related pain guidelines published in or after the year 2000 were considered in this review.

Exclusion Criteria

Guidelines in a language other than English were excluded from the evidence review because resources were not available for translation services.

RESULTS: DATA SOURCES IDENTIFIED

Using the inclusion criteria, 25 guidelines were found for review. Those guidelines were then evaluated for the quality of the guideline and the utility of the guideline for the purposes of Ontario recommendations. The Panel used two methods to do the evaluation; the first was the Appraisal of Guideline Research and Evaluation (AGREE) Instrument (5). The purpose of the AGREE Instrument is to provide a framework for assessing the quality of the guideline, which includes judgements about the methods used for developing the guidelines, the content of the recommendations, and the factors linked to their uptake. Each guideline was evaluated by two or three Panel members. The results of the AGREE assessment of all guidelines can be found in Appendix D.

To decide whether a guideline contained information relevant to pain management, the Panel evaluated the domains included in each guideline. The evaluation included the target audience (nurses, physicians, or all health care providers), the environment for which the guideline was written (long-term care, cancer centre, inpatient hospital, ambulatory, or community), and the population for whom the guideline was written (elderly, adult, or pediatric).

Using these two criteria, the Panel chose eight guidelines to focus on, from which to extract information relevant for cancer-related pain recommendations of practice for Ontario. Those eight are described below in order of publication date.

Control of Pain in Patients with Cancer: Scottish Intercollegiate Guidelines Network (SIGN), 2000 (6). SIGN was formed to develop guidelines, based on a systematic review of the evidence by guideline development group members, to improve health care quality in Scotland. The Control of Pain in Patients with Cancer guideline was geared towards clinical staff and management and focuses on the adult population and locations of care other than long-term care facilities. The recommendations are rated on the levels of evidence and encompass the following areas: the education of professionals, patients, and family; the assessment of pain, psychosocial issues, and interventions; principles of pain management; and types of interventions.

The definitions of the types of evidence and the grading of recommendations used in this guideline originate from the United States (US) Agency for Health Care Policy and Research (AHCPR) (now the Agency for Healthcare Research and Quality [AHRQ]).

Grade of Recommendations:

- A Requires at least one randomized controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation.
- B Requires the availability of well-conducted clinical studies but no randomized clinical trials on the topic of recommendation.
- C Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities; indicates an absence of directly applicable clinical studies of good quality.

Clinical Practice Guidelines: The Management of Persistent Pain in Older Persons, American Geriatrics Society (AGS), 2002 (7). The AGS Panel of Persistent Pain in Older Persons wanted to update their previous 1998 guideline The Management of Chronic Pain in Older Persons. The recommendations are focussed on the elderly and older adults, rated on the quality of evidence used to make the recommendations, and targeted to clinicians, researchers, and policy makers. Specific recommendations are for the following issues: assessment of pain, pharmacological treatment, non-pharmacological strategies, and health systems that care for older persons

Some of the recommendations are based on the clinical experience and consensus of panel members, without scientific evidence. The rating of evidence is as follows:

Quality of Evidence:

- Level I Evidence from at least one properly randomized controlled trial.
- Level II Evidence from at least one well-designed clinical trial without randomization, from cohort or case-controlled analytic studies, from multiple time-series studies, or from dramatic results in uncontrolled experiments.
- Level III Evidence from respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Assessment and Management of Pain: Registered Nurses Association of Ontario (RNAO), 2002 (8). A panel of RNAO nurses with expertise in clinical practice and research in pain assessment and management identified, reviewed, and evaluated clinical practice guidelines to develop this nursing best practice guideline for the assessment and management of pain. The guideline targets nurses on an interdisciplinary team and rates the levels of evidence used to create the recommendations. Three large areas are covered: practice

recommendations (pain assessment and pain management), education recommendations (patient and family education, documentation, and nurse education), and organization and policy recommendations. The recommendations are relevant to several care settings and different ages of patients. The grading system used in this guideline has been adapted from SIGN (2000).

Grades of Recommendations:

- A Requires at least one randomized controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendations. This grade may include systematic review and/or meta-analysis of randomized controlled trials.
- B Requires the availability of well-conducted clinical studies but no randomized clinical trials on the topic of the recommendation. This includes evidence from well-designed controlled studies without randomization, quasi-experimental studies, and non-experimental studies such as comparative studies, co-relational studies, and case studies. The RNAO guideline development panel strongly supported the inclusion of well-designed qualitative studies in this category.
- C Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality.

Clinical Practice Guidelines for the Psychosocial Care of Adults with Cancer: National Breast Cancer Centre and National Cancer Control Initiative (NBCC-NCCI), Australia, 2003 (9). This guideline was developed to identify key themes in the provision of psychological care that could be incorporated into clinical care. It focuses on adults and psychosocial management with topics such as the challenges of cancer and the issues; emotional, psychological, and practical care to be provided by the treatment team (e.g., information, treatment options, emotional and social support); referral for specialized care; and issues requiring special consideration (culture, age, geography, and sexual orientation). The guideline was developed for all members of the diagnostic and treatment team for use in diverse settings.

The evidence rating system used in the guideline is based on the recommendations for interventions studies by the National Health and Medical Research Council (NHMRC) Standing Committee on Quality of Care and Health Outcomes (QCHOC), which was adapted from the rating system developed by the US Preventive Services Task Force.

Rating of Evidence:

- Level I Evidence is obtained from a systematic review of all relevant randomized controlled trials.
- Level II Evidence is obtained from at least one properly designed randomized controlled trial.
- Level III-1 Evidence is obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method).
- Level III-2 Evidence is obtained from comparative studies with concurrent controls and allocation not randomized (cohort studies), case control studies, or interrupted time series with a control group.
- Level III-3 Evidence is obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel group.
- Level IV Evidence is obtained from case studies, either post-test or pre- and post-test.

Cancer Pain Management Manual: Canadian Association of Nurses in Oncology (CANO-ACIO), 2004 (10). This manual was created to provide nurses with clinical direction to deal effectively with patients experiencing cancer pain. It can be used in any setting and focuses on

all populations. The topics covered are the principles of pain and pain management, assessment for pain, plan of care for pain management, principles for documentation and communication, interventions, and the evaluation of individual patients and the health care system.

Guideline for the Management of Cancer Pain in Adults and Children: American Pain Society (APS), 2005 (11). The 2005 APS guideline is an update of the 1994 US AHCPR Management of Cancer Pain guideline. The recommendations are not for a specific setting, and all populations are taken into account. The guideline focuses on the assessment of cancer pain, cancer pain management algorithms, and cancer pain management, including pharmacological strategies, patient education, psychological and physical strategies, procedure-related pain, and quality improvement. The guideline is intended for use by all health care professionals, and the recommendations are evaluated for the level of evidence supporting them. The evidence for the recommendations was summarized according to its strength and consistency. The panel labelled recommendations as A or B, primarily based on evidence. For recommendations labelled C or D, the panel used the available empirical evidence but based its recommendations primarily on expert judgment.

Strength and Consistency of Evidence:

- A There is evidence of type I or consistent findings from multiple studies of types II, III, or IV.
- B There is evidence of types II, III, or IV, and findings are generally consistent.
- C There is evidence of types II, III, or IV, but findings are inconsistent.
- D There is little or no evidence, or there is type V evidence only.

Panel Consensus: Practice is recommended based on the opinions of experts in pain management; used when the recommendation was a statement of panel opinion regarding desirable practice.

Type of Evidence

- I. Meta-analysis of multiple well-designed controlled studies.
- II. Well-designed experimental studies.
- III. Well-designed quasi-experimental studies such as nonrandomized controlled, single-group pre-post, cohort, time series, or matched-case controlled studies.
- IV. Well-designed non-experimental studies such as comparative and co-relational descriptive and case studies.
- V. Case reports and clinical examples

Accreditation Pain Standard; Making It Happen: Canadian Pain Society (CPS), 2005 (12). This standard was prepared by the Special Interest Group on Nursing Issues of the CPS to help organizations and health care professionals meet new pain assessment and management standards from the Canadian Council on Health Services Accreditation. The standard has information for all types of populations and covers topics such as pain assessment, management, and monitoring; documentation; patient and family education; staff development; and organizational responsibility.

Best Practice Guidelines for the Management of Cancer-Related Pain in Adult: Cancer Care Nova Scotia (CCNS), 2005 (13). This guideline was created by a collaborative effort of the Supportive Care Cancer Site Team and sponsored by CCNS to assist health care professionals care for patients with cancer-related pain in a variety of settings and to standardize the assessment of cancer pain for adults across Nova Scotia. Topics discussed include the barriers to pain assessment and management; the etiology of pain in patients with

cancer; the diagnosis and assessment of cancer-related pain; the management of cancer-related pain; the interdisciplinary care of patients with cancer pain and the implications for practice, patient and family education, documentation, and referral information. It provides practice pathways for cancer pain assessment and management.

Table 1.0 Summary of evidence.

Recommendation Section	SIGN (6)	AGS (7)	RNAO (8)	NBCC-NCCI (9)	CANO-ACIO (10)	APS (11)	CPS (12)	CCNS (13)
Final AGREE Score	Strongly Recommend	Recommend	Strongly Recommend					
Assessment of Pain	✓						✓	
Assessors of pain							✓	✓
Time and frequency of assessment	✓					✓	✓	✓
Components of pain assessment	✓							✓
Assessment of pain in special populations		✓			✓	✓	✓	
Plan of Care			✓			✓		
Pharmacological Intervention		✓	✓			✓	✓	✓
Non-Pharmacological Intervention				✓		✓		✓
Documentation			✓		✓		✓	✓
Education	✓				✓	✓	✓	✓
Outcome Measures								

Abbreviations: AGS, American Geriatrics Society; APS, American Pain Society; CANO-ACIO, Canadian Association of Nurses in Oncology; CPS, Canadian Pain Society; CCNS, Cancer Care Nova Scotia; NBCC-NCCI, National Breast Cancer Centre and National Cancer Control Initiative; SIGN, Scottish Intercollegiate Guidelines Network.

UNDERLYING PRINCIPLES OF THE MANAGEMENT OF CANCER PAIN

1. *Expectation of Patient-centered Care and Family-centered Care*

Patient-centered care is integral to the quality of pain management. Patient-centered care has been defined as “an approach that consciously adopts the patient’s perspective about what matters” (1). It includes the following elements:

- respecting the patient’s values, preferences, and needs
- providing physical comfort and emotional support
- coordinating and integrating care
- ensuring information, education, and communication
- involving family and friends
- ensuring transition and continuity

- providing access to care

Similarly, family-centered care ensures the health and well being of a patient of any age, and their family, by recognizing them as important partners in the assessment, planning, delivery, and evaluation of health care. Therefore, the principles of providing family-centered care include respect for the patients' and families':

- culture, values, beliefs, knowledge, perspectives, and choices, and
- need and opportunity to participate, collaborate, and communicate in the care and decision making, made in the best interests of the patient.

We know we are practising patient and family-centered care when patients and families report that they:

- had opportunities to discuss the things most important to them,
- felt listened to and respected and received meaningful information and,
- received personalized and meaningful care.

and health care professionals document and report:

- patients' and families' perspectives, hopes, and plans,
- actions taken to address patients' concerns and hopes, and
- patients' and families' evaluation of the quality of care provided (2).

2. *Care is Individualized for Each Patient*

This document is a consensus statement that integrates the major guiding principles of palliative care when assessing and managing pain. The document recognizes the importance of preserving a patient's dignity and considers the impact of emotional, cultural, and spiritual issues that may contribute to the patient's experience of total pain (2).

3. *Need for Inter-Disciplinary Team*

People with cancer-related pain have many needs, and it takes a dedicated team to address them. Although the typical team starts with the physician and nurse, many other health professionals can help the patient. The pharmacist may be the one individual best prepared and informed to address medication-related issues. The social worker, clergy, psychologist, and other counsellors can be involved in psychosocial supportive care. In addition, occupational therapists and physiotherapists can be important team members for some patients. Specialists may already be involved in patient care or may be needed, on referral, for specific interventions. Many other caregivers, professionals, and volunteers can be helpful. The team may be as unique as the needs of each individual patient. Clear communication is imperative, as people from various backgrounds may be involved in the care team. Most important is the involvement of the patient and family in the team.

4. *Recognition of Variation in Patient Experience*

The pain experience includes the individual's perception of pain, evaluation of the meaning of pain, and response to pain. The perception of pain refers to whether the individual notices a change from the way he or she usually feels or behaves. People evaluate their symptoms by making judgements about the severity, cause, treatability, and effect of symptoms on their lives. Responses to pain include physiological, psychological, sociocultural, and behavioural components. A person's response to pain is determined by their age, cognitive abilities, cultural background and previous experience and exposure to pain. Understanding the interaction of these components of the pain experience is essential if the pain is to be effectively managed (3).

Age is only one factor by which to separate populations and cancer pain management. The assessment and treatment of pain can usually be separated by age; pediatric patients are usually defined as being 0–17 years of age, adults as 18–74 years, and the elderly as over 75 years of age (7). However, each individual is different, and the patient's cognitive ability needs to be tested no matter what their age. As well, consideration should be given to other factors that may determine a person's response to pain, including the categories listed below.

Pediatric

Children perceive pain differently from adults. There are numerous factors involved in the pathogenesis of pain in children with cancer. They will experience pain associated with the disease, pain caused by procedures used to establish a diagnosis and evaluate the disease, and pain related to treatment intervention. Furthermore, the expression of pain varies according to their age and developmental characteristics. In order to effectively manage the pain experienced by children with cancer, it is critical to understand the developmental aspects related to their response to pain (10).

Elderly

The elderly are not a homogeneous group but are very diverse in terms of wellness, physiological response to medications and other interventions, past history of pain, and beliefs around pain and suffering. Studies have indicated that the elderly may experience more pain than younger people do but are less likely to complain about it (10). In health care discussions, the elderly persons described are often those who are the frailest, with multiple health problems and disability issues (7).

Cognitively Impaired

Cognitive impairment often refers to people who have some form of developmental delay, dementia, delirium, and/or failing memory. Cognitive impairment can also be the result of metabolic disorders, pre-existing brain injury, treatment-induced side effects such as opioid toxicity, and disease-related symptoms such as brain metastases. Cognitive impairment is a major barrier to pain assessment and management (10).

Cognitive impairment may be permanent, a result of medical comorbidities such as dementia (e.g., Alzheimer's dementia, Lewy-Body dementia, multi-infarct dementia), pre-existing brain injury, or congenital disorders. Cognitive impairment can also be acute and temporary, a consequence of metabolic abnormalities, infectious processes, events causing hypoxia, opioid toxicity, or adverse effects from the concomitant use of other medications (e.g., steroids, benzodiazepines, neuroleptics, phenothiazines, anticholinergics, antihistamines, non-steroidal anti-inflammatories [NSAIDs]). Another cause is the disease process itself, as a result of cerebral metastases or the long-term side effects of cerebral radiation. Poorly controlled pain has also been shown to contribute to cognitive impairment, and effective analgesic use has reduced or reversed the impairment.

Cultural Diversity

Diversity may include gender, personality, sexual orientation, religion, family and social influences, socioeconomic status, ethnicity, and geographical living arrangements (10). These variables uniquely influence a patient's perception of a symptom, the meaning applied to that symptom, and the patient's response. Effective pain management requires awareness of and sensitivity to cultural values. Health care providers demonstrate their consideration of client diversity by developing an approach that promotes sensitivity, understanding, respect, and open communication.

RESULTS: EVIDENCE CONCERNING CANCER-RELATED PAIN MANAGEMENT DOMAINS

Abstracted Information. The following information was abstracted from the guidelines and placed under relevant topic areas as background information that would contribute to the recommendations. Many guidelines graded the evidence on which their recommendations were based for strength and consistency. Because not all the guidelines rated the evidence or recommendations based on the evidence, and the levels of grading (i.e., A, B, C, D or I, IIA, IIB, III) were different among those that did, it can be difficult to compare the ratings. In order not to lose this information about the recommendations, the Panel decided to keep the evidence rating of the guideline developers who rated the evidence at the end of each recommendation. For those recommendations that were based on evidence, but the evidence was not given a rating, the term “Evidence; Not Rated” follows the recommendation. The term ‘Consensus’ was added after those recommendations where the recommendation was based on the opinions and/or clinical experience of experts in pain management.

Assessment of Pain

- No laboratory test for objective measures of pain currently exist. Unlike body temperature, which can be measured directly and objectively by using a thermometer, pain is measured indirectly. The sensation of pain is completely subjective, and its existence cannot be proved or disproved. The gold standard for assessing pain is the individual’s self-report, often through the use of tools or techniques developed to evaluate the amount of pain experienced by focusing on certain aspects of that pain. Presently, no easily administered, widely accepted uniform technique exists for assessing pain in all populations (e.g., infants, children, adults, cognitively impaired) or across types of pain (12). [CPS, Evidence; Not Rated]
- The most reliable indicator of pain is the patient’s self-report. Patients must be taught how and when to communicate their pain to the health care provider. Pain assessment and reporting tools must be taught to the patient and used in every pain situation (12). [CPS, Evidence; Not Rated]
- Assessment techniques can be classified as self-report measures or behavioural observation measures. Furthermore, pain assessment measures can incorporate both one-dimensional and/or multidimensional approaches. Self-report measures use the individual’s own report of their feelings, images, or statements about the pain that they perceive (12). [CPS, Evidence; Not Rated]
- For effective pain control, the physical, functional, psychosocial, and spiritual dimensions should be assessed (6). [SIGN, Consensus]

Assessors of Pain

- A component of the initial assessment of each cancer patient should include screening questions designed to identify the existence of pain. If the answers to the screening questions identify pain as a focus for care, health care professionals should perform a comprehensive pain assessment (12). [CPS, Evidence; Not Rated]
- Particular attention to their preferences and needs is required for patients whose education or cultural traditions may affect their communication about pain and for those patients who are cognitively impaired, non-English speaking, very old, known substance abusers, or part of another special patient group (13). [CCNS, Evidence; Not Rated]

Timing and Frequency of Assessment

- When a change occurs in the patient’s pain or when a new pain occurs, a comprehensive pain assessment and diagnostic evaluation should be repeated (using a pain assessment

and care plan) and the pain management plan modified as appropriate (12). [CPS, Evidence; Not Rated]

- Cancer patients should continue to be screened for pain at each visit with a health care professional. Inpatients should also be regularly screened for pain once daily until it is established that pain is not a focus of care (12). [CPS, Evidence; Not Rated]
- A comprehensive assessment should be made with each new report of pain to identify the cause(s). A pain management plan should then be formulated with the patient, based on the results of this assessment (11). [APS, Evidence; Not Rated]
- Establishing standards for the routine screening assessment of pain is essential to the treatment of pain in order to overcome barriers to effective pain management and to provide quality patient care. Organizations may want to establish policies and procedures that mandate the frequency of pain assessment. These standards should be used in a flexible and adaptive manner to meet the needs of different clinical care settings and/or patient populations, monitoring, for example:
 - at least once per shift for inpatients
 - at least once every visit for outpatients and home care
 - before, during, and after procedures (13) [CPS, Evidence; Not Rated]
- Sudden severe pain in patients with cancer should be recognized by all health professionals as a medical emergency, and such patients should be seen and assessed immediately (6). [SIGN, Consensus]

Components of Pain Assessment

Information to include in a pain assessment includes:

- Location of the pain (diffuse; point to location[s])
- Characteristics of the pain (descriptive words: burning, throbbing, sharp, aching)
- Timing of the pain (onset, duration, variation, pattern)
- Pain intensity, using the patient-appropriate measurement tool
- Exacerbating and alleviating factors (what makes the pain better or worse)
- History of the pain, including response to medications (and adverse effects)
- Current pain medications, past pain medications (and their effectiveness)
- Associated symptoms (nausea, vomiting, constipation, sweating, tiredness)
- Cognitive impairment, memory deficits
- Current and past treatments for pain (physiotherapy, occupational therapy, chiropractic therapy, acupuncture, heat, cold)
- Presence of psychosocial distress or other factors that affect 'total pain'
- Cultural, family, or religious beliefs and practices that affect pain
- Social history (psychosocial impact of the pain on family, work, social life)
- Family history (mental illnesses, alcoholism)
- Results of physical exam, lab investigations, and diagnostic imaging
- Level of function; how does the pain impact (activities of daily living, performance status of cancer, mood, sleep patterns, mental concentration)
- Fears or concerns about pain and medications; patient and family educational needs (Not Stated) (13). [CCNS, Evidence; Not Rated]

A thorough assessment of the patient's psychological and social state should be carried out and should include the assessment of anxiety, in particular, depression, as well as the patient's beliefs about pain (6). [SIGN, Evidence; B]

Assessment of Pain in Special Populations

Use appropriate strategies to assess pain in special patient populations, including the very young and the very old, the cognitively impaired, known or suspected substance abusers, and non-English-speaking patients (11). [APS, Evidence; A]

Neonates, Infants and Children

- Self-report measures should be utilized with children who are old enough to understand and use a self-report scale (three years of age and older), who are not overtly distressed, who do not have impaired cognitive or communicative abilities, and whose self-report ratings are not considered exaggerated or minimized due to cognitive, emotional, or situational factors. Children have pain words by 18 to 24 months of age, and by the age of three to four years are able to report the degree of pain. Children greater than four years of age can provide detailed descriptions of pain intensity (e.g., faces scales, simple word descriptors) quality, and location (12). [CPS, Evidence; Not Rated]
- Pain in neonates and infants can be assessed and managed effectively using reliable, valid, and clinically sensitive assessment tools. Composite pain measures that include more than one assessment approach within a given instrument are used, and most composite measures include both behavioural and physiological indicators. Some measures also include contextual factors such as the gestational age or behavioural sleep/wake state of the infant (12). [CPS, Evidence; Not Rated]

Cognitively Impaired Children

- Children with cognitive impairments include those with cerebral palsy, neurodevelopmental disorders, severe mental retardation, or developmental delay, and children with pervasive developmental disorders. Many of these children are at higher risk than other children for the under-treatment of pain, for the following reasons: (1) their multiple medical problems may be the source of the pain; (2) the multiple procedures they must undergo are often painful; (3) their idiosyncratic behaviours, such as moaning, may mask the expression of pain; (4) pain behaviours such as changes in facial expression and patterns of sleep or play are already inconsistent and difficult to interpret because of the physical problems already present; and (5) the comfort of these children may be valued less by society than the comfort of other children, biasing the recognition and acknowledgement of pain. Therefore, the assessment of pain in this high-risk group of children can be particularly challenging (12). [CPS, Evidence; Not Rated]
- Researchers have examined some of the behavioural cues that caregivers use to identify pain in neurologically impaired children. The behavioural cues identified include facial expression; vocal cues; changes in posture and movements; physiological changes such as sweating, pallor or reddening; and alterations in sleeping and eating, as well as changes in mood and sociability. Changes in these behaviours are cues to caregivers that the child might be experiencing pain. There is also early evidence that some children with borderline and mild cognitive impairments can use simple concrete pain rating scales (12). [CPS, Evidence; Not Rated]

Elderly Adults

- Cognitive function should be evaluated for new or worsening confusion (7). [AGS, Evidence; II]
- For the older adult who is cognitively intact or who has mild to moderate dementia, the practitioner should attempt to assess pain by querying the patient directly (7). [AGS, Evidence; II]

Cultural Diversity

- Cultural aspects that will influence the assessment and management of pain include where the person was raised, the strength of their ethnic affiliation, the cultural belief system around pain and suffering, religious beliefs, and customs and beliefs around health, illness and death (10). [CANO-ACIO, Evidence; Not Rated]
- Pay particular attention to the preferences and needs of patients whose education or cultural traditions may affect communication about pain (11). [APS, Evidence; B]

Cognitively Impaired

- Cognitive impairment, delirium, and dementia pose serious difficulties in pain assessment. More frequent pain assessments should be done with these patients than with patients who are not cognitively impaired. Pain intensity scales for patients with cognitive impairments should be in large print and should focus on a patient's present pain intensity. Cognitively impaired patients should also be observed for nonverbal behaviours indicative of pain. For example, changes in a patient's function (e.g., changes in gait, withdrawn or agitated behaviour) or vocalizations (e.g., moaning, groaning, lack of vocalization) that suggest pain should be evaluated (11). (APS, Evidence; Not Rated)
- Self-assessment of pain by a cognitively impaired patient has not been proven less valid than assessment by a cognitively intact patient. Given sufficient time to process information and respond, a cognitively impaired patient can provide an accurate self-assessment of pain; however, this group of patients prefer the use of the simpler pain intensity scale of 0-5 with word anchors. There is no reason to withhold opioid analgesics in the cognitively impaired patient experiencing pain. The use of co-analgesics and other medications must be used with caution, especially in the patient with multiple medical comorbidities. (Consensus of Cancer-Related Pain Management Expert Panel)

Suspected and Known Substance Abusers

- Patients with a suspected, past, or known substance abuse can be effectively treated only when their addiction problems and needs are addressed (11). [APS, Evidence; Not Rated]
- If a health care professional suspects problematic drug taking or substance abuse, a careful and graduated interview that slowly introduces the assessment of drug use is warranted (11). [APS, Evidence; Not Rated]

Plan of Care

- Collaborate with patients and family caregivers, taking costs and the availability of treatment options into account, when selecting pain management strategies (11). [APS, Consensus]
- Establish a management plan in collaboration with interdisciplinary team members that is consistent with individual and family goals for pain relief, taking into consideration all the following factors:
 - assessment findings
 - baseline characteristics of pain
 - physical, psychological, and sociocultural factors shaping the experience of pain
 - etiology
 - most effective pharmacological and non-pharmacological strategies
 - management interventions
 - current and future primary treatment plans (8) [RNAO, Consensus]
- All patients should receive a written pain management plan that includes information about:
 - the cause of their pain
 - the types of a rationale for their analgesic medications
 - instructions for having prescriptions for analgesic medications

- specific instructions on how to dose and titrate their analgesic medications
- instructions on how to manage analgesic side effects
- instructions for storage and safe keeping of medications
- whom to call if the pain is not relieved or increases in intensity or if side effects occur
- when and how to use nonpharmacologic approaches for pain management (11). [APS; Evidence; Not Rated and Consensus]
- Communicate to members of the interdisciplinary team the pain assessment findings by describing the parameters of pain obtained through a structured assessment tool, the relief or lack of relief obtained from treatment methods, the person's goals for pain treatment, and the effect of pain on the person (8). [RNAO, Consensus]

Interventions

Pharmacologic Strategies

- Cancer pain management may require the use of non-opioids, opioids, and co-analgesics (11). [APS, Consensus]
- A key principle for pharmacological pain management is to titrate the analgesic dose to achieve the pain relief desired, while minimizing unwanted side effects (8). [RNAO, Evidence; B]
- Base the *initial* treatment of cancer pain on the severity of the pain the patient reports (11). [APS, Evidence; B]

Selecting Appropriate Analgesics

The selection of analgesics is individualized to the person, taking into account:

- type of pain (acute or chronic, nociceptive and/or neuropathic)
- intensity of pain
- potential for analgesic toxicity (age, renal impairment, peptic ulcer disease, thrombocytopenia)
- general condition of the person
- concurrent medical conditions
- response to prior or present medications
- cost to the person and family
- setting of care (8) [RNAO, Evidence; A]

Selecting the Appropriate Dosage and Routes

Use the simplest analgesic dosage schedules and least invasive pain management modalities:

- The oral route is the preferred route for chronic pain and for acute pain as healing occurs.
- Tailor the route to the individual pain situation and the care setting.
- Intravenous administration is the parenteral route of choice after major surgery, usually via bolus and continuous infusion.
- The intramuscular route is not recommended for adults, children, or infants because it is painful and not reliable (8). [RNAO, Consensus]

Patient Considerations in the Treatment of Pain

Pain intensity

- Background discomfort: mild pain may be managed with a non-opioid alone.
- Mild–moderate pain may be managed with any opioid but is usually managed with an opioid–non-opioid combination such as codeine or oxycodone, compounded with a non-opioid such as acetaminophen.

- Moderate–severe pain is almost always managed with a strong opioid agonist that can be titrated upward as needed (13) [CCNS, Evidence; Not Rated]

Patient age

Younger patients (with no major organ failure): any opioid agonist

Elderly patients (especially those with major organ failure):

- Opioids with short half-life: recommended (e.g., morphine, hydromorphone, oxycodone)
- Opioids with long half-life: avoided (e.g., methadone, levorphanol)
- Opioids with active metabolites: avoided (e.g., meperidine, propoxyphene) (13) [CCNS, Evidence; Not Rated]

Coexisting disease

Hepatic failure

- All opioid drugs are metabolized by the liver
- Liver disease: opioid clearance decreased; bioavailability and half-life increased
- May increase adverse effects because of higher than expected plasma concentrations
- Metabolism of morphine and methadone: not significantly altered in liver disease

Renal disease

- May accumulate the active metabolites of meperidine (normeperidine), propoxyphene (norpropoxyphene), and morphine (M6G)
- Normeperidine eliminated by the kidneys; meperidine contraindicated in renal disease
- Accumulation of morphine metabolite M6G: increased and prolonged effects
- Hydromorphone recommended if morphine toxicity occurs in a patient with renal disease (13) [CCNS, Evidence; Not Rated]

Concurrent drugs

Drug Interactions

- Medication history to determine concurrent drug therapy; modify opioid choice if a potential interaction is identified (13) [CCNS, Evidence; Not Rated]

Prior treatment outcomes

History to include previous experience with the drug:

- Unmanageable side effects with an opioid: explore whether the side effects were really unmanageable or simply unmanaged
- True allergy to an opioid is extremely rare
- If intolerable/unmanageable side effects, switch to another opioid (13) [CCNS, Evidence; Not Rated]

Patient preferences and convenience

- Respect patients' preferences (e.g., for the choice of opioid, route of administration, scheduling of doses) whenever feasible
- Preferences may be based on myths and misconceptions: ensure patient has accurate information, including an accurate understanding of pain management
- Make opioid treatment regimen convenient; can lead to improved patient compliance with treatment plan
 - Use controlled-release opioid in place of short-acting opioid to reduce number and frequency of pills taken, or consider fentanyl transdermal patch

- Schedule opioid doses concurrently with other medications, if possible (13) [CCNS, Evidence; Not Rated]

Cost

- Cost of medications and the amount of prescription insurance coverage can vary
- Morphine, hydromorphone, and methadone are less expensive than other opioids
- Single opioids in sufficient doses may provide adequate pain control and minimize cost
- Consider options to minimize cost to patients and family: poor compliance if drugs cannot be afforded
- Patient assistance programs may be available to help patients unable to afford their analgesic medications. (13) [CCNS, Evidence; Not Rated]

Non-opioid

Non-opioid analgesics are used most often in the management of mild to moderate pain. The two main types are acetaminophen and the NSAIDs; their analgesic effects are primarily produced within the peripheral nervous system. Both acetaminophen and the NSAIDs have the pharmacologic property of a ceiling effect (11). [APS, Evidence; Not Rated]

Acetaminophen

- Acetaminophen may be prescribed as initial therapy for mild pain (i.e., a pain rating of 1–4) and can be combined effectively with an opioid analgesic if pain intensity increases (11). [APS, Evidence; Not Rated]
- Chronic daily doses of more than 4 grams per day of acetaminophen in adults (65mg/kg/day in children) increase the risk of hepatotoxicity. If patients drink more than 2 ounces of alcohol daily, the dose of acetaminophen should not exceed 2.5 grams per 24 hours (11). [APS, Evidence; Not Rated]
- An assessment of the amount of acetaminophen a patient is taking must include all acetaminophen-containing combination products (e.g., analgesics, cold products) to avoid toxicity. The risk of hepatotoxicity is increased if a patient is taking other medications that cause similar hepatic dysfunction or medications (e.g., phenytoin, carbamazepine, barbiturates) that induce hepatic microsomal enzymes (e.g., cytochrome P450), which increase the conversion of acetaminophen to toxic metabolites (11). [APS, Evidence; Not Rated]

Nonsteroidal anti-inflammatory drugs

- NSAIDs are effective in the treatment of mild pain and have an opioid-sparing effect for moderate to severe pain (11). [APS, Evidence; Not Rated]
- NSAIDs may be most useful in the treatment of cancer-related pain when the pain is associated with inflammation, for example, in patients with pain from bone metastasis. Each individual drug has a maximum therapeutic dose (the ceiling effect). Health care providers should consider efficacy, adverse side effects of NSAIDs (especially gastrointestinal and renal), patient preference, and cost when selecting an NSAID for cancer pain management (11). [APS, Evidence; Not Rated]

Opioids

- Opioids are the analgesics used most often in the management of moderate to severe pain because of their effectiveness, ease of titration, and favourable risk-to-benefit ratio. Opioids produce analgesia by binding to specific receptors both within and outside the central nervous system (CNS) (11). [APS, Evidence; Not Rated]

- Consider the following pharmacological principles in the use of opioids for the treatment of severe pain:
 - Full agonists (i.e., codeine*, fentanyl, hydromorphone, and morphine) have no dose ceiling; the dosage can be titrated to pain relief without regard to a maximum dose, as long as side effects are tolerable (12). [CPS, Evidence; Not Rated]
 - Meperidine (Demerol) use should be limited due to the adverse effects of its active metabolite normeperidine, which causes CNS stimulation that may lead to seizures (12). [CPS, Evidence; Not Rated]
 - Mixed agonist-antagonists (e.g., pentazocine) in clinical use have an analgesic ceiling (maximum daily dose). In contrast to full agonists, these drugs block opioid analgesia at one type of opioid receptor (μ) or are neutral at this receptor, while simultaneously activating a different opioid receptor (κ). Patients who receive a full opioid agonist should not be given a mixed agonist-antagonist, because it can precipitate a withdrawal syndrome and cause increased pain (11). [APS, Evidence; Not Rated]
 - Only one opioid agonist by a single route of administration should be used whenever possible (13). [CCNS, Evidence; Not Rated]
 - The elderly generally receive a greater peak and longer duration of action from analgesics than do younger individuals; dosing should be initiated at lower doses and increased more slowly (“careful titration”) (8). [RNAO, Evidence; B]
 - Special precautions are needed in the use of opioids with neonates and infants under the age of six months. Drug doses, including those for local anesthetics, should be calculated carefully, based on the current or most appropriate weight of the neonate. Initial doses should not exceed the maximum recommended amounts (8). [RNAO, Evidence; B]
 - Ensure that the timing of analgesics is appropriate according to the personal characteristics of the individual, pharmacology (i.e., duration of action, peak effect, and half-life), and route of the drug (8). [RNAO, Evidence, B]
- Opioids should be administered on a regular time schedule according to the duration of action and depending on the expectation regarding the duration of severe pain.
 - If severe pain is expected for 48 hours postoperatively, routine administration may be needed for that period of time. Late in the postoperative course, analgesics may be effective given on an “as needed” basis.
 - In chronic cancer pain, opioids are administered on an “around-the-clock” basis, according to their duration of action.
 - Long-acting opioids are more appropriate when dose requirements are stable (8). [RNAO, Evidence; A]
- Drug dose and frequency should be titrated to the individual patient’s response and analgesic needs whenever the route of administration or the types of formulation is changed (11). [APS, Evidence, Not Rated]
- Use principles of dose titration specific to the type of pain to reach the analgesic dose that relieves pain with a minimum of side effects, according to:
 - cause of the pain
 - individual’s response to therapy
 - clinical condition
 - concomitant drug use
 - onset and peak effect
 - duration of the analgesic effect
 - age

* Although no true dose ceiling exists, patients requiring doses above 800mg daily may be better managed on a lower dose of a more potent opioid (14).

- known pharmacokinetics and pharmacodynamics of the drugs administered. Doses are usually increased every 24 hours for persons with chronic pain on immediate-release preparations, and every 48 hours for persons on controlled release opioids. The exception to this is transdermal fentanyl, which can be adjusted every three days (8). [RNAO, Evidence; B]
- Promptly treat pain that occurs between regular doses of analgesic (breakthrough pain) using the following principles:
 - Breakthrough doses of analgesic in the postoperative situation are dependent on the routine dose of analgesic, the individual's respiratory rate, and the type of surgery and are often administered as bolus medications through patient-controlled analgesia (PCA) pumps.
 - Breakthrough doses of analgesic should be administered to the person on an "as needed" basis according to the peak effect of the drug (per os/per rectum [po/pr]: every 1-2 hours; subcutaneously [SC] = 30minutes-1 hour; intravenously [IV] = q10-15min). [Note: intramuscular route is not recommended by the Panel because it is painful and unreliable.]
 - It is most effective to use the same opioid for breakthrough pain as that being given for "around-the-clock" dosing.
 - For individuals with chronic pain:
 - An immediate-release opioid should be available for pain (breakthrough pain) that occurs between the regular administration times of the "around the-clock" medication
 - Breakthrough doses of analgesic for continuous cancer pain should be calculated as 10 to 15 percent of the total 24-hour dose of the routine "around-the-clock" analgesic
 - Breakthrough analgesic doses should be adjusted when the regular "around-the-clock" medication is increased.
 - Adjustment to the "around-the-clock" dose is necessary if more than two to three doses of breakthrough analgesic are required in a 24-hour period and pain is not controlled (8). [RNAO, Consensus]
- For patients who experience inadequate pain relief or an unacceptable level of side effects from a specific opioid that limits dose escalations, pain control can be achieved through opioid rotation (11). [APS, Evidence; Not Rated]
- Use an equianalgesic table to ensure equivalency between analgesics when switching analgesics. Recognize that the safest method when switching from one analgesic to another is to reduce the dose of the new analgesic by one half a stable pain situation (8). [RNAO, Consensus]
- Ensure that alternate routes of administration are prescribed when medications cannot be taken orally, taking into consideration individual preferences and the most efficacious and least invasive route.
 - The indications for transdermal routes of medication include an allergy to morphine, refractory nausea and vomiting, and difficulty swallowing.
 - Consider using continuous subcutaneous infusion of opioids in individuals with cancer who are experiencing refractory nausea and vomiting or an inability to swallow or who require this route to avoid continuous peaks and valleys in pain control.
 - The cost of medications and the technology necessary for delivery (e.g., pain pumps) should be taken into consideration in selecting certain alternative routes of administration.
 - Consider using a butterfly injection system to administer intermittent SC analgesics.
 - Epidural access must be managed by clinicians with appropriate resources and expertise (8). [RNAO, Consensus]

Safety and Efficacy

- Recognize the difference between drug addiction, tolerance, and dependency to prevent these from becoming barriers to optimal pain relief (8). [RNAO, Evidence; A]
 - *Addiction* is defined as a primary, chronic neurobiologic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviours that include one or more of the following: impaired control over medication use, compulsive use, continued use despite harm, and craving.
 - *Physical dependence* is a state of adaptation that is manifested by drug–class-specific withdrawal syndrome produced by abrupt cessation, rapid dose reduction, decreasing level of the medication in the blood, and/or administration of an antagonist.
 - *Tolerance* is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug’s effects over time (11). [APS, Evidence; Not Rated]
- Monitor persons taking opioids who are at risk for respiratory depression, recognizing that opioids used for people not in pain, or in doses larger than necessary to control the pain, can slow or stop breathing.
- Respiratory depression develops less frequently in individuals who have their opioid doses titrated appropriately. Those who have been taking opioids for a period of time to control chronic or cancer pain are unlikely to develop this symptom.
 - The risk of respiratory depression increases with intravenous or epidural administration of opioids, rapid dose escalation, or renal and liver impairment (8). [RNAO, Evidence; A]
- In patients with normal respiratory function, respiratory depression is usually not a clinically significant problem even after initial doses of opioids. Patients with respiratory impairment (e.g., patients with CO₂ retention, pneumonia, chronic obstructive pulmonary disease) are at greater risk for respiratory depression and must be monitored closely after receiving initial doses of opioid analgesics. Opioid treatment, however, should not be withheld from these patients because of fear of respiratory depression. Patients receiving chronic opioid therapy usually develop a tolerance to the depressant effects of these agents within days to weeks. (11). [APS, Evidence; Not Rated]
- Titrate naloxone, when in the rare instance it is indicated for the reversal of opioid-induced respiratory depression, by giving incremental doses that improve respiratory function but do not reverse analgesia (12). [APS, Evidence; B]

Common Side Effects of Opioids

- Inform patients that the side effects of opioid analgesics can be controlled to ensure adherence with the medication regime (8). [RNAO, Consensus]
- Monitor persons taking analgesic medications for side effects and toxicity. Recommend a change in opioid if pain relief is inadequate following appropriate dose titration and if the person has side effects refractory to prophylactic treatment such as myoclonus or confusion. Particular caution should be used when administering analgesics to children and the elderly (8). [RNAO, Consensus]
- Evaluate the efficacy of pain relief with analgesics at regular intervals and following a change in dose, route, or timing of administration. Change analgesics when inadequate pain relief is observed (8). [RNAO, Consensus]
- Seek referral to a pain specialist for individuals who require increasing doses of opioids that are ineffective in controlling pain. Evaluation should include assessment for residual pathology and other pain causes such as neuropathic pain (8). [RNAO, Consensus]
- Anticipate and monitor individuals taking opioids for common side effects such as nausea and vomiting, constipation, and drowsiness, and institute prophylactic treatment as appropriate (8). [RNAO, Evidence; B]

- To ensure adherence with the medication regime, counsel patients that side effects to opioids can be controlled (8). [RNAO, Consensus]
- Treat all potential causes of side effects, taking into consideration medications that potentiate opioid side effects:
 - Sedation: sedatives, tranquilizers, antiemetics
 - Postural hypotension: antihypertensives, tricyclics
 - Confusion: phenothiazines, tricyclics, antihistamines and other anticholinergics (8) [RNAO, Evidence; A]

Nausea and vomiting

- Assess all persons taking opioids for the presence of nausea and/or vomiting, paying particular attention to the relationship of the symptom to the timing of analgesic administration (8). [RNAO, Consensus]
- Ensure that persons taking opioid analgesics are prescribed an antiemetic for use on an “as needed” basis, with routine administration if nausea and/or vomiting persist (8). [RNAO, Consensus]
- Recognize that antiemetics have different mechanisms of action, and selection of the right antiemetic is based on this understanding and the etiology of the symptom (7). [AGS, Consensus]
- Assess the effect of the antiemetic on a regular basis to determine relief of nausea and/or vomiting, and advocate for further evaluation if the symptom persists in spite of adequate treatment (8). [RNAO, Consensus]

Constipation

- Begin a bowel regimen to prevent constipation when the patient is started on an opioid analgesic (11). [APS, Evidence; B]
- Institute prophylactic measures for the treatment of constipation unless contraindicated, and monitor constantly for this side effect.
 - Laxatives should be prescribed and increased as needed to achieve the desired effect as a preventative measure for individuals receiving routine administration of opioids. [RNAO, Evidence; B]
 - Osmotic laxatives soften stool and promote peristalsis and may be an effective alternative for individuals who find it difficult to manage an increasing volume of pills. [RNAO, Evidence; B]
 - Stimulant laxatives may be contraindicated if there is impaction of stool. Enemas and suppositories may be needed to clear the impaction before resuming oral stimulants (8). [RNAO, Consensus]
- Counsel individuals on dietary adjustments that enhance bowel peristalsis, recognizing personal circumstances (seriously ill individuals may not tolerate change) and preferences (8). [RNAO, Consensus]

Drowsiness/sedation

- Recognize that transitory sedation is common, and counsel the person and family and/or care provider that drowsiness is common upon the initiation of opioid analgesics and with subsequent dosage increases (8). [RNAO, Consensus]
- Evaluate drowsiness that continues beyond 72 hours to determine the underlying cause (8). [RNAO, Consensus]

Co-analgesic Agents

- Co-analgesic drugs are important adjuncts in the treatment of specific types of pain.

- Co-analgesic drugs such as anticonvulsants and antidepressants provide independent analgesia for specific types of pain.
- Extra caution is needed in administering antidepressant and anticonvulsant drugs to the elderly, who may experience significant anticholinergic and sedative side effects (8). [RNAO, Evidence; B]

Procedural Pain

- Anticipate pain that may occur during procedures such as medical tests and dressing changes, and combine pharmacologic and non-pharmacologic options for prevention (8). [RNAO, Consensus]
- Recognize that analgesics and/or local anaesthetics are the foundation for pharmacological management of painful procedures. Anxiolytics and sedatives are specifically for the reduction of associated anxiety. If used alone, anxiolytics and sedatives blunt behavioural responses without relieving pain (8). [RNAO, Consensus]
- Ensure that skilled supervision and appropriate monitoring procedures are instituted when conscious sedation is used (8). [RNAO, Consensus]
- Use optimally titrated doses of opioids and maximal safe and tolerable doses of co-analgesics through other routes of administration before considering spinal analgesics (11). [APS, Consensus]
- Treat procedure-related pain prophylactically with appropriate analgesics and/or sedation (11). [APS, Evidence; A]
- Provide safe, monitored procedural sedation to children and adults who experience distress from painful procedures associated with the diagnosis and treatment of cancer (11). [APS, Evidence; B]
- Offer patients who decline to have procedural sedation non-pharmacologic alternatives to decrease procedure-related pain (11). [APS, Evidence; A]

Patient and Family Education of Pharmacological Intervention

- Provide the person and their family and/or care providers with information about their pain and the measures used to treat it, with particular attention focused on the correction of myths and strategies for the prevention and treatment of side effects (8). [RNAO, Evidence; A]
- Ensure that individuals understand the importance of promptly reporting unrelieved pain, changes in their pain, new sources or types of pain, and side effects from analgesics (8). [RNAO, Consensus]
- Clarify the differences between addiction, tolerance, and physical dependence to alleviate misbeliefs that can prevent the optimal use of pharmacological methods for pain management.
 - Addiction (psychological dependence) is not physical dependence or tolerance and is rare with persons taking opioids for chronic pain.
 - Persons using opioids on a chronic basis for pain control can exhibit signs of tolerance requiring upward adjustments of dosage. However, tolerance is usually not a problem, and people can be on the same dose for years.
 - Persons who no longer need an opioid after long-term use need to reduce their dose slowly over several weeks to prevent withdrawal symptoms because of physical dependence (8). [RNAO, Evidence; A]
- Develop a systematic approach to cancer pain management, and teach patients and family caregivers how to use effective strategies to achieve optimal pain control (11). [APS, Evidence; B]

- Provide patients and family caregivers with accurate and understandable information about effective cancer pain management, the use of analgesic medications, other methods of pain control, and how to communicate effectively with clinicians about unrelieved cancer pain (11). [APS, Evidence; A]
- Provide patients with a written pain management plan (11). [APS, Evidence; B]
- Provide patients with information about the expected quality and duration of the sensations that they will experience during a painful procedure (11). [APS, Evidence; A]
- Provide cancer patients with a prescription for an analgesic medication, and instruct patients to have the prescription filled, to take the medication if unexpected pain occurs, and to call their health care provider for an appointment to evaluate the pain problems (11). [APS, Consensus]

Non-pharmacological Strategies

- Use cognitive and behavioural strategies as part of a multimodal approach to cancer pain management, not as a replacement for analgesic medications (11). [APS, Evidence; B]

Types of Non-pharmacologic Interventions

(13) [CCNS, Evidence; Not Rated and Consensus]

Psycho-social-spiritual Interventions

- | | |
|-------------------------------|--|
| Patient Education | <ul style="list-style-type: none"> • promotes self care in pain treatment and management of side effects |
| Patient Counselling | <ul style="list-style-type: none"> • may improve patient's coping skills and provide emotional comfort • facilitates communication |
| Family Counselling | <ul style="list-style-type: none"> • may alleviate stress within the family and facilitate communication between patient and family |
| Life Review | <ul style="list-style-type: none"> • reinforces social and spiritual value of their life and self worth |
| Recreational Activities | <ul style="list-style-type: none"> • Increase pain threshold through distraction |
| Relaxation Therapy
Imagery | <ul style="list-style-type: none"> • may reduce pain and anxiety through distraction/relaxation • examples include music, guided imagery, and visualization |
| Social Interactions | <ul style="list-style-type: none"> • reduces fears, anxieties, boredom/isolation • promotes self-awareness, social contact • stimulates communication |
| Spiritual Counselling | <ul style="list-style-type: none"> • may improve patient's coping skills and provide spiritual and emotional comfort |

Physical Interventions

- | | |
|--|---|
| Cutaneous Stimulation –
Heat/Cold | <ul style="list-style-type: none"> • reduction in swelling (examples: wax, packs, magic bags, ice) |
| Massage | <ul style="list-style-type: none"> • relaxation (family may contribute intervention after initial assessment by physiotherapist to ensure no contraindications) • reduction in swelling, relaxation |
| Mechanical Aids-TENS/
Acupressure/Vibrators | <ul style="list-style-type: none"> • promotes relaxation • stimulates known pressure points/nerves |

- | | |
|---|--|
| Laser/Ultrasound | <ul style="list-style-type: none"> • may reduce pain related to inflammation or spasm • promotes healing |
| Therapeutic Touch | <ul style="list-style-type: none"> • promotes relaxation and well being by utilization of body's electromechanical energy field |
| Positioning Strategies | <ul style="list-style-type: none"> • enhance comfort function and reduce pressure sore development |
| Movement (active, active-assisted, passive) | <ul style="list-style-type: none"> • prevent deformity, reduces spasticity, maintains or improves joint mobility, improves circulation and preserves skin integrity |
| Orthotics (splints, slings, lower extremity braces) | <ul style="list-style-type: none"> • improve comfort while enhancing function |

Other Interventions

- | | |
|--|--|
| Radiation Therapy | <ul style="list-style-type: none"> • directly treats tumours (especially helpful for bone metastases) |
| Regional Neurolytic Block or Spinal Epidural Anesthesia | <ul style="list-style-type: none"> • can benefit pain refractory to drug therapy or when drug therapy causes intolerable or intractable side effects • reduce analgesic drug(s) dosage for localized pain, reduce side effects |
| Neurosurgery-Dorsal root entry zone (DREZ) dorsal rhizotomy, cordotomy | <ul style="list-style-type: none"> • can control pain when drug therapy causes intolerable or intractable side effects or cannot provide adequate pain control |
| Surgery (e.g. Orthopaedic, GI) | <ul style="list-style-type: none"> • treats underlying cause of pain specifically (e.g. fracture, bowel obstruction) |

Therapy/Intervention Techniques for Specific Psychological Problems and Specialized Care (9)

Anxiety

- Relaxation therapy, guided imagery, systematic desensitization, problem solving, crisis intervention, supportive interventions, other combinations of education and behavioural or non-behavioural interventions, and anti-anxiety medications [NBCCNCCI, Evidence; I & II]

Depression

- Relaxation therapy, guided imagery, psycho-education, problem solving, supportive interventions, other combinations of education and behavioural or non-behavioural interventions, anti-depressants and cognitive behavioural therapy, and electroconvulsive therapy (ECT), taking into account the specific physical status of the patient [NBCCNCCI, Evidence; I & II]

Post traumatic stress disorder

- Supportive psychotherapy and cognitive behavioural interventions, often in combination with antidepressants [NBCCNCCI, Evidence; I]

Physical symptoms

- Relaxation therapy, guided imagery, systematic desensitization, supportive interventions and education, together with cognitive behavioural interventions, complementary therapies, exercise [NBCCNCCI, Evidence; I, II & III-3]

Body image concerns

- Cognitive behavioural interventions, supportive interventions, crisis interventions, complementary therapies (e.g., exercise) [NBCCNCCI, Evidence; II]

Sexuality concerns

- Personal and/or couples therapy [NBCCNCCI, Evidence; II]

Interpersonal problems

- Couples therapy, family therapy [NBCCNCCI, Evidence; III-3]

Documentation

- Documentation is a means for communicating pain assessments, interventions to manage pain, and the patient's response. The more severe the pain, the more often it is assessed and documented (10). [CANO-ACIO, Evidence; Not Rated]
- Document all pharmacological interventions on a systematic pain record that clearly identifies the effect of analgesic on pain relief. Utilize this record to communicate with interdisciplinary colleagues about the titration of analgesics. The date, time, severity, location, and type of pain should all be documented (8). [RNAO, Consensus]
- Provide the individual and family in the home setting with a simple strategy for documenting the effect of analgesics (8). [RNAO, Consensus]
- Document on a standardized form that captures the person's pain experience specific to the population and setting of care. Documentation tools will include:
 - Initial assessment, comprehensive assessment, and re-assessment
 - Monitoring tools that track efficacy of intervention (0-10 scale) (8) [RNAO, Consensus]
- Document pain assessment regularly and routinely on standardized forms that are accessible to all clinicians involved in care (8). [RNAO, Consensus]
- Documentation of pain contains all the information and/or components of a pain assessment and should occur as frequently as assessment occurs (12). [CPS, Evidence; Not Rated]
- Any education regarding pain that has been provided to the patient and family should be documented (12). [CPS, Evidence; Not Rated]
- Standardized forms and/or tools for the documentation of pain allow for the initial assessment and ongoing re-assessment. They can also be used for the documentation of the efficacy of pain-relieving interventions (12). [CPS, Evidence; Not Rated]
- Forms and/or tools should be accessible to the entire interprofessional team to help facilitate communication (12). [CPS, Evidence; Not Rated]
- Documentation should include:
 - Type of pain
 - Onset and frequency of pain
 - Description of the pain
 - Location(s) of the pain, including radiating patterns
 - Intensity of the pain at rest and with activity
 - Factors that induce and/or exacerbate pain and associated signs and symptoms
 - Factors that relieve the pain. This can include both non-pharmacological and pharmacological interventions
 - Side effects of interventions along with side-effect management and their effectiveness
 - Degree of pain relief or intensity of pain after a pain relieving treatment/intervention (12) [CPS, Evidence; Not Rated]

Patient Diaries

- The **Patient Pain Control Diary** may be used for ongoing self-monitoring by the patient. Some patients prefer to keep a diary of their own design; for these patients, the clinicians should advise the patient which pieces of information need to be kept. The information is use to inform the health care professional about the patient's subjective pain assessments and experiences (13). [CANO-ACIO, Evidence; Not Rated]

Education

Patient, Family, and Caregivers

- The patient has a right to have their pain treated. Patients and their families need help in order to understand that effective pain management is important and that it is their right to have the best relief possible. They should also be encouraged to communicate their pain to the health care provider (12). [CPS, Evidence; Not Rated]
- Involving the patient and family in the plan of care is a fundamental principle of pain management. Patients and families are active participants in their own care and should be encouraged to report pain. As a preliminary step towards the management of the pain, they need to be educated to understand the nature of pain, its treatment, and their role in pain control. The education of patients and families involves a consistent effort by all interdisciplinary team members. Health care professionals should use the principles of adult education to guide patient and family teaching (13). [CCNS, Evidence; Not Rated]
- Patients and family members should be educated using both verbal teaching and written materials. Verbal information about pain management may need to be reinforced frequently. It is important that all members of the health care team provide consistent information to patients and families (13). [CCNS, Evidence; Not Rated]
- Make patient and family caregiver education about pain management a part of the treatment plan, and encourage patients and family caregivers to participate actively in pain management (11). [APS, Evidence; A]
- Provide patients and family caregivers with accurate and understandable information about effective cancer pain management, the use of analgesic medications, other methods of pain control, and how to communicate effectively with clinicians about unrelieved cancer pain (11). [APS, Evidence; A]
- Clarify myths and misconceptions about pain and pain management, and reassure patients and family caregivers that cancer pain can be relieved and that addiction and tolerance are not problems associated with effective cancer pain management (11). [APS, Evidence; B]
- Family members and other informal health care providers should be offered information and education regarding the principles of pain and its management in order to address their lack of knowledge and concerns regarding analgesic administration, tolerance, and addiction (6). [SIGN, Evidence; B]
- The concept of pain prevention should be taught to patients and their families in an effort to lessen or eliminate the pain experience before it becomes difficult to manage. Patients should be encouraged to request analgesia before pain interferes with general activities (i.e., >4/10 pain score) (12). [CPS, Evidence; Not Rated]
- Patients and families need to participate in decisions about management strategies, including pharmacological and non-pharmacological techniques (12). [CPS, Evidence; Not Rated]
- Patients must be encouraged to report pain that has not improved after intervention (12). [CPS, Evidence; Not Rated]
- Patients must be encouraged to report any adverse effects to the health care provider and assured that these discomforts can and will be managed (12). [CPS, Evidence; Not Rated]

- Potential procedural pain needs to be discussed, including the strategies to manage it. Providing patients with control in their pain management allows the patient flexibility and timely access to analgesia as required (12). [CPS, Evidence; Not Rated]
- All patients in the health care organization will benefit from pain management education (12). [CPS, Evidence; Not Rated]
- Patients will benefit most from pain management education that is repeated several times in various formats (12). [CPS, Evidence; Not Rated]
- Review methods for assessing pain with the patient prior to hospital discharge, and provide information about conducting pain assessments effectively at home (12). [CPS, Evidence; Not Rated]
- Patients should be taught by physicians, nurses, pharmacists, physical therapists, occupational therapists, and/or other health care professionals regarding pain management during hospitalization and upon discharge. This may be in a pre-admission setting, physician's office, or post-discharge. However, it should also be provided on an ongoing basis during hospitalization (12). [CPS, Evidence; Not Rated]
- Many misbeliefs exist around pain management. Inaccurate statements or beliefs must be identified and clarified (12). [CPS, Evidence; Not Rated]
- Where possible, use appropriate teaching materials, particularly for low-literacy learners and those for whom English is a second language (10). [CANO-ACIO, Evidence; Not Rated]

Health Care Providers

- Prepare clinicians, through both basic and ongoing professional education, to assess and manage cancer pain effectively (11). [APS, Consensus]
- Pain assessment and management should be included in orientation programs (12). [CPS, Evidence; Not Rated]
- There are many beliefs and fears about using opioids that prevent the optimal use of these agents in controlling pain. For this reason, it is important to learn the difference between physical dependence, tolerance, and opioid addiction (12). [CPS, Evidence; Not Rated]
- Professional development opportunities on pain management should be made available to all health care professionals (12). [CPS, Evidence; Not Rated]
- Educational programs should be designed to facilitate change in knowledge, skill, attitudes, and beliefs about pain assessment and management (12). [CPS, Evidence; Not Rated]
- If advanced techniques (such as regional analgesia or nerve blocks) are utilized, it is important for health care professionals to have the appropriate knowledge and skills to use them and to monitor for the safety and effectiveness of these techniques (12). [CPS, Evidence; Not Rated]
- The following is an overview of the areas that need to be addressed when educating health care providers on cancer pain and its management (13). [CCNS, Evidence; Not Rated]
 1. General Overview:
 - Defining pain
 - Pain can be relieved
 - Concept of total pain
 - Understanding the causes of pain
 - Importance of early and appropriate treatment
 - Talking to patients about pain
 - How to describe pain
 - The use of pain rating scale
 2. Pharmacological Management
 - Overview: drug management of pain

- Choice of drugs, appropriate dosing
 - How drugs are taken (e.g., regular dosing around-the-clock, titration, breakthrough drugs)
 - Understanding and overcoming myths and fears
 - Addiction
 - Drug tolerance
 - Respiratory depression
 - Controlling common side effects of drugs (e.g., nausea and constipation)
3. Non-pharmacological Management
- Role for non-pharmacological modalities
 - Review of types of non-pharmacological management

Outcomes Measures

Pain is a common problem for individuals with a diagnosis of cancer. Pain can be managed with interventions proven to be efficacious. While there are many aspects to the patient's pain management, professionals need to know about and practice effective pain management strategies that include alleviating pain in the physical, psychological, emotional, functional, and spiritual dimensions.

Pain is a subjective multidimensional phenomenon that will vary with each individual and each experience with pain. The implementation of evidence-based guidelines will be effective in standardizing approaches to pain management, taking into consideration the person's experience and goals for care.

Outcome measures need to be implemented that consider the following:

- health outcomes
- organizational outcomes
- system outcomes (Consensus of Cancer-Related Pain Management Expert Panel)

Health Outcomes

- As Dodd et al (3) outlined in the Symptom Management Conceptual Model, there are several outcomes that should be considered from a patient perspective. The first is functional status of the patient. Has functional status improved or worsened following the implementation of interventions? An improvement in functional status would be an indicator that the pain management strategies are effective. Functional status can be measured using validated tools. It can also be measured by reviewing the patient's medical record and documentation through regular audits of the charts. Similarly, assessing co-morbidity related to side effects can be determined through regular audits of documentation that will determine whether pain management interventions are causing decreased functional ability and distress for the patient and family.
- The assessment of self-care status is related to functional ability where evaluations of the patient's ability manage his or her care through psycho-educational interventions may be appropriate.
- Quality of life is an outcome that can be considered. There are validated quality of life tools available that can be instituted in organizations. While overall quality of life is likely to deteriorate through disease progression, interventions to manage pain and other symptoms are appropriate and effective in reducing discomfort and distress.
- Direct and indirect cost factors are problematic for patients and their family members. For example, have patients and/or family members been counselled on financial assistance to reduce costs for supportive care drugs and interventions? Time to travel to appointments or

the addition of other home care workers not covered by the Community Care Access Centre (CCAC) are cost factors that the family will bear to support effective pain management.

Organizational Outcomes

Organizations can implement measures to assess outcomes that are indicative of an improvement in practice strategies for effective pain management. Measures of organizational outcomes include:

- Patient satisfaction with the experience of care; use of surveys to measure both inpatient and ambulatory care, not only in hospital but also in community and long-term care
- Length of stay (LOS) for pain control; reduction in LOS when effective interventions are implemented
- Decreased re-admission rates for pain management
- Use of clinical pathways and clinical practice guidelines by practitioners
- Reduction of risk management; for example, fewer complaints related to ineffective pain management.

System Outcomes

Improvement in pain management can result in system outcomes such as:

- Reduced hospital and home care costs when pain management interventions are effective
- Public reporting of reduction in wait times to access care for pain management
- Improved functionality in patients able to contribute to society

DISCUSSION

The Expert Panel on Cancer-related Pain Management used guidelines that were of high quality, based on the AGREE tool; reviewed other documents produced in similar cancer programs; and used expert opinion to reach consensus on recommendations for cancer-related pain management in Ontario. The Panel took into account the various environments and populations of patients with cancer-related pain, the principle of patient-centred care, and the concept that best practice is accomplished through an interdisciplinary team approach.

Both evidence and consensus from the CPS guideline determined that the patient self-report is the best indicator of pain. The Panel agreed that pain is subjective, and the patient is the best indicator of both the quality of pain and its impact on their functional and emotional integrity. The Panel felt that the consensus-based SIGN guideline recommendation of the physical, functional, psychological, and spiritual dimensions being assessed was a necessary point to add.

The Panel decided that if a patient was unable to complete a pain assessment then a proxy report from the family or caregiver would be appropriate. Evidence from the CPS guideline found that a health care professional should conduct an in-depth assessment, and the Panel felt that, for complex pain, a specialized pain team might be required. The Panel chose the evidence-based CPS guideline recommendation concerning the timing and frequency of pain assessments. For sudden severe pain, the Panel used the SIGN guideline's consensus-based recommendation.

The Edmonton Symptom Assessment System was chosen as the principle screening tool because it is currently used throughout Ontario. However, the Panel also recognized the need to use population-specific assessment tools and identified this list in Appendix A. The evidence from the CCNS guideline provided a list of components required for an assessment to be comprehensive. Nonetheless, the Panel felt that health care professionals are needed for in-depth assessment, and highly complex pain situations will require specialist expertise such as in anaesthesia care and radiation oncology, among other specialties. Evidence from the CPS

guideline demonstrated that the reassessment of pain needs to be done regularly to analyze any changes in pain and the functional and psychological impact, as well as additional procedures that may cause pain.

The recommendations concerning care plans from the guidelines was consensus based. The Panel recommended that a written care plan for the management of pain was necessary and that all team members and family be included in the care plan development and updating. The Panel choose the recommendations from the RNAO guideline to describe the factors to be taken into account when writing a care plan and, from the APS guideline, the elements that belong in the care plan. The Panel added information regarding what elements needed to be updated upon the reassessment of pain in patients. The Panel emphasized that all people involved need to know what to expect and do and as well, to understand the reasoning of the plan. For good pain management to be comprehensive and effective, the entire team, including the patient and family members, need to be informed and active in achieving the goals of the plan.

The recommendations for pharmacological interventions were based on evidence or consensus statements from existing guidelines, as well as the Working Panel consensus. The Panel combined the list of multiple factors on which to base the appropriate analgesics, dosages, and routes from information provided from both the RNAO guideline (recommendations based both on evidence and consensus) and the CCNS guideline (based on evidence). Most of the recommendations concerning the administration of medication are from the RNAO guideline. The RNAO guideline used evidence to develop the recommendations concerning opioid administration and the principles of dose titration and used consensus to recommend the use of breakthrough doses and of an equianalgesic tablet. The recommendation concerning opioid rotation was from the APS guideline, which used evidence to make their recommendation.

The Panel based the safety and efficacy of the pharmacological recommendations on the APS guideline evidence-based recommendations. They used a combination of two evidence-based RNAO guideline recommendations concerning the anticipation and monitoring of individuals taking opioids for common side effects in order to prevent non-adherence to prescribed medications. For the recommendation concerning the co-analgesic agents, the Panel used an evidence-based RNAO guideline recommendation. For the recommendations concerning procedural pain, the Panel chose three evidence-based APS guideline recommendations that suggested treating pain prophylactically, providing safe sedation to those who experience distress for painful procedures, and providing those who decline sedation with non-pharmacological interventions to decrease pain.

Evidence from the guidelines and the Panel concurred that combinations of pharmacological and non-pharmacological methods are essential. Furthermore, to meet the patient's total pain experience, the use of psychosocial services and other pain relief specialists is imperative and so recommended.

The documentation recommendations developed by the Panel were based on the evidence-based recommendations from the CANO-ACIO and CPS guidelines. The Panel were of the opinion that documentation in health care done well and regularly is the key communication strategy for facilitating comprehensive care. Documentation must be completed by all health professionals in all settings. The Panel did not reach consensus on the use of patient diaries, believing that the use of a diary is an individual decision, to be offered but not imposed on patients or their family members.

Barriers to comprehensive pain management include the misperceptions, myths, or misinformation held by health professionals, the public, patients, and family caregivers. Therefore, the Panel was unanimous that the education of the patients and their families and the health care providers is extremely important for successful cancer pain management. The

recommendations were based on and were combinations of evidence and consensus from the CANO-ACIO and APS guidelines and the Panel's experience and consensus.

Evaluation measures are essential to determine whether the recommendations are effectively implemented. The Panel recommended the following three outcome measures to determine how well the recommendations are being used and whether they are having the desired impact: patient outcomes (is pain relieved), organizational outcomes (are fewer patients admitted with uncontrolled pain), and system outcomes (are system resources to manage uncontrolled pain reduced or increased).

As new guidelines are produced and new therapies or protocols develop, it is important that the cancer-related pain recommendations be modified. With further research, the implementation of the standards of care, and new practices, the cancer system will incorporate new findings and best practice to improve service delivery and patient outcomes.

CONFLICT OF INTEREST

None of the members of the Cancer-related Pain Management Working Panel declared any conflicts of interest.

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Appendix A. Pain assessment tools: from RNAO (8).

ADULTS:

Pain Assessment Tool	Reference
Visual Analogue Scale (VAS)	http://www.blackwellpublishing.com/specialarticles/jcn_10_706.pdf
Numeric Rating Scale (NRS)	http://www.ndhcri.org/pain/Tools/Numerical_Pain_Rating_Scale.pdf
Verbal Scale	http://www.ndhcri.org/pain/Tools/Verbal_Descriptor_Pain_Scale.pdf
Facial Grimace and Behaviour Flow Charts	Brignell A. Guidelines for developing a pain management program-a resource guide for long term facilities. 2000.
Pain Assessment Tool and Key for Pain Assessment Tool	Brignell A, editor. Guideline for developing a pain management program. A resource guide for long-term care facilities, 3rd ed. 2000.
Communication Worksheet for Pain Management Orders	
Calgary Interagency Pain Assessment Tool	Huber S, Feser L, Hughes D. A collaborative approach to pain assessment. <i>Can Nurse</i> . 1999;95(8):22-6.
Brief Pain Inventory	Cleeland CS. Measurement of pain by subjective report. In: Chapman CR, Loeser JD, eds. <i>Issues in pain measurement</i> . Vol. 12 of <i>Advances in pain research and therapy</i> . New York: Raven Press, 1989:391-403. English and translated versions of this tool are available from: http://www.mdanderson.org/departments/PRG/
McGill Pain Questionnaire	http://www.uofapain.med.ualberta.ca/ReadingDocuments/McGillPainQuestRevisited2005.pdf

PEDIATRIC:

Pain Assessment Tool	Reference
Premature infant Pain Profile (PPIP)	Stevens B, Johnston C, Petryshen P. Premature infant pain profile: development and initial validation. <i>Clin J Pain</i> . 1996;12(1): 13-22.
Neonatal Infant Pain Scale (NIPS)	Lawrence J, Alcock D, McGrath P, Kay J, MacMurray S, Dulberg C. The development of a tool to assess neonatal pain. <i>Neonatal Network</i> . 1993;12(6), 59-66.
FLACC	Merkel SI, Voepel-Lewis T, Shayevitz JR, Malviya S. The FLACC: a behavioral scale for scoring postoperative pain in young children. <i>Pediatric Nurs</i> . 1997;23(3):293-7.
Children's Hospital of Eastern Ontario Pain Scale (CHEOPS)	McGrath PJ, Johnson G, Goodman JT, Schillinger J, Dunn J, Chapman J. CHEOPS: A behavioural scale for rating postoperative pain in children. <i>Advances in pain research and therapy</i> . Vol 9. Fields HL et al, editors. New York: Raven Press; 1985. p. 395-402.
Wong-Baker Faces Scale	http://www.us.elsevierhealth.com/WOW/faces.html Translations of the Wong-Baker Faces Scale available from: http://www.us.elsevierhealth.com/WOW/facesTranslations.html
OUCHER	Beyer JE, Aradine CR. Content validity of an instrument to measure young children's perceptions of the intensity of their pain. <i>J Pediatric Nurs Care</i> . 1986;1(16):386-95.

Appendix B. Edmonton Symptom Assessment System (ESAS).

Edmonton Symptom Assessment System (ESAS)

Please circle the number that best describes:

No pain	0	1	2	3	4	5	6	7	8	9	10	Worst possible pain
Not tired	0	1	2	3	4	5	6	7	8	9	10	Worst possible tiredness
Not nauseated	0	1	2	3	4	5	6	7	8	9	10	Worst possible nausea
Not depressed	0	1	2	3	4	5	6	7	8	9	10	Worst possible depression
Not anxious	0	1	2	3	4	5	6	7	8	9	10	Worst possible anxiety
Not drowsy	0	1	2	3	4	5	6	7	8	9	10	Worst possible drowsiness
Best appetite	0	1	2	3	4	5	6	7	8	9	10	Worst possible appetite
Best feeling of wellbeing	0	1	2	3	4	5	6	7	8	9	10	Worst possible feeling of wellbeing
No shortness of breath	0	1	2	3	4	5	6	7	8	9	10	Worst possible shortness of breath
Other problem	0	1	2	3	4	5	6	7	8	9	10	

Patient's Name _____

Date _____ Time _____

Complete by (*check one*)

- Patient
- Caregiver
- Caregiver assisted

BODY DIAGRAM ON REVERSE SIDE

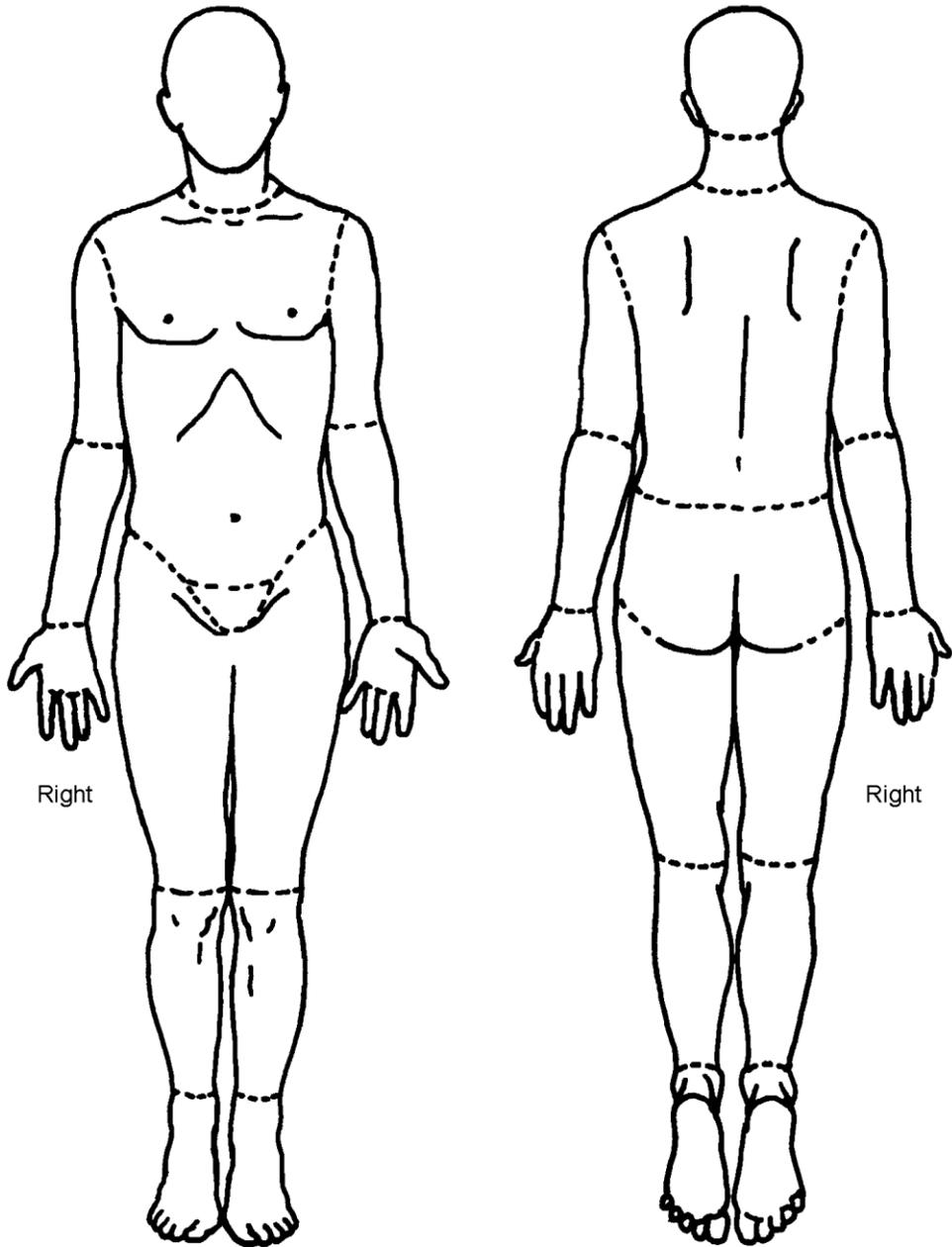
August, 2006

Used with permission from the Regional Palliative Care Program, Capital Health, Edmonton, Alberta, 2006

ESAS completed by:

- Patient Health professional
- Family Assisted by family or health professional

Please mark on these pictures where it is you hurt.



Appendix C. Cancer Care Ontario's Cancer-related Pain Management Working Panel.

<p>Chair: Esther Green RN MSc(T) Provincial Head, Nursing and Psychosocial Oncology, Cancer Care Ontario, Toronto, ON</p>	<p>Carole Beals RN BScN CONC (C) Regional Surgical Oncology Network Coordinator Royal Victoria Hospital, Barrie, ON</p>
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Appendix D. Cancer pain management standards–AGREE scores for selected guidelines.

Guideline	Domain						Overall	Number of Reviewers
	Scope & Purpose	Stakeholder Involvement	Rigor of Development	Clarity & Presentation	Applicability	Editorial Independence		
<i>SIGN, 2000</i>	100%	58.3%	83.3%	91.7%	50.0%	16.7%	Strongly Recommend	2
<i>AGS, 2002</i>	100%	75.0%	88.1%	79.2%	61.1%	91.7%	Strongly Recommend	2
<i>RNAO, 2002</i>	100%	87.5%	90.5%	95.8%	83.5%	100%	Strongly Recommend	2
<i>NBCCNCCI, 2003</i>	83.3%	79.2%	97.6%	79.2%	44.4%	83.3%	Strongly Recommend	2
<i>CANO-ACIO, 2004</i>	94.4%	62.5%	57.1%	95.8%	66.7%	75.0%	Strongly Recommend	2
<i>APS, 2005</i>	81.5%	55.6%	76.2%	97.2%	55.6%	88.9%	Strongly Recommend	3
<i>CPS, 2005</i>	66.7%	58.3%	38.1%	66.7%	55.6%	50.0%	Recommend	2
<i>CCNS, 2005</i>	88.9%	79.2%	54.8%	95.8%	50.0%	58.3%	Strongly Recommend	2

Strongly recommend

The guidelines rated high (3 or 4) on the majority of items and most domain scores are above 60%. This indicates that the guideline has a high overall quality and that it could be considered for use in practice without provisos or alterations.

Recommend (with provisos or alterations)

The guidelines rated high (3 or 4) or low (1 or 2) on a similar number of items and most domains scored are between 30 or 60%. This indicates that the guideline has a moderate overall quality. This could also be due to insufficient information or a lack of information in the guideline for some of the items. If provisos or alterations are made—and sufficient information is provided on the guideline development method—the guideline could still be considered for use in practice, in particular when no other guidelines on the same clinical topic are made.

Would not recommend

The guidelines rated low (1 or 2) on the majority of items and most domain scores are below 30%. This indicates that the guideline has a low overall quality and serious shortcomings. Therefore, it should not be recommended for use in practice.

Evidence-Based Series #16-2: Section 3

Cancer-Related Pain Management: A Report of Evidence-Based Recommendations to Guide Practice: Guideline Development and External Review— Methods and Results

Cancer-related Pain Management Working Panel

A Quality Initiative of the
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

Report Date: March 17, 2008

THE PROGRAM IN EVIDENCE-BASED CARE

The Program in Evidence-based Care (PEBC) is an initiative of the Ontario provincial cancer system, Cancer Care Ontario (CCO) (1). The PEBC mandate is to improve the lives of Ontarians affected by cancer, through the development, dissemination, implementation, and evaluation of evidence-based products designed to facilitate clinical, planning, and policy decisions about cancer care.

The PEBC supports a network of disease-specific panels, termed Disease Site Groups (DSGs) and Guideline Development Groups (GDGs), as well as other groups or panels called together for a specific topic, all mandated to develop the PEBC products. These panels are comprised of clinicians, other health care providers and decision makers, methodologists, and community representatives from across the province.

The PEBC is well known for producing evidence-based clinical practice and organizational guidelines, known as Evidence-based Series (EBS) reports, using the methods of the Practice Guidelines Development Cycle (1,2). The EBS report consists of a comprehensive evidentiary review (typically a systematic review) of the evidence on a specific cancer care topic, an interpretation of and consensus agreement on that evidence by our Groups or Panels, the resulting recommendations, and an external review by Ontario clinicians and other stakeholders in the province for whom the topic is relevant. The PEBC has a formal standardized process to ensure the currency of each guideline, through the periodic review and evaluation of the scientific literature and, where appropriate, the integration of that literature with the original guideline information.

The Evidence-Based Series

Each EBS is comprised of three sections:

- *Section 1: Recommendations.* Contains the clinical and/or organizational recommendations derived from the evidentiary review, its interpretation by the Panel involved, and a formalized external review in Ontario by review participants..
- *Section 2: Evidentiary Base.* Presents the comprehensive evidentiary/systematic review of the clinical and scientific research on the topic and the conclusions reached by the Panel.
- *Section 3: Guideline Development and External Review—Methods and Results.* Summarizes the guideline development process and the results of the formal external review by Ontario practitioners of the draft version of Section 1: Recommendations and Section 2: Evidentiary Base.

DEVELOPMENT OF THIS EVIDENCE-BASED SERIES

Development and Internal Review

This EBS was developed by the Cancer-related Pain Management Working Panel of the CCO PEBC. The series is a convenient and up-to-date source of the best available evidence on Cancer Pain Management, developed through review of the evidentiary base, evidence synthesis, and input from external review participants in Ontario. The Panel was made up of nurses, palliative care physicians, pharmacists, and pain specialists.

Report Approval Panel

Prior to the submission of this EBS draft report for external review, the report was reviewed and approved by the PEBC Report Approval Panel, which consists of two members, including an oncologist, with expertise in clinical and methodology issues. Key issues raised by the Report Approval Panel were the following, with the actions taken in response to that feedback:

1. *The question is not as explicit and informative as it could be.* The layout of the question was modified in order to streamline the question.
2. *The qualifying statements are not clarifying a position.* The 'Qualifying Statements' section was changed into the 'Underlying Principles of Cancer-pain Management' section.
3. *You are losing very useful information by collapsing "evidence vs. consensus". Why not retain the level of evidence IF reported.* In the 'Results' section, the level of evidence of the recommendations from other guidelines was added and clarified.
4. *Methods –include more components in tables and add AGREE scores.* More components and AGREE scores were added to Table 1. Summary of Evidence.
5. *For 'Outcome Measures' recommendation, what specific indicators do you recommend?* Specific outcomes concerning the patient's perspective (pain levels, functional status, quality of life), the organizational perspective (direct and indirect costs, patient satisfaction, length of stay for pain control, readmission rates), and the system perspective (hospital and home care costs) was added to the recommendation.

External Review by Ontario Clinicians

Following the review and discussion of Section 1: Recommendations and Section 2: Evidentiary Base of this EBS and the review and approval of the report by the PEBC Report Approval Panel, the Cancer-related Pain Management Working Panel circulated Sections 1 and

2 to external review participants in Ontario for review and feedback. Box 1 summarizes the draft recommendations and supporting evidence developed by the Cancer-related Pain Management Working Panel.

Methods

Feedback was obtained through a mailed survey of 155 external review participants in Ontario (including nurses, palliative care physicians, and pharmacists). The survey consisted of items evaluating the methods, results, and interpretive summary used to inform the draft recommendations and whether the draft recommendations should be approved as a guideline. Written comments were invited. The survey was mailed out on November 21, 2007. Follow-up reminders were sent at two weeks (post card) and four weeks (complete package mailed again). The Cancer-related Pain Management Working Panel reviewed the results of the survey.

Results

Twenty-six responses were received out of the 155 surveys sent (17% response rate). Responses include returned completed surveys as well as phone, fax, and email responses. Of the participants who responded, 20 indicated that the report was relevant to their practice or organizational position, and they completed the survey. Key results of the feedback survey are summarized in Table 1.

Table 1. Responses to eight items on the feedback survey.

Item	Number (%)		
	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
The rationale for developing a guideline, as stated in the "Introduction" section of the report, is clear.	19 (95%)	1 (5%)	0
There is a need for a guideline on this topic.	19 (95%)	0	1 (5%)
The literature search is relevant and complete.	11 (55%)	6 (30%)	2 (10%)
The results of the trials described in the report are interpreted according to my understanding of the data.	18 (90%)	1 (5%)	1 (5%)
The draft recommendations in the report are clear.	17 (85%)	0	3 (15%)
I agree with the draft recommendations as stated.	16 (80%)	2 (10%)	2 (10%)
This report should be approved as a practice guideline.	17 (85%)	2 (10%)	1 (5%)
If this report were to become a practice guideline, how likely would you be to make use of it in your own practice?	Very likely or likely	Unsure	Not at all likely or unlikely
	16 (80%)	2 (10%)	2 (10%)

Summary of Written Comments

Seventeen respondents (85% of responders) provided written comments. The main points contained in the written comments were the following, with the responses from the Cancer-related Pain Management Working Panel:

1. *Add treatment goals to documentation.* The goals are included in the Plan of Care, a part of the necessary documentation.
2. *Summary or short form might be easier to follow and more useful as a quick reference.* The purpose of this document is to assess the existing guidelines in order to develop standards of care applicable to all environments in which people with cancer-related pain may be seen. The Panel recognized the need for comprehensive guidelines for Ontario

cancer programs that would be available to and used in multiple settings for different populations.

3. *Neuropathic pain receives almost no attention.* The Panel would like to state that there is already a PEBC guideline dealing with neuropathic pain, EBS #13-8 *The Use of Gabapentin and Tricyclic Antidepressants in the Treatment of Neuropathic Pain in Cancer Patients*. The Panel has also added a 'Relevant Guidelines' section to Section 1 that lists EBS #13-8.
4. *There is little or no discussion of drug infusions.* The new 'Relevant Guidelines' section also includes EBS #16-1 *Managing Central Venous Access Devices in Cancer Patients*.
5. *There were a few comments concerning the use of morphine in advanced renal failure.* The Panel clarified and rewrote that recommendation based on the feedback and added a new reference concerning that topic specifically.
6. *It is misleading to refer to codeine as having no ceiling.* The Panel noted this error and added the following footnote to Section 2 concerning that point: Although no true dose ceiling exists, patients requiring doses above 800mg daily may be better managed on a lower dose of a more potent opioid.
7. *One respondent asked if the recommendation about using oral or intravenous as the preferred route for children was evidence based.* The recommendation was based on expert opinion and practice. Taking into consideration quality of life and suffering, intramuscular and subcutaneous injections are avoided, where possible, especially in the setting of pediatric pain management. In practice, needles for pain are not given, simply because the injection hurts and is an anxiety-provoking experience for children already under stress.
8. *For adults in Appendix A, did not see McGill Pain Scale.* A web reference for the McGill Pain Questionnaire was added.
9. *The NCCN pediatric and adult guidelines and the WHO guidelines were missing from evaluation.* The Panel found and reviewed 25 guidelines published after the year 2000. The WHO guideline was written in 1999 and not eligible for inclusion in the literature reviewed. The NCCN guidelines were reviewed but, based on the inclusion criteria (the AGREE instrument and relevancy to the Ontario context for cancer-pain management), were not included in the guidelines chosen for use in the recommendations.

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Education and Information

Guideline review outcomes definitions.

1. **ARCHIVED** – An archived document is a document that will no longer be tracked or updated but may still be useful for academic or other informational purposes. The document is moved to a separate section of the Web site and each page is watermarked with the phrase “ARCHIVED”.
2. **ENDORSED** – An endorsed document is a document that the DSG/GDG has reviewed for currency and relevance and determined to be still useful as guidance for clinical decision making. A document may be endorsed because the DSG/GDG feels the current recommendations and evidence are sufficient, or it may be endorsed after a literature search uncovers no evidence that would alter the recommendations in any important way.
3. **DEFERRAL** – A Deferral means that the clinical reviewers feel that the document is still useful and the decision has been made to postpone further action for a number of reasons. The reasons for the deferral are in the Document Assessment and Review Tool.
4. **UPDATE** – An Update means that the DSG/GDG recognizes that there is new evidence that makes changes to the existing recommendations in the guideline necessary but these changes are more involved and significant than can be accomplished through the Document Assessment and Review process. The DSG/GDG will rewrite the guideline at the earliest opportunity to reflect this new evidence. Until that time, the document will still be available as its existing recommendations are still of some use in clinical decision making.