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This program meets Canadian Association of Nurses in Oncology guidelines for educational content and will support nurses in their understanding of cancer pain.

October 2004
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Introduction to Initiative

INTRODUCTION

The World Health Organization estimates that of the five million who die from cancer annually, four million die of uncontrolled pain. It has been estimated that even in Canada one-quarter of individuals with cancer die without adequate pain control. Management of cancer pain is a complex phenomenon influenced by physical, social, spiritual, emotional and cultural factors which together define the experience of human suffering. Uncontrolled pain causes suffering, reduces quality of life and adds to the burden of fear experienced by individuals with cancer. Much of this suffering is unnecessary since with appropriate skill and knowledge up to 90% of cancer pain can be effectively controlled.

Despite recent advances in the understanding of pain and pain management approaches, pain control remains a significant problem for individuals with cancer. Barriers to cancer pain management are complex and relate to the attitudes, beliefs, expectations and knowledge of health care professionals, patients, families and the health care system itself. It is further compounded by the low priority given to comfort and symptom management in our disease-centered model of care, the failure to consider the model of “total pain” and the lack of consultation to appropriate treatment resources for pain control. There is an urgent need to define accountability and responsibility for pain management within our health care system.

Because of the prevalence and seriousness of issues surrounding the management of cancer pain, CANO believes it is important to assume a leadership role in addressing obstacles to effective management of pain in adults and children with cancer. Although CANO addresses cancer pain in its Standards for Oncology Nursing Practice, a more focused and comprehensive approach is needed. The establishment of these standards represents the first steps toward improving the nursing care of individuals suffering from cancer pain. The steps integral to the nursing process - assessment, planning, implementation, coordination and evaluation - are the cornerstones of these standards. The CANO Standards for Nursing Practice and Education related to Cancer Pain Management were developed to guide all nurses providing cancer care in any practice setting - the community, the home, hospitals or specialty treatment centres and represents the first steps needed to prevent and treat cancer pain. The standards require a specialized knowledge of the cancer trajectory, the current treatment modalities and their associated consequences along with an understanding of the unique challenges for persons diagnosed with cancer. Standards are designed to set guidelines for clinical practice, establish the required knowledge base and to define acceptable outcomes.
CANO Position Statement on Cancer Pain:

We believe that individuals with cancer pain have a right to obtain the best possible pain relief. Pain management extends beyond the relief of physical pain to encompass the emotional, psychological and spiritual responses to pain and illness that impact the individual’s quality of life and ability to function optimally in the family and society. Nurses caring for individuals with cancer pain have an ethical obligation to explore all options within the scope of nursing practice to provide relief by:

- exercising a proactive role in identifying and assessing cancer pain and in planning, implementing, coordinating, and evaluating the interdisciplinary management of cancer pain.
- reducing or minimizing health system barriers in order to provide effective pain management.

Guiding Principles:

- Nurses along with other team members utilize ongoing pain assessment to identify the presence of pain and adequacy of pain management.
- Nurses recognize that flexibility is essential to managing cancer pain. As individuals vary in diagnosis, stage of disease, treatment plan, responses to pain and interventions, life experiences and personal preferences, so must pain management.
- Nurses need to adapt assessments and interventions to meet the specific needs of specialized populations including infants and children, the elderly, the cognitively impaired, substance abusers and others.
- Nurses address the problem of cancer and treatment related pain throughout the cancer trajectory, initial treatment to palliation, and in all care settings, acute care, community care and continuing care.
- Nurses are responsible for implementing an individualized pain management strategy which includes interventions and evaluation in collaboration with the individuals with cancer, the family and interdisciplinary team members.
- Nurses are sensitive to the unique pain management needs and circumstances of individual’s from various ethnic and cultural backgrounds.
- Nurses are responsible for being knowledgeable and skilled in the assessment and use of current pain management techniques.
- Nurses, as participants in the pain management process, need to examine their personal beliefs and attitudes towards pain and how this influences their pain management practice.
- Nurses have a responsibility for patient, family and public education related to pain relief and the options and resources available for assessment and treatment of cancer pain.
- Nurses have a responsibility to use research findings relevant to assessment and management of cancer pain in their practice and to facilitate the dissemination and use of these findings.
- Cancer pain and pain management are research priorities for oncology nurses and CANO.
• Nurses participate in the development of institutional standards and a formalized process for evaluating pain management practices and individual patient responses.

Pain Standards

Standard 1.0 - Assessment:

Nurses caring for individuals with cancer include an initial assessment for pain and ongoing pain assessments through treatment and changes in disease status.

Guiding Principles:

• A comprehensive assessment of pain precludes the appropriate and individualized treatment of pain.
• The patient’s self-report is the primary source of assessment data and includes the patient’s preferences for pain management.
• Special populations require aggressive pain assessment and management.

1.1 Nurses will perform a basic assessment of pain appropriate to the individual’s developmental and cognitive level. The assessment includes the location, quality, duration of pain, aggravating and relieving factors, effects of pain and interventions on activities of daily living and lifestyle, side effects of current treatment and the meaning of pain for the individual experiencing pain.

1.2 Nurses have a basic understanding of pain transmission and modulation.

1.3 Nurses understand the myths, fears, values and beliefs that can influence assessment and management of pain.

1.4 Nurses assist individuals in communicating their experience of pain through the use of various pain assessment strategies.

1.5 Nurses will identify procedures that may potentially lead to acute pain and will advocate for measures to reduce such pain.

1.6 The Nurse will determine the patient’s previous experiences with acute and chronic pain.

1.7 The Nurse will assess the patient’s fears and perceptions regarding anticipated pain and pain therapies.

1.8 The Nurse will observe the patient for indirect evidence of pain. This is especially important for those who may not be able to communicate the presence of pain such as infants, individuals with cognitive impairments and those from other cultures. The Nurse will include reports and observations from family and caregivers.
1.9 The Nurse recognizes that the ongoing assessment of pain, pain relief, pain interventions and side effects associated with therapy should be documented on a standardized pain flow sheet.

1.10 Nurses assess pain at appropriate intervals after starting the treatment plan, with each new report of pain and following an intervention.

**Standards 2.0 - Planning:**

The nurse develops an individualized plan of care for pain management in collaboration with the patient, family and other team members.

**Guiding Principles:**

- The plan of care utilizes the principles of the analgesic ladder published by the World Health Organization.
- The plan of care includes specific measurable goals and interventions taking into account the individuals' goal for pain management.
- The plan includes referral to appropriate consultants, agencies and community resources for pain management.
- The plan recognizes that spiritual and psychosocial care are important aspects of the treatment plan and where appropriate, referral should be made to support groups. These approaches are not a substitute for analgesics.

2.1 The nurse recognizes the need for appropriate dosing, appropriate uses of high doses of opiates in this population, and the use of equianalgesic charts.

2.2 Nurses are knowledgeable about commonly used adjuvant analgesics, including doses appropriate for those cared for by the nurse (e.g., infants, children, adults, and elderly).

2.3 Nurses use measures to prevent, minimize, and treat common side effects of analgesics and adjuvant analgesics (especially constipation).

2.4 The Nurse is aware of the difference between addiction, dependence, and tolerance, and applies this information clinically.

2.5 The Nurse anticipates effects of primary cancer therapy on pain and modifies the pain care plan.

2.6 The Nurse is knowledgeable and utilizes non-pharmacological, adjuvant measures such as patient education and relaxation and incorporates these into the management of pain.
**Standard 3.0 - Implementation:**

Utilizing the care plan developed by the interdisciplinary team, nurses are responsible and accountable for implementation and coordination of the plan for management of cancer pain within the scope of nursing practice.

**Guiding Principles:**
- The plan of care for pain management is communicated to caregivers in other settings who will be caring for the individual experiencing cancer pain.
- Nurses assist individuals and families with self-care and autonomy taking into account their ability and culture.

3.1 Interventions for managing procedural related pain should consider the type of procedure, anticipated level of pain and specific individual factors.

3.2 Nurses will utilize all available clinical and administrative resources to ensure progress toward achieving relief or control of cancer pain.

**Standard 4.0 - Evaluation:**

Nurses are responsible for evaluating responses to interventions for cancer pain management and for using evaluation data to revise the plan of care.

**Guiding Principles:**
- The quality of pain management should be evaluated in all settings where cancer patients receive care.
- Nurses contribute to the evaluation of health care system approach to the management of cancer pain.
- Cancer pain will be evaluated on an individual basis.

4.1 Nurses are aware of the individual variation in side effects and monitors them and where possible treats them prophylactically.

4.2 Nurses re-assess and evaluate the care plan on an ongoing basis. See standard 1.1.

4.3 Nurses are responsible for identifying and communicating barriers to cancer pain management.
Standard 5.0 - Education:

Opportunities should exist for all nurses caring for individuals with cancer to obtain knowledge and skill in the assessment and management of cancer pain.

Guiding Principles:
- Nurses are responsible for updating their knowledge of cancer pain assessment, management and evaluation.
- Nurses have a responsibility to educate individuals and families about the right to relief of cancer pain along with the current resources and options available for assessment and treatment of cancer pain.

5.1 CANO supports and initiates continuing education opportunities for oncology nurses to develop expertise in cancer pain management.

5.2 CANO provides expert consultation to various education programs in curriculum development and delivery related to cancer pain management.

5.3 Basic nursing education programs need theoretical and clinical curriculum content related to cancer pain and its management.

5.4 Graduate nursing education programs preparing advanced practitioners should provide advanced theoretical, research and clinical curriculum content on cancer pain management.

5.5 Nurses are encouraged to participate community education regarding pain management.

Standard 6.0 - Research:

Oncology nurses utilize research findings in the assessment and management of cancer pain.

Guiding Principles:
- Cancer pain and cancer pain management are research priorities for oncology nurses.
- Nursing research on pain management includes the effects of cancer pain on family members and significant others.

Nurses caring for individuals with cancer identify issues and problems for research related to the management of cancer pain.

6.1 Nurses support and participate in interdisciplinary research efforts directed towards cancer pain management.

6.2 Nurses with the appropriate educational preparation and skills conduct nursing research studies related to cancer pain.
6.3 Nurses develop measures for evaluating the quality of pain management.
6.4 Nurses advocate and participate in organizational and industry resources to conduct studies related to cancer pain.
6.5 Nurses read current literature on cancer pain and evaluate its potential for application to practice.
6.6 Nurses incorporate research findings regarding cancer pain management into educational programs.

References:


Preface

Patients often equate the diagnosis of cancer with the experience of a painful illness. The data from studies on the prevalence of pain in patients with cancer report that as many as 2/3 of patients will experience moderate to severe cancer-related pain during their illness (Bonica, 1990). Much of this suffering is unnecessary, since with appropriate skill, knowledge and judgement up to 90% of cancer pain can be effectively controlled (Goisis, Gorini, Ratti, et al., 1989; Schug, Zech and Dörr, 1990; Teoh and Stjernsward, 1992; Ventafridda, Caraceni and Gamba, 1990).

This manual is intended to provide oncology nurses and nurses who care for patients and families experiencing cancer-related pain with the clinical direction that is essential to deal effectively with this problem.

The information provided is aimed at nurses with an intermediate level of expertise in cancer care and pain management. The manual contains foundational information and recommendations for the assessment, planning, intervention and evaluation of cancer pain management.

The manual is designed to be used as a resource for registered nurses caring for oncology patients, and as a vehicle to disseminate best practices in cancer pain management.

The information in the manual is structured to follow the nursing process framework of assessment, planning, intervention (pharmacological, non-pharmacological) and evaluation. Specific suggested assessment tools or guides are contained in appendices of the manual.

It is our hope that the information provided in this manual will guide nurses as they help patients and families to manage cancer pain. We believe that this will contribute to the alleviation of suffering across Canada, and perhaps in the global community.
Physiology of Pain & Principles of Pain Management

Pain is often referred to as an unpleasant sensory sensation, and as a subjective experience (IASP, 1979; McGrath, 1990). Nociceptive pain is perceived in the central nervous system following a series of processes.

These processes are divided into 4 phases:

**Transduction** - stimulus (painful) is detected by nociceptive receptors.

**Transmission** - painful stimulus is relayed to the central nervous system (dorsal horn neurons).

**Modulation** - message of pain is modified by other activity in the ascending or descending neural pathways (thalamic nuclei).

**Perception** - the brain understands the stimulus as painful (somato-sensory cortex – physical perception; frontal limbic cortices – emotional impact).
One of the systems used to describe pain is a classification of pain as either nociceptive or neuropathic.

Nociceptive pain is pain sensation as a result of damage to tissues resulting in a normal nerve transduction process. Pain from cancer results from tumour pressing on tissues, infiltration of tumour into bone or pain from cancer treatment (surgery, radiation, and chemotherapy). Patients will describe the quality of this type of pain as ache, sharp knife-like.

Neuropathic pain is pain sensation as a result of damaged nerves which transmit a sensation without an external cause or transmit a normal sensation that is interpreted a “painful” such as light touch. Patient will describe the quality of this type of pain as burning, electric shock-like, pins & needles.

**Principles of pain management:**

1. Pain is what the patient says it is, regardless of age, culture, beliefs, etc.
2. Remember concept of “total pain”.
3. Care is individualised and holistic.
4. Pain management is family centred and patient focused.
5. A collaborative, multi-professional interagency approach is provided by knowledgeable professionals.
6. Do a thorough but relatively rapid assessment of the pain.
7. Treat underlying disease when appropriate.
8. Avoid unnecessary delay in treating the pain, especially if it is severe.
9. Patients (including children) and their families are viewed as partners in care.
10. Educate the patient, family and other caregivers & involve them in the treatment plan.
11. Follow a stepped approach that depends on the severity of pain.
12. Never use placebos.
13. Consider adjuvant therapy at all stages.
14. Give medication orally whenever possible.
15. Constant pain requires regular analgesics to maintain a constant level of analgesia.
16. Always provide breakthrough doses.
17. Use environment in therapy.
18. Monitor & communicate with patient frequently.
19. Treat other symptoms aggressively.
20. Refer to pain experts when pain persists.
Barriers to Cancer Pain Management

A number of variables hinder the management of cancer pain, and can be grouped under patient, health care provider, health care system barriers and myths and misconceptions about cancer pain and its treatment.

A. Patient Barriers

- Reluctance to report pain.
- Want the Healthcare professionals to focus on diagnosing, treating and curing the cancer.
- Want to be perceived as a “good patient”.
- Have underlying concerns about the meaning of their pain - disease progression? Failed treatment?
- Reluctance to take drugs, particularly opioids.
- Concerns about side effects, or believe that they are “allergic”.
- Addiction concerns - confuse physiological dependence with psychological dependence.
- Tolerance concerns - if I use these drugs now, what will I use if the pain gets really bad.

B. Health Care Provider Barriers

- Poor pain assessment skills.
- Reluctance to prescribe opioids.
- Reluctance to refer to pain services
- Fear of uncontrollable side effects.
- Fear of addiction – confuse physiological dependence as psychological dependence.
- Unwarranted concerns about respiratory depression.
- Failure to make pain control a priority.

C. Health Care System Barriers

- Lack of systematic pain documentation.
- Lack of availability of drugs.
- Inconsistent funding nationally, for certain drugs.
- High costs of some drugs.
- Inadequate funding of palliative care programs.
- Lack of specialists/services in pain control.
D. Myths and Misconceptions About Cancer Pain

- Cancer pain is inevitable.
- Some pains cannot be treated.
- Taking morphine means that the end is near.
- Taking morphine means that you will become an addict.
- It is better to wait as long as possible before taking analgesics.
- Young children and infants do not experience pain as intense as adults.
- Young children will not have a memory of pain.
- Children cannot evaluate intensity and quality of cancer pain; parents and nurses are better judges of pain.
- It is impossible for a child to conceal pain.
- The elderly are expected to have and tolerate pain.

What is important for the nurse to recognize is the extent to which these barriers interfere with the management of cancer pain, and how to minimize or remove them.
Roles of Health Care Professionals in the Management of Cancer Pain

Nurses play a crucial role in pain management. The nurse is in a key position to address patient and family fears, to educate them, and to ensure that effective pain management is integrated into the complete health care plan for the patient.

Since nurses have constant contact with patients, more so than other health care professionals, this places them in a unique position to assess patients’ needs for pain control and to monitor the success of interventions in achieving pain relief.

Nurses who care for cancer patients have a responsibility to be competent in cancer pain management (see CANO Position Statement). However, nurses practice with other health team members, and collaborate to assess, plan, intervene and evaluate cancer pain management.

A. Roles of Registered Nurse (RN)

- Conduct initial and ongoing pain assessment.
- Discuss findings with physician and other health care professionals to develop a plan of care.
- Administer pain medications as required.
- Teach patient and families on the use of nonpharmacological approaches to pain management (e.g. use of heat or cold).
- Provide information given to patients/families and about pain principles, pain medications and management of side effects.
- Check for concerns about medications and counteract myth and misconceptions about management of pain.
- Monitor for side effects of opioids (e.g. nausea, constipation) and provide appropriate interventions.
- Report toxicities and side effects to physician (sedation, confusion, constipation or myoclonus).
- When appropriate consult other resources for the patient/families (Clinical Nurse Specialist).
- Ensure that medications are available/accessible in home/community.
- Communicate with physicians/pharmacist and other health care professionals regarding the plan for pain control.

B. Roles of Registered Practical Nurse (RPN), Licensed Practical Nurse (LPN)

- Conduct initial and ongoing pain assessment.
- Provide comfort through instruction and use of heat, cold and positioning.
Report side effects, e.g. nausea, sedation and constipation to the RN.
Respond to concerns and fears about opioids with factual and reassuring statements.
Each province has legislation regulating the practice of LPN’s, therefore the relationship between the LPN and the RN may differ.

Roles of Physician
- Conduct a history and physical to determine etiology of pain.
- Determine medical plan of care with involvement of other health care professionals, understanding patient’s goals.
- Consider referral to pain services
- Discuss plan of care with patient/family.
- Be available for ongoing collaboration with nurse and patient regarding plan of care.
- Follow-up and adjust plan of care based on relief of pain and development of side effects.
Learning Objectives

At the end of this section, the nurse will:

1. Identify the key areas that need to be assessed in an adult or child experiencing pain.

2. Explain how pain is expressed according to a child's age and developmental characteristics.

3. Describe the considerations needed to assess pain in the older adult.

4. List three strategies for the development of a culturally sensitive pain assessment.

5. State how pain assessment tools can be modified and/or utilized for assessing pain in the cognitively impaired.

6. Describe factors that complicate, hinder and impact pain assessment.
Brief Pain Assessment for Adults: A seven-minute shortcut

In an ideal world, nurses would have time to complete an in-depth assessment of pain as outlined in Appendix A. What is presented here is an abbreviated assessment that can be completed despite the current time constraints of a busy clinic. When you look at this approach, keep in mind that instructions about the use of heat/cold, how to use a 0-10 intensity scale and asking patients to bring in a list of medications need only to be done once. The following is a description of two possible scenarios, which represent the use of this tool in an ambulatory or inpatient setting.

Scenario 1 - Patient not known to have pain - no reference in documentation about pain.

Review chart and if no mention of pain then proceed to ask a broad screening question e.g. “How have you been feeling?” followed by “Are you experiencing any pain that you think is from your cancer?”

If pain is identified as a problem then follow section A.

Scenario 2 - Patient known to have pain (but not known to you).

Review most recent documentation and note if pain was a problem.

Ask the patient if pain is still a problem.

Ask if patient/family have kept a pain diary

A. If pain continues to be a problem: assess

? Location(s) of pain (NB – if back pain, be alert to the possibility of a spinal cord compression – see Appendix B).

? Severity of pain - using 0-10 scale (if possible) rate worst pain and least pain in past 2 days (see section below on how to use rating scale).

? Quality of pain (burning, dull ache).

? Current medications for pain:

? Did they bring a list of their meds or the bottles with their pills? (Ask patient/family to bring list or pill bottles with them for every clinic visit).

? Current dose/schedule of any opioid. How often do you take them? Do they help? How long do they last?

? Problems (nausea, constipation, sedation, unable to afford medication).

? Has the patient tried heat or cold?

? What else has the patient/family tried to help to relieve the pain?

B. If No pain or pain well controlled:

? Check to see if patient needs prescriptions.

? Check if any side effects from current medications.
Examples of using the brief pain assessment:

- "Hello, Mrs. Smith, I noticed from your chart that you had pain in your left hip. Is this still a problem for you …..?"
- Can you point out where the pain is?
- Are there any other sites of pain?
- Can you tell what the pain feels like? (Use word probes only if patient unable to describe pain in their own words).
- I am going to ask you to rate the intensity of your pain using a scale. On this scale, 0 means no pain and 10 means the worst pain possible, 5 is a moderate amount of pain.
- Can you tell me what number you would give your pain at this very second
- In the last 2 days what number would you give the worst pain? … and the least….
- Are you taking any medication for the pain?
- How many pain pills do you take in 24 hrs?
- Did you bring a list or the medication with you?
- Are you having any problem taking the medications, any nausea or constipation?
- Have you ever tried heat or cold on your hip to manage the pain?
- Dr. X will be here in a few minutes and I will tell her about your pain. I will see you at the end of your visit to go over any changes.
Brief Pain Assessment for Children

Children are not “small adults.” One challenge to the nurse when caring for the child with cancer pain is to perceive that pain through the eyes and world of the child.

Since pain in children is subjective and interwoven with emotions, perceptions and past experiences it is important to use numerous strategies to collect quantitative and qualitative data from the child and their family.

Recommendations

A. Since assessment in children includes many aspects, Baker and Wong (1987) suggests a QUESTT approach to pain assessment in children:

- Question the child.
- Use pain-rating scales.
- Evaluate behaviour and physiologic changes.
- Secure parents’ involvement.
- Take cause of pain into account.
- Take action and evaluate results.

B. A thorough evaluation in children includes:

Information about pain – Individual differences:

- Obtain the child’s pain history, including previous experience with analgesic medications and learn what words the child uses to describe pain (boo-boo, feel funny, baddie, hurt...).
- Children may or may not be able to give details on their present and past experience of pain. “Be vigilant for any indication of pain” (Royal College of Nursing, 1999).
- If children are able to communicate they may be able to describe their pain if asked the right questions or coached through play, as outlined in Appendix C. Parents can also help by describing behaviour observed in their child. Explore and identify cultural factors which may affect the experience of pain.
C. Physiologic Responses and behavior changes (verbal and non-verbal)

Look out for physiological changes such as: sweating, paleness, flushing of the skin, dilation of the pupils, increase in respiratory rhythm, in blood pressure, restlessness or absence of movement and decrease in oxygen saturation that may be observed when a child is in pain. Note however that these reactions vary considerably and are not specific to pain. They also may be absent even though child is experiencing pain.

Note changes in children’s behavior. Many responses may be observed in appearance and activity level (for further information, see Behaviours Potentially Indicative of Pain (page 18).

Note changes in behavior and vital signs after administration of analgesics. Improved behavior (less irritable, starts to play, better posture and mobility) and decreased pulse, respiration, etc. give clues to efficacy of pain management.

Observe the child in activities of daily living –quality of sleep, appetite, play, etc.

D. Use pain assessment tools to measure intensity and quality of pain

There is a variety of tools and clinical guidelines being utilized to assess pain in children. Some refer to the nurse’s observational skills and use physiological parameters, others require self-reporting by the child (numeric scales, faces scales) and others include parental observations. In choosing an instrument, consider the child’s developmental level and perspective. Once an instrument has been chosen it must be used consistently.

On a children's pain scale, "worst pain possible" can mean very different things to different children, depending in part on their imaginations and their previous experiences of pain. "Very much pain" is a better upper anchor. The Faces Pain Scale - Revised (FPS-R) was adapted from the Faces Pain Scale (Bieri et al, 1990) in order to make it possible to score on the widely accepted 0-to-10 metric. It shows a close linear relationship with visual analog pain scales across the age range 4 through 16 years. It is easy to administer and requires no equipment except for the photocopied faces. The absence of smiles and tears in this faces scale may be advantageous. The FPS-R is recommended for use with younger children in parallel with numerical self-rating scales (0-to-10) for older children and behavioural observation scales for those unable to provide self-report (Hicks, von Baeyer et al. 2001).
Faces Pain Scale – Revised FPS-R

Instructions to the child are: "These faces show how much something can hurt. This face [point to left-most face] shows no pain [or hurt]. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] - it shows very much pain. Point to the face that shows how much you hurt [right now]."

Do not use words like ‘happy or ‘sad’. This scale is intended to measure how children feel inside, not how their face looks. Numbers are not shown to children; they are shown here only for reference.

The instructions for administration are currently available in 12 languages from www.painsourcebook.ca

The tools should be used in conjunction with the child’s self-report, the parent’s assessment and the health professionals’ evaluation. Please note that none of the above measures may be used as the sole indicator of pain. For a list of questions to use in conjunction with an intensity rating scale, see appendix C.
Pain Assessment in Various Populations

"To care for someone, I must know who I am
To care for someone, I must know who the other is;
To care for someone, I must bridge the gap between myself and other"
Watson, 1985

The assessment of pain requires creative and innovative approaches especially when the nurse encounters people of various ages, cultures and cognition. In this section you will find information for assessing pain in children at various developmental stages, in the older adult, the cognitively impaired, and in people from different cultures. Although the list is not exhaustive, this information will provide you with a grounding of information regarding cancer pain in various populations.

One of our greatest challenges is to understand the individual’s pain experience when they are unable to adequately communicate their pain in a way that can be easily assessed. Many times our common assessment tools and strategies are inadequate or not appropriate for these populations. Modification of assessment tools and the use of new strategies are required.

Biases surrounding special populations and lack of knowledge with regards to their perception of pain, experience of pain and acceptance of pain can hinder the nurse’s ability to appropriately assess and manage these individuals’ cancer pain. It is important for nurses to keep this information as an integral part of their assessment skills.

Behaviours Potentially Indicative of Pain
This list is a simple guide to behavioural assessment of pain for patients who are unable to provide a self-report of pain. It is not an exhaustive list.

😊 **Facial Expressions**: frown (wrinkled forehead), grimace, and fearful, sad, muscle contraction around mouth and eyes.

💪 **Physical Movements**: restlessness, fidgeting, absence of movement, slow movements, cautious movements, guarding, rigidity, generalized tension (not relaxed), trying to get attention (beckoning someone).

🎵 **Vocalizations**: groaning, moaning, crying, noisy breathing.

Adapted from McCaffrey & Pasero (1999)

Simple screening tools can be used to determine the person’s ability to process information such as the Mini-Mental Status Questionnaire – Appendix D.

Assessment tools used for children can be use to score behaviours such as crying, facial expression, verbal complaints, movement, and touch, which indicate discomfort.
**Children's’ Responses to Pain**

Children perceive pain differently than do 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 to establish a diagnosis and evaluate the disease and pain related to treatment intervention.

There are also many psychological mechanisms related to pain perception. For example, play is essential in a child’s life and his involvement in play can provoke an endogenous mechanism of inhibition of pain more easily than in adults. Keep in mind that anything that can cause pain in an adult can cause pain in a child.

Furthermore the expression of pain varies according to age and developmental characteristics. In order to manage pain experienced by the child with cancer effectively it is critical to understand the developmental aspects related to a child’s response to pain.

**A. Infants**

**Cognitive stage: Preverbal**

- Infants less than 6 months of age: no memory of previous painful experiences, react with less apprehension and fear than older children.
- Infants more than 6 months: influenced by their recall of prior painful experiences.
- Distraction does little to lessen their immediate reaction to pain and anticipatory preparation tends to increase their fear and resistance.

**Behavioural responses**

- Facial expression of discomfort.
- Body movements include squirming, writhing, jerking, and flailing.
- Loud crying: some may cry loudly during a procedure whereas others are easily calmed by a gentle hug. Recognize and respect early signs of individuality and realize that children who react less intensively may still be experiencing significant discomfort.
- Generalized body response of rigidity or thrashing possibly with local reflex withdrawal of stimulated area.
- Older infants react with physical resistance and uncooperativeness. May refuse to lie still, attempt to push person away or try to escape. Deliberate withdrawal of stimulated area.

(Izard, Hembree & Huebner, 1987)
Physiological responses

- Increase or decrease in heart rate.
- Increase in blood pressure and respiratory rate.
- Paleness.
- Sweating.

Recommendations

- Patting, rubbing, rocking, or swinging.
- Bathing in warm water.
- Gentle massage—rub baby’s back in a circular motion or just hold his or her hands (a firm touch is more soothing than a light one).
- Wrapping in blankets (bundling).
- Dimming the lights and reducing noise.
- Combining care activities at meal times so baby can rest at other times.
- Offering pacifier.
- Playing tapes or lullabies.
- Speaking softly.

B. Toddlers (1-3 yrs)

Cognitive stage: Preoperational thought

- Can usually communicate about their pain and localize it by pointing to where it hurts but can’t describe the intensity.
- Intrusive experiences as examining the ears or mouth are very anxiety producing and toddlers may react as intensively as they may do to painful ones.
- Reactions to pain are similar to those seen in infancy but variables influencing the individual response are complex and varied: memory, physical restraint, parent separation, emotional reactions of others and lack of preparation will in part determine the behavioral response.
- Vocabulary of 50-150 words.

Behavior responses

- Grimacing, clenching teeth/lips, opening their eyes wide, rocking, rubbing and aggressiveness such as biting, kicking, hitting or running away.
- Become restless and overly active.
Recommendations

- Give one instruction at a time.
- Ask child to tell how a puppet, doll or stuffed animal is feeling or to point to where doll hurts.
- Tell the parents what you are doing.
- Advise the child just before the intervention, the notion of time is not integrated.
- Use non-verbal indicators.

C. Preschoolers (4 – 6 yrs)

Cognitive stage: Preoperational thought

- Child can identify where it hurts, can evaluate intensity of pain and describe his reactions to pain.
- The notion of time still doesn’t exist.
- Capable of using 1500 words.
- Conceives of pain primarily as a physical and concrete experience.
- Pain can be seen as punishment for real or imagined misdeeds.
- Thinks in terms of magical disappearance of pain.
- Tends to hold someone accountable for own pain and may strike out at person.
- Explanations are understood only in terms of real events.

Behaviour responses

- Loud screaming, crying.
- Verbal expressions of “Ow”, “Ouch” or “It hurts”.
- Thrashing of arms and legs.
- Attempts to push stimulus away before it is applied.
- Uncooperative: may need physical restraint.
- Requests termination of procedure.
- Clings to parent, nurse or significant other.
- Requests emotional support, such as hugs or other forms of physical comfort.
- May become restless or irritable with continuing pain.

All these behaviors may be seen in anticipation of actual painful procedure.
Recommendations

- Use pictures and dolls to explain things to the child,
- Child enjoys being congratulated and receiving rewards so use this concept in the treatment plan.
- Ask child to point to where it hurts or where “mommy and daddy could put a Band-Aid”.

D. School-Age Children (6-12 yrs)

Cognitive stage: Concrete operational thought

- Conceives of pain physically (e.g. headache, stomach-ache).
- Able to perceive psychological pain (e.g. someone dying).
- Fears bodily harm and annihilation (body destruction and death).
- May view pain as punishment for wrongdoing.
- Better perception of time, understands links between interventions.
- Can express himself better with words.

Behavior responses

- We may see all behaviors of young child, especially during painful procedure but less in anticipatory period.
- Stalling behavior, such as “Wait a minute” or “I’m not ready”.
- Muscular rigidity, such as clenched fists, white knuckles, gritted teeth, contracted limbs, body stiffness, closed eyes, wrinkled forehead.

Recommendations

- Important to explain interventions in a scientific way that he can understand.
- Obtain collaboration.
- Help the child feel in control of the situation.
- Have child mark or color painful area on a drawing of a human figure.

E. Adolescents (12-18 yrs)

Cognitive stage: Formal operational thought

- Able to give reason for pain (e.g. Fell and hit nerve).
- May however be reluctant to disclose their pain unless they feel confident that the nurse is there to listen closely.
- Perceives several types of psychological pain and able to describe pain experience.
Has limited life experiences to cope with pain as adult might cope despite mature understanding of pain.

Fears losing control during painful experience. May feel embarrassed and ashamed of losing control, crying or reverting to childish behavior or may on the contrary react by overconfidence, conceit or a “know it all” attitude.

Physical appearance is important. Rapidly changing body image often makes them feel insecure about their bodies.

Any change that makes them different from their peers is regarded as a major crisis. Illness, interventions and hospitalization may increase their concern for normalcy.

May respond to changes by asking numerous questions, withdrawing, rejecting others or questioning the adequacy of care.

Because of sexual changes, very concerned about privacy.

May believe the nurse knows how they feel; thus may see no need to ask for analgesia.

**Behavior responses**
- Less vocal protest, excessive quiet or irritability.
- Less motor activity, limited movement.
- More verbal expressions, such as “It hurts” or “You’re hurting me”.
- Increased muscle tension.

**Recommendations**
- Explain goals and consequences of interventions.
- Offer emotional and physical support and active coaching.
- Have teenager participate in decisions and help them to feel in control during procedures or treatment by closely monitoring what is happening.
- Suggest ways to increase independence and self-assertion.
- Respect privacy and confidentiality.

Reference: James Whitcomb Riley Hospital (1998)
Assessment of the Older Adult

The elderly are not a homogenous group, but are very diverse in terms of wellness, physiological response to medications and other interventions, past history with 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.

The assessment of pain in the elderly can pose many challenges for the nurse since these individuals, besides having changes due to the aging process, often have other medical conditions in addition to a diagnosis of cancer.

Research has indicated that elderly and minority cancer patients may receive inadequate treatment for cancer pain partly due to the underestimation or underreporting of pain.

MYTHS and FACTS about Pain in the Elderly:
Assessing pain and pain related behaviors in the elderly are complicated by myths and misunderstandings commonly held by the elderly and many health care professionals. Some of these are:

✗ MYTH: Pain is expected with aging.
✓ FACT: Pain is not normal with aging. The presence of pain in the elderly necessitates aggressive assessment, diagnosis, and management similar to that of younger patients.

✗ MYTH: Pain sensitivity and perception decrease with aging.
✓ FACT: This assumption is dangerous! Data are conflicting regarding age-associated changes in pain perception, sensitivity, and tolerance. Consequences of this assumption are needless suffering and under-treatment of both pain and the underlying cause.

✗ MYTH: If a patient does not complain of pain, he must not have much pain.
✓ FACT: This is erroneous in all ages but particularly in the elderly. Older patients may not report pain for a variety of reasons. They may fear the meaning of the pain, diagnostic works, or pain treatments. They may think pain is normal part of aging.

✗ MYTH: A person who has no functional impairment, appears occupied, or is otherwise distracted from pain, must not have significant pain.
✓ FACT: Patients have a variety of reactions to pain. Many patients are stoic and refuse to “give in” to their pain. Over extended periods of time, the elderly may mask any outward signs of pain.

✗ MYTH: Narcotic medications are inappropriate for patients with chronic nonmalignant pain.
✓ FACT: Opioid analgesics are often indicated in nonmalignant pain.
MYTH: Potential side effects of opioid medications make them too dangerous to use in the elderly.

FACT: Opioids may be used safely in the elderly. Although elderly patients may be more sensitive to opioids, this does not justify withholding opioids and failing to relieve pain.

From Ferrell & Ferrell, (1992)

Guidelines

1. Pain is not an inevitable part of aging, but the elderly are at greater risk for many painful disorders.
2. Some elderly may accept pain as normal in aging and not report their experience.
3. Earlier generations had a “passive recipient” role as health care consumers, leading them to presume that doctors and nurses would know when they were in pain.
4. Assessment requires a multidimensional approach tailored to the person’s ability and situation.
5. Assess for hearing and vision impairments that could interfere with person’s ability to report pain.
6. Some may relate to a different terminology and may deny pain. Try other words like discomfort, aches, pressure, and soreness.
7. The elderly may not report pain because they do not want to be a bother.
8. They may deny pain because of fear of the consequences that will lead to loss of autonomy, diagnostic procedures, dangerous medications, hospitalization, and institutionalization.
9. Older persons often have other chronic illnesses that can cause concurrent pain(s).
10. The expression and interpretation of pain can vary dramatically among ethnic groups. Cultural values regarding the expression of pain are established early in life and continue to affect behaviours as one ages.
11. Boredom, loneliness and depression can have a significant effect on the elderly person’s perception and report of pain.
Recommendations

Tailor pain assessment tools to the needs and abilities of the older adult. The Verbal Descriptor Scale (VDS) consists of a set of numbers representing different levels of pain and may be easiest for the older person to understand, along with vertical presentations such as the rising of a thermometer. Large, dark print and numbers, contrasting paper and adequate spacing make the tool easier to read. Tools that are suitable for children may be successfully adapted for the elderly e.g. colour tools or an eight-point facial expression scale. Give clear instructions and examples of what the numbers, figures or marks mean on the tool and then consistently use that tool. For the visually impaired, administer the tool verbally. The DOLOPLUS scale utilizes somatic, psychomotor and psychosocial indicators to assess pain severity in the elderly, non-verbal patients or patients with cognitive impairment (Filbet and Wary, 1999).

Look for changes in mobility, activity tolerance, self-care and independence.

Obtain self-reports if possible and supplement the assessment with further questioning, observation and information from significant others.

Take time to establish rapport with the elderly person. A supportive, familiar environment may help obtain a more reliable assessment.

Allow adequate time for the assessment or set assessment priorities and collect the data over a number of shorter sessions. Allow additional time to answer questions. Speak slowly and avoid detailed questions.

Use short simple sentences with words familiar to the individual. Provide clear explanations; clarify medical terminology, and use examples or demonstrations of assessment activities where possible.
Pain Assessment in the Cognitively Impaired

Cognitive impairment often refers to those who have been diagnosed with some form of dementia, confusion and/or failing memory. Cognitive impairment can also be the result of metabolic disorders, treatment induced side effects such as opioid toxicity, and disease related symptoms such as brain metastases. In particular, cognitive impairment in the elderly represents a major barrier to pain assessment and management.

Guidelines

1. The use of multiple medications can increase the risk of side effects such as confusion and affect a person’s perception of and ability to report pain.
2. Significant others can provide reliable information on changes in behavior and function.
3. In some cases, health care professionals only observe behavior and assume that pain is a problem.
4. The cognitively impaired have a diminished ability to communicate pain but all people have the ability to feel pain.
5. Anything that causes pain in an adult who can say it hurts will cause pain in the adult who is elderly, confused and/or demented.
6. Delineate the underlying cause for cognitive impairment. eg: a delirium induced by opioid toxicity.

Recommendations

A comprehensive assessment will include all physical and environmental factors that could cause pain including a thorough physical examination, assessment of current drug and non-drug interventions, and all aspects of daily living. Cognitively impaired patients require simpler scales and more frequent assessment. The DOLOPLUS scale utilizes somatic, psychomotor and psychosocial indicators to assess pain severity in the elderly, non-verbal patients or patients with cognitive impairment (Filbet and Wary, 1999).

1. Gather information from as many sources as possible, family, friends and members of the health care team.
2. Focus on non verbal cues. Facial expression (grimacing), decreased affect, movement, interaction and changes in normal behavior or daily activities can be indications of pain and distress. They should be assessed at rest and with activity. A standardised 0 through 5 facial grimace measure can be used to evaluate these expressions.
3. Note any vocalizations such as grunting and groaning.
4. Utilize various scales such as the Mini-mental State Examination (MMSE) or the Confusion Rating Scale (CRS) see Appendix E.
Cultural Factors in Cancer Pain

When assessing cancer pain, it is important for the nurse to consider the wide variation of individuals within a cultural group. Diversity within a culture includes gender, personality, religion, family and social influences, socioeconomic status, degree of Westernization and geographical living arrangements.

Pain meaning or perception levels vary from one cultural background to another, from one individual to another and also in one person in different situations.

Guidelines

1. Be aware of cultural variations, respect the beliefs of others and be sensitive to how a person’s beliefs and experience in another culture may affect their reaction to pain and pain management interventions.

2. Be aware of how your own cultural background and experience with other cultures affects your own beliefs and attitude. Never stereotype based on culture.

3. Become familiar with the beliefs and practices of common ethnic groups who access your care centre.

4. Don’t be afraid to acknowledge unfamiliarity with the client’s culture. Ask for information about their beliefs and practices.

5. Determine who makes decisions? Is it the patient, the family, or another social unit?

Recommendations

- Cultural aspects that will influence the assessment and management of pain include where the person was born, 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.

- Good communication is important in the assessment of pain in culturally diverse groups. Verbal and nonverbal communication skills vary and must be understood so that a person’s responses and behaviors are not misinterpreted.

- Language may be a communication barrier. Lack of fluency with the common language spoken in the care setting may lead to misunderstanding and information taken too literally.

- Gender differences in the pain experience may be due to the expectations of the health care team or to cultural norms that accept the expression of pain in women but men are expected to be stoic.

- Learn the patient's name and correct pronunciation as well as how they would like to be addressed.
Don't rush. Allow adequate time for the pain assessment and teaching. The use of storytelling is common communication in many cultures.

Ask the individuals which words they use to describe pain.

Where possible, use appropriate teaching materials particularly for low literacy learners and those where English is a second language.

Determine whether culturally sensitive material is already available for the common cultures in your community.

**Strategies for Developing a Culturally Sensitive Pain Management Plan**

- Assess, don’t assume because of subdued behavior when in pain, that some patients need less aggressive pain management. A thorough pain assessment incorporating patients’ self report of pain is needed.
- Make frequent and careful assessments of the subtle physical signs of pain. For example, stoic patients can often control verbal expression of their pain, but they are less likely to be able to control physical symptoms signs such as sweating, grimacing, guarding, etc.
- Avoid using consideration of culture as an excuse for stereotyping since within a culture, the patient is still an individual that requires individualized assessments and care.
- As much as possible, honor the patient’s cultural preferences for pain control since some patients may prefer non-pharmacological and non-traditional interventions for managing their pain.
## Communication Diversity Within Cultures

<table>
<thead>
<tr>
<th>Communication Characteristic</th>
<th>Cultural Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Contact</td>
<td>Many cultures consider it rude to look directly into another person's eyes. Avoidance of prolonged eye contact may also be a sign of respect.</td>
</tr>
<tr>
<td>Pause or silence</td>
<td>Many cultures pause before responding to questions. Health care providers must be patient to allow adequate pauses and response time after asking questions.</td>
</tr>
<tr>
<td>Greetings</td>
<td>It is polite in most cultures to greet others with a handshake. The handshake should not be too firm, which may be interpreted as a sign of aggression.</td>
</tr>
<tr>
<td>Asking Questions</td>
<td>It is considered rude in some cultures for patients to ask questions. Asking questions may infer that the patient thinks the health care provider is not competent. This characteristic may interfere with a patient's request for PRN medications.</td>
</tr>
<tr>
<td>Nodding</td>
<td>A nod or smile may not reflect agreement or understanding. Nodding and smiling may be a sign of respect and courtesy.</td>
</tr>
<tr>
<td>Responding to questions</td>
<td>Some cultures may say “no” in response to questions or may respond with answers they think that the health care provider wants to hear. Questions may need to be repeated in order to obtain accurate assessments.</td>
</tr>
</tbody>
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Brandt (1999)
Situations That Impact Pain Assessment

The assessment of cancer pain is not as easy a task as one would hope. There are many factors that can complicate, hinder and impact the pain assessment. What may seem very minor in nature to the nurse can be a major obstacle for the patient and/or family.

It is imperative that the nurse take the time to explore with the patient/family any situations, fears, anxieties, or misinformation that would impact the assessment of pain.

The examples identified below represent the many situations that can influence pain assessment. Knowledge of these individual factors will be crucial to ongoing assessment and management of the patient's cancer pain.

❖ Fear of medication.
❖ Does the person express concerns about taking medications for pain relief?
❖ Fear of addiction.
❖ Fear of taking medication too soon, making it ineffective later.
❖ Fear of sedation and other side effects.
❖ Fear of loss of control.
❖ Fear of needles.
❖ Fear of morphine.
❖ Incorrect information.
❖ Does the person have inadequate or incorrect information?
❖ Reporting pain may distract from treatment of the disease.
❖ If pain is controlled life may be shortened.
❖ Need to save strong medications for later.
❖ Pain means worsening of the disease and death.
❖ It is important to be “good” and not complain.

Psychosocial/Situational Factors Involved
❖ Is there evidence that psychosocial factors or personal situations may be affecting the experience of pain?
❖ Do pain behaviours correlate with pain intensity rating?
❖ Does the person deny any negative symptoms?
❖ Does the person deny pain deliberately?
❖ Is the person unable to isolate pain from total discomfort?
❖ Do family members/caregivers speak for the person experiencing the pain?
+ Is the person newly diagnosed or learning about the reoccurrence of a malignancy?
+ May believe a new pain indicates disease progression.
+ Are there pre-existing physical or psychiatric disorders?
+ Are there insufficient support systems?
+ Pain may contribute to loneliness, isolation, and loss of independence and depression.
+ Are there psychosocial issues, which might influence the pain experience such as a loss of a job, financial concerns or a role change?
References - Pain Assessment


City of Hope pain/palliative care resource centre website. http://www.cityofhope.org/


Planning
Learning Objectives

The nurse will:

1. Describe effective communication skills to support inter-professional communication.

2. Describe effective therapeutic communication skills to support nurse patient/family communication.

3. Identify key variables to be captured in the documentation for effective pain management.

4. List tools that facilitate the documentation of pain management.

5. Identify the key determinants of adequacy and availability of resources.
Guiding Principles For Communication
A variety of communication skills are essential for effective communication and are critical for assessment and treatment of cancer patients. In particular, clear and assertive communication is necessary between the nurse and the care team to convey the plan of care.

Empathetic listening skills are necessary to help patients/families express their feelings and explore the effectiveness of pain management.

Between Nurse - Colleague
Nurses claim that, while they feel they have important data to relate to their colleagues concerning their patients’ pain, they often feel that their messages are not attended to, and the care plan is not then altered in ways that better meet patient’s needs. One skill that is necessary to be heard and understood in any verbal exchange is assertiveness. Assertive behavior is behavior in which the nurse insists on his/her rights without violating the rights of others. Passive behavior is avoidance behavior in which the person either does not exercise his or her rights, or exercises them weakly or ineffectually.

Generally speaking, people in need of assertion training do not perceive themselves to be in a position where a choice of behaviors is available, and so assertive behaviors are not chosen. People are also concerned that assertive behaviours are perceived by others as aggressive (forward, offensive, pushy, etc.) Nurses are often unassertive, as it is not in their nature or behavioural repertoire to be otherwise – nurse are, after all, nice people. It is important that nurses do not confuse being assertive with not being nice, for if they do they will not be able to effectively advocate for their patients – Appendix F for more information on assertiveness skills.

Between Nurse – Patient/Family
The therapeutic relationship between the nurse and patient is formed and supported by the nurse employing empathetic listening skills, and the demonstration of:

♥ Commitment – communicate professional competence and availability.
♥ Compassion – communicate professional interest and empathy.
♥ Understanding of suffering – what is the context of meaning in which the pain is experienced?

When there are barriers to communication, other methods and resources must be accessed and implemented to obtain the necessary information.

Communication is an active, ongoing process in which people exchange messages using verbal and nonverbal means to convey meaning to others. Verbal reporting is an important component of clinical interactions as both diagnosis and treatments are dependent on the person’s report of pain.
Verbal messages should be:
- Simple
- Brief
- Clear
- Appropriately timed
- Relevant
- Adapted to the situation
- Credible

Nonverbal communication includes:
- Person’s physical appearance
- Posture
- Gait
- Eye contact and facial expressions

Feedback is essential for clarification:
- May be verbal or nonverbal, positive or negative
- Determines understanding
- Keeps communication flowing
- Feedback should be clear and prompt
- A response to a specific message not a reaction to the speaker

Consider other factors as well:
- External interferences may interrupt the flow of communication (noises, lighting, interruptions, and temperature).
- Internal factors (emotional state, sensory/hearing deficits, language, and physical factors).
- Individual’s frame of references such as his or her background experiences and cultural influences.

Barriers to communication for patients
- Feeling intimidated by doctor or nurse.
- Concerned about taking too much of his/her time.
- Worrying about asking “stupid” questions.
- Fear what they hear and that they won’t remember it all.
- Not being believed.
Influence of family reactions and concerns.
Impact of fatigue on cognitive functions.
Age and culture related – communication barriers.
When there is age and cultural related barriers to communication, other methods and resources must be accessed and implemented in order to obtain the necessary information.

**Key areas to consider**

- Does the person have impaired hearing or sight?
- What are the primary and secondary languages, speaking and reading ability?
- What is their nonverbal communication style?
- What are the communication variables: conversational style and pacing, definition of personal space, use of eye contact and touch, and time orientation?
- Is the person cognitively impaired?
- Does the person lack the vocabulary to describe the pain?
- Is the person’s education and cultural background different from that of the health care team?
- Does the person have a history of chemical dependence?

**Crucial messages the nurse needs to convey to patients and families:**

- I care.
- I believe you about the pain.
- I respect the way you are reacting to the pain.
- I want to explore with you what you think will help relieve your pain.
- I want to discuss with you what your pain means to you.
- I am willing to stay with you even if I fail to help control your pain.
- If you cannot relate to me, I will try to find someone else for you.
Guiding Principles for Documentation and Reporting

In many settings, pain is assessed as “the fifth vital sign”. 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.

Nurses often practice in a care setting where patients and families merely visit; therefore it is necessary in a successful pain management plan to include a communication plan.

This section will review the points that are necessary to ensure that a pain management plan is followed by the patient and their family, and is clearly communicated amongst the team, and with health care providers in other health care settings.

Guidelines:

1. Determine the patient and family’s understanding of the factors associated with cancer pain and its treatment.
2. Identify physiological, psychosocial, and cultural factors that influence the perception of pain and acceptance of treatment.
3. Describe the impact of pain on activities of daily living, role performance, work or home responsibilities, self-concept, and comfort.
4. Define the goals of pain management and treatment plans as determined jointly by the client and care team, and share with other health care providers (team and/or other agencies).
5. List situations that require urgent professional assistance, and ensure that the family know where and how to access this:
   - Pain unrelieved with usual pain management regimen.
   - Acute changes in the character of pain.
   - Unrelieved complications of pain management regimen.

Categories of Information Recorded by the Nurse

| Objective Data | observed through the senses, verified by other persons, measured by an instrument. |
| Subjective Data | received by other means, individual, families, cannot be measured with an instrument or through the nurses’ senses. |
| Plan | outline of steps to be taken. |
| Interventions by the team | implementation of actions such as therapies, and related activities, also observed actions of others. |
| Evaluation | recording effectiveness of the action, modifications, and change in plan. |
Tools to Support Documentation

Progress Notes
With the movement towards electronic documentation, the nurse must remember that the contribution made to the patient progress notes must be:

- Accurate
- Complete
- Factual
- Clear
- Appropriate
- Concise
- Current
- Technically correct

Flow Sheets and Checklists
Flow sheets are commonly used when documenting the use of opioid analgesics, invasive analgesia such as epidural analgesia, and/or patient controlled analgesia (PCA).

Flow sheets are used for ongoing assessment and evaluation. They are intended to standardize documentation, save time, provide an overall picture of the patient’s pain experience during treatment, ensure that pain assessments are recorded, track amounts of analgesic used, and document the side effects of treatment.

Flow sheets can be designed for specific populations, clinical settings and the type of pain that is being managed – see Appendix G. For patients at home, a simplified version of the pain flow sheet can be used. It requires specific instructions for when to record on the record and for how long they are to record pain ratings, interventions, the effectiveness of the interventions, and side effects.

Patient and family education about pain and pain management should be documented. This can be in a checklist format or narrative. For an example of a patient education see McCaffrey & Pasero’s: Pain, Clinical Manual, either the 1989 or the 1999 edition.

The responsibility for teaching about pain management is shared by all team members.

Advantages of Flow Sheets

- Provides a reminder of the assessment questions
- Prevents repetition in progress notes
- Timesaving
- Allows for ongoing evaluation of assessment
Evaluates effectiveness of analgesics
Evaluates non-pharmacological methods of pain control
Allows for quick documentation of responses
Easy retrieval of information for continuous evaluation

Disadvantages of Flow Sheets
Reduces amount of communication with patients
Questions limited to those on the flow sheet
All charting may depend on the flow sheets

Adequacy and Availability of Resources
The planning process is impacted by the adequacy and availability of resources, internal to the care setting and external to the care setting. The resources available to a family in an urban centre are very different than those available to a family in a rural setting, and the plan needs to reflect this. Additionally, patient and family circumstances and resources are factors that may either hinder or assist the successful implementation of the plan.

Key Determinants:
- Determine client and family eligibility for resources/community agencies.
- Assess availability of resource people, supportive services, and health delivery agencies within the community and beyond.
- Assess family doctor availability, involvement, and level of expertise.
- Assess community nurses/other health care providers-availability and expertise.
- Access to Pain Specialists i.e. Palliative Care physicians, anaesthetists (blocks, Intraspinal medications).
- Develop a catalogue of resources for the community.
- Involve Cancer Society and other Provincial programs where available.
- Evaluate services, criteria for admission, costs, and goals.
- Verify insurance coverage and ability to pay for medications and other supplies.
- Determine understanding of illness and situation.
- Consider other tools, travelling chart or diary, medication calendar.
- Assess patient/family adherence to plan of care.
References - Planning


Interventions
Learning Objectives

At the end of this section, the nurse will:

1. Identify pharmacological approaches to cancer pain management.

2. Describe the routes and indications for medication administration.

3. Identify developmental factors that influence pharmacological approaches.

4. Describe the use of algorithms in the management of cancer pain.

5. Describe the indications, guidelines, recommendations, patient education, and nursing strategies for pharmacological approaches to cancer pain management.

6. Determine the appropriate breakthrough dosage and schedule for the pain management plan.

7. State common side effects to opioid medications, and explain how to effectively prevent and/or manage these side effects.

8. Identify procedures that contribute to cancer pain, and describe strategies to mitigate cancer pain.

9. List invasive and other pharmacological methods used to manage cancer pain.

10. Identify non-pharmacological therapies, and describe their use in cancer pain management.
Introduction
Cancer symptom management is complex, and pain management needs to consider all etiological, biological, psychological and spiritual elements – together this is referred to as “total pain.” As well, the progression of the disease, the effects of treatment and individual differences are all integral to the patient picture.

Effective cancer pain management often uses combined analgesic regimens, thereby reducing the likelihood of significant side effects from a single agent.

This section outlines the standard therapies offered to patients and families in an effort to control or alleviate cancer pain. The information is designed to inform nurses so that they can advocate, support and contribute to the management of cancer pain.

Pharmacological Approaches
The first section focuses on the pharmacological management of pain. Effective analgesic management is the cornerstone of cancer pain management. A good understanding of the various agents used to provide pain relief is an important knowledge base for the oncology nurse. Each of the major classification of agents used is covered in this section, however this is not a comprehensive drug list of the many medications that may be used for patient care.

Guidelines
Follow a stepped approach to analgesia. Base the initial choice of analgesics on the severity and type of pain:

1. Non-opioid for mild pain (when pain persists or increases, an opioid should be added).
2. Opioid +/- non-opioid for moderate to severe pain (treatment is based on increasing the potency or dose).
3. Adjuvant medications (eg. antidepressant or anticonvulsant for neuropathic pain).
4. There is no maximum dose with strong opioids. Codeine and meperidine have maximum dose recommendations. Use an appropriate starting dose and then increase opioid doses until pain relief is achieved or side effects are unmanageable.
5. Children may require extremely large doses to obtain relief; titration in gradual increase needs to be addressed, sometimes as much as a thousand times the standard starting doses.

When administering analgesics to the older adult:

1. Use drugs with a short duration of action,
2. Prescribe one drug at a time,
3. Begin with low doses,
4. Be aware of additive effects,
5. Continue the drug trial for an adequate duration
6. Opioids to avoid in the elderly include methadone, meripidined, levorphanol, propoxyphene, and pentazocine. (Portenoy, 1992)
<table>
<thead>
<tr>
<th>Recommendations</th>
<th>DO</th>
<th>DON’T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualize route, dose and schedule</td>
<td>Give IM injections</td>
<td></td>
</tr>
<tr>
<td>Administer drugs orally when possible</td>
<td>Use Meperidine for chronic pain</td>
<td></td>
</tr>
<tr>
<td>Give analgesics on a regular basis rather than PRN for chronic pain</td>
<td>Delay in treating severe pain</td>
<td></td>
</tr>
<tr>
<td>When treating the elderly, go low &amp; slow</td>
<td>Use multiple opioids unless one is needed for breakthrough dosing</td>
<td></td>
</tr>
<tr>
<td>Opioids should be limited to the agonist drugs</td>
<td>Never administer a placebo</td>
<td></td>
</tr>
<tr>
<td>Use non-opioid and adjuvant drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor and treat opioid side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treat constipation prophylactically</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use both scheduled and breakthrough dosing for cancer pain</td>
<td></td>
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</tr>
</tbody>
</table>
Routes of Administration

Routes of administration for pain management include all available routes for administering medications including oral, oral transmucosal, buccal, sublingual, rectal, vaginal, stomal, transdermal, intranasal, nebulized, subcutaneous, intravenous, intra-arterial and epidural/intrathecal.

A single patient may experience several different routes during his or her treatment, therefore it is important that the nurse understands the advantages and disadvantages of each the administration routes.

Guidelines

A. Oral
The oral route is the preferred route for administering opioids for patients with chronic pain. It is:

- simple,
- inexpensive,
- noninvasive,
- does not require special equipment and
- can be as effective as parental route if doses are well adjusted
- capable of providing steady analgesic blood levels.

The oral route should be considered before all other routes. Preparations include tablets, liquids and controlled-release formulations. The oral route has a slow onset of action and, therefore may not be suitable for severe, escalating pain.

Opioids undergo extensive metabolism by the liver before they have a systemic effect therefore, oral doses are two to three times higher than parenteral doses. Equianalgesic charts give the approximate equivalency – see Appendix H.

B. Transdermal
The transdermal therapeutic system makes use of the skin as a gateway to the body. There are actually four separate layers to the system:

1. An impermeable backing that holds the drug in the system
2. A reservoir containing the drug
3. A membrane that controls the rate at which the drug is released
4. An adhesive layer that keeps the unit on the skin
Guidelines for when a transdermal opioid delivery system may be useful when the patient:

- can no longer swallow, or has difficulty with swallowing
- has difficulty adhering with an oral or parenteral regimen
- has multiple oral medications (large volume of pills)
- has a negative association with oral medication

Prerequisite for transdermal route: pain must be stabilized.

C. Subcutaneous
The subcutaneous route is effective and relatively easy to maintain. It provides a steady state of analgesia and has a lower incidence of nausea than the oral route. It is less invasive than the intravenous route and does not require venous access thus allowing for more independence. The subcutaneous route easily provides continuous or intermittent infusions.

Patients and families can be taught to manage subcutaneous medication administration where they are often unable to manage an IV. Portable pumps or disposable infusion devices can be used to maintain subcutaneous infusions.

The onset of analgesia is slower than the intravenous route.

D. Intravenous
The intravenous route with its quick onset is most effective when rapid titration is required for severe pain. It is commonly used for short periods of treatment in hospital settings where monitoring is available. Administration can include by intermittent infusions (bolus) or continuous infusion or PCA.

The disadvantages are that it is not practical for the home setting, as it requires venous access with repeated IV starts, physically restricts patients has a higher incidence of side effects and is more costly because of increased caregiver time required. The exception is for patients with central venous access devices.

The parenteral route is an alternative when the patient:

- is unable to swallow
- has persistent nausea and vomiting
- has gastrointestinal obstruction and/or
- requires rapid titration for severe pain
E. Patient Controlled Analgesia (PCA)
PCA is parenteral pain management method that permits patients to treat their pain by self-administering doses of analgesics via this route. This approach recognizes that only the patient can feel the pain. The dose is preset based on the patient’s requirement for pain medication – the patient can then choose the frequency of administration within prescribed limits.

PCA is used to manage all types of cancer pain but is most commonly used to manage acute pain (e.g. mucositis). The benefits of PCA as a method of analgesic administration include: patient has control over pain medications, rapid relief, less anxiety for some patients, facilitates care giving – e.g. bolus dose immediately prior to mobilization. PCA can be used with IV or SC method of administration.

PCA consists of two modes:
1. PCA bolus doses with a continuous infusion called a basal rate
2. PCA bolus doses alone.

In opioid-naïve patients, the following guidelines should be followed:

1. PCA with bolus doses alone is safer than PCA bolus doses with continuous infusion or continuous infusions alone. With continuous infusions, a common error is suggesting a range in infusion rates thinking that the effect of each infusion is maximal within a few hours (in fact it takes more than 12 hours to plateau when there is normal renal function).
2. When there is upward titration every few hours, patients can experience severe respiratory depression. If the patient on PCA with bolus doses alone becomes too sedated, they simply stop pushing the button and the opioid level declines.
3. To be a considered for PCA, the person must understand the relationship between pain, pushing the button, and pain relief.
4. Children over the age of 5 can understand the concept of PCA and should be offered this form of treatment. Certain studies have shown PCA to be superior to continuous morphine infusion (Duval 2000). Parents need to be counseled not to give their child doses of medication, but rather to allow the child to control the administration of the medication via the PCA; otherwise it becomes Parent Controlled Analgesic.
5. Ongoing pain assessment is required. Patients may not be getting adequate analgesia but believe they are getting all they can have.
6. Patient / family education is essential.
F. Intraspinal - Epidural
The epidural route is relatively rare in cancer pain management. It requires expertise for the insertion of catheters or implanted pumps and an established program for the care and monitoring of patients.

The epidural route requires less opioid than is required for intravenous administration and can be an advantage for patients with dose limiting side effects. It allows for the addition of an anesthetic agent that can provide better analgesia for patients with some pain problems.

It is more invasive than the parenteral route and has a higher risk of serious complications and technical problems.

For the small number of patients who benefit from epidural analgesia, the outcomes can far outweigh the risks. Analgesia via epidural can also be delivered with a PCA method, and is referred to as PCEA.

G. Other Routes
Beyond what is described in this manual, there are a number of other routes that are possible to utilize, such as vaginal, oral transmucosal, intranasal, and stomal.

Recommendations
As there are numerous options to administer cancer pain medication, the nurse needs to think of a number of factors when helping patients make a decision. Optimal route selection is determined by:

- Patient preference
- Required onset of action
- Degree of discomfort patient experiencing
- Convenience
- Cost
- Availability
- Care setting
- Provider knowledge and capability
- Volume or concentration of medication
- Concomitant medical conditions (i.e. Thrombocytopenia or risk of infection)
Pain Control Algorithms

Algorithms help nurses to understand and foster a step-wise approach to pain management. Algorithms over-simplify the care plan; however provide basic guidance in applying the principles of pain management.

This algorithm is but one step-wise approach to cancer pain. Oncology nurses may work with physicians who use a different approach. Remember that unless prescribing ability has been authorized to the RN, prescribing is the role of the physician.

Algorithms cannot be put in place unless they have been through an agency approval process, which includes medical input, as an algorithm predetermines medically prescribed actions in relation to observed phenomena.

Pain Algorithm for Adult Patients

This algorithm is useful for basic cancer pain management, but does not address the pain arising from brain metastases, obstructed organs, mucositis, and pain of benign origin.

1. Tylenol® plain ➔ Tylenol #2® ➔ Tylenol #3®.
2. Add NSAID’s (discontinue if ineffective).
3. Switch Tylenol #3® to morphine liquid or immediate release tablets.
4. Switch to sustained release morphine when pain control is reached.
5. If inadequate pain relief:

<table>
<thead>
<tr>
<th>Bone</th>
<th>Neuropathic</th>
<th>Soft Tissue/Root Irritation</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV biphosphonate</td>
<td>gabapentin</td>
<td>dexamethasone</td>
<td>call experts</td>
</tr>
<tr>
<td>dexamethasone</td>
<td>amitriptyline</td>
<td>dexamethasone</td>
<td></td>
</tr>
</tbody>
</table>

The two factors that modify the algorithm:

1. The initial steps have been tried in an adequate dose:
   ✪ Failure of opioids, NSAIDs, tricyclics, etc. in low doses to produce satisfactory results does not tell you anything about their utility unless they caused dose-limiting adverse effects.
2. Contraindications/ Increased risks with some medications:

   **NSAID:** ASA allergy, past stomach ulcers, anticoagulants, and platelets
   **Steroid:** diabetes, past excitation/depression on steroids, infection, NSAIDs
   **Mexiletine:** allergy to dentist’s freezing, arrhythmia, ECG with 2° or 3° block
   **Amitriptyline:** ECG with 2° or 3° block
Algorithm for Severe Pain Crises

Severe pain can only be treated by potent opioids, which have no ceiling effect and can be increased in dosage infinitely. The following process is one that has been devised by Victoria Hospice for the safe and effective relief of severe pain, and has been used exclusively for pain crises in the end stage patient. If you plan to use this algorithm in your organization, it must go through the approval process.

Definition of Stacking
Stacking is a process whereby giving one or more parenteral drugs repeatedly at short intervals, results in a rapid rise in serum concentration in order to immediately settle a pain crisis.

Initiation
To initiate stacking, SC or ¼ converts the usual q4h oral dose of morphine to parental route by giving ½ the PO dose by IV bolus. The parental dose SC or IV is actually the same; however, for safety reasons in rapid and multiple stacking, the IV dose is reduced by 50%.

Safeguards
Maximal respiratory depression occurs at 5-10 minutes following an IV bolus or 30-90 minutes after a SC injection. Stay with the patient throughout the process.

How to:

<table>
<thead>
<tr>
<th>How to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>Convert q4h oral dose by giving 1/2 the PO dose by SC or 1/4 the dose by IV bolus</td>
</tr>
<tr>
<td>Interval</td>
<td>IV route q10 mins; SC route q15-20 mins</td>
</tr>
<tr>
<td>Single Stacking</td>
<td>repeating the same dose at short intervals</td>
</tr>
<tr>
<td>Double Stacking</td>
<td>2x the prior dose</td>
</tr>
<tr>
<td>Time frame</td>
<td>one hour – most cases relief occurs by 2\textsuperscript{nd} or 3\textsuperscript{rd} dose</td>
</tr>
<tr>
<td>End point</td>
<td>1st sign of “breaking” the crisis</td>
</tr>
</tbody>
</table>
Algorithm for Severe Pain

Case Example:
Medical History
Very pleasant 44 year-old women who was diagnosed with cancer of the rectum 14 months ago.

She was initially treated with complete perineal resection and colostomy and was noted at surgery to have widespread abdominal metastases. Weekly 5FU started 3 months ago and around this time she developed mid-back and perineal pain well controlled on Morphine sulphate immediate release (MSIR) 15 mgs PO Q4h. MSIR recently increased to 30 mg PO Q4h but the patient presented to emergency over the weekend with severe distress. The family is extremely upset and I had a call from the hospital early this morning about uncontrolled pain.

Recent Hx
Mrs. Anita Martin had felt fairly well since her last visit with her family physician 3 weeks previously, but had needed to slowly increase her analgesic to the top of the prescribed range of MSIR 30-60 mg PO Q4h. On Friday evening, pain had significantly increased and she had contacted the on-call physician for advice. He had suggested a 10 mg increase to 70 mg MSIR Q4h and had also suggested she try and “forget about the pain.”
By Saturday, the patient was taking 70 mg MSIR PO Q3h with incomplete control and on Sunday her husband brought her to Emergency. She was assessed there by the Emergency Room Physician and admitted to the hospital with a new morphine order of 15 mg PO or IM PRN q4h.

When seen that morning, you found the patient up pacing the hall. She was in considerable distress. Her husband Bob was with her and said, "She can hardly sit down anymore, and hasn’t been able to sleep since Saturday. We both thought she would be better off in hospital but her pain has only gotten worse! “and could only say; “It’s bad, really bad.” When is somebody going to do something? “

What issues above are of concern? As a nurse, what would you do?

Initial Treatment
- Morphine 30 mg SC stat
- Ativan 1 mg SL stat

20 minutes later
- Anita looks more relaxed and now rates her pain at 7/10
- Repeat Morphine 30 mg SC stat

20 minutes later
- Anita is now able to sit for several minutes and to give a better description of pain
- pain is located over her right ischial tuberosity and radiates across her entire perineum
- discomfort is worsened by pressure of sitting or lying supine and alleviated by walking
- constant burning and grinding pain with sudden onset sharp shooting pain superimposed

VAS at end of interview 2/10
Overview of Opioids

Opioid analgesics are the major drugs used for relieving pain in patients with cancer because of their effectiveness, ease and ability to titrate, no fixed upper dosage limit, and favorable risk to benefit ratio. Derivatives of the opium poppy, they have been used as analgesics for centuries.

Guidelines

Opioids act by binding to specific receptors both within and outside the central nervous system.

Knowledge of several important pharmacologic features of the opioid drugs will improve the nurse’s understanding of their use:

- Site of action and receptors.
- Pharmacokinetics – opioids are absorbed relatively well from the GI tract. Opioids disperse widely in the body and cross the blood-brain barrier. Duration of action is a function of protein binding, distribution in the cerebral spinal fluid and metabolism. All strong opioids or their metabolites may accumulate when renal function is compromised.
- Physical dependence and tolerance – patients taking opioids can exhibit some tolerance and may require upward adjustment of dosage.
- Endogenous opioids – there are three groups - enkephalins, endorphins, and dynorphins. They act on opioid receptor sites.
- Opioids have classic side effects that include nausea, sedation, and constipation. More in-depth information is included in the side effect section.
- As well, this class of medications raises a lot of concerns about addiction and tolerance.
Morphine Sulfate

**Indications:** For all types of cancer pain (including neuropathic pain)

Morphine is the drug of choice recommended by the World Health Organization. It is the most commonly used opioid for controlling moderate to severe pain and is the standard against which the analgesic properties of other drugs are measured.

**Dosage for Adults**

- The starting dose depends on previous opioid exposure (e.g. use of Tylenol® with codeine, or Tylenol® with Oxycodone [Percocet]®)
- For patient being switched from weak opioids switch to an equianalgesic dose - see Appendix H.
- There is no ceiling recommended opioid dose, however there can be dose-limiting side effects
- Titrate to pain relief
- Side effects (e.g. nausea, sedation) need to be effectively managed before increasing the opioid dose
- Upward titration is halted when there is no apparent increase in pain relief, or when patient experience toxic side effects (e.g. monoclonus, delirium)

**Pediatric Initial Dosage Recommendations (Opioid Naïve Children)**

- PO/Rectal: 0.2-0.4 mg/kg/dose q 4-6 hours
- SC: 0.1-0.15 mg/kg/dose q 3-4 hours
- IV: 0.02-0.07 mg/kg/dose q 2-4 hours
- Long acting oral: 0.3-0.6mg/kg/dose q 12 hours or 24 hour release drugs

**Schedule - See Opioid Titration Process**

- Start with immediate release form to make dosage titration easier
- For poorly controlled pain you should be making a change in the dose every 24-48 hours.
- Increase the regular dose based on pain relief and side effect profile
- Consider use of breakthrough medication - see breakthrough section

*For children less than 3 months use 30-50% of these recommended doses. As for adults, there is no ceiling in strong opioid doses.*
Available Products and Strengths
Short-acting PO:
- Statex® - 5 mg, 10mg, 25mg, 50mg tablets
- MSIR 5 mg, 10mg, 20mg, 30mg tablets
- Morphine Elixir - 1mg=1ml, 5 mg=1ml, 20mg=1ml liquid preparation
- Suppositories: 10, 20, 30mg

Long Acting PO:
- MS Contin® - 15, 30, 60, 100, 200 mg:
- M-Eslon® - 10, 15, 30, 60, 100, 200 mg:
- Kadian® (once q 24 hrs) 20, 50, 100
- Long acting suppositories: 30, 60, 100, and 200mg.

Contraindications
- True morphine allergy – clarify that in fact the patient is allergic to the morphine. Allergy often means nausea/vomiting or other side effect - < 1% of patients have a true allergy to morphine.
- Use caution in patients with renal failure since morphine metabolites can build up in the blood if not excreted by the kidney. Hydromorphone may be preferred because of the absence of known active metabolites.
- Use caution in the elderly because of a higher risk for renal failure - use “start low and go slow” for titration approach
- Use caution in patients with a history of morphine substance abuse or current abuse of morphine - may require a different opioid and strict titration guidelines.

Patient/Family Education Tips
- Be aware that no other medication causes patients/families such concern - be prepared to counsel patients and families around myths and misconceptions.
- Ask up front if patients have concerns about taking strong pain medication - in particular, morphine.
- Tell patients about expected side effects and how to manage them (see Side Effect Management section).
- Ensure patients have enough opioid medication to last until next appointment. Caution them against suddenly stopping the medication and not informing their doctor or nurse.
- Ensure that patients are aware that they must not break up (crush or chew) long acting preparations.
Inform patient that prescriptions for opioids cannot be “called in” to the pharmacist - they require a written prescription.

**Side Effects** - see side effect section for greater explication

- **Nausea** can be a side effect of opioids. However, do not assume that any nausea is opioid related. Determine if the nausea started after the initiation of the morphine and determine if the nausea is experienced shortly after taking a dose of morphine.

- **Constipation** is an expected side effect of opioid administration. Institute a good bowel regime.

- **Sedation** is a common side effect of initial opioid use and may be reflective of sleep deprivation. Drowsiness should improve in 2-3 days.
Hydromorphone

**Indications:** For all types of cancer related pain

Hydromorphone is a semi-synthetic agent that is about 5-7 times more potent than morphine; however, in equi-analgesic doses it is no more effective in relieving pain. It is used in opioid rotation when side effects from one opioid become difficult to manage. Hydromorphone is primarily metabolized by the liver—may be preferred in patients with renal failure.

**Dosage**

- The starting dose chosen depends on previous opioid exposure (e.g. use of Tylenol with codeine, or Tylenol with oxycodone)
- For patient being switched from weak opioids switch to an equianalgesic dose - see Appendix H
- For adults and children there is no ceiling recommended opioid dose, titrate to pain relief, dose limiting side effects or no reduction in pain intensity with significantly increasing doses

**Pediatric Initial Dosing Recommendations (Opioid Naïve Children) clipart**

- PO/rectal: 0.04-0.1mg/kg/dose q 4-6 hours
- SC: 0.02-0.03mg/kg/dose q 3-4 hours
- IV: 0.005-0.015mg/kg/dose q 2-4 hours
- Long acting oral: 0.06-0.15 mg/kg/dose q 12 hours

**Availability**

- Liquid – 1mg=1ml,
- 1, 2, 4, and 8mg short-acting tablets;
- 3, 6, 12, 24 and 30 mg Long –acting capsules
- At dosages > 40mg q4h consider using a subcutaneous pain pump for convenience

**Contraindications**

- True opioid allergy (anaphylactic reaction)

**Patient/Family Education Tips:** - see Management of Side Effects, page 32

- Constipation is an expected side effect of opioid administration. Bowel regime
- Sedation is a common side effect of initial opioid use. Drowsiness should improve in 2-3 days.
Nausea is possible with initiation of opioids. Monitor and assess to determine if nausea is related to the start of opioid. Consider use of antiemetic.

See side effect management section.

Ensure patients have enough opioid medication to last until next appointment. Caution them against suddenly stopping the medication and not informing their doctor or nurse.

Inform patient that prescriptions for opioid cannot be “called in” to the pharmacist - they require a written prescription.

**Nursing Tips**

- Remember to inform patient that they may need to take more than one type of pain medication (such as an opioid and NSAID) to manage the pain since the pain is complex or there is more than one type of pain.

- Give patients/families written instructions to take home with them if outpatient – verbal information can be forgotten.
Fentanyl
A synthetic full agonist opioid

Indications – For all types of cancer-related pain:
- Refractory nausea on other opioids.
- Inconvenience of multiple medications.
- Useful if allergic to morphine.
- Part of an opioid rotation plan where other opioids have failed or caused uncontrolled side effects.

Two preparations of medication: parenteral and transdermal.

Indications – transdermal system
- Useful in patients with poor compliance who forget to take oral medications
- Useful for patients when oral administration is not possible because the patient has difficulty swallowing or if the oral route is non-existent e.g. cancer of esophagus
- Useful once pain control is reached since requires 3 days between dosage changes

Dosage
- Orally, sublingual, intravenous, subcutaneous, transdermal 80-100 times more potent than morphine
- Recommended ceiling dose of 400ug/hour via transdermal patch (4 100ug patches), but higher doses may sometimes be used. Patients requiring larger doses should be switched to an equi-analgesic dose of an oral or parenteral administered opioid
- Sublingual fentanyl is almost instantaneous in onset and short acting, so is useful for incident and procedural pain
- IV and subcutaneous fentanyl can be delivered either continuously and intermittently
- Transdermal patch - each patch contains a 72-hour supply of fentanyl, which is rated regulated and absorbed through the skin. Occasionally, patients require 48 hr patch dosage change, due to individual absorption factors
- Levels in plasma rise slowly over 12-24 hours after patch placement, and the dosage form has an elimination half-life of 17 (range 13-22) hours
- Patch care and placement of patch is important. The patch needs to be applied to hairless, clean and dry skin. Firm pressure must be applied after application, for about a minute. Some patients experience difficulty with adhesion of the patch to the skin
Patches should be placed above the waist
Patches above 25 μg/hr should not be used in opioid naïve patients

Schedule for the transdermal system
- After the patch is applied, a plateau level of the drug is seen after 12-24 hours. There is also a skin depot of medication so that removing the patch results in very gradual elimination of the drug; it can take close to 24 hours to reach 50 percent of the plateau level. This may lead to prolonged adverse effects, even after the patch is removed.
- Each patch is usually effective for 72 hours, but infrequently the patch may need to be changed as often as every 48 hours.
- It is recommended that the total dosage be changed only every 72 hours.
- Breakthrough pain must be managed using an immediate release opioid such as morphine or hydromorphone.
- Do not cut or alter the patch.
- Patches are rarely used in pediatrics, and only likely with adolescents.

Available strengths
- Sublingual concentration - 50 μg/ml in various sizes
- Transdermal system - 25, 50, 75 and 100 μg/hr
- IV or subcutaneously – 50 or 100 μg per ml

Pediatric Initial Dosing Recommendations
- In pediatrics Fentanyl is usually used only after other options have been tried. The dosage will then be converted from the current opioid as recommended in chart in appendix H.

Contraindications
- Problems in dose equivalence and slow achievement of a steady state preclude the use of transdermal fentanyl in patients who have severe, unstable pain that needs rapid control, or in patients who have a life expectancy of less than a few hours or days.
- Transdermal fentanyl should not be used in severe pain situations.
- Transdermal fentanyl should not be used in opioid naïve patients, or where the dose for effective pain relief is still being titrated. It is important that family physicians have skill in using transdermal systems because of the complex pharmacokinetics of the system.
Side Effects

พอใจ Transdermal system - skin irritation
พอใจ Opioid side effects, nausea, constipation and sedation, although less than with other opioids

Patient/Family Education Tips for the Transdermal System

พอใจ Instruct the patient/family in how to apply the patch. Do not shave hair – this can cause skin irritation. Clip the hair close to the skin with scissors. Do not put the patch on skin that is very oily, burned, cut or damaged.
พอใจ If the patch does not stick well, tape down the edges with tape or apply a bio-occlusive dressing.
พอใจ Wash hands without soap after applying the patch.
พอใจ Review disposal of patch. Remove patch fold in half and flush down toilet.
พอใจ Instruct the patient/family on keeping track of how many breakthrough medications are required each day.
พอใจ Patients may shower, wash or bathe with the patch on. Swimming is also allowed. Take care not to scrub the patch area too vigorously, as this may cause the patch to fall off.
พอใจ Write date and time of patch application on patch or on tape beside patch to aid in remembering when patch was applied.
พอใจ Instruct the patient/family to remember to tell other health professionals in Emergency room or outpatient clinic where patch is located on patient.

Nursing Tips

พอใจ If using the transdermal system and skin irritation is problematic, consider using a Beclovent beclomethasone (steroid) inhaler to “puff” the steroid over the skin to reduce/eliminate the irritation. Then apply patch as indicated above. Remember to encourage patient to use alternate sites when applying the patch.
พอใจ Tapering off the patch or switching to oral or parenteral alternate opioids requires careful calculation.
พอใจ As fentanyl is highly potent, care and caution must be exercised when administering the parenteral.
พอใจ Some children may complain of pain when removing the patch. Solvoplast ® may be used to facilitate removal.
Methadone

**Indications:** For all types of cancer related pain

Most commonly used as a maintenance therapy for drug addicts, but is also used for cancer patients, most usually those who are not responding to morphine.

Methadone is a useful alternative for treating severe pain if other medications are not effective.

**Guidelines**

- Patients may be switched to methadone when there is opioid toxicity from high dose morphine or hydromorphone such as myoclonic jerking, hallucinations and agitation
- Paradoxical pain or pain not responding to rapid escalation of opioids.
- Neuropathic pain.
- It is preferred that patients be in the hospital for initiation for better monitoring.
- Useful in a true morphine allergy.
- Useful for patients who have renal failure as it is metabolized in the liver and excreted mainly via the GI tract in the bile. Only a small amount is excreted through the kidneys.
- Methadone has N-methadyl-aspartate (NMDA) receptor blocking properties, which may have extra benefit in neuropathic pain.

**Note:** Methadone is not readily available. Requires a special license to prescribe.

**Dosage/Scheduling**

- The half-life of methadone has a primary (distribution) of 14 ±6 hrs, a secondary (elimination) of 54 hrs ±27 hrs which results in chronic dosing half-life of 22 ± 7 hrs. This may increase up to 120 hours with advanced age. Steady state may take 2-10 days to achieve
- Oral methadone is approximately 10 times as potent as oral morphine, it is even more potent when rotating from very high doses of oral morphine, therefore the higher the dose of other opioid the LOWER the dose of methadone
- Patient's clearance of this medication varies greatly and therefore this makes it very difficult to monitor
- Disease states, renal function and other drugs the patient may be taking affect drug clearance
Two forms are available in Canada; one is a powder for makeup of oral solution. Powder can be made into capsules or suppositories for PR use. Orally it has a very bitter taste. Often mixing it with Tang helps. An oral solution is also available (Pharmascience ®).

Rectal dose needs to be increased 50% over oral dose

With chronic dosing, duration of analgesia increases to 8-12 hours or longer as do the dosing intervals

There are several methods of switching from other opioids to methadone, and practice varies across Canada. If you are interested in using methadone, there are several centres that have protocols and experience with this medication. You might wish to contact Victoria Hospice, Calgary Health Region Tertiary Palliative Care, and BC Cancer Agency

**Pediatric Initial Dosing Recommendations**

- PO: 0.2 mg/kg q 4-12 hours for opioid naïve patients. In pediatrics Methadone is used after other options have been tried. Conversions vary greatly and should be evaluated individually for each child by the pain care team
- PRN administration is possible

**Contraindications**

- Should not be used in combination with monoamine oxidase inhibitors
- Pediatrics – not used often

**Available**

**Injectable:**
- 10mg/ml available in 5 ml or 20 ml vials

**Oral:**
- Can be made up into individual capsule by some pharmacists, usually in strengths of 5, 10, 20, 40, 50, 80 100 & 200 mg
- Powder can be reconstituted to either a 1mg/1ml or 10gmg/1ml solutions, methadone lasts 1 month at room temperature, refrigeration does not extend shelf life, unpalatable as a syrup, therefore often mixed in orange juice.
Side Effects

- Potential for opioid side effects, nausea, drowsiness, constipation
- Greater potential for respiratory depression due to prolonged ½ life and lack of knowledge about dosing schedule by health care professionals

Nursing/Patient Teaching Tips Re: Outpatient Titration

- Patient should titrate the drug by themselves – not to have family administer the medication because if patient gets drowsy, they will stop taking more medication, whereas family may continue to administer and risk over-sedation
- Patient needs to be able to understand instructions regarding increasing dosages and need to monitored for toxicity
- Family members or close friends need to be available to check on patient several times per day during the titration process
- Health Care professionals need to be available, including on-call 24 hours, for family or patient to call for advice
- Physician expertise with rotation of opioids in the outpatient setting needs to be available
Oxycodone

Indications: For all types of cancer related pain

Oxycodone is a synthetic derivative of morphine, with equal analgesic potency to morphine. Used in combination with Tylenol it has led to an erroneous belief that it is a weak opioid. Oxycodone is used in opioid rotation when side effects from one opioid become difficult to manage.

When used in combination with Tylenol or ASA, the ceiling dosage is based on the total of 4 grams of Tylenol per 24 hrs, or ASA ceiling dose. When used alone there is no ceiling dose.

Dosage:
- The starting dose chosen depends on previous opioid exposure (e.g. use of Tylenol with codeine, or Tylenol with oxycodone)
- For patient being switched from weak opioids switch to an equianalgesic dose - see Appendix H
- There is no ceiling of recommended opioid dose, titrate to pain relief, dose limiting side effects or no reduction in pain intensity with significantly increasing doses

Pediatric Initial Dosage Recommendations
- PO: 0.1-0.2 mg/kg/dose q 4-6 hours

Availability:
- Percocet® 1 tab = 5 mg oxycodone + 325 mg Tylenol
- Percodan® 1 tab = 5 mg oxycodone + 325 mg ASA

- Short-acting oxycodone - 5 mg, 10 mg, 20 mg
- Long Acting oxycodone - 10mg, 20 mg, 40 mg, 80mg

Side Effects
- Similar to morphine

Patient Teaching
- Similar to morphine
- Long acting tablets should be swallowed whole, not broken, chewed or crushed
Opioid Titration

Titration, or adjustment of dose, to better control pain and reduce side effects is a principle of pain control.

Opioids should be titrated for each individual patient; the aim is to provide effective pain control with minimal side effects, by using the lowest dose of opioid, which will achieve this result. It may take several days of dose adjustment to accomplish this goal, and doses need to be reviewed as a part of the ongoing monitoring of the patient.

The following guidelines will provide parameters for how titration is done, but the nurse is reminded that prescribing authority is not within the scope of practice of a registered nurse.

Guidelines

Morphine Titration (Oral)

1. The starting dose of morphine for an adult is usually 15 mg q4h (remember that a patient taking 2 Tylenol #3 q4h is already taking approx. 50 mg of morphine equivalent in the codeine). If the patient has not taken ANY opioid then starting at 5 or 10 mg q4 h is appropriate.

2. From there the titration is approximately 15-25% q 24 hr.

3. There are two preparations of oral short acting morphine available: tablets and liquid suspension.

4. One way to titrate oral morphine is using the liquid suspension preparation in concentration of 5 mg/1ml. Provide a syringe to allow accurate measure of the small amount.

For Example:

The patient is taking 3 ml (5mg/ml) q4h for one-day - total dose - 90mg/24hr with little effect.
- Day 2 – increase to 4 ml (20mg) = 120 mg/24 hr, with little effect
- Day 3 – increase to 5 ml (25 mg) = 150 mg/24 hr, with little effect
- Day 4 - increase to 6 ml (30 mg) = 180 mg /24 hr, with minimal effect
- Day 5 - 8ml (40 mg) = 240 mg/24 hr - at this point the patient can be switched to immediate release pills, if preferred - use 10 mg - if still titrating. If pain control is good - consider switching to a long acting preparation after at least 18-24 hours post stabilization.

In the rapidly titrating phase - where daily changes are planned – it is not always feasible to add breakthrough, since this may add to patient’s and family’s confusion. If daily changes are not planned then follow the guidelines for breakthrough in the section following.
Titrating with Sustained Release Morphine:
Using long acting morphine preparations to rapidly titrate a patient whose pain is not in control is not recommended.

However, if you work with a patient who only has long acting medication at home here are some guidelines to follow.

For Example:
- Day 1  - 45 mg q12 hr
- Day 2 or 3 - 60 mg q12 hr
- Day 3-4 - 75 mg - q12hr
- Then 100, 130 160, 200, 260, 300, 400, 500, 600, 800, 1000

Downward Titration
The following situations require that the opioid dose be tapered downward, if pain improves dramatically as a result of other interventions:
- Palliative radiation therapy
- Surgical fixation of a pathological fracture, or nerve block
- Reduction of tumor size through chemotherapy
- Successful resolution of psychological/spiritual distress
- If severe sedation due to opioids is accompanied by good pain control
- Renal impairment

Basically, downward titration of opioid medication is similar to upward titration. You can reduce the medication in the same way you increased it.

Reduce by 30% every 2 days and then when you reach 5 mg/q4h or equivalent the patient may stop the opioid completely. Remember that if the pain reappears during the tapering then you would stop tapering and hold the patient at that dose or increase back to the level of good pain control. As always – consult the health care team, and document your actions in the patient’s health record.

Recommendations
There is no upper limit of strong opioids for patients overall, although there is a limit for each patient.

As well, some patients will need special consideration when choosing a starting dose, such as those who are opioid naïve, have renal impairment, are elderly, or have a previous history of alcohol and/or substance abuse.
Altering Route of Administration

Administration of medication via the oral route is the preferred method, however there may be situations which require medication to be delivered via an alternative route, such as when patients can no longer swallow, or are vomiting.

Many drugs taken via the oral route are affected by the “first pass effect”, which means that a portion of the absorbed drug is directly metabolized by the liver and excreted via the kidneys without providing a systematic effect. This means that oral dosage is often a larger amount of the drug – to allow for direct excretion.

Example: It takes 30 mg of oral morphine to provide the same effect as 10 mg of morphine given via the intravenous route. This is called the equianalgesic dose

Guidelines

1. Changing from oral to parenteral route at the same dosage – a conversion factor must be taken into account - see Appendix H
2. Analgesic medication orders should specify a single route of administration – orders such as PO/IV need to be clarified since the oral dose will often not be equal to the intravenous dose and can result in under or overdosing of the patient
Opioid Rotation

Morphine is the gold standard of opioids for the management of cancer-related pain. The current standard procedure is to establish good pain control with short acting formulation of opioids and then switch to long acting preparation.

Patients may develop side effects or tolerance to one opioid and require a switch to another opioid. This is called opioid rotation and patients with long-term cancer pain may require many changes in the type of opioid they can tolerate. The reason for the change in opioid is because the individual side effect and effect profile is different for every patient.

Some patients will tolerate morphine for years with little or no side effects and good relief from pain; others may require a switch to Hydromorphone, Fentanyl, and Methadone over the course of their illness.

Guidelines

1. The new opioid is often started at a lower dose that the previous opioid since the patient may not be tolerant to the new opioid. The new opioid may be rapidly titrated up to achieve good effect.

2. Education is required to help patient/families understand the rationale for switching from one type of pain medication to another.

3. Avoid combinations of opioids wherever possible – e.g. morphine and hydromorphone.
Breakthrough Medication

Cancer pain is chronic in nature and requires both scheduled and breakthrough dosing. Breakthrough pain is defined as transient moderate to severe pain that increases above the pain addressed by scheduled analgesics.

There is confusion with patients and families as to what “breakthrough” means and much confusion about how to use it both in the outpatient and inpatient setting. Patients should be taught that breakthrough pain is the pain they experience between their regularly scheduled doses.

Remember the term “breakthrough” doesn’t make sense to patients unless you explain about the principles of keeping pain under control. If their pain “breaks through” then PRN medication is necessary. Many patients will hold back on taking breakthrough (PRN) medication until the pain is very intense - they need to be counseled to take the extra medication as the pain is starting to increase.

Remember to ensure that the breakthrough/PRN dose is changed (increased) to keep in step with the increased regular dose - this is often overlooked and then the breakthrough dose “doesn’t work” when the patient takes it - thus contributing to the confusion.

Guidelines

1. Breakthrough pain should be expected and planned for when managing chronic cancer pain
2. The breakthrough dose should be increased when increasing the regular dose
3. If the breakthrough dose is ineffective, a repeat dose is what is required, not a change in rate
4. The patient must be told that they should ask for or take extra medication when the pain starts to build up
5. Escalating PRN doses are NOT a substitute for frequently increasing the regular dose
6. The scheduled dose will maintain even serum drug levels and provide consistent relief
7. Breakthrough pain in patients with continuous cancer pain is common
8. Frequent breakthrough dosing requires an increase in the scheduled dosage
9. Always use immediate release opioid analgesics for when breakthrough pain occurs. Choose the same route and opioid as the regular opioid whenever possible
10. The size of the breakthrough dose should be in proportion to the regular dose of the opioid
The following is an example of how to estimate an appropriate breakthrough dose:

<table>
<thead>
<tr>
<th>Route</th>
<th>Amount of Breakthrough</th>
<th>Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>10% of 24 hour total</td>
<td>35 mg</td>
<td>q2h</td>
</tr>
<tr>
<td>IV</td>
<td>2 hour's worth of infusion</td>
<td>40 mg</td>
<td>q2h</td>
</tr>
<tr>
<td>SC</td>
<td>1 hour's worth of infusion</td>
<td>75 mg</td>
<td>q1h</td>
</tr>
</tbody>
</table>

Examples:
- 60 mg PO q4h would need a breakthrough of 35 mg q2h
- 20 mg IV/hr would need a breakthrough of 40 mg q2h
- 75 mg SC/hr would need a breakthrough of 75 mg q1h

Remember the term “breakthrough” doesn’t make sense to patients unless you explain about the principles of keeping pain under control and if the pain intensity “breaks through” this control then more medication is necessary.

The breakthrough dose order should not be written as a range. What a range in dose order doesn’t take into account is that after each rate increase the concentration in the blood builds up over a period of over 12 hours. This gives rise to two problems:
1. It takes a few hours after each rate increase before the relief is seen.
2. If you repeatedly increase the infusion rate over a 24-hour period, you may greatly overestimate the required dose of opioid and the patient may experience severe sedation or confusion.

Nursing Tips
When increasing the Regular Dose with Patient using Breakthrough Dosages ***Do Not Forget*** - to add the breakthrough dosages to the overall 24 hr dosage before factoring the new regular daily dosage. If not you will end up giving a lower dose than is required.

Example:
A patient is taking 60 mg q4h regular dose and he has taken 4 PRN doses of 35 mg over the past day. When you talk with him he is still experiencing pain and does not have dose limiting side effects (excessive drowsiness, hallucinations). If all you took into account were the regular doses the calculation would look like this:
- 60 mg x 6 = 360 mg in 24 hr then 30% increase = 108 mg + 360 mg = 468 mg ÷ 6 = 75 mg q4 hr

But yesterday he took:
- 60 x 6 = 360 mg
- 35 x 4 breakthrough = 140 mg
- Total 24 hr dose 360 + 140 = 500 mg (instead of assuming only 360 mg in 24 hrs)
Therefore if you add 30% to 500mg= 650 ÷ 6 doses = 108 rounded to 110 mg The new dose would be 110 mg q4h regular dose and the breakthrough would be 10% of 650 therefore 65 mg q2h
Side Effects of Opioid Medications

An important role for nurses is to assess for side effects and to convey to patients/families that most common side effects can be controlled thus allowing patients to continue to take effective pain relieving medications.

This section will provide an overview of the major side effects and a clinical approach to their management.

Health care professionals can focus too heavily on the reduction of pain intensity and fail to assess for side effects of pain medications. Ward (1993) reported that constipation was the highest rated barrier for patients taking strong opioids. Patients may stop effective pain medications due to unrelieved side effects.

A. Nausea & Vomiting

Approximately 1/3 of patients taking regular opioids may experience nausea and it often disappears after 1-3 days of regular opioid doses. An antiemetic is suggested prophylactically for the first three to five days of opioid induction or significant dose escalation.

Guidelines

1. Assess for the presence of nausea. Remember that patients will often state they are “allergic” to opioid medications because they have experienced an episode of nausea/vomiting

2. Determine, to the extent you can, the underlying cause of nausea (e.g. vestibular, chemoreceptor trigger zone, cerebral, vagal stimulation)

3. If nausea present, attempt to determine if the onset of nausea is related to the timing of analgesic administration. Remember many other drugs and cancer treatments can be the cause of nausea/vomiting

4. Correct constipation which may contribute to nausea

Nursing Tips

- Reassess for reduction/relief of nausea after intervention. If no improvement, consider substituting or adding other antiemetics and/or the use of non-opioid medications or switching to another opioid

- Consider adjuvant analgesia, and reduce opioid dose if possible

- Titrate opioid drugs slowly where possible

- Support the use of non-pharmacological techniques such as relaxation, Sea Bands®, etc

- If severe nausea persists switch to continuous subcutaneous infusion or IV infusion if intravenous is in place
Drug treatment differs according to the cause of nausea – the following schematic from Victoria Hospice links the appropriate medication in relation to the etiology of nausea.

Note: Use of these drugs in pediatrics may vary according to pediatric experience and documentation.

**Assessment and Management of Chronic Nausea:**

1. **Measure the Intensity:** Use scales such as the Visual Analogue Scale (VAS) and obtain a history of aggravating and alleviating factors, onset and duration, frequency and description of emesis. Assess the regularity of bowel movements.

2. **Review Drugs:** Drugs such as opioids, antidepressants, SSRIs and some antibiotics cause nausea. Those that are non-essential can be discontinued while others that are essential (such as opioids or SSRIs) may need to be replaced by alternative drugs.

3. **Thorough examination:** Exclude bowel obstruction, neurological signs suggesting CNS involvement, constipation.
4. **Investigations:** Further investigations may be helpful e.g.: abdominal x-rays (supine, erect and/or oblique views) where bowel obstruction is suspected or a flat plate if stool impaction is suspected. Renal function and electrolyses may be helpful. The physician may order an augmented CT scan if there are neurological deficits to suggest brain metastases.

5. **Correct suspected underlying causes:**
   Such as -
   - Constipation: increase bowel care and prokinetic agents such as metoclopramide
   - Opioids: rotate opioids if accumulation of opioid metabolites is suspected
   - Raised intracranial pressure: corticosteroids and/or Radiation Therapy
   - Electrolyte imbalances: correct these
   - Dehydration: hydrate

6. **General Measures**
   Such as -
   - Maintain good oral hygiene
   - Eat/drink smaller volume meals at more regular intervals
   - Avoid food odors (e.g.: eat cold food)
   - Avoid food that is greasy, spicy or sweet
   - Relax in an upright position after eating
   - Eat in a pleasant environment

7. **Pharmacological Measures**
   Metoclopramide is the drug of first choice. The reasons are:
   - It improve gastrointestinal motility
   - It has an antidopaminergic effect on receptors in the gastrointestinal tract and the chemoreceptor trigger zone. (Opioids exert their emetic effect mainly via these two mechanisms)
   - Monitor for possible adverse effects such as extra-pyramidal side effects. These are infrequent, but if they do occur, one may need to switch to an alternative antiemetic. If the nausea persists, consider adding an adjuvant anti-emetic such as a corticosteroid (e.g.: dexamethasone 4-6 mg TID PO/SC)

Contraindications to metoclopramide include complete bowel obstruction. In the presence of complete bowel obstruction, use haloperidol 1 mg q1hr PRN PO/SC with or without Buscopan 60-90 mg SC in 24 hours in divided doses or continuous infusion.

- Review after a few days – if nausea settles, consider discontinuing the regular dose and continuing only with rescue orders
- If metoclopramide results in significant adverse effects, consider Motilium. Motilium does not cross the blood-brain barrier and therefore has little risk for extra-pyramidal side effects. However its effects are primarily on the stomach.

B. Constipation

Constipation is a common problem for patients taking analgesic stronger than Tylenol #2®, because, unfortunately there are opioid receptors on the bowel that respond to the presence of opioids in the patient’s system by reducing bowel motility.

Unlike nausea and sedation this side effect does not diminish with time and requires a prophylactic approach to its management.

Assume that patients on opioid medication will usually require a stimulant laxative, and ensure that a bowel routine is integral to the care plan.

Contraindications to laxatives:

- Pre-existing history of diarrhea - or treatment plan includes chemotherapy or radiation where an expected side effect is diarrhea
- Suspected bowel obstruction
- Ileostomy

Nursing Tips

- Assess patient to determine if patient is to receive opioid pain medication on a regular basis
- Check for contraindications to regular laxatives
- Ensure patient understands the rationale for regular laxatives and the aim of regular bowel movements (at least once every 3 days). Always write out/instruct regarding laxatives
- Ensure that patient obtains a stimulant laxative (e.g. senna, bisacodyl)
- Consider dietary modifications including an increase in fluid intake, and/or addition of fruit & fibre as appropriate (may not be helpful in cancer patients where appetite is problematic)
- Consider stool softeners in combination with a stimulant
- As opioid dose increases, increase the dosage of bowel medication
- Use suppositories or enemas if oral agents are ineffective in three days – a good response, however, may not treat the constipation fully, and therefore be persistent with oral and rectal interventions. Use caution in patients with low platelets
- Do a rectal exam to rule out impaction (rarely done in children)
- Avoid bulk-forming laxatives (e.g. Metamucil®)
- Increase activity if possible
- Create a comfortable and private environment where, if possible, the patient can be placed in a sitting position
- Treat hemorrhoids and fissures
Example of an approach for the Prevention of Constipation:

1. Encourage generous fluid intake (8-10 glasses/day)
2. Large amounts of dietary fibre are often poorly tolerated by debilitated patients and should only be increased gradually
3. Encourage exercise as tolerated
4. Start with a bowel stimulant and a stool softener e.g.: senna 1-2 tabs at hs and ducosate 100 mg BID PO
5. Doses can be titrated upwards as to achieve a bowel movement regularly (every 1 to 2 days)
6. If patients find it difficult swallowing tablets/capsules, senna and ducosate comes in liquid forms. (Lactulose, 30 mg TID, is an alternative)
7. If unable to achieve a bowel movement within 3 days, administer a fleet enema or bisacodyl suppository rectally on day 3

Commonly used doses are:
- Senna 2-4 tabs BID, up to QID if necessary
- Docusate 240 mg TID, up to QID if necessary

Example of an approach for the Treatment of Established Constipation (with or without fecal impaction):

1. Administer a fleet enema or a bisacodyl suppository. Repeat if unsuccessful
2. If still unsuccessful, administer an oil retention enema followed by a soapsuds enema several hours later. (Caution: debilitated, frail patients may poorly tolerate soapsuds enema. A high fleet is an alternative in these patients)
3. If the impaction appears to be in the proximal colon, magnesium citrate, up to 250 ml PO may be tried

C. Sedation
Patients and family members should know that sleepiness might happen when first starting strong pain medications and when increasing dosage. This sleepy effect will either wear off after a few days (48-72 hours) or can be dealt with by other means (e.g. stopping other sedating drugs, using non-opioids to lower opioid requirements, using a stimulant).

Instruct patient to inform physician if they become aware of a new problem with confusion or hallucinations. If you hear a statement that may represent confusion, ask the patient “Have you been talking to people who are not in the room or seeing things that you know are not present?”

In patients whose function is severely affected by opioid related drowsiness, and the dose cannot be painlessly reduced, consider addition of an amphetamine like drug (Ritalin®, Methylphenidate ®)

**Sedation not subsiding spontaneously after 4 days:**
- Discontinue sedatives plus any antiemetics that are no longer necessary
- Try to lower opioid requirements with NSAID, steroid, or following radiation therapy, etc.
- If no confusion, hallucinations or paranoia, try Ritalin® 10 mg q 8 a.m. and 5 mg q noon
- Pediatric dose: Ritalin® 0.1-0.2 mg/kg/dose
- Try an alternate opioid.(see opioid rotation)

D. Respiratory Depression
Cancer patients requiring opioid medication for cancer related pain rarely experience respiratory depression.

Careful titration of opioids allows the body time to gradually adjust to the respiratory sedating effects of the medication. Concern about respiratory depression in opioid use relates to the acute pain management in the postoperative patient where the patient’s respiratory system is compromised by the use of anaesthetic drugs and gases, not the opioid itself.

Caution and monitoring needs to be employed when initiating opioid naive patients on relatively large doses of medication. On the other hand, patients receiving their first dose of opioids may experience pain relief, which allows them to catch up on sleep. This sleeping must not be confused with respiratory depression or sedation, and family needs to be informed about this. The following information will provide the nurse with direction.
Signs & Symptoms of Respiratory Depression

- There is no definitive number of breaths that defines respiratory depression, some authors state < 10 breaths/min, some < 6 breaths/min. A more accurate assessment is based on using a pulse oximeter to obtain level of oxygen saturation. Some patients may be breathing less in number but greater depth - still providing adequate oxygen.
- A decreased level of consciousness, difficulty in arousing the patient or the patient may arouse but slide back into a decreased level of consciousness.

Nursing Tips

If you decide that the respiratory level is problematic:

- Inform physician
- Stimulate the patient to breathe by shaking or slapping the feet - manual stimulation may be all that is required for a period of time until the opioid begins to clear from the patient’s system: this may require one-to-one care
- Use of O2 and continuous pulse oximetry is appropriate to verify that breaths are adequate for ventilation.

Many drugs can cause or contribute to sedation and opioids are an easy choice in the search for the cause of the problem. If the patient is receiving a continuous infusion of opioids, stopping the infusion for 4 + hours should suffice because levels of opioid in the blood will slowly decline. Restart the opioid infusion at 70% of the previous dosage after the 4 hours and based on the patient’s level of sedation and pain intensity.
Use of Naloxone (Narcan®)
Because respiratory depression is rare with cancer patients, and there are other interventions that are often effective, the use of naloxone is rare. However, if required, the objective of naloxone use is to reverse respiratory depression, without causing pain, to bring the patient back into the safety zone. An early sign of reversal is that the patient will begin to yawn.

Guidelines
1. If respiratory rate is < 6 breath/min, naloxone may be considered for a patient who is being treated aggressively.
2. If you give a 0.4 mg ampoule of naloxone, you may cause severe pain!. Instead, dilute the 0.4mg ampoule with 10 ml of D5W or N/S. Give 0.5 ml (0.02mg) boluses/minute until respirations are > 12 breaths/min.
3. Give a bolus dose through a rapidly running IV (300ml/hr). This will transport the naloxone to the brain (and the opioid receptors) rapidly.
4. Never give naloxone subcutaneously.
5. DO NOT ATTEMPT TO MAKE THE PATIENT FULLY ALERT, AS THIS WILL INDUCE WITHDRAWAL AND SEVERE PAIN. The greater the tolerance to opioids, the greater will be the sensitivity to the effects of naloxone, and there is a greater risk of distress caused by withdrawal.
6. The effects of naloxone wear off faster than those of the opioid; therefore patients must be closely monitored for a return of respiratory depression.

Pediatric Initial Dose Recommendations
1. 2 µg/kg/dose IV in less than 30 seconds, repeat every 30 seconds for a maximum of 10 doses.

E. Pruritus
Pruritus is rare in the cancer patient except for those treated with an epidural or spinal infusion of opioids. It may be treated with antihistamines or a change or reduction in opioids or route of opioid administration.

F. Urinary Retention
Opioids can act to increase the smooth muscle tone, which can result in an increased contraction of the sphincter of the bladder, therefore resulting in urinary retention. This tends to be more prevalent in patients receiving epidural opioids, more common for men and/or elderly patients. Short-term treatment may require catheterization, or changes in route or type of medication.
G. Myoclonus

Myoclonus is a sudden, involuntary, jerking movement of the extremities, head or trunk, which is considered benign if it occurs around the time of sleep.

At high doses, all the opioid analgesics can produce multi-focal myoclonus. This is a sign of toxicity, and may indicate a need to reduce the dose or rotate the opioid, reassess the pain problem, and trial an adjuvant drug to help reduce the pain.

Myoclonus can be mistaken as an indication of increasing pain, and the opioid may be mistakenly upwardly titrated, whereas it should be reduced.

Assess to determine that patient is truly experiencing myoclonus, (involuntary twitching of muscles while the patient is awake, or if asleep, it wakes the patient up or exacerbates pain).

**Nursing Tips**

- Try an alternate opioid
- Try to lower opioid requirements with NSAID, steroid, radiation therapy, etc.
- Try Clonazepam (starting at 0.5 mg PO BID) - this may cause undesirable sedation Pediatric dose: Clonazepan® 0.1-0.3mg/kg/day given in 2-3 doses/day may be incremented to 0.1-0.2mg/kg/day for a maximum of the adult dose
H. Altered Cognitive Function
Cognitive impairment can occur following the initiation or upward titration of opioids. It usually resolves in a few days, however persistent confusion can be attributable to the opioids. In such cases, the opioid should be reduced and an adjuvant added (e.g. neuroleptic), or the opioid should be rotated.

Cognitive impairment can resemble an expression of pain, and should be carefully assessed, especially in the non-verbal population.

Cognitive impairment may be due to a multiplicity of factors such as infection, metabolic disturbances, dehydration, brain metastases, and for the elderly – a change in location. The nurse should consider all possible sources of cognitive impairment when establishing a care plan.

Nursing Tips
- If mild, hold off further increases and see if it subsides within 4 days
- Try to lower opioid requirements with NSAID, steroid, radiation therapy, etc.
- Try an alternate opioid
Adjuvant Medication
Adjuvant medications often have a primary indication other than pain, but are used as analgesics or to potentiate the effects of analgesics in some situations.

These drugs differ in many respects from opioids. One of the most important features is that they have a ceiling to their analgesic efficacy. They also may help to relieve pain by elevating mood, reducing anxiety levels, or minimizing the adverse side effects of the primary analgesic. They are generally less predictable than opioids, and should be considered after or as opioid treatment is initiated or optimized.

Guidelines
Consider the following before trialing an adjuvant:

- Particularly useful for mild to moderate pains
- Optimize opioid use
- Consider the risks verses the benefits of the adjuvant drugs, since many may have serious side effects
- Most patients require several days before achieving pain relief with adjuvant medications
- Tailor the pain management plan to the individual, since certain patients may respond better to adjuvants than others
- You may use more than one adjuvant, but be careful to avoid polypharmacy
- Some are available over the counter, so may be easily accessible, but may also be expensive

Recommendations
The nurse should be knowledgeable about the wide range of adjuvant medications that are available for the pain management plan, and advocate for their use.
Non-Steroidal Anti-inflammatory Drugs

**Indications:** For all types of cancer pain (including neuropathic pain)

**Contraindications**
- ASA allergy
- Recent history of bleeding stomach ulcers
- Concurrent anticoagulant therapy
- Low platelet count
- Renal failure with high creatinine

**Dosage**
- Adults younger than 75 years of age- 375 mg BID
- Older than 75 years of age - 250 mg BID
- Children: 5–8 mg/kg/dose q 8-12 h (max 20 mg/kg/day)

**Drug Availability**
- Tablets with or without enteric coating– 250 mg, 375 and 500 mg tabs
- Sustained release tablets 750mg
- Rectal suppository – 500 mg (not indicated in children under 12 years old)
- Liquid – 5ml = 125mg

**Side Effects**
- Nausea and vomiting
- Gastrointestinal ulceration – leading to bleeding
- Renal Failure in patients who are already compromised

**Patient Teaching**
- Advise the patient to take this medication with a small amount of food, e.g. crackers & milk in their stomach (remember that cancer patients may not be eating much).
Nursing Tips

🛒 A trial of this drug for 48 hours is sufficient for the MD to determine its effect on pain. Therefore it could be tried even if the patient is at higher risk of ulceration since it would be extremely unlikely for a patient to develop ulceration in 48 hrs.

🛒 Patients who are already taking steroids are at an additional risk of ulceration however they could still benefit from a 48-hr. trial of a NSAID. If the NSAID provided additional relief – one could consider stopping the steroid (if it was being prescribed for pain relief), otherwise a cytoprotective agent e.g. misoprostol 200 µg QID should be used

🛒 Nausea and/or vomiting are not a sign of gastric ulceration – there may be no obvious sign/symptom of ulceration prior to bleeding

🛒 Rectal suppositories can be used if nausea/vomiting are a problem – or a switch to another NSAID or a new COX₂ NSAID (Celebrex®) may be better tolerated

🛒 Monitor renal function tests – especially creatinine
Steroids

**Indications:** For all types of cancer pain (including neuropathic pain)

**Contraindications**
- Diabetes
- Active infection
- Avoid using NSAID and steroids together because of greater risk of ulceration

**Dosage**
- For fast relief of severe pain in adults – give Decadron® 20 mg IV if effective continue with oral dosage Decadron® 4 mg BID
- Oral dosage: Decadron® 4 mg PO once daily or prednisone 15 mg once daily
- If other methods of pain relief are effective (e.g. radiation) taper dosage
- The pediatric dose is not established

**Availability**
- Decadron® 1, 2, 4 mg tablets

**Side Effects**
- Candidiasis in mouth from increased glucose
- Fluid retention

**Patient Education**
- Inform patients not to stop taking steroids without advice from MD or RN
- Remind patients not to take ASA, or NSAIDS without advice from MD or RN
- Advise patient to take steroids with some milk or food to avoid the side effect of heartburn
- Advise patients that steroids may make them feel more awake. Taking the drug early in the day may help
- Advise patients that they may notice an increase in their appetite and some weight gain

**Nursing Tips**
The dose of steroids used for pain is considered a low dose; it is very unlikely to see some of the other side effects commonly associated with steroids- steroid induced diabetes, or muscle wasting/weakness, however long term use of steroids needs to be carefully considered.
Tricyclic Antidepressants

Indications:
- Neuropathic pain
- Post-herpetic neuralgia
- The required dose is less and the time to effect is shorter when used for pain management than for depression.

It is sometimes recommended that a baseline ECG be obtained prior to administration of tricyclic antidepressants for both adults and children

Contraindications
- 2nd or 3rd degree heart block
- Concurrent administration of SSRI antidepressants (Paxil®, Zoloft®)

Dosing Schedule

Pediatric Dosing:
- PO: 0.1-0.3mg/kg/day HS titrate every 3-5 days up to 0.5-2mg/kg/day at HS or this total dose can be divided into twice a day dosing. Maximum initial dosing: 10-25 mg/day.

For adults under 70:
- Start with 25 mg PO at bedtime for 5 days
- then 50 mg PO at bedtime for 5 days
- then 75 mg for 5 days
- continue to increase by 25 mg every 5 days until pain relief or problematic side effects until ceiling dose 150 mg per day

For patients older that 70:
- Start at 10 mg at bedtime for 5 day
- then 20 mg, increase by 10 mg every 5 days until patient is taking 50 mg
- then increase by 25 mg as per the schedule above

Availability
- 10, 25 and 50 mg tablets, Amitriptyline (Elavil®)
Side Effects:
- Dry mouth
- Excessive sedation
- Light-headedness

Patient Education
- Advise patients that although this drug is used to treat depression, it has been prescribed for you to treat your type of cancer pain.
- Advise patients that it may take up to 6 weeks to get the full effect from this medication. They need to continue to take the pills even if they notice little or no effect. **Do not stop taking the medication without talking to a MD or RN.** A change to similar medication (Desipramine) at the same dosage may be better tolerated - if patient stops taking Elavil® then you will need to return to the lowest dose and start again with the titrating process.
- Advise patients that they may be taking this medication along with other medication for cancer pain since this medication may work on a different type of pain.
- Advise patients that dry mouth and/or morning drowsiness may occur. If these side effects become problematic for the patient, please call your MD or RN.
Bisphosphonates

Indications in Cancer Pain Management

- Used for bone pain - arising from bony metastasis
- Not suitable for nerve root compression associated with bone metastasis
- Has been tried for steroid induced bone pain

Dosage:

- IV clodronate 1500 mg in 500ml of fluid - infuse over 4 hours - repeat every 3-4 weeks if there is an effect
- IV pamidronate 90 mg in 250 ml infuses over 2 hours - repeat 3-4 weeks
- Oral clodronate -used for long term prophylaxis of fractures - 1600 mg PO once daily or 800 mg per BID
- IV zolodronate 4 mg in 50 mls of sterile 0.9% sodium chloride, USP, or 5% Dextrose Injection, USP and infused over 15 min.
- Pediatric dose not established. Some clinicians in specialized centres are using pamidronate 0.25-1.5 mg/kg/day IV x 3 days

Availability

- Clondronate 400mg tabs; IV 60 mg/ml - 1- 5 ml ampule
- Pamidronate IV only -ampules, 30 mg, 60 mg, 90 mg each concentration is 10 ml ampule
- Zolodronate: 4 mg vial of sterile powder

Patient Education

- Reassure patients that the drug is well tolerated
- One drawback is coming into hospital for the IV treatment
- Venous access may be a problem for some patients
- When taken orally there are restrictions when taking dairy products - need to take drug on empty stomach or 2 hours after meal. DO NOT take oral medication with milk – milk will bind to medication and it will be excreted without any absorption
- IV medication can be administered as an outpatient
Nursing Tips

 Enumerable This drug is almost always well tolerated with practically no side effects. In about 10% of patients pain flares for 1-2 days with 1st dose. Provides relief in approx. 50% of patients

 enclave The full effect of the drug can take up to 2 weeks to be appreciated (like radiation therapy)

 north Usually approach is to give 1 dose - see if any effect after 10-14 days - if no benefit then repeat dosage and if still no benefit stop drug

 north Unlike treatment for hypercalcemia - do not measure the calcium level in the blood - while it may change briefly, it is not relevant to the pain management approach

 north Delivery of this drug via the IV route is the preferred method for pain relief - studies did not show the same benefit on pain when given orally - more research is required
Management of Procedural Pain

With advances in treatment modalities, cancer patients are subjected to an increasing number of diagnostic procedures. Although procedures may be short, they can also be very painful.

The practice of providing analgesia and/or sedation before procedures is not the standard in many settings, and cancer nurses have a responsibility to identify procedures that may potentially lead to acute pain and will advocate for measures to prevent or reduce such pain.

Procedural pain serves no useful purpose and has many damaging consequences. Patients who undergo repetitive procedures without adequate or no analgesia are more fearful, anxious and may feel victimized.

For the patient with existing cancer pain, procedural pain can significantly add to their suffering. This may influence their willingness to continue with treatment or seek other health care professionals who give more attention to their comfort needs.

Not all procedures cause pain. Some procedures elicit a high anxiety response but are not painful. It is important to assess both the patient and the procedures potential for causing pain or anxiety.

Sedation alone does not reduce pain and it does not eliminate the memory of it. Sedation along with adequate analgesia or local anesthetic may mean the patient does not remember the procedure.

Guidelines for Adults

1. A baseline assessment of existing pain
2. Existing analgesics, sedatives and non-drug methods of pain management
3. The patient’s understanding of what they will feel during the procedure and any concerns
4. Observe for overt signs of pain such as muscle rigidity, grimacing and changes in vital sign.
   - Lack of evidence of pain does not mean there is an absence of pain.

Specific Considerations for Children

One of the most difficult aspects of children’s cancer treatment is coping with repeated invasive procedures. Procedures such as lumbar punctures, bone marrow aspirations, port access, venipunctures, are an essential part of cancer diagnosis and treatment but they are painful and distressing.

Some children develop anxiety-related symptoms such as nausea, vomiting, anorexia, skin rashes, insomnia, and nightmares in anticipation of painful procedures.

Children vary widely in their ability to cope with this distress and a number of factors need to be taken into consideration when planning an intervention program for each child.
Factors Affecting Pain and Distress in Children
The terms behavioral anxiety, procedural distress, and distress are used to describe a complex interaction of cognitive, affective, and behavioral responses to a situation that involves pain. It is often impossible to separate pain from the anxiety and fear that children experience during a medical procedure.

There are a host of factors which contribute to the over-all unpleasantness of the situation, including the unpredictability and the loss of control that are part of being restrained and forced to submit to a painful procedure. In addition, younger children typically exhibit more overt physical manifestations of distress such as screaming, crying, clinging and refusal to maintain the position necessary to carry out the procedure.

Around age seven, and older, children tend to express their pain and fear verbally and they are more adept at articulating their fear and asking for support.

Parents’ level of anxiety and parents’ anticipation of their child’s distress are two other factors that contribute to the child’s ability to cope with procedures.

For some children combative or active behaviors may be distracters that enable them to attend away from the procedure, which in turn may alter their perception of the intensity of the pain. Their coping behaviors are indicative of distress as measured by observational tools, but their self-reported pain may be relatively low.

Guidelines for Children
Information about the child’s past experience with pain and painful procedures should be gathered at the time that a cancer diagnosis is being confirmed. It is important for the nurse to have a sense of the vulnerability of this child from the perspective of their past experience. Perhaps this child has had very negative experiences with routine immunizations, dental pain and other common procedures, or this might be a child that experiences headaches, abdominal pain or some other type of chronic pain syndrome.

Some children that have been hospitalized for surgery or a painful medical condition may have had poorly controlled pain at the time and subsequently developed an aversion to hospitals, procedures, and health care personnel. Conversely, some children are relatively robust and self-confident about their ability to cope with pain.

The child’s and parents perception of coping style is important to understand when planning intervention strategies for procedural pain. Clearly the time to address procedural pain is prior to the first painful procedure. It is much easier to prevent the anticipatory distress from developing by preventing and treating procedural pain than it is to treat after the child has experienced difficult procedures.
Methods For Procedural Pain Management in Adults and Children

- Local anesthetics are inexpensive, techniques are simple and easy to learn and are relatively safe. They work by blocking nerve conduction and have the capability of stopping the transmission of pain. They may be injected at the site of sensory nerve endings or used topically (e.g. EMLA® cream or patch).
- Opioids can be used alone or in combination with sedatives. Fentanyl is used often for short procedures because of its rapid onset and short duration of action. Morphine is more suitable for longer procedures and when the pain is expected to continue after the procedure.
- NSAIDS can be used safely and effectively as preemptive analgesic or in combination with opioids.
- Nonpharmacological interventions can be used to complement pharmacological pain management. Health care professionals can suggest a few methods for patients who want to learn these methods. Practice before the procedure is important in helping the patient to gain proficiency and confidence. Examples of non-drug intervention are the application of cold, distraction, imagery and relaxation.
- Sedation /analgesia combines medications to produce a depressed level of consciousness and analgesia but retains the patient's ability to maintain an airway and respond to physical stimuli and verbal commands.

Levels of sedation

1. **Anxiolysis** (minimal sedation) is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and co-ordination may be impaired ventilatory and cardiovascular functions are unaffected.
2. **Conscious Sedation** (moderate sedation) is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patient airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.
3. **Deep Sedation**: is a drug-induced loss of consciousness during which patients cannot be easily aroused but respond purposefully following repeated painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.
4. **General Anesthesia** is drug-induced loss of consciousness during which patients are not arousable even by mild painful stimulation. The ability to independently maintain ventilatory
function is often impaired. Patients often required assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired (American Society of Anesthesiologists, 2002).

**Recommendations**

- The prevention of procedural pain and distress should be part of a pervasive institutional commitment to preventing pain and promoting comfort. Standardized protocols can address the routine management of procedural pain. Oncology nurses must have the education, values, attitudes and motivations to operationalize this commitment.

- Nurses play a key role in advocating for procedural pain management through assessment, patient education, support, monitoring of outcomes and the development of policies and procedures that support preemptive interventions.

- Protocols and supports must be in place within the institution to utilize the range of pharmacological and non-pharmacological methods for managing pain and distress. For example, IV sedation with propofol and fentanyl is a safe and effective way to alleviate the pain of lumbar punctures and bone marrow aspirations. However, this intervention is within the domain of anesthesia and as such needs to be coordinated between oncology and anesthesia. The efforts involved in making this linkage happen are part of the institutional commitment to comfort.

- Cognitive - behavioral interventions such as distraction, imagery, relaxation, and even virtual reality can be powerful tools for decreasing pain and alleviating distress but they need to be part of a consistent and organized plan. These interventions do not succeed without advance preparation and attention to the details. Patients, parents, children, and nurses must be trained and feel comfortable and confident using these techniques. In addition it is important to recognize when cognitive-behavioral interventions should be adjuncts to drug treatment.

- Provide procedural information about what will happen for patients who wish to have the information. Some patients do not want to know the details and will benefit more from distraction strategies. (Pediatric content from contributor J. Ellis, RN, PhD School of Nursing, University of Ottawa).
Invasive and Other Methods to Manage Cancer Pain

This section focuses on interventions that are considered invasive but not pharmacological. This manual provides basic information on surgical, radiation and chemotherapy approaches to pain relief. The intention is to inform the nurse with an emphasis on teaching and practical tips that will support these treatments.

Invasive non-pharmacological methods may need to be considered in the management of cancer pain. Where possible, the choice should be for the least invasive modality, however some cancer pain can only be effectively managed by invasive means.

A. Surgery

Surgery is not a common approach to managing cancer pain. However, surgery can be useful for:

- Pain caused by mechanical means – such as “debulking” surgery to remove some of the tumor
- Applying bone glue for unstable spinal vertebra, where pain limits mobility
- Stabilizing impeding fracture of major bones, which may require pin and plate, to improve function and reduce pain
- Nerve ablation – sectioning the nerves through a procedure called a cordotomy for severe nociceptive pain in the lower body. Often done through a percutaneous approach, however an open surgical approach can be used.

Recommendations

- Help the health care team to consider the invasiveness of surgery for the patient at this time (life expectancy, length of recovery time, time in hospital)
- Advocate for patient and family to have time to consider surgical options
- Post-operative care – careful attention should be paid to downward titration of pre-operative analgesic to avoid inducing opioid withdrawal
- Advocate for consult to pain specialist if surgical team not comfortable with cancer pain management.
B. Radiation Therapy
Fifty per cent of patients diagnosed with cancer will receive radiation therapy (RT) whilst dealing with their malignancy (Kirkbride & Barton, 1999). In half of these cases, radiation therapy is given for palliation i.e. control of symptoms such as pain, rather than eradication of the tumor (Kirkbride & Bezjak, 2002). However, radiation may not be easily accessible to all Canadians due to geographical location. It is essential that the nurse and health care team work collaboratively to implement pain and symptom management strategies whether the patient is able to access therapy or not.

Indications
Radiation therapy (RT) can be beneficial for patients who present with pain due to primary malignancies such as:

- lung cancer with chest wall invasion,
- head and neck cancers causing pain with eating and swallowing,
- retroperitoneal cancers causing back pain,
- rectal or pelvic cancers causing pelvic pain

Radiation therapy is also an effective form of treatment when given with a view to cure (RT alone or in combination with chemotherapy or surgery) while at the same time relieving symptoms. In this case, RT is given at a higher dose, and may be given as a single or multiple treatments.

Radiation therapy is also beneficial for pain due to metastatic disease which may be in:

- the bone
- soft tissues
- lymph nodes (possibly causing obstruction)
- solid tumours (possibly) pressing on nerves
The goal of treatment is symptom management. The treatment plan for the palliative patient is dependent on many issues, such as:

- pathology
- site and size of tumour
- current or potential symptoms
- functional status of patient
- benefits of treatment vs. risk if treatment is not given
- adverse effects of treatment
- possible benefit from alternative management strategies
- wishes of patient and family

The most common form of treatment is external beam RT; however radioactive isotopes such as strontium-89, and brachytherapy have also been used. If multiple sites of bone metastases are causing pain, hemibody radiation can be considered. More often single areas are treated.

For oncological emergencies such as spinal cord compression radiation is often the first choice of treatment, to not only relieve pain, but to prevent further neurological deterioration.

**Side Effects**

As radiation therapy can cause injury to the normal tissues, acute and chronic side effects are observed during and following treatment. These are dependent on the area treated and occur in both the curative or palliative scenario.

**Acute Side Effects:**

- 😊 flare up of pain
- 😊 nausea and vomiting
- 😊 diarrhea
- 😊 fatigue
- 😊 skin reactions

These side effects are to be anticipated and appropriate medication should be given in advance to deal with the symptoms or prevent them. Chronic side effects can surface months or even years following therapy, and may cause problems.
Chronic Side Effects

- peripheral neuropathy
- fibrosis
- ongoing skin reactions

These chronic side effects are mainly seen in patients who receive high dose treatment for curative intent.

Nursing Tips

辐射治疗不会立即生效。事实上，它可能会导致疼痛的加剧，尤其是在骨转移的患者中。患者可能在14天内开始症状改善。然而，需要四到六周才能达到最佳效果。护士需要为患者制定疼痛管理计划，包括治疗前，治疗中和治疗后。

谨慎告知患者在治疗期间和治疗结束后一周内避免直接使用热/冷疗法。

患者应谨慎对待突然停止止痛药物的情况，如果疼痛消失。需要制定计划逐步减少止痛药的使用，以避免药物戒断。

通常，辐射会与止痛药物一起使用，辐射可能有助于减轻疼痛的特征（如钝痛）或疼痛的强度，但不能完全消除止痛药物的需要。患者教育可能需要了解需要使用不止一种方法来管理癌症相关的疼痛。

如果疼痛在辐射后持续或复发，放射科医生的重新评估可能需要，因为进一步的辐射可能是可能的和有益的。
C. Nerve Blocks
Nurses caring for patients receiving nerve blocks require additional knowledge and skills. The following provides some general information in this area, however advanced skills are beyond the scope of this project.

Indications
Nerve blocks are generally used for patients who have a short life expectancy and for whom pharmacological approaches have already been tried and failed. Problems arise for long-term patients because of nerve regeneration and/or the development of different pain (neuropathic), which may be worse than the original pain.

Pain transmission can be stopped by either temporary or permanent injection to a nerve or nerve plexus. Local anesthetic agents are used to produce temporary nerve blocks before a permanent block is considered. Permanent nerve blocks use phenol or alcohol. Specialized anesthesiologists or neurosurgeons perform nerve blocks.

Types of nerve blocks used in cancer related pain:
- **Trigeminal nerve block** - Used to block pain in the face and jaws supplied by the trigeminal nerve. Balloon compression or glycerol injection has replaced alcohol injection.
- **Celiac plexus blockade** - used for patients with pain arising from upper abdomen, e.g. cancer of pancreas, liver or GI.
- **Peripheral nerve destruction** – can be accomplished be the injection of a neurolytic agent. The intercostal nerve block is used frequently in the treatment of chest wall pain.
- **Neurolytic sympathetic blockade** – can be useful in the treatment of pain in the arm, head and neck, or the leg.
- **Caudal blocks** – used in the relief of pain in the sacral canal (sciatic pain) arising from perineal or pelvic cancers.
Nursing Tips
- Observe for hypotension
- Assess sensory and motor function
- Reinforce that opioids and/or other pharmacological pain therapy may still be required.
- Reinforce that sudden cessation of opioids would lead to withdrawal – plan with patient and health care team for a gradual downward titration of opioids
- Inform the patient that bowel and bladder denervation is possible with cordotomy and celiac nerve block – observe for this complication
- Advise the patient and family that permanent numbness can develop from nerve blocks – patient and family need to be cautioned to avoid injury since the body’s warning signal has been turned off

D. Chemotherapy
As with radiation therapy, chemotherapy can be used as a pain management intervention. Patients may experience considerable relief as a result of the reduction in tumour size.

Chemotherapy does not immediately work to control pain. Depending on the protocol, the patient may not feel the full effect of the treatment right away. Nurses need to advocate for a plan for pain control during this time, even though the chemotherapy treatment may assist in the pain control plan.

As with all invasive procedures, chemotherapy must be considered in terms of the risk and benefits:
- Risks - in terms of undesirable side effects and a reduced life span
- Benefits - in terms of the potential for pain relief

Patient and family need to be fully informed of the “lived experience” of receiving the chemotherapy.
Non-Pharmacological Measures To Manage Cancer Pain

This section reviews the non-pharmacological approaches to pain management such as cutaneous stimulation, and cognitive-behavioural therapies. This is an important area for nursing practice since many of these treatments can be prescribed and delivered by Registered Nurses.

It is beyond the scope of this section to provide comprehensive information on every technique, however the basics are highlighted and direction provided for further reading.

There are a variety of non-pharmacological therapies for pain management. The nurse needs to be knowledgeable about non-pharmacological measures, and combines pharmacological methods with non-pharmacological methods to achieve effective pain management. Many of these techniques can be used with children to decrease the perception of pain especially during procedures.

With certain interventions, such as TENS and Acupuncture, practitioners need to have received training to administer these non-pharmacological methods. However, music, massage, vibration, repositioning, exercise, application of heat and cold and relaxation/imagery may be useful non-pharmacological measures for pain management, and are within the scope of nursing practice.

The selection of non-pharmacological methods of pain management should be based upon:

- patient preference
- patients’/families’ attitudes towards, or experience and participation in self care strategies for preventing additional pain problems
- the goal of treatment
- the patient's ability to participate.
- An evaluation of potential contraindications (such as massage in the patient with potential thrombophlebitis and or pathological fracture)

There is little research supporting the efficacy of non-pharmacological interventions, as it is difficult to single out the effects of these interventions. Therefore, these interventions should be applied according to patient preference and caregiver familiarity. Research needs to be supported to investigate this area of care, as it is so very appealing to the general public, and so very widely used. For further understanding of this area, a review of the strength of evidence for nonpharmacological interventions is available in Wyatt (2002).
A. Heat & Cold
Heat and cold have been used for centuries as a treatment for pain.

**Indications for a trial of heat or cold are:**
- It works well for some patients
- It works quickly
- Adverse effects are virtually non-existent
- It can provide some patients/families with an important sense of control over the relief of pain

**Heat**
The premise for applying heat to skin is that it will increase blood flow and reduce neurotransmitters, which sensitize pain nerve fibres. Heat may compete for nerve transmission with pain and therefore, in the brain there is a perception of heat and a reduced perception of pain.

Heat can be used to provide relief from pain at any stage in cancer treatment. There is no concern that heat will promote tumour growth, since the sources of heat affect only the superficial layers of the dermis and do not reach sufficient temperature to affect tumour growth.

**Cold**
Cold works through a similar pathway as heat, competing for nerve transmission. It creates numbness in the area of pain and may be especially helpful when the pain has a burning quality.

Cold can be obtained from many sources like ice cubes, cold gel packs or frozen bags of vegetables. In general, wrapping a pillowcase or thin towel around the cold source makes it more tolerable. Cold can sometimes briefly increase pain before it decreases pain. Cold should be left in place for only 20 minutes at a time.

**Nursing Tips**
- 🌺 Assess for prior use of heat or cold
- 🌺 Remember that when you recommend heat or cold as a treatment, some patients may think that you are “trivializing“ their pain
- 🌺 Describe how heat and cold is effective to encourage patients to try heat or cold as an adjunct to their pain management
- 🌺 Heat and cold can be used in children greater than 6 months of age
Contraindications

Heat:
- No area that is bleeding
- No area with decreased feeling
- An injury within the first 24 hours
- Combined with menthol-containing products (Vicks, Ben Gay, etc.)
- Within a site presently receiving radiation therapy – after treatment, may use provided that the skin is not compromised

Cold:
- No area with poor circulation (diabetic feet)
- Within a site presently receiving radiation therapy – after treatment, may use provided that the skin is not compromised
- Not where a wound is in the healing phase

Application of Heat or Cold:
- Heat can be obtained from a variety of sources including heating pad, hot water bottle, topical ointments
- Use low to medium setting to avoid burns
- Place over painful site. When this is not possible (too painful, open wound) other options include above the site, below the site, or on the opposite side of the body
- Prevent direct contact with heat/cold source on skin
- Heating pad placed on a child should be monitored every 5 minutes and the child should not be left unattended
- Cold can be enhanced by using it in conjunction with menthol-containing products (e.g. A535® with ice bag over top)
- When using a topical ointment, test the skin with a small amount of product to check for allergic reaction prior to using it on the painful site

B. Relaxation and Imagery

Relaxation
Relaxation may be appropriate for almost any type of pain with a goal of reducing muscle tension and anxiety. It may also be used in children aged 7 years and older.

Patients who are already tense and in pain may benefit from simple relaxation centred on slow, deep breathing. Progressive muscle relaxation in which the patient uses isometric exercise to systematically relax muscles from head to foot may also be helpful - see Appendix I.

Lengthy relaxation techniques are enhanced by a quiet environment and having the patient in a comfortable, well supported position. Listening to a taped relaxation session may help the patient to focus more easily, and become less distracted by their pain.

Imagery
Imagery can also be used to assist in the pain management plan. Guided imagery engages the person to mentally reconstruct images, sounds, smells and feelings as if they were actually happening. Effective use of imagery involves all of the persons’ senses. Images can be stimulated by something that spontaneously springs to mind or be consciously created. Imagery thus generates a new internal experience. This technique gives a greater sense of control and provides distraction from the pain by changing the perception of the painful experience with a familiar activity of favourite story. Children over 5 years old can usually participate in guided imagery. Imagination is spontaneous and natural for children. They are able to focus easily, thus taking their attention away from their pain. As the child becomes familiar with imagery he becomes more comfortable, dissociates from the pain and his anxiety is reduced. This focus helps the child to distance himself from the pain and sometimes even escape it.

Nursing Tips

 Suggestions in constructing an imagery experience in children when pain and tension is present include inviting the child or teen to:

 - Choose a favorite person, place, activity or story
 - Focus on creating a rich experience with the child that uses all senses

 Examples of visual imagery: favorite places, animals, flower gardens, movies; auditory imagery: conversation with significant others, favorite song, playing a musical instrument, environmental sounds (waves, etc.); movement imagery: flying, swimming, skating, amusement rides (Hockenberry-Eaton, M., Barerra, P. et al 1999).

 If the pain isn't overwhelming suggest that the child or teen focus on generating a direct image of the pain, for example a red ball of fire then altering, shrinking, changing it to decrease the hurting and discomfort (see Kuttner 1996 and Murdoche 1987 for different methods on guided imagery with children).
Contraindications
Caution should be used in using relaxation and imagery techniques in patients who are either:

- Confused
- Drowsy
- Have a poor grasp of the language of the relaxation therapist
- Have a previous history of significant psychiatric history such as having hallucinations

C. Distraction
Distraction is another pain reducing technique that can be used in children and adults. The idea is to divert the attention by actively involving the patient in the performance of a distracting task that is interesting and more pleasant than the painful procedure. Patients can choose anything of interest. Suggestions for children include blowing bubbles, reading a special book, a musical toy, or a magical wand, the use of virtual reality glasses (Kleiber et al 1999, Kuttner, 1996, Chen 2000, Sander 2002). A common technique for adults is use of personal entertainment devices for soothing music or narrative.

D. Other Therapies
Complementary therapies such as therapeutic touch, massage therapy, reflexology, Reiki and aromatherapy may be useful non-pharmacological adjuncts to pain management (Wyatt 2002). These modalities should be administered by individuals with training in their application.
References – Interventions


City of Hope pain/palliative care resource centre website. http://www.cityofhope.org/


Evaluation
Learning Objectives

At the end of this section the nurse will:

1. Describe how to evaluate the interventions that have been put in place to reduce the pain experienced by cancer patients.

2. Identify assessment measures to compare any change in patients’ pain from his/her baseline assessment.

3. List relevant outcome parameters assist with communication to appropriate health team members.

4. Identify the appropriate benchmarks in order to determine whether the health care system which he/she functions within the addresses the needs of quality cancer pain management.

5. Understand that cancer pain management efforts are useful to both patients and their families.
Introduction

Evaluation processes are required in order to determine whether or not the care plan has achieved the desired outcomes for your cancer patient. In the same manner, in order to know whether your program or agency is making a difference in cancer pain management, health care system evaluation processes must be utilized. The principals for applying these processes are similar, but the tools are quite different for each arena.

This section will provide the nurse with an overview of both patient outcomes evaluation, and evaluation of the health care system in which he/she works. The nurse plays an essential part in both areas.

Individual Patient Evaluation

Revisit 7 Minute Brief Assessment Parameters

The best evaluation exercise is to revisit baseline measures and compare whether there is any change. The assumption can then be made that this change is in relation to the interventions, and overall efficacy of the care plan. For this reason, the best tool for measuring patient’s change in cancer pain experience is the same one used to measure the baseline or presenting patient cancer pain experience.

Physiological Parameters

Intensity Score – has it changed?

Higher – intervention has not been effective, or pain is escalating at a rate that your intervention is not matching – need for closer titration, or change in therapy.

Lower – have you achieved the patient’s goal and/or does your agency have a threshold of acceptable symptom distress? (e.g. 5/10 pain intensity requires action)

Change in the quality of pain – compare to report at assessment – if there is change in quality - will alert you to one or more of the following things:

Your interventions were effective.

There needs to be modifications or additions to interventions.

New pain may be emerging which will require additional interventions, including possible referral to other resources (e.g. pain team, neurologist).

Change in the location of pain – is there change in the location of pain – is this indicative of new pain emerging?
Side effects - as a result of interventions, have side effects become problematic? If so, you may need to do one or more of the following:

- Reduce dosage if pain relief is achieved
- Add a medication to deal with the side effect
- Rotate the medication.

Toxicity assessment – is there evidence of toxicity resulting from the analgesic (such as hallucinations experienced when patient on morphine).

Need to alert physician about this, and expect to see a change in the intervention.

Functional Parameters

- Is there any change in the patient’s Palliative Performance Scale (PPS) score – see Appendix J; or Lansky Play Performance Scale for children – activity, sleeping patterns, intake - see Appendix K.
- Is the change related to the effectiveness/non-effectiveness of the intervention(s)? Do you need to add or change something, or make a referral to another resource?
- Is the change related to expected progression of the disease?

Psychological Parameters

Psychological parameters include anxiety, depression, grieving, anger, etc. which may be problematic for patient or family, and may also have an impact on the patient’s total pain experience. Evaluation can be made by a single interaction, observations in a group context, or perhaps a family conference.

- Are there any changes to the Patient and Family Psychosocial Aspects as measured by the PPS - see Appendix J.
- Is the change related to the effectiveness/non-effectiveness of the intervention(s)? Do you need to add or change something, or make a referral to another resource?
- Is the change related to expected progression of the disease?

Adjustment of Care Plan

1. Does the above evaluation lead to a change in the care plan?
   - Titration of medication – move up or down within the range that has been prescribed or call for new physician directives.
   - Addition or change of medication - call for new physician directives;
Need for additional interventions/therapy – add to care plan or make referral to appropriate source.

If patients/families experiencing psychosocial stressors may require inclusion of a counsellor or other psychosocial support.

2. Document changes to care plan and rationale. Make sure that all team members are aware of changes.

3. Assess the impact of cancer pain management barriers – review this section in assessment to determine whether barriers originally assessed have been overcome or reduced, and to ensure that new barriers have not crept into the patient care picture.
Health Care System Evaluation

A. Patient and Family Satisfaction:
There are many patient and family satisfaction tools that are available, however the tool created by the City of Hope is one that focuses primarily on cancer pain management. Please refer to the City of Hope Pain Resource Centre Quality Assurance at www.cityofhope.org

B. Quality Assurance Measures:

1. World Health Organization, & The Quality of Care Committee of the American Pain Society.

- Assuring that a report of unrelieved pain raises a “red flag” that attracts clinicians' attention.
- Ensuring adoption of an official pain control policy.
- Ensuring that consistent methods of pain assessment are used.
- Making information about analgesics convenient where orders are written.
- Making information about the appropriate use of non-drug therapies available.
- Promising patients responsive analgesic care and urging them to communicate pain.
- Making available educational programs for all care providers on cancer pain relief.
- Implementing policies and safeguards or the use of modern analgesic technologies; and
- Coordinating and assessing implementation of these measures.

2. Canadian Benchmark - CCHSA Standards
   AIM (Achieving Improved Measurement) Cancer Care Standards

There is a process for assessing the clients’ pain.

- The team knows how to assess and manage pain
- All clients receive a pain assessment
- The team identifies and consults with experts in pain

Cancer Services Standard 7.4 Acute Care, Ambulatory Care, Home Care, Long Term Care Standard 7.5
The services outlined in the service plan:

- Are based on each client's cancer stage
- Help to manage cancer symptoms and the side effects of treatment
- Include methods to relieve or to manage acute and chronic pain
- Help clients manage and maintain good nutrition throughout their cancer experience
- Include education, emotional support, and counselling to be given to clients and families
- Meet clients' needs for rehabilitation to improve functioning
- Help clients achieve and maintain optimal independence, and quality of life
- Include measures to prevent further complications, and prevent and take action in a crisis
- Link clients and families to appropriate community support groups and services
- Prepare the clients for transition, end of service, and follow-up
- Meet the clients' needs for palliative services as applicable


**Canadian Hospice Palliative Care Association Norms of Practice (March, 2002)**

The Norms direct the care team to address pain and symptom management as part of the overall care of the palliative patient and their family. Included in the norms and principles which guide practice are the processes of assessment, information sharing, and decision making, care planning, care delivery and confirmation (evaluation). The CHPCA Norms will be used by the CCHSA to benchmark palliative care practice and program administration.

The CHPCA Norms of Practice can be found at [www.c pca.net](http://www.c pca.net), and are available in English and French.

**American Benchmark – Joint Commission on the Accreditation of Health Care (JCAHO) Standards**

The health care organization addresses care at the end of life. Patients have the right to appropriate assessment and management of pain. (Full explanation of the intent and application of these standards are available in the Appendices for evaluation)
References


Glossary

Addiction is psychological dependence, a continual craving for an opioid, and the need to use an opioid for effects other than pain relief. Addiction occurs rarely in patients receiving opioids for pain control.

Agonist – is a drug which binds to a receptor for which it has an affinity to stimulate physiological activity.

Breakthrough pain – the pain that is experienced between regularly scheduled doses.

Incident Pain – the pain that occurs spontaneously without warning.

Initiation - To initiate stacking, the usual q4h oral dose of morphine is converted to parental route by giving ½ the PO dose by SC or ¼ the PO dose by IV bolus. The parental dose SC or IV is actually the same; however, for safety reasons in rapid and multiple stacking, the IV dose is reduced by 50%.

Opioid – the term opiate is a specific term that describes drugs derived from the juice of the opium poppy. An opioid is any natural or synthetic drug with an opiate like or morphine-like activity. The term “narcotic” is avoided because of the connotations associated with substance abuse.

Physical dependence is the physical reliance on an opioid evidenced by withdrawal symptoms if the opioid is abruptly stopped or an antagonist administered. Physical dependence will develop with chronic opioid therapy. Taper the dose to prevent withdrawal.

Pre-emptive analgesia - Pre-injury pain treatments to prevent the establishment of peripheral and central sensitization of pain. Examples are preprocedure analgesics and pre-incision local anesthetic infiltration.

Stacking - Stacking is a process whereby giving one or more parenteral drugs repeatedly at short intervals, results in a rapid rise in serum concentration in order to immediately settle a pain crisis.

Tolerance is a common physiologic result of chronic opioid use that may result in a larger dose of opioid needed to maintain the same level of analgesia.
References


City of Hope pain/palliative care resource centre website. http://www.cityofhope.org/


Ferrell, B.R. (September, 2000), Pain Update. Vancouver, BC.


Appendices
Appendix A - Comprehensive Adult Pain Assessment

<table>
<thead>
<tr>
<th>Description of Pain:</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>When did the pain start?</td>
</tr>
<tr>
<td>Duration</td>
<td>How long have you had the pain? Is it constant?</td>
</tr>
<tr>
<td>Progression</td>
<td>Has the pain gotten better, worse or stayed the same over time?</td>
</tr>
<tr>
<td>Timing</td>
<td>Is there a time of day that is better or worse for pain?</td>
</tr>
<tr>
<td>Location:</td>
<td>Where is the pain located <em>(may use a body diagram)</em></td>
</tr>
<tr>
<td>Radiation:</td>
<td>Does the pain travel or move from one location to another?</td>
</tr>
<tr>
<td>Quality:</td>
<td>What does the pain feel like? (sharp like knife, burning, pins &amp; needles, dull ache)</td>
</tr>
<tr>
<td>Intensity:</td>
<td>Can you tell me how much pain you are having right now? Please rate your pain by telling me on a scale of 0 to 10 the number that best describes your pain right now.</td>
</tr>
<tr>
<td>Associated signs &amp; symptoms</td>
<td>Depression, anxiety</td>
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<td></td>
<td>Has pain affected your mood, more anxious, or withdrawn?</td>
</tr>
<tr>
<td>Triggering or Aggravating factors</td>
<td>What increases the pain intensity? What brings on the pain? What makes the pain worse?</td>
</tr>
<tr>
<td>Improving factors:</td>
<td>What relieves the pain?</td>
</tr>
</tbody>
</table>

Impact on Activity & Participation

**How does pain affect:**
- Sleep
- Appetite
- Physical activity
- Concentration
- Emotions
- Social Relationships
- Sexual relationships

Impact on Self
- How has pain interfered with your mood?
- How has pain interfered with your normal work or school activities?
- How much support do you have a home?
- How do you cope with pain?
- Who is at home? (Family members)
- What you used to help you cope with pain in the past?
Treatment History

- What treatments or medications are you receiving for your pain?
- Are you taking other medication not prescribed by a doctor for pain?
- Do the medications help to relieve the pain? For how long?
- Are you having side effects from taking the medications? (probe for nausea, constipation, drowsiness, hallucinations)
- Are you taking any medications to help with the side effects of the pain medications?

Other

<table>
<thead>
<tr>
<th>Understanding of pain</th>
<th>What do you think is causing the pain?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Considerations</td>
<td>How do you pay for your medications/prescriptions?</td>
</tr>
<tr>
<td>Patient/Family</td>
<td>What would you like to see happen to the pain?</td>
</tr>
<tr>
<td>Pain Management Goals</td>
<td>How would you know your pain relief has improved?</td>
</tr>
</tbody>
</table>

Remember to document the information obtained !!!!
Appendix B - Spinal Cord Compression

Spinal cord compression is an emergency situation for the patient, and the cancer nurse needs to be familiar with which cancers are likely to lead to this complication, signs and symptoms of pending or actual compression, how the location and severity of the compression will be determined, and what possible interventions might be used to relieve the compression. The approach is one of speedy assessment and management of symptoms, and rapid reversal of compression, if possible. As in any emergency, assessment must be as prompt and complete as possible.

Pathophysiology

- direct mechanical compression of the spinal cord
- vertebral compression or collapse with pathological fracture leading to entrapment of the nerve roots

Incidence

- occurs in 5% of cancer patients; 66% from bony metastases

Cancers That Typically Metastasize to the Spinal Cord:

<table>
<thead>
<tr>
<th>Spinal Region</th>
<th>Metastatic Cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoracic spine</td>
<td>metastatic breast or lung cancer</td>
</tr>
<tr>
<td>Lumbosacral spine</td>
<td>gastrointestinal, prostate or melanoma</td>
</tr>
<tr>
<td>Cervical spine</td>
<td>least likely site for metastases</td>
</tr>
</tbody>
</table>

Clinical Manifestations:
A. Pain:
- localized to the affected site
- radicular - unilateral or bilateral – a “belt of pain”
- aggravated by coughing, straining, and lying down

Sensory Impairment:
- numbness, tingling and a sensation of cold in affected area
- weakness/heaviness/stiffness in the affected

Autonomic dysfunction: (late manifestations, and indicate poorer prognosis)
- urinary hesitancy
- urinary retention
- constipation/obstipation
• bowel incontinence  
• sexual difficulties  

**Diagnostic Testing:**  
• X-ray of the spine  
• CT scan of the spine  
• Myelogram  
• MRI  

Not all these tests required obtaining a clinical diagnosis of spinal cord compression; some may be ordered to assist the radiation oncologist with treatment.  

**Clinical Management:**  
• Clarify goal of care with physician and patient – i.e. curative/restorative or merely halting further progression.  
• Complete a neurological assessment to determine which nerve centre is affected.  
• If treated –then must be treated right away. Once paralysis is evident it is permanent so goal is to treat early at first signs.  

**Steroids** – IV dexamethasone 40-100 mg daily x 3 days then taper – used immediately and while waiting for radiation therapy  

**Radiation Therapy** - Intervention of choice, and done on an emergency basis  

**Surgery** - Decompression laminectomy  
Surgery is used if:  
- maximum radiation to spinal cord has been previously given  
- when a tissue diagnosis is required  
- when rapid neurological deterioration occurs despite radiation  
- to stabilize the spine  
- to evacuate abscess or hematoma causing compression  

**References:**  


Appendix C – Pediatric Pain Assessment

PAIN EXPERIENCE HISTORY

<table>
<thead>
<tr>
<th>CHILD FORM</th>
<th>PARENT FORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tell me what pain is.</td>
<td>• What word(s) does your child use in regard to pain?</td>
</tr>
<tr>
<td>• Tell me about the hurt you have had before.</td>
<td>• Describe the pain experiences your child has had before.</td>
</tr>
<tr>
<td>• Do you tell others when you hurt? If yes, who?</td>
<td>• Does your child tell you or others when he/she is hurting?</td>
</tr>
<tr>
<td>• What do you do for yourself when you are hurting?</td>
<td>• How do you know when your child is in pain?</td>
</tr>
<tr>
<td>• What do you want others to do for you when you hurt?</td>
<td>• How does your child usually react to pain?</td>
</tr>
<tr>
<td>• What don’t you want others to do for you when you hurt?</td>
<td>• What do you do for your child when he/she is hurting?</td>
</tr>
<tr>
<td>• What helps the most to take your hurt away?</td>
<td>• What does your child do for him/herself when he/she is hurting?</td>
</tr>
<tr>
<td>• Is there anything special that you want me to know about where you hurt?</td>
<td>• What works best to decrease or take away your child’s pain?</td>
</tr>
<tr>
<td>(If yes, have child describe)</td>
<td>• Is there anything special that you would like me to know about your child and pain? (If yes, describe)</td>
</tr>
</tbody>
</table>

Modified from Hester NO, Barcus CS: Assessment and management of pain in children. Pediatric Nurse Update 1:2-8, 1986 taken from Wong, 1995
### Appendix D – Mini Mental State Exam

<table>
<thead>
<tr>
<th>Maximum Score</th>
<th>Patient Score</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td>What is the (day of week), (month), (day of month), (year), (season)?</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Where are we? (city), (province), (country), (hospital), (floor)?</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Name three objects and ask patient to repeat all 3. Give 1 point for each correct answer. Then repeat them until patient learns all 3.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. Glass        b. Cup        c. Lamp</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blanket          Brush          Pen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pencil            Chair           Pillow</td>
</tr>
</tbody>
</table>
| 5             |               | a. Start at 100 and count backwards by 7’s (Serial 7’s). Alternately spell "world" backwards.  
b. Start at 96 and count backwards by 6’s. Alternately spell the word "house" backwards.  
c. Start at 93 and count backwards by 4’s. Alternately spell the word "tiger" backwards. |
|               |               | (Stop after 5 answers. Give 1 point for each correct number or letter in sequence.) |
| 3             |               | Ask for the 3 objects repeated above. |
| 2             |               | Point to 2 objects and ask patient to name them. |
|               |               | a. Name and pencil and watch |
|               |               | b. Name a water jug and comb |
|               |               | c. Name a book and stapler |
| 1             |               | Repeat the following: "No ifs, ands or buts". |
| 3             |               | Follow a 3 stage command: |
|               |               | a. "Take a paper in your right hand, fold it in half, and give it to me."  
b. "Take the pen, draw a circle and give the pen back to me."  
c. "Take the pencil, erase the line and place the pencil on the night stand." |
| 1             |               | Read and obey the following (see back of form, not reproduced here): |
|               |               | a. Close your eyes |
|               |               | b. Touch your nose |
|               |               | c. Place your hands together |
| 1             |               | Write a sentence |
| 1             |               | Copy a design (see back of form): |
|               |               | TOTAL SCORE |
|               |               | Assess level of consciousness along a continuum |

---

**TOTAL SCORE**

Assess level of consciousness along a continuum
<table>
<thead>
<tr>
<th>Alert</th>
<th>Drowsy</th>
<th>Stupor</th>
<th>Coma</th>
</tr>
</thead>
</table>


Appendix E – Confusion Rating Scale

Calgary Tertiary Palliative Care Unit
Confusion Rating Scale (CRS)

Code each of the 4 behaviours at the end of each shift as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>behaviour not present during shift</td>
</tr>
<tr>
<td>1</td>
<td>behaviour present at some time during shift, but mild</td>
</tr>
<tr>
<td>2</td>
<td>behaviour present at some time during shift, and pronounced</td>
</tr>
<tr>
<td>A</td>
<td>Natural Sleep</td>
</tr>
<tr>
<td>B</td>
<td>Pharmacological sedation</td>
</tr>
<tr>
<td>C</td>
<td>Stupor or coma</td>
</tr>
<tr>
<td>D</td>
<td>Other reason</td>
</tr>
</tbody>
</table>

If assessment impossible during entire shift, specify reason as follows:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Natural Sleep</td>
</tr>
<tr>
<td>B</td>
<td>Pharmacological sedation</td>
</tr>
<tr>
<td>C</td>
<td>Stupor or coma</td>
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<tr>
<td>D</td>
<td>Other reason</td>
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<tr>
<th>Date (month/day/year)</th>
<th>Day</th>
<th>Eve</th>
<th>Night</th>
<th>Day</th>
<th>Eve</th>
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<th>Day</th>
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<td>Disorientation</td>
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<td>Inappropriate behaviour</td>
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<td>Illusions/Hallucinations</td>
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<td>TOTAL SCORE</td>
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<th>Date (month/day/year)</th>
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<th>Night</th>
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<th>Eve</th>
<th>Night</th>
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<th>Eve</th>
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<tbody>
<tr>
<td>Disorientation</td>
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<td>Inappropriate behaviour</td>
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<tr>
<th>Date (month/day/year)</th>
<th>Day</th>
<th>Eve</th>
<th>Night</th>
<th>Day</th>
<th>Eve</th>
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<th>Eve</th>
<th>Night</th>
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<tbody>
<tr>
<td>Disorientation</td>
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<tr>
<td>Inappropriate behaviour</td>
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<td>Inappropriate communication</td>
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<tr>
<td>Illusions/Hallucinations</td>
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<td>TOTAL SCORE</td>
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</tbody>
</table>

**Disorientation:** Verbal or behavioural manifestation of not being oriented to time or place or misperceiving persons in the environment

**Inappropriate behaviour:** Behavior inappropriate to place and/or for the person: e.g. pulling at tubes or dressings, attempting to get out of bed when that is contraindicated

**Inappropriate communication:** Communication inappropriate to place and/or for the person: e.g. incoherence, non-communicativeness, or unintelligible speech
Illusion/Hallucinations: Seeing or hearing things that are not there: distortions of visual objects.
Appendix F - Assertiveness Skills

Assertive behavior is behavior in which persons insist on their rights without violating the rights of others. The continuum customarily presented is passive-assertive-aggressive, with passive-aggressive being a special case of non-assertion. Passive behavior is avoidance behavior in which the person either does not exercise his or her rights, or exercises them weakly or ineffectually. Aggressive behavior is attack behavior in which a person violates the rights of others in his attempts to get what he wants or to avoid what he does not want. Passive-aggressive behavior is basically aggressive in its intent, but is manifested in passive ways such as being continually late.

Essentially, assertive behavior is interaction involving two or more people. It consists of three domains of social exchange:
1. requests,
2. refusals and
3. expressions.

Assertion basically involves asking for what one wants, refusing what one doesn't want and expressing desired positive and negative messages to others.

Since assertive behavior is interactional, it also involves being able to receive requests, refusals and expressions. This necessitates respect for the other person's assertive rights.

Assertion is not a unitary behavior; it involves a range of potential interactions from the tactful to the blunt. There is no single appropriate assertive approach. Conversely, there are a number of singularly inappropriate approaches to assertion.

Why People are Not Assertive

For the most part, people in need of assertion training do not perceive themselves to be in a position where a range, or a choice, of behaviors is available. Hence assertive behaviors are not chosen.

Also, responses labeled as assertive are often perceived by people as aggressive and are therefore not employed. (Aggression can be defined as depriving another person of his rights by force or threat). This definition is often at odds with the person's definition of aggression, and this erroneously perceived aggression is often described as forward, offensive, pushy etc.

A further reason for the lack of assertive responses is their absence from the individual's behavioural repertoire. Many people do not know how to perform assertively in certain situations. When this is the case, a person's use of passivity, aggression, or passive aggression is not a choice, but is elicited by the lack of assertive alternatives.

Still another explanation for the lack of assertive behavior is the presence of anxiety. Anxiety may arise from many sources including interfering cognitions or behavioural deficits, or because of past punishment - with related or unrelated anticipation of failure. When anxiety interferes with assertive behavior because of inappropriate cognitions, deficits, or an unfortunate learning
history, the successive approximation model of training presented here is critical. Each small graded task is successfully accomplished at an anxiety level low enough to facilitate the rational decision making that is part of being assertive.
Appendix G – Sample Flow Sheets

Calgary Inter-Agency Pain Assessment

1. Please mark the area of pain on the drawing. If you have more than one pain, label them A, B, C, etc.

2. Use the 0-10 pain scale and mark in the spaces on the chart below the score(s) you would give your pain.

3. How and when did your pain(s) begin?
   - Pain A
   - Pain B
   - Pain C

4. Check the words that best describe each pain you have. Indicate which area(s) the word(s) describes (Pain A, B or C)
   - Dull ache
   - Burning
   - Stabbing
   - Cramping
   - Throbbing

5. How long does your pain(s) usually last?
   - Seconds
   - Minutes
   - Hour(s)
   - Constant

6. What makes your pain worse?
   - Walking
   - Moving
   - Eating
   - Other (describe below)

   Is your pain(s) worse at any particular time of the day or night?

7. What pain medications are you presently taking?

8. What makes the pain(s) better?
   - Heat
   - Distraction
   - Cold
   - Massage
   - Relaxation (e.g., music, imagery, humor, etc.)
   - Other (e.g., TENS, physio, acupuncture, etc.)

At Present
At its Worst
At its Least
Acceptable Level

Pain A
Pain B
Pain C
9. Has the pain or treatment produced any other symptoms?
☐ Anxiety
☐ Diarrhea
☐ Constipation
☐ Dyspepsia
☐ Insomnia
☐ Nausea
☐ Other (describe below)

10. Does your pain(s) affect your daily activities?
☐ Bathing
☐ Eating
☐ Walking
☐ Other

11. Describe how the pain(s) affects your personal life?
(e.g., sexual intimacy, parenting, family relationships, friendships, etc.)

12. What concerns do you have regarding your pain management?
☐ Money to pay for medications
☐ Communicating or explaining your pain to others
☐ Getting prescriptions picked up
☐ Fear of becoming addicted to pain medications
☐ Side effects of pain medications
☐ Concern that you should take some pain medication in case the pain gets worse
☐ Other (describe below)

13. What concerns do your family and/or caregivers have?

Date ____________________ Time ____________________

Part B Information Provided By
☐ Patient
☐ Other (Please specify)
☐ N/A

Date ____________________ Time ____________________

Health Care Professional’s Name (printed)

Patient Signature ____________________
Signature / Status ____________________
**PAIN FLOW SHEET**

**ROUTE:**
- PCA = Patient Controlled Analgesia
- EA = Epidural Analgesia
- PA = Patient Analgesia
- LA = Local Anesthesia
- IM = Intramuscular
- IV = Intravenous
- DI = Drip

**SITES ASSESSMENT:**
- = Missing Accessorized Device
- = Failed

**SITES:**
- = Spinal
- = Epidural
- = Interlaminar
- = IT = Intrathecal

**LEVELS:**
- = Block Level

**SUGGESTION SCORE:**
- 0 = None
- 1 = Mild
- 2 = Moderate
- 3 = Severe
- 4 = Unbearable
- 5 = Unbearable, Difficult to Intervene

**COMBINATION:**
- = hypo tension
- = hypoxia

**PAIN SCALE:**
- = Median
- = Analgesic

**MEDICATION:**
- = Name
- = Concentration

**ROUTE:**
- = Injection Route
- = Time

**PAIN SCALE:**
- = Pain Level
- = Pain Intensity
- = Pain Duration

**HEMODYNAMIC:**
- = Heart Rate
- = Blood Pressure

**DEVICES & MACHINERY:**
- = Intravascular Catheter
- = Intubation

**THERAPEUTIC:**
- = Treatment Required
- = Treatment Required

**SIDE EFFECTS:**
- = Initial
LEVELS OF PRINCIPLE DERMATOMES

MONITORING INSTRUCTIONS

**PCA and/or Continuous Infusions**
- Monitor and record Respiratory Rate, Sedation Level, and Pain Level:
  - q1h x 4 hours
  - then q2h x 8 hours
  - then q4h for duration of infusion
- Increase frequency of monitoring pm or as indicated by physician's order.

**Post Intrathecal or Epidural Morphine (single dose)**
- Monitor and record Respiratory Rate, Sedation Level, and Pain Score:
  - q1h x 8 hours
  - then q2h x 4 hours
- Increase frequency of monitoring pm or as indicated by physician's order.

---

**Epidural Infusions**

If opioid used:
- Monitor Respiratory Rate, sedation score and pain level q1h x 4 hrs...
- q2h x 20 hrs., then q4h for duration of infusion.

If local anesthetic used:
- Monitor sensory level q1/2min x 3, q1h x 4 then q6h for duration of infusion.
- Monitor modified Bromage scale q4h while awake.
- Repeat monitoring sequence if loading dose of medication administered.

**Peripheral Nerve Block**

Monitor resp. rate, sedation score and pain level q1h x 4 hours, the q2h x 20 hours, the q4h for duration of infusion.
<table>
<thead>
<tr>
<th>Categories</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested</td>
<td>Frequent to constant quivering chin, clenched jaw</td>
</tr>
<tr>
<td>Legs</td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking, or legs drawn up</td>
</tr>
<tr>
<td>Activity</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
<td>Arched, rigid or jerking</td>
</tr>
<tr>
<td>Cry</td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers; occasional complaint</td>
<td>Crying steadily, screams or sobs, frequent complaints</td>
</tr>
<tr>
<td>Consolability</td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging or being talked to, distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>

Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.

# Appendix H - Opioid Conversions

Equianalgesic Potency of Opioids: Dosages in both columns (light-shade for parenteral, dark-shade for oral) are equianalgesic and interchangeable in the ratios shown.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Example</th>
<th>SC Dose</th>
<th>PO Dose</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic Dosing</td>
<td>7-10 mg$^1$</td>
<td>20 mg</td>
<td>q4h</td>
</tr>
<tr>
<td></td>
<td>Sustained Release</td>
<td>or 60 mg</td>
<td></td>
<td>q12h</td>
</tr>
<tr>
<td></td>
<td>MSContin/M-Eslon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codeine</td>
<td></td>
<td>120 mg</td>
<td>200 mg</td>
<td>q4h</td>
</tr>
<tr>
<td>Oxycodone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supeudol</td>
<td>--</td>
<td>20 mg</td>
<td>q4h</td>
</tr>
<tr>
<td></td>
<td>Percodan$^2$</td>
<td>--</td>
<td>20 mg</td>
<td>q4h</td>
</tr>
<tr>
<td></td>
<td>Percocet$^2$</td>
<td>--</td>
<td>20 mg</td>
<td>q4h</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td></td>
<td>2 mg</td>
<td>4 mg</td>
<td>q4h</td>
</tr>
<tr>
<td>Fentanyl</td>
<td></td>
<td></td>
<td>25-50 ug$^3$</td>
<td>Per hour transdermal delivery system</td>
</tr>
<tr>
<td>Methadone</td>
<td></td>
<td></td>
<td>4-8 mg$^4$</td>
<td>q8h</td>
</tr>
<tr>
<td>Diamorphine</td>
<td></td>
<td>5-8 mg</td>
<td>10-15 mg</td>
<td>q4h</td>
</tr>
<tr>
<td>Levorphanol</td>
<td></td>
<td>2 mg</td>
<td>4 mg</td>
<td>q4-6h</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td></td>
<td>1 mg</td>
<td>5 mg$^5$</td>
<td>q4h</td>
</tr>
<tr>
<td>Meperidine</td>
<td></td>
<td>75 mg</td>
<td>300 mg</td>
<td>q2-3h</td>
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<tr>
<td>Pentazocine</td>
<td></td>
<td>60 mg</td>
<td>180 mg</td>
<td>q3-4h</td>
</tr>
<tr>
<td>Nalbuphine</td>
<td></td>
<td>10 mg</td>
<td>--</td>
<td>q4h</td>
</tr>
</tbody>
</table>
1 Oral/Parenteral potency of morphine varies between 2:1 and 3:1. The decision to use the 2 or 3 as the conversion factor will depend on the degree of pain control by the current route, patient age, known sensitivity to dose changes, and general patient condition.

2 To make 20 mg of oxycodone, these require 4 tablets q4h, which may become toxic for the ASA or acetaminophen.

3 Manufacturer suggests 25 ug patch if oral morphine is between 45-134 mg/24 hr. Using this for the above chart, MS 20 mg PO q4h would equate to between a 25 ug or 50 ug patch. Experience leans to the 50 ug as being required.

4 This drug has a prolonged half-life; single doses are 1:1, but regular dosing increases potency with great individual variation – in some cases to 3-10x or higher. Extreme caution is necessary when rotating to methadone from high doses of other opioids. Please contact the VCC Palliative Care Team for assistance with switching to Methadone. A protocol is available for this purpose.

5 These are available in rectal suppositories as well as oral. PO dose equals PR dose in most cases.

6 These doses of meperidine are toxic and should not be used. They are listed here for equianalgesic potency only.
# Suggested Dosing Guidelines for Adults

<table>
<thead>
<tr>
<th>Drug</th>
<th>Steps</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morphine</strong></td>
<td><strong>↑ 25-35% q24 hrs</strong>&lt;br&gt;e.g. 15, 20, 25, 30, 40&lt;br&gt;*when tapering <strong>↓</strong> by 25% q24 hrs</td>
<td>Liquid morphine in 1, 5 and 20 mg/mL.&lt;br&gt;Immediate release tablets 10, 25 and 50 mg (all scored).&lt;br&gt;Switch to long-acting morphine when pain is stable or when at 75 mg PO q4h.&lt;br&gt;At &gt; 2400 mg/day consider pain pump for convenience.&lt;br&gt;MS Contin 15, 30, 60, 100, (scored) 200 mg tablets.&lt;br&gt;M-Eslon in 10, 15, 30, 60, 100, 200 mg capsules.</td>
</tr>
<tr>
<td><strong>Hydromorphone</strong>&lt;br&gt;(Dilaudid®)</td>
<td><strong>↑ 25-35% q24 hrs</strong>&lt;br&gt;e.g. 2, 3, 4, 6, 8,10,12</td>
<td>At &gt; 40 mg q4h consider pain pump for convenience. Comes in 1 mg/mL liquid or UNSCORED 1, 2, 4 and 8 mg tablets.&lt;br&gt;Long-acting hydromorphone 3, 6, 12, 24, 30 mg.</td>
</tr>
<tr>
<td><strong>Fentanyl Patch</strong></td>
<td>25, 50, 75, 100 µg/hr q3 days</td>
<td>Change patch q3 days, use &lt; 6 patches at once. Practical range up to 1500 mg/day of morphine equivalent. Need oral opioid breakthrough. 5 patches/box - 25, 50, 75, 100 µg/hr.</td>
</tr>
<tr>
<td><strong>Naproxen</strong></td>
<td>375 mg BID if &lt; 75 yrs&lt;br&gt;250 mg BID if &gt; 75 yrs</td>
<td>If nausea/heartburn, try rectal route (500 mg q12h), sucralfate 1 g QID or ibuprofen 200 mg QID. 250 and 375 mg tablets; 500 mg suppository.</td>
</tr>
<tr>
<td><strong>Misoprostol</strong></td>
<td>200 µg QID</td>
<td>Use with NSAID if &gt; 75 yrs, heart disease bleed/peptic ulcer or current steroid use. May cause nausea or diarrhea. 100 and 200 µg tablets.</td>
</tr>
<tr>
<td><strong>PO Clodronate</strong></td>
<td>1600 mg once daily or 800 mg BID</td>
<td>Preferred route for long term prevention of fracture but to relieve pain NOW use IV route. 400 mg capsules.</td>
</tr>
<tr>
<td><strong>IV Clodronate</strong></td>
<td>1500 mg in 500 mL over 4 hrs</td>
<td>Repeat q3-4 weeks. Do not measure Ca++. 3 - 14 days for relief.</td>
</tr>
<tr>
<td><strong>Pamidronate</strong></td>
<td>90 mg in 250 mL over 2 hrs</td>
<td>See clodronate.</td>
</tr>
<tr>
<td><strong>Amitriptyline</strong></td>
<td>25 mg if &lt; 70 yrs,&lt;br&gt;25 mg steps q5 days to 150 mg&lt;br&gt;10 mg if &gt; 70 yrs&lt;br&gt;10,20,30,40,50,75,100, 125, 150 mg q5 days</td>
<td>If dry mouth or sedation, switch to desipramine at same number of mg 10, 25, 50 and 75 mg tablets.&lt;br&gt;Do not use if 2° or 3° on heart block ECG.&lt;br&gt;Do not use if already on SSRI antidepressants.</td>
</tr>
<tr>
<td><strong>Mexiletine</strong></td>
<td>100 mg TID, 100 mg QID, 200 mg TID&lt;br&gt;<strong>↑</strong> q2 days</td>
<td>Do not use if local anesthetic allergy, arrhythmias or 2° or 3° heart block or on SSRI antidepressants. Starting dose usually very well tolerated. D/Cif nausea, excessive tremor, light-headed, palpitations. 100 and 200 mg tablets.</td>
</tr>
<tr>
<td><strong>Dexamethasone</strong></td>
<td>4 mg daily</td>
<td>Add misoprostol if already on an NSAID.</td>
</tr>
<tr>
<td><strong>Ritalin= methylphenidate</strong></td>
<td>10 mg q 8 a.m.,&lt;br&gt;5 mg q noon&lt;br&gt;<strong>↑</strong> by 5 mg (both doses) daily, morning and noon</td>
<td>DO NOT USE if confusion, hallucinations or paranoia. 10 mg tablet.</td>
</tr>
<tr>
<td><strong>Domperidone</strong></td>
<td>10 mg, 20 mg QID</td>
<td>Do not prescribe PRN. 10 mg tablet.</td>
</tr>
</tbody>
</table>

Appendix I – Progressive Muscle Relaxation Script

Patient/Family Teaching Points

This technique consists of:

1. Tense (or contract) and then relax specific muscle groups.

2. Usually tense/relax is done twice with each muscle group.

In the following script, 14 muscle groups are used, but many different groups may be used. You may perform this technique from memory or by referring to the written directions. However, most people prefer to have it tape-recorded. Listening to the tape with a headset helps decrease distracting noises in the environment.

You may choose your nurse or someone else to record this. Before this is recorded, follow the directions for at least one or two sets of tense/relax. Have your recorder note approximately how many seconds you prefer to contract your muscles and how many seconds you prefer to remain relaxed between muscle contractions.

You may do this relaxation technique in any comfortable, well-supported position, sitting or lying down. To get the most out of relaxation, prepare yourself and the environment. Your nurse can give you a list of suggestions.

Changing the script.

The script may be changed in several ways. In the script, each muscle group is noted with a bullet. Go over each of these. If you do not understand the directions or muscular contraction, ask an expert or change the directions.

If you want a longer technique (up to 20 minutes), divide the muscle groups into smaller groups; if you want a shorter technique, combine some muscle groups into one group or perform each muscle contraction only once with each muscle group. Determine if any muscle groups should be omitted. Some muscle contractions may increase your pain. If you are prone to leg cramps, you may wish to omit muscle contractions involving the legs and feet. Also, the sequence may be changed, e.g., you may begin at the toes and progress to the upper body.

Following are the exact words, designed for tape-recording, that may be used in the script:

(Name of patient), this is (name of person talking). I believe you have chosen to listen to this because you want to give yourself a chance to experience and benefit from relaxation. Together we will do what we can at this moment. We cannot make it happen. Sometimes you will feel relaxed, sometimes you won't. All we can do is go through the technique and give it a chance to work.
You may close your eyes now or find something to focus on. Breathe in deeply, hold it a moment, and breathe out slowly. Now you may breathe in your usual way, just slowly and regularly.

Clench your right fist and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, clench your right fist again and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your hand.

Clench your left fist and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, clench your left fist again and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your hand.

Press your upper right arm toward your ribs and press the elbow back. Hold it. Feel the tension. Now, let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, once again press your upper right arm toward your ribs and press the elbow back. Hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your arm.

Press your upper left arm toward your ribs and press the elbow back. Hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, once again press your upper left arm toward your ribs and press the elbow back. Hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your arm.

Wrinkle your forehead and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, once again wrinkle your forehead and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your forehead.

Wrinkle your nose and shut your eyes tightly. Hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again wrinkle your nose and shut your eyes. Hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your nose and eyes.

Clench your teeth, pull back the corners of your mouth, and press your tongue against the roof of your mouth. Hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again clench your teeth, pull back the corners of your mouth and press your tongue against the roof or your mouth. Hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your mouth and jaw.

Press your head backwards and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again press your head backwards and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your neck.

Bring both shoulders upward toward your ears and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, bring both shoulders upward toward your ears and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your shoulders.
Make your stomach hard, pull it inward, and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again make your stomach hard, pull it inward, and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your stomach.

Press your right leg backwards and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again press your right leg backwards and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your leg.

Press your left leg backwards and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again press your left leg backwards and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your leg.

Point your right toes, stretch, and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again point your right toes, stretch, and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your leg and foot.

Point your left toes, stretch, and hold it. Feel the tension. Now let it relax. Feel the difference. Notice the feelings of relaxation. Now, with less tension, again point your left toes, stretch, and hold it. Feel this level of tension. Now let it relax. Notice the feelings of relaxation in your leg and foot. (End of script.)

Additional points:
Once you have gained skill in using this technique to produce relaxation, you may find that when your time is limited you can benefit from using one small part of it, e.g., briefly clenching and relaxing your fists.

This can be a practical way of integrating relaxation into your daily life. To prevent tension from building up, at intervals throughout the day you might clench your fists, note the tension, and then relax, noting the feelings of relaxation. Relaxation of one part of the body may spread throughout the body.

Appendix J - Palliative Performance Scale

Using the Palliative Performance scale to identify where patients are in their physical capacities as their disease progresses. There has been increasing awareness of the timing and relationship between physiological events or issues and psychological ones. That is, changes in mobility and function are closely tied to spiritual, social and emotional issues. Identifying critical transitions allow us to use our limited time more effectively and efficiently.

<table>
<thead>
<tr>
<th>Patient and Family Psychosocial Aspects by PPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>50%</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>30%</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>10%</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>0%</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

The tool is intended to provide another avenue for communicating with team members about changing psychosocial care needs, and draws staff attention to expected or predictable patient and family issues and concerns - the process of dying becomes normalized.
## Some Key Features

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50% PPS</strong></td>
<td>the disease resurfaces - new sites or metastases are discovered - symptoms or body changes are experienced. This may be the first time that patient experiences pain, and there will need to be much teaching about this. Family is often unable to recognize the impact on themselves as care providers. They may be unable to pace themselves, feel totally responsible, and unaware of the ongoing demands.</td>
</tr>
<tr>
<td><strong>30% PPS</strong></td>
<td>Changes become more apparent or closer together. Often prognostication is clearer about death. Symptoms may change or intensify requiring medication adjustment or increases. Family are becoming more fatigued and are starting to deal with the finality of the situation - how to continue caring and yet begin to separate emotionally.</td>
</tr>
<tr>
<td><strong>10% PPS</strong></td>
<td>Impact of the cancer on mind and body are increasingly noticeable. Drastic physical changes will require adapting care such as changes in medication routes and increased personal care. Family is on autopilot - feeling extremely weary or empty</td>
</tr>
</tbody>
</table>

## Reference:

Psychosocial Care of the Dying (1998). In Victoria Hospice Society Medical Care of the Dying (3rd ed.)
# Appendix K – Lansky/Karnofsky Pediatric Performance Scales

<table>
<thead>
<tr>
<th>PERFORMANCE STATUS CRITERIA</th>
<th>Karnofsky and Lansky performance scores are intended to be multiples of 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECOG (Zubrod)</strong></td>
<td><strong>Karnofsky</strong></td>
</tr>
<tr>
<td>Score</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction.</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light housework, office work.</td>
</tr>
<tr>
<td></td>
<td>Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours</td>
</tr>
<tr>
<td></td>
<td>Capable of only limited self-care, confined to bed or chair more than 50% of waking hours.</td>
</tr>
<tr>
<td></td>
<td>Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.</td>
</tr>
<tr>
<td></td>
<td>Moribund, fatal processes progressing rapidly.</td>
</tr>
</tbody>
</table>

The conversion of the Lansky to ECOG scales is intended for NCI reporting purposes only.