7. The need for protective isolation and the parameters are being explained to the patient. She wails, "How can I hug my children when I am locked up in this room?" A likely nursing diagnosis would be:
   1. Pain.
   2. Altered nutrition.
   3. Deficient knowledge.
   4. Social isolation.

8. Which intervention would the nurse implement for a patient with active pulmonary tuberculosis who has social isolation related to imposed airborne precautions?
   1. Limit the number of visitors to immediate family.
   2. Suggest alternative means of contact such as e-mail and phone calls.
   3. Arrange for a nursing assistant to sit with the patient.
   4. Reinforce rationale for airborne precautions.

9. The nurse is caring for an elderly patient and notes a change in mental status. The skin is flushed, warm, and dry. There is a full, bounding pulse and a decreased urine output. What is the priority action?
   1. Alert the rapid response team for suspected sepsis.
   2. Call the physician to obtain an order for blood cultures.
   3. Take a full set of vital signs and compare them to the baseline.
   4. Check the patient's history to determine risk for sepsis.

10. Cross-infection among members of the household who take care of a relative with a severe infection can be prevented by which behavior(s)? *(Select all that apply.)*
    1. Share personal items.
    2. Practice hand hygiene.
    3. Use bleach to clean surfaces.
    4. Seal used dressings in impermeable bags.
    5. Wash soiled linens weekly.

Critical Thinking Questions

Scenario A

Mrs. Compton, age 44, is admitted to the hospital for a hysterectomy. During the admission assessment procedure, you notice a large, draining abscess in her axillary region. She also has a temperature of 100° F (37.7° C), and she tells you that she has not felt well for the past few days.

1. What would be your course of action following this assessment?

Scenario B

Mr. Lopez, age 18, has been admitted to the orthopedic unit following an automobile accident. He has sustained an open fracture of the femur and has been placed in traction.

1. What would be some expected signs and symptoms of inflammation that he might experience?
2. What specific problems might his care present for the nurse?

Scenario C

Mrs. Kay is an elderly woman, who comes to the clinic for treatment of an abrasion on her arm that she sustained "while picking up my cat." She is alert, oriented, and very cheerful and talkative. You notice that she is slightly underweight and that her clothes are not very clean.

1. What additional assessment might you make about the wound and the injury because she mentioned the cat?
2. What changes related to aging are likely to affect Mrs. Kay's natural defense mechanisms to fight infection?
3. Based on the scenario, identify issues that will affect wound healing and self-care for Mrs. Kay.
4. Explain why older adults may have a normal or even subnormal temperature in the presence of infection.

chapter

7 Care of Patients with Pain

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Objectives

Theory

1. Demonstrate an understanding of the current view of pain as a specific entity requiring appropriate intervention.
2. Review the gate control theory of pain and its relationship to nursing care.
3. Compare nociceptive and neuropathic pain and the nursing care for each.
4. Explain how pain perception is affected by personal situations and cultural backgrounds.
5. Describe the false perceptions that underlie many current ideas about pain and pain management and assist patients to achieve a clearer, more factual understanding.
6. List the different pharmacologic approaches to pain management with examples of each.
7. Analyze the major differences between acute and chronic pain and their management.

Clinical Practice

1. Effectively use the nursing process for pain management.
2. Use appropriate pain evaluation tools for a variety of patients.
3. Recognize common side effects of analgesics and describe techniques for addressing them.
4. Employ nonpharmacologic approaches to pain management with a variety of patients.

Key Terms

acute pain (ă-KŪT pān, p. 127)
adjuvant (ĂJ-ŭ-vănt, p. 126)
buccal mucosa (BŪK-ăl MŪ-cō-să, p. 136)
chronic pain (KRŎN-ĭk pān, p. 127)
endorphins (ĕn-DŎR-fĭnz, p. 125)
epidural (Ĕ-pĭ-DŬ-rŭl, p. 136)
intractable pain (ĭn-TRĂC-tă-bŭl pān, p. 136)
modulation (p. 126)
neuropathic pain (nū-rō-PĂTH-ĭk pān, p. 126)
nociceptive pain (nō-sē-SĔP-tĭv pān, p. 125)
pain threshold (pān, p. 127)
pain tolerance (pān TŎL-ŭr-ŭns, p. 127)
perception (pĕr-CĔP-shŭn, p. 126)
phantom pain (FĂN-tŏm pān, p. 126)
placebos (plă-SĒ-bōz, p. 134)
referred pain (rĭ-FŬRD pān, p. 130)
transduction (trănz-DŬK-shŭn, p. 126)
transmission (trăns-MĬ-shŭn, p. 126)

THEORIES OF PAIN

Current thinking views pain not as just a symptom, but as a specific problem that needs to be treated. *Pain* is defined as a neurologic response to unpleasant stimuli. Pain receptors are abundantly distributed throughout the skin and in many deeper structures of the body. Receptors for pain do not become dulled with repeated stimulation and, under some conditions, repeated stimulation results in an increase in the acuteness of the pain sensation.

Pain results from the release of various chemicals from damaged cells, but the actual mechanism of pain is still poorly understood. It may be helpful to think of pain as being controlled by a "gate" in the central nervous system (Figure 7-1). When the gate is open, the pain sensation is allowed through. When the gate is closed, the pain sensation is blocked. The *gate control theory* recognizes that stimuli other than pain pass through the same gate. When a large volume of non-painful stimuli are competing for the gate, pain impulses may be blocked. A high volume of pain, however, may override other stimuli and pass through the gate, causing the individual to perceive the pain.

Aspects of this theory relate to nursing practice in several ways:

- Two types of nerve fibers—small-diameter and large-diameter—carry pain stimuli.
- Activity in the small-diameter nerve fibers seems to open the gate, and activity in the large-diameter nerve fibers seems to close it.
- Massage and vibration produce activity in the large-diameter nerve fibers.
- High levels of sensory input create brainstem impulses that seem to close the gate. Distraction in the form of activity or social interaction produces these brainstem impulses.

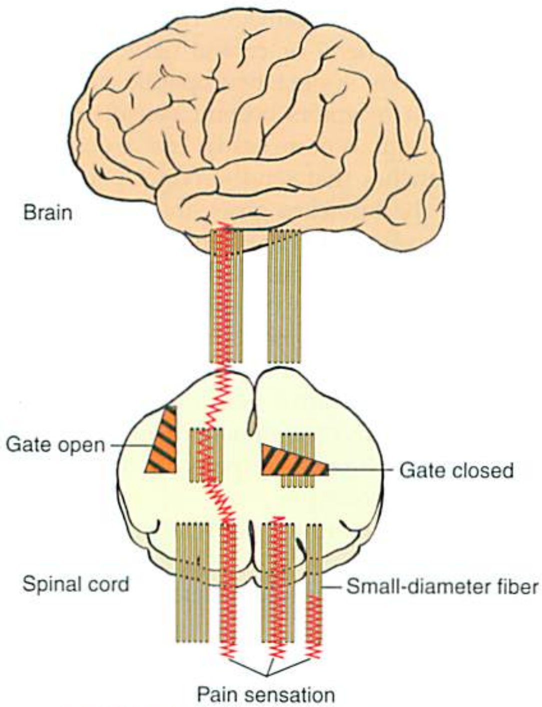


FIGURE 7-1 The gate control theory of pain.

- An increase in anxiety seems to open the gate, and a decrease in anxiety seems to close it. The fear that pain will not be controlled may actually increase pain intensity, and knowing that pain can be or is being controlled may reduce pain.

Another way of looking at pain and its management is the idea of "pieces of pain." The more intense the pain, the greater the number of pieces, and therefore a greater number of pieces of analgesia will be required to control pain. This idea states that inadequate analgesia results in leftover "pieces" of pain, and total relief or control has not been achieved.

The human body produces substances called **endorphins** (endogenous morphine) that attach to pain receptors and block pain sensation. Much is still unknown about endorphins and how they work, but their properties appear to modify and inhibit unpleasant stimuli, reduce anxiety, and relieve pain. Endorphins also may produce feelings of euphoria and well-being. For example, the "runner's high" may occur because endorphins are released after physical exercise.

CLASSIFICATION OF PAIN

There are two pathophysiologic classifications of pain: *nociceptive* and *neuropathic*.

NOCICEPTIVE PAIN

Nociceptive pain is associated with pain stimuli from either *somatic* (body tissue) or *visceral* (organs) structures. Somatic nociceptive pain arises from injury to tissue where pain receptors called nociceptors are located. These nociceptors may be found in skin, connective tissue, bones, joints, or muscles. Trauma, burns, or surgery may cause injuries triggering somatic nociceptive pain. Visceral nociceptive pain arises from pathophysiology in visceral organs such as the organs of the gastrointestinal tract. Pathologic conditions triggering visceral nociceptive pain include tumors and obstructions of the organs (Table 7-1).

Table 7-1 Physiologic Sources of Pain

PHYSIOLOGIC STRUCTURE	CHARACTERISTICS OF PAIN	SOURCES OF ACUTE POSTOPERATIVE PAIN	SOURCES OF CHRONIC PAIN SYNDROMES
Nociceptive Pain			
Somatic Pain			
Cutaneous or superficial: skin and subcutaneous tissues Deep somatic: bone, muscle, blood vessels, connective tissues	Sharp, burning, dull, aching, cramping	Incisional pain, pain at insertion sites of tubes and drains, wound complications, orthopedic procedures, skeletal muscle tissue	Bony metastases, osteoarthritis and rheumatoid arthritis, low back pain, peripheral vascular diseases
Visceral Pain			
Organs and the linings of the body cavities	Poorly localized Diffuse, deep cramping or splitting, sharp, stabbing	Chest tubes, abdominal tubes and drains, bladder distention or spasms, intestinal distention	Pancreatitis, liver metastases, colitis, appendicitis
Neuropathic Pain			
Nerve fibers, spinal cord, and central nervous system	Poorly localized Shooting, burning, fiery, shock-like, sharp, painful numbness	Phantom limb pain, postmastectomy pain, nerve compression	HIV-related pain, diabetic neuropathy, postherpetic neuralgia, chemotherapy-induced neuropathies, cancer-related nerve injury, radiculopathies

Adapted from Ignatavicius, D.D., & Workman, M.L. (2010). *Medical-Surgical Nursing: Critical Thinking for Collaborative Care* (6th ed.). Philadelphia: Elsevier Saunders, p. 38.

Four phases of pain are associated with nociceptive pain (Figure 7-2) (Lewis et al., 2011):

1. **Transduction** begins when tissue damage causes the release of substances that stimulate the nociceptors and initiate the sensation of pain.
2. **Transmission** involves movement of the pain sensation to the spinal cord.
3. **Perception** occurs when impulses reach the brain and the pain is recognized.
4. **Modulation** occurs when neurons in the brain send signals back down the spinal cord by release of neurotransmitters.

Aspects of nociceptive pain relate to nursing practice in several ways:

- Treatment of nociceptive pain may be directed toward one or all of the four phases.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) work by blocking the production of the substances that trigger the nociceptors in the transduction phase.
- Opioids interfere with the transmission phase.
- Nonpharmacologic treatments, such as distraction and guided imagery, may be effective during the perception phase.
- Drugs that block neurotransmitter uptake work in the modulation stage.

NEUROPATHIC PAIN

Neuropathic pain is associated with a dysfunction of the nervous system that involves an abnormality in the processing of sensations. These dysfunctions in the nervous system are often associated with medical conditions rather than with tissue damage. The dysfunction may occur in the peripheral or central nervous system. In peripheral nervous system neuropathic pain, it is believed that pain receptors become sensitive to stimuli and send pain signals more easily. Nerve endings grow additional branches that send stronger pain signals to the brain. As the branches grow, they influence touch and warmth receptors. Other peripheral nervous system conditions may cause neuropathic pain. Neuropathic pain may be the result of damage to nerve roots such as compression or entrapment. Another dysfunction of the central nervous system occurs when the pain signal that would normally move from the periphery toward the brain reverses and the signal is sent in the opposite direction. **Phantom pain,** the pain felt in a limb after amputation, is an example.

Aspects of neuropathic pain relate to nursing practice in several ways:

- Analgesics and opioids usually do not relieve neuropathic pain.
- **Adjuvant** medications such as NSAIDs, tricyclic antidepressants, anticonvulsants, and corticosteroids relieve neuropathic pain.

PERCEPTION OF PAIN

Pain is a subjective experience. Only the patient knows the location of the pain, its degree of intensity, and which treatment regimen works and how long it is effective. Reactions to pain can vary widely from person to person and in the same individual under different circumstances.

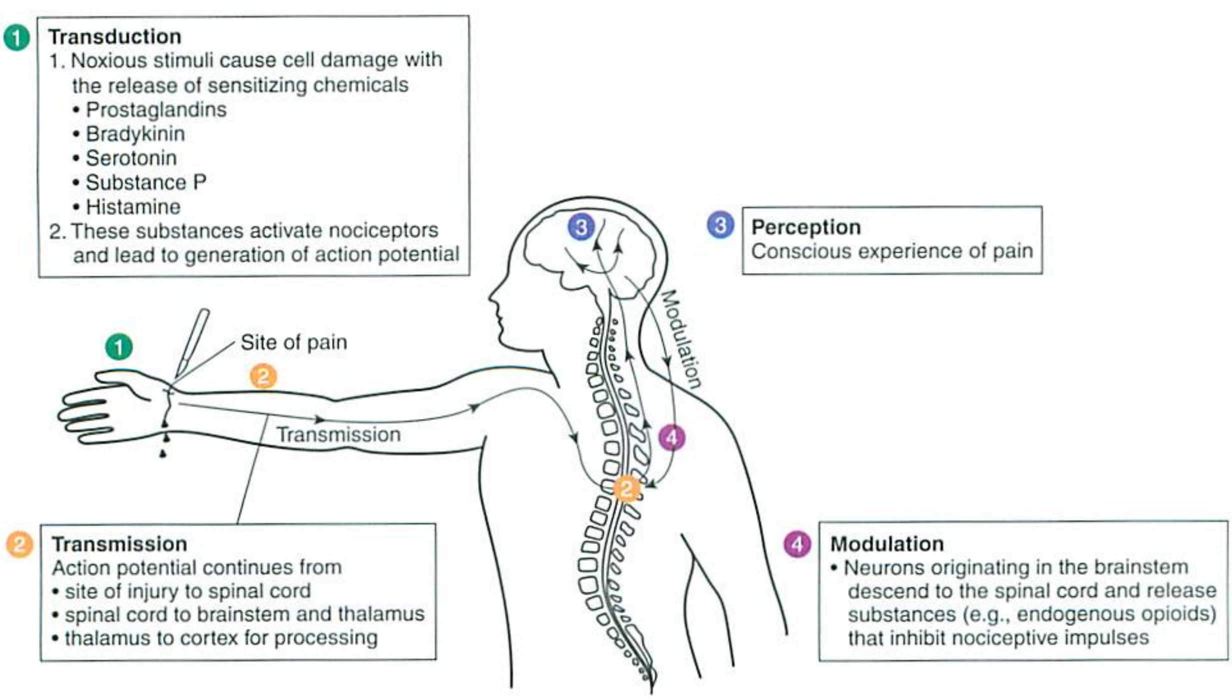


FIGURE 7-2 Nociceptive pain originates when tissue is injured. *1,* Transduction. *2,* Transmission. *3,* Perception. *4,* Modulation.

Pain threshold is the point at which pain is perceived. Relaxation and distraction strategies can alter the perception of pain. **Pain tolerance** is the length of time or the intensity of pain a person will endure before outwardly responding to it. Tolerance varies among people and is influenced by culture, pain experience, expectations, and role behaviors. People with **acute pain** (of recent onset, lasting less than 6 months) may have physiologic symptoms such as increased pulse and respiratory rates, increased blood pressure, diaphoresis, and increased muscle tension. They may also experience nausea and vomiting. People with **chronic pain** (lasting months or years) may have learned adaptive methods that allow them to have some control over their pain. Symptoms associated with chronic pain include irritability, depression, withdrawal, and insomnia. Coping with any pain takes a lot of energy, and patients who are debilitated are less able to withstand pain than are strong, robust people. Fatigue caused by pain can lead to an increase in pain perception.

Clinical Cue

Patients who have a substance abuse problem are not to be denied pain medication when they experience acute pain. Patients who are being treated for long-term chronic pain often require higher doses of pain medication after surgery or trauma.

Pain can cause a variety of physiologic responses, including increased respiratory rate, pulse, or blood pressure; muscle tension; sweating; flushing or pallor; and frowning or grimacing. Although the presence of any of these factors may indicate pain, their absence does not prove the absence of pain.

A person's cultural background influences feelings about pain. In much of Western culture it is considered valuable to have a high pain tolerance, particularly among men. Other cultures promote the idea that to endure pain is natural, or honorable. A nurse whose cultural background approves the "stiff upper lip" approach to handling pain may see the patient who outwardly expresses pain as weak or manipulative. By contrast, those patients whose cultural upbringing causes them to hide and deny pain may suffer needlessly unless the nurse can intervene and help them to understand that analgesia will aid the healing process by encouraging movement and decreasing fatigue. Learning to accept without judgment the various ways of coping with and expressing pain is a very necessary process for nurses.

Elder Care Points

The idea that pain perception diminishes with age is false. In fact, perception of pain may actually increase with age, as the individual becomes frail, has more than one chronic ailment, and has fewer resources for tolerating pain.

ACUTE VERSUS CHRONIC PAIN

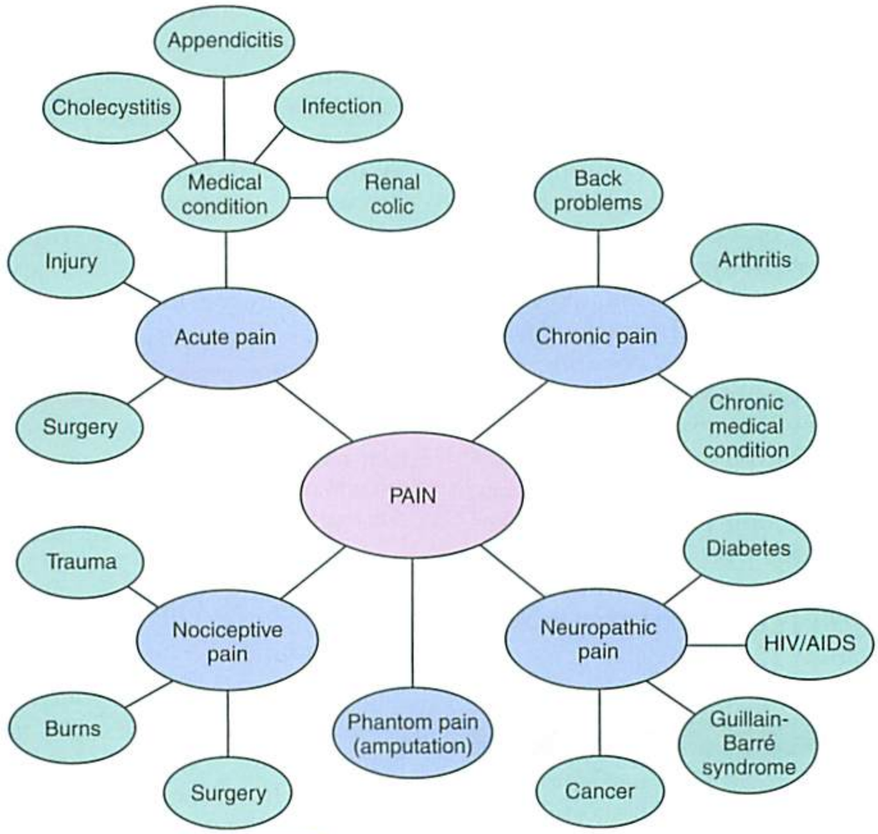
ACUTE PAIN

Patients with acute pain frequently experience fear and anxiety, which can take many forms. They may fear that something is seriously wrong, that they will never get relief from the pain, or that they will become addicted to the pain medication. The anxiety and fear of these patients frequently are alleviated by first providing adequate analgesia to relieve the pain and then educating them about their pain and the methods that can be used to control pain safely. Including patients in planning care reassures patients that health care professionals believe them and want to help.

Rely on the patient's report of pain and intervene to promote comfort. Table 7-2 compares acute and chronic pain. Some nurses hesitate to administer pain medication to patients with a history of drug abuse. Such patients may experience acute pain, for example, following surgery. The postoperative period is not the time to withhold pain medication from any patient. Concept Map 7-1 shows the various types and causes of pain.

Table 7-2 Acute versus Chronic Pain

	ACUTE	CHRONIC
Duration	Hours to days.	Months to years.
Prognosis for relief	Good; may resolve spontaneously or in response to analgesic therapy.	Poor unless complicating factors removed; spontaneous relief unusual.
Cause	Relatively easy to identify.	Sometimes cause is known, but diagnosis may be complex or undetermined.
Psychosocial effects	Usually transient or none. May temporarily disrupt normal activities or routine.	Can affect ability to earn a living, enjoy social activities, maintain self-esteem.
Effect of therapy	Medication usually beneficial, surgery often helpful.	Medications may be helpful, but patient may become dependent. Multiple medication regimen may be used. Surgery may help, but also may worsen the problem.



CONCEPT MAP 7-1 The various types and causes of pain.

CHRONIC PAIN

Chronic pain is commonly associated with depression. People who hurt most or all of the time frequently resign themselves to the idea that they can never again live a normal life. Research and the work of several outstanding pain centers and nurse and physician specialists now offer new pain relief techniques for sufferers of chronic pain. Many people whose lives were previously dictated by their pain now experience good control and have returned to normal, productive lives.

Elder Care Points

Between 50% and 70% of the elderly in the community have chronic pain. The most common conditions causing the pain are joint problems from osteoarthritis, degenerative disk disease from osteoporosis, low back pain, and pain from previous fracture sites. If their chronic pain is adequately controlled, quality of life is improved.

❖ NURSING MANAGEMENT

■ Assessment (Data Collection)

Because no technology can accurately and objectively measure pain, you must use a combination of evaluation methods, including observation and rating scales.

Observation

Appearance. The patient's face may look tense, drawn, or pale. There may be a grimace or even a look of fear.

Behavior. A normally verbal patient may become quiet or withdrawn. One who is normally pleasant may become irritable, demanding, or argumentative. The individual may protect or "cradle" the painful area with the hands or arms. Tears, refusal of food or drink, or any behavior that is out of the ordinary for the individual may be an indication of pain.

Activity Level. A person in pain often reduces activity to a minimum. Staying in bed, creeping slowly from place to place, stooping over during ambulation, and stopping frequently to rest or lean against a support can all indicate pain.

Verbalization. Many individuals in pain may verbalize their discomfort, but it is not always easy to interpret the degree of pain from what is said. Limited vocabulary, lack of experience in verbalizing abstract concepts, fear of disbelief or disapproval, cultural stoicism, and fear of becoming addicted to the analgesic all can impair the person's ability to communicate the degree of pain.

Physiologic Clues. Physiologic clues to pain include rapid, shallow, or guarded respirations, pallor, diaphoresis, increased pulse, elevated blood pressure, dilated pupils, and tenseness of the skeletal muscles. However, remember that problems other than pain can also cause these physiologic clues to occur. All physiologic changes must be fully assessed to determine the cause.

Elder Care Points

Older patients may not report pain for a variety of reasons, and their pain is often undertreated. They may think pain is an expected part of aging. They may deny pain because it means they are getting older. They may not report pain because they feel they cannot afford the cost of tests or treatments. Elderly people often will say they have "soreness" or "discomfort" rather than pain. Assess further if such comments are made.

Focused Assessment

The Patient with Pain

Ask the following questions while assessing a patient with pain:

LOCATION
- Where is your pain?
- Can you point to the pain?

CHARACTERISTICS
- Can you describe your pain?
- What words would you use to describe the pain? (Aching, burning, gnawing, sharp, stabbing, shooting, etc.)
- Is the pain constant or does it come and go?

QUANTITY
- How strong or intense is your pain?
- How strong is your pain on this scale?

PATTERN
- How long have you had this pain?
- Did the pain begin during activity, before eating, after eating?
- Did the pain start suddenly?
- Has the pain increased over time?

ASSOCIATED FACTORS
- Have you had other symptoms such as nausea and vomiting, shortness of breath, rapid heart rate, sweating?
- What does your family usually do when there is pain?
- Do you have any chronic problems that cause pain?

ALLEVIATING FACTORS
- What have you tried to relieve the pain? (Medication, certain position, application of heat or cold, distraction, etc.)
- Did it work?

AGGRAVATING FACTORS
- What, if anything, makes the pain increase?

Pain Rating Scales

Several rating scales have been developed for use in pain evaluation. **When using a pain rating scale, it is important that the nursing staff use it consistently and that the patient fully understands how to use it.** The type of scale being used and any pertinent information about how the patient uses the scale must be included in the patient care plan.

Numbered Scale. Numbered scales ask the patient to rate the degree of pain as a number from 0 to 5 or 0 to 10, with 0 indicating no pain and the highest number indicating the greatest amount of pain imaginable. The numbers in between show graduated levels of pain. The scale may be simply verbal, or it may actually be drawn on a piece of paper so the person can mark or point to the degree of pain. Number scales can be used very effectively with people who have a good understanding of the numerical concept and who like a strictly logical approach. They are not appropriate for young children, anyone who has difficulty with numbers, or anyone who is *confused* or disoriented.

Visual Scale. Some visual scales use photographs or simple drawings of faces with expressions showing a pain-free state (happy and smiling) that progress through a series of faces showing increased discomfort. The final picture shows a face either crying or with an intense grimace (Figure 7-3).

Color Scale. A color scale allows the patient to select colors that represent varying degrees of pain. Colored pieces of paper or plastic (e.g., poker chips), crayons, or markers can be used. The patient selects a color that represents no pain, a color that represents severe pain, and then one, two, or three other colors for pain levels in between. This scale is often used with children, but very young children cannot understand more than three or four possible choices.

Pieces of Pain Scale. This scale uses five poker chips or other identical, plain objects that represent "pieces" of pain. The patient indicates the degree of pain by selecting the number of chips that equals the intensity of pain being experienced.

Behavioral Pain (FLACC) Scale. This scale is used with patients who are cognitively impaired or cannot speak. The nurse assesses the patient's behavior in categories such as facial expression, limb movement,

FIGURE 7-3 Wong-Baker FACES pain rating scale. For coding purposes, numbers 0, 2, 4, 6, 8, and 10 can be substituted for 0-5 system to accommodate a 0-10 system.

Face	0 No particular expression or smile	1 Occasional grimace or frown, withdrawn, disinterested	2 Frequent to constant frown, clenched jaw, quivering chin
Legs	0 Normal position or relaxed	1 Uneasy, restless, tense	2 Kicking, or legs drawn up
Activity	0 Lying quietly, normal position, moves easily	1 Squirming, shifting back and forth, tense	2 Arched, rigid, or jerking
Cry	0 No cry (awake or asleep)	1 Moans or whimpers, occasional complaint	2 Cries steadily, screams or sobs, frequent complaints
Consolability	0 Content, relaxed	1 Reassured by occasional touching, hugging, or talking to; distractible	2 Difficult to console or comfort

FIGURE 7-4 FLACC scale for pain assessment used for cognitively impaired persons.

and activity level (Figure 7-4). A score from 0 to 2 is obtained for each category, and the category scores are added together to arrive at a pain score total of 0 to 10. It is useful when assessing the pain of confused or nonverbal adults, infants, and young children.

Elder Care Points

A more accurate assessment of pain in the elderly is obtained when several types of pain scales are used, such as a number scale, a visual scale, and a behavioral scale.

Think Critically

Can you explain the difference between acute and chronic pain to someone?

Table 7-3 Common Terms to Help Patients Describe Pain

Degree of pain (from least to most severe)	Absent, minimal, mild, moderate, fairly severe, severe, very or extremely severe, excruciating
Quality of pain	Crushing, tingling, itching, throbbing, pulsating, twisting, pulling, burning, searing, stabbing, tearing, biting, blinding, nauseating, debilitating
Frequency of pain	Constant, intermittent, occasional, related to something specific (e.g., only when coughs)

Data Collection Difficulties

Much of the data gathered when assessing a patient's pain comes from conversation with the patient, which presents a variety of problems. The first problem is language itself. Concepts of the true meaning of words in a common language may vary greatly from person to person. It is important to discuss the common words used to describe pain and to agree on their meaning (Table 7-3). It also is important that documentation include the patient's exact words.

The need to work through an interpreter or to deal with language difficulties when the patient speaks a foreign language compounds the problem of communicating pain. Whenever possible, the nurse should use a medical professional (rather than a family member) with a good knowledge of both languages as an interpreter. Most hospitals have a list of approved interpreters to assist in these situations. Patients may hide personal, embarrassing, or painful information if the interpreter is a family member or personal friend.

Describing the location of pain can be made difficult by the problem of **referred pain** (pain felt in a different part of the body from where it actually originates) (Figure 7-5). Heart pain may be felt in the jaw or radiating down the arm. Gastric pain may center in the area of the heart rather than the stomach. **There also is a tendency not to believe an individual's statement of pain if there is no outward appearance of pain.** For example, a patient watching

Cultural Considerations

Cultural Beliefs Affecting Pain Perception and Treatment

Various groups from different cultures may have beliefs about pain that differ from yours. Do recall, however, that just because a person is linked to a particular cultural group, it doesn't mean that he participates in the cultural practices of that group. Proper assessment of beliefs is very important.

Pain Expression and Meaning	Preferences and Action
WHITE (EUROPEAN; CAUCASIAN)	
Men display strong stoicism. Narcotic use brings fear of addiction for many. May dismiss the effects of pain and continue to work and carry out usual activities. May decrease use of pain medication quickly.	Prefer to use non-narcotic medications. Many prefer to use relaxation and distraction techniques rather than medication, or just to "tough it out."
HISPANIC	
Mexican Americans often feel that pain is "God's will" and are stoical. Pain may be seen as a consequence of immoral behavior. For some males, expressing pain shows weakness and may cause lack of respect. Other Hispanic groups tend to be expressive of pain and discomfort and may moan, groan, or cry, and such expression is seen as acceptable.	Many feel that injectable medication is better treatment for pain than a pill. Prayer, heat, and herbs may be used to treat pain.
BLACK (AFRICAN AMERICAN, AFRICAN NATIVE)	
Pain is often seen as a sign of sickness. May express pain openly, but this varies. Pain may be seen as something to just be endured.	Laying-on of hands and prayer are thought to help relieve pain. May rely on spiritual or religious belief to help endure pain.
ASIAN	
Varies among subgroups, but generally tend to be stoical. Bearing pain may be seen as a matter of family honor. May describe pain obliquely in terms of body symptoms. Some Filipinos view pain as a part of life and to endure it as honorable. Elders may fear addiction to pain medication.	May prefer oral or intravenous pain medication; injections may be seen as too invasive of privacy. May use applications of moist heat. Family may request pain medication for the patient.
AMERICAN INDIAN (NATIVE AMERICAN)	
Many believe that pain is something to be endured and will not ask for pain medication. Pain is often described in general body terms such as "I don't feel good." May not be aware that they can ask for medication for pain.	Many use traditional medicine men and rely on herbal preparations. May tell family or visitors about the pain rather than tell the health care provider.
ARAB	
View pain as something to be controlled and expect prompt treatment. May describe pain in terms of hot and cold. May express pain more openly to family than to health care providers.	Usually prefer injectable medication rather than pills.

an exciting football game with a friend may enjoy the game even if his surgical incision is quite painful. The lack of a grimace or of physiologic changes indicative of pain may be viewed as an absence of pain, when in fact the patient is using distraction as a way of coping with the presence of pain. People may fall asleep even though pain is severe, particularly if uncontrolled pain has left them in a state of exhaustion.

? Think Critically

Which pain scale would you use for a 24-year-old patient? Why? Which one would you use for a patient who is cognitively impaired? Why?

Nursing Diagnosis

The nursing diagnosis for pain frequently is "Pain related to" a cause. An example would be *Pain related to a fractured pelvis and fractured left femur.*

Planning

The overall goal is *relief* of pain. If that is impossible to achieve, the goal is *control* of pain. Plan the goals of nursing care by indicating actions that will promote the comfort of the patient during treatment and recovery. Planning should be a team effort that includes the patient, and both pharmacologic and nonpharmacologic interventions should be considered. Physician input comes as written orders and progress notes and may also be available through direct discussion. Include input from pharmacists, therapists, and other health care professionals in pain management. As recovery progresses, update the nursing care plan. The type of medication, method of delivery, and comfort measures will change as the patient's needs change. Planning must address all areas that affect the patient's pain management needs, including family situation, cultural influences, financial constraints, and whether pain is acute or chronic in nature (Nursing Care Plan 7-1).

Implementation

Reassess all patients for pain at the beginning of each hospital shift, clinic appointment, or home visit and revise interventions based on the findings. Appropriate interventions include providing an analgesic as ordered, using nonpharmacologic measures such as repositioning or massage (adjunctive measures), and reporting to the physician when measures are not

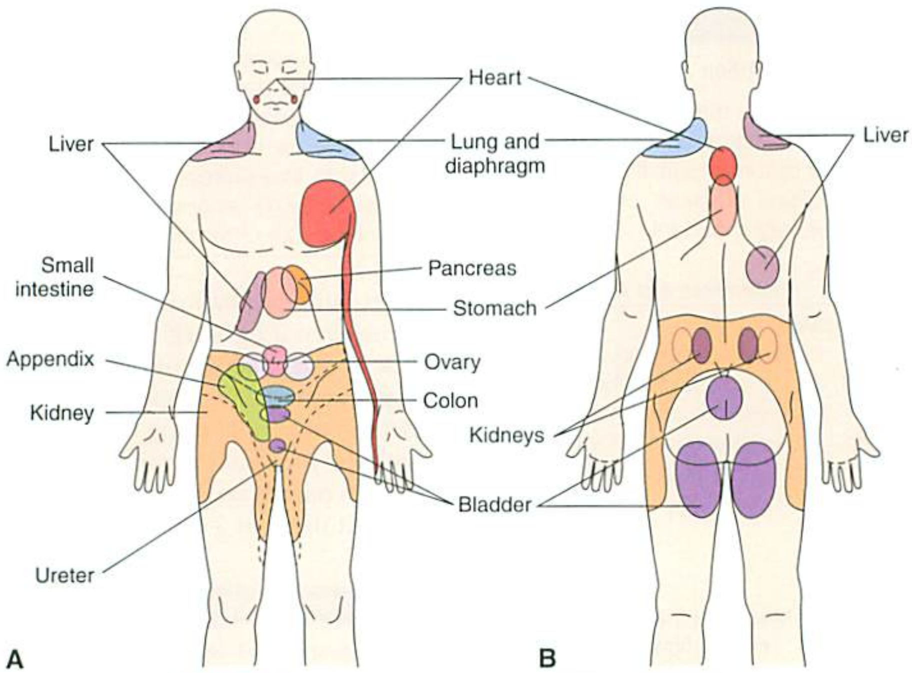


FIGURE 7-5 Usual sites of referred pain. **A,** Front. **B,** Back.

effective or have unwanted side effects. Implementation also includes teaching the patient and family how to monitor effects of treatment and report side effects. False perceptions of pain may need to be addressed (Table 7-4).

Preventing complications from medications is an important aspect of implementation. Specific actions include:

- Prominent documentation of any known drug allergies.
- Accurate recording of pertinent information obtained during the initial assessment phase, such as current medications, previous experience with pain, analgesics, and adjuncts to pain relief.
- Patient and family teaching regarding dose, frequency, and the need to first consult with the physician or nurse before taking any other medications to avoid dangerous interactions.
- Appropriate monitoring of effects of any medications given and prompt notification of the physician should medications fail to relieve pain or should problems occur.
- Accurate and complete documentation of any adverse reactions to treatment and communication of that information to other health care providers, to the patient, and to appropriate family members.

Evaluation

Ask the patient about the effectiveness of the pain control measures. How quickly did relief occur? How long did it last? To what degree was the pain controlled? Were there any unpleasant side effects? Whenever possible, use patient verbalization as the primary evaluation tool. For evaluation, use a pain assessment tool with the patient before the pain is treated and again after treatment to compare the patient's response.

If the patient is unable to verbalize, evaluate the objective signs. For instance, an aphasic stroke patient might thrash, moan, and look fearful when in pain, and evaluation of effective analgesia might include, "Mr. Jones lying quietly, free of facial tension, watching the activity around him. He did not moan when repositioned one hour after analgesic given."

Clinical Cues

Evaluation of the effectiveness of the pain control medication used should be based on the route of administration. Medications given by mouth may take 30 to 45 minutes to be effective. Injections are effective within 30 to 45 minutes. Intravenous medications are effective within 5 to 15 minutes.

Documentation

All measures to control pain must be accurately documented:

- Initial pain assessment (location, intensity, duration of the pain, and the method used to assess [e.g., pain scale, patient verbalization]; document aggravating and alleviating factors)
- Measures taken (e.g., analgesic medication, adjunctive measures)
- Evaluation of effectiveness of measures
- Physician notification of problems or concerns and physician response, if applicable
- Related patient or family education provided

Nursing Care Plan 7-1 Care of the Patient with Pain

Scenario

Mr. Osbourne, an 82-year-old patient with a history of cerebrovascular accident, has been admitted via the emergency department after a fall and left hip fracture. A total hip replacement was performed this morning. Orders include morphine sulfate via patient-controlled analgesia (PCA), which has just been started. Mr. Osbourne has complained of pain at 8 on a 0-to-10 scale. His blood pressure and pulse are slightly elevated, but his temperature and respirations are normal. He has been restless and moaning. You implement the following portion of his plan of care.

Problem/Nursing Diagnosis

Pain and muscle aching in left hip and leg/Pain related to surgical incision and replacement of hip.

Supporting Assessment Data

Subjective: Grimaces and moans when moves in bed; moves very cautiously; states muscles feel sore.
Objective: Incision at left hip; hip replacement on 5/17.

Goals/Expected Outcomes	Nursing Interventions	Selected Rationale	Evaluation
Patient will report pain at 0 to 3 on a 0-to-10 scale within 2 hr.	Teach to use the PCA pump.	Knowledge of how to use the pump allows the patient to use it correctly.	Using pump correctly, but without good relief.
	Encourage relaxation techniques, provide diversionary activities such as television and electronic games.	Relaxation and diversion are known to lessen pain by focusing the mind elsewhere.	Taught relaxation exercise. Does not wish to watch TV at present. Will use electronic poker game.
	Encourage use of the PCA before ambulation, exercise, or repositioning.	Medicating before activity reduces pain from the activity.	Medicated before physical therapy visit.
	Position in good body alignment.	When the body is in correct alignment, joints hurt less.	Repositioned in correct alignment with abduction pillow q 2 hr.
	Apply cold packs to reduce swelling over large bruise on lower thigh.	Cold reduces swelling by vasoconstriction and also dulls the perception of pain.	Cold pack over thigh for 20 min q hr × 8 hr.
	Observe frequently for pain relief and side effects of medication.	If pain is inadequately relieved, other measures to relieve it can be employed. Knowing if side effects are occurring allows measures to be taken to alleviate or prevent them.	No side effects noted other than drowsiness. Pain at 3.
	Keep abduction wedge in place.	Keeping leg abducted prevents dislocation of the hip and reduces pain.	Wedge in place when in bed.

Critical Thinking Questions

1. If the PCA pump medication is not controlling the pain adequately, what would you do?
2. Considering the age of the patient and the type of surgery, which possible side effects of the analgesia would be of greatest concern? What interventions would you use to try to counter the side effects and prevent problems?

Patient Teaching

Managing Pain

Take medication before pain is severe; take medication regularly until pain is well controlled before lengthening time between doses. Use distraction, imagery, or relaxation exercises to augment the effect of pain medication.

Example of pain documentation. States pain level following physical therapy at 7 on a 0-to-10 scale. Morphine sulfate 10 mg IM in the rt. deltoid. 45 minutes after injection, states pain level is now 2 to 3. Pulse 72, respirations 16, moving freely in bed. Discussed pain relief needs; suggested that he request pain medication before next therapy session.

Think Critically

What do you think is the most difficult aspect of evaluating someone's pain?

Table 7-4 False Perceptions of Pain

FALSE PERCEPTION	FACT
If pain is really present, there must be a demonstrable cause.	**Pain can be present even though no cause can be found.** Although damage to the cells does lead to the release of chemicals that stimulate the pain receptors, in many cases pain may be present although no cellular abnormality can be found. The patient with a migraine headache may or may not suffer less than one with a brain tumor. We cannot say that just because the brain tumor can be shown on a brain scan and the headache cannot, the person with the brain tumor has greater pain than the person with the migraine headache.
The person who has a low tolerance for pain has no self-control and probably is emotionally immature or childish.	**Pain tolerance is a physiologic response to pain that is made more complex by psychosocial factors—many of which can be beyond the control of the patient.** Tolerance for pain is defined as that duration or intensity of pain the person is *willing* to endure without seeking relief. **Pain tolerance varies greatly from one individual to another and varies in the same person from time to time.** Nurses often place a high value on a patient's ability to feel pain without complaining or asking for relief. Those who value a high pain tolerance usually impose their own values on their patients by ignoring or belittling patient reports of pain. The person who should decide how willing he ought to be to tolerate pain is the one who is suffering pain.
The neonate is too neurologically immature to perceive or remember pain, so analgesia is unnecessary in this age group.	***Neonates do perceive and maintain memory of pain.*** They cry and pull away from procedures such as heelstick blood tests. Male infants cry and struggle when they are circumcised. Neonates with medical conditions that require repeated blood tests begin to cry and pull away as soon as someone grasps the foot as if to perform a blood test, indicating a memory of pain from previous heelsticks. Analgesia for neonates is appropriate during procedures or situations that would be known to cause pain in more mature patients.
Elderly patients have a decreased ability to perceive pain, and pain medicines are dangerous for them because of their age.	***Ability to express pain may be impaired by decreased cognitive function, but acute pain is still perceived.*** Age combined with physical impairments such as decreased kidney or liver function may reduce tolerance for various medications, but with appropriate dosage and monitoring, geriatric patients can have good pain management without severe side effects. Untreated pain will interfere with sleep, nutrition, healing, and general well-being.
Reactions to acute pain and chronic pain are the same.	**In general, acute pain is more often associated with anxiety and chronic pain with depression.** Emotional reactions such as anxiety and depression do not cause pain, but they can intensify pain. The management of acute and chronic pain is not the same, as discussed in the chapter text.
Addiction to pain-relieving drugs is always a hazard, and for the sake of the patient, nurses often must withhold a drug even though the patient asks for it.	**A very small percentage of patients (probably less than 1% and no more than 3%) become addicted to drugs administered for the purpose of relieving acute pain.** In spite of an abundance of evidence to the contrary, this mistaken belief about the dangers of addiction persists, causing needless suffering among patients who are denied adequate pain relief.
Placebos (substances prescribed that contain no medication, such as sterile saline or sugar pills) are very useful in assessing whether a patient actually has pain.	**There is no basis for believing that a patient who finds relief from pain after receiving a placebo has been pretending to have pain or that the reported pain has been "all in his mind."** The question of how placebos affect people and why they have a positive response in some and not in others is still poorly understood. However, there has been sufficient study of the subject to show that actual pain is sometimes well relieved by placebos.

MANAGEMENT OF PAIN

Effective pain management is not just a matter of giving the right medicine at the right time. It is a combination of pharmacologic and nonpharmacologic approaches that together give the individual the greatest possible degree of comfort for the longest possible time. The World Health Organization has made recommendations for a stepped approach to pharmacologic pain control (Figure 7-6).

Home Care Considerations

Maintain Medication Record

Jot down the time pain medication is taken at home. It is easy to forget just when a medication has been taken. Writing down the time when medication was taken helps prevent overdosage and toxicity.

PHARMACOLOGIC APPROACHES

Analgesics and Routes of Administration

Table 7-5 lists common analgesics by category and action.

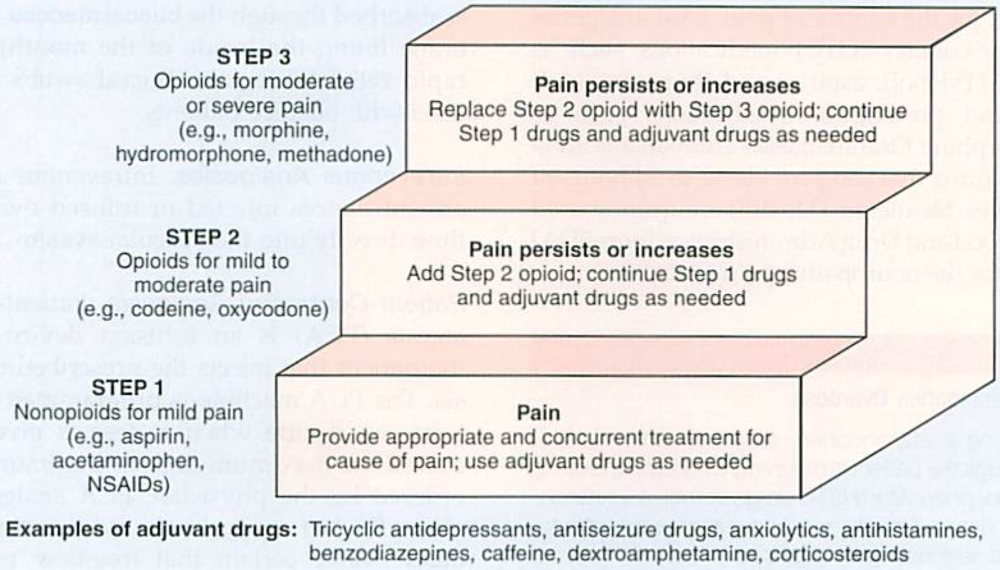


FIGURE 7-6 The analgesic ladder proposed by the World Health Organization.

Table 7-5 Analgesic Medications by Type, Primary Action, and Nursing Implications

TYPE OF DRUG AND PRIMARY ACTION	PRIMARY ACTION	EXAMPLES	NURSING IMPLICATIONS
Non-narcotic analgesics, including nonsteroidal anti-inflammatory drugs (NSAIDs)	Block pain at the peripheral nervous system level	Over-the-counter aspirin, acetaminophen, ibuprofen,* ketoprofen,* naproxen* Prescription naproxen, indomethacin, ibuprofen, ketoprofen	May be present in combination drugs. Various possible side effects of which to be aware.† Educate patients not to use in combination with over-the-counter dosage of same medication.
Narcotics (opioids)	Block pain at the central nervous system level	Morphine, meperidine, hydromorphone, codeine, fentanyl	Constipation common, can be severe. Can cause respiratory depression; antidote is naloxone (Narcan).
Medications with nonanalgesic primary actions used as adjuncts to pain control	Various mechanisms of action	Antidepressants: amitriptyline, imipramine, trazodone hydrochloride Anticonvulsants: phenytoin, carbamazepine, gabapentin, pregabalin Stimulants: caffeine, dextroamphetamine Muscle relaxants: carisoprodol, baclofen Chemotherapeutic agents: methotrexate	Varied due to different mechanisms of action. Always be aware of side effects and possible adverse reactions. May cause grogginess.

*Nonprescription dose.
†Note: Combination drugs are often used. These may combine two forms of analgesic (e.g., acetaminophen and codeine) or an analgesic with another type of medication, such as an antihistamine. It is important to be aware of what ingredients are contained in combination drugs to avoid administering excessive amounts of one of the components.

Oral Analgesics. An oral analgesic is any substance taken by mouth for the control of pain. Oral analgesics include over-the-counter (OTC) medications such as acetaminophen (Tylenol), aspirin, and ibuprofen (Advil, Motrin), and prescription medications such as codeine and morphine. Oral analgesics are available in extended-release forms that can provide 12 to 24 hours of pain relief (Aleve). Mexiletine (Mexitil) is currently used off-label (non–Food and Drug Administration [non-FDA] approved use) for the neuropathic pain of diabetes.

Safety Alert

Preventing Acetaminophen Overdose

When administering acetaminophen, check all other medications and OTC drugs the patient is receiving when administering doses of acetaminophen. Many OTC drugs combine acetaminophen with other drugs. Toxicity may occur if more than the total recommended safe dosage is ingested.

Intramuscular Analgesics. Intramuscular (IM) analgesics are substances injected into muscular tissue to control pain.

Subcutaneous Analgesics. Subcutaneous analgesics are medications injected or infused into *subcutaneous* (fatty tissue just beneath the skin) tissue to control pain.

Topical Analgesics. Topical analgesics are medications placed in a specific area on the skin and absorbed via the vascular system. Topical anesthetics such as EMLA (a mixture of lidocaine and prilocaine) are used to treat pain from minor procedures such as venipunctures. Capsaicin (Zostrix) (made from a substance in peppers) is used topically for joint and other pain.

Transdermal Patches. Transdermal patches placed on the skin rely on vascular uptake of pain medication. These patches can provide relief from systemic pain and are commonly used with patients who have chronic pain. Transdermal patches containing lidocaine may be used for local pain.

Safety Alert

Pain Patch

Fentanyl patches used for severe pain can cause death from overdose. Signs of overdose are difficulty breathing, shallow breathing, extreme sleepiness, and inability to think, talk, or walk normally. Faintness, dizziness, and confusion are other signs.

Clinical Cues

Always remove the old transdermal patch before applying a new one; cleanse the skin where the old patch has been. The patch must be removed before the patient undergoes an MRI to prevent a burn from the foil in the patch.

Buccal Swabs. Buccal swabs contain medication that is absorbed through the **buccal mucosa** (mucous membrane lining the inside of the mouth) and provides rapid relief from pain. Buccal swabs are commonly used with hospice patients.

Intravenous Analgesics. Intravenous (IV) analgesics are substances injected or infused over a prescribed time directly into the vascular system.

Patient-Controlled Analgesia. Patient-controlled analgesia (PCA) is an infusion device controlled by the patient that injects the prescribed dose of analgesia. The PCA machine is programmed so that the patient can decide when a dose is given, but cannot exceed the maximum dose or minimum time interval ordered by the physician. PCA analgesia is usually given IV, but may also be administered subcutaneously. Make certain that free-flow protection is in use on the PCA pump so that overdosage is not possible. Morphine and Dilaudid are most commonly used for PCA.

Epidural Analgesic. An epidural analgesic such as morphine is medication infused directly into the **epidural** space near the base of the spine using a programmable pump. An anesthesiologist inserts the infusion catheter. Patients receiving epidural analgesia need to be monitored for possible delayed respiratory suppression or apnea, bradycardia, hypotension, urinary retention, nausea and vomiting, and allergic reactions such as itching or hives. Report adverse symptoms to the anesthesiologist immediately, and observe the insertion site for signs of infection, localized allergic reaction, and leaking.

Peripheral Nerve Catheter. A peripheral nerve catheter is used to deliver local anesthetic to the sheath of a nerve. These catheters are typically used postoperatively for patients who have had total joint replacement.

Nonanalgesic Medications Used for Pain Control

Antidepressants. A number of antidepressant medications are effective in controlling some specific types of pain, such as nerve root pain. They may be given alone or in combination with other analgesic medications.

Chemotherapeutic Agents and Other Immunosuppressants. Occasionally drugs such as methotrexate (Rheumatrex) are used for **intractable pain** in rheumatoid conditions.

Anticonvulsants. Newer anticonvulsants, such as gabapentin (Neurontin), have been approved for treatment of neuropathic pain. Pregabalin (Lyrica) has been approved for the pain of fibromyalgia.

Muscle Relaxants. Muscle relaxants, such as baclofen, are often used adjunctively to ease spasm in patients with back pain, multiple sclerosis, and other neurologic and muscular disorders.

Invasive Treatments. Invasive treatments—such as sympathectomies, rhizotomies, and cordotomies, which sever the nerve conducting the pain—are now uncommon. Advances in pain management, including surgically implanted medication pumps and nerve stimulators, have made these invasive treatments unnecessary in most cases. A dorsal column stimulator may be implanted for pain after failed back surgery and for other pain syndromes. An epidural injection may be used to ease sciatic nerve pain. The medication dosage given directly to the spinal cord (intrathecal) is about $1/70$ of the oral dose, so patients suffer no central nervous system side effects. They can work and drive while being relieved of severe pain.

Special Considerations in Pain Management

Pharmacologic analgesics, including OTC drugs, may be administered to patients in a health care facility only under a physician's order to prevent unwanted interactions with other prescribed medications. For example, aspirin, commonly taken for occasional headache and arthritis pain, is a powerful anticoagulant. Aspirin can lead to dangerous complications for someone with a bleeding disorder or who is taking another anticoagulant medication. Acetaminophen in high doses is toxic to the liver, and may be contraindicated in patients with a liver disorder. Alerting patients that OTC drugs can have serious interactions with their prescribed drugs is an important part of patient education.

Elder Care Points

The very elderly frequently have reduced tolerance for medications. Smaller doses of analgesics may give effective relief without causing overwhelming sedation or disorientation. Elderly patients on analgesics must be monitored carefully, and the route of administration is a serious consideration. Intramuscular injections are not recommended for the elderly because diminished muscle and fatty tissue may affect the bioavailability of drugs.

Nurses' Responsibilities

In addition to following the "Five Rights" (right patient, right drug, right dose, right route, right time), the nurse has a variety of responsibilities when giving analgesic medications (Box 7-1).

Box 7-1 Nursing Responsibilities When Administering Analgesics

1. Document drug, dose, route (including location of injection site for IM or subcutaneous injections), and reason for drug administration.
2. Monitor the effectiveness of pain relief after 15 to 30 minutes and at 1- to 2-hour intervals. Document the degree and duration of pain relief in the patient record.
3. If the analgesic is ineffective, determine whether a stronger analgesic is available to the patient and administer per physician order. If no other analgesic is available, notify the physician that the medication is not effective. Also notify the physician if the medication is initially effective but the duration of effect is too short to maintain patient comfort until the next dose may be given.
4. If the analgesic results in unwanted side effects (e.g., depressed vital signs, vomiting, or altered level of consciousness), monitor the patient closely and notify the physician before administering another analgesic dose.

Side Effects and Complications of Pain Medications

Probably the most common—and one of the most distressing—side effect of pain medication is constipation. Analgesics such as morphine, meperidine, and codeine slow peristalsis. Fecal material becomes compacted and dry because of the extended time of passage through the intestines. Patients receiving these medications for any length of time should be monitored carefully for regular, normal bowel movements. **Oral fluids must be increased if possible.** Stool softeners and fiber-based laxatives, such as psyllium (Metamucil), can be helpful if approved by the physician. Miralax also has proven very effective for opioid-induced constipation.

Elder Care Points

Help prevent constipation in the elderly patient receiving a narcotic analgesic by encouraging the increased intake of fluids and fiber, administering an ordered stool softener, and monitoring for bloating, discomfort, and lack of daily bowel movement.

Some side effects, such as drowsiness and euphoria, generally only last for the first few days and then spontaneously disappear. Allergic reactions, such as itching and hives, must be reported immediately. Discontinue the medication and obtain an alternative order. The patient may need an antihistamine such as diphenhydramine (Benadryl) for relief of itching. Narcotic analgesics can depress the respiratory system to the point of apnea (no respiration). Should this occur, resuscitation must begin immediately. In the hospital setting, provide respiratory support and call the code team. In the home, physician's office, or clinic, provide respiratory support and call 911. The standard treatment for respiratory suppression from narcotics is naloxone (Narcan), an effective narcotic antagonist that can be given IM or IV.

The most feared side effect to analgesia—that of addiction to narcotics—in reality almost never occurs when pain medications are taken for real pain. **Patients**

in pain have a right to expect that effective analgesia will be available to them. Dependence does occur with long-term use of many of the narcotic analgesics and they should not be stopped abruptly. When pain can be controlled with non-narcotic medications, the patient is tapered off of the narcotic analgesic.

Legal and Ethical Considerations

Narcotic Pain Control at the End of Life

Patients and their families often worry that treating the terminally ill with sufficient pain medication to control pain may hasten death. However, no scientific evidence has proven that this can happen when opioids are used to control pain. Health care providers have a moral obligation to adequately treat pain even at the very end of life, and opioids must be administered for the purpose of relieving pain and not to purposefully hasten death (Lewis et al., 2011).

Elder Care Points

Some drugs are considered especially risky to administer to elderly patients. Tramadol (Ultram) and meperidine (Demerol) lower the seizure threshold and should be used cautiously (Titler et al., 2003).

NONPHARMACOLOGIC APPROACHES

A variety of methods exist for relieving pain without or in addition to medications. Using adjuncts can increase the effectiveness of pain medication and may decrease the frequency at which it is needed.

Sleep

Adequate sleep and rest are major factors in healing. **Rest increases pain tolerance and improves response to analgesia.** Allow adequate time between treatments for naps, and plan care to keep sleep interruptions to a minimum. For instance, take vital signs when the patient is awake to use the bathroom or requests pain medication. It is important to remember that exhaustion will cause a patient to sleep, even while experiencing severe pain, but such sleep is not as therapeutic. Appropriate analgesia combined with adequate rest promotes healing.

Heat

Gentle heat is very soothing for many types of pain. Gentle heat promotes vasodilation of the area, which promotes increased blood supply and movement of nutrients to the affected area. Sources include warm compresses, warm blankets, water-filled heating devices, Hydrocollator pads, whirlpools, tub baths, heat lamps, and chemical self-heating packs. Compresses and packs are usually left in place for 15 to 20 minutes, although gentle heat sources such as water-filled heating devices may be used over longer periods. Always check the temperature before applying heat, and monitor the patient closely for tolerance. To prevent injury to the skin, never apply a warm compress directly to the surface of the skin. The very young and the very old are particularly sensitive to heat. Anyone with an altered level of consciousness or loss of normal sensation may not realize something is too hot, and those with loss of movement may not be able to move away from the heat source when necessary.

Elder Care Points

The skin of the elderly is thin and burns more easily. Stroke patients and those with diabetic neuropathy frequently have areas of lost or diminished sensation, and patients with senile dementia may not recognize that something is too hot. Even the alert and oriented elderly person frequently falls asleep and may be burned. Monitor any heat application very carefully. Do not apply heat to any areas where nerve damage or decreased sensation has occurred.

Menthol. When applied to the skin, menthol causes warming, which may have an analgesic effect. Mentholated products are usually massaged into the skin, giving the individual the benefit of both massage and warmth. They are available OTC but require a physician's order in a hospital or clinic setting. Do not use menthol with external heating devices to avoid overheating the skin surface. Caution the patient to wash hands well after applying to avoid contact of the menthol with the eyes or mucous membranes.

Cold

Cold is particularly helpful in reducing swelling through vasoconstriction. It also can be effective in relieving muscle spasms and some types of joint pain. Ice massage of sore muscles can be done by freezing water in a paper cup, then tearing away the edge of the cup to expose the ice, leaving the base of the cup as a handle. Some individuals are very sensitive to cold. If cold applications cause shivering, tensing of the muscles, or an increase in pain or spasm, discontinue their use.

Clinical Cues

The effectiveness of cold is maximized in 15 to 20 minutes. Remove the source after that time.

Distraction

Any activity that takes a person's attention away from pain is termed a *distraction*. This includes watching TV, talking with friends, using a computer, or playing a game. People have an innate ability to distract themselves from their surroundings or situation. Health care workers may mistakenly interpret patients' ability to distract themselves as proof that there is no pain. Distracting activities can take the patient's mind off of pain momentarily, but distractions do not stop pain. Distraction can be helpful in bridging the time gap between giving an analgesic and the onset of pain relief.

Relaxation

Relaxation also is called "tension release" and involves the conscious relaxation of muscle groups. Tension release is frequently done as a progression, beginning at the feet and moving up the body, ending with the neck and facial muscles. Initially, the nurse can guide the patient verbally, slowly directing the attention to the next muscle group to be relaxed. After one or two sessions, many patients can effectively provide their own relaxation sequence.

Guided Imagery

Guided imagery involves assisting patients to form mental images of a pleasant environment where they are comfortable and happy. For some, the experience is visual; in their minds they "see" a beautiful place. For others, it is a process of achieving a feeling of comfort and peace. Either is highly effective in giving the patient a brief mental break from pain. These methods often are used during painful procedures, such as bone marrow extraction.

Meditation

Meditation involves the use of a focus point, which may be a sound, a repeated phrase (sometimes called a *mantra*), the sound of the breath as it moves in and out of the body, or a visual image. The visual image may be a picture or object that the patient gazes at, or it may be an imagined image (a candle's flame, a leaf moving with breeze, beach waves).

Hypnosis

Hypnosis, or therapeutic suggestion, should be done by a trained practitioner. It involves the use of focusing and relaxation to induce a trance-like state during which a patient receives suggestions that may be helpful after returning to a normal level of consciousness. Although people under hypnosis cannot be induced to do things they would ordinarily feel were wrong, this inducement remains a common fear. Reassurance may help, but hypnosis should be used only if the subject is comfortable with the idea and is open to its use.

Biofeedback

Biofeedback involves the use of a machine that uses electrodes attached to the skin to measure the degree of muscular tension. The machine has colored lights that change (usually red to yellow to green) and an audible tone that changes in pitch from higher to lower as the patient relaxes. The patient receives visual and auditory confirmation of self-induced relaxation. This technique is particularly effective with people who are highly competitive because it rewards success and allows them to "win" the game.

Music

Music used alone can be highly effective in bringing about relaxation and can be used as a focal point for meditation or to enhance other distracting activities. Nature sounds, including the ocean, running streams, breezes, rain, and birds singing, also can induce relaxation. Headphones allow the patient to be immersed in sound without disturbing others. Headphones with music can be used during loud or long diagnostic procedures such as magnetic resonance imaging (MRI).

Binders

Binders are helpful for strains, sprains, and wounds or surgical incisions that are packed. They support the tissues during movement, such as ambulation or coughing, which reduces the pain.

Massage

Once a mainstay of nursing comfort measures, massage (cutaneous stimulation) is again increasing in popularity. The use of long, firm strokes; short, soft, circular strokes; and occasionally gentle pounding with the sides of the hands stimulates circulation, relaxes muscles, and increases the general sense of well-being. When the painful area has inflammation, or consists of a wound or an incision, massaging another area of the body with gentle but firm pressure helps the patient direct attention away from the pain. Always be guided by the patient's sense of comfort. Use only the degree of pressure that is pleasant and relaxing.

Simple massage can be done by a family member with just a little instruction, giving them an opportunity to assist in the care in a positive and loving way. Massage should not be used on any area that has been reddened by pressure. This tissue is already compromised and massage can cause further damage through *shearing,* the traumatic pulling of tissue layers away from one another.

Acupuncture and Acupressure

Acupuncture originated centuries ago in China and involves the use of tiny needles inserted into the skin at specific points along lines called *meridians,* a concept similar to that of nerve pathways. In recent years it has gained favor in the United States as a pain control measure. Research has shown that acupuncture helps relieve back and headache pain (Doheny, 2010; Yuan et al., 2008). Acupressure involves the use of external finger pressure at the meridian points to achieve similar effects. Both acupuncture and acupressure require extensive training for proper use and should only be done by someone fully trained in these procedures.

Complementary and Alternative Therapies

Pain Relief

Complementary and alternative therapies are used more for pain relief than for anything else. Therapies used include relaxation, meditation, biofeedback, yoga, hypnosis, imagery, chiropractic, acupuncture, acupressure, massage, aromatherapy, and herbal preparations and supplements. Research from the National Institutes of Health has proven that acupuncture is effective for many patients for various pain problems.

Transcutaneous Electrical Nerve Stimulation

Transcutaneous electrical nerve stimulation (TENS) utilizes a small electrical stimulator attached to the skin with electrodes placed around the area of pain. A low current running between the electrodes acts to block pain sensation. The degree of stimulation can be controlled by the patient using dials on the stimulator. The application of TENS requires specific training and must be ordered by a physician (Figure 7-7). Some patients find TENS unpleasant rather than helpful. In such cases, the physician should be notified and an alternative method of pain control selected.

Spinal Cord Stimulator

The spinal cord stimulator is implanted in the epidural space adjacent to nerves that innervate the affected body area. This device is used for patients with chronic pain who have not responded to medications or other methods of pain management.

Think Critically

What types of nonpharmacologic methods would you use for the patient who is complaining of muscle pain in the shoulder after an auto accident?

FIGURE 7-7 Instructing the patient on how to use a TENS unit.

COMMUNITY CARE

Community care for pain can take place in a variety of settings, with varying levels of training among direct caregivers. Nurses may need to work with the social worker before discharge to put in place all the necessary measures to control pain for the patient going home. Nurses in the community should help educate people about the complementary and alternative resources available to treat chronic pain.

EXTENDED CARE

Extended-care facilities may provide rehabilitative services, long-term care services, or both. Each type of care may include specific pain management needs. Patients undergoing rehabilitation often have acute pain related to therapy, particularly in the early phases. It is important that therapy be scheduled to allow for adequate rest and recovery time. It also is important that analgesic medication be given on a schedule that provides the patient with the greatest pain relief during therapy sessions. This assists the patient to cooperate with therapy, which in turn encourages a more rapid recovery. In planning, always include the patient, who knows best which medication and time schedule provides the most effective pain relief.

Long-term care facilities—also called nursing homes, skilled nursing facilities, transitional care units, and board and care homes—often have patients who live there for the last weeks, months, or even years of their lives. In such settings, the term *resident* is used, rather than *patient*. Residents may have pain following a fall, after dental work, or during a period of illness, and they may have chronic pain from arthritis, degenerative disorders, or cancer. Residents may be mentally alert and oriented, or be alert and confused, or have a decreased level of consciousness. However, each of these individuals can perceive pain and should be given appropriate analgesics when pain exists.

The nurse can be of great assistance to the physician in ordering analgesia by providing accurate information about the type of pain, the frequency, the intensity, and precipitating factors. For instance, a resident with degenerative arthritis and chronic joint pain may benefit from a routine oral analgesic such as acetaminophen (Tylenol) or ibuprofen (Motrin). Those with more severe chronic problems, such as cancer, may benefit from routine time-released medications such as MS Contin (oral morphine sulfate in a time-released tablet). As pain increases, more narcotic may be needed to gain relief, but remember that the very elderly or debilitated may be more drug sensitive. Monitor all medications carefully and work with the physician to ensure that the resident's pain is being appropriately addressed. Ideally, the resident is comfortable, alert, and able to participate in activities of choice. Nurses in the long-term care setting must make pain assessment and management a priority.

HOME CARE

The number of individuals receiving skilled and professional nursing care at home is increasing rapidly. Early discharge from the hospital is growing primarily to control escalating medical costs and because people generally are more comfortable and heal more rapidly in their home environment. Patients frequently go home from the hospital with peripheral or central IV lines providing analgesia. The nurse provides patient and family education on pain management in the home setting, which includes verbal and written instructions about the medication and any equipment used to dispense it. Telephone numbers that give the patient and family access to 24-hour assistance should be prominently displayed.

Just as in an inpatient setting, home care patients must be evaluated for the continued safety and effectiveness of the analgesic medication. The nurse must contact the physician any time the medication orders need to be adjusted. Adjuncts to pain management, such as simple massage, relaxation techniques, and the use of pillows, warmth, repositioning, or soft music, are readily taught to patients and families for use in the home care setting.

PCA medications sometimes are given subcutaneously rather than intravenously, particularly for those patients with poor peripheral venous access who are not candidates for a central line. A tiny needle is placed in the subcutaneous tissue on the abdomen and taped in place. Sites are changed at regular intervals to maintain good absorption of the medication and avoid damage to the tissues. The increased use of central IV catheters and ports and the availability of oral timed-release analgesics are making subcutaneous PCA devices much less common.

Current guidelines for home care by agencies such as Medicare require that case management be done by a licensed professional. This usually is a registered nurse, although the registered physical therapist may fill this role for patients whose only acute need is continued restorative therapy. The role of the LPN/LVN is that of direct patient care under the guidance of the case manager. The LPN/LVN may monitor an ongoing infusion and discontinue the infusion as needed, but must report any difficulties immediately to the case manager for intervention. Some states offer IV therapy certification for LPN/LVNs, which allows them to infuse medications.

The nurse must always be alert to an increase in pain due to changes in the disease process. The physician needs to be notified of the change so that appropriate measures, including adjusting or changing the medications, can take place.

Get Ready for the NCLEX® Examination!

Key Points

- Only the patient knows where the pain is and its degree of intensity.
- Pain is a neurologic response to unpleasant stimuli.
- The gate control theory states that when the gate is open, pain sensation is allowed through; when the gate is closed, pain is blocked.
- The patient should be asked to use an appropriate pain scale.
- Endorphins can block pain sensation.
- The two pathophysiologic classifications of pain are nociceptive and neuropathic.
- Nociceptive pain derives from stimulation of somatic or visceral structures.
- There are four phases of nociceptive pain: transduction, transmission, perception, and modulation.
- Neuropathic pain is from dysfunction of the nervous system.
- Neuropathic pain is relieved with NSAIDs, tricyclic antidepressants, anticonvulsants, and corticosteroids.
- Pain tolerance varies from one individual to another.
- Pain threshold is the point at which pain is perceived.
- Cultural factors and beliefs affect each person's perception of pain.
- Pain assessment/data collection includes the areas of appearance, behavior, activity level, verbalization, and physiologic clues.
- An interpreter may be required to gather correct data about a non–English-speaking patient's pain.
- Goals of care are (1) relief of pain and (2) control of pain.
- Pharmacologic and nonpharmacologic methods are used to treat pain.
- False perceptions about pain may affect care (see Table 7-4).
- Evaluating the effectiveness of measures used to relieve pain is a primary nursing responsibility.
- Always follow the "Five Rights" when administering pain medication.
- It is important to know all about the commonly used analgesics (see Table 7-5).
- Constipation is a common side effect of narcotic analgesia, and preventive measures should be used.
- Adequate sleep assists in controlling pain.
- Hypnosis and biofeedback have been proven to be effective for many people for a variety of types of pain.
- Chronic pain is common among the elderly in long-term care facilities.

Additional Learning Resources

SG Go to your Study Guide for additional learning activities to help you master this chapter content.

evolve Go to your Evolve website (http://evolve.elsevier.com/deWit/medsurg) for the following FREE learning resources:

- Animations, audio, and video
- Answers and rationales for questions and activities
- Concept Map Creator
- Glossary with pronunciations in English and Spanish
- Interactive Review Questions and Exercises and more!

Online Resources

- American Chronic Pain Association, www.theacpa.org/default.aspx
- Pain assessment and management resources: http://ltctoolkit.rnao.ca/resources/pain; www.vachss.com/help_text/pain.html; www.stoppain.org; www.webmd.com/pain-management/default.htm

Review Questions for the NCLEX® Examination

1. An appropriate expected outcome for a patient with *Acute pain related to recent surgical procedure* would be:
   1. the patient will demonstrate use of patient-controlled analgesia pump.
   2. the nurse will assess for adequate pain relief.
   3. the incision will heal without infection.
   4. pain will be adequately controlled with a PCA pump.

2. The long-term care nurse is caring for an elderly male patient who appears to be withdrawn and quiet. He grimaces whenever he is touched. The *most* appropriate nursing action would be to:
   1. administer pain medication.
   2. assess for underlying causes of the patient's behavior.
   3. reposition him and check again in 2 hours.
   4. notify the physician.

3. A 25-year-old patient complains of moderate pain at his incision site. The nurse administers morphine sulfate intramuscularly. The most appropriate nursing action after the injection would be to:
   1. evaluate the effectiveness of the pain medication in 2 hours.
   2. encourage him to close his eyes and rest.
   3. suggest he play solitaire or watch something interesting on TV.
   4. administer ordered ibuprofen orally.

4. Before administering an opioid analgesic, it is *most* important to:
   1. check the blood pressure.
   2. provide other comfort measures first.
   3. assess for possible constipation.
   4. assess rate and depth of respirations.

5. A patient with chronic pain asks, "What is a TENS unit?" What is the best nursing response?
   1. "It is an implant in the epidural space adjacent to nerves that innervate the affected body area."
   2. "It provides a small electrical stimulus to the skin around the area of pain."
   3. "It involves the use of external finger pressure at the meridian points."
   4. "It supports the tissues during movement."

6. A patient who has osteoarthritis is experiencing right knee pain daily. This type of pain usually has the best result if treated by:
   1. oxycodone.
   2. ibuprofen.
   3. Lyrica.
   4. prednisone.

7. The nurse reinforces the need for safe administration of gentle heat to the nursing assistant. Which action by a nursing assistant indicates the need for further instruction?
   1. Applying a cold pack directly to the painful site
   2. Encouraging relaxation techniques to decrease pain
   3. Repositioning the patient for comfort
   4. Checking on the patient in 20 minutes after the heat application

8. After administering ketorolac (Toradol) 30 mg intramuscularly to a 30-year-old male patient, an immediate nursing action would be to:
   1. recap the needle.
   2. massage the area.
   3. check for pain relief in 45 minutes.
   4. encourage an activity that will provide distraction.

9. The nurse is assigned to care for a patient with an epidural for analgesia. Which sign or symptom related to this treatment would require immediate physician notification?
   1. Blood pressure 80/60 mm Hg
   2. Temperature 99.5° F (37.5° C)
   3. Respirations 12/min
   4. Urinary output less than 30 mL/hr

10. In determining the patient's perception of pain, which question(s) would be useful in assessing pain? *(Select all that apply.)*
    1. "Where are you hurting?"
    2. "What pain control measures have worked in the past?"
    3. "How would you describe your pain?"
    4. "What were you doing before the onset of the pain?"
    5. "Are you sleeping adequately?"

Critical Thinking Questions

Scenario A

Ann Jefferson, a 43-year-old woman, has suffered shoulder pain from an old healed fracture for several years. When the pain is too severe to be controlled with acetaminophen, her physician recommends that she use the oral narcotic analgesic he prescribed. However, Ann does not want to continue taking drugs that she "might become addicted to."

1. How would you respond to Ann's statement regarding her fear of addiction to the pain medication?
2. What other measures could you suggest for management of Ann's pain?

Scenario B

Fred Hickson, an African American construction worker, had a bowel resection 3 days ago. He is determined to get back to work quickly and is very cooperative about ambulation. He refuses pain medication, stating, "I don't need it." You note that he stops frequently to lean against the wall, walks stooped over, and grimaces when no one is looking.

1. Why might Fred be refusing pain medication?
2. What information might you share regarding pain control and getting well after major surgery?
3. What suggestions might you make to Fred regarding his comfort?

Scenario C

Jim Tolliver, age 32, sprained his left ankle playing football with his friends this morning. He consults his neighbor (who is a nurse) about what to do as it is hurting a lot.

1. What should his nurse neighbor do first?
2. What should be suggested to Jim as to home treatment?
3. What precautions should the neighbor take regarding further treatment?

chapter

8 Care of Patients with Cancer

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Objectives

Theory

1. Identify characteristics of neoplastic (abnormal tissue) growth.
2. Identify at least five factors that may contribute to the development of a malignancy.
3. State at least four practices that can contribute to prevention and early detection of cancers.
4. Include the recommendations of the American Cancer Society for routine checkups and detection of cancers into patient education.
5. Explain the advantages and disadvantages of the various treatments available for cancer.
6. Illustrate the major problems for a patient who is coping with side effects of radiation or chemotherapy for cancer, and state the appropriate nursing interventions.
7. Distinguish the stages of the grieving process experienced by the dying cancer patient.

Clinical Practice

1. Devise a general plan of nursing care for the patient receiving chemotherapy.
2. Formulate a teaching plan for the patient who has bone marrow suppression from cancer treatment.
3. Institute nursing interventions to help the patient cope with the common problems of cancer and its treatment.
4. Use appropriate nursing interventions to help patients and families deal with the psychosocial effects of cancer and its treatment.
5. Employ nursing interventions to help the cancer patient cope with death and dying.

Key Terms

benign (bĕ-NĪN, p. 145)
biopsy (BĪ-ŏp-sē, p. 153)
carcinogens (kăr-SĬN-ō-jĕnz, p. 147)
carcinoma (kăr-sĭ-NŌ-mă, p. 146)
cytology (sī-TŎL-ō-jē, p. 151)
cytotoxic (sī-tō-TŎK-sĭk, p. 162)
deoxyribonucleic acid (DNA) (dē-ŏx-ē-rī-bō-nū-KLĀ-ĭc ĂS-ĭd, p. 145)
encapsulated (ĕn-KĂP-sū-lāt-ĕd, p. 145)
hematoma (hē-mă-TŌ-mă, p. 146)
incidence (ĬN-sĕ-dĕns, p. 144)
leukemia (lū-KĒ-mē-ă, p. 146)
lymphoma (lĭm-FŌ-mă, p. 146)
malignant (mă-LĬG-nănt, p. 145)
melanoma (mĕl-ă-NŌ-mă, p. 146)
metastasis (mĕ-TĂS-tă-sĭs, p. 146)
mutation (mū-TĀ-shŭn, p. 147)
neoplasm (NĒ-ō-plăzm, p. 145)
occult blood (ŏ-KŬLT blŭd, p. 151)
oncogenes (ŎNGK-ō-jēnz, p. 147)
palliative care (PĂL-ē-ă-tĭv, p. 172)
prognosis (prŏg-NŌ-sĭs, p. 146)
promoters (prō-MŌ-tĕrz, p. 148)
sarcoma (săr-KŌ-mă, p. 146)
TNM staging (p. 146)
transformation (trănz-fĕr-MĀ-shŭn, p. 149)
tumor markers (TŪ-mŏr, p. 154)
vesicants (VĔ-si-kĕnts, p. 163)

THE IMPACT OF CANCER

Cancer is a group of diseases that characteristically grow in an uncontrolled manner with the spread of abnormal cells. In many instances, however, the growth can be controlled by specific treatment. In the early 1900s, there was little hope for survival once cancer was detected. This year, 4 of 10 people who are diagnosed with cancer will be alive in 5 years.

Excluding skin cancer, about 1,529,560 new cases of invasive cancer will be diagnosed in 2010 (American Cancer Society [ACS], 2010). It is estimated that an additional 1 million people in 2010 will be told that they have squamous cell skin cancer. The current rate of cancer is about the same as that of 1977, indicating little advance in the rate of cancer occurrence. The **incidence** of lung cancer in men declined during 2010 and the incidence in women stabilized. However, the incidence of breast cancer has increased over the past three decades and is mostly attributed to improved detection.

Death rates for many other major cancers have stabilized or declined since the 1930s. However, cancer still accounts for one in four deaths in the United States