Guidelines from the Case Management Society of America for improving patient adherence to pain therapies

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# PAIN
Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pain</td>
</tr>
<tr>
<td>74</td>
<td>Appendix 1: References</td>
</tr>
<tr>
<td>80</td>
<td>Appendix 2: Useful Resources</td>
</tr>
<tr>
<td>84</td>
<td>Appendix 3: Glossary of Terms</td>
</tr>
</tbody>
</table>
Pain

In this volume we will review the following:

✓ Current definitions for pain and pain types
✓ The prevalence of pain in the U.S.
✓ The complications of pain
✓ The economic impact of pain
✓ Prevalent pain treatment modalities
✓ Other disease processes that might contribute to pain
✓ Adherence challenges
✓ CMAG assessment and intervention tools specific to the individual with pain
✓ Resources available for individuals with pain as well as for healthcare professionals
Background

The pain experience is almost universal. In healthy individuals, it is the body’s way of warning or reminding us of past or impending injury. Nearly 25 years ago, the National Institutes of Health and the Department of Health and Human Services issued reports documenting that about 30% of Americans experienced chronic pain, resulting in about 700 million annual lost work days due to pain related disabilities. More recent work suggests that conditions responsible for chronic pain affect approximately 100 million U.S. adults at an cost somewhere between $560-635 billion annually due to medical treatment and lost productivity.

Pain affects people at all ages, from childhood into old age. The National Center for Health Statistics reported in 2006 that about 26% of Americans age 20 years and over report that they have had a problem with non-acute pain of any sort that persisted for more than 24 hours in duration. The 45-64 year age group reported the most pain (30%) followed by those age 20-44 years (25%). Those over age 60 years were the least likely to report pain (21%). The top three pain complaints are low back pain, headaches, and joint pain.

Pain can be categorized as acute, chronic nonmalignant, and chronic malignant. Acute pain is usually sudden in onset, time limited, and linked clearly to a specific event, injury, or illness. Examples include kidney stones, severe sunburn, fracture, or post-surgery. The source of acute pain is not always obvious, but often discovered upon examination. Acute pain resolution varies and is dependent upon timely identification and treatment. Acute pain can be a recurrent problem, with episodes being interspersed with pain-free periods, as in the case of migraine and sickle-cell disease.

Chronic nonmalignant pain is persistent pain that does not resolve even when the source of pain is eliminated. By definition, the pain will last months or years. Examples include low back pain, arthritis, herpes zoster (shingles), irritable bowel syndrome, chronic fatigue syndrome, or diabetic neuropathy. Chronic nonmalignant pain can be debilitating and difficult to treat and is a large contributor to disability in the United States. Chronic pain may be more prevalent in older adults, but it is not a normal part of aging. Pain sufferers are more likely to experience depression, functional limitations, anxiety, and poorer self-reported health perception.

Chronic malignant pain is pain due to: cancer or its therapy; pain associated with other progressive, potentially life-ending disease such as AIDS, end-stage organ system failure, heart failure; or pain associated with degenerative neurological disease such as multiple sclerosis or amyotrophic lateral sclerosis (Lou Gherig’s disease).
When using the term “chronic pain” in this document, it will generally refer to all types of chronic pain, malignant or nonmalignant, unless otherwise indicated.

While pain is one of the most common reasons people seek health care, studies continue to show that pain is underdiagnosed and undertreated, and that regular and systematic assessment is a major barrier to effective pain management. Case managers have the pertinent skills and knowledge to help patients receive the most effective pain management possible.

**Signs and Symptoms**

Pain is a complex phenomenon causing an unpleasant sensory and emotional experience. Pain can manifest in patients in many different ways and is experienced and described by individuals differently depending on the pain site and duration. Acute pain has a sudden onset and typically involves more visible or observable changes such as vital sign changes (e.g., increased pulse, respiratory rate, blood pressure) but not always.

Chronic pain is often associated with a disorder or process that is not life-threatening. Pain may be due to abnormal activity of sensitized receptors or neurons in inflamed tissue or the central nervous system, or both.

Pain often results in diminished quality of life and impaired functioning. People with chronic pain may experience impaired sleep, mood, energy, appetite, sexuality, socialization, and a host of other symptoms. These symptoms may lead to problems with eating, grooming, ambulation, memory, and concentration, among others.

**Pain Assessment**

The acute phase or cause of pain is more readily addressed especially if the source is obvious such as trauma with visible injury. Chronic pain can be more difficult to diagnose, especially if the initial source of pain was previously identified and treated.

Pain assessment includes diagnostic testing, functional assessment, and history and examination. Diagnostic tools to assist in identifying the source of pain include: laboratory work up, magnetic resonance imaging (MRI), x-ray, computed tomography (CT) scan, electromyography (EMG), electroencephalography (EEG), diffusion tensor imaging (DTI), functional MRI (fMRI). Functional assessment can provide objective information about a patient’s quality of life and ability to participate in normal life activities. Pain assessment tools provide information regarding the existence and intensity of pain.
Population at Risk

Pain is a common condition. About 100 million U.S. adults have common chronic pain conditions, and over 80% of patients who undergo surgery experience post-operative pain. Of those 80% experiencing post-operative pain, fewer than half report adequate pain relief. Depending on surgery type, 10% to 50% of postsurgical pain sufferers go on to develop chronic pain. Over 26% of people report low back pain of at least 1 day in the last 3 months.²

Generally speaking, everyone is at risk for acute pain, but certain groups are at an increased risk of chronic pain. Common diagnoses often associated with chronic pain are arthritis, spinal stenosis, headache, general musculoskeletal pain, neuropathies, and terminal illness such as cancer.²,⁶

Potential protective factors include engaging in moderate physical activity, healthy body weight, injury avoidance strategies, receiving pre- and postsurgical analgesia and monitoring, and having personality traits such as resilience and positive affect.²

<table>
<thead>
<tr>
<th>Factors associated with high risk for chronic pain</th>
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<tbody>
<tr>
<td>Acute or recurrent pain</td>
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<tr>
<td>Aging</td>
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<td>Cognitive impairment</td>
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<td>Development of chronic disease</td>
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<td>Geographic location</td>
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<tr>
<td>Joint and muscle overuse</td>
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<tr>
<td>Lack of social support</td>
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<td>Low educational level</td>
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<td>Low fitness level</td>
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<td>Low socioeconomic status</td>
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Prevalent Treatment Modalities

Medications

A variety of medications have been tried in efforts to control acute and chronic pain. Medications or medication classes for pain generally include opioids, nonsteroidal anti-inflammatory drugs (NSAIDs), acetaminophen, antidepressants, and anticonvulsants. Acetaminophen is usually considered a first-line agent for mild to moderate pain, both acute and chronic.

Opioids are useful medications for acute and chronic pain. They are considered to be the most potent, but also carry important side effects and the most abuse potential. This class of agents is available in oral and parenteral forms and includes opioid and opioid-like agents (e.g.,
tramadol, tapentadol, buprenorphine). NSAIDs are also useful for acute and chronic pain. These agents can be associated with a variety of side effects, including heart failure exacerbation, heart attack, stroke, and gastrointestinal bleeding. These products are available in oral and parenteral formulations and consist of a broad range of agents including salicylates (i.e., aspirin, salsalate), non-selective (e.g., ibuprofen, naproxen), and selective (e.g., celecoxib).

Antidepressants have historically been used primarily for neuropathic pain syndromes as primary and adjunctive therapy; however, recent evidence suggests potential in other chronic pain syndromes, such as fibromyalgia. The category includes a broad range of agents from tricyclic antidepressants (e.g., amitriptyline) to selective (e.g., sertraline) and non-selective serotonin reuptake inhibitors (e.g., desvenlafaxine). Anticonvulsants are used in a broad range of chronic pain syndromes including migraine and neuropathic pain. Their use is somewhat limited by side effects and drug interactions.

Topical agents for acute and chronic pain are available in a broad range of products including corticosteroids, analgesics (e.g., capsaicin, lidocaine), and NSAIDS (e.g., diclofenac).

Other Therapies
Nonpharmacologic therapies range from physical manipulation to music therapy. There is a growing body of evidence aimed at pain relief without or in conjunction with medications. Physiologic therapies, regional anesthetic interventions, surgery, rehabilitation or physical therapy, and complementary and alternative medicines have been studied over the past decade. While some of these therapies have been found to be helpful for those with certain chronic pain types, there is still a lack of evidence for all treatment modalities for different pain types.

Placebo
Historically, placebo use was widespread in medicine until the 20th century. Today, however, using placebo interventions in clinical practice is ethically, professionally, and legally controversial. It is uncommon today that a clinician will prescribe a placebo for a patient that has a mild, self-limited disorder for which an active drug does not exist or is not indicated (e.g., for nonspecific malaise or tiredness). There was a time when the reasoning to do this was that the placebo satisfied patients’ demands for treatment without exposing them to potential adverse effects and made them feel better—due to the placebo effect or spontaneous improvement.

While placebo use is often necessary in clinical trials as a control to a study medication when no standard medication treatment exists, placebo use in medical practice, where patients are not told they are receiv-
ing an inactive treatment, is controversial and generally considered unacceptable. Some clinicians argue that the deception is unethical and, if discovered, may damage the clinician-patient relationship. Further, clinicians may under-treat pain when an actual medication may be effective for pain relief. Others suggest that it is more unethical to not give something that may make patients feel better. Giving an active treatment solely for placebo effect may be further considered unethical because it exposes patients to actual adverse effects (as opposed to nocebo adverse effects). Currently, there are no guidelines that recommend placebo use for relieving pain.

**Adherence Challenges**

**Barriers to Effective Pain Management**

There are many therapeutic options available for treating pain, but there are also many barriers that hinder effective pain management. Over 100 million Americans experience chronic pain, with additional millions experiencing short term pain—more than 50% of them living with chronic or reoccurring pain. Many barriers contribute to this lack of adequate pain management. In addition, inadequate pain management causes an enormous additional cost burden to an already stressed health care system. Barriers can be classified as patient, healthcare provider, and healthcare system barriers.

**Patient Barriers**

**Age**

Pediatric and elderly patients are at higher risk for inadequate pain management. Age is a factor in the type of pain that occurs. Chronic pain is less frequent in the younger population compared to older adults. Only 3% of the population under the age 30 report having chronic pain. Younger patients are more likely to have acute pain episodes involving sports-related injuries or accidents (seven out of ten young adults). Older adults are more likely to report chronic pain.
As noted in the figure above, people ages 18-29 are more likely to report an acute pain episode than those aged 65+, who more often experience chronic, recurrent, and frequent pain episodes.\(^7\)

**Pediatric**

Pediatric patients experience pain associated with acute episodes of childhood illnesses (e.g., ear infections or colic) and sports-related injuries such as broken bones and bruises. Chronic pain experienced by young patients can be related to illnesses such as asthma, cystic fibrosis, or sickle cell anemia. Children also suffer from pain similar to adults, such as headaches—17 % of U.S. children aged 4-18 experience frequent headaches, including migraines, over a year.\(^8\)

Pain management barriers for children are related to their experience with pain, communication (language barriers due to age), and cognitive, behavioral, emotional, and psychosocial factors. It is difficult in younger children to make an accurate pain assessment and treatment plan. Some of this is due to misconceptions of pain in children, which often leads to undertreatment. The American Academy of Pediatrics and the American Pain Society issued a joint statement regarding assessment and management of acute pain in infants, children, and adolescents.\(^8\) They recognize several barriers that lead to pain undertreatment in children.
These barriers include:

- The myth that infants and children do not feel pain, have a higher pain tolerance than adults, or that there are no untoward consequences of experiencing pain
- Lack of routine pain assessment
- Misunderstanding of how to quantify the pain experience
- Lack of knowledge regarding newer treatment modalities and proper dosing strategies for the use of analgesics in children
- Fear of respiratory depression or other adverse side effects of medications

**Geriatrics**

As with the pediatric population, the geriatric population is also at a higher risk for pain undertreatment. According to the U.S. Census Bureau, the nation’s population of elders will more than double in size through 2050. It is estimated that 50% of the elderly population has chronic pain. Some common causes of pain in older adults include joint pain, musculoskeletal, surgical, and pain from chronic disease or illness. Pain should not be an expected condition of aging.²

Barriers for the geriatric population include cognitive impairment or dementia, comorbidities (multiple illnesses or disease processes), pain under-reporting (fear or reality that complaining may affect the quality of care), altered response to analgesic medications, higher rates of treatment complications, fear (fear of diagnostic test, medications, diagnosis of pain), the belief that nothing can be done, and the living situation of the patient.

Case managers need to recognize these barriers and treatment plans should be adapted to overcome them. An appropriate plan will minimize the risk of undertreatment and maximize effective management.

**Culture/Race/Ethnicity**

Culture in America is diverse. It is shaped by many influences, including race, ethnicity, language, gender, socioeconomic status, sexual orientation, occupation, age, and other factors. Currently, 20% of Americans speak a different language at home.¹¹ In 2010, the U.S. Census Bureau reported that just over one-third of the U.S. population reported their race and ethnicity as something other than non-Hispanic white (i.e., “minority”).¹²

Culture influences a patient’s beliefs, values, behaviors, and perceptions about illness and healthcare. It affects how patients from varying cultures experience and respond to pain, including when and how to seek treatment.
Individual perceptions and descriptions of pain vary according to cultural norms and expectations. This can lead to a miscommunication between patients and healthcare providers. Healthcare providers should be aware of an individual’s culture and that culture’s influence on pain. Cultural norms may dictate the pain response, such as keeping pain as a private matter because exhibiting physical and verbal expressions of pain is inappropriate. Other culture’s norm is to freely exhibit and voice pain. Understanding that culture is a factor, case managers should be aware of the nonverbal clues that a patient and family may be demonstrating. These include facial expressions, body language, activity level, and withdrawal during assessment and discussion of the treatment plan. Being aware of the patient’s culture can make a difference in an effective and successful treatment plan.

Merriam-Webster defines **culture** as the integrated pattern of human behavior that includes thought, speech, action, and artifacts and depends upon the human capacity for learning and transmitting knowledge to succeeding generation. It may also be defined as the customary beliefs, social forms, and material traits of a racial, religious, or social group.

**Culture and Pain Treatment**

Given the role that culture plays in a patient’s acceptance of a pain management plan, case managers must be aware of important cultural differences. Medications are acceptable as initial treatment in some cultures, while others may start with more complementary and alternative therapies (i.e., nontraditional to western culture) such as acupuncture, herbs, natural remedies, and spiritual practices (e.g. prayer). When healthcare providers do not investigate the patient’s cultural background, they may be puzzled by a patient’s lack of engagement and label patients as nonadherent. A treatment plan that fails to incorporate these important concepts is unlikely to be effective.

Assessment tools, if not chosen carefully, may not accurately reflect a patient’s level of pain. For example, Native Americans tend to choose a favorite or sacred number. Therefore, a linear numerical tool may have limited value in measuring their pain.

Culture also extends to the patient’s level of trust with the health care team and case manager, especially when there is a lack of understanding of treatments passed through generations, and their importance to the patient.
Race/Ethnicity

According to the U.S. Census Bureau, one-third of the U.S. population is comprised of minorities. By 2050, the population will be 54% minorities. The Latino population, the largest minority group, is predicted to triple in size by 2050.12

Minorities are less likely to have access to pain management and services, have their pain documented by health care providers, and receive pain medications. Research has reported unequal ability to obtain opioid prescriptions for minorities. One study found that only 25% of pharmacies in nonwhite neighborhoods carried opioid supplies, compared to 72% of pharmacies in white neighborhoods.14 While it is unclear which patients in specific areas or neighborhoods will have problems with access to medications or other supplies, it is prudent to consider all patients’ access to needed medications.

When the case manager can understand their own personal beliefs, values, perceptions, and behaviors regarding pain and pain management, they are better equipped to recognize barriers when communicating with their patients. The differences in health care beliefs and perceptions between the patient and provider can act as a major barrier. This barrier can be detrimental, especially to minority patients and families.15

Gender

There are some biological differences in the perception of pain between men and women. According to a study conducted at Stanford Hospital, women reported a higher pain intensity than men in several common pain categories (e.g., osteoarthritis and back pain).16 In NHANES data, women reported widespread pain more often than men.17 There are conditions that are predominantly diagnosed in women (80-90%) such as fibromyalgia, myofacial pain syndrome, chronic fatigue syndrome, migraine headaches, irritable bowel syndrome, interstitial cystitis, and temporomandibular disorders. Some of the common causes of pain for both men and women include headaches, low back, neck, knee, shoulder, and hip pain. According to the CDC and NCHS, women will report a higher incidence in these common causes of pain.

Differences between women and men are also influenced by psychosocial, racial, ethnic, and cultural variables.5
Age-Adjusted Rates of U.S. Adults Reporting Pain in the Last 3 Months, Selected Causes, by Sex, 2009

<table>
<thead>
<tr>
<th>Causes of Pain</th>
<th>Women %</th>
<th>Men %</th>
<th>Ratio</th>
</tr>
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<tbody>
<tr>
<td>Severe headache or migraine</td>
<td>21.9</td>
<td>10.1</td>
<td>2.17</td>
</tr>
<tr>
<td>Hip pain</td>
<td>8.7</td>
<td>5.3</td>
<td>1.64</td>
</tr>
<tr>
<td>Finger pain</td>
<td>9.2</td>
<td>5.9</td>
<td>1.56</td>
</tr>
<tr>
<td>Neck pain</td>
<td>17.5</td>
<td>12.6</td>
<td>1.39</td>
</tr>
<tr>
<td>Low back pain</td>
<td>30.1</td>
<td>26.0</td>
<td>1.16</td>
</tr>
<tr>
<td>Knee pain</td>
<td>20.5</td>
<td>18.3</td>
<td>1.12</td>
</tr>
<tr>
<td>Shoulder pain</td>
<td>8.7</td>
<td>9.2</td>
<td>0.95</td>
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Communication

Poor communication between stakeholders is a common barrier to effective pain management. Miscommunication between patients and healthcare providers, due to varying levels of health literacy among patients and inconsistency of both pain intensity and severity, compromises the quality of care. Patients who are elderly, pediatric, or have a language barrier (i.e., speaks another language, a nonverbal patient) are all at an increased risk for communication breakdown. Assessing each patient’s communication level and ability will help identify barriers to effective care.

Medical language is often a communication barrier for patients. Patients and families often have poor health literacy, defined by Healthy People as "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." Health literacy is not simply the ability to read, but is a complex group of reading, listening, analytical, and decision-making skills, and the ability to apply these skills to health situations. It includes the ability to understand instructions on prescription drug bottles, appointment slips, medical education brochures, doctor’s directions and consent forms, and the ability to negotiate complex health care systems. It should be noted that the family or family member is not always the primary caregiver for a patient, and the case manager should determine the primary caregiver up front.

Health literacy varies by setting and context and is not necessarily related to educational attainment or general reading ability. A person who functions well at home or work may have poor literacy in a health care environment. Many patients and families will not let the case manager know they do not understand due to embarrassment, not wanting to take more of the case managers time, or not knowing what to say or ask. It is important to speak at a level the patient can understand when
explaining a disease process, providing education, or assisting with a treatment plan. Asking a patient to repeat the information back is a confirmation that the patient understands. Research has shown that between 40% and 80% of patients forget medical information immediately.\(^{17}\)

Patients who have cognitive or functional impairments also present with a variety of communication barriers. While self-report is the best method of assessing pain, reports from proxies (e.g., family members, friends, caregivers), health history (if known), and observation may substitute for a first-person account. The case manager can provide an important service for this patient population. Helping patients establish a health care network that is able to provide services through multiple communication forms will positively affect outcomes. Identifying healthcare providers who offer services to patients with cognitive or functional impairments will greatly improve the success of the patient in following the treatment plan.

**Caregiver**

As the length of hospital stays decline and patients receive more care in the home setting, the presence of a caregiver is of increasing importance. Depending on the patient’s health and functional status, the caregiver may be the primary liaison between the case manager and the patient. Along with the patient, the caregivers level of communication, health literacy, age, family status, level of support (both physical and emotional), and availability can be barriers to the patient’s pain management. Keep in mind the importance of caregiver burden and its affect on adherence and care of the patient.

**Reluctance to Report Pain**

Patients are reluctant to report pain for a multitude of reasons. Some patients are reluctant for fear that they will be prescribed a pain medication they do not want to take. There are many real or perceived concerns about pain medications include risk of addiction, stigmatization, side effects, and tolerance to the effect. Other fears or concerns include:

- Confirmed disease progression
- Viewed as weak or as a complainer by the healthcare team
- Distracting the healthcare provider from other treatment
- Feeling of not being a good patient
- Inability to afford medication or other financial concerns

**Fear**

Fear can be a major barrier that prevents timely and proactive medical care, evaluation, and treatment. Fear is an emotional response to a perceived threat. Patients’ fears can include many concerns such as fear of the unknown or the healthcare system, the diagnosis, treat-
ments, prognosis, pain related to the disease itself or treatments, and fear of being a burden to family or other caregivers.

Patients may delay or avoid seeking healthcare due to fear of the system’s complexity. They may not understand who to call or where to get treatment or medications, or may be afraid to ask their physician or healthcare providers for fear of bothering them or appearing uneducated. Oftentimes, patients do not know what questions to ask.

Patients may be afraid of “bad news” from their healthcare provider, even when symptoms continue to get worse. When delayed treatment results in disease progression, the outcome is tragic when the prognosis becomes terminal. Healthcare treatments may be frightening to patients, especially for patients who have other barriers, such as language and culture. Fears may be related to the equipment, environment, personnel, medications, pain, or other aspects that are needed for treatment.

Becoming a burden to the family can be stressful for patients. Burdens can be either financial or emotional. With the high cost of medical care and the possibility of losing a job, or lack of medical insurance, patients do not want to increase the family’s financial burden. Patients may refuse to buy medications, take fewer doses than prescribed, avoid treatments, or miss appointments to avert the financial expense. Providing the patient and family with appropriate education and coaching, resources, and time for discussion can help alleviate some of the patient’s fears.

**Socioeconomic barriers**

Financial issues are an escalating and critical healthcare barrier to the patient and the family. The changing healthcare environment, national expenditure reform, reduced or eliminated state funding, and limited access to charitable care services negatively impacts optimal outcomes. The financial barriers may include: limited, reduced, or eliminated monetary income; high copays and deductibles, limited or absent pharmacy benefit, or lack of health insurance.

These financial barriers present challenges to obtaining healthcare services, but also adherence to continued care services.

**Treatment Issues**

Pain management can be cumbersome for patients and families. Patients may have difficulty adhering to treatment when it is complicated, confusing, or unpleasant. There is evidence suggesting that patients with more medications have a higher risk of being nonadherent. Adherence may diminish for patients who do not recognize immediate benefits from treatment or where treatment benefits decline over time.
With pain treatment plans, time is an important factor. Oftentimes, it takes trial and error to get effective and efficient pain treatment for each patient and enduring that period can be difficult. It is important for case managers to work with patients and families to understand the risks and benefits to the medications they take, why the treatment is important, and how to alleviate or cope with treatment-specific medication effects or issues.

**Quality of Life Issues**

The impact of pain on individual’s life can be extensive. Every individual has a unique pain experience. Lifestyle changes and issues can include decreases in activity, appetite, mood, sleep, and social interaction. About four in ten Americans state that pain interferes with their mood, activities, sleep, ability to work or enjoyment of life. The impact that pain has on the quality of life can be distressing for both the patient and the family. According to the 2006 Voices of Chronic Pain Survey, the key findings regarding the impact of quality of life showed:

- 59% reported an impact on the overall enjoyment of life
- 77% reported feeling depressed
- 70% have trouble concentrating
- 74% impact on energy levels
- 86% reported an inability to sleep well

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<th>How Pain Affects Americans</th>
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<tr>
<td>Types of Pain</td>
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<td>Pain interferes with your...</td>
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<tr>
<td>Ability to do work/chores</td>
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<tr>
<td>Mood</td>
</tr>
<tr>
<td>Day-to-day Activities</td>
</tr>
<tr>
<td>Sleep</td>
</tr>
<tr>
<td>Enjoyment of life</td>
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<tr>
<td>Relationships with others</td>
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Source: Poll: Americans Searching for Pain Relief. New Poll Shows Nearly Four in 10 American Adults Suffer From Pain on a Regular Basis

**Healthcare Provider Barriers**

**Inadequate Knowledge**

Even with all the treatment options and educational resources available, a gap remains for adequate pain assessment tools, protocols, and training programs. Healthcare providers lack adequate knowledge...
about pain assessment, appropriate medication therapy, and alternative treatments. Poor pain assessment can be related to timing of the assessment, assessment tool used, patient’s ability to communicate, and other patient-related factors. Approximately 76% of physicians have stated that they have a low competence in patient assessment of pain.\textsuperscript{20} This is a major barrier for adequate pain management.

There are issues with clinician training programs; 88% of physicians reported that their medical school education in pain management was poor, and 73% reported that the residency program was fair or poor.\textsuperscript{20}

While there are validated pain assessment tools, two physician surveys published in 2011 identified the subjective nature of pain reporting to be a barrier to effective pain management.\textsuperscript{21,22} One survey also identified difficulty converting or dosing opioids as a barrier to using this class of medications for pain management.\textsuperscript{21}

Additionally, clinician’s often underestimate or do not take into account the role of the patient’s culture on pain assessment and treatment.

**Negative Attitude**

Attitudes toward patients with chronic pain can be a provider barrier to adequate and effective treatment. There are several reasons that physicians and other healthcare providers have a negative attitude towards patients with chronic pain: \textsuperscript{2,21,23}

- Time consuming, demanding, or difficult to manage
- Issues and concerns regarding opioid prescribing (patient addiction, tolerance, and physical dependence)
- Fear that patients may be drug seeking
- Frustrating to diagnose source of pain
- Less satisfying or rewarding to work with pain management patients
- Experience negative emotions- frustration, lack of appreciation, and guilt

**Geographic Barriers**

Geographic barriers exist for patients and families. Barriers include distance and long travel time to health care providers or facilities in rural areas and a shortage of healthcare providers or specialists. These barriers can have a detrimental effect on the healthcare for patients.

Approximately 20% of Americans live in rural areas. Healthcare in rural areas is limited, offering fewer services or even no specialized services, less technology and equipment, fewer available hospital beds (30-40’s compared to hundreds in a metropolitan area), and fewer physicians and/or no specialized physicians. Many rural hospitals are
also facing financial difficulties due to legislative and reimbursement changes in healthcare. A study of California rural hospitals revealed that nearly three-fourths of the rural hospitals are losing money, with several having to file bankruptcy. Closing of rural and critical access hospitals will result in an increased barrier to the patients and families that reside in these areas. Healthcare providers including physicians, nurses, social workers, therapists, and case managers are limited or even absent in many rural areas.

Healthcare System Barriers

Cost
Healthcare system cost barriers are related to insurance, care availability (physicians, treatment teams, pharmaceutical), and transitions of care (communications, multiple healthcare providers). The dynamic nature of the current healthcare systems causes confusion for both patients and healthcare providers.

More than 45 million Americans have either no or inadequate healthcare coverage. With the increasing cost of healthcare, patients are dealing with increasing copayments, lack of or limited medication benefits, inconsistent reimbursement policies, and increasing out-of-pocket expenses.

Access
Access to care is another important barrier to appropriate pain management. Access may be limited for a variety of reasons—medication availability, financial resources, transportation, and geographic variations in specialist availability, among others.

Transitions of care is an important aspect of pain management. Transitional care is the set of actions ensuring the coordination and continuity of care as patients transfer between locations or levels of care. Patients and families are often confused during transitions due to involvement of multiple healthcare professionals (i.e., physicians, nurses, social workers, pain management team members, etc), and poor understanding of medication, equipment (wheelchair, TENS, etc.), appointments (physicians, therapy, etc.), and homecare services. Without care coordination, patients often experience medications errors, missed appointments, confusing instructions or even a lack of instructions, and an a poor experience with incomplete pain control. With all of the challenges that the patient, family, and healthcare providers face, case managers need to be aware of the barriers related to patients, healthcare providers, and the healthcare system to be able to deliver the most efficient and effective pain management to their patients.
Assessment

Pain assessment is a critical component in providing effective pain management. Inadequate pain assessment is one of the most critical barriers to pain control for patients. Pain assessment has also been cited as a concern and knowledge deficit to nurses and nurse practitioners. Ongoing assessment of adherence to the treatment plan, is a critical component of the pain assessment.

Pain Assessment Tools

The initial patient assessment should include the patient interview, physical assessment, comprehensive medical history (including pain history), medication review, and psychosocial aspects of the patient and family environment. Pain assessment must also include the location, onset, duration, description, intensity, factors that alleviate and relieve pain, side effects of pain (nausea, vomiting, inability to eat, etc.), affect on quality of life, and the patient’s goal for both functionality and pain management. Other patient factors to consider are knowledge, resources, medications and treatments, education and skill level, readiness and willingness to learn, ability to adhere to the treatment plan, and expectations. Pain assessment is the foundation for developing and implementing an effective treatment plan. An inadequate pain assessment has been shown to be one of the most problematic barriers in achieving pain control. Inadequate pain control can lead to both physical and psychological problems for the patient and family. Pain assessments should be conducted through the continuum of care including the initial assessment and ongoing evaluations.

Pain is individualized and subjective, making assessment challenging. An individual’s culture, beliefs, and personality, among other factors, affect how they respond to pain. It is critical that the health care team embrace a systematic approach to pain assessment. Implementing a systematic process and using a measurement and evaluation tool allows for improved pain control, physical function, and psychological outcomes, and an increased satisfaction to their pain management plan. Poor assessment may lead to pain under-treatment, poor quality of life, and dissatisfaction with care.

Steps to Pain Assessment

A systematic approach to pain assessment will consider the following steps.
1. Patient Interview: self report of pain
2. Diagnosis of possible causes of pain: diagnostic testing
3. Observe patient and family behaviors and interactions
4. Assessment of pain with the use of pain assessment tools
5. Development of treatment plan
6. Reevaluation and assessment of pain management treatment plan
**Patient Interview**

The first step in the assessment of pain is the patient interview. Patient self-reporting is the most common and accurate way to assess pain. In verbal patients, assessment questionnaires can be used. Standard questions include the location, description, duration, intensity, onset, and factors that alleviate and relieve pain. Other factors, such as pain effects (e.g., nausea, vomiting, inability to eat, etc.), the impact to the quality of life, and treatment goals and expectations should be included in the patient interview. Talking and listening to one another at this stage creates a trusting, collaborative environment to develop the most appropriate and effective pain management treatment plan.

**Location:** You may elicit information by asking a broad question, “Do you have pain, discomfort, or hurt anywhere?” When assessing the location of pain, ask the patient to identify the location by pointing to the area or areas of pain. If the pain radiates to other areas, have the patient show the areas of radiation. Other ways for identifying the location(s) of pain are with the use of diagrams or body drawings.

**Description:** Have the patient describe the pain in their own words. Descriptions can be words such as burning, tingling, sharp, shooting, etc. There are many tools available to record the pain description including the McGill Pain Questionnaire or the LOCATES scale.

**Intensity:** Ask the patient the intensity level of the pain. Terms used can be mild, moderate, or severe. Tools that can be used for assessing pain intensity include the Numeric Pain Intensity Scale (NPI), Numerical Rating Scale (NRS), Verbal Descriptor Scale (VDS), and the Faces Rating Scale (FRS). When treatments are used, assessments should be performed throughout the treatment to determine if it is effective. It is important to be consistent in the choice of assessment tool to ensure accurate measures over time.

**Duration and onset:** Ask the patient when the pain started and how long it lasts. Try to determine if there are patterns to the pain— if the onset is related to a certain time of day or month, activity, medication, or other potential sources. Patient self-assessment using pain diaries or logs can be useful in documenting when the patient experiences pain, activity at onset, the location, efforts to relieve pain, the duration and intensity following treatment, and any other factors related to the pain.
Alleviating and relieving factors: Ask the patient what they did to alleviate pain or provide relief. What made the pain better or worse? What medications or treatments does the patient use at the onset of pain? Do these medications and treatments help? The use of pain diaries and logs also help in the assessment of alleviating and relieving factors as well as generating a treatment program.

Associated factors: Ask the patient if there are associated factors with the pain. These factors include but are not limited to nausea and vomiting, constipation, impaired sleeping or eating, confusion, sedation, anxiety, or depression.

Quality of life: Ask the patient if the pain interferes with their quality of life. What activities has the patient given up due to the pain? Are they no longer able to go to the store, church, or work due to pain? Is the patient experiencing depressed feelings, sadness, tearfulness, and anger due to the pain? Has the patient given up hobbies, exercise, or other loved activities due to the pain? The World Health Organization has a quality of life assessment instrument, the WHOQoL-100 and accompanying pain module (the Pain and Discomfort Module or PDM).

Pain and functional goals: Ask patients for their pain management goals. The goals should be realistic and achievable. For chronic pain patients, the goal of being pain-free may be unrealistic depending on the cause of pain. Educating patients and families about pain and its management can assist in developing realistic goals and achievable treatment options. As patients progress through treatment plans, reassess the goals. Goals may need revision depending on health status.
Diagnostic Testing for Causes of Pain

After the patient interview and physical examination, the physician or healthcare provider may order tests that will assist with pain diagnosis. The tests include are but are not limited to: laboratory, x-ray, magnetic resonance imaging (MRI), computerized axial tomography (CAT scan), electromyography (EMG), ultrasound, and bone scan. The case manager can assist the healthcare provider and the patient with:

- Choosing the most appropriate and effective available testing
- Coordination of services
- Reducing duplication of services
- Timeliness of tests
- Using the patient’s benefit network
- Negotiating rates with providers who are not part of the patient’s network
- Patient and family education about tests

Observe Patient and Family Behaviors and Interactions

Understanding the patient’s belief, culture, position in the family, and the support of family members can be beneficial to the development of an effective pain management treatment plan. Observe patient and family dynamics, and document how the family interacts with the patient. The patient and family dynamic may influence how the patient reacts to pain and its treatment. People with a supportive network of family and friends are more able to handle stresses related to pain and have resources needed to have a positive treatment outcome.

Pain Assessment Tools

There are many tools available for pain assessment. The pain type, patient’s ability to communicate, cognition level, and availability determines which tool is most appropriate. If the patient is not able to adequately communicate pain characteristics or understand the questions of the assessment tool, reconsider options available. The individual administering the assessment should be nonjudgmental, having a trusting attitude with the patient, and understanding how their own beliefs about pain and pain management may affect the assessment. The healthcare provider should listen carefully and show empathy for what the patient is going through. The case manager must have faith in the patient’s responses to the assessment in order to achieve a positive outcome.27

Pain assessment tools can be one-dimensional or multi-dimensional. One-dimensional pain scales examine one pain aspect, usually intensity. These tools, although limited, are useful to assess acute pain episodes, such as post-surgical pain. Multi-dimensional pain scales not only assess intensity, but also other factors such mood, activity level, and medication effectiveness. Multi-dimensional tools are generally better used for chronic pain conditions.
One-Dimensional Tools

Visual Analog Scale (VAS)

The Visual Analog Scale (VAS) is an assessment tool that measures the patient’s pain level on a continuum, usually a vertical line, and is one of the simplest assessment tools available. It is a subjective pain measurement, depending on the patient’s perspective at the time of assessment. The amount of pain that the patient is experiencing is measured from no pain to extreme pain.

To use: Instruct the patient to point on the line to indicate the current pain intensity level. The measurement ranges from no pain to very severe pain or worst pain ever.

Examples of VAS:

No Pain ___________________________________ Very Severe Pain

No pain ____________________________________________ Worst pain ever

Numerical Rating Scale (NRS)

The Numerical Rating Scale (NRS) is one of the most widely used tools for assessing pain. It requires the patient to rate their pain from 0-10, with 0 being no pain to 10 being the most severe pain. The advantages to the NRS are that it is short, quick, and easy to administer. It offers the ability to easily compare multiple assessments for re-evaluation of pain and pain treatments on an ongoing basis. It can be used in multiple languages and be written or verbal. This tool has several disadvantages: it cannot be used in nonverbal and cognitively impaired individuals; it only measures one aspect of pain; and it may be less accurate when patients are in severe pain.

To use: Instruct the patient to choose a number between 0-10, with 0 being no pain to 10 being worst pain possible.
Verbal Descriptor Scale (VDS)

The Verbal Descriptor Scale (VDS) is similar to the VAS and is used with patients who are able to self-report. The VDS uses a list of verbal descriptors, ranging from “no pain” to “worst pain imaginable.” The patient is asked to pick a word that best describes the pain. The advantages to the VDS are that it is quick and easy to use and can be used throughout the continuum of pain treatments to evaluate their effectiveness. Several disadvantages exist for VDS including understandability of the words, patients may have a different meaning to the words used to evaluate pain, and it is less sensitive than the VAS for changes in pain.

To use: Ask the patient to select the phrase that best describes their pain level.
Pain Thermometer

The Pain Thermometer is an adaptation of the traditional Verbal Descriptor Scale (VDS) that aligns a thermometer next to the words that represent varying pain severity levels. The thermometer aids understanding and communication about pain, especially for those with impaired cognitive capacity. Patients are shown the scale and asked to think that as temperature rises in a thermometer, pain also increases as you move to the top of the scale. These combined verbal and thermometer scales have been shown to be helpful for assessing pain in older persons and are recommended by national and international guideline panels on pain in older persons.

(Pain Thermometer Scale)

Used with permission, Keela Herr, PhD, RN, AGSF, FAAN, College of Nursing, The University of Iowa
**Faces Rating Scale (FRS)**

The Faces Rating Scale (FRS) is similar to the VRS and NRS. It is used when you have patients that may not understand the wording of the VRS or the number system used in the NRS.

To use: Instruct patient to choose the face that best describes how they feel. The scale goes from no pain at the left to hurts worse at the right. Document the number that coordinates with the face chosen.

![Faces Rating Scale (FRS)](image)

**Quality of Life Scale**

Pain is very personal and it affects each individual’s quality of life in different ways. The Quality of Life Scale examines the affect of pain on the ability to perform activities of daily living such as eating, grooming, dressing, bathing, and transferring. This tool can assist the patient and the healthcare team in developing an effective treatment plan and determine treatment progression.

To use: Instruct the patient to choose what number best describes what level of activities best describes the functional level.
Multidimensional Tools

McGill Pain Questionnaire (MPQ)

The McGill Pain Questionnaire (MPQ), developed at McGill University in Montreal, Canada, contains three primary areas of pain experience using sensory, affective, and evaluative word descriptors. Sensory qualities include how the pain feels, where on the body it occurs, when it occurs (continuously, intermittently, etc). Affective qualities help describe the emotion the individual feels, such as fearful or exhausted,
due to the pain. The evaluation area helps describe the overall intensity of the pain (irritating, intense, or unbearable). The three measures are: the pain rating index (PRI), multiple of words chosen from a standard list of descriptive terms, and present pain intensity. It is available in both a short and long form. The short form consists of 15 pain descriptors, 11 of which refer to sensory qualities and 4 refer to affective qualities. Each is rated on a scale from 0-3 or none/mild to severe pain.

**Brief Pain Inventory (BPI)**

The Brief Pain Inventory (BPI) was originally used to assess pain in cancer patients, but has been found to be effective in evaluating patients with chronic pain. The BPI consists of four components: a pain intensity scale, a body diagram to locate pain, functional assessment, and efficacy of pain medications.

To use: The BPI can be administered both as an interview or self-report. Have the patient answer questions or fill out the form.

**Pediatric Pain Assessment Tools**

**Wong-Baker FACES Pain Rating Scale**

The Wong-Baker FACES Scale uses six faces ranging from happy smiling face to a sad crying face. The scale is simple and easy to use. It requires no reading skills and is generally used for children and cognitively impaired adults.
To use: Instruct the patient to point to the face that best describes how they are feeling. Document the number that coordinates with the face.


**CRIES**

CRIES (Crying, Requires 02 for SaO2 < 95%, Increased vital signs, Expression, and Sleepless) is a pain assessment tool used in evaluating pain in neonates. It is simple and requires little time to complete. It is a consistent assessment tool for the healthcare provider. The components of the tool involve rating crying pitch, oxygen requirements, vital signs, facial expression, and sleeplessness.

To use: The healthcare provider needs to observe and rate the areas of assessment. Each assessment is scored based on numerical equivalents from 0-2. The total score is from 0-10, the higher the score the more pain or distress the neonate is experiencing.

**FLACC Behavioral Scale**

FLACC (Face, Legs, Activity, Cry, and Consolability) is similar to the CRIES pain assessment tool for neonates. It is used for infants and children from 2 months to 7 years of age. It is a simple, valid, and reliable observational tool used to assess pain in children, adults with cognitive impairment, and critically ill adults. The components of the tool involve observation of a patient’s face, legs, activity, cry, and consolability.

To use: The healthcare provider needs to observe and rate each assessment area. Each assessment is scored based on numerical equivalents from 0-2. The total score is from 0-10, and the higher the score the more pain or distress the child is experiencing.

**Specialty Patient Populations**

The Joint Commission (previously The Joint Commission on Accreditation of Healthcare Organizations or JCAHO) launched their pain management standards in 2001 requiring organizations become ac-
countable for pain assessment and management. Organizations are required to ask patients about their pain and the responses will determine which services are needed. The standards require organizations to:

- recognize patients’ rights to appropriate pain assessment and management
- assess pain in all patients and record assessments in a way that facilitates regular reassessment and follow-up
- educate patients, families, and providers
- establish policies that support appropriate pain medication prescribing or ordering
- include patient needs in discharge planning for symptom control
- collect data to monitor the appropriateness and effectiveness of pain management

The standards apply to accredited ambulatory care facilities, behavioral healthcare organizations, critical access hospitals, home care providers, hospitals, office-based surgery practices, and long term care providers. These standards address all patients including nonverbal patients, patients with dementia, critically-ill intubated patients, and patients with substance abuse disorders.

Nonverbal Patients

Nonverbal patients are those that cannot provide a self-report of pain verbally, in writing, or by other means including hand gestures such as finger span or blinking their eyes to answer yes or no questions. This includes individuals such as elders with advanced dementia, infants and preverbal toddlers, and intubated or unconscious patients. The inability to communicate pain and discomfort because of cognitive, developmental, or physiologic issues is a major barrier for adequate pain assessment and achieving effective pain management. Ratings scales or tools have been created to specifically address these needs.

Behavioral Rating Scale

Behavioral rating scales are designed to be used with nonverbal patients who are not able to self report. The healthcare provider uses five patient behavioral components to complete the tool. These components include facial expressions, restlessness, muscle tone, vocalization, and consolability.

To use: The healthcare provider rates each of the five measurements ranging from 0-2, with 0 being no pain characteristics to 2 being high pain characteristics. Add all of the measurements together for a total pain score ranging from 0-10.
Checklist of Nonverbal Pain Indicators (CNPI)

The Nonverbal Pain Indicator (CNPI) is a pain assessment tool that is for adults who are nonverbal or for cognitively impaired elders. The CNPI is an observation tool for healthcare providers. It incorporates six behaviors that are associated with pain including vocal complaints (both verbal and nonverbal), facial grimaces, bracing, restlessness, and rubbing.

To use: The healthcare provider will observe the patient both at rest and during movement. Scoring is done on a scale of 0-1, with a score of 0 if the behavior was not observed and a score a 1 if the behavior occurred (even briefly) during activity and at rest. There are no clear scores that indicate the level of pain; rather it indicates the presence of pain. This allowing the healthcare provides to do further assessment and treatment for pain.

Dementia

Pain Assessment in Advanced Dementia (PAINAD)

The Pain Assessment in Advanced Dementia tool is used for patients with dementia and other cognitive impairments. These patients can be the most difficult to assess for pain as they are often not able to verbalize the presence and severity of pain and cannot reliably and effectively communicate. This tool is an observation tool for the healthcare provider. The PAIN-AD elevates five observations common in patients with dementia who have pain. These include observations of breathing, vocalization, facial expression, body language, and consolability.
Checklist of Nonverbal Pain Indicators (CNPI)

This tool is listed in the previous section for nonverbal patients. See page 31 for a description.

Other tools are available for dementia patients including:
- ADD: the Assessment of Discomfort in Dementia Protocol
- PACSLAC: The Pain Assessment Scale for Seniors with Severe Dementia
- NOPPAIN: Nursing Assistant Administered Instrument to Assess Pain in Demented Individuals

Intubated and/or Unconscious Patients

Patients that are sedated, unconscious, or intubated are at risk for pain undertreatment. Pain causes undue stress and other adverse physiologic effects to this high risk group, including increased blood pressure, pulse, respiration, agitation, and delirium. Effective assessment primarily relies on the observations and evaluations of healthcare providers. Though healthcare providers are aware of the potential for and effects of pain, they may have other care priorities and distractions that limit successful pain assessment in this at-risk population.

Payen Behavioral Pain Scale

The Payen Behavioral Pain Scale (BPS) is one tool that is designed to assess pain in the sedated, critically ill adult patient. The BPS consists of a sum of scores based on three behavioral indicators which include facial expression, upper limb movement and compliance with ventilation.2

To Use: This is an observational tool, where the healthcare provider will use the BPS assessment tool by observing the patient and scoring certain behavioral indicators (i.e., facial expression, upper limb movements, and compliance with mechanical ventilation). Scores are given to each indicator from 1-4, and then summed. The sum of the three indicators will indicate the level of pain, which ranges from 3 (no pain) to 12 (highest pain level). Document the totaled score.

Critical Care Pain Observation Tool (CPOT)

The Critical-Care Pain Observation Tool (CPOT) is a behavior pain tool that was developed to detect pain in nonverbal critically ill patients, such as patients with cognitive impairment, sedated, or intubated patients (mechanical ventilated). The tool measures four components: facial expression, body movements, muscle tension, and compliance with the ventilator or vocalization (extubated patients).3

To use: The healthcare provider will use the CPOT by observing the patient and scoring each component giving a score of 0-2. The total
score for the CPOT can be measured from 0-8, 0 being no pain to 8 being extreme pain.

**Substance Abuse**

**Opioid Risk Tool (ORT)**

When prescribing pain medications for patients, it is important to know if they have substance abuse risk factors before initiating opioid treatment. This information can be useful in determining the appropriate level of monitoring for preventing abuse. The Opioid Risk Tool (ORT) was developed to predict which patients are at risk for drug-related behaviors associated with addiction or abuse. It assesses the patient’s personal and family history of prescription, alcohol, and illegal drug abuse, age, history of preadolescent sexual abuse, the presence of depression, attention deficit disorder, obsessive-compulsive disorder, bipolar disorder, or schizophrenia. It is a five question questionnaire that is self-administered on the initial visit. It takes the patient less than five minutes to complete. Based on the score, individuals are categorized as low, moderate, or high risk. These risk factors have been shown to be the most predictive of substance abuse disorder.⁴

<table>
<thead>
<tr>
<th>Opioid Risk Tool</th>
<th>Item score if Female</th>
<th>Item score if Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family History of Substance Abuse</td>
<td>a. Alcohol</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>b. Illegal Drugs</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>c. Prescription Drugs</td>
<td>4</td>
</tr>
<tr>
<td>2. Personal History of Substance Abuse</td>
<td>a. Alcohol</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>b. Illegal Drugs</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>c. Prescription Drugs</td>
<td>5</td>
</tr>
<tr>
<td>3. Age (Mark box if between 16 – 45)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>4. History of Preadolescent Sexual Abuse</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>5. Psychological Disease</td>
<td>a. Attention Deficit Disorder, Obsessive Compulsive Disorder, Bipolar, Schizophrenia</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>b. Depression</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Score Risk Category**

- **Low Risk (0-3)**: 6% chance of developing problematic behaviors
- **Moderate Risk (4-7)**: 28% chance of developing problematic behaviors
- **High Risk (≥ 8)**: >90% chance of developing problematic behaviors

Adapted from: Webster, LR and Webster, RM, *Pain Med: 2005; 6:432-442*
Screener and Opioid Assessment for Patients with Pain (SOAPP-R)

Another tool for assessing potential risk of prescription abuse in chronic pain patients being considered for long-term opioid therapy is the Screener and Opioid Assessment for Patients in Pain-Revised (SOAPP-R). It is a self-report assessment that contains 24 questions relating to substance abuse history, medication-related behaviors, antisocial behaviors, doctor-patient relationships, and personal care and lifestyle issues. The SOAPP-R assists healthcare providers with a tool that can assist in predicting patients who may be a risk for opioid addiction or misuse. Along with continuous monitoring and appropriate evaluations, the healthcare providers who would have been reluctant to use opioids have more confidence in their use. This tool is available in a printable form from a variety of sources on the internet.

To Use: The healthcare provider gives the patient the questionnaire.

Scoring: Each question is scored on a 5 point scale (0=never to 4 = very often). A score of 22 or greater indicates a patient who may be at high risk for opioid misuse. A score of 10-21 indicates a moderate risk for opioid misuse. Those with a score of <9 are at a low risk for use. More information about the SOAPP-R is available at http://www.meniscus.com/mei/ceofferings/ONS2011/PDF/6-SOAPP-R_Final_SAMPLE.pdf

Health Literacy Assessment

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Providers should have access to educational materials designed for those with low levels of health literacy to offer patients and families. Case managers can assist in choosing appropriate materials, helping patients and families understand the information, and coaching patients to be active participants in their own healthcare. For an more in depth discussion about health literacy, see CMAG 3.0 available at http://www.cmsa.org/Individual/Education/CaseManagementAdherenceGuidelines.

Pain is the most common reasons patients seek medical care and is a leading cause of disability. Patients with chronic pain are often exposed to large amounts of medical information, including opioid agreements, informed consents for procedures, and medication guides that require sufficient health literacy to decipher. Studies have shown that persons with poor health literacy have greater limitations on daily activities and greater pain related to physical health, than those with adequate health literacy.

Patients with low or limited health literacy often have less knowledge of their healthcare, but also have higher complications, hospitalizations, health care costs, and worse health status than those who have adequate literacy. Individuals with poor health literacy often experi-
ence worse health status due to multiple factors. These factors include poor knowledge of the disease, inability to follow instructions, missed appointments, improper medication use, and poor self-management skills. It is important to remember that people with adequate literacy skills find understanding healthcare information challenging. Research has shown that between 34% to 55% of patients have a basic or below basic literacy skill level. Patients who are older, less educated, belonging to racial or ethnic minority groups, socioeconomically disadvantaged, and from rural areas of the country are more likely to have lower health literacy. There are several assessment tools that can be used to assist the healthcare provider assess health literacy. These include: The Newest Vital Sign (NVS), Rapid Estimate of Adult Literacy in Medicine REALM-R, and Test of Functional Health Literacy in Adults (TOFHLA).

The Newest Vital Sign (NVS)

Created by Pfizer in 2008, the NVS is designed to be used in the primary care setting as a screen for general literacy, numeracy, and comprehension skills. It is bilingual, available in both English and Spanish. It is easy to administer taking approximately three minutes, and consists of an ice cream container nutrition label. A health care provider asks the patient six questions about the nutrition label. A score of 0-1 suggests a high likelihood (>50%) of limited literacy. A score of 2-3 suggests the possibility of limited literacy. A score of 4-6 almost always indicates adequate health literacy.
Rapid Estimate of Adult Literacy in Medicine (REALM-R)

The REALM-R is a brief screening instrument used to assess an adult patient’s ability to read common medical words. It is designed to assist medical professionals in identifying patients at risk for poor literacy skills. The REALM-R is a word recognition test not a reading comprehension instrument. Adults are asked to decode or pronounce words. The test takes less than 2 minutes to administer and score. There are eight words that are used in the REALM-R which include: fat, anemia, flu, fatigue, pill, directed, osteoporosis, colitis, allergic, constipation, and jaundice. (www.ahrq.gov/pharmhealthlit/documents/REALM-R.pdf)
The Adult Meducation website (http://www.adultmeducation.com/AssessmentTools_1.html) has a printable instruction guide, word list, and examiner record for the REALM-R.

**Test of Functional Health Literacy in Adults (TOFHLA)**

The TOFHLA tests for both numeracy and reading comprehension. It is available in both English and Spanish and takes 20-25 minutes to administer. It contains passages in which every 5th to 7th word is omitted and replaced with a blank. The patient is asked to select from a multiple-choice option. The test is scored on a scale of 0-100.
TOFHLA scores: 75-100 adequate health literacy, 60-74 marginal health literacy, 0-59 inadequate health literacy. The TOFHLA is also available in a short form (S-TOFHLA) that takes approximately seven minutes to complete.45

### Sample items from the TOFHLA

#### Item for Assessment of Numeracy

Normal blood sugar is 60-150  
Your blood sugar today is 160  

Question: if this were your score, would your blood sugar be normal today?

#### Item for Assessment of Prose Literacy

Your doctor has sent you to have a ___________ x-ray.  

- a. stomach  
- b. diabetes  
- c. stitches  
- d. germs

You must have an ________ stomach when you come for _________.  

- a. asthma  
- b. empty  
- c. incest  
- d. anemia

The x-ray will ___________ from 1 to 3 _____________ to do.  

- a. Take  
- b. View  
- c. Talk  
- d. Look

Sample items from the Test of Functional Health Literacy in Adults (TOFHLA). Reprinted with permission. TOFHLA is available only from Peppercorn Books, at http://www.peppercornbooks.com/catalog/product_info.php?products_id=2514

Clinicians routinely overestimate the ability of patients to understand medical information.41 It can be difficult at times to recognize patients with low literacy and many patients conceal their difficulties. Patients may be embarrassed or afraid to say they do not understand. By observation and asking the right questions, case managers can recognize patients with difficulties.

There are a number of characteristics or behaviors that low health literacy patients exhibit. These behaviors may include:41

- Making excuses when asked to read or fill out forms  
  - Examples include: “I don’t have my glasses,” “I’m too tired to read,” and “I’ll read this when I get home”  
- Lifting text closer to their eyes, or pointing to the text with a finger while reading. Many times their eyes wander over the page without finding a central focus
- Providing an incomplete medical history or checking items as “no” to avoid follow-up questions
- Missing appointments
- Making errors regarding medications
- Identifying medications by color, size, and shape
- Showing signs of nervousness, confusion, frustration, and indifference
- Withdrawing from or avoiding situations where complex learning is required
- Providing incorrect answers when questioned about what they have read

**Medication Knowledge**

People at any level of health literacy can make medication errors. Medications can be complex, especially if they have more than one healthcare provider prescribing medications. Assessing the patient’s medication regimen on a continual base is important for preventing medication errors. Pain medications are a leading cause of emergency hospitalizations for adverse events in older adults.46

Assessing the patient’s understanding of their medication regimen should include the reason for use, dose, frequency, side effects, route of administration, and any special instructions (such as how to properly apply a patch). Also assess any special instructions for medications, such as taking with food, avoiding sun exposure, storage, and disposal. It is important to review the patient’s medication list with every change that is made.

Education related to medications should include:

- Providing written instructions related to medications in large letters and bullet or list format
- Tailoring instructions to how the patient takes his or her medicine
- Grouping information, starting with generalized information, followed by how to take the medicine, and then the outcomes such as side effects to watch for and when to call the doctor
- Using medication schedules or charts to reinforce instructions
- Reviewing dose, time, side effects to monitor for and report, and special instructions
- Teaching patients how to maintain an accurate medication list

Education is critical for patients receiving chronic pain medications. Medications used for chronic pain management are known to have a broad range of side effects related to their use. Additionally, these agents have other safety concerns related to overdose and appropriate storage. These issues will be reviewed with each individual agent.
Medication Management of the Community-Dwelling Older Adult

Another tool that can be used for medication review is The Brown Bag Medication review. The Brown Bag Review helps to improve communication between the patient and healthcare provider and evaluate understanding of their medications. This also allows for the patient to ask questions they may have regarding their medications, and for the healthcare provider to evaluate if the best teaching method is being used.

Procedure to conduct a brown bag review includes:
1. Have patients bring in all medications that they are currently taking, including over the counter medications. It is also important to remind the patient to bring in all vitamins, supplements, and herbal medications.
2. Take all medications out of the bag and set out.
3. Offer praise to the patient for remembering to bring in all their medications.
4. Review all of the medications with the patient. Ask if they have any questions about them. Remember to ask open ended questions rather than yes/no questions. You will get a better assessment of the patient’s knowledge level when you ask questions such as, “Why are you taking this medication,” “How many are you taking each day, when do you take it, and how are you taking it.” Rather than “Are you taking your medications?”
5. Clarify medication instructions. Review medication instructions, especially new medications. Ask the patient to repeat back their understanding of the medications to confirm understanding.
6. Update medications in the patient’s chart.
7. Provide patient with updated medication list.

Research has shown that patients with limited health literacy are less likely to know how to take their medicine and have more difficulty following complex medication regimens.

Social Support

Caregivers are an unpaid individual (a spouse, significant other, family member, friend, or neighbor) involved in assisting others who are unable to perform certain activities on their own. On average, caregivers spend 20.4 hours per week providing care. Those who live with their care recipient spend 39.3 hours per week caring for that person. Those caring for a child under age 18 spend 29.7 hours per week. So it is important that a patient’s caregiver has the capability to understand the patient’s diagnosis, disease process, treatment plan, including treatments and medications, and any other healthcare related items.
Motivation Assessment

It is important that individuals with pain adhere to medication and take prescribed medication routinely for the most effective pain control.

The Readiness-to-Change Ruler

The readiness-to-change ruler (or Readiness Ruler) is a quick and effective tool that can assist providers in assessing a patient’s “willingness or readiness to change.” It is a useful tool for eliciting change talk from your patients. The Ruler is a simple, straight line drawn on a paper that represents a continuum from the left “not prepared to change” to the right “already changing.” Patients are asked to mark on the line their current position in the change process for the specific behavior. Providers should then question patients about why they did not place the mark further to the left (which helps to determine what motivates their behavior) and what it would take to move the line further to the right (which helps to determine their perceived barriers). Providers can ask patients for suggestions about ways to overcome an identified barrier and actions that might be taken before the next visit.

Two concepts that are useful to assess when determining readiness are importance and confidence. Importance, or why should I change, is an indication of whether the change is worthwhile. Confidence, or how will I do it, is an indication of whether the individual can achieve it. These can be assessed very informally or by using a scale technique similar to the Readiness Ruler. This assessment can give you very quick feedback on how an individual feels about a particular change especially if someone’s readiness is low. Based on how they respond, a case manager can determine which issue is impacting the patient’s readiness. From there, strategies can be used to either explore importance or build confidence.

Readiness Ruler

Below, mark where you are now on this line that measures your change in _____________________________________________________.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>

Not Prepared to Change | Already Changing
Are you not prepared to change, already changing, or somewhere in the middle?

Readiness to change should be an ongoing assessment for individuals receiving therapy for chronic pain. Breakthrough pain, exacerbations, depression, illness, and other issues in individuals with chronic pain may cause change in motivation.

**PLANNING AND IMPLEMENTATION**

"Identifying the type of pain a patient experiences leads not only to an appropriate diagnosis, but assists with developing a pain management plan that meets the individual patient's needs”

*Hader & Guy*

**Pain Management Treatment Team**

The pain management treatment team is a multidisciplinary approach to pain management. There are many healthcare providers, pain centers, facilities, and hospitals that are working together to provide patients and families the most effective pain treatment. For the proper management of pain, it takes a team of healthcare professionals and the patient and their family. The pain management team can consist of:

- Patient
- Nurses
- Family and friends
- Case managers
- Pain management specialists
- Physical therapist
- Anesthesiologist
- Occupational therapist
- Neurologist
- Social workers
- Orthopedist
- Nutritionists
- Pharmacist
- Psychiatrist or psychologist
- Physiatrist
- Psychiatric

It may take time to put together an appropriate and effective pain management team. Once organized and functioning, the team will be able to develop the most effective treatment plan. Having a multidisciplinary team brings different perspectives and approaches to the plan, as each individual brings their own unique education and talents to the team.

Case management is an essential part of the pain management team. The case manager will assist in the healthcare team collaboration and services, patient and family education, coordination of benefits, service utilization, treatment coordination, transitions of care, and pharmaceutical needs. The case manager assists in preventing increased utilization of services (such as prolonged hospital stays, unnecessary emergency room visits, and physician visits), duplication or inappropriate services and medications, caregiver issues, and unnecessary suffering.
Treatment Options

Pain treatment must be patient centered and individualized. Every patient has a unique and personal pain experience, so the treatment plan for each patient will be different depending on patient goals and beliefs, pain type, and healthcare team members. Treatment plans may involve a number of healthcare professionals and providers along with treatment options. These options may include medications, interventional procedures, surgery, rehabilitative and physical therapy, psychological therapy, and other alternative therapies.

Key Management Skills in Treatment of Pain

Self management is the first step taken by patients in pain treatment. Typically patients try remedies that will bring relief to their pain prior to seeking medical attention. They rely on family and friends to give them advice, and look to their pain history and treatments that succeeded or failed in the past. When pain becomes unbearable or is affecting their quality of life, they seek medical attention.

For pain management to be most effective, patients must be an active participants and take responsibility for the treatment plan. Family members are also an essential component to success of the plan. Obtaining effective pain control is much more difficult without family support. Educating the patient requires teaching about disease characteristics, treatments, healthcare providers and their roles in the treatment, medications, communication skills, problem-solving, and ownership of their own success in the program. Teaching patients appropriate skills and self-efficacy is important in the long term treatment plan success. Education ultimately provides greater patient confidence, a necessary trait to make life-improving changes that yield better clinical outcomes. Education is essential to the patient’s success.

Medication Management

Medications, as one component of a multimodal management plan, play an important role in treating pain. The major medication types used in treating pain include opioids (both short- and long-acting), non-opioids (acetaminophen, ibuprofen, others) and adjuvants (antidepressants, anticonvulsants, others). Medications may not remove all of the pain, but often help by making the pain tolerable enough to improve health status and quality of life. Some pain medications, particularly opioids, can have debilitating adverse effects; hence, patient education is a very important management aspect. For the safety of the patient and for the most effective results, teach the patient what the medication is used for, when to take it, how to take it, its side effects, problems taking it with other medications, and what to do if they miss a dose. Instruct the patient what to do if side effects occur and when to contact their healthcare providers. When a patient is experiencing
a side effect, a minor adjustment in dosing or timing may be all that is needed to make medication tolerable, instead of stopping the medication. In general, medications should never be abruptly stopped without the physician’s knowledge. In some patients, abruptly stopping a pain medication may cause withdrawal symptoms or a dramatic increase in pain symptoms.

Chronic pain patients often have other medical conditions, such as diabetes, cancer, cardiovascular disease, which can lead to multiple medications and healthcare providers. Case managers should communicate with all providers about the full medication regimen, including over-the-counter therapies and herbal remedies, to decrease the possibility of drug-drug interactions. It is important to remember that individuals respond differently to medications. If you or your patients have concerns about how a medication is affecting them, it is important to talk to their healthcare provider.

Medications Used in Treating Pain

The type of pain is a primary determinant in selecting an appropriate medication for pain management. In general, in a patient naïve to treatment, the least expensive and least toxic medication should be tried first.

<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone (ostealgia)</td>
<td>Typically localized to a specific area and can be dull, deep, and intense. It is often worse at night or with movement or weight-bearing exercise. It occurs most often in major bones of the upper arms or legs, the pelvis, hips, or spine. Its causes include cancer metastasis, and increasingly, the side effects of drugs.</td>
</tr>
<tr>
<td>Colic</td>
<td>Colic or colicky pain occurs in the abdomen or flank. It is usually severe and sharp, sudden, and uncontrollable, resulting from spasms, obstruction, or distention of one of the hollow viscera. Patients often say pain comes and goes. Causes include stones in the liver, kidney, or gall bladder.</td>
</tr>
<tr>
<td>Muscular</td>
<td>Manifests as soreness, stiffness, or cramping. It can be intense, and may mask underlying bone pain. Patients describe cramps and spasms, and may grab or rub the area in an attempt to alleviate the pain. Clinicians may be able to feel a tenseness or hardness in the muscle. Muscle pain can become chronic and nonspecific. Steihaug S. Can chronic muscular pain be understood?</td>
</tr>
<tr>
<td>Neuropathic</td>
<td>Neuropathic pain may originate from anywhere in the nervous system and often manifests as allodynia (i.e., pain in response to touching that would not ordinarily cause pain) and cold hyperalgesia (i.e., increased and painful sensitivity to cold temperatures). It is usually caused by damage to a specific nerve, plexus, root, or spinal cord.</td>
</tr>
</tbody>
</table>
Types of Pain

| Pleuritic Pain | Experienced during inhalation. May observe the patient breathing shallowly to guard against severe pain. Causes include pneumonia (bacterial, viral, or parasitic), cough fracture, sickle cell anemia, pulmonary embolism, pulmonary lesions, complications of chemotherapy or radiation, Guillain-Barré syndrome, and, rarely, varicella-zoster virus pneumonia or pericarditis. Identifying the underlying cause is crucial to developing an appropriate treatment plan. Red flags include severe coughing, shortness of breath, fever and chills, tachypnea, unexplained weight loss, cyanosis, or joint pain and swelling. |
| Visceral/soft tissue | Consists of a continuous ache and often indicates injury, compression, or tumor in or around an organ, or abdominal cavity stretching; Pain is at the injury site or referred to other visceral or cutaneous areas that share vasculature or nerve roots with the affected site. Pain radiation often makes it difficult to isolate a cause or true location; patients describe the pain as aching, but may also say it feels like squeezing. |


**Nonopioids**

**Acetaminophen**

**Actions:** To relieve mild to moderate pain symptoms.

**Precautions:** Acetaminophen in high doses or for prolonged periods can cause liver damage. If a history of liver disease is present, observe patients for liver damage such as: persistent nausea and vomiting, extreme tiredness, abdominal pain, yellowing of eyes and skin, and dark urine. Be aware that many over the counter products contain acetaminophen, such as cold products and cough syrups. Advise the patient to read the medication labels carefully before taking other medications. Acetaminophen overdoses can happen unintentionally. Between the years 1990-1998, there were an estimated 56,000 emergency room visits, 26,000 hospitalizations, and 458 deaths related to acetaminophen-associated overdoses. Because of the increased liver damage risk, the FDA recommended in January 2011 that the maximum acetaminophen dose in combination opioid products (e.g., Vicodin, Percocet) be limited to 325 mg. In addition, they recommend a maximum single dose of acetaminophen of 650 mg and a maximum daily dose of 4000 mg. In July 2011, the manufacturer of Tylenol, McNeil Consumer Healthcare, revised the package labeling of its extra strength Tylenol products to a lower total daily dose of 3000 mg.
**Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)**

**Actions:** To relieve mild to moderate pain and the reduction of inflammation.

NSAIDs consist of a large number of medications including naproxen (Naprosyn or Aleve) and ibuprofen (Motrin). These medications are commonly used in acute injury or surgery, pain and fever in children, and osteoarthritis in adults. They can be purchased over the counter and are also available in prescription strength. Due to a high degree of patient variability in response, it may be necessary to try several different NSAIDS to find the one that works best.

**Precautions:** NSAIDS can increase an individual’s risk for upper gastrointestinal bleeding or ulcers, renal impairment, peripheral edema, heart failure exacerbation, and increase risk for heart attack and stroke. NSAIDs are not recommended for use prior to or after cardiac bypass surgery. In addition, they may limit the efficacy of medications used to treat high blood pressure, particularly angiotensin converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs).

**Corticosteroids**

**Actions:** Corticosteroids inhibit prostaglandin synthesis, an important cause of inflammation. They reduce signs and symptoms of inflammation in conditions such as acute nerve pain, bone pain, visceral pain, and osteoarthritis. They may be used orally or topically, or as intra-articular injections, such as for osteoarthritis, by reducing inflammation, thus decreasing pain. Examples of corticosteroids used in pain management include: dexamethasone, hydrocortisone, prednisone, and prednisolone. These medications are available by prescription only.

**Precautions:** Corticosteroids affect the entire body, not just a particular area or system. When given short term, corticosteroids have few adverse effects. Some side effects can include fluid retention, mood disturbance, increased blood pressure, and elevated pressure in the eyes. When given long term, side effects to watch for include: cataracts, high blood sugar, increased risk for infections, difficulty sleeping, skin changes (thinness, easily bruised, redness), psychological changes (anxiety, mood, and depression), menstrual irregularities, and suppressed adrenal gland hormone production. These medications should not be abruptly stopped. They must be tapered or the patient will experience adverse affects.
### Opioids

**Actions:** Opioids are strong analgesics for the treatment of moderate to severe pain. They stop the transmission of pain impulses by binding to specific central nervous system receptors. These medications can be used for short term treatment (acute pain, such as post-operatively) or long term treatment (cancer or chronic pain). Opioids are available in a multitude of forms, including oral pills, liquids, lollipops, injections, skin patches, and suppositories. Every patient is unique so they will react to medications differently. It is important that all patients on these medications be closely monitored. The most commonly used opioids include morphine, codeine, hydrocodone, oxycodone, and fentanyl.

**Precautions:** Patients are more at risk for the development of addiction and misuse with opioid use. It is important for the healthcare provider to choose medications carefully and to monitor their use. There are many assessment tools that can be used in the assessment of possible addiction and tolerance of the medications. It is important to understand the differences between physical dependence, addiction, and tolerance when treating patients for pain. The side effects of opioids include sedation, respiratory depression, constipation, and nausea and vomiting.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Physical dependence</td>
<td>a state of adaptation that is manifested by a drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist.</td>
</tr>
<tr>
<td>Addiction</td>
<td>a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.</td>
</tr>
<tr>
<td>Tolerance</td>
<td>a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug’s effects over time.</td>
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</tbody>
</table>

(Definitions Related to the Use of Opioids for the Treatment of Pain, 2001, American Academy of Pain Medicine, American Pain Society and American Society of Addiction Medicine)

### Adjuvants

Adjuvant medications are medications that are not primarily used to control pain, but may be useful in treating pain. Classes of medications considered adjuvants for pain treatment include antidepressants, anticonvulsants, and muscle relaxants. These medications do not have a direct pain relieving affect, but assist in treating other symptoms that are related to pain. These symptoms include depression, anxiety, insomnia and fatigue, inflammation, and muscle spasms.
**Antidepressants**

Actions: Depression has a higher incidence in chronic pain patients. Studies have shown that patients with pain have a substantially increased risk for depression, anywhere from 2 to 5 times that of the general population.\(^5^2\)

There is ongoing research investigating the correlation between chronic pain and depression. There is a physiologic basis for the connection, as chronic pain and depression share the same neurotransmitters and nerve pathways. Chronic pain often causes disruptions in or inability to sleep, eat, and continue to perform normal activities. Some symptoms attributed to depression are lack of sleep, fatigue, frustration, irritability, agitation, and the limited activity levels leading to decreased quality of life. It becomes a vicious cycle, where the pain then becomes worse and the depression increases. Since antidepressants work on the same neurotransmitters and nerve pathways, theoretically they assist with treatment of both pain and depression. Antidepressants elevate mood and increase sleep and activity levels, and in return increase quality of life.\(^1^6\) There are several antidepressant classes. The difference between them relates to their effects on different neurotransmitters and nerve pathways. The two most common antidepressants used in the treatment of pain are serotonin-norepinephrine reuptake inhibitors (SNRIs) and tricyclic anti-depressants (TCAs).

It is important to note that it may take several weeks to see the effects of antidepressants. Lack of response after weeks of medication may indicate a need for dose increase or a change in medication. Many patients will not respond to the initial medication choice.

Precautions: Antidepressants have a variety of side effects and precautions. When a patient is prescribed an antidepressant, it is important to investigate specific drug precautions, reactions, and interactions with other medications that the patient is taking and review the potential risks with the patient. Common side effects of antidepressants include sedation, dry mouth, nausea, increased appetite, sexual dysfunction, fatigue, insomnia, blurred vision, constipation, and restlessness. Some of these side effects will only last for a limited time when antidepressants are initiated. If they continue to last after a few weeks talk to the healthcare provider. It is important that antidepressants not be abruptly stopped. Patients may experience flu-like symptoms, insomnia, nausea, imbalance, sensory disturbances, and hyperarousal with sudden antidepressant withdrawal.\(^5^4\)

**Anticonvulsants**

Actions: Anticonvulsant medications are used in the prevention of seizures, but they may also be effective in treating certain types of pain. Several have been found to be effective in treating neuropathic pain
Pain and chronic migraines. There are many anticonvulsants available, but only carbamazepine and gabapentin have FDA approval for chronic pain treatment. All others are considered “off-label use.”

Precautions: As with other medications, anticonvulsants have side effects. The most common side effects are drowsiness, dizziness, fatigue, peripheral edema, and unsteady gait. These should decrease over time, but consult the healthcare provider if they persist. Many anticonvulsant medications have drug-drug interactions with other commonly prescribed medications. It is important to review the current medicine regimen carefully for these interactions when starting an anticonvulsant for pain management. As with antidepressants, anticonvulsants should not be stopped abruptly. Healthcare providers can offer recommendations on how to stop the medication.

**Muscle Relaxants**

Actions: Muscle relaxants reduce muscle spasms or contraction. A muscle spasm is an involuntary and uncontrolled muscle contraction that comes without warning and can be extremely painful. Muscle relaxants do not work directly on muscle groups but act on the brain to cause total body relaxation or sedative effects, rather than working on the specific body part (lower back, knees, etc.). They are most commonly prescribed for use in low back pain and arthritis. Examples of muscle relaxants used in pain management include baclofen, carisoprodol, cyclobenzaprine, diazepam, and tizanidine. Muscle relaxants relax the muscle, reducing pain and increasing patient activity level to allow for regained mobility and range of motion. In most circumstances, muscle relaxants are used for short-term pain management.

Precautions: It is important to take a complete medical history of the patient. There is a precaution with certain medical conditions such as hyperthyroidism, arrhythmia, and other heart conditions. The most common side effects include drowsiness, dry mouth, fatigue, blurred vision, and dizziness. Due to their relaxant and sedating nature, it is important not to operate heavy equipment or drive when taking these medications. There is strong evidence that these medications increase the risk for falling, especially in older adults, and a fall risk assessment should be considered.
Stepped Approach to Pain Management

The World Health Organization (WHO) developed the Pain Relief Ladder in 1986 as a conceptual model for cancer pain relief. It was developed to assist healthcare providers in using medications for pain treatment. The ladder gives a simple stepped approach to the pain management in regard to medications. It specifically uses three groups of medications: analgesics, opioids (both weak and strong), and adjuvants. According to WHO,

“If pain occurs, there should be prompt oral administration of drugs in the following order: nonopioids (aspirin and [acetaminophen]); then, as necessary, mild opioids (codeine); then strong opioids such as morphine, until the patient is free of pain. To calm fears and anxiety, additional drugs – “adjuvants” – should be used. To maintain freedom from pain, drugs should be given “by the clock”, that is every 3-6 hours, rather than “on demand.” This three-step approach of administering the right drug in the right dose at the right time is inexpensive and 80-90% effective. Surgical intervention on appropriate nerves may provide further pain relief if drugs are not wholly effective.”

(http://www.who.int/cancer/palliative/painladder/en/#)

The WHO Pain Relief Ladder has been used and studied extensively. It remains an effective approach for the treatment of all pain types and the development of treatment plans. It includes five recommendations for correct medication use. These are:

- Oral analgesic administration should be used first when possible.
- For adequate and effective pain relief, pain medications should be given at regular intervals.
- Analgesics should be prescribed according to pain intensity as evaluated by a pain intensity scale. This point is important because pain relief medications should be prescribed after clinical examination and adequate pain assessment. The prescription must be given according to the level of the patient’s pain and not according to the medical staff’s perception of the pain. If the patient complains of pain, it is important to trust this complaint.
- Dosing of pain medication should be adapted to the individual. There is no standardized dosage in the treatment of pain. Every patient will respond differently, and the correct dosage is one that allows adequate pain relief while minimizing side effects.
Analgesics should be prescribed with a constant concern for detail. Regular analgesic administration is crucial for the adequate treatment. Once the appropriate regimen is established, it is ideal to provide a written personal program to the patient. This allows the patient, family, and medical staff to have the necessary information about when and how to administer the medications.

**Interventional Techniques**

Interventional techniques are defined as “minimally-invasive procedures including: percutaneous precision needle placement, with placement of drugs in targeted areas or ablation of targeted nerves; and some surgical techniques for the diagnosis and management of chronic, persistent, or intractable pain such as laser or endoscopic diskectomy, intrathecal infusion pumps and spinal cord stimulators.”

Interventional techniques use local anesthetics, corticosteroids, and neurolytic drugs to assist with blocking sensory and pain pathways, reducing inflammation, and destroying nerve pathways to aid with pain reduction. Therapeutic interventional techniques include: facet joint interventions, epidural injections, lumbar epidural adhesiolysis, sacroiliac joint interventions, intradiscal therapies, percutaneous disc decompression, spinal cord stimulation, and implantable intrathecal drug administration systems.

**Facet Joint Interventions**

Facet joints are joints in the spine that aid stability and allow the spine to bend and twist. Facet joint injections are a type of interventional pain
management technique used to diagnose or treat back pain. It works by reducing inflammation and irritation. A steroid and anesthetic combination such as lidocaine is injected directly into the joint. The medications assist in reducing irritation (pain) and inflammation. Complications are rare for these procedures but may include bleeding, infection, and allergic reactions.⁵⁹

**Epidural Injections**

Epidural injections are similar to facet joint injections. With the epidural injection, a catheter is placed into the epidural space rather than into the facet joint. The injection results in pain reduction by blocking the transmission of pain through the nerves. Epidural injections are generally safe, but possible complications include: dizziness, headache, nausea, nerve root damage, infection, allergic reaction, and bleeding.

**Lumbar Epidural Adhesiolysis**

Epidural adhesiolysis is a catheterization procedure used to treat chronic back pain by eliminating fibrous tissue from the epidural space that can prevent direct application of drugs to nerves or other tissues. Epidural adhesiolysis is done to lyse (dissolve) the scar tissues that press on the nerves. Using fluoroscopy and dye to aid in visualizing the target space, local anesthetic and a steroid are injected into the epidural space through the catheter.⁶⁰ Possible complications for adhesiolysis are similar as for other spinal injections.

**Sacroiliac Joint Interventions**

The sacroiliac joint can be the cause of pain in the lower back, buttocks, groin, and legs. The sacroiliac joint injection is performed by a pain specialist. Under guided fluoroscopy, the physician injects a local anesthetic into the sacroiliac joint. If the pain is relieved, then a corticosteroid is also used. This results in a reduction in inflammation and thus provides pain relief for a longer period of time. Sacroiliac joint injections take approximately 30 minutes and are performed on an outpatient basis. Improvement following sacroiliac joint injections may take several days after the injection and may last for up to several months. Patients may have up to three injections every two to three weeks.

**Intradiscal Therapies**

Intradiscal electrothermal therapy (IDET) is a minimally invasive technique for the treatment of low back pain. IDET involves the percutaneous threading of a flexible catheter into the disk under fluoroscopic guidance. Patients may be given a sedative and local anesthetic prior to an IDET procedure. Pain relief after IDET is not immediate and may actually increase during the first few days. Physical therapy is typically necessary.
Percutaneous Disc Decompression

Percutaneous disc decompression is a procedure that removes a portion of intradiscal tissue. It is performed for patients who are experiencing pain or numbness that is caused by a bulging or herniated lumbar disk. This procedure is done on an outpatient basis with minimal recovery time.

Spinal Cord Stimulation

Spinal cord stimulation is an outpatient procedure for the treatment of chronic pain. The procedure is completed by implanting a small pulse generator under the skin in the abdomen, and is performed under a local anesthetic and a sedative. The leads are inserted into the spinal canal, and a pulse generator sends electrical pulses to the spinal cord, which interferes with nerves impulses that cause pain.

Implantable Intrathecal Drug Administration Systems

Implantable intrathecal drug administration systems are devices or pumps that assist with the placement of drugs directly in the spinal fluid. The pump is placed using a catheter directly into the spinal cavity through the use of a needle. A pump is connected to the catheter and placed under the skin of the abdomen. When drugs are placed directly into the spinal fluid, they are able to reach the spinal cord in higher concentrates than when taken orally or in other routes. Drugs that are commonly used are opioids, nerve blocking agents, and antispasticity drugs.

Rehabilitative Therapies

Rehabilitative therapies include physical and occupational therapies. The goal is to assist the patient to resume or regain an active lifestyle and to increase their quality of life as much as possible.

Physical therapy: Physical therapists conduct a comprehensive assessment of the patient’s pain and abilities and will design a program consisting of active and passive modalities depending on the patient’s pain and condition. Active modalities consist of strengthening, stretching, pain relief, and low-impact conditioning exercises. These exercises will help patients increase strength, flexibility, and endurance, thus improving quality of life. Passive modalities include heat/ice packs, ultrasound, deep tissue massage, and transcutaneous electrical nerve stimulation (TENS) units.

Hot and cold packs: Heat and cold therapies are used to assist with pain reduction. Heat therapy increases blood flow, decrease joint stiffness, and reduces muscle spasms and inflammation. Cold therapy causes muscle relaxation, reduction in pain and inflammation, vasoconstriction, a decrease in nerve conduction, and improvement in range of motion and function.
**Ultrasound:** Ultrasound therapy consists of the use of high frequency sound waves that penetrate deep into the muscles, tendon, and ligaments. It provides heat that increases circulation, thus helping to reduce swelling, stiffness, and pain.

**Deep tissue massage:** Deep tissue massage or lighter techniques are used to target specific muscle groups to decrease muscle tension. Massage is defined as pressing, rubbing, and other-wise manipulating muscles and soft tissue in the body by the National Center for Complementary and Alternative Medicine (NCCAM). Massage therapy assists in reducing pain, stress, and edema, and improving mobility.

**Transcutaneous electrical nerve stimulation (TENS):** A TENS unit safely stimulates muscles by providing pulsed electrical activity over the patient’s skin. The unit can provide different intensities depending on the patient’s ability to handle the stimulation. This therapy assists in reducing muscle spasms and increasing muscle relaxation.

**Whirlpool:** Whirlpool assists by using pulsating water that increases blood flow to areas of pain. It can be used with both hot and cold therapies.

Occupational therapy assists by providing techniques to help the patient to manage the physical and psychological effects of pain. Patients learn to lead active, productive, and meaningful lives. Occupational therapists assist in:

- Identifying specific activities or behaviors that aggravate pain and suggest alternatives.
- Teach methods for decreasing the frequency and duration of painful episodes.
- Implement therapy interventions that may decrease dependence on or use of pain medications.
- Facilitate the development of better function for daily activities at work and home.
- Collaborate with the patient’s health care team, such as physicians, physical therapists, psychiatrists, and psychologists, to determine the best course of treatment and intervention.
- Recommend and teach the client how to use adaptive equipment to decrease pain while performing tasks such as reaching, dressing, bathing, and performing household chores.

**Acupuncture**

The term “acupuncture” describes a family of procedures involving the stimulation of anatomical points on the body using various techniques. The acupuncture technique that has been most often studied scientifically involves penetrating the skin with thin, solid, metallic needles that
are manipulated by the hands or by electrical stimulation. Acupuncture has been studied for a variety of uses including fibromyalgia, headaches, low back pain, myofascial pain, and osteoarthritis. There is limited evidence clearly supporting its use, but relatively few side effects have been reported when performed by qualified practitioners.61

**Chiropractic**

Chiropractic is a health care discipline that emphasizes the relationship between the body’s structure—mainly the spine—and its functioning. Although practitioners may use a variety of treatment approaches, they primarily perform adjustments (manipulations) to the spine or other parts of the body with the goal of correcting alignment problems, alleviating pain, improving function, and supporting the body’s natural ability to heal itself.63 Most chiropractic research has focused on spinal manipulation. Spinal manipulation appears to benefit some people with low-back pain and may also be helpful for headaches, neck pain, upper- and lower-extremity joint conditions, and whiplash-associated disorders.63

**Music Therapy**

Music therapy is the clinical and evidence-based use of music interventions to address physical, psychological, cognitive and/or social functioning for patients of all ages and disabilities.64 Music therapy is an established health profession with credentialed professionals who have completed an approved music therapy program. The benefits of music therapy are the reduction of pain and isolation while increasing relaxation. Music therapists develop compassionate relationships with patients and families. They involve the family in the process of music selection allowing them to take an active role in the program. Music therapy can improve the quality of life for the patient and their family.65

**Laughter or Humor Therapy**

Laughter can have many positive benefits during treatment of medical conditions. These benefits include increased relaxation, decreased stress and tension, and increased mood. Laughter causes several physical and biological changes in the body, such as an increase in endorphin and neurotransmitter levels and the reduction of hormones such as cortisol and adrenaline. Laughter takes the patient’s mind off their pain for a period of time. It gives the patient another perspective. Some of the ways that patients can bring laughter into their lives are: watch funny movies and programs, read humorous books and articles, do activities that bring laughter into your lives (go to parties, movies, etc), be able to laugh at yourself, smile more often, and try to see the humor in situations.
Psychological Therapy

Psychological therapy can play an important role in the treatment of chronic pain. Patients who have chronic pain may feel depressed, angry, frustrated, despair, and hopelessness. It may have affects on their personal and professional lives. Patients may experience difficulties with sleep, eating, or with handling stress. Psychological therapy provides a safe environment for the patient to express feelings that will assist in the reduction of stress, provide coping mechanisms, and help with any issues that the patient may be experiencing with relationships both with family and at work.

Support Groups

Support groups in the patient’s community can be beneficial in the patient’s treatment plan. Merriam-Webster defines a support group as “a group of people with common experiences and concerns who provide emotional and moral support for one another.” Support groups provide peer support of a patient’s pain condition. Being able to share their own experience can provide patients with an avenue of relief, knowing that they are not alone and that there are others who understand. Patients are able to share their feelings in a safe environment with peers. Healthcare professionals (case managers, nurses, social workers, and counselors) and patients typically comprise support groups. They meet in a safe environment in weekly to monthly meetings.

There are many therapies that are available for the treatment of pain. It is best to assess the patient and decide what therapies would work best for the patient.

Patient Safety

With all the medications, treatments, and issues with the treatment of pain, patient safety always need to be a top concern. To ensure patient safety with an effective pain management treatment plan there needs to be adequate education, understanding, and collaboration between the entire treatment team (patient, family, case manager, therapists, pharmacy, physicians). To ensure patient’s safety here, are some patient safety issues that relate to pain management.

Medications

When patients have several physicians and are on multiple medications, make sure that the patient communicates to all parties an accurate list of medications they are currently taking. This will ensure no drug interactions, duplicate medication orders and medications, and medication errors.
Patient education regarding medications should include reason for use, how to use, side effects, possible adverse effects, safe storage, and how to dispose of medications properly. As one example, the fentanyl patch requires special consideration for the safety of patients, children, and even pets who are accidentally exposed. Patches lack child resistant packaging, so these medications should be store safely out of children’s reach. Further, used and discarded patches can be a source of serious injury or death. Patches should be disposed of safely.

When using medications that cause sedation, ensure that the patient understand not to participate in activities that require use of heavy machinery or equipment, or high levels of alertness, such as for driving.

When patient’s are in a hospital setting, ensure patient safety by making sure call bell is within reach, side rails are in use, patient has assistance with activities (e.g., ambulating, walking, going to the bathroom), and fall precautions are in place.

When administrating medication use, the five “R’s” of drug administration are: Right Patient, Right Route, Right Dose, Right Time, and Right Medication.

**Invasive Procedures**

When a patient undergoes an invasive procedure, educate the patient and family if the patient experiences any redness, swelling, or fever to notify the physician. These may be signs of infection.

Notify the physician of any adverse reactions to any procedure. These may include nausea, vomiting, pain, sedation, etc.

**Topical Treatments**

Patients should be taught to protect the skin when applying heat or cold for pain relief. Instruct patients on the correct use of heating pads. Heating pats should not be used over topical treatments, such as the fentanyl patch, which can increase the toxicity of the drug.

**Communication**

Communication between all parties of the pain management team is an essential part of a successful treatment plan. Without the necessary communication, misunderstanding, confusion, frustrations, and errors lead to less than ideal outcomes and overall dissatisfaction. Miscommunication can lead to pain under treatment. To make it easier for the patient and other healthcare providers, there are many tools available to increase communications within the healthcare team.
Tools to Assist with Communication Improvement

**Pain Logs:** Pain logs and journals help patients keep track of their activities and routinely document pain. Logs enable the healthcare team and patients to see patterns of pain triggers, what makes pain better or worse, how medications affect pain levels, even how the weather affects pain. Logs also include details of the pain itself—location, intensity, duration, and what offers pain relief. Having this detailed information about an individual’s pain experience will allow the team to develop a treatment plan that is individualized to the patient and more likely to be effective. There are many examples of pain logs and journals available for patients available on the internet and for use on smartphones.

Examples of pain logs (written and online)
Implementation of a Treatment Plan

The definition of implementation is “The process of executing specific case management activities and/or interventions that will lead to accomplishing the goals set forth in the case management plan.” Implementation of the treatment plan involves all participants on the pain management team along with the patient and family caregivers. It is important to include patients in the development process, because if they are not in total agreement with the treatment plan, it will be unsuccessful. If the patient is not aware, educated, or willing to do an item on the treatment plan, it must be revised. The plan should undergo revision at times when treatments, healthcare providers, or treatment goals change.

Once the treatment plan is completed, it must be communicated to all the participants of the pain management team. All the participants need to be aware of their roles and responsibilities. It is important to communicate to the other healthcare providers that the patient was a part of the development and is in agreement with the treatment plan. The purpose of the treatment plan is in assisting the pain management treatment team toward the requirements and interventions that are necessary to reach the patient’s goals.
Examples of goals could include:
- Return to the previous quality of life (if possible)
- Minimize pain
- Return to work
- Increase physical strength, endurance, stamina, and flexibility
- Reduce or the eliminate medications, if possible
- Reduce stress
- Reduce caregiver burden
- Increase patient safety with medications
- Reduce use of healthcare services
- Increase self-management
- Return to regular daily activities
- Learn stress management techniques
- Resume leisure and recreational activities

Evaluation and reassessment of the treatment plan needs to be ongoing. Interventions, treatments, medications, providers, and patient’s outcome change frequently. It is important to keep the pain management treatment plan updated and current for it to be successful.

**Patient Centered Programs for Pain Management**

Living with pain is a way of life for many individuals. It is estimated that at least 116 million American adults have and live with chronic pain. The burden of chronic pain is more than heart disease, cancer and diabetes combined. To be able to live successfully with pain, it is important to have treatment options such as Pain Management programs, clinics, or day programs, and community resources that can assist with the patient’s needs.

**Interdisciplinary Pain Management Programs**
Interdisciplinary pain programs are programs or clinics that consist of professionals from a variety of disciplines working together in an integrated way with joint goals and with ongoing communications. These programs are designed to assist the patient in being an active participant in their pain management program. They offer a complete program which includes the physical, emotional, and psychological components that start with the assessment, development of the treatment plan, to the education for all parties involved, evaluation, and follow-up. The team evaluates the patient’s goals on an ongoing basis to make sure that the patient and team are still progressing. If not, an assessment is made to see what changes need to be made, or what challenges or barriers are present. It is important that the program assess the entire patient and not just the pain or symptoms. Each patient’s programs will look different and include different team members because of each patient’s individualized needs. The team members may fluctuate as the plan and patient needs change over time.

Communication is a key component of a well-functioning team. The entire team including the patient needs to be able to communicate and work together. When the communication breaks down problems or issues can develop for the entire team. It also helps to keep the team focused on the goals. Qualities of a well functioning interdisciplinary pain team include:

- Shared beliefs and mission
- Patient- and family-centered
- Work together for common, agreed upon goals
- Develop treatment plans based on individual needs
- Mutual respect and open communication as a team
- Frequent communication between primary provider and team members
- Shared goal of improvement for each person in the program is ongoing and the responsibility of all team members
- Monitoring of progress toward goal achievement
- Feedback about progress and performance is provided to you, caregivers, significant others, and primary care providers
- Formal follow-up is scheduled

**Role of Case Management in Adherence Issues**

The case manager can play an important role for the patient in the completion of the treatment plan. When the case manager performs the initial patient assessment, they will be able to identify potential barriers that may affect the patient’s ability to follow their treatment plan. As the patient moves through their care and treatments, ongoing reassessment throughout the continuum is critical. It is easier to correct or identify a barrier as it occurs rather than after several weeks or months. If patients do not understand, have misinformation, lack of resources
(funds, transportation, etc), or are overwhelmed with the treatment plan and disease, they will have difficulty with the treatment plan. This often leads to nonadherence issues. Case managers should conduct ongoing assessment, evaluation, and documentation. This can be demonstrated by:

- Documentation of ongoing collaboration with the client, family or caregiver, providers, and other pertinent stakeholders, so that the client’s response to interventions is reviewed and incorporated into the plan of care.
- Verification that the plan of care continues to be appropriate, understood, accepted by client and support system, and documented.
- Awareness of circumstances necessitating revisions to the plan of care, such as changes in the client’s condition, lack of response to the care plan, preference changes, transitions across settings, and barriers to care and services.
- Collaboration with the client, providers, and other pertinent stakeholders regarding any revisions to the plan of care.

Factors that can affect adherence

<table>
<thead>
<tr>
<th>Category</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-centered factors</td>
<td>Age, race, marital status, gender, education&lt;br&gt;Pyschosocial factors such as beliefs, motivation, attitude&lt;br&gt;Patient-prescriber relationship&lt;br&gt;Health literacy&lt;br&gt;Patient knowledge&lt;br&gt;Physical difficulties&lt;br&gt;Tobacco smoking or alcohol intake&lt;br&gt;Forgetfulness&lt;br&gt;History of good compliance</td>
</tr>
<tr>
<td>Therapy-related factors</td>
<td>Treatment complexity&lt;br&gt;Treatment duration&lt;br&gt;Medication side effects&lt;br&gt;Degree of behavioral change required&lt;br&gt;Drug storage requirements</td>
</tr>
<tr>
<td>Healthcare system factors</td>
<td>Lack of access&lt;br&gt;Long waiting time&lt;br&gt;Difficulty in getting prescriptions filled&lt;br&gt;Unhappy clinic visits</td>
</tr>
<tr>
<td>Social and economic factors</td>
<td>Inability to take time off work&lt;br&gt;Cost and income&lt;br&gt;Social support</td>
</tr>
<tr>
<td>Disease factors</td>
<td>Disease symptoms&lt;br&gt;Disease severity</td>
</tr>
</tbody>
</table>

Reference: 71
Strategies for improving the patient’s adherence to their treatment plan may be patient education. Knowledge about the disease, required treatment, members of the healthcare team, medication regimen, and self management can lead to improved adherence of the treatment plan. Chronic pain management can be complex for the patient and their families. It is important to provide education in different formats, taking into account a patient’s level of literacy, culture, race, and behavioral components needed to when developing the educational plan. Patient education should start at the time of diagnosis. It should be provided by all members of the healthcare team. The case manager will assist in the coordination and collaboration with all the healthcare team members. This ensures that all members are providing adequate and appropriate patient education and that the patient understands the information that is being provided to them. When providing education to the patient, either verbal or written, it is important to have the patient repeat the information back to you, a technique referred to as “teach back.” Teach back is a useful educational tool, that allows the case manager to determine how much the patient understands and if the materials that are used in the patient education are appropriate for the patient.

Finally, giving the patient encouragement can be beneficial to the patient’s confidence and success in the treatment plan. If a patient is not confident in the management of their treatment plan and/or themselves, it can have a negative effect on their success. It is important that the entire pain management team gives feedback and is encouragement to the patient.

Example of Interventions to Improve Adherence:

<table>
<thead>
<tr>
<th>Integrate drug therapy into the patient’s overall treatment plan</th>
<th>• Integrated interventions should involve physicians, nurses, and pharmacists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that the patient understands the importance of medical therapy</td>
<td>• Explain the disease being treated and its potential consequences, as well as benefits from the prescribed therapy • Do not assume that the patient understands the disease and the need for treatment</td>
</tr>
<tr>
<td>Simplify treatment regimens</td>
<td>• Make sure that the patient actually needs all prescribed and over-the-counter medications being taking • Use once-daily formulations when possible • Incorporate the regimen into the patient’s lifestyle</td>
</tr>
<tr>
<td>Ensure that the patient understands how to take medications</td>
<td>• Review dosing regimens with patient and family member(s) • Provide written, highly visual, instructions • Show the patient how to use new products (e.g., patch use)</td>
</tr>
</tbody>
</table>
Help the patient remember
- Use medication calendars, pill boxes, and similar reminders

Be aware of the patient’s disabilities
- Provide instructions in a quiet environment that is free of distractions
- Make sure that written instructions are in a font that can be easily read by a visually impaired individual

Help maximize reimbursement and access to care
- Help with filing insurance claims
- Help patients identify and use all available assistance programs
- Determine whether mail or online ordering is most cost effective

Source: Reference 72

Pain and the Emergency Department

There will be times when a patient may need to visit the emergency department (ED), even with a treatment plan and well-controlled pain. Patients may experience breakthrough or flare-ups with their pain. Pain is most the common reason for seeking health care in the emergency department, with 60% having pain as their main symptom.\(^7^3\)

Educating patients about when it is appropriate to go to the ED is an important aspect of the patient’s treatment plan and education. Some acceptable reasons for an emergency room visit include:

- An adverse reaction to a medication
- Unexpected or uncontrolled pain that is different than normal pain, in character or intensity
- Uncontrolled nausea or vomiting

It can be difficult for chronic pain patients when they go to the ED. Due to the subjective nature of pain, and a lack of diagnostic tests available when a clear diagnosis is absent, the healthcare provider must rely on what the patient is telling them. Healthcare providers may have suspicions of possible drug seeking patients. This is one barrier that can impede effective management of pain in the emergency room. Oligonalagesia is defined as underuse of analgesics in the face of valid indications.\(^5^3\) There are several factors or causes for the under-treatment of pain, these include: failure to acknowledge pain, failure to assess initial pain, failure to have pain management guidelines in the ED, failure to document pain and assess treatment adequacy, and failure to meet the patient’s expectations regarding pain management.\(^5^4\)
Examples of these factors include:74

- A pre-occupation with the diagnosis and treatment of the underlying medical problem
- Concerns about masking symptoms
- Fears about contributing to or causing addiction
- Caregiver underestimation of pain experienced by patient
- Cultural differences in pain expression
- Poor communication
- Reluctance of patients to complain of pain or demand pain treatment
- A pain-free interval after acute traumatic injuries
- Inadequate training in the recognition and management of pain.

Providing adequate patient education is the first step in providing adequate and effective management of pain in the ED. It can be a frustrating experience for a chronic pain patient in the ED. To prepare them for an ED visit, there are a few education items that can be helpful. Make sure that the patient has a primary physician that is taking responsibility for the patient’s pain management. The emergency physician may need to call the patient’s physician to inform them of the reason for the ED visit. Make sure the patient has tried to call their own physician first. Patients should proceed to the ED if they have not been able to reach their physician or if the physician has given them instructions to go to the ED.

Remind patients to bring in a current list of all of their medications, documentation of their medical history, and their treatment plan to the emergency room. When patients are having an exacerbation and under significant stress, they may not be able to tell the emergency room staff what they are taking, how often, what times, who prescribed them, and an accurate medical history. It is easier to be able to hand a list or the prescription containers and their medical history to the healthcare providers. This is also helpful when patients are traveling.

Emergency healthcare providers often find it frustrating and at times difficult to work with chronic pain patients. It can be difficult to determine patients who are drug seeking or using the ED as their primary physician for pain relief from those patients who are truly in need of pain control. The ED has several characteristics that make it vulnerable for abuses. These include: anonymity of patients, difficult access to medical records, availability of multiple urgent and emergency departments in a given city, and an obligation to see and stabilize anyone complaining of pain.76 Many states now have prescription drug monitoring programs available that assist healthcare professionals in the detecting of diversion, abuse and misuse of prescription medications classified as controlled substance. Physician can check a patient’s
prescription history online. Physicians are able to see if a patient is following their physician’s treatment plan or if they are seeing numerous physicians and have been filling multiple prescriptions at multiple pharmacies.

Emergency rooms have now developed guidelines and protocols in the treatment of chronic pain. Beginning in 2001, The Joint Commission (JCAHO at the time) put into effect standards for the assessment and treatment of pain, not only in the emergency room, but also in surgery and other specialty areas. These standards guarantee patients rights for effective pain management and require health care providers to be educated in pain assessment, treatment, management, and patient education in the treatment of their pain. Pain is viewed as a condition that coexists with diseases and injuries, thus pain management is acknowledged as a patient right and an organizational responsibility. These standards include:

- Recognize the right of patients to appropriate assessment and management of pain
- Screen for the existence and assess the nature and intensity of pain in all patients
- Record the results of the assessment in a way that facilitates regular reassessment and follow-up
- Determine and ensure staff competency in pain assessment and management, and address pain assessment and management in the orientation of all new staff
- Establish policies and procedures that support the appropriate prescription or ordering of effective pain medications
- Educate patients and their families about effective pain management
- Address patient needs for symptom management in the discharge planning process
- Maintain a pain control performance improvement plan
Sample Emergency Room Protocol for Chronic Pain Patients

Visit One:
- Identify the chronic pain patient through assessment, history, interview, and case management notes
- Determine biological mechanisms of pain and treat as indicated.
- Obtain a comprehensive history and assessment of pain
- Review prescription drug monitoring program
- Consult case management
- Provide rescue medication and/or treat acute pain when indicated
- Consider up to 2 narcotic pain tablets or up to Morphine 6 mg IM (if the patient is vomiting)
- Morphine is the gold standard and should be used first
- Assess current care with patient (case management or nursing)
- Educate patient on chronic pain (CP) guidelines. (physician)
- Provide patient with CP packet to include: Referral information, resources, treatment plan Document with instructions for their PCP or Pain Specialist (case management)
- Assist with referral appointment when indicated/able. (case management)
- Provide 15 Narcotic tablets as prescribed by the ED Physician for outpatient care. (physician)

Visit Two:
- Provide rescue medication and/or treat acute pain when indicated (physician)
- Consider up to 2 narcotic pain tablets or up to Morphine 6 mg IM (if the patient is vomiting)
- Morphine is the gold standard and should be used first
- Discuss boundaries for patient, and visit 3 plan of care, and document discussion (physician)
- Meet with patient to assess current plan of care, provide CP Packet, and assist with referrals for follow up as needed (case management)
- Provide 15 narcotic tablets as prescribed by the ED Physician for outpatient care (physician)

Visit Three:
- Assess patient condition and provide further care with or without narcotic intervention (physician)
- Provide rescue medication and/or treat acute pain. Consider up to 2 narcotic pain tablets or up to Morphine 6 mg IV/IM (if the patient is vomiting)
- Review boundaries set and documented during previous ED visit (physician)
- Contact patient’s pain management physician, as indicated (physician)
- Discusses plan of care with patient and provide chronic pain packet (case management)
- Assist with referrals (case management)

*No Outpatient Prescriptions given

Source: Banner Good Samaritan Medical Center, Phoenix AZ
Key Transitions of Care Issues

“Care transitions is a team sport, and yet all too often we don’t know who our teammates are, or how they can help.” ~ Eric A. Coleman, MD, MPH

Successful transitions of care are essential components of effective pain management for the patient and family. Transitions of care can occur at many different levels, including: transitions between healthcare providers, between facilities, and between difference health states (e.g., controlled pain to pain exacerbation, curative to palliative). Transitional care is defined as “a set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location.”25 Transitional care is based on a comprehensive plan of care and the availability of health care practitioners who are well-trained in chronic care and have current information about the patient’s goals, preferences, and clinical status. It includes logistical arrangements, education of the patient and family, and coordination among the health professionals involved in the transition. Transitional care, which encompasses both the sending and the receiving aspects of the transfer, is essential for persons with complex care needs.25

Transitions of care is often very complex and can cause confusion among all participants. One in five hospitalized Medicare beneficiaries is readmitted within 30 days of discharge, nearly half of whom return without having seen a physician or other health care practitioner.78 The primary reason for hospital readmissions is due to poorly managed transitions of care.79 Components of successful transitions of care include:

- Education of the patient, family, and participating healthcare providers
- Open and clear communication between all members of the transition of care team
- Collaboration of all team members
- Scheduling of follow-up appointments with primary care physician, pain specialist, and any required therapy.
- Medications list is complete listing all medications, dosage, possible side effects, and how to take the medications. Patient is knowledgeable about medications and able to self manage.
- Transportation issues.
- Warning signs, patient and family understands any warning signs that the patient’s condition or disease is worsening, and who to call for issues.
Pain Notes

There are many models of evidence based models regarding transitions of care. A thorough review document can be found at http://www.agingkingcounty.org/accountable-care/docs/CareTransitionsModels.pdf

A key role for case managers is ensuring that there is an appropriate and safe transition of care between settings. Poor care transitions can compromise patient safety and quality of care. Inconsistencies can cause delays in care, missed appointments and follow-up care, wrong treatments, and medication errors. This can lead to an increase in costs for the patients, providers, and payers. It leads to a decrease in patient and provider satisfaction.

Many helpful resources for improving transitions of care are available through the National Transitions of Care Coalition at www.NTOCC.org

**Identify Key Discharge Issues for Pain Management**

Discharge planning begins as the patient is being admitted in the hospital. During the initial assessment, identifying the barriers and possible complications for the patient and family is essential in the development of the discharge plan and for any transitions of care. The lack of knowledge and motivation of the discharge regimen is likely to decrease adherence to the discharge regimen and increase the likelihood of readmission. Discharge planning will involve a multitude of people in the process. The collaboration of the physician, nurse, social worker, therapist, family, and the case manager is essential for a successful and well-developed discharge plan. There are essential components to the discharge plan; these include patient/family education, medications, community resources, homecare needs, follow-up care, financial needs, discharge destination, and transition of care requirements.

Discharge planning is the responsibility of everyone involved with the patient and family. The goals of discharge planning are to provide the most effective, efficient, and safe transition of care for the patient and family and the healthcare providers.

**Patient/Family Education**

Patients who understand their after-hospital care instructions, including how to take their medicines and when to make follow-up appointments, are 30 percent less likely to be readmitted or visit the emergency department than patients who lack this information. They are also be more motivated, involved, and will remain more adherent to their pain treatment plan. Patient education must be individualized. There is no one best way to provide education as different patients have different learning styles and assimilate information differently. Providing the patient with different educational media such as verbal, written, electronic, and video formats, and most importantly, personal interac-
tion with all of their healthcare providers, can reach more patients. Having materials for the patient and family to take with them will provide reinforcement and reminders of patient education they received in the hospital. It is also helpful to provide the patient and family a discharge folder. This folder is given to the patient and or family during admission. As the patient receives educational materials they will have a folder to put everything into. It decreases the chance that they will lose or misplace important educational materials.

When providing patient education, remember to speak at the educational level of the patient. Do not use medical jargon, technical language, or acronyms, as they can cause confusion. Create a trusting environment in which patients feel comfortable to ask questions. Assess the patient’s level of understanding by having them repeat back what they have learned. This method, called teach-back, is a way that will assist in confirming that the patient has understood any information that has been given to them. It allows them to repeat back in their own words, and confirms that the method in which you are using is effective for the patient. Among heart failure patients readmitted for heart failure within 30 days between July and September 2009, teach-back patients were readmitted 25 percent less often than those who did not receive teach-back evaluation.19 Talk slowly when teaching. If the patient speaks another language, it is important to have an interpreter that can assist with teaching. Only introduce a few items at a time. Providing too much information at one time can cause information overload for patients. Studies have shown that 40-80 percent of the medical information patients receive is forgotten immediately.19

Common questions that might be asked by patients or families and need to be addressed prior to discharge include:

- What is wrong with me?
- How will this interfere with me working or doing other activities?
- Will this affect me for a short or long period of time?
- How will this affect my family?
- Will I need to make changes in my current lifestyle, such as activity, diet, or medications?
- How is this going to affect me financially?
### Teach Back

Ask all patients to verbally “teach back” information about the treatments, services, and procedures for which they have been taught.

**Who** Physicians, nurses, interpreters, and other professionals who communicate with patients about their healthcare decisions.

**What** Patients should be able to explain, in everyday words:
- the diagnosis/health problem for which they need care
- the name/type/general nature of the treatment, service, or procedure, including what receiving it will entail
- the risks, benefits, and alternatives to the treatment, service, or procedure

**When** Ask for “teach back” early in the care process (i.e., well before the day of surgery, whenever possible), so that patients have time to think about their options and make informed choices.

**Why** Many patients have difficulty understanding basic health information, despite signing consent forms. Asking for “teach back” helps you gauge how well patients understand and whether informed consent was really given.

**How** Patients should be able to show they understand and not just be asked to pass a “quiz” or to repeat what you said.

Use phrases such as:
- “I want to be sure we have the same understanding....”
- “It’s my job to explain things clearly. To make sure I did this....”
- “This is important for your safety....”
- “Can you tell me, in your own words...?”

**Common Misperceptions by Providers**

Asking patients “do you understand?” or “do you have any questions?” will not tell you whether they really understand.

### Medication

Many patients have their medication regimen changed while they are hospitalized. It is necessary to educate the patient and family on how the new medications will be incorporated into their current regimen. Medications should be listed by name, dosage, times, how it needs to be administered, and any special instructions for taking the medication (i.e. with food, avoid certain foods, etc). For pain medications, education of why the medication is ordered, for what type of pain, side effects, possible interactions with other medications, and administration schedule is important. For example, instruct patients that routine medications that are ordered should be taken for on a regular and consistent basis for best effectiveness. It is also important to teach the patient and family when to call the physician, such as for a medication reaction or ineffective relief of pain.
Common questions that might be asked by patients or families and need to be addressed prior to discharge include:

- What are the new medications that I am taking?
- Am I supposed to continue the medications that I was taking prior to being admitted?
- Are any of my new medications replacing some of my other medications?
- How do I take the new medications? Do I need to take my new medication with or without food? Do I need to avoid certain foods?
- Can I drink alcohol with these new medications?
- Can I drive after taking these medications?
- What are the side effects that I need to watch for?
- If I have an adverse reaction, should I call my physician?
- If the medication does not relieve my pain, what do I do?
- If I do not like the medication, can I just stop the medication?

**Community resources**

Resources are often available in the community to assist people to be self-reliant. Community resources may include housing, home health care, equipment, medications, transportation, caregivers, and food. Common questions that might be asked by patients or families and need to be addressed prior to discharge:

- Are there any community resources that can help me with my medications or transportation?
- What resources are available in the community for support groups?

**Homecare needs**

Homecare needs are individualized depending on the patient’s assessment, diagnosis, and illness severity. Homecare needs may require services from home health, hospice, companion services, house cleaning, and durable medical equipment (DME).

Common questions that might be asked by patients or families and need to be addressed prior to discharge:

- Will I need special equipment at home?
- Do I need a special diet?
- Can I return back to my normal activities at home? If not, when can I?
Follow-up care

Patients will need to know how to continue their healthcare once they return home. It is important to know when and with whom to follow up. It is important for patients to know if their condition is worsening. If referrals have been made for home health, a pain clinic, or a day program, it is important that the patient knows who to contact for assistance. Patients may also have several healthcare providers, such as a primary care physician, pain specialist, case manager, physical therapist, and so on. It is important for the patient to know who to call if they are having problems.

Common questions that might be asked by patients or families and need to be addressed prior to discharge:

- When do I need to follow-up with the physician?
- Are there any special tests that I need to schedule?
- Is there a way for me to get help with transportation, if needed?
- If I have a problem at home, who do I call?

Financial needs

With the high cost of healthcare and limited resources many patients and families may have financial needs. With chronic pain, many patients may have difficulties with medical costs, prescription costs, or the ability for specialized treatments. There are many financial resources available for medication cost assistance, such as prescriptions programs.

Common questions that might be asked by patients or families and need to be addressed prior to discharge:

- What is the cost of my medications or treatments?
- Will my insurance cover the cost for my medications or treatments?
- What are my co-pays going to be?
- If I cannot afford my medications, are there programs that can help me?
- If I need special equipment, will my insurance cover it?
- Are there any community resources that can assist me or my family?
**Evaluation and Outcomes**

Whether pain is acute or chronic, individuals have hope that the future will be pain free or have good pain control and that they will have the ability to return to their life before pain. Good pain management plans should include periodic evaluation of how well the patient is achieving individual management goals. Optimal pain control starts when an individual begins to manage their own care. Individuals must take self responsibility with pain management for it to be effective.

The most important clinical markers that indicate optimal control are reported by the patient. They include:

- Satisfaction with the level of pain control achieved
- Ability to participate in regular activities and resume or maintain employment and/or hobbies
- No complaints of pain-related sleep problems or poor energy

Findings from pain assessments should be compared over time to determine if changes in the treatment plan are needed. If patients have not achieved all of their goals outlined in the treatment plan, investigate barriers to accomplishing those goals. Adherence intention can change over time, especially if goal attainment is taking longer than anticipated. Poor progress can cause or worsen depression, poor energy, and sleep problems.

If the plan is not progressing, review all treatment interventions and determine which requires a change. Over time, patients and providers gain valuable knowledge about an individual’s pain, which can help when making adjustment to treatment.

Case managers should be aware of the effect pain relapse or fear of pain relapse can be a barrier to adhering to or adjusting the treatment plan. Pain relapses often cause fear that the pain will never be treated effectively, which may result in resistance to changes in the treatment plan. Further, fear of pain relapse may paralyze some patients such that changes in treatment plans or attempts with new products or treatments are not readily accepted.

Unplanned events such as hospitalization, unscheduled visits to providers, depression symptoms, poor sleep and missed work are some of the signs of a lapse in pain management or poor pain management. The role of the case manager is to communicate with clients and providers to reassess, educate, and develop a care or treatment plan. Most importantly the case manager is to promote self-efficacy and engage the patient in their treatment protocol.
APPENDIX 1:
References


80. Sokol MC, McGuigan KA, Verbrugge RR, Epstein RS. Impact of medication adherence on...


APPENDIX 2: Useful Resources

**Adult Meducation: Improving Medication Adherence in Older Adults**
The American Society on Aging and the American Society of Consultant Pharmacists Foundation collaborated on a web-based program designed to encourage their members to identify, resolve, and prevent medication nonadherence in older adults.
www.adultmeducation.com

**American Academy of Pain Medicine**
The AAPM is a medical specialty society representing physicians practicing in the field of pain medicine and is involved in education, training, advocacy, and research in the specialty of pain medicine.
www.painmed.org
4700 W. Lake Avenue
Glenview, IL 60025
847-375-4731

**American Chronic Pain Association**
The ACPA has offered peer support and education in pain management skills to people with pain, family and friends, and health care professionals.
www.theacpa.org
P.O. Box 850
Rocklin, CA 95677
800-533-3231

**American Pain Society**
The APS is a national chapter of International Association for the Study of Pina that brings together scientists, clinicians, health care providers, and policy makers to stimulate and support the study of pain and to translate the knowledge into improved pain relief worldwide.
www.ampainsoc.org
4700 W. Lake Avenue
Glenview, IL 60025
847-374-4715

**American Society of Pain Educators**
As the only organization focusing on pain educator training, the Society teaches healthcare professionals to serve as resources to educate their clinical peers, as well as patients, families, and caregivers, on ways to relieve pain by the safest means possible.
www.paineducators.org
6 Erie Street
Montclair, NJ 07042
973-233-5570

**American Society for Pain Management Nursing**
The American Society for Pain Management Nursing’s mission is to advance and promote optimal nursing care for people affected by pain by promoting best nursing practice.
www.aspmn.org
18000 W. 105th Street
Olathe, KS, 66061-7543
American Society of Regional Anesthesia and Pain Medicine
ASRA is an organization that addresses the clinical and professional educational needs of physicians and scientists; promote excellence in patient care using regional anesthesia and pain medicine; and investigates the scientific basis of the specialty.
www.asra.com
120 West Center Court
Schaumburg, IL 60195
847-934-7246

Institute for Clinical Systems Improvement
ICSI is a non-profit organization that brings together diverse groups to transform the health care system so that it delivers patient-centered and value-driven care.
www.icsi.org
8009 34th Avenue South
Suite 1200
Bloomington, MN 55425
925-814-7060

International Association for the Study of Pain
IASP brings together scientists, clinicians, health care providers, and policy makers to stimulate and support the study of pain and to translate that knowledge into improved pain relief worldwide.
www.iasp-pain.org
111Queen Anne Ave N
Suite 501
Seattle, WA 98109-4955
206-283-0311

National Institutes of Health Pain Consortium
The NIH Pain Consortium was established to enhance pain research and promote collaboration among researchers across the many NIH Institutes and Centers that have programs and activities addressing pain.
http://painconsortium.nih.gov/

National Institute of Neurological Disorders and Stroke
The mission of NINDS is to reduce the burden of neurological disease. NINDS conducts, fosters, coordinates, and guides research on neurological disorders and collects and disseminates research information related to neurological disorders.
NIH Neurological Institute
P.O. Box 5801
Bethesda, MD 20824

National Transitions of Care Coalition
NTOCC is an organization dedicated to filling the gaps that occur when patients leave one care setting and move to another care setting. They have many tools available for both patients and practitioners.
www.ntocc.org
750 First Street, NE Suite 700
Washington, DC 20002
**Partners Against Pain**
Partners Against Pain has set out to teach people about pain, help people who are caring for those with pain, help people who are dealing with pain, and advocate for all those who have pain.

[www.partnersagainstpain.com](http://www.partnersagainstpain.com)

Purdue Pharma L.P.
One Stamford Forum
201 Tresser Boulevard
Stamford, CT 06901-3431
888-726-7536

**The Mayday Pain Program**
They have set out to improve pain assessment and care of patients on a national and international scope.

[www.painandhealth.org](http://www.painandhealth.org)

**Society for Pain Practice Management**
The SPPM is dedicated to education specialists in the area of pain treatment and practice management and to promote the health and wellness of mankind by advancing the art and science of the specialty of pain management.

[www.sppm.org](http://www.sppm.org)
P.O. Box 7228
Overland Park, Kansas 66211
913-327-5999

**United States Department of Veterans Affairs**
The VA is committed to offering support to the veterans of the United States.

[http://www.healthquality.va.gov/Chronic_Opioid_Therapy_COT.asp](http://www.healthquality.va.gov/Chronic_Opioid_Therapy_COT.asp)
APPENDIX 3: Glossary of Terms

**Ablative surgery**- surgical procedures performed on peripheral nerves, the spinal cord, the brain, or brain stem that relieve pain by permanent disruption of nerve pathways.

**Acupuncture**- a procedure in which specific body areas associated with peripheral nerves are pierced with fine needles to produce anesthesia, relieve pain, and promote therapy.

**Acute pain**- pain that has a sudden onset and commonly declines over a short time (i.e., days, hours, minutes).

**Addiction**- a primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations.

**Adjuvant analgesic medication**- a medication that is not a primary analgesic but rather a medication that research has shown to have independent or additive analgesic properties (e.g., antidepressant, anticonvulsant).

**Allodynia**- a condition in which a nonpainful stimulus is felt as painful in spite of normal-appearing tissue.

**Arthritis**- a disorder of a joint where two bones meet, which may be manifested on physical examination by swelling, redness, warmth, or tenderness in the joint or may be demonstrated on radiograph by loss of the joint space, formation of spurs, erosions, or cysts in the bone.

**Arthrocentesis**- a procedure in which a needle is inserted into the joint to either drain fluid for diagnostic purposes or to inject medications or other materials into the joint.

**Arthroplasty**- implantation of prosthesis in a joint.

**Arthroscopy**- the insertion of an endoscope within a joint. Surgical procedures are then percutaneously performed, guided by visualization through the arthroscope.

**Biofeedback**- a process in which a person learns to influence reliably physiologic responses of two kinds: those that are not ordinarily under voluntary control and those that ordinarily are easily regulated but for which regulation has broken down because of trauma or disease.

**Biologic agents**- a new category of therapy in rheumatic diseases involving the synthesis of substances that interfere with the basic biologic mechanisms of the disease process.

**Breakthrough pain**- intermittent exacerbations of pain that can occur spontaneously or in relation to specific activity; pain that increases above the level of pain addressed by the ongoing analgesics; includes incident pain and end-of-dose failure.

**Catastrophize**- the tendency to ruminate upon, focus on, and worry about pain and to evaluate one’s ability to control pain in an overly negative fashion.

**Chronic pain (malignant)**- chronic malignant pain is due to: cancer or its therapy; pain associated with other progressive, potentially life-ending disease such as AIDS, end-stage organ system failure, heart failure; or pain associated with degenerative neurological disease such as multiple sclerosis or amyotrophic lateral sclerosis (Lou Gherig’s disease).

**Chronic pain (nonmalignant)**- generally considered to be pain that lasts more than 6 months, is ongoing, is due to non-life-threatening causes, has not responded to current available treatment methods, and may continue for the remainder of the person’s life.

**Combination therapy**- method of treating disease through the simultaneous use of a variety of medications to eliminate or control the biochemical cause of the disease.
Conscious or moderate sedation- light sedation during which the patient retains airway reflexes and responses to verbal stimuli.

Counterirritant- an agent that is applied to produce irritation at one site so as to decrease perception of pain at the same or a distant site.

Counterstimulant- application of a moderate to intense sensory stimulation, such as with cold, heat, rubbing, pressure, or electrical current, so as to decrease perception of pain at the same or a distant site.

Cyclooxygenase-1 (COX-1)- an enzyme that is normally present in the body for physiologic reasons, including the formation of prostaglandins, which are involved in the inflammatory response.

Cyclooxygenase-2 (COX-2)- the inducible form of cyclooxygenase that arises with joint inflammation and is involved in the diseases of the joints.

Dysesthesia- an unpleasant abnormal sensation, whether spontaneous or evoked; impairment of sensation, especially touch.

Dysphoria- an emotional state marked by anxiety, depression, and restlessness.

Epidural- situated within the spinal canal, on or outside the dura mater (the tough membrane surrounding the spinal cord); synonyms are extradural and peridural.

Equianalgesic- having equal analgesic effect; morphine sulfate 10 mg parenterally is generally used for opioid analgesic comparisons.

Fibromyalgia syndrome (FMS)- the most common chronic, widespread pain syndrome characterized by a set of well-defined symptoms. Etiologic or pathologic findings are not established.

Hyaluronic acid- a substance in the synovial fluid that is responsible for the viscosity of joint fluid. It is important in the lubrication process and in the protection of the joint and allows for smoother motion of the joint.

Hyperalgesia- increased sensitivity to pain or enhanced intensity of pain sensation.

Hyperpathia- a painful syndrome characterized by increased reaction to a stimulus, especially a repetitive stimulus, as well as an increased threshold.

Hypnosis- a state of heightened awareness and focused concentration that can be used to manipulate the perception of pain.

Iatrogenic- induced inadvertently by medical treatment or procedures.

Incident pain- a type of breakthrough pain that is related to a specific activity, such as eating, defecating, socializing, or walking; also referred to as movement-related pain.

Inducible- able to initiate or increase the production of an enzyme or other protein at the level of genetic transcription; produced in the joint by inflammation.

Intrathecal- the area that lies between the arachnoid membrane and pia mater and contains the cerebral spinal fluid (CSF).

Juvenile chronic arthritis- a group of systemic inflammatory disorders affecting children younger than 16 years of age. Three major subsets are described: (a) pauciarticular onset—four joints or less involved, (b) polyarticular onset—more than four joints involved and (c) systemic onset—with fever, rash, and arthritis.

Loading dose- the initial dose administered for a pain episode.

Local nerve block- infiltration of a local anesthetic around a peripheral nerve so as to produce anesthesia in the area supplied by the nerve.

Maintenance dose- the medication dosage required to produce a given level of analgesia.
Mixed opioid agonist-antagonist- a compound that has an affinity for two or more types of opioid receptors and blocks opioid effects on one receptor type while producing opioid effects on a second receptor type.

Movement-related pain- a type of breakthrough pain that is related to a specific activity, such as eating, defecating, socializing, or walking; also referred to as incident pain.

MU (μ) agonist- type of opioid; relieves pain by binding to the μ receptor sites in the nervous system.

Music therapy- a form of distraction that uses music as an aid to relaxation.

Myofascial pain- a large group of muscle disorders characterized by the presence of hyper-sensitive points, called trigger points, within one or more muscles and/or the investing connective tissue, together with a syndrome of pain, muscle spasm, tenderness, stiffness, limitation of motion, weakness, and occasionally autonomic dysfunction.

Neurolytic block- the injection of a chemical agent to cause destruction and consequent prolonged interruption of peripheral somatic or sympathetic nerves, or in some cases, the neuraxis.

Neuropathic pain- pain that results from a disturbance of function or pathologic change in a nerve; in one nerve, mononeuropathy; in several nerves, mononeuropathy multiplex; if diffuse and bilateral, polyneuropathy.

Neuropathy- a disease or abnormality of the nervous system, especially one affecting the cranial or spinal nerves.

Nociception- the process of pain transmission, usually relating to a receptive neuron for painful sensations.

Nociceptive pain- pain resulting from actual or potential tissue damage; pain resulting from the ongoing activation of primary afferent neurons by noxious stimuli.

Nonsteroidal anti-inflammatory drug (NSAID)- aspirin-like medication that reduces inflammation (and hence pain) arising from injured tissue.

Opiate receptor- opiate-binding sites found throughout primary afferents and the neuraxis.

Opioid- a morphine-like medication that produces pain relief. The term opioid is preferred to the term narcotic; it refers to natural, semisynthetic, and synthetic medications that relieve pain by binding to opioid receptors in the nervous system.

Opioid agonist- any morphine-like compound that produces bodily effects including pain relief, sedation, constipation, and respiratory depression.

Opioid agonist-antagonist- a medication that acts as an agonist at one type of opioid receptor and as an antagonist at another receptor.

Opioid partial agonist- a compound that has an affinity for and stimulates physiological activity at the same cell receptors as opioid agonists but that produces only a partial (i.e., submaximal) bodily response.

Osteoarthritis (OA)- a disease of the cartilage that progressively produces a local tissue response, mechanical change, and failure of function.

Pain- an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. (International Association for the Study of Pain, 1994)

Pain affect- the affective unpleasantness and emotional arousal caused by pain.

Pain threshold level- the level of intensity at which pain becomes appreciable or perceptible.
**Paradoxical reaction** - a response (e.g., to a medication) that is the opposite of the usual response, such as agitation produced in an individual patient by a drug normally considered to be a sedative.

**Paraneoplasia** - hormonal, neurological, hematological, and other chemical and biochemical disturbances associated with malignant neoplasms but not directly related to invasion by the primary tumor or its metastases.

**Paraparesis** - partial paralysis of the lower extremities.

**Paresthesia** - a skin sensation, such as burning, prickling, itching, or tingling, with no apparent physical cause.

**Patient-controlled analgesia (PCA)** - analgesics self-administered by a patient who has received instruction in doing so; usually refers to self-dosing with an intravenous, subcutaneous epidural opioid (e.g., morphine) administered by means of a programmable pump.

**Peridural** - situated within the spinal canal, on or outside the dura mater (the tough membrane surrounding the spinal cord); synonyms are epidural and extradural.

**Perineural** - surrounding a nerve.

**Persistent pain** - constant pain that lasts for long periods.

**Physical dependence** - a state of adaptation that is manifested by a medication class-specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the medication, and/or administration of an antagonist (APS, AAPM, & ASAM, 2001).

**Physical modalities** - physical methods such as heat, cold, massage, or exercise to relieve pain.

**Plexopathy (brachial)** - decreased movement or sensation in the arm and shoulder, caused by impaired function in the brachial plexus, a nerve area that affects the arm.

**Polyarthritis** - refers to inflammation in multiple joints.

**Pseudoaddiction** - pattern of medication-seeking behavior of patients receiving inadequate pain management that can be mistaken for addiction.

**Psychosocial intervention** - a therapeutic intervention that uses cognitive, cognitive-behavioral, behavioral, and supportive interventions to relieve pain.

**Refractory pain** - pain that is resistant to ordinary treatment.

**Relaxation methods** - a variety of techniques to help decrease anxiety and muscle tension; these may include imagery, distraction, and progressive muscle relaxation.

**Rescue dose** - a bolus or extra dose of medication given as needed (prn) to relieve pain that breaks through despite a regimen of medication that is given at regularly scheduled intervals.

**Rheumatoid arthritis (RA)** - a chronic inflammatory condition in which the body’s immune system attacks cartilage, bone, and sometimes internal organs, usually causing joint disease. Joints become inflamed which leads to swelling, pain, stiffness, and the possible loss of function.

**Substance P** - a short chain polypeptide that functions as a neurotransmitter, especially in the transmission of pain impulses from peripheral receptors to the central nervous system.

**Synovitis** - inflammation of the synovial lining tissue of the joint as is seen in inflammatory arthritis.

**Tactile strategies** - strategies that provide comfort through the sense of touch, such as stroking or massage.

**Tapering** - a process in which a medication is gradually withdrawn from a patient who is physically dependent on the medication.
**Titration**—the incremental adjustment of a medication in subsequent doses until a desired effect is achieved.

**Titration to relief**—a gradual increase in pain medication until the highest pain relief is obtained, making the pain as tolerable as possible while minimizing short- and long-term negative effects.

**Tolerance**—a state of adaptation in which exposure to a medication induces changes that result in a diminution of one or more of the medication’s effects over time (APS, AAPM, & ASAM, 2001)

**Transcutaneous electrical nerve stimulation (TENS)**—a method of producing electroanalgesia through electrodes applied to the skin.

**Tumor necrosis factor (TNF)**—important immune mediator that may be involved in the mechanisms contributing to disease in rheumatoid arthritis.

**Viscosupplementation**—a procedure currently approved for use in osteoarthritis in which viscous fluid is injected into a joint (currently the knee joint), which results in decreased pain and increased mobility.