

The Management of Chronic Pain in Older Persons

AGS Panel on Chronic Pain in Older Persons

BACKGROUND AND SIGNIFICANCE

Pain is an unpleasant sensory and emotional experience.¹ It is recognized as a complex phenomenon derived from sensory stimuli and modified by individual memory, expectations, and emotions.² Unfortunately, there are no objective biological markers of pain. Therefore, the most accurate evidence of pain and its intensity is based on the patient's description and self-report.³

A concise definition of chronic pain remains difficult. For some conditions, chronic pain is defined as pain that exists beyond an expected time frame for healing. For other conditions, it is well recognized that healing may never occur. In many cases, chronic pain is understood as persistent pain that is not amenable to routine pain control methods.¹ Because there are many differences in what may be regarded as chronic pain, the definition remains flexible and related to specific diagnoses or cases. (For a more detailed description, see the classification of chronic pain of the International Association for Study of Pain¹).

Chronic pain is common in older people.^{4,5} A recent Louis Harris telephone survey found that one in five older Americans (18%) are taking analgesic medications regularly (several times a week or more), and 63% of those had taken prescription pain medications for more than 6 months.⁶ Older people are more likely to suffer from arthritis, bone and joint disorders, back problems, and many other chronic conditions. This survey also found that 45% of patients who take pain medications regularly had seen three or more doctors for pain in the past 5 years, 79% of whom were primary care physicians. Previous studies have suggested that 25 to 50% of community-dwelling older people suffer important pain problems.⁷⁻¹² Pain is also common in nursing homes.¹³ It has been estimated that 45 to 80% of nursing home residents have substantial pain that is undertreated.¹⁴⁻¹⁶ Studies of both the ambulatory and nursing home populations have found that older people often have several sources of pain. This finding is not surprising inasmuch as older patients often have multiple medical problems. A high prevalence of dementia, sensory impairments, and disability in this population make assessment and management difficult.

The consequences of chronic pain among older people are numerous. Depression,^{11,15,17,18} decreased socialization,^{11,15} sleep disturbance,^{11,14} impaired ambulation,^{11,14,19}

and increased healthcare utilization and costs¹⁹ have all been associated with the presence of pain in older people. Although less thoroughly described, many other conditions are potentially worsened by the presence of pain, including gait disturbances, slow rehabilitation, and adverse effects from multiple drug prescriptions.

Psychosocial factors are known to be associated with pain in older patients. Keefe et al. (1987) have shown that older adults with good coping strategies have significantly lower pain and psychological disability.²⁰ Depression is often associated with pain in the older patient. Parmelee et al. (1991) showed a statistically significant correlation between pain and depression among nursing home residents even after controlling for self-reported functional status and physical health.¹⁸ Older patients with cancer pain rely heavily on family and informal caregivers.²¹ For these patients and caregivers, pain can be a metaphor for death, resulting in substantial suffering.²²

Classifying chronic pain in pathophysiologic terms may help the clinician select therapy and determine prognosis.²³ Treatment strategies targeted specifically to underlying pain mechanisms are likely to be most effective. Although it is beyond the scope of this guideline to describe the pathophysiology of individual pain syndromes in detail, most syndromes can be classified into four basic categories. This classification system, with examples, is shown in Table 1. Nociceptive pain may be visceral or somatic and is most often derived from stimulation of pain receptors.²⁴ Nociceptive pain may arise from tissue inflammation, mechanical deformation, ongoing injury, or destruction. Examples include inflammatory or traumatic arthritis, myofascial pain syndromes, and ischemic disorders. Nociceptive mechanisms usually respond well to traditional approaches to pain management, including common analgesic medications and non-pharmacologic strategies. Neuropathic pain results from a pathophysiologic process that involves the peripheral or central nervous system.²⁵ Examples include trigeminal neuralgia, post-herpetic neuralgia, poststroke central or thalamic pain, and postamputation phantom limb pain. These pain syndromes do not respond as predictably as nociceptive pain problems to conventional analgesic therapy. However, they have been noted to respond to unconventional analgesic drugs such as tricyclic antidepressants, anticonvulsants, or anti-arrhythmic drugs.²⁶ Mixed or unspecified pain is often regarded as having mixed or unknown mechanisms. Examples include recurrent headaches and some vasculitic pain syndromes. Treatment of these syndromes is more unpredictable and may require various trials of different or combined approaches. Finally, when psychological factors are judged to have a major role in the onset, severity, exacerbation, or

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Table 1. Pathophysiologic Classification of Chronic Pain

Nociceptive pain	
Arthropathies (e.g., rheumatoid arthritis, Osteoarthritis, gout, posttraumatic arthropathies, mechanical neck and back syndromes)	
Myalgia (e.g., myofascial pain syndromes)	
Skin and mucosal ulcerations	
Nonarticular inflammatory disorders (e.g., polymyalgia rheumatica)	
Ischemic disorders	
Visceral pain (pain of internal organs and viscera)	
Neuropathic pain	
Postherpetic neuralgia	
Trigeminal neuralgia	
Painful diabetic polyneuropathy	
Post-stroke pain (central pain)	
Postamputation pain	
Myelopathic or radiculopathic pain (e.g., spinal stenosis, arachnoiditis, root sleeve fibrosis)	
Atypical facial pain	
Causalgia-like syndromes (complex regional pain syndromes)	
Mixed or undetermined pathophysiology	
Chronic recurrent headaches (e.g., tension headaches, migraine headaches, mixed headaches)	
Vasculopathic pain syndromes (e.g., painful vasculitis)	
Psychologically based pain syndromes	
Somatization disorders	
Hysterical reactions	

persistence of pain, this is described as psychogenic pain. Examples may include conversion reactions and somatoform disorders.²⁷ Patients with these disorders may benefit from specific psychiatric treatments, but traditional medical interventions for analgesia are not indicated.

Age-associated changes in pain perception have been a topic of interest ever since older adults have been observed to present with unusually painless manifestations of common illness.²⁸⁻³¹ Neuroanatomic and neurochemical findings have shown that the perception of pain and its modulation in the central nervous system are extremely elaborate and complex.³²⁻³⁴ Unfortunately, little is known about the effect of age alone on most of these complex neural functions. Although there may be altered transmission along A-delta and C nerve fibers associated with aging, it is not clear how this might affect an individual's experience of pain.^{4,35} Experimental studies of pain sensitivity and pain tolerance across all ages (young and old persons) have had mixed results. In the final analysis, age-related changes in pain perception are probably not clinically significant.³⁶

The most common strategy for pain management is the use of analgesic drugs. Unfortunately, older patients have commonly been systematically excluded from clinical trials of such drugs. In a 1993 report of 83 randomized trials of nonsteroidal anti-inflammatory drugs (NSAIDs), which included nearly 10,000 subjects, only 2.3% were aged 65 or older and none were aged 85 or older.³⁷ Although older people are more likely to experience the side effects of analgesic medications, they also appear to be more sensitive to analgesic properties, especially those of opioid analgesics. For

example, single-dose studies comparing younger and older subjects with postoperative and chronic cancer pain have observed higher peak pain relief and longer duration of action among older subjects for morphine and other opioid drugs.³⁸⁻⁴⁰

The use of opioid analgesic drugs for chronic non-cancer-related pain remains controversial.⁴¹ Reluctance to prescribe these drugs has probably been overinfluenced by political and social pressures to control illicit drug use among people who take these medications for emotional rather than medical reasons.⁴² However, addictive behavior among patients taking opioid drugs for medical indications appears to be very low.^{41,43-45} This is not to suggest that morphine and other opioid drugs should be used indiscriminately but only that fear of addiction and other side effects does not justify failure to treat severe pain, especially in those near the end of life.

GUIDELINE DEVELOPMENT PROCESS AND METHODS

The American Geriatrics Society has published position papers on the care of patients near the end of life.^{46,47} In these publications the Society has promoted the goals of comfort and dignity for all patients near the end of life. Inherent in these goals is the obligation of clinicians to provide effective pain management in all cases, even if doing so may hasten death by a few hours or days.

Clinical practice guidelines have been published by the Agency for Health Care Policy and Research to address the management of acute and postoperative pain,⁴⁸ the management of cancer pain,⁴⁹ and the management of acute back pain.⁵⁰ Guidelines have also been published by the American Pain Society⁵¹ on analgesic medication for acute pain and cancer pain. These guidelines have been broad in scope, but they generally have not included considerations that are unique to the care of older patients. Treatment for chronic non-cancer-related pain has often been neglected, especially among those with nonterminal illness. Alternative care settings such as nursing homes and homes also present unique challenges about which previous guidelines have not been especially sensitive.

This project was organized to develop clinical practice guidelines specifically for the management of chronic non-cancer-related pain in older persons. The goals were to provide the reader with an overview of broad principles of chronic pain management as they apply specifically to older people and with specific recommendations to aid in decision making about pain management for this population. This is not meant to be an exhaustive, academic treatise on the subject but, rather, a practical and usable guide for clinicians so that they may rapidly upgrade their skills in the management of chronic pain problems common in the geriatric population. We have tried to avoid duplication of the work of previous guideline panels. These guidelines focus on issues that are unique to the geriatric population and on areas that have been omitted or less well developed in previous publications. We hope that our efforts will be helpful to clinicians in practice as well as to researchers and policy makers. Ultimately, we hope the beneficiaries of this work will be our patients who require effective pain management to maintain their dignity and quality of life.

The recommendations that follow are largely derived from consensus among a panel of experts from the fields of

geriatrics, pain management, psychology, pharmacology, and nursing. After an extensive search of the medical literature for data-based publications on the subject of pain in older (or aged) persons, members of the panel abstracted and reviewed the reports. It is important to note that existing evidence-based literature on the assessment and management of chronic pain—specifically in older people—was found to be very limited in sample and design. Much of the literature presented chronic pain in a disease-specific approach, and the number of pain-producing diseases studied was very large. Few randomized clinical trials were identified, and meta-analyses were nonexistent. Outcome data were not adequate to suggest definitive algorithms in most clinical situations. Panel members sometimes drew on data derived from studies of younger patients that could be extrapolated reasonably to older persons. However, data-based literature describing chronic pain in younger populations could not always be extrapolated easily to the oldest old or to the alternative care settings where older patients are often encountered. Once the literature review was completed, panel members formulated recommendations and then reassessed them to produce the set of recommendations for external review by a variety of experts from other organizations with interest in this subject.

Many issues in chronic pain management are beyond the scope of this limited project and so are not addressed by guideline recommendations. Clearly, a number of barriers still stand in the way of the improvement of pain management in clinical practice; these barriers often involve larger issues of medical education, attitudes, medical economics, law, and health systems organization. We hope that this initial work will stimulate others to collaborate, study, revise, and develop new solutions for the significant issues not addressed by this panel.

The guidelines for improving clinical practice have been divided into four sections: Assessment of Chronic Pain in Older Persons, Pharmacologic Treatments of Chronic Pain in Older Persons, Nonpharmacologic Strategies for Pain Management in Older Persons, and Recommendations for Health Systems That Care for Older Persons. For each section, general principles are presented with specific references provided, followed by the panel's recommendations for improving clinical assessment and management of chronic pain in older persons.

ASSESSMENT OF CHRONIC PAIN IN OLDER PERSONS

General Principles

A thorough initial assessment is crucial to understanding the causes and pathophysiology of chronic pain in the older adult.⁵² Pain management is most successful when the underlying cause of pain is identified and treated definitively. Inherent in the assessment of chronic pain is the need to evaluate acute pain that may indicate new concurrent illness and to distinguish this from exacerbations of chronic pain. Among those for whom the underlying cause is not remediable or only partially treatable, a multidisciplinary assessment and treatment strategy is often indicated.⁵³ It should be remembered that there are no objective biological markers for the presence of pain. The most accurate and reliable evidence of the existence of pain and its intensity is the patient's report.³ Even patients with mild to moderate cognitive impairment can be assessed with simple questions and

screening tools.^{16,54-58} Health care professionals as well as family and informal caregivers must believe patients and take their reports of pain seriously.

Older patients themselves may present substantial barriers to accurate pain assessment.⁵⁶ They may be reluctant to report pain despite substantial physical or psychological impairment.¹⁴ Not only do older people expect pain with aging, but they often describe discomfort, hurting, or aching rather than use the specific word *pain*.⁵⁷ They may be reluctant to talk about pain because they may fear the need for diagnostic tests or medications that have side effects. For some patients, pain is a metaphor for serious disease or death. For others, pain and suffering represent atonement for past actions.²² Sensory and cognitive impairment, common among frail older people, make communication more difficult. Fortunately, pain can be assessed accurately in most patients by the use of techniques adapted for the individual patient's needs and handicaps.^{16,58}

Specific Recommendations

- I. On initial presentation of any older person to any health care service, a health care professional should assess the patient for evidence of chronic pain.
- II. Any persistent or recurrent pain that has a significant impact on function or quality of life should be recognized as a significant problem.
- III. A variety of terms synonymous with pain should be used to screen older patients (e.g., *burning, discomfort, aching, soreness, heaviness, tightness*).
- IV. For those with cognitive or language impairments, nonverbal pain behavior, recent changes in function, and vocalizations suggest pain as a potential cause (e.g., changes in gait, withdrawn or agitated behavior, moaning, groaning, or crying).
- V. For those with cognitive or language impairments, reports from a caregiver should be sought.
- VI. Conditions that require specific interventions should be identified and treated definitively if possible.
 - A. Underlying disease should be managed optimally.
 - B. Patients who need specialized services or skilled procedures should be referred for consultation to a healthcare specialist who has expertise in such services and procedures.
 1. Patients identified as having debilitating psychiatric complications should be referred for psychiatric consultation.
 2. Patients identified as abusing or as being addicted to any legal or illicit substance should be referred for consultation with an expert who has experience in pain and addiction management.
 3. Patients with life-altering intractable pain should be referred to a multidisciplinary pain management center.
- VII. All patients with chronic pain should undergo comprehensive pain assessment. (Figure 1 provides an example of a medical record form that can be used to summarize the initial pain assessment.⁵⁹)

GERIATRIC PAIN ASSESSMENT

Date: _____

Medical Record Number _____

Patient's Name _____

Problem List:

Medications:

Pain Description:

Pattern: Constant Intermittant

Duration: _____

Location: _____

Character:

Lancinating Burning Stinging

Radiating Shooting Tingling

Pain Intensity:

0 1 2 3 4 5 6 7 8 9 10

None Moderate Severe

Worst Pain in Last 24 hours:

0 1 2 3 4 5 6 7 8 9 10

None Moderate Severe

Other Descriptors:

Mood: _____

Depression Screening Score: _____

Exacerbating Factors:

Gait and Balance Score: _____

Impaired Activities:

Relieving Factors:

Sleep Quality: _____

Bowel Habits: _____

Other Assessments or Comments: _____

Most Likely Cause of Pain: _____

Plans: _____

Figure 1. Example of a medical record form that can be used to summarize pain assessment in older persons.⁵⁹

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- A. Comprehensive pain assessment should include a medical history and physical examination, as well as a review of the results of the pertinent laboratory and other diagnostic tests, with the goals of recording a temporal sequence of events that led to the present pain complaint and establishing a definitive diagnosis, plan for care, and likely prognosis.
- B. Initial evaluation of the present pain complaint should include characteristics such as intensity, character, frequency (or pattern, or both), location, duration, and precipitating and relieving factors.
- C. Initial evaluation should include a thorough analgesic medication history, including current and previously used prescription medications, over-the-counter medications, and "natural" remedies. The effectiveness and any side effects of current and previously used medications should be recorded.
- D. Initial evaluation should include a comprehensive physical examination with particular focus on the neuromuscular system (e.g., search for neurologic impairments, weakness, hyperalgesia, hyperpathia, allodynia, numbness, paresthesia) and the musculoskeletal system (e.g., palpation for tenderness, inflammation, deformity, trigger points).
- E. Initial evaluation should include evaluation of physical function.
 1. Evaluation of physical function should include a focus on pain-associated disabilities, including activities of daily living (e.g., Katz ADLs,⁶⁰ Lawton IADLs,⁶¹ FIMS,⁶² Barthel Index⁶³).
 2. Evaluation of physical function should include performance measures of function (e.g., range of motion, Up-and-Go Test,⁶⁴ Tinetti Gait and Balance Test⁶⁵).
- F. Initial evaluation should include evaluation of psychosocial function.
 1. Evaluation of psychosocial function should include assessment of the patient's mood, especially for depression (e.g., a geriatric depression scale,⁶⁶ CES-D scale⁶⁷).
 2. Evaluation of psychosocial function should include assessment of the patient's social networks, including any dysfunctional relationships.
- G. A quantitative assessment of pain should be recorded by the use of a standard pain scale (e.g., visual analogue scale, word descriptor scale, numerical scale^{58, 68}) (see Figure 2).
 1. Patients with cognitive or language barriers should be presented with scales that are tailored for their needs and disabilities (e.g., scales adapted for speakers of a foreign language, scales in large print, or scales for the visually impaired that do not require visual-spatial skills).
 2. Quantitative estimates of pain based on clinical impressions or surrogate reports should not be used unless the patient is unable to reliably make his or her needs known.

VIII. Patients with chronic pain and their caregivers should be instructed to use a pain log or pain diary with

regular entries for pain intensity, medication use, response to treatment, and associated activities. (Figure 3 provides an example of a medical record form that can be used as a pain diary or to record pain assessments over time⁶⁹).

- IX. Patients with chronic pain should be reassessed regularly for improvement, deterioration, or complications attributable to treatment. The frequency of follow-up should be a function of the severity of the pain syndrome and the potential for adverse effects of treatment.
 - A. Reassessment should include evaluation of significant issues identified in the initial evaluation.
 - B. The same quantitative assessment scales should be used for follow-up assessments.
 - C. Reassessment should include an evaluation of analgesic medication use, side effects, and adherence problems.
 - D. Reassessment should include an evaluation of the positive and negative effects of any nonpharmacologic treatments.

PHARMACOLOGIC TREATMENT OF CHRONIC PAIN IN OLDER PERSONS

GENERAL PRINCIPLES

The most common treatment of pain in older people involves the use of analgesic drugs.²³ All pharmacologic interventions carry a balance of benefits and burdens. The patient should be given an expectation of pain relief, but it is unrealistic to suggest or sustain an expectation of complete relief for some patients with chronic pain.⁴⁹ The goals, expectations, and tradeoffs of possible therapies need to be discussed openly. A period of trial and error should be anticipated when new medications are initiated and while titration occurs. Review of medications, doses, use patterns, efficacy, and adverse effects should be a regular process of care, and seemingly ineffective drugs should be tapered and discontinued.

Although older people are more likely to experience adverse reactions, analgesic drugs are safe and effective for use by this population.⁷⁰ For some classes of pain-relieving medications (opioids, for example), older patients have been shown to have increased analgesic sensitivity.^{38-40,71} However, because the older population is heterogeneous, optimum dosage and side effects are difficult to predict. Recommendations for age-adjusted dosing are not available for most analgesics. The adage "start low and go slow" is probably appropriate for most drugs known to have high side-effect profiles in the older adult.^{70,71} In reality, dosing for most patients requires careful titration, including frequent assessment and dosage adjustments, to optimize pain relief while monitoring and managing side effects.

Pharmacologic therapy is most effective when combined with nonpharmacologic strategies to optimize pain management.^{49,72} Analgesic drugs should also supplement other medications directed at definitive treatment or optimum management of underlying disease. It is recognized that there are major potential problems with multiple drug use by older patients. However, polypharmacy (the use of more than one agent to effect a therapeutic endpoint) may be necessary to minimize dose-limiting adverse effects of a particular drug

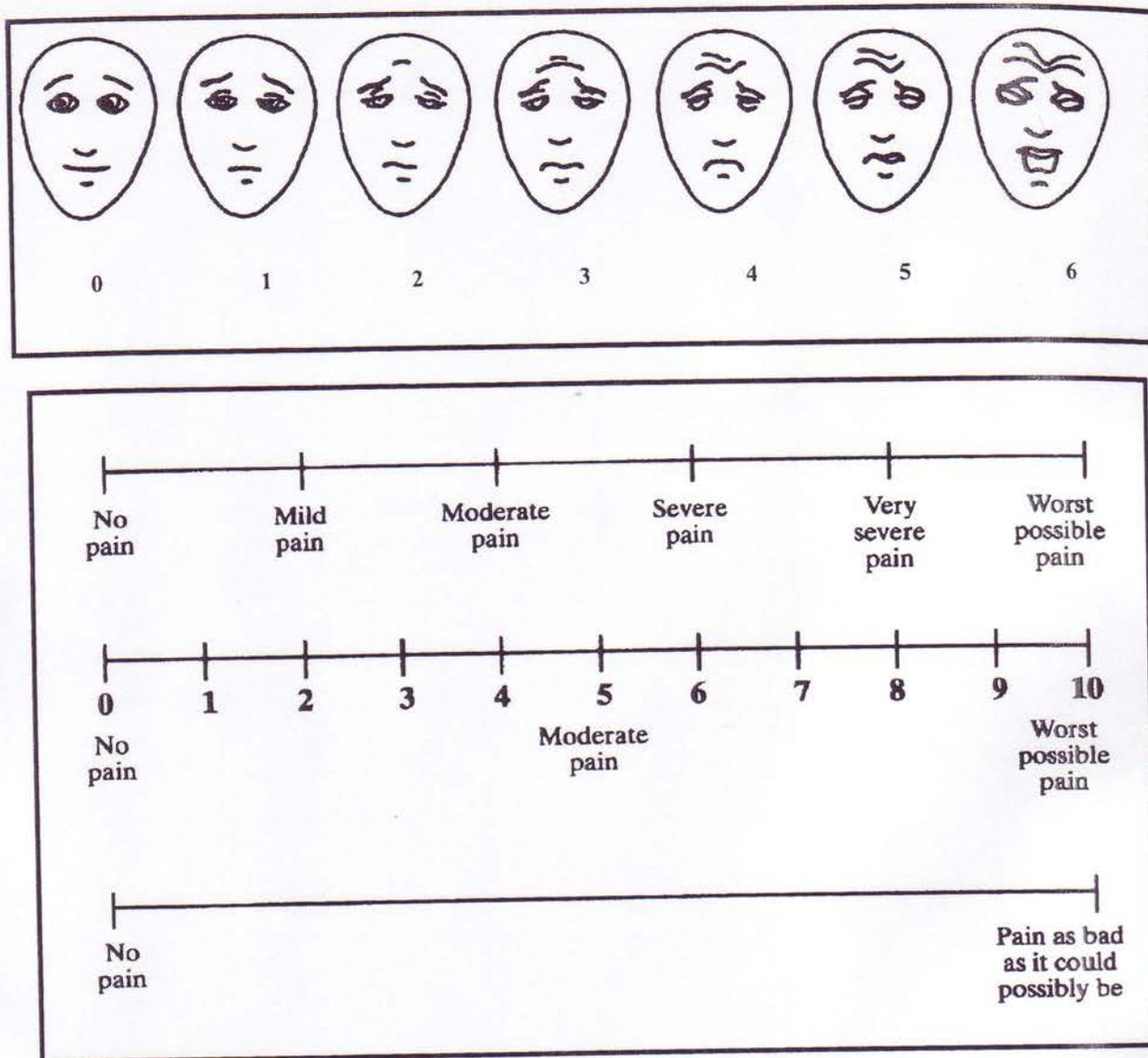


Figure 2. Examples of pain intensity scales for use with older patients. 1. A faces scale.^{58,68} Reprinted from *Pain* 1990;41(2):139-150, with kind permission of Elsevier Science - NL, Sara Burgerhartstraat 25, 1055 KV Amsterdam, The Netherlands. 2. Visual analogue scales.^{48,49}

class.⁴⁹ Combining smaller effective doses of differing drug classes may produce pain relief without as much risk of the side effects associated with higher doses of a single medication. Close monitoring is important when multiple medications are prescribed, particularly for patients with concurrent medical problems.

In older patients, the chronic use of NSAIDs is associated with a high frequency of adverse effects.⁷³⁻⁷⁶ The risk of gastrointestinal bleeding associated with NSAID use in a general population is about 1%. For those aged 60 or older, the risk reaches 3 to 4%, and for those aged 60 or older with a history of gastrointestinal bleeding, the risk is about 9%.⁷⁷ The relative risks and benefits of NSAIDs should be weighed carefully against other available treatments for older patients. For most patients with mild to moderate pain from degenerative joint disease, acetaminophen provides satisfactory pain relief with a much lower risk of side effects than with NSAID drugs.^{78,79} The concomitant administration of misoprostol, histamine₂-receptor antagonists, proton pump inhibitors,

and antacids is only partially successful in reducing the risk of gastrointestinal bleeding associated with NSAID use,⁸⁰⁻⁸² and the side-effect profiles of these additional medications in this population must be weighed against their potential benefits.⁸³ It should also be remembered that these gastrointestinal protective drugs do nothing to prevent the renal impairment and other drug-drug and drug-disease interactions commonly associated with NSAIDs. For many patients, chronic opioid therapy, low-dose corticosteroid therapy (for those with inflammatory conditions), or other adjunctive drug strategies (e.g., the use of antidepressants or anticonvulsants for neuropathic pain) may have fewer life-threatening risks than does long-term daily use of high-dose NSAIDs. Table 2 lists some examples of NSAID choices as well as acetaminophen.

The use of opioid drugs for chronic non-cancer-related pain remains controversial, but they are probably underutilized in the treatment of older people.⁷⁰ Table 3 provides examples of some opioids used for treating chronic pain in

Table 2. Acetaminophen and Nonsteroidal Anti-Inflammatory Drugs^{s,t}

Drug	Maximum Dosage	Pharmacologic Changes	Precautions and Recommendations
Acetaminophen ^{†s} (Tylenol)	4000 mg/24 h (q 4-6 h dosing)	Hepatotoxic above maximum dose	Avoid exceeding maximum recommended dose
Aspirin ^{†s}	4000 mg/24 h (q 4-6 h dosing)	Gastric bleeding; abnormal platelet function	Avoid high doses for prolonged periods of time
Ibuprofen [†] (Motrin, Advil, Nuprin, etc.)	2400 mg/24 h (q 6-8 h dosing)	Gastric, renal, and abnormal platelet function may be dose-dependent; constipation, confusion, and headaches may be more common in older patients	Avoid high doses for prolonged periods of time
Naproxen ^{†s} (Naprosyn)	1000 mg/24 h (q 8-12 h dosing)	Similar toxicity to ibuprofen	Tests for salicylate levels may be necessary
Choline magnesium trisalicylate ^{††} (Trilisate)	5500 mg/24 h (q 8-12 h dosing)	Prolonged half-life of 8-12 h; similar toxicity to ibuprofen; classic salicylate toxicity may develop at high dose	occasionally to avoid toxicity

^sLimited number of representative examples only for demonstrative purposes. Comprehensive lists of other classes of NSAIDs and a multitude of brand names can be located elsewhere. There is no evidence of increased efficacy or decreased adverse effects (other than specific allergic sensitivities) to warrant the extremely high costs of most proprietary variations.

^tClinicians should monitor the literature closely for availability and cost-risk-benefit analyses of the cyclo-oxygenase-2-inhibitor class of NSAIDs, which should be commercially available soon.

[†]Available in liquid form.

^{††}Available in suppository form.

^{†††}Minimum platelet dysfunction.

older persons. Fears of drug dependency and addiction are often exaggerated by the desire to reduce illicit drug use in society. The prevalence of narcotic abuse among older people is not known, but those aged 60 or older account for less than 1% of patients attending methadone maintenance programs.⁸⁴ Fears of drug dependency and addiction do not justify the failure to relieve pain, especially for those near the end of life. Some state agencies have released prescribing guidelines for the appropriate use of narcotic analgesic drugs for chronic non-cancer-related pain.⁸⁵⁻⁸⁷

The doses of opioid analgesic medications needed for the treatment of non-cancer-related chronic pain are often smaller than those used for cancer-related pain. Monitoring the side effects of opioid therapy should focus on neurologic and psychologic functions such as sedation, concentration, and ability to drive. Side effects such as impaired consciousness, hypoxia, myoclonus, and pruritus rarely occur with the use of low- to moderate-dose opioid therapy, especially when doses are started low and escalated slowly.

The so-called adjuvant analgesic drugs are medications not classified formally as analgesics but found to be helpful (i.e., they reduce pain) in certain intractable pain syndromes.²⁶ The term *adjuvant*, although used frequently, is a misnomer because these non-opioid drugs may be the primary pain-relieving pharmacologic intervention in certain cases. Table 4 provides some examples of non-opioid drugs that may help certain kinds of pain. The largest body of literature concerns the use of tricyclic antidepressants.^{88,89} The newer antidepressants (including selective serotonin-reuptake inhibitors (SSRIs)) often have fewer side effects but have not been demonstrated to be very effective as analgesics.⁸⁹ Anticonvulsants (e.g., carbamazepine) have also been shown to be helpful in some conditions.²⁶ It has been observed that failure of response to one agent does not necessarily predict the response to another agent within the same class. Although antidepressants and anticonvulsants may be used simultaneously for some refractory neuropathic pains, this increases the potential for adverse drug reactions, particularly in the older patient. Unfortunately, many of these drugs have high side-effect profiles in older adults. It should be remembered that non-opioid drugs are often only partially successful and rarely provide complete relief.⁸⁸ They are often most effective when used for baseline pain management and when supplemented by other specific analgesic drugs for breakthrough pain.

The timing of medications is important.²³ For continuous pain, medications are best given on a regular basis. Additional doses may be required before activities that are known to exacerbate pain. Chronic pain is an exhausting experience.⁹⁰ Deconditioning, poor sleep, and poor eating habits can result from unrelieved pain.¹⁴ Most patients can cope better if analgesic drugs are prescribed in an effort to support appropriate exercise, enjoyable activities, and a good night's sleep. With these goals in mind, the clinician should simplify drug regimens as much as possible, and patients and caregivers should have some flexibility in designing regimens for their particular needs and life styles.⁹¹ Clinical endpoints for pharmacologic interventions should not concentrate on reduced drug dose but rather focus on decreased pain, improved function, and improved mood and sleep.

Economic issues do play a major role in current pain management and should enter into decision-making pro-

Table 3. Opioid Analgesic Drugs

Drug	Oral Equivalent	Starting Dosage	Aging Effects	Precautions and Recommendations
Short-acting drugs				
Morphine sulfate (Roxanol, MSIR)	30 mg	15-30 mg q 4 h	Intermediate half-life; older people are more sensitive than younger people to side effects	Start low and titrate to comfort; continuous use for continuous pain; intermittent use for episodic pain; anticipate and prevent side effects
Codeine (plain codeine, Tylenol with codeine, other combinations)	120 mg	30-60 mg q 4-6 h	Acetaminophen-NSAID* combinations limit dose; constipation is a major issue	Begin bowel program early; do not exceed recommended maximum dose
Hydrocodone (Vicoden, Lortab, others)	30 mg	5-10 mg q 3-4 h	Acetaminophen-NSAID* combinations limit dose; toxicity similar to morphine	Anticipate and prevent side effects; begin bowel program early; do not exceed recommended maximum dose
Oxycodone (Roxicodone, Oxy IR, Percodan, Tylox, Percocet)	20-30 mg	5-10 mg q 3-4 h	Acetaminophen-NSAID* combinations limit dose; toxicity similar to morphine; oxycodone is available as a single agent	Anticipate and prevent side effects; begin bowel program early; do not exceed recommended maximum dose
Hydromorphone (Dilaudid)	7.5 mg	1.5 mg q 3-4 h	Half-life may be shorter than morphine (3 h); toxicity similar	Similar to morphine; start low and titrate to comfort; give continuously (q 3-4 h) for continuous chronic pain disorders
Long-acting drugs				
Sustained-release* morphine (MS Contin, † Kadian, ‡§ Oramorph SR†)	30 mg	15-30 mg q 12 h or 24 h equivalent of total prior analgesics in divided doses q 12 h	Rarely requires more frequent dosing than recommended on package insert	Escalate dose slowly because of possible drug accumulation; immediate-release opioid analgesic often necessary for breakthrough pain
Sustained-release* oxycodone (Oxycontin)	20-30 mg	10-20 mg q 12 h or 24 h equivalent of total prior analgesics in divided doses q 12 h	Similar to sustained-release morphine	Immediate-release opioid often necessary for breakthrough pain
Transdermal fentanyl (Duragesic)	NA (see package insert)	>25 µg/h not recommended in opioid-naive patients	Effective activity may exceed 72 h in older patient (transdermal patches designed for 3-day duration of action)	Titrate slowly using immediate-release analgesics for breakthrough pain; peak effects of first dose may take 18-24 h

*These preparations are *not* to be broken, crushed, or dissolved. They must be used as formulated to provide continuous-release activity.

†Every 24 hour dosing.

‡Every 8-12 hour dosing.

§Capsules can be opened and contents sprinkled on applesauce for easier ingestion without altering activity of the drug.

Table 4. Non-Opioid Drugs for Analgesia

Drug	Starting Dose (po)	Specific Indications	Pharmacologic Changes	Precautions and Recommendations
Corticosteroids (prednisone)	2.5-5.0 mg daily	Inflammatory disease	Increased risk of hyperglycemia, osteopenia, and Cushing phenomenon	Avoid high dose for long-term use
Antidepressants (amitriptyline, desipramine, doxepin, imipramine, nortriptyline)	10 mg HS	Neuropathic pain, sleep disturbance	Increased sensitivity to side effects, especially anticholinergic effects	Monitor carefully for anticholinergic adverse effects; desipramine may be as effective as amitriptyline with fewer side effects; start at lowest available dose, 10 mg, and titrate HS dose upward by 10 mg every 3-5 days
Anticonvulsants Clonazepam Carbamazepine (Tegretol)	0.25-0.5 mg 100 mg	Neuropathic pain Only for lancinating pain, e.g., trigeminal neuralgia	Can cause somnolence, ataxia, dizziness, leukopenia, thrombocytopenia, and rarely aplastic anemia May prove to have less serious side effects than carbamazepine	Start at 100 mg qd, increase slowly bid, 200 mg qd, then bid; check LFTs, CBC, RF at baseline; CBC at 2 then 8 weeks Start with low dose (100 mg) and titrate up slowly to effect; neuropathic doses not yet established; titrate to tid dosing; monitor for idiosyncratic side effects, e.g., ankle swelling, ataxia; dose range for efficacy anecdotally reported 100-800 mg tid
Gabapentin (Neurontin)	100 mg	Neuropathic pain		
Anti-arrhythmics Mexiletine (Mexitiil)	150 mg	Neuropathic pain	Side effects such as tremor, dizziness, unsteadiness, paresthesias are common; rarely hepatic damage and blood dyscrasias occur	Avoid use in patients with pre-existing heart disease; start with low dose and titrate slowly; recommend initial and follow-up ECGs; titrate to tid-qid dosing May be useful predictor of response to mexiletine or other oral local anesthetics for neuropathic pain; diagnostic test only in a monitored environment where seizure, delirium, airway control, and hemodynamic alterations can be managed
Local Anesthetics (intravenous) Lidocaine	3-5 mg/kg infused every 15-30 minutes	Diagnostic test	Delirium common	
Other agents Baclofen	5 mg	Neuropathic pain, muscle spasms	Probable increased sensitivity and decreased clearance	Monitor for weakness, urinary dysfunction; avoid abrupt discontinuation due to CNS irritability

CBC = complete blood cell count; CNS = central nervous system; ECG = electrocardiogram; HS = hour of sleep or at bedtime; LFT = liver function tests; RF = renal function.

cesses at some level.⁹² Economic considerations should be used to make balanced decisions after sound principles of assessment and treatment have been followed. Clinicians should be aware of common economic barriers patients and their families may encounter, including the lack of Medicare reimbursement for outpatient oral medications, limited formularies, and delays from mail-order pharmacies in some managed-care programs, as well as limited availability of strong opioid analgesics from some pharmacies.

Finally, it is axiomatic that all medication management must be tailored to the individual patient's needs and situations. Information provided herein is meant to serve as a guide only and should not be used in lieu of clinical judgment.

Specific Recommendations

- I. All older patients with diminished quality of life as a result of chronic pain are candidates for pharmacologic therapy.
 - II. The least invasive route of administration should be used (this is usually the oral route).
 - III. Fast-onset, short-acting analgesic drugs should be used for episodic (i.e., chronic recurrent or noncontinuous) pain.
 - IV. Acetaminophen is the drug of choice for relieving mild to moderate musculoskeletal pain. The maximum dosage of acetaminophen should not exceed 4000 mg per day.
 - V. NSAIDs should be used with caution.
 - A. High-dose, long-term NSAID use should be avoided.
 - B. When used chronically, NSAIDs should be used as needed, rather than daily or around the clock.
 - C. Short-acting NSAIDs may be preferable to avoid dose accumulation.
 - D. NSAIDs should be avoided in patients with abnormal renal function.
 - E. NSAIDs should be avoided in patients with a history of peptic ulcer disease.
 - F. NSAIDs should be avoided in patients with a bleeding diathesis.
 - G. The use of more than one NSAID at a time should be avoided.
 - H. Ceiling dose limitations should be anticipated (i.e., maximum dose may be unattainable because of toxicity or may be accompanied by lack of efficacy).
 - VI. Opioid analgesic drugs may be helpful for relieving moderate to severe pain, especially nociceptive pain.
 - A. Opioids for episodic (i.e., chronic recurrent or noncontinuous) pain should be prescribed as needed, rather than around the clock.
 - B. Long-acting or sustained-release analgesic preparations should be used only for continuous pain.
 1. Breakthrough pain should be identified and treated by the use of fast-onset, short-acting preparations. Breakthrough pain includes the following three types:
 - a. *End-of-dose failure* is the result of decreased blood levels of analgesic with concomitant increase in pain before the next scheduled dose.
 - b. *Incident pain* is usually caused by activity that can be anticipated and pretreated.
 - c. *Spontaneous pain*, common with neuropathic pain, is often fleeting and difficult to predict.
2. Titration should be conducted carefully.
 - a. Titration should be based on the persistent need for and use of medications for breakthrough pain.
 - b. Titration should be based on the pharmacokinetics and pharmacodynamics of specific drugs in the older person and the propensity for drug accumulation.
 - c. The potential adverse effects of opioid analgesic medication should be anticipated and prevented or treated promptly.
 3. Constipation should be prevented.
 - a. A prophylactic bowel regimen should be initiated with commencement of analgesic therapy.
 - b. Bulking agents should be avoided.
 - c. Adequate fluid intake should be encouraged.
 - d. Exercise, ambulation, and physical activities should be encouraged.
 - e. Bowel function should be evaluated with every follow-up visit.
 - f. Rectal examination and disimpaction should occur before use of motility agents.
 - g. An osmotic, stimulant, or motility agent should be prescribed, if necessary, to provide regular bowel evacuation.
 - h. Motility agents should not be used if signs or symptoms of obstruction are present.
 - i. If fecal impaction is present, it should be relieved by enema or manual removal.
 4. Mild sedation and impaired cognitive performance should be anticipated when opioid analgesic drugs are initiated. Until tolerance for these effects has developed:
 - a. patients should be instructed not to drive.
 - b. patients and caregivers should be cautioned about the potential for falls and accidents.
 - c. monitoring for profound sedation, unconsciousness, or respiratory depression (defined as a respiratory rate of <8 per minute or oxygen saturation of <90%) should occur during rapid, high-dose escalations. Naloxone should be used carefully to avoid abrupt reversal of pain and autonomic crisis.
 5. Severe nausea may need to be treated with antiemetic medications, as needed.
 - a. Mild nausea usually resolves spontaneously in a few days.
 - b. If nausea persists, a trial of an alternative opioid may be appropriate.
 - c. Anti-emetic drugs should be chosen from those with the lowest side-effect profiles in older persons.

6. Severe pruritus may be treated with antihistamine medications.
 7. Myoclonus may be relieved by the use of an alternate opioid drug or clonazepam in severe cases.
- VII. Fixed-dose combinations (e.g., acetaminophen and opioid) may be used for mild to moderate pain.
- A. Maximum recommended dose should not be exceeded to minimize toxicity of acetaminophen or NSAID.
 - B. Ceiling effect should be anticipated (i.e., maximum dose may be reached without full efficacy because of limits imposed by toxicity of acetaminophen or an NSAID).
- VIII. Patients taking analgesic medications should be monitored closely.
- A. Patients should be re-evaluated frequently for drug efficacy and side effects during initiation, titration, or any change in dose of analgesic medications.
 - B. Patients should be re-evaluated on a regular basis for drug effectiveness and side effects throughout long-term analgesic drug maintenance.
 1. Patients on long-term opioid therapy should be evaluated periodically for inappropriate or even dangerous drug-use patterns.
 - a. The clinician should watch for indications of the use of medications prescribed for other persons or of illicit drug use (the latter being very rare in this population).
 - b. The clinician should ask about prescriptions for opioids from other physicians.
 - c. The clinician should watch for signs of narcotic use for inappropriate indications (e.g., anxiety, depression).
 - d. Requests for early refills should include evaluation of tolerance, progressive disease, or inappropriate behavioral factors.
 - e. These evaluations need to take place with the same medical equanimity accompanying similar evaluations for long-term management of other potentially risky medications (i.e., antihypertensive medications) in order not to burden the patient with excessive worry or unnecessary fears, or to promote "opiophobia."
 2. Patients on long-term NSAIDs should be periodically monitored for gastrointestinal blood loss, renal insufficiency, and other drug-drug or drug-disease interactions.
- IX. Non-opioid analgesic medications may be appropriate for some patients with neuropathic pain and some other chronic pain syndromes.
- A. Carbamazepine is the medication of choice for trigeminal neuralgia.
 - B. Agents with the lowest side-effect profiles should be chosen preferentially.
 - C. Agents may be used alone but often are more helpful when used in combination and to augment other pain management strategies.

- D. Therapy should begin with the lowest possible doses and increased slowly because of the potential for toxicity of many agents.
- E. Patients should be monitored closely for side effects.
- F. Clinical endpoints should be decreased pain, increased function, improvements in mood and sleep, not decreased drug dose.

NONPHARMACOLOGIC STRATEGIES FOR PAIN MANAGEMENT IN OLDER PERSONS

General Principles

Nonpharmacologic approaches, used alone or in combination with appropriate pharmacologic strategies, should be an integral part of care plans for most chronic pain patients.⁷² Nonpharmacologic pain management strategies encompass a broad range of treatments and physical modalities. Education programs,^{72,93-96} cognitive-behavioral therapy,⁹⁷ exercise programs,⁹⁴⁻⁹⁶ acupuncture,⁹⁸ transcutaneous nerve stimulation,⁹⁹ chiropractic,¹⁹ heat, cold, massage, relaxation, and distraction techniques have each been helpful for some patients.¹⁰⁰ Moreover, these strategies carry few adverse effects other than cost. Many patients use these approaches, not always with the advice of their primary healthcare provider.^{6,100} Although many of these interventions provide short-term relief, few have been shown to have greater benefit than placebo controls in randomized trials for the long-term management of chronic pain in older people. Nonetheless, nonpharmacologic interventions used in combination with appropriate drug regimens often improve overall pain management, enhancing therapeutic effects while allowing reduction of medication doses to prevent or diminish adverse drug effects.⁴⁹

A variety of alternative therapies are also used by many patients.¹⁰⁰ Healthcare providers should be aware that patients with unrelieved chronic pain often seek alternative medicine approaches, including use of homeopathy, naturopathic preparations, and spiritual healing.⁶ Although there is little scientific evidence to support these strategies for chronic pain control, it is important that healthcare providers not leave patients with a sense of hopelessness in an effort to discourage unapproved but benign therapies or to debunk healthcare quackery and fraud.

The importance of patient education cannot be overemphasized. Studies have shown that patient education programs alone significantly improve overall pain management.²¹ Such education programs commonly include information about the nature of pain and how to use pain assessment instruments, medications, and nonpharmacologic pain management strategies. For many patients, especially older persons, family caregiver education is also essential. Whether the program is conducted one-on-one or organized in groups, it should be tailored to patients' needs and levels of understanding. The use of suitable written materials and appropriate methods for reinforcement is important to the success of the program.

Cognitive strategies are aimed at altering belief structures, attitudes, and thoughts in order to modify the experience of pain and suffering.¹⁰¹ These include various forms of distraction, relaxation, biofeedback, and hypnosis. Behavioral therapy discourages abnormal, unpredictable, or self-defeating behavior and provides positive reinforcement for successes in achieving goals. Cognitive strategies are usually

combined with behavioral approaches, and together they are known as cognitive-behavioral therapy. Cognitive-behavioral therapy in its most effective form includes a structured approach to teaching coping skills that might be used alone or in combination with pharmacologic therapies for chronic pain control.^{101,102} Effective programs can be conducted with patients individually or in groups. There is some evidence that the involvement of a spouse, caregiver, or significant other enhances the effects. Cognitive-behavioral therapy usually requires 6 to 15 sessions (60 to 90 minutes per session) with a trained therapist and includes components of education, rationale for therapy, coping skills training, methods to generalize coping skills, and relapse prevention.⁹⁷ Although it may not be appropriate for patients with appreciable cognitive impairment, the favorable results of controlled trials support the use of cognitive-behavioral therapy as a part of the management of most patients with significant chronic pain.

Physical exercise has also been shown to improve pain management in older patients significantly.^{93-95,103-109} Clinical trials involving older patients with chronic musculoskeletal pain have shown that moderate levels of training (aerobic and resistance training) on a regular basis are effective in improving pain and functional status. Initial training usually requires 8 to 12 weeks and supervision by a knowledgeable professional who can focus on the special needs of older adults with musculoskeletal conditions. There is no evidence that one type of exercise is better than another; thus, the exercise program should be tailored to the needs and preferences of the patient. The intensity, frequency, and duration should be adjusted to avoid exacerbation of pain while increasing and later maintaining overall conditioning. Feeling better may give the false impression that the discipline of ongoing self-directed exercise is no longer necessary. Continual encouragement and reinforcement is often necessary. Unless contraindications supervene, the program should be maintained indefinitely to prevent deconditioning and deterioration.

Specific Recommendations

- I. All patients with diminished quality of life as a result of chronic pain are candidates for nonpharmacologic pain management strategies.
- II. Patient education should be provided for all patients with chronic pain.
 - A. Content should include information about the known cause(s) of pain, methods of pain assessment and measurement, goals of treatment, treatment options, expectations of pain management, analgesic drug use for pain management (prescription and over-the-counter medications), and self-help techniques, such as the use of heat, cold, massage, relaxation, and distraction.
 - B. Educational content should be reinforced during every patient encounter.
 - C. Specific patient education should be provided before special treatments or procedures.
- III. Nonpharmacologic interventions can be used alone or in combination with pharmacologic strategies for chronic pain management.

- IV. Cognitive-behavioral therapies should be a part of the care of older patients troubled by chronic pain.
 - A. Cognitive-behavioral therapy should be applied as a structured program that includes components of education, rationale for therapy, coping skills training, methods to generalize coping skills, and relapse prevention.
 - B. Cognitive-behavioral therapy should be conducted by a professional.
 - C. Plans for a flare-up should be a part of this therapy to prevent self-defeating behavior during episodes of pain exacerbation.
- V. Exercise should be a part of the care of all older patients troubled by chronic pain.
 - A. Initial training should be conducted over 8 to 12 weeks and should be supervised by a trained professional with knowledge of the special needs of older adults.
 - B. Exercise should be tailored to the needs and preferences of the patient in consultation with the primary clinician.
 - C. Moderate levels of exercise conditioning (aerobic or resistance training) should be maintained indefinitely.
- VI. A trial of physical or occupational therapy is appropriate for the rehabilitation of impaired range of motion, specific muscle weakness, or other physical impairments associated with chronic pain.
- VII. Traditional insight-oriented psychotherapy should not be used alone for the management of chronic pain.
- VIII. Other nonpharmacologic therapies may be helpful for some patients with chronic pain.
 - A. Chiropractic, acupuncture, or transcutaneous nerve stimulation may be helpful for some patients, but they are expensive and have not been shown to have greater benefit than placebo controls in the management of chronic pain. These interventions should be provided only by professionals.
 - B. Self-administered heat, cold, and massage and the use of liniments and other topical agents may be helpful for some patients.
 1. Initial instruction and demonstration should be provided by a trained clinician.
 2. Precautions against thermal injury should be provided, especially for patients with sensory disturbances (e.g., diabetic patients) or with cognitive impairment.
 3. Patients should be cautioned about the toxicity of or possible reactions to liniments and other topical agents.

RECOMMENDATIONS FOR HEALTH SYSTEMS THAT CARE FOR OLDER PERSONS

General Principles

The United States healthcare system is probably the most complex in the world. Access to and delivery of quality health care vary considerably, depending on economic and social priorities in each of the 50 states. Medical care is provided by a large number of independent for-profit and not-for-profit healthcare businesses, including ambulatory care facilities,

hospitals, nursing homes, and home-health agencies. Free-standing pharmacies, emergency services, and a variety of other community services contribute substantially to the quality of the American healthcare system. Because of the growing population of older people, many of whom have chronic illnesses, almost every component of the U.S. healthcare system can be expected to care for a substantial number of older patients with chronic pain.

The health care system has an obligation to provide comfort and pain management for older patients. Healthcare facilities, quality review organizations, and government regulatory agencies should work together to facilitate structures and processes that ensure access and delivery of quality pain management services. In some cases, organizations need to revise existing regulations that have actually created barriers to effective pain management. Medical license boards and law enforcement agencies, in their efforts to reduce illicit drug use, should recognize their equal obligation to ensure the easy availability of safe and effective pain medications (i.e., opioid analgesic drugs) for those with legitimate medical needs.⁸⁵

Traditionally, health care professionals have not been adequately trained in pain assessment and management.¹¹⁰⁻¹¹⁶ This lack of sensitivity to the problem of pain and its sequelae has contributed to both underrecognition and undertreatment of pain in older adults. Progress has been limited by a lack of professional attention to the interdisciplinary model critical to effective care of older adults. Refocusing not only the curricula for trainees but also continuing education for healthcare professionals is the key to assuring optimum care for older adults. Using such education as an indicator of quality by healthcare organizations and accreditation bodies will serve to more fully integrate the principles of pain management into clinical practice. Likewise, empowering consumers with an appreciation of the principles of pain management will create an advocacy for standards by which all providers will eventually be measured.

Today, financial considerations are a part of every healthcare decision. Insurance companies, managed care plans, and federal and state health agencies should recognize the importance of pain management. Adequate reimbursement should be provided for those services that ensure comfort, rehabilitation, and palliative care, especially for those near the end of life. Third-party payers need to consider carefully the financial incentives they create. Policies that favor expensive procedures appropriate for only a few patients may result in needless suffering for many patients. Although these policies may seem financially prudent in the short term, they may result in needless disability and increased health care utilization in the long run.

Specific Recommendations

- I. Health care facilities should support policies and procedures for routine screening, assessment, and treatment of chronic pain among all older patients. Health organizations should include pain management as a major domain in the development of clinical pathways.
- II. Healthcare facilities (ambulatory care facilities, hospitals, nursing homes, and home-care agencies) should periodically conduct quality assurance or quality improvement (QA or QI) activities in pain management.

- A. QA or QI activities should include appropriate structure and process indicators of pain assessment and treatment activities.
 - B. Benchmarks for quality improvement should be established internally and should include quantifiable pain outcomes, including (but not limited to) patient satisfaction.
- III. Healthcare financing systems (third-party payers, managed care organizations, and publicly financed programs) should extend resources for chronic pain management.
 - A. Present diagnosis-driven reimbursement systems should be revised to improve incentives for pain management and symptom control.
 1. Effective pharmacologic and nonpharmacologic strategies for pain management should be provided.
 2. Cost-containment strategies must not result in the inaccessibility of effective treatment or needless suffering.
 - B. Reimbursement should be appropriate for the increased time and resources often necessary for the care of frail, dependent, and disabled older patients in all settings.
 - IV. Health systems (integrated networks and community health planners) should ensure accessibility to specialty pain services.
 - V. Specialty pain services should be accredited and adhere to guidelines defined by quality review organizations.
 - VI. Pain-management education for all health care professionals should be improved at all levels.
 - A. Professional health school curricula should provide substantial training and experience in chronic pain management in older adults.
 1. Curricula should adhere to curriculum guidelines established by the International Association for the Study of Pain (IASP).
 2. Trainees should demonstrate proficiency in pain assessment and management.
 - B. Health systems should provide continuing education in pain assessment and management to health professionals at all levels.
 - C. Accreditation bodies should include pain management curriculum content as evaluation criteria.
 - D. Pain management should be included in consumer information services.
 - VII. Programs and regulations designed to decrease illicit drug use should be revised to eliminate barriers to chronic pain management for the older patient.
 - A. State medical license boards should publish professional standards or guidelines for prescribing controlled substances for pain, including professional standards for chronic use, expectations for medical record documentation, and standards for professional conduct review.
 - B. State medical license boards must eliminate clinicians' trepidation over conduct review that has become a major barrier to the prescription of effective medications.

- C. Law and drug enforcement agencies should recognize their role in facilitating and providing easy access to the legitimate use of controlled substances for patients in pain.
- D. Law and drug enforcement agencies should publish information for clinicians and the public regarding legal and illegal prescribing, dispensing, storage, disposal, and use of controlled substances for pain management.

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