

# The Management of Persistent Pain in Older Persons

## AGS Panel on Persistent Pain in Older Persons

### INTRODUCTION

#### Background and Significance

Pain is an unpleasant sensory and emotional experience.<sup>1</sup> Pain is a complex phenomenon derived from sensory stimuli or neurologic injury and modified by individual memory, expectations, and emotions.<sup>2</sup> Pain is usually associated with injury or a pathophysiologic process that causes an uncomfortable experience and is usually described in such terms. Although there are no objective biologic markers of pain, an individual's description and self-report usually provides accurate, reliable, and sufficient evidence for the presence and intensity of pain.<sup>3</sup>

Persistent pain can be defined as a painful experience that continues for a prolonged period of time that may or may not be associated with a recognizable disease process. The terms *persistent* and *chronic* are often used interchangeably in the medical literature. Unfortunately for many elderly persons, *chronic pain* has become a label associated with negative images and stereotypes often associated with longstanding psychiatric problems, futility in treatment, malingering, or drug-seeking behavior. The term *persistent pain* may foster a more positive attitude by patients and professionals for the many effective treatments that are available to help alleviate suffering.<sup>4</sup>

The clinical manifestations of persistent pain are commonly multifactorial. Because of the complex interplay among these factors across several domains (physiologic, psychologic, and social), discriminating which factors are most important for the purpose of treatment can be very challenging. Further complicating this task is the fact that pain expression and hence the importance of specific factors commonly vary, not only across individuals but also over time in one individual.

Elderly persons have been defined by demographers, insurers, and employers as those aged 65 years and over. In healthcare discussions, the elderly persons often de-

scribed are those who are most frail, with health and disability problems typically encountered in the older population. By age 75 many persons exhibit some frailty and chronic illness. In the population above age 75, morbidity, mortality, and social problems rise rapidly, resulting in substantial strains on the healthcare system and societal safety nets. This group represents the fastest growing segment of the total population.<sup>5</sup> The greatest challenges in geriatric medicine are represented by the oldest, sickest, and most frail patients with multiple medical problems and few social supports. The guideline panel focused its attention on this group as it prepared this update.

Persistent pain is common in older people.<sup>6</sup> A 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.<sup>7</sup> Older people are more likely to suffer from arthritis, bone and joint disorders, back problems, and 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.<sup>6,8,9</sup> Pain is also common among nursing home residents.<sup>10,11</sup> It has been estimated that 45% to 80% of them have substantial pain that is undertreated. Studies of both the community-dwelling and nursing home populations have found that older people commonly have several sources of pain, which is not surprising, as older patients commonly have multiple medical problems. A high prevalence of dementia, sensory impairments, and disability in this population make assessment and management more difficult.

The consequences of persistent pain among older people are numerous. Depression, anxiety, decreased socialization, sleep disturbance, impaired ambulation, and increased healthcare utilization and costs have all been found to be associated with the presence of pain in older people. Although less thoroughly described, many other conditions are known to be worsened potentially by the presence of pain, including gait disturbances, slow rehabilitation, and adverse effects from multiple drug prescriptions.<sup>12</sup>

Psychosocial factors affect and are affected by pain in older patients. It has been shown that older adults with good coping strategies have significantly lower pain and

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Address correspondence to Elvy Ickowicz, MPH, Manager, Professional Education and Special Projects, American Geriatrics Society, 350 Fifth Avenue, Suite 801, New York, NY, 10118. email: eickowicz@americangeriatrics.org

psychologic disability.<sup>13</sup> Depression is commonly associated with pain in the older patient; researchers have found a significant correlation between pain and depression among nursing home residents, even after controlling for self-reported functional status and physical health.<sup>14</sup> Older patients with cancer pain rely heavily on family and informal caregivers; for these patients and caregivers, pain can be a metaphor for death, resulting in increased suffering.<sup>15</sup>

Classifying persistent pain in pathophysiologic terms may help the clinician select therapy and determine prognosis.<sup>12</sup> Treatment strategies targeted specifically to underlying pain mechanisms are more likely to be effective. It is beyond the scope of this guideline to describe the pathophysiology of individual pain syndromes in detail, but four basic categories that encompass most syndromes can be described:

- *Nociceptive pain* may be visceral or somatic and is most often derived from the stimulation of pain receptors. 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 nonpharmacologic strategies.
- *Neuropathic pain* results from a pathophysiologic process that involves the peripheral or central nervous system. Examples include diabetic neuropathy, trigeminal neuralgia, post-herpetic neuralgia, post-stroke central or thalamic pain, and postamputation phantom limb pain. These pain syndromes do not respond as predictably as do nociceptive pain problems to conventional analgesic therapy. However, they have been noted to respond to unconventional analgesic drugs, such as tricyclic antidepressants, anticonvulsants, or antiarrhythmic drugs.
- *Mixed or unspecified pain* is usually 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 trials of different or combined approaches.
- There may be rare conditions (e.g., conversion reaction) where psychologic disorders are responsible for the onset, severity, exacerbation, or persistence of pain. 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 for many years, ever since older adults have been observed to present with unusual manifestations of common illness. Neuroanatomic and neurochemical findings have shown that the perception of pain and its modulation in the central nervous system are very elaborate and complex.<sup>16</sup> Unfortunately, little is known about the effect of age alone on most of these complex neural pain functions. Although alterations of transmission along A-delta and C nerve fibers may be associated with aging,<sup>17</sup>

it is not clear how this might affect an individual's experience of pain. Experimental studies of pain sensitivity and pain tolerance across all ages (young and old persons) have had mixed results.<sup>16</sup> In the final analysis, age-related changes in pain perception are probably not clinically significant.

The most common strategy to manage pain is to use analgesic drugs. Unfortunately, older patients have been systematically excluded from clinical trials of such drugs. In one report of 83 randomized trials of nonsteroidal anti-inflammatory drugs (NSAIDs) including nearly 10,000 subjects, only 2.3% were aged 65 or over and none were aged 85 or over.<sup>18</sup> Despite the fact that older people are more likely to experience the side effects of analgesic medications, they appear to be more sensitive to analgesic properties, especially those of opioid analgesics.<sup>19</sup> For example, single-dose studies comparing younger and older patients with postoperative and cancer pain have observed higher pain relief and longer duration of action among older patients for morphine<sup>20</sup> and other opioid drugs.<sup>21</sup>

The use of opioid analgesic drugs for persistent non-cancer-related pain remains controversial, although consensus statements from major professional pain organizations endorse their use in appropriate situations (e.g., American Academy of Pain Management and American Pain Society). Reluctance to prescribe these drugs has probably been over-influenced by political and social pressures to control illicit drug use.<sup>22,23</sup> In fact, the incidence of addictive behavior among patients taking opioid drugs for medical indications appears to be very low.<sup>24,25</sup> Moreover, the exercise of careful professional responsibility reduces the risk of abuse. This does not imply that opioid drugs should be used indiscriminately, but only that fear of addiction and other side effects does not justify failure to treat severe pain.

### Guideline Development Process and Methods

The American Geriatrics Society published the predecessor of this clinical practice guideline, entitled *The Management of Chronic Pain in Older Persons*, in 1998.<sup>12</sup> Since then, advances in pharmacology and the availability of new drugs and strategies for the management of pain in older persons have been made. This panel has focused on updating and revising the earlier recommendations, using the latest information about pain management in elderly persons. The goal is to provide the reader with (1) an overview of the principles of pain management as they apply specifically to older people and (2) specific recommendations to aid in decision making about pain management for this population. This is not meant to be an exhaustive treatise on the subject, but, rather, a practical guide for clinicians. It also provides a synthesis of existing literature and the consensus among experts familiar with clinical pain management and research in older persons. In focusing on issues unique to the geriatric population and areas that have been omitted or less well developed in previous publications, we hope to be helpful to clinicians as well as to researchers and policy makers. Ultimately, we hope the beneficiaries of this work will be those patients who require effective pain management to maintain their dignity, functional capacity, and overall quality of life.

The recommendations that follow began with the earlier work of the Panel on Chronic Pain in Elderly Persons. The panel, convened in 2001, included experts in ethics, family medicine, geriatrics, nursing, pain management, pharmacy, psychiatry, psychology, rehabilitation medicine, rheumatology, and social work. The panel drafted the revised recommendations and then conducted a review of existing literature to evaluate the evidence available related to each recommendation. More than 4,122 citations were identified from sources, including computerized key word searches for each recommendation (PubMed), personal citation libraries of the panel members, and references from the texts of some individual articles. These citations were screened for evidence-based content related to the recommendations, and more than 2,089 abstracts were obtained for further analysis by a panel member. Finally, more than 520 full-text English-language data-based articles were obtained and summarized for detailed analysis by panel members. The data from these articles reporting formal meta-analyses, randomized controlled trials, other clinical trials, and descriptive or correlational studies were then reviewed to determine the strength of evidence and quality of evidence criteria for the recommendations. Groups of the panel members then assigned a designation of the strength and the quality of evidence to each recommendation. (See Table 1 for a key to the designations used.)

It is important to note that some of the recommendations are based on clinical experience and consensus of panel members without scientific evidence. Existing evidence-based literature on the assessment and management of persistent pain specifically in older people was found to be very limited in sample and design. Much of the literature presents persistent pain in a disease-specific approach, and the number of pain-producing diseases reported is very large. Few randomized clinical trials consisting entirely of subjects aged 75 years and over were identified, and no formal meta-analyses of multiple studies of older subjects could be found. The majority of controlled trials and meta-analyses were derived from samples consisting of younger patients. The panel occasionally drew on data derived from studies of younger patients that could be reasonably extrapolated to older persons. However, data describing persistent pain in younger populations could not always be easily extrapolated to the oldest old or to care settings where older patients are often encountered. Once the literature review was completed, evidence was rated, and results were disseminated for external review by experts from a variety of other organizations with interest in this subject.

Some issues in persistent pain management are beyond the scope of this project and so are not addressed by guideline recommendations. For example indicators and outcomes of many surgical procedures were not reviewed. Clearly, a number of barriers still prevent the improvement of pain management in clinical practice; these barriers often involve larger issues of professional education, public and professional attitudes, economics, law, and health system issues. We hope that this work will stimulate others to collaborate and develop new solutions for the significant issues not addressed by this panel.

**Table 1. Key to Designations of Quality and Strength of Evidence**

**Quality of Evidence**

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

**Strength of Evidence**

A	Good evidence to support the use of a recommendation; clinicians "should do this all the time"
B	Moderate evidence to support the use of a recommendation; clinicians "should do this most of the time"
C	Poor evidence either to support or to reject the use of a recommendation; clinicians "may or may not follow the recommendation"
D	Moderate evidence against the use of a recommendation; clinicians "should not do this"
E	Good evidence against the use of a recommendation, which is therefore "contraindicated"

The recommendations that follow have been divided into four sections: Assessment of Persistent Pain, Pharmacologic Treatment, Nonpharmacologic Strategies, and Recommendations for Health Systems That Care for Older Persons. For each section, general principles are followed by the panel's specific recommendations for improving the clinical assessment and management of persistent pain in older persons. Readers should recognize that medical science is a constantly changing field. As new data are accumulated and re-analyzed, clinicians must keep abreast of new developments as evidence emerges that may have important implications for implementation of specific recommendations contained in this guideline. These recommendations are meant to serve as a guide and should not be used in lieu of critical thinking, sound judgment, and clinical experience.

**ASSESSMENT OF PERSISTENT PAIN**

**General Principles**

Pain management is most successful when the underlying cause of pain is identified and treated definitively. A thorough initial assessment and an appropriate work-up

are necessary to determine whether disease-modifying interventions could address the cause of a patient's persistent pain.<sup>26</sup> Assessment should include evaluation of acute pain that might indicate new concurrent illness rather than exacerbation of persistent pain.

In the evaluation process, interdisciplinary assessment may help identify all the potentially treatable contributors to the pain. For those in whom the underlying cause is not remediable or is only partially treatable, an interdisciplinary assessment and treatment strategy is often indicated.<sup>27</sup> Patients who need specialized services or skilled procedures should be referred to a specialist with appropriate expertise. Such patients include those with debilitating psychiatric complications, substance abusers, and those with life-altering intractable pain.

The most accurate and reliable evidence of the existence of pain and its intensity is the patient's report.<sup>28</sup> Clinicians as well as family and caregivers must believe patients and take their reports of pain seriously. Even patients with mild to moderate cognitive impairment can be assessed with simple questions and screening tools.<sup>29-36</sup>

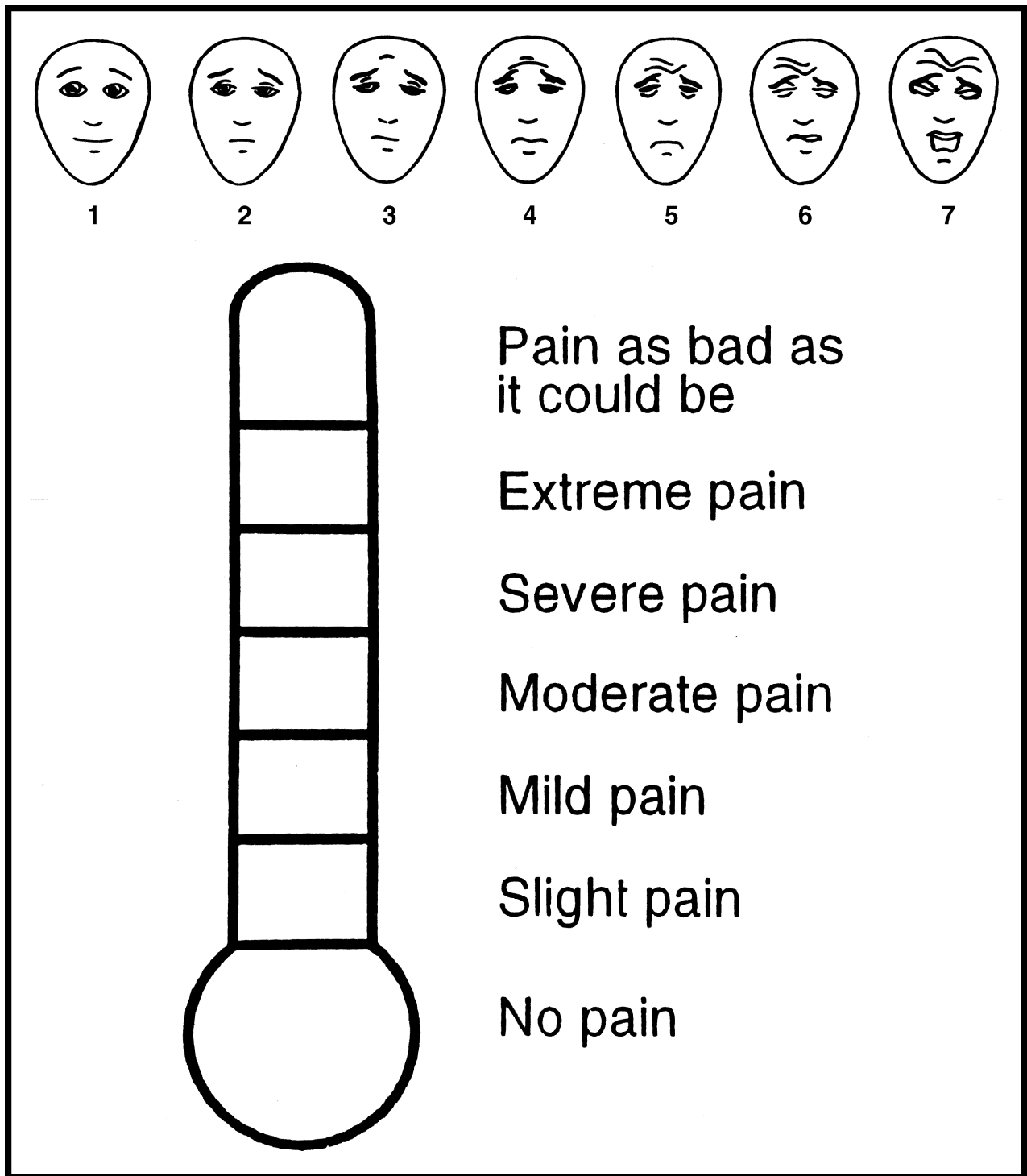
A variety of pain scales have been accepted for use among older adults, even among those with mild to moderate cognitive impairment. A verbally administered 0–10 scale is a good first choice for measuring pain intensity in most older persons. The Joint Commission on Accreditation of Healthcare Organizations has often accepted and many institutions have adopted this method for routine assessment or "Pain — the 5th Vital Sign" monitoring programs. In this case, the clinician simply asks the patient "On a scale of zero to ten, with zero meaning no pain and ten meaning the worst pain possible, how much pain do you have now?" However, a substantial portion of older adults (with and without cognitive impairment) may have difficulty responding to this scale. Other verbal descriptor scales, pain thermometers, and faces pain scales also have accepted validity in this population and may be more reliable in those who have difficulty with the verbally administered 0–10 scale. Thus it is important to utilize a scale that is appropriate for the individual and document and use the same tool with each assessment.<sup>26</sup> Figure 1 illustrates examples of a pain thermometer and a faces scale that have been studied in older populations.

Older patients themselves may make accurate pain assessment difficult.<sup>37,38</sup> They may be reluctant to report pain despite substantial physical or psychologic impairment. Many older people expect pain with aging and do not believe that their pain can be alleviated. They may fear the need for diagnostic tests or medications that have side effects, or fear addiction to and dependence on strong analgesics. Some patients accept pain and suffering as atonement for past actions.<sup>10</sup> While denying the presence of *pain*, many older adults will acknowledge *discomfort*, *hurting*, or *aching*.<sup>39-41</sup> 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's handicaps.<sup>31,42</sup> Assessment and treatment strategies need to be sensitive to culture and ethnicity, as well as the values and beliefs of individual patients and families. Information from family and other caregivers should also be included in the assessment.

### Specific Recommendations

(quality and strength of evidence ratings follow each recommendation: see Table 1)

- I. On initial presentation or admission of any older person to any healthcare service, a healthcare professional should assess the patient for evidence of persistent pain. (IIB)
- II. Any persistent pain that has an impact on physical function, psychosocial function, or other aspects of quality of life should be recognized as a significant problem. (IIA)
- III. All patients with persistent pain that may affect physical function, psychosocial function, or other aspects of quality of life should undergo a comprehensive pain assessment, with the goal of identifying all potentially remediable factors. (See Table 2 for sample pain interview questions.) Assessment should focus on recording a sequence of events that led to the present pain complaint, and on establishing a diagnosis, a plan of care, and likely prognosis: (IIIB)
  - A. History
    1. Initial evaluation of present pain complaint should include pain characteristics, such as intensity, character, frequency (or pattern, or both), location, duration, and precipitating and relieving factors. (IIIA)
    2. Initial evaluation should include a description of pain in relation to impairments in physical and social function (e.g., activities of daily living [ADLs], instrumental activities of daily living [IADLs], sleep, appetite, energy, exercise, mood, cognitive function, interpersonal and intimacy issues, social and leisure activities, and overall quality of life). (IIA)
    3. Initial evaluation should include a thorough analgesic history, including current and previously used prescription medications, over-the-counter medications, complementary or alternative remedies, and alcohol use or abuse. The effectiveness and any side effects of current and previously used medications should be recorded. (IIIB)
    4. The patient's attitudes and beliefs regarding pain and its management, as well as knowledge of pain management strategies, should be assessed. (IIB)
    5. Effectiveness of past pain-relieving treatments (both traditional and complementary or alternative) should be evaluated. (IIIB)
    6. The patient's satisfaction with current pain treatment or health should be determined and concerns should be identified. (IIIB)
  - B. Physical examination
    1. Physical examination should include careful examination of the site of reported pain, common sites for pain referral, and common sites of pain in older adults. (IIIA)
    2. Physical examination should focus on the musculoskeletal system (e.g., myofascial pain, fibromyalgia, inflammation, deformity, posture, leg length discrepancy). Practitioners skilled



**Figure 1.** Samples of two pain intensity scales that have been studied in older persons. Directions: Patients should view the figure without numbers. After the patient indicates the best representation of their pain, the appropriate numerical value can be assigned to facilitate clinical documentation and follow-up. Source: The faces scale is adapted from Pain 1990; 41(2):139-150. With permission from Elsevier Science—NL, Sara Biergerjartstraat 25. 1055 KV Amsterdam, The Netherlands. The thermometer is adapted with permission from Keela Herr.

in musculoskeletal examination should be considered for consultation (e.g., physical therapy, occupational therapy, physiatry). (III A)  
 3. Physical examination should focus on the neurologic system (e.g., search for weakness,

hyperalgesia, hyperpathia, allodynia, numbness, paresthesia, other neurologic impairments). (III A)  
 4. Initial assessment should include observation of physical function (e.g., measures of ADLs,

**Table 2. Sample Questions in a Pain Interview**

1. How strong is your pain right now? What was the worst/average pain over past week?
2. How many days over the past week have you been unable to do what you would like to do because of your pain?
3. Over the past week, how often has pain interfered with your ability to take care of yourself, for example, with bathing, eating, dressing, and going to the toilet?
4. Over the past week, how often has pain interfered with your ability to take care of your home-related chores, such as going grocery shopping, preparing meals, paying bills, and driving?
5. How often do you participate in pleasurable activities such as hobbies, socializing with friends, travel? Over the past week, how often has pain interfered with these activities?
6. How often do you do some type of exercise? Over the past week, how often has pain interfered with your ability to exercise?
7. How often does pain interfere with your ability to think clearly?
8. How often does pain interfere with your appetite? Have you lost weight?
9. How often does pain interfere with your sleep? How often over the past week?
10. Has pain interfered with your energy, mood, personality, or relationships with other people?
11. Over the past week, how often have you taken pain medication?
12. How would you rate your health at the present time?

Adapted with permission from Weiner D, Herr K, Rudy T. (eds.). *Persistent Pain in Older Adults: An Interdisciplinary Guide for Treatment*. New York: Springer (in press).

- performance measures such as range of motion, get-up-and-go test, or others). (IIA)
- C. Comprehensive pain assessment should include results of pertinent laboratory and other diagnostic tests. Tests should not be ordered unless their results will affect decisions about treatment. (IIIB)
  - D. Initial assessment should include evaluation of psychologic function, including mood (e.g., depression, anxiety), self-efficacy, pain coping skills, helplessness, and pain-related fears. (IIA)
  - E. Initial assessment should include evaluation of social support, caregivers, family relationships, work history, cultural environment, spirituality, and healthcare accessibility. (IIB)
  - F. Cognitive function should be evaluated for new or worsening confusion. (IIA)
  - G. For the older adult who is cognitively intact or who has mild to moderate dementia, the practitioner should attempt to assess pain by directly querying the patient. (IIA)
    1. Quantitative estimates of pain based on clinical impressions or surrogate reports should not be used as a substitute for self-report unless the patient is unable to reliably communicate his or her pain. (IIA)
    2. A variety of terms synonymous with pain should be used to screen older patients (e.g.,

- burning, discomfort, aching, soreness, heaviness, tightness). (IIIA)
3. A quantitative assessment of pain should be recorded by the use of a standard pain scale that is sensitive to cognitive, language, and sensory impairments (e.g., scales adapted for visual, hearing, foreign language, or other handicaps common in elderly persons). A variety of verbal descriptor scales, pain thermometers, numeric rating scales, and facial pain scales have acceptable validity and are acceptable for many older adults. (See Figure 1 for examples of some commonly used pain-intensity scales.) (IIA)
  4. The use of a multidimensional pain instrument that evaluates pain in relation to other domains (e.g., the Pain Disability Index<sup>43</sup> or the Brief Pain Inventory<sup>44</sup>) should be considered. (IIB)
  5. Elderly persons with limited attention span or impaired cognition should receive repeated instructions and be given adequate time to respond. Assessment may be done in several steps; it may require assistance from family or caregivers, and planning in advance of the visit. (IIIB)
  6. Patients should be queried about symptoms and signs that may indicate pain, including recent changes in activities and functional status; they should also be observed for verbal and nonverbal pain-related behaviors and changes in normal functioning. (See Table 3 for some common pain indicators.) (IIA)
  7. Patients can also be asked about their worst pain experience over the past week. (IIB)
  8. With mild to moderate cognitive impairment, assessment questions should be framed in the present tense because patients are likely to have impaired recall. (IIB)
- IV. For the older adult with moderate to severe dementia or who is nonverbal, the practitioner should attempt to assess pain via direct observation or history from caregivers. (See Figure 2 for an algorithm for assessing pain in cognitively impaired persons.)
    - A. Patients should be observed for evidence of pain-related behaviors during movement (e.g., walking, morning care, transfers). (IIA)
    - B. Unusual behavior in a patient with severe dementia should trigger assessment for pain as a potential cause. (IIA)
  - V. The risks and benefits of various assessment and treatment options should be discussed with patients and family, with consideration for patient and family preferences in the design of any assessment or treatment strategy. (IIIC)
  - VI. Patients with persistent pain should be reassessed regularly for improvement, deterioration, or complications. (IIIA)
    - A. The use of a pain log or diary with regular entries for pain intensity, medication use, mood, response to treatment, and associated activities should be considered. (IIIC)
    - B. The same quantitative pain assessment scales should be used for initial and follow-up assessments. (IIIA)

**Table 3. Common Pain Behaviors in Cognitively Impaired Elderly Persons****Facial expressions**

Slight frown; sad, frightened face  
 Grimacing, wrinkled forehead, closed or tightened eyes  
 Any distorted expression  
 Rapid blinking

**Verbalizations, vocalizations**

Sighing, moaning, groaning  
 Grunting, chanting, calling out  
 Noisy breathing  
 Asking for help  
 Verbally abusive

**Body movements**

Rigid, tense body posture, guarding  
 Fidgeting  
 Increased pacing, rocking  
 Restricted movement  
 Gait or mobility changes

**Changes in interpersonal interactions**

Aggressive, combative, resisting care  
 Decreased social interactions  
 Socially inappropriate, disruptive  
 Withdrawn

**Changes in activity patterns or routines**

Refusing food, appetite change  
 Increase in rest periods  
 Sleep, rest pattern changes  
 Sudden cessation of common routines  
 Increased wandering

**Mental status changes**

Crying or tears  
 Increased confusion  
 Irritability or distress

Note: Some patients demonstrate little or no specific behavior associated with severe pain.

Source: AGS Panel on Persistent Pain in Older Persons

- C. Reassessment should include evaluation of analgesic and nonpharmacologic interventions, side effects, and compliance issues. (IIIA)
- D. Reassessment should consider patient preferences in assessment and treatment revisions. (IIIB)

**PHARMACOLOGIC TREATMENT****General Principles**

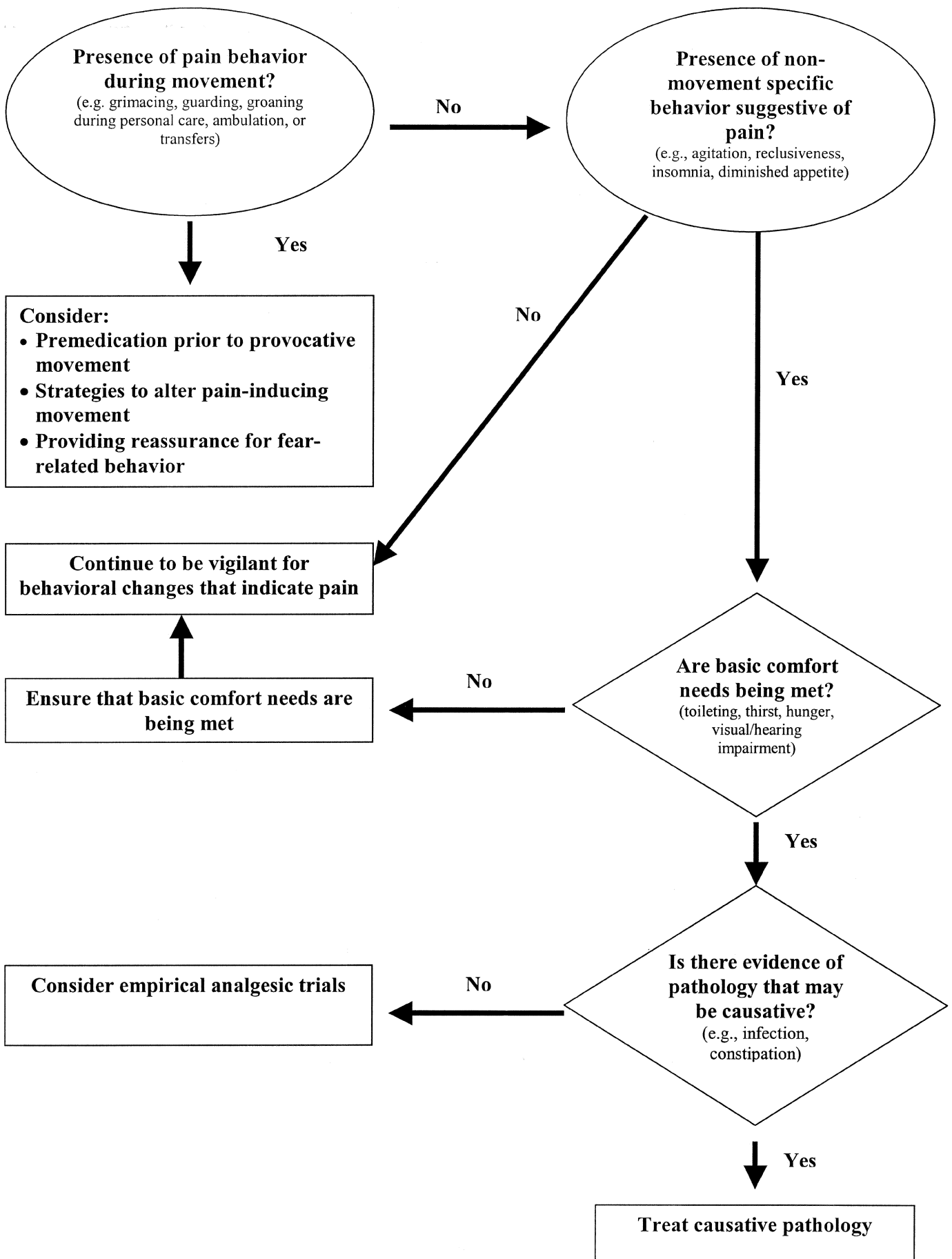
Pharmacotherapy is the most common treatment to control pain in older patients. All pharmacologic interventions carry a balance of benefits and risks. Positive outcomes can be maximized when clinicians become knowledgeable about the pharmacology of the drugs they prescribe and regularly monitor their effects. The frequency and duration of follow-up visits for patients with pain should be dictated by each patient's clinical, functional, cognitive, and social circumstances. It is unrealistic to imply, or for patients to expect, complete absence of pain for some persistent pain conditions. Relief can be enhanced by frequent clinician visits for assurance and validation.<sup>45</sup>

It is rare that any two patients respond with exactly the same degree of relief or side effects to the same pain-relieving drugs. Therefore, individually tailored therapeutic trials are the hallmark of effective pharmacotherapy for persistent pain. Titrating drugs while monitoring therapeutic and adverse effects should be done with consideration for specific subjective and objective endpoints. Patients with excruciating pain require more rapid titration to get symptoms under control; these patients may be best managed in an inpatient setting. Dose escalation and drug changes can be safely achieved only when the patient is monitored closely while the steady-state blood level at a given dose is achieved and variations resulting from the patient's clinical status (e.g., state of hydration, serum protein status, renal and hepatic function) are anticipated.<sup>46</sup>

Older patients are generally more susceptible to adverse drug reactions. Nevertheless, analgesic and pain-modulating drugs can be used safely and effectively in this population. It should be assumed that sensitivity to central nervous system active drugs, including opioid analgesics, increases with age. Age-associated differences in efficacy, sensitivity, and toxicity should also be expected.<sup>21,47</sup> Start with the lowest anticipated effective dose, monitor frequently on the basis of expected absorption and known pharmacokinetics of the agent(s), and then titrate the dose on the basis of likely steady-state blood levels and clinically demonstrated effects.<sup>12</sup> This process may take 1 to 2 days for some drugs and several days to a week with other long-lasting preparations or drugs with very long half-lives.

Greater reductions in pain and improvements in function are usually obtained by combining pharmacologic and nonpharmacologic treatments.<sup>45,48</sup> Similarly, the use of more than one drug to affect a specific therapeutic endpoint may be necessary. A combination of two or more drugs with complementary mechanisms of action may afford greater relief with less toxicity than would higher doses of a single agent.<sup>12,45</sup> This is particularly true in some persistent pain syndromes for which no single analgesic can produce adequate pain relief without dose-limiting side effects. Because of the increasing possibility of drug-drug and drug-disease interactions in elderly persons with every additional drug taken, the importance of frequent monitoring cannot be overemphasized. It is especially important for the primary care provider to be aware of all new drugs, over-the-counter medications, and herbal products added to a patient's regimen by consultants, or the patient themselves, and to taper and discontinue drugs that do not provide a well-defined therapeutic outcome.

In most cases, it makes sense to progress from non-opioid analgesics, such as acetaminophen, to antiinflammatory drugs, neurotransmitter-modulating and membrane-stabilizing drugs, and opioids, to balance medical risks and progressively more severe pain (Table 4).<sup>49</sup> The notable exceptions are inflammatory processes that may cause severe pain and for which antiinflammatory agents are sufficient. Likewise, certain types of neuropathic pain may not respond to anything but combinations of non-opioid pain-modulating drugs, such as the anticonvulsants. Unless pain is severe, it appears reasonable to start with drugs that have the highest likelihood of effecting pain relief with the lowest side-effect profile.





### The Use of Non-Opioid Analgesics

Most patients with persistent mild to moderate musculoskeletal pain respond favorably to around-the-clock doses of acetaminophen. The maximum recommended dose for patients with normal renal and hepatic function, and in those with no history of alcohol abuse, is 4,000 mg per day. In patients with renal or hepatic dysfunction or those with hazardous or harmful alcohol use, dose reduction by 50% to 75% or a different therapy is recommended. In frail older patients, with multiple-system disease, the persistent use of traditional nonselective NSAIDs is associated with an unacceptable rate of life-threatening gastrointestinal bleeding.<sup>12,50</sup> Although this risk is reduced with the concomitant administration of misoprostol or proton-pump inhibitors,<sup>51,52</sup> misoprostol may not be well tolerated by elderly persons.<sup>53</sup> Moreover, the cost and inconvenience may not justify these strategies.

When maximum safe doses of acetaminophen do not adequately control pain, NSAID therapy may be beneficial.<sup>50,51,54</sup> For patients who require daily persistent therapy and who have no specific contraindications, the current evidence, weighing efficacy versus adverse effects, supports the use of cyclooxygenase (COX)-2 selective agents.<sup>55,56</sup> The nonacetylated salicylates (e.g., choline magnesium trisalicylate, salsalate) may provide a relatively safe and less expensive alternative to the more selective new agents. Although the combination of acetaminophen and an NSAID may be safe, it is unlikely that any net gain in pain relief is obtained by their combined use. If appreciable reduction in symptoms is not experienced within a few days of around-the-clock dosing, reevaluation and consideration of a different form of drug therapy is indicated. The COX-2 selective drugs are safer than nonselective COX inhibitors in terms of gastrointestinal morbidity and antiplatelet effects. However, drug-drug and drug-disease interactions associated with COX-2 inhibitors remains a highly active area of research, and clinicians must stay informed about new findings.<sup>57-59</sup> In the final analysis, the chronic use of opioids for persistent pain or some other analgesic strategies may have fewer life-threatening risks than does the long-term daily use of high-dose nonselective NSAIDs.<sup>12</sup>

### The Use of Opioid Analgesics

The use of opioid analgesics for persistent noncancer pain is becoming more acceptable. Physical dependency is an inevitable consequence of continuous exposure to opioids and is managed by gradual dose reduction (tapering) over the course of several days to weeks if indications for opioid therapy no longer exist.<sup>60</sup> True addiction (drug craving and continued use despite known harms) in older patients with persistent pain syndromes is probably rare in comparison with the known prevalence of undertreated debilitating pain. When aberrant behaviors are observed,

it is incumbent on clinicians to determine that these behaviors do not reflect poorly controlled pain. Longitudinal studies increasingly suggest that tolerance (the need for more drug in order to get the same therapeutic effect) is slow to develop in the face of stable disease.<sup>61</sup> Any change in a patient's drug requirements signals a need for reassessment for new or progressing disease before a diagnosis of "opioid tolerance" is made. Most importantly, concerns over drug dependency and addiction do not justify the failure to relieve pain.<sup>62</sup> Many state and federal agencies have issued prescribing guidelines or have created policies to support medically indicated use of opioid analgesics for patients with pain conditions.<sup>63</sup>

### Opioids of Particular Concern

It is beyond the scope of this summary to describe individual opioid analgesics. However, the panel felt compelled to review a few of the drugs that clinicians often question. Propoxyphene has been available for the treatment of mild to moderate pain for many years. Studies suggest that its efficacy is similar to that of aspirin or acetaminophen alone, but drug accumulation, neuroexcitatory effects, and ataxia or dizziness may add unnecessary morbidity in older patients. Although many practitioners and patients continue to find propoxyphene useful, the current literature suggests that other analgesic strategies are more appropriate for patients with persistent mild to moderate pain.<sup>64-66</sup>

Tramadol is an analgesic with a dual mechanism of action: mu opioid-receptor binding combined with inhibition of norepinephrine and serotonin reuptake. It is an unscheduled drug with apparently low abuse and diversion potential.<sup>67-69</sup> Tramadol has been studied largely in mild to moderate pain associated with osteoarthritis, low back pain, and diabetic neuropathy, and its use in elderly patients has been recently reviewed.<sup>70, 71-74</sup> Its efficacy and safety are reported to be similar to those of equianalgesic doses of codeine and hydrocodone, including potential for drowsiness and nausea. Because of the threat of seizures, rare but potential, tramadol should be used with caution in patients with a history of seizure disorder or those taking other medications that lower seizure thresholds.

Methadone is a potent mu opioid-receptor agonist whose use for pain control has waxed and waned. It has regained the interest of pain management clinicians recently because it is thought to be effective for neuropathic pain and to slow the development of opioid tolerance.<sup>75</sup> However, methadone is difficult to titrate because of its long and variable half-life.<sup>76</sup> This property is onerous in older patients with limited reserve and modified hepatic metabolism resulting from their use of medications for other persistent conditions. Methadone should be prescribed by clinicians who have considerable experience with its use or in closely monitored settings.<sup>46</sup>

**Table 4. Systemic Pharmacotherapy for Persistent Pain Management (oral dosing unless otherwise specified)**

<b>Drug</b>	<b>Starting Dose</b>	<b>Usual Effective Dose (Maximum Dose)</b>	<b>Titration</b>	<b>Comments</b>
<b>NON-OPIOIDS</b>				
Acetaminophen (Tylenol)	325 mg q 4 h– 500 mg q 6 h	2–4 g/24 h (4 g/24 h)	after 4–6 doses	Reduce maximum dose 50%– 75% in patients with hepatic insufficiency; hx of alcohol abuse
Choline magnesium trisalicylate (Tricosal, Trilisate)	500–750 mg q 8 h	2,000–3,000 mg/24 h (same)	after 4–6 doses	Long half-life may allow qd or bid dosing after steady state is reached
Salsalate (e.g., Disalcid, Mono-Gesic, Salflex)	500–750 mg q 12 h	1,500–3,000 mg/24 h (3000 mg/24 h)	after 4–6 doses	In frail patients or those with diminished hepatic or renal function, it may be important to check salicylate levels during dose titration and after reaching steady state
Celecoxib (Celebrex)	100 mg bid or 200 qd	200 mg/24 h (400 mg/24 h)	after 2–3 days	Higher doses may be associated with a higher incidence of GI side effects; patients with indications for cardio-protective ASA require aspirin supplement
Rofecoxib (Vioxx)	12.5 mg qd	25 mg/24 h (50 mg/24 h)	after 2–3 days	Higher doses may be associated with a higher incidence of GI side effects; patients with indications for cardio-protective ASA require aspirin supplement
Corticosteroids (prednisone) (e.g., Deltasone, Liquid Pred, Orasone)	5.0 mg qd	variable (NA)	after 2–3 doses	Use lowest possible dose to prevent chronic steroid effects; anticipate fluid retention and glycemic effects
Tricyclic antidepressants*: desipramine (Norpramin), nortriptyline (Aventyl, Pamelor)	10 mg hs	25–100 mg hs (variable)	after 3–5 days	Significant risk of adverse effects in older patients; anticholinergic effects
Anticonvulsants —carbamazepine (Tegretol)	100 mg qd	800–1,200 mg/24 h (2,400 mg/day)	after 3–5 days	Monitor LFTs, CBC, BUN/Creat., electrolytes
—clonazepam (Klonopin)	0.25–0.5 mg hs	0.05–0.2 mg/kg/day (20 mg)	after 3–5 days	Monitor sedation, memory, CBC
—gabapentin (Neurontin)	100 mg hs	300–900 mg tid (3,600 mg)	after 1–2 days	Monitor sedation, ataxia, edema
Mexiletine (Mexitil)	150 mg	150 mg tid–qid (variable)	after 3–5 days	Avoid use in patients with conduction block, bradyarrhythmia; monitor ECG
Baclofen (Lioresal)	5 mg	5-20mg bid–tid 200 mg	after 3–5 days	Monitor muscle weakness, urinary function; avoid abrupt discontinuation because of CNS irritability

*Continued*

Table 4. Continued

Drug	Starting Dose	Usual Effective Dose (Maximum Dose)	Titration	Comments
<b>OPIOIDS</b>				
Tramadol (Ultram)	25 mg q 4–6 h	50–100 mg (300 mg/ 24 h)	after 4–6 doses	Mixed opioid and central neurotransmitter mechanism of action; monitor for opioid side effects, including drowsiness and nausea
Hydrocodone (e.g., Lorcet, Lortab, Vicodin, Vicoprofen)	5 mg q 4–6 h	5–10 mg (see comments)	after 3–4 doses	Useful for acute recurrent, episodic, or breakthrough pain; daily dose limited by fixed-dose combinations with acetaminophen or NSAIDs
Oxycodone, immediate release (OxyIR)	5 mg q 4–6 h	5–10 mg (see comments)	after 3–4 doses	Useful for acute recurrent, episodic, or breakthrough pain; daily dose limited by fixed-dose combinations with acetaminophen or NSAIDs
Oxycodone, sustained release (OxyContin)	10 mg q 12 h	variable (variable)	after 3–5 days	Usually started after initial dose determined by effects of immediate-release opioid
Morphine, immediate release (e.g., MSIR, Roxanol)	2.5–10 mg q 4 h	variable (variable)	after 1–2 doses	Oral liquid concentrate recommended for breakthrough pain
Morphine, sustained release (e.g., MSContin, Kadian)	15 mg q 12 h	variable (variable)	after 3–5 days	Usually started after initial dose determined by effects of immediate-release opioid; toxic metabolites of morphine may limit usefulness in patients with renal insufficiency or when high-dose therapy is required; continuous-release formulations may require more frequent dosing if end-of-dose failure occurs regularly
Hydromorphone (Dilaudid, Hydrostat)	2 mg q 3–4 h	variable (variable)	after 3–4 doses	For breakthrough pain or for around-the-clock dosing; a sustained-release formulation is currently under FDA review
Transdermal fentanyl (Duragesic)	25 µg/h patch q 72 h	variable (variable)	after 2–3 patch changes	Usually started after initial dose determined by effects of immediate-release opioid; currently available lowest dose patch (25 µg/h) recommended for patients who require 60 mg per 24-h oral morphine equivalents; peak effects of first dose takes 18–24 h. Duration of effect is usually 3 days, but may range from 48 h to 96 h

Note: ASA = acetylsalicylic acid; BUN = blood urea nitrogen; CBC = complete blood cell count; CNS = central nervous system; Creat. = serum creatinine; CV = cardiovascular; ECG = electrocardiogram; FDA = U.S. Food and Drug Administration; GI = gastrointestinal; hx = history; LFT = liver function test; NA = not applicable; NSAIDs = nonsteroidal antiinflammatory drugs; hs=bedtime; qd=daily; bid=twice daily; tid=three times daily.

\* Amitriptyline is not recommended.

## Management of Side Effects

Monitoring the side effects of opioid therapy should focus on neurologic, gastrointestinal, and cognitive-behavioral effects. These include gait disturbance (ataxia), dizziness, falls, pruritus, constipation,<sup>77,78</sup> abdominal distention or discomfort, nausea, sedation, and impaired concentration. It is advisable to allow several days at the maintenance analgesic dose before advising the patient to resume driving. Serious side effects, such as myoclonus, impaired consciousness or delirium, and hypoxia or life-threatening respiratory depression, are rare, especially when doses are started low and escalated slowly, allowing for steady-state blood levels to be reached at each dose prescribed.<sup>46</sup> Patients with borderline mobility capabilities and a propensity for falls must be monitored carefully for increasing gait and balance disturbances.<sup>79</sup> These patients may require evaluation for an assistive device or physical therapy throughout the titration phase. Sustained-release opioid formulations are available for continuous treatment of moderate to severe pain.<sup>80-84</sup> Patients should be warned that chewing or crushing continuous-release tablets destroys their controlled-release properties and causes rapid absorption of the entire dose, which may result in overdosage.

## The Use of Adjuvant Drugs

A number of drugs developed for purposes other than analgesic nevertheless alter, attenuate, or modulate pain perception. The term *adjuvant drug* has been used in the cancer pain literature to describe them.<sup>85</sup> These drugs may be used alone or in combination with non-opioid or opioid analgesics to treat many different persistent pain conditions, especially neuropathic pain. These drugs act on the nervous system through interactions at cell surface receptor sites or membrane ion channels, or by alteration of synaptic neurotransmitter levels. Recent improvements in treatment of depression have been seen with the introduction of selective serotonin-reuptake inhibitor (SSRI) drugs that have relatively low side-effect profiles. It is important to note that SSRI drugs have not been very effective against pain. Traditional antidepressants that have demonstrated dual effects on pain and depression, such as amitriptyline, nortriptyline, and desipramine, often demonstrate unacceptable side effects in elderly persons. Gabapentin or other new anticonvulsant drugs with relatively low side-effect profiles may provide a better choice than older tricyclic antidepressants.<sup>86-88</sup>

It is important to note that all of the currently available pain-modulating drugs, including antidepressants, anticonvulsants, antispasmodics, antiarrhythmics, and local anesthetics, have side effects that require careful titration, frequent monitoring until steady-state maintenance levels are achieved, and regular follow-up visits to assess therapeutic and adverse effects.

## The Use of Placebos

The use of placebos in clinical practice is unethical, and there is no place for their use in the management of persistent pain.<sup>89</sup> Placebos, in the form of inert oral medications, sham injections, or other fraudulent procedures are justified only in certain research designs where patients

have given informed consent, understand that they may be receiving a placebo as a part of the research design, and incur an overall risk of no treatment that is considered very low.<sup>90</sup> In research, placebos help identify and measure random or uncontrollable events that may confound results of some research designs. In clinical settings placebo effects are common, but they are neither diagnostic of pain or indicative of a therapeutic response. The effects of placebos are short lived, and most patients eventually learn the truth, resulting in loss of patient trust and more needless suffering.

## Drug Regimens

The timing of medications is important. For continuous pain, medications are best given on a time-contingent around-the-clock basis.<sup>45</sup> Supplemental doses of immediate-release, short-acting analgesics may be required just before a patient engages in activities known to exacerbate pain. Persistent pain is an exhausting experience; deconditioning, sleep deprivation, and poor nutrition commonly result from unrelieved pain. Most patients will cope better if drugs are prescribed in an effort to support exercise, enjoyable activities, and a good night's sleep.<sup>12</sup> Patients with primary sleep disturbance and persistent pain require therapy directed at both disorders, since each exacerbates the other. Sleep deprivation is so common with persistent pain that when pain is relieved, there is often a short period, lasting a few days, when the patient seems to sleep continuously. This phase of restorative sleep is healthy, as long as the patient can be easily aroused and can function to eat, drink, and perform normal toileting. Over the course of a few days, once dose stabilization has occurred and the patient has become rested, sedation should diminish. If not, dose reduction is in order.

Drug regimens for the older patient should be simplified as much as possible, and regimens should be adjusted to meet individual needs and life styles.<sup>10</sup> Tools to enhance compliance should be used whenever possible. Economic issues do play a role in pain management and should also enter into the decision-making processes once sound principles of assessment and treatment have been followed. Clinicians should be aware of common economic barriers, including the lack of Medicare reimbursement for outpatient oral medications, limited formularies, and delays from mail-order pharmacies in some managed-care programs. Inner-city areas may not have pharmacies that are willing to carry certain opioid analgesics.<sup>91</sup>

## Specific Recommendations

(quality and strength of evidence ratings follow each recommendation: see Table 1)

- I. All older patients with functional impairment or diminished quality of life as a result of persistent pain are candidates for pharmacologic therapy. (IA)
- II. There is no role for placebos in the assessment or management of pain. (IC)
- III. The least toxic means of achieving systemic pain relief should be used. When systemic medications are indicated, the noninvasive route should be considered first. (IIIA)

- IV. Acetaminophen should be the first drug to consider in the treatment of mild to moderate pain of musculoskeletal origin. (IB)
  - V. Traditional (nonselective) NSAIDs should be avoided in treating patients who require long-term daily analgesic therapy. The COX-2 selective agents or nonacetylated salicylates are preferred for older persons who require NSAIDs. (IA)
  - VI. Opioid analgesic drugs may help relieve moderate to severe pain, especially nociceptive pain. (IA)
    - A. Opioids for episodic (noncontinuous) pain should be prescribed as needed, rather than around the clock. (IA)
    - B. Long-acting or sustained-release analgesic preparations should be used for continuous pain. (IA)
      1. Breakthrough pain should be identified and treated by the use of fast-onset, short-acting preparations. There are three types of breakthrough pain: (IA)
        - a. *End-of-dose failure* is the result of decreased blood levels of analgesic with concomitant increase in pain before the next scheduled dose. If this occurs routinely, consider decreasing the interval between doses of continuous-release agents. Increasing the dose of the continuous-release agent is another consideration, but this may cause undesirable effects, such as sedation. (IIIB)
        - b. *Incident pain* is usually caused by activity that can be anticipated and pretreated. (IB)
        - c. *Spontaneous pain*, common with neuropathic pain, is commonly fleeting and difficult to predict. (IC)
      2. Titration should be conducted carefully. (IA)
        - a. Titration of the maintenance dose should be based on the persistent need for and use of medications for breakthrough pain. (IA)
        - b. Titration should be based on the pharmacokinetics and pharmacodynamics of specific drugs in the older person, the propensity for drug accumulation, interactions with other drugs, and each patient's unique clinical and social circumstances. (IIIA)
        - c. The potential adverse effects of opioid analgesic medication should be anticipated and prevented or treated promptly. (IIA)
      3. Constipation and opioid-related gastrointestinal symptoms should be prevented. (IA)
        - a. Assessment of bowel function should be part of the initial assessment and of every follow-up visit for all patients receiving analgesics. (IA)
        - b. A prophylactic bowel regimen should be initiated with the commencement of persistent opioid therapy. (IA)
        - c. Bulking agents should be used cautiously in patients who are immobile and where adequate hydration is questionable. (IIIB)
        - d. Adequate fluid intake should be encouraged. (IIIB)
- e. Exercise, ambulation, regular toileting habits and patterns, and physical activity should be encouraged. (IIIB)
- f. If fecal impaction is present, it should be relieved by enema or manual removal. (IIIA)
- g. A stimulant (e.g., senna) should be prescribed to provide regular evacuation. Doses of this agent need to be titrated against desired effect. (IIB)
- h. Stimulant laxatives are contraindicated when signs or symptoms of bowel obstruction are present. (IIIA)
4. Mild sedation and impaired cognitive performance should be anticipated when opioid analgesic drugs are initiated or escalated. Until these side effects cease: (IIIC)
  - a. Patients should be instructed not to drive. (IIIB)
  - b. Patients and caregivers should be cautioned about the potential for falls and accidents; appropriate precautions should be taken. (IIIA)
  - c. Monitoring for profound sedation, unconsciousness, or respiratory depression (defined as a respiratory rate of < 8 per minute or oxygen saturation < 90%) should occur during rapid, high-dose escalations. Naloxone should be used very carefully, titrated in low incremental doses, to avoid abrupt, complete opioid antagonism and the precipitation of autonomic crisis. (IA)
5. Patients who experience unremitting opioid-induced sedation or fatigue that limits quality of life or dose escalation to provide optimum pain control may require switching to an alternate opioid, or they may be candidates for opioid rotation or use of short-term, low-dose psychostimulant therapy (e.g., methylphenidate), or both. (IB)
6. Severe or persistent nausea may need to be treated with anti-emetic medications, as needed. (IIIB)
  - a. Mild nausea usually resolves spontaneously in a few days. (IIIB)
  - b. If nausea persists, a trial of an alternative opioid may be appropriate. (IIIB)
  - c. Anti-emetic drugs should be chosen from those with the lowest side-effect profiles in older persons. (IIIA)
- VII. Fixed-dose combinations of opioid with acetaminophen or NSAIDs may be useful for mild to moderate pain. (IA)
  - A. The maximum recommended dose should not be exceeded, to minimize acetaminophen or NSAID toxicity. (IA)
  - B. If a maximum safe (nontoxic) dose is reached without sufficient pain relief because of limits imposed by the maximum safe acetaminophen or NSAID dose, switching to noncombination preparations is recommended. (IA)

- VIII. Patients taking analgesic medications should be monitored closely. (IA)
- A. Patients should be reevaluated frequently for drug efficacy and side effects during initiation, titration, or any change in dose of analgesic medications. (IA)
  - B. Patients should be reevaluated regularly for drug efficacy and side effects throughout long-term analgesic drug maintenance. (IIIA)
    1. Patients on long-term opioid therapy should be evaluated periodically for inappropriate or dangerous drug-use patterns. (IIIA)
      - 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). (IIIC)
      - b. The clinician should ask about prescriptions for opioids from other physicians. (IIIA)
      - c. The clinician should watch for signs of opioid use for inappropriate indications (e.g., anxiety, depression, grief, loss). (IIIA)
      - d. Requests for early refills should include evaluation of tolerance, progressive disease, inappropriate behavior, or drug diversion by others. (IIIA)
      - 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.” (IIIA)
      - f. The use of a written “medication agreement” is advised when there are concerns about appropriate use or adherence to the plan of care. (IIIC)
    2. Patients on long-term NSAIDs should be periodically assessed for symptoms or signs of gastrointestinal blood loss, renal insufficiency, edema, hypertension, and drug-drug or drug-disease interactions. (IA)
- IX. Non-opioid analgesic medications may be appropriate for some patients with neuropathic pain and some other persistent pain conditions. (IA)
- A. Agents with the lowest side-effect profiles should be chosen preferentially. Patients with intact skin who have localized or regional pain syndromes (e.g., post-herpetic neuralgia) may benefit from commercially available topical therapies (e.g., capsaicin cream, lidocaine patch). (IB)
  - B. Agents may be used alone but often are more helpful when used in combination and to augment other pain management strategies. (IIB)
  - C. Therapy should begin with the lowest possible doses and increased slowly because of the potential for toxicity of many agents. (IA)
  - D. Patients should be closely monitored for side effects. (IA)

- X. Clinical endpoints should be decreased pain, increased function, and improvements in mood and sleep, not decreased drug dose. (IIIB)

## NONPHARMACOLOGIC STRATEGIES

### General Principles

A variety of nonpharmacologic interventions for persistent pain have been shown to work alone or in combination with appropriate pharmacologic strategies.<sup>45</sup> Nonpharmacologic pain management interventions include a number of physical and psychologic treatment modalities that often require active participation. Active patient involvement helps to build self-reliance and control over pain. These interventions (e.g., patient education, plans for safe physical exercise maintenance, and appropriate use of self-help techniques) should be an integral part of the approach to management of any persistent pain problem.

The importance of patient education cannot be overemphasized. Studies have shown that patient education programs alone (especially these associated with actual practice of self-management and coping strategies) significantly improve overall pain management.<sup>92-98</sup> Such programs commonly include information about the nature of pain and how to use pain assessment instruments, medications, and nonpharmacologic pain management strategies. For many older persons, family caregiver education is also essential. Whether the program is conducted one-on-one or organized in groups, it should be modified to patients' needs and levels of understanding. Suitable written materials (accommodating for visual impairment) and appropriate methods for reinforcement of self-help efforts are important to the success of the program. The clinician should be aware that many patients obtain medical information from the Internet or other sources, and some of it is misleading and possibly dangerous.<sup>99</sup> The sources of the patient's information should always be ascertained.

Many older persons with persistent pain problems experience significant symptoms of depression and anxiety at some time. These symptoms make assessment and treatment more difficult. Depression and anxiety need to be anticipated and treated in tandem with other strategies to make overall pain management more effective. It is important to recognize that treatment of anxiety and depressive symptoms is not a substitute for other analgesic strategies, and vice versa. Older persons who have significant anxiety or depression associated with persistent pain often require an interdisciplinary and multi-modal approach to the management of these complex problems.

Learning cognitive and behavioral pain coping strategies is an important part of pain management for all patients with persistent pain. Cognitive coping strategies are designed to modify factors such as helplessness, low self-efficacy, and catastrophizing that have been shown to increase pain and disability.<sup>100, 101</sup> Cognitive strategies may include distraction methods to divert attention from pain (e.g., imagery, focal point, counting methods), mindfulness methods to enhance acceptance of pain (e.g., meditation), and methods for altering self-defeating thought patterns that contribute to pain and psychologic distress (e.g.,

altering underlying beliefs and attitudes). Behavioral strategies can help patients to control pain by pacing their activities, increasing their involvement in pleasurable activities, and using relaxation methods. Cognitive strategies are typically combined with behavioral strategies, and together they are known as cognitive-behavioral therapy. The most effective forms of cognitive-behavioral therapy use a structured, systematic approach to teaching coping skills.<sup>102</sup> Cognitive-behavioral therapy can be used alone, but typically it is combined with pharmacologic therapies. Effective programs can be conducted with patients individually or in groups; evidence suggests that the active involvement of a spouse or significant other enhances the effects.<sup>103,104</sup> Cognitive-behavioral therapy usually requires six to 10 sessions (60 to 90 minutes per session) with a trained therapist. Although such therapy may not be appropriate for patients with appreciable cognitive impairment, the favorable results of controlled trials support its use for many older adults with persistent pain.

Successful aging amounts to sustaining a high quality of life, which primarily means maintaining functional independence.<sup>105,106</sup> Persistent pain may directly influence the development and course of disability that threatens functional independence by provoking or worsening physical inactivity, which itself is a risk factor for many health problems.<sup>107,108</sup> Moreover, the resulting deconditioning may contribute further to both persistent pain and disability. The combination of persistent pain, deconditioning, and age-related changes in several physiologic domains can make attempts at resuming physical activity and restoring functional independence even more painful. Reversing the adverse consequences of deconditioning and optimizing function by increasing physical activity thus has the potential to substantially enhance the older person's quality of life.<sup>109,110</sup>

Strong evidence indicates that regular participation in physical activities may help control persistent diseases and lessen the clinical impact of the biologic changes of aging.<sup>111-115</sup> Furthermore, systematic reviews of observational and randomized controlled clinical trials conclude that there is strong evidence that participation in regular physical activity reduces the pain and enhances the functional capacity of older adults with persistent pain.<sup>116-119</sup> Because persistent pain is commonly associated with prolonged physical inactivity, these effects may be partly due to the reversal of the physiologic consequences of deconditioning. In addition, increasing physical activity may improve psychologic health, and regular participation in physical activities may lessen the clinical impact of age-related biologic changes and of chronic diseases.<sup>107,109</sup>

A variety of therapeutic exercise programs have been used to treat persistent pain associated with a range of conditions.<sup>116,117,120</sup> Components of an exercise prescription appropriate for the older adult have been described in a recent AGS Practice Recommendation.<sup>120</sup> The primary objectives of such an exercise program are to reduce pain and to reverse the physical impairments and the consequences of deconditioning. A program should include exercises that improve joint range of motion, increase muscle strength and power, enhance postural and gait stability, and restore cardiovascular fitness. An inventory of the pa-

tient's comorbidities, medications, and physical impairments is essential to the development of an exercise prescription that is safe and meets each patient's needs. Because moderate levels of physical activity should be maintained indefinitely, each exercise program should be adjusted to the preferences of the patient to promote long-term compliance. A variety of such programs are available through the Arthritis Foundation,<sup>121</sup> and at least one study has shown that water exercises are safe and may have higher compliance.<sup>122</sup> An effective combination of non-pharmacologic interventions commonly improves the therapeutic effects of medications and may facilitate lower drug dosages.

Unrelieved persistent pain commonly causes patients to seek relief with alternative medicine, including homeopathy, naturopathy, chiropractic, and spiritual healing. Although there is little scientific evidence for the efficacy of most of these strategies for controlling persistent pain, it is important that clinicians not leave patients with a sense of hopelessness as a result of their efforts to discourage unapproved but benign therapies or to debunk healthcare quackery and fraud. A recent rising interest in religion and spirituality has caused many to seek relief with spiritual healing. Studies suggest that it is helpful to some suffering from an idiopathic persistent pain syndrome.<sup>123</sup>

The personal attention and physical touching provided by practitioners of these alternative therapies may give some modicum of relief to patients with persistent pain. Until more rigorous investigation, it is difficult to make specific recommendations about the long-term use of complementary and alternative therapies.

### Specific Recommendations

(quality and strength of evidence ratings follow each recommendation: see Table 1)

- I. A physical activity program should be considered for all older patients. (IA)
  - A. Physical activities should be individualized to meet the needs and preferences of each patient. (IA)
  - B. For some older adults with severe physical impairments, a trial of supervised rehabilitation therapy is appropriate, with goals to improve joint range of motion and to reverse specific muscle weakness or other physical impairments associated with persistent pain. (IA)
  - C. For healthy individuals who are currently sedentary or deconditioned, referral should be made to a group exercise program (e.g., YMCA classes) for a moderate program of physical activity. (IIIC)
  - D. For those who are incapable of strenuous training, initial training should be conducted over 8 to 12 weeks and should be supervised by a professional with knowledge of the special needs of older adults. (IA)
- II. Moderate levels of physical activity (leisure-time or utilitarian) should be maintained. (IIIC)
- III. Any physical activity program for older patients should include exercises that improve flexibility, strength, and endurance. (IA)

- IV. Patient education programs are integral components of the management of persistent pain syndromes. (IA)
  - A. Content should include information about self-help techniques (e.g., relaxation, distraction), the known causes of their pain, the goals of treatment, treatment options, expectations of pain management, and analgesic drug use. (IIA)
  - B. Educational content and the patient's self-help efforts should be reinforced during every patient encounter. (IIIA)
  - C. Focused patient education should be provided prior to special treatments or procedures. (IIIC)
  - D. Patients should be encouraged to educate themselves by using available local resources (e.g., local hospitals, support groups, and disease-specific organizations). (IIIC)
- V. Formal cognitive-behavioral therapies are helpful for many older adults with persistent pain. (IA)
  - A. Cognitive-behavioral therapy conducted by a professional should be applied as a structured program that includes education, a rationale for therapy, training in cognitive and behavioral pain coping skills, methods to generalize coping skills, and relapse prevention. (IIIA)
  - B. Plans for coping with pain exacerbations should be a part of this therapy to prevent self-defeating behavior during such episodes. (IIIC)
  - C. Spouses or other partners can be involved in cognitive-behavioral therapy. (IA)
- VI. Other modalities (e.g., heat, cold, massage, liniments, chiropractic, acupuncture, and transcutaneous electrical nerve stimulation) often offer temporary relief and can be used as adjunctive therapies. (IIIC)

## RECOMMENDATIONS FOR HEALTH SYSTEMS THAT CARE FOR OLDER PERSONS

### General Principles

The healthcare 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 the delivery of quality pain management services.<sup>124</sup> In some cases, organizations need to revise regulations that have 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. In all cases, clinicians and professional organizations need to work with legislative bodies to promote appropriate legislation.<sup>12,125,126</sup>

Traditionally, healthcare professionals have not been adequately trained in pain assessment and management. 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 the effective care of older adults. Primary care physicians need to work with pain specialists and palliative care providers to enhance communication,

improve appropriate referrals, and share the responsibility for the care of elderly patients with persistent pain. Refocusing not only the curricula for trainees but also continuing education for practitioners 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.<sup>12</sup>

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, especially for those near the end of life, palliative care. Third-party payers need to consider carefully the financial incentives they create. Policies that seem financially beneficial in the short term may result in needless disability, suffering, and increased healthcare utilization in the long run. Care must be taken not to create incentives that promote unjustified use of more costly and oftentimes unnecessarily interventional therapies.<sup>12</sup>

### Specific Recommendations

(quality and strength of evidence ratings follow each recommendation: see Table 1)

- I. Healthcare facilities should support policies and procedures for routine screening, assessment, and treatment of persistent pain among all older patients. Health organizations should include pain management as a major domain in the development of clinical pathways. (IIB)
- II. Attention should be devoted to pain across the continuum of care and should not be limited to those patients who are near the end of life. (IIB)
- III. Ambulatory care facilities, hospitals, nursing homes, assisted-living facilities, and home-care agencies should routinely conduct quality assurance and quality improvement (QA and QI) activities in pain management. (IIB)
  - A. QA and QI activities should include appropriate structure and process indicators of pain assessment and treatment activities. (IIIC)
  - B. Benchmarks for quality improvement should be established internally and should include quantifiable pain outcomes, which may include, but should not be limited to, patient satisfaction. (IIB)
- IV. Healthcare financing systems (third-party payers, managed-care organizations, and publicly financed programs) should extend resources for persistent pain management. (IIIC)
  - A. Present diagnosis-driven reimbursement systems should be revised to improve incentives for time-consuming pain management. (IIIC)
    - 1. The safest and most effective pharmacologic and nonpharmacologic strategies for pain management should be provided. (IIIC)



2. Reimbursement systems must not result in the inaccessibility of effective treatment or in needless suffering. (IIIC)
3. Reimbursement systems should promote adequate compensation for all providers who can contribute to effective pain management (e.g., physical therapy, nursing, psychology, social work, occupational therapy). (IIIC)
- 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. (IIIC)
- V. Health systems (especially integrated networks and community health planners) should ensure accessibility to specialty pain services. (IB)
- VI. Specialty pain services should be accredited and adhere to guidelines defined by quality review organizations. (IIIB)
  - A. Services should include medicine, pharmacy, mental health, nursing, physical therapy, and occupational therapy. (IIIC)
  - B. These services should also be available outside a coordinated multidisciplinary pain service. (IIIC)
- VII. Education in pain management for all healthcare professionals should be improved at all levels. (IB)
  - A. Professional curricula should provide substantial training and experience in pain management for older adults. (IIIC)
    1. Curricula should adhere to published general curriculum guidelines until those specific to older adults have been developed (e.g., those of the International Association for the Study of Pain). (IIIC)
    2. Trainees should demonstrate proficiency in pain assessment and management. (IIIC)
  - B. Health systems should provide continuing education in pain assessment and management to health professionals at all levels. (IB)
  - C. Accreditation bodies should include pain management curriculum content as evaluation criteria. (IIIC)
- VIII. Pain management should be included in consumer information services. (IIIB)
  - A. Healthcare systems should encourage patients and their surrogates to advocate for more effective pain management. (IIIC)
  - B. Healthcare systems should provide educational materials (posters, pamphlets, Internet resources) that encourage patients to discuss pain with their providers. (IIIC)
- IX. Programs and regulations designed to decrease illicit drug use should be revised to eliminate barriers to persistent pain management for the older patient. (IIIB)
  - A. State 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. (IIIC)
  - B. State medical license boards must work to eliminate clinicians' trepidation over conduct review

that has become a major barrier to the prescription of effective pain medications. (IIIC)

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

### Panel Members & Affiliations

The American Geriatrics Society (AGS) Panel on Persistent Pain in Older Persons includes: Bruce Ferrell, MD (Chairman): UCLA School of Medicine, Los Angeles, CA; David Casarett, MD: Center for Health Equity Research and Promotion, Philadelphia VA Medical Center, Philadelphia PA; Jerome Eppin, MD: Litchfield Family Practice Center, Litchfield, IL; Perry Fine, MD: University of Utah Pain Management Center, Salt Lake City, UT; F. Michael Gloth, III, MD: Victory Springs Senior Health Associates & John Hopkins University School of Medicine, Baltimore, MD; Keela Herr, PhD, RN: University of Iowa, Iowa City, IA; Paul Katz, MD: University of Rochester Medical School, Rochester, NY; Francis Keefe, PhD: Duke Medical Center, Durham, NC; Peter J.S. Koo, PharmD: University of California, San Francisco, CA; Michael O'Grady, MD: Emory University School of Medicine, Atlanta, GA; Peggy Szwabo, PhD, LCSW, RN: Saint Louis University, Saint Louis, MO; April Hazard Vallerand, PhD, RN: Wayne State University, Detroit, MI; Debra Weiner, MD: University of Pittsburgh School of Medicine/ Pain Evaluation and Treatment Institute, Pittsburgh, PA.

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