

The Under Treatment of Pain: A Public Health Problem
Gretchen Dickinson
January 14, 2008

Introduction

Pain has been documented to be one of the most common and widely feared symptoms experienced by adult patients and can be highly preventable in multiple settings.¹ Tragically, the more severe the pain the more likely we as physicians will underestimate it and mismanage it. For example an all too common scenario is summarized:²

I loved it when they'd pop their heads in the room, maybe twice a day, and say, "Rate your pain from 1 to 10." So "5," he'd say with tears in his eyes, wincing. And away they'd go—no more medicine, no further questions asked. Finally, I couldn't take it any longer and told him to "up the number," as pain is a very subjective thing and those who don't feel it do not interpret its levels the same way as those who do. He increased the number slightly, and finally resorted to saying, "So what is the highest number I can say? 10? Well, then, its 11 now." Then a bigger problem set in. "Hit the clicker when you are in pain and if you are allowed more, it will be distributed. You can click every 5 minutes." How the hell is someone in pain, trying to get some rest, supposed to manage that pain by clicking a clicker every 5 minutes 24 hours a day? It was so bad we were clicking the clicker for him through the night as he tried to sleep. This ordeal lasted several days.

Many terminally ill patients unnecessarily experience moderate to severe pain in their last weeks of life. Evidence suggests that many, if not most, of the patients who request assistance in ending their lives are usually seeking help in ending their pain. "What patients fear more than dying is the prospect of living in unmanageable pain."² It is also well documented that this issue is particularly a problem for children, the elderly, minorities, persons with a substance abuse history, persons with disabilities, as well as for persons with chronic conditions such as cancer, AIDS and sickle cell anemia.³ It has been uniformly shown that doctors underestimate and under treat pain. The under treatment of pain is recognized by many as a serious public health problem that results in a decrease in patients' functional status and quality of life. The problem can be attributed to a myriad of social, economic, political, legal and educational factors.⁴ The mere misunderstanding of addiction and dependence and the lack of knowledge of medical standards, current research, and clinical guidelines for appropriate pain treatment are just some of the educational factors that contribute to the problem. Then there is the perception that prescribing adequate amounts of controlled substances will result in scrutiny by regulatory authorities and the overall lack of understanding of regulatory policies and processes. All of these issues combined create an environment where pain is often under treated and mismanaged.

Pain Policy

In an American Medical Association (AMA) survey of physicians done several years ago, the majority of physicians responding reported that their prescribing of controlled drugs was negatively influenced by a fear of licensing board sanctions.⁵ Although this has been addressed recently and many improvements in state policy have been initiated we still

have a long way to go. Some of the major authorities on pain including the World Health Organization (WHO), the International Narcotics Control Board, the Institute of Medicine, the American Cancer Society and the National Institutes of Health have called attention to the under treatment of pain and have concluded that part of the problem is due to policies that are meant to control drug abuse but are also impeding medical use of opioids. Much of the discussion below comes from the Pain and Policy Studies Group. Their vision is that people who suffer pain from cancer, AIDS, surgery, accidents, and chronic conditions will have relief from their pain and a better quality of life; and that caregivers will know when and how to use opioid analgesics without fear of regulatory agencies. Their mission is to "balance" international, national and state policies to ensure adequate availability of pain medications for patient care while minimizing diversion and abuse, and to support a global communications program to improve access to information about pain relief, palliative care, and policy. They are one of the major contributors to research in this area and are affiliated with the University of Wisconsin and The World Health Organization.

There has been growing attention to the consequences of abuse of opioid analgesics which has led some to believe that a large part of the problem is physicians' prescribing these pain medications. This has rekindled fears about regulatory scrutiny and caused doubts about the use of these important medications. Medical professionals may hesitate to prescribe narcotic drugs when such drugs are warranted clinically. Legitimate use of controlled substances is not only essential but must be protected. It is important for physicians to understand their states policies and regulations in order for them to treat pain free from fear of punishment. Physicians need a safe and secure environment to prescribe narcotics to avoid the under treatment of pain. Since opioids have the potential for abuse they are regulated by federal and state controlled substances policies. These policies are there to prevent drug trafficking, abuse and substandard medical practice but in some states these policies go beyond the usual framework and can negatively affect legitimate medical practices. These policies that conflict with current standards of practice can interfere with pain management in many ways but mainly by restricting the amounts of medications that can be prescribed and restricting access to certain patient populations.³ Even if a states' policy is not overly interfering with practice it is often lacking the fundamentals that have been recommended to encourage pain management. Policy should be created uniformly not only on the national level but also at the state and local level. The Uniform Controlled Substances Act is one tool that helps states address these concerns and provides model legislation to assure the continued free movement of controlled substances. The model helps outline interactions between persons/agencies with local, state and federal agencies.⁵ This is only one example of legislation that helps provide physicians the ability to prescribe narcotics. As residents we do not think much about policy or how it works and take much of our prescribing privileges for granted. It is important as young physicians enter into their own practices to be aware and understand policy. This will help ensure improved attitudes and a safer environment in which to prescribe narcotics.

The Federation of State Medical Boards is an agency committed to assisting state medical boards in protecting the public and improving the quality and integrity of health care in the United States. In 1997, the Federation developed model guidelines, which were

revised and renamed Model Policy in 2004, to encourage state medical boards and other health care regulatory agencies to adopt policy encouraging adequate treatment of pain. The *Model Guidelines* have been endorsed by the American Academy of Pain Medicine, the Drug Enforcement Administration, the American Pain Society, and the National Association of State Controlled Substances Authorities. Many states have adopted pain policy using all or part of the *Model Guidelines*. Despite increasing concern in recent years regarding the abuse of controlled substances, pain policies have improved due to the efforts of medical, pharmacy, and nursing regulatory boards committed to improving the quality of appropriate pain care. Even though there has been progress in establishing state policy regarding use of opioid analgesics there is still a significant body of evidence suggesting that both acute and chronic pain are undertreated. There needs to be a continued effort for all states to adopt uniform policy and for physicians to be aware such policy exists to help them practice in a safer environment. The model policy helps provide state medical boards with a template regarding the appropriate management of pain in compliance with state and federal laws and regulations. The revised policy also notes that the state medical board will consider the under treatment of pain, a departure from an acceptable standard of practice. It is important to keep the awareness and research going in order to get to the place where under treatment of pain is no longer a problem.⁴

The first section of the model policy emphasizes that appropriate application of up-to-date knowledge and treatment modalities of pain can serve to improve the quality of life of patients as well as reduce the morbidity and costs associated with inappropriately treated pain. It encourages physicians to view pain management as a part of quality medical practice for all patients, especially for patients who experience pain as a result of terminal illness. All physicians should know how to assess a patient's pain, treat pain, and the states requirements for prescribing controlled substances. The policy should help to alleviate physician uncertainty and to encourage better pain management.

Appropriate pain management is the treating physician's responsibility and the inappropriate treatment of pain will be considered a departure from the standard of practice and allegations of departure will be investigated. The state board will refer to current clinical practice guidelines regarding pain treatment and also recognizes that controlled substances may be essential in the treatment of pain. The medical management of pain should consider the use of pharmacologic and non-pharmacologic modalities. Physicians should recognize that tolerance and physical dependence are normal consequences of sustained use of opioid analgesics and are not the same as addiction. Physicians should not fear disciplinary action from the state board for administering controlled substances for a legitimate medical purpose. This is where good documentation and compliance with the law play a key role.⁴

Section two of the model policy is the actual guidelines which are summarized here:

-Evaluation of patient-History and physical documented. Documentation of pain should include nature and intensity, current and past treatment, underlying or coexisting diseases, effect of pain on physical and psychological functioning, history of substance abuse. Document the presence of a recognized medical indication for the use of a controlled substance.

-Treatment Plan-State objectives that will be used to determine success of treatment, document any further diagnostic evaluations or treatments.

-Informed Consent and agreement of treatment-Discuss the risks and benefits of controlled substances. Medications should be dispensed from one physician and one pharmacy when feasible. If there is a history of abuse the physician should consider a written agreement outlining the patient responsibilities.

-Periodic Review-Periodically review the pain treatment and continuation or modification of controlled substances should be based on the treatment objectives and if they are being met.

-Consultation-Refer as needed for additional treatment and evaluation in order to meet treatment objectives.

-Medical record should include- History and physical, diagnostic, therapeutic and lab results, evaluations and consults, treatment objectives, discussion of risk/benefits, informed consent, treatments, medications (date, type, dosage, and quantity), instructions and agreements, periodic reviews

-Compliance with controlled substances laws and regulations- Must be licensed in that state and comply with federal and state regulations. Physicians can be referred to Physicians manual of the U.S. Drug Enforcement Administration for specific rules governing controlled substances.⁴

Section three goes over important definitions not all of which are discussed here.

-Addiction- Addiction is a primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include the following: impaired control over drug use, craving, compulsive use, and continued use despite harm. Physical dependence and tolerance are normal physiological consequences of extended opioid therapy for pain and are not the same as addiction.

-Physical Dependence- Physical dependence is a state of adaptation that is manifested by drug class specific signs and symptoms that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist. Physical dependence, by itself, does not equate with addiction.

-Pseudo addiction- The iatrogenic syndrome resulting from the misinterpretation of relief seeking behaviors as though they are drug-seeking behaviors that are commonly seen with addiction. The relief seeking behaviors resolve upon institution of effective analgesic therapy.

-Tolerance- Tolerance is a physiologic state resulting from regular use of a drug in which an increased dosage is needed to produce a specific effect, or a reduced effect is observed with a constant dose over time. Tolerance may or may not be evident during opioid treatment and does not equate with addiction.⁴

When reviewing these definitions it is important for physicians to realize that dependence and tolerance are not the same as addiction. These are expected outcomes of long-term analgesic therapy and do not have the characteristics associated with addiction. “Whereas it is inappropriate to prescribe analgesics to maintain addiction, it is good medical care to provide relief from chronic pain even in the face of habituation and tolerance.”⁵ General

guidelines as above are helpful both in managing pain and in protecting one's self from legal or State Board actions.

Maryland has a board of physician quality assurance (BPQA) that adapts the above policy. Part of Maryland's policy states "As physicians, our role is to relieve suffering; we may have no hard evidence that "proves" the patient is in pain, yet we believe our patients and we try to help them. All the members of BPQA wish to reassure Maryland physicians that they need not under-prescribe needed medications for fear of Board action. Under-prescribing results in unnecessary suffering." Maryland laws are available through the Maryland State Board. Maryland's guidelines can be viewed under the Database of State Laws, Regulations, and Other Official Governmental Policies from the University of Wisconsin's Pain and Policy Group. Maryland's Board hopes that physicians will use these guidelines to help them manage patients with pain without fear of regulatory scrutiny.⁵

The Progress Report Card 2007, which is conducted by the Pain and Policy Studies Group at the University of Wisconsin, was developed to evaluate state policies regarding pain management. In 2007 Maryland received a B grade which is where most of the states ranked (41% of the US population). On the good side only one state ranked below a C (3% US pop.) but on the flip side only 4 states received an A grade (9% US pop.). Since 2000 the percent of states that scored a C or better has gone from 49 % to 86%. Although this seems like great progress there is still need for improvement. From 2006 to 2007 23/51 states made changes to their policy but this resulted in only 8 improved letter grades.³ And although there have been some improvements in letter grades it is another thing to actually see progress in improving the quality of patient care. Many physicians are not fully aware of their states' policies that govern pain management. A step in the right direction is being made by the Federation of State Medical Boards'. They are publishing *Responsible Opioid Prescribing: A Handbook for Physicians*. They plan to distribute this to all practicing physicians in the US through their state medical boards. However this is a costly endeavor but we hope to see the publication soon once individual boards endorse the idea and funding becomes available.

Physicians need to realize that most of the cases they've heard about in which doctors are sanctioned for inappropriate controlled substance prescribing practices were not physicians just trying to alleviate suffering but most of the physicians charged under this provision of the Medical Practice Act were clearly acting in other than the best interest of their patients. Usually, obvious addicts were buying prescriptions from the physicians and the transactions were disguised as office visits or occasionally, truly naive physicians, once targeted, attract every addict in town. In the U.S. the actual risk of a physician being disciplined by a state medical board for treating an actual patient with real pain is virtually nonexistent.⁶ In 2006 Jung et al published a study that assessed the risk of action by the federal Drug Enforcement Administration (DEA) against physicians for prescribing opioids to patients in pain.⁶ The DEA provided a list of physician arrests in the year 2003 and the Federal Registrar was also searched for all revocations of DEA registrations for 2003 and 2004. Of the 963, 385 doctors registered with the DEA there were 47 arrests in 2003 and 56 revocations of registration in 2003 and 2004. The reasons

for the aforementioned actions were loss of medical license, fraud, substance abuse by prescriber, sex in exchange for prescriptions, and prescribing without seeing a patient. Also for the majority of cases a documented doctor/patient relationship with a pain patient did not exist. Although the data reviewed was limited and focused the study did conclude that the risk of action against a physician prescribing opioids for a chronic pain patient is small. All of us will occasionally be fooled by a patient but it can not be emphasized enough that fear need not be involved when prescribing narcotics in an appropriate manner and better understanding of state policy should help physicians put this fear to rest.

Lawsuits

As described previously, it is well recognized that physician's fear of regulatory scrutiny is a major contributor to the problem of under treatment of pain. There was a recent landmark lawsuit that should be a wake-up call for all physicians that the under treatment of pain poses its own legal liability. The case involves an 85 year old California man with metastatic lung carcinoma who spent his final week of life in severe pain. On each day of Mr. Bergman's hospital stay, his pain was charted between a 7 and 10. On the day of discharge the patient's pain was charted to be a 10 and only after a hospice nurse secured a prescription for morphine from another physician did Mr. Bergman's pain come under control. He died shortly thereafter. After the patient's death his children sued his physician alleging that drugs powerful enough to relieve their father's suffering were not prescribed. This was one of the first U.S. cases in which a physician stood trial for under treating a patient's pain and lost on the grounds that the lack of attention to pain constituted elder abuse. The jury awarded the family \$1.5 million (the amount was later reduced to \$250,000).

Another case which occurred in North Carolina in 1991, involved a nurse and the nursing home that employed her. They were charged with under treating the pain of Henry James, an elderly resident with metastatic prostate cancer. In summary the nurse refused to administer the patient's prescribed medication because, in her opinion, it would lead to his addiction. The family of Mr. James filed a lawsuit because they were upset over their loved one's painful death. Expert witnesses testified that Mr. James' suffering was unnecessary because the medically indicated opioid analgesics that were prescribed would have provided safe and effective relief and the nurse's refusal to administer the medication was considered a departure from acceptable care. The jury awarded the family \$7.5 million in compensatory damages. Although this case does not involve a physician directly it is an important case that demonstrates the under treatment of pain will not be tolerated.

The healthcare community can expect more such verdicts and physicians should evaluate their pain management practices not only to improve care but to protect themselves from legal action for under treatment of pain. In an ideal world physicians would not use the fear of lawsuits to help guide medical care, but evidence shows that they do. Below are some tips to help physicians protect themselves against legal action. These are from the End of life/Palliative Education Resource Center (EPEC) which is an excellent resource

for healthcare professionals involved in end of life/palliative care issues. It is supported by the Medical College of Wisconsin.⁷

1. Review your own practice-are you currently meeting Joint Commission on Accreditation of Healthcare Organizations (JCAHO) pain guidelines?
2. Improve your knowledge and skills in pain assessment and treatment. (Some states now require mandatory pain continuing medical education or CME).
3. Learn about and utilize your local consultation resources for pain management.
4. Improve your knowledge and skills in assessing substance abuse disorders; learn about and utilize your local resources for substance abuse referrals and treatment.
5. Improve your understanding of the drug regulatory system and how it functions-learn about the common triggers for regulatory review. Go to: www.painpolicy.wisc.edu/ for information about federal and state regulatory laws and regulations.
6. Become active in your hospital pain improvement efforts- check with your hospital QI department and their efforts to meet the new JCAHO pain guidelines.
7. Become active with your state Cancer Pain Initiative; go to <http://aspi.wisc.edu/> to find information about your state activities.

Keep in mind that JCAHO does have pain guidelines that need to be followed by all medical institutions. Physicians should be aware that their institution may be at greater risk of legal action for the under treatment of pain if patients are being appropriately informed of their right to pain relief as mandated by JCAHO but are not receiving it during their stay. Patient satisfaction rates have been found to be lower when they are promised appropriate and timely analgesic management and do not receive it which may lead to increased lawsuits in the future.

Under Treatment of Cancer Pain

Although all patients with pain require better pain management, cancer patients in particular definitely warrant a closer look. In the United States alone approximately 1 million people are diagnosed with cancer each year and 1 of 5 deaths, about 1400 per day, are related to cancer and unfortunately pain has been described as the most persistent and incapacitating symptom of recurrent or metastatic cancer.^{8 9} It has been estimated that 70-100% of individuals with advanced cancer or in palliative care settings experience pain.¹⁰ Even though it is evident that cancer is quite prevalent in the US, the pain associated with it is often undertreated due to multiple reasons. Consider the following 2 cases printed for thought by the NEJM:¹¹

Patient 1, a middle-aged woman with progressive cancer that had metastasized to bone, had accelerating pain requiring increasing doses of morphine. She ran out of pain medicine earlier than anticipated, but her physician refused to refill her prescription for fear that she was using it too much and that he might be reviewed for overprescribing. When she went to the emergency department with a pain crisis, a palliative care consultant recognized that her worsening pain and increased morphine requirements were caused by the progression of cancer. With a moderate increase in her dose, satisfactory

pain control was achieved, and the patient went home to live out her final months in relative comfort.

Patient 2 had advanced metastatic lung cancer and had been receiving opioids at home when he was admitted to the hospital with new metastases to his thoracic spine. He was confused, could not move his legs, had difficulty breathing, and was in excruciating pain, screaming whenever he moved and grimacing with each breath. He was near death, and the primary goal of medical care was to control pain, agitation, and dyspnea. He was given a subcutaneous infusion of opioids at an equianalgesic dose 30 percent higher than his usual dose, and the nurses were instructed to give him another dose, equal to 10 percent of the total daily dose, "as needed" every half hour if he appeared to be in pain (the proper approach, according to standard guidelines). But several nurses and physicians refused to give the "as needed" doses, despite evidence of continuing distress, because they feared hastening his death. Ethics and palliative care consultants were called in, and they refocused the team on the professional obligation to relieve pain and suffering. The patient died hours after receiving the additional doses, and some staff members remained unsettled about whether they might have been legally liable for "causing" his death. Issues such as these are all too familiar both in the outpatient and inpatient settings.

In 1994 new clinical-practice guidelines were published by the Agency for Health Care Policy and Research (AHCPR), a branch of the Department of Health and Human Services, in an effort to correct the problem of inadequate treatment of pain in cancer patients. The guidelines call for (1) a collaborative, interdisciplinary approach to the care of patients with cancer pain, (2) an individualized pain-control plan developed and agreed on by patients, their families, and practitioners, (3) ongoing assessment and reassessment of the patient's pain, (4) the use of both drug and nondrug therapies to prevent or control pain, and (5) explicit institutional policies on the management of cancer pain, with clear lines of responsibility for pain management and for monitoring its effectiveness.⁸

When the guidelines were released the NEJM published an excellent review that is summarized here. The guidelines emphasize the ongoing assessment of pain with good history and physical at each encounter keeping in mind that patients are often reluctant to volunteer this information. Patients should be taught to report changes in their pain or any new pain so that appropriate changes can be initiated. Physicians should remember that patients and their families may have difficulty in understanding and remembering the details of the pain plan and providing a written pain management plan is often helpful. Some common conditions causing pain in cancer patients to keep in mind are bone metastases, epidural metastases with spinal cord compression, plexopathies, peripheral neuropathies, and mucositis.⁸

Drug therapy is the cornerstone in treating cancer pain and should be tailored to the individual. There are three major classes of drugs used alone or in combination to manage pain: nonsteroidal anti-inflammatory analgesic drugs (NSAIDs) and acetaminophen; opioid analgesic agents; and adjuvant analgesic agents. Below is a very helpful table when prescribing opioids which are very frequently used in controlling cancer pain.

DRUG	APPROXIMATE EQUIANALGESIC DOSE		USUAL STARTING DOSE FOR MODERATE-TO-SEVERE PAIN	
	ORAL	PARENTERAL	ORAL	PARENTERAL
Opioid agonists†				
Morphine‡	30 mg every 3–4 hr (for around-the-clock dosage) 60 mg every 3–4 hr (for single dose or intermittent dosage)	10 mg every 3–4 hr	30 mg every 3–4 hr	10 mg every 3–4 hr
Controlled-release morphine‡	90–120 mg every 12 hr	Not available	90–120 mg every 12 hr	Not available
Hydromorphone‡	7.5 mg every 3–4 hr	1.5 mg every 3–4 hr	6 mg every 3–4 hr	1.5 mg every 3–4 hr
Levorphanol	4 mg every 6–8 hr	2 mg every 6–8 hr	4 mg every 6–8 hr	2 mg every 6–8 hr
Meperidine	300 mg every 2–3 hr	100 mg every 3 hr	Not recommended	100 mg every 3 hr
Methadone	20 mg every 6–8 hr	10 mg every 6–8 hr	20 mg every 6–8 hr	10 mg every 6–8 hr
Oxymorphone‡	Not available	1 mg every 3–4 hr	Not available	1 mg every 3–4 hr
Combination opioid–NSAID preparations§				
Codeine	180–200 mg every 3–4 hr¶	75 mg every 3–4 hr	60 mg every 3–4 hr	60 mg every 2 hr (IM or SC)
Hydrocodone	30 mg every 3–4 hr	Not available	10 mg every 3–4 hr	Not available
Oxycodone	30 mg every 3–4 hr	Not available	10 mg every 3–4 hr	Not available

*Published data on the doses that are equivalent in analgesic effect (equianalgesic) to morphine vary. Clinical response is the criterion that must be used for each patient, and adjustment according to clinical response is necessary. Because there is not complete cross-tolerance among these drugs, it is generally necessary to use a lower dose than the equianalgesic dose when changing drugs and to adjust it according to the response once again. For recommended starting doses for children and adults weighing <50 kg, see Jacox et al.³

†The recommended doses do not apply to patients with renal or hepatic insufficiency or other conditions affecting drug metabolism and pharmacokinetics.

‡For morphine, hydromorphone, and oxymorphone, rectal administration is an alternative route for patients unable to take oral medications; equianalgesic doses may differ from the oral and parenteral doses, however, because of pharmacokinetic differences. Transdermal fentanyl is also available; dosage conversion has not been calculated with respect to single doses of morphine. See the package insert for conversion calculations.

§When aspirin or acetaminophen is given in combination with an opioid–NSAID preparation, the doses must be adjusted according to the patient’s body weight. Aspirin is contraindicated in children in the presence of fever or other viral disease because of its association with Reye’s syndrome.

¶Doses of codeine above 65 mg are often not appropriate because analgesia diminishes incrementally with increasing doses but nausea, constipation, and other side effects increase continually.

||IM denotes intramuscularly, and SC subcutaneously.

Morphine is the most commonly used opioid agent for moderate-to-severe pain because it’s widely available in a variety of doses and forms, it has well known pharmacokinetics and pharmacodynamics, and is relatively inexpensive. Physicians should know that most pain due to cancer can be managed by the oral administration of drugs after the initial acute pain is managed, however do not hesitate to start with higher doses initially if patients are in severe pain. Physicians all too often under treat the pain and should not be afraid to prescribe opioid analgesia when indicated especially near the end of life. Most hospice providers recognize the paradoxical phenomenon of prolonged survival once adequate pain control is achieved yet there is still a common myth among physicians that morphine hastens death. Once patients at the end of life are more comfortable with appropriate analgesia, they may not die as quickly.¹²

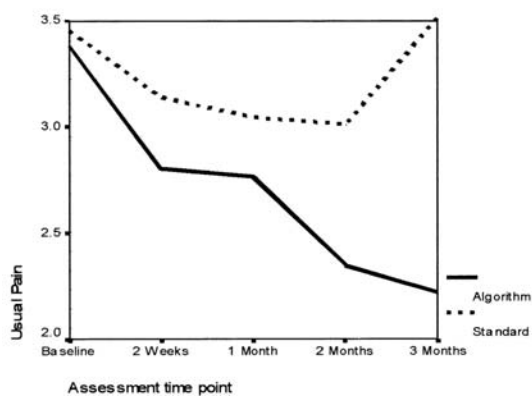
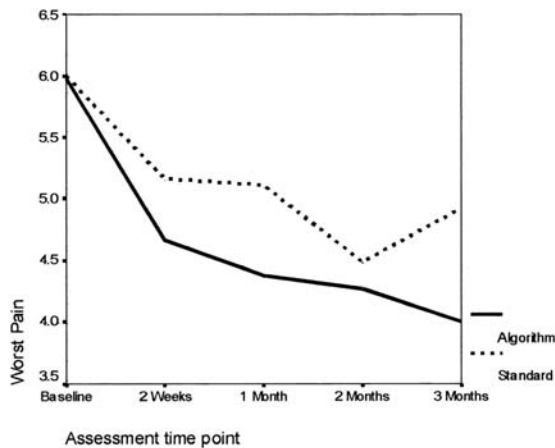
The World Health Organization (WHO) has created a simple, well-validated, and effective method for the adjustment of therapy for cancer pain and it has been shown to provide relief in approximately 90 percent of patients with cancer.⁸ The first step is the use of aspirin, acetaminophen, or another NSAID for mild-to-moderate pain, adjuvant drugs may be used at any stage of treatment. When pain persists or increases the physician should advance to the second step of the WHO analgesic ladder which entails adding an opioid often in combination with the NSAID. Keep in mind that patients who already have moderate-to-severe pain on presentation should be started at the second or third step of the ladder. The third step of the analgesic ladder is to increase the potency or dosage of the opioids to treat persistent pain. Medications at this stage should be

administered on an around-the-clock basis, with additional "as needed" doses. As previously discussed tolerance and physical dependence are common and predictable consequences of the long-term administration of opioid agents and should not be confused with addiction.

Physical and psychosocial methods can also be used with drugs or alone to help control pain in cancer patients. For example myofascial pain is associated with periods of inactivity and immobility which often go hand in hand with the grueling therapies used to treat cancer. Physical methods that can be employed to help this kind of pain include cutaneous stimulation such as the application of heat, cold, or electrical stimuli (TENS); exercise; immobilization; and acupuncture. Psychosocial interventions should also be used as part of a multimodal approach to pain management. One goal of psychosocial intervention is to help the patient gain a sense of control over the pain which can often be achieved by providing patients with information about pain and its management.⁸

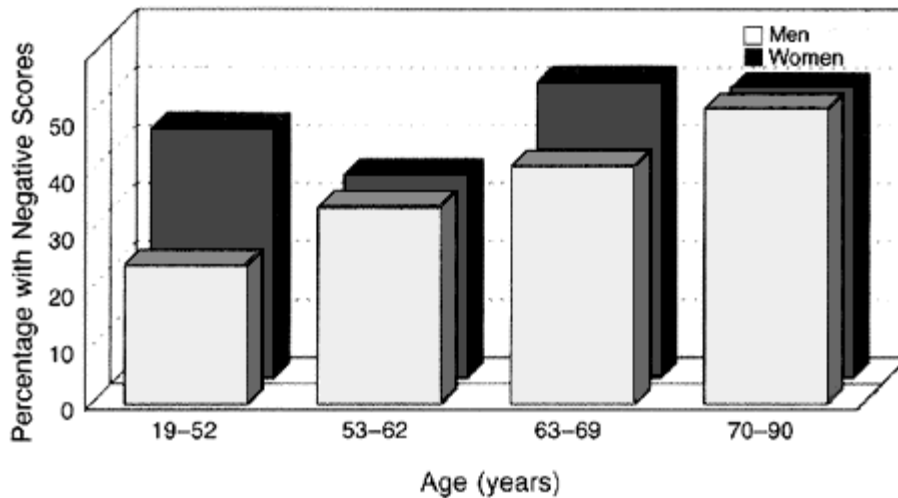
With rare exceptions, noninvasive analgesic pain relief should precede invasive palliative approaches, however it's estimated that 1 to 15 percent of patients may require more invasive procedures to control pain. Some examples of more invasive pain relief techniques include radiation and surgical procedures. Greater than one third of the radiation therapy used in patients with cancer is palliative and intended to relieve pain.⁸ Implementing these simple yet effective measures to control pain can often provide your patients with cancer the much provided relief they deserve.

A study published in 1999 in the Journal of Clinical Oncology evaluated pain management guidelines in cancer patients to see if these guidelines improved care.¹³ An algorithm was developed based on the above guidelines for cancer pain management from the Agency for Health Care Policy and Research (AHCPR). The algorithm has a basic decision making process including pain assessment, analgesic drug choice, and reassessment that balances efficacy versus toxicity. Eighty one cancer patients were enrolled into a prospective, longitudinal, randomized controlled study from the outpatient clinic settings of 26 western Washington area oncologists. The algorithm was compared with the standard practice of pain management therapies used by the community oncologists. The primary outcome of interest was pain (Brief Pain Inventory); secondary outcomes of interest were all other symptoms (Memorial Symptom Assessment Scale) and quality of life (Functional Assessment of Cancer Therapy Scale). At an initial visit patients were randomized to either a pain algorithm treatment or standard-practice treatment group. The patients were followed longitudinally for 3 months and measurements were collected at baseline, 2 weeks, 1 month, 2 months, and 3 months after the start of the intervention. Patients randomized to the pain algorithm group achieved a statistically significant reduction in usual pain intensity (pain level most of the time), when compared with standard community practice ($P < .02$). Concurrent chemotherapy and patient adherence to treatment were significant mediators of worst pain (worst their pain level ever got). The graph below shows means scores of usual and worst pain by assessment time point for patients treated with the algorithm intervention versus standard management.



There were no significant differences found in other symptoms or quality of life between the two treatment groups but patients' satisfaction with current pain treatment ($t = 2.35$, $P < .02$) and the number of patients who would choose to have similar treatment again ($t = 3.22$, $P < .003$) were higher in the intervention group. The study concluded that implementing guidelines to create algorithmic decision making in the management of cancer pain did enhance usual pain outcomes.¹³

Although guidelines for the management of cancer pain have been established and proven effective, they have not been widely adopted, and there is considerable variability in the treatment of cancer pain among physicians.⁹ Cleeland et al published the results of the Outpatient Pain Needs Assessment Survey conducted by the Eastern Cooperative Oncology Group (ECOG) in the NEJM.⁹ This study was designed to determine the proportion of patients with cancer who have substantial pain (pain that impairs function), the types of pain treatment received by patients with cancer, and the characteristics of patients who are at greater risk for under medication with analgesic drugs. The study found that over half of the patients had pain and of those the majority had pain severe enough to impair function despite the fact they were receiving some treatment for their pain. In the study both the patient's pain level and type of analgesia prescribed were scored. The pain management index was then computed by subtracting the pain level from the analgesic levels. A negative score indicated inadequate analgesic treatment. The findings are summarized in the graph below, 42 percent of all patients who had pain were found to be undertreated.



The graph also indicates that women and the elderly were less likely to have their pain treated adequately. The study also found that patients seen at centers treating primarily minorities were three times more likely than nonminority patients to have a negative score. The most powerful additional predictor of the score on the pain-management index was the discrepancy between the physician's and patient's estimate of the severity of the patient's pain (its degree of interference with daily activities). The authors cited a previous study which interviewed physicians and when asked about barriers to good pain management in their own practice setting, 76 percent cited poor assessment of pain as a problem- a finding consistent with the strong predictive role of the discrepancy between patients' and physicians' assessment of the patients' pain in inadequate analgesia reported here.⁹ This study again validates the important need for adequate assessment of pain in order to provide proper relief. Cancer pain occurs mostly in the context of a progressive illness that can result in multiple physical and psychological symptoms, functional decline, spiritual distress, family disruption, financial worries and many other issues that may affect the quality of life of the patient and their family. The ability to provide a comprehensive assessment, competently administer analgesic drugs and communicate with the patient and family is the basis of good pain management in patients with cancer.

Patient Barriers

It needs to be recognized that patients have many of the same misconceptions regarding opioids that health care providers have.¹⁴ For example, patients are often afraid of becoming “addicted” and they to confuse physical dependence with psychological dependence. As a result, patients may try to limit their intake and often wait until the pain is severe before using opioids which interferes with adequate pain control. Patients also worry about tolerance. In other words they fear taking too much pain medicine or taking the medicine too early in their disease course often resulting in severe pain during the dying process. One of patient’s biggest fears is regarding opioid side effects, especially mental impairment, nausea and constipation. Although these fears may be warranted, with appropriate teaching and intervention by the physician these fears can be put to rest.

There is also the “Good Patient”. This is the patient that doesn’t want to worry or bother the doctor with their complaints. This can be a particular problem with pain, as they may feel their report of pain is a criticism towards the doctor’s efforts to treat them. Our society has a very ambivalent view towards pain and pain treatment, believing that it is better if patients are “strong” which often minimizes the reporting of symptoms. This is where it is important for physicians to conduct very thorough histories, ask questions and look for physical clues. Physicians should not have the attitude of; the patient didn’t report it so it must not be a problem. Patients often want to please their doctor, resulting in the patient just answering yes when questions are asked. To better understand a patient’s pain and pain management some patient assessment tips are provided from the EPERC website.¹⁴

Patient Assessment Tips:

1. Use non-judgmental phrasing. *"Tell me exactly how you take your pain medicine."* Often it is easier for patients to tell you that they are not taking the medicine the way they were prescribed if you acknowledge how hard it is to take the medicine; *" It must be really hard to take all these pills. How often, in the last week, have you found that you forget one or two?"*
2. Normalize the patient concerns. *"Some patients worry that if they take the pain medications, they will become addicted. Do you have this worry?"*
3. Explicitly ask about their health beliefs regarding opioids. Ask what they know about morphine or whether they have any family members who have taken morphine and what the experience was like.
4. Ask about side effects at every visit in the same way that you ask about pain. Moreover, ask about whether the patient notices any other changes that s/he believes might be caused by the opioids.

Another large barrier to pain management is cultural and gender beliefs. It has been reported that some physicians view women as more prone to exaggerate pain complaints than men, and thus they are given analgesia less frequently than their male counterparts; and that Hispanics are twice as likely as non-Hispanics to receive no medication at all for pain.² It is not uncommon to label patients that are unfamiliar to us that are requesting narcotics for chronic pain as “drug seekers” and thereby decreasing the likelihood that we will aggressively treat their pain.

When it comes to cultural differences, many studies have shown that patients from minority groups receive inadequate pain management. In 1997, Cleeland et al published Pain and Treatment of Pain in Minority Patients with Cancer: The Eastern Cooperative Oncology Group Minority Outpatient Pain Study in *Annals of Internal Medicine*.¹⁵ The study aimed to evaluate the severity of cancer-related pain and the adequacy of prescribed analgesics in minority outpatients with cancer. This was a prospective clinical study that looked at 281 minority outpatients with recurrent or metastatic cancer. Pain severity was measured by using the Brief Pain Inventory during a clinic appointment and the adequacy of analgesic prescription was estimated by using the Pain Management Index, a measure for prescribing analgesics and an approximate measure of good

treatment of pain based on guidelines from the WHO and the AHCPR. Below is a table that shows the demographic and pain-related variables of the 197 minority patients who reported pain and were the sample for the subsequent analyses.

Variable	All Patients	Hispanic Patients	Black Patients
Women, <i>n/n</i> (%)	117/197 (59)	67/94 (71)	50/103 (49)
Mean age \pm SD, <i>y</i>	57 \pm 13	57 \pm 14	57 \pm 12.5
Poor performance status, <i>n/n</i> (%)†	65/197 (33)	27/94 (29)	38/103 (37)
Mean average pain \pm SD	4.2 \pm 2.6	4.5 \pm 2.4	4.0 \pm 2.6
Mean worst pain \pm SD	5.7 \pm 3	6.2 \pm 2.9	5.3 \pm 3
Severity of pain, <i>n/n</i> (%)‡			
Mild	58/175 (33)	16/79 (20)	42/96 (44)
Moderate	46/175 (26)	27/79 (34)	19/96 (20)
Severe	71/175 (41)	36/79 (46)	35/96 (36)
Received inadequate treatment of pain, <i>n/n</i> (%)§	110/168 (65)	56/76 (74)	54/92 (59)
Taking opioid analgesics, <i>n/n</i> (%)	67/180 (37)	29/85 (34)	38/95 (40)

* Not all information for every category was available for each patient.

† Patients were rated as having poor performance status if they scored 2 or more on the Eastern Oncology Group Performance Status evaluation (scale, 0 to 4).

‡ Patients who rated their worst pain from 1 through 4 were classified as having mild pain, those who rated their worst pain as 5 or 6 were classified as having moderate pain, and those who rated their worst pain from 7 through 10 were classified as having severe pain.

§ Measured by the Pain Management Index.

The study found that 77% of patients reported disease-related pain or took analgesics; 41% of patients reporting pain had severe pain. Of particular interest, 65% of minority patients did not receive guideline-recommended analgesic prescriptions compared with 50% of non-minority patients ($P < 0.001$). Hispanic patients in particular reported less pain relief and had less adequate analgesia. The authors also found that minority patients received better pain management in community-based treatment settings than in settings designated predominantly for patients of minority ethnicity or in university settings. The awareness that minority patients do not receive adequate pain control and that better assessment of pain is needed may improve control of cancer-related pain in this patient population.¹⁵

Pain is not just a physiologic response but also includes emotional and behavioral responses based on an individuals' past experiences and are influenced by a person's cultural background. One must also be careful of cultural stereotyping which can also lead to inadequate assessment and treatment of pain. When treating a patient who is from a culture other than your own, the physician must listen with empathy to the patient's perception of their pain, explain the perception of the pain problem, acknowledge the differences and similarities in perceptions, recommend treatment, and negotiate agreement.¹⁶ Outlined below are some questions from the EPERC that can be used to help assess cultural differences in order to better assess and implement a pain management plan.¹⁶

1. What do you call your pain? Do you have a name for it?
2. What do you think caused your pain?
3. Why do you think it started when it did?

4. What does your pain do to you?
5. How does it work?
6. How severe is your pain? Will it have a long or short course?
7. What are the most important results you hope to receive from the treatment?
8. What are the main problems your pain has caused you?
9. What do you fear most about your pain?

Inadequate prescribing of analgesics for minority patients may result from many factors, including concern about potential drug abuse, fewer resources with which to pay for analgesics, greater difficulty in accessing care and in filling analgesic prescriptions, and greater difficulty for the physician in assessing pain in minority patients because of differences in language and cultural background. Looking at one of these issues, the NEJM published a study in 2000 named “We Don’t Carry That”- Failure of Pharmacies in Predominately Nonwhite Neighborhoods to Stock Opioid Analgesics.¹⁷ A randomly selected sample of 30% of New York City pharmacies was surveyed to obtain information about their stock of opioids. The chart below shows the list of drugs that were of interest that were compiled from the 1998 *Physicians' Desk Reference*, AHCPR guidelines for the treatment of pain from cancer and advice from a panel of experts in palliative care.

TABLE 1. OPIOID AGENTS AND DOSES.

OPIOID CATEGORY	DOSE
Long-acting opioids	
Fentanyl transdermal patch	25 µg, 50 µg, 75 µg, and 100 µg
Delayed release	
Morphine	15 mg, 30 mg, 60 mg, 100 mg, and 200 mg
Oxycodone	10 mg, 20 mg, 40 mg, and 80 mg
Short-acting opioids — tablet	
Morphine	15 mg and 30 mg
Hydromorphone	2 mg, 4 mg, and 8 mg
Oxycodone	5 mg
Short-acting opioids — liquid	
Morphine	20 mg/ml, 10 mg/5 ml, 20 mg/5 ml, 100 mg/5 ml, and 20 mg/10 ml
Hydromorphone	5 mg/5 ml
Oxycodone hydrochloride	20 mg/ml
Combination products	
Acetaminophen and codeine	325 mg of acetaminophen and 15 mg of codeine, 325 mg of acetaminophen and 30 mg of codeine, and 325 mg of acetaminophen and 60 mg of codeine
Acetaminophen and oxycodone	325 mg of acetaminophen and 5 mg of oxycodone
Aspirin, oxycodone, and oxycodone terephthalate	325 mg of aspirin, 4.5 mg of oxycodone, and 0.38 mg of oxycodone terephthalate

For each pharmacy, U.S. Census estimates for 1997 were used to determine the racial and ethnic composition of the neighborhood (defined as the area within a 0.25-mile radius of the pharmacy) and the proportion of residents who were more than 65 years old. A total of 347 pharmacies responded to the survey and out of these 176 pharmacies (51 percent) did not have sufficient supplies of opioids to treat patients with severe pain. The table

below shows the adequacy of opioid supplies according to the racial and ethnic composition of the neighborhoods in which the pharmacies were located.

TABLE 2. ADEQUACY OF OPIOID SUPPLIES AT 347 PHARMACIES, ACCORDING TO THE RACIAL AND ETHNIC COMPOSITION OF THE NEIGHBORHOOD.

RACIAL AND ETHNIC COMPOSITION OF NEIGHBORHOOD	TOTAL PHARMACIES	PHARMACIES WITH ADEQUATE OPIOIDS	P VALUE FOR TREND
	no.	%	
White			<0.001
0-39%	110	25	
40-69%	72	56	
70-79%	72	50	
≥80%	93	72	
Black			<0.001
<10%	173	61	
10-19%	53	45	
20-39%	57	42	
≥40%	64	30	
Hispanic			0.002
<10%	89	56	
10-19%	108	54	
20-39%	70	50	
≥40%	80	34	
Asian			0.01
<10%	241	54	
10-19%	74	42	
20-39%	16	44	
≥40%	16	25	

Only 25% of pharmacies in predominantly nonwhite neighborhoods (those in which less than 40% of residents were white) had opioid supplies that were sufficient to treat patients in severe pain, as compared with 72% of pharmacies in predominantly white neighborhoods (those in which at least 80% of residents were white) ($P < 0.001$). Sixty-six percent of pharmacies that had no supplies of opioids at all were in predominantly nonwhite neighborhoods. The pharmacists representing the 176 pharmacies with inadequate opioid supplies were asked why they did not have adequate supplies. Fifty four percent reported that they had little demand for these medications, 44% cited concern about disposal, 20% cited fear of fraud and illicit drug use that might result in investigations by the DEA, 19% cited fear of robbery, and 7% cited other reasons (e.g., problems with reimbursement by health plans and Medicaid). Overall pharmacies in predominantly nonwhite neighborhoods of New York City do not stock sufficient medications to treat patients with severe pain adequately. Two thirds of the pharmacies that did not carry any opioids were in neighborhoods where the majority of the residents were nonwhites. This finding, together with reports that nonwhite patients are significantly less likely than white patients to receive prescriptions for analgesic agents recommended by the AHCPR, suggests that members of racial and ethnic minority groups are at substantial risk for the under treatment of pain.¹⁷

Another large group who are at particular risk for the under treatment of pain are the elderly. People over the age of 75 are the fastest growing group in the population in most developing countries. Studies have shown that pain is present in 25-50% of elderly people in the community and 30-49% of nursing home residents. Pain in elderly cancer

patients has also been estimated to be as high as 80%.¹⁸ The impact of untreated pain in the elderly can range from increased risk of suicide, increased alcohol consumption, reduced appetite, decreased involvement in social activities, increased dependency, sleep disturbance, gait impairment and increased rates of anxiety and depression. There can also be increased cost of care due to increased use of health services.¹⁸ A review published in 2004 cited that 25% of elderly nursing home patients in pain did not receive any pain medications and those who did receive medications were more likely to get non-opioids. Another study showed that elderly cancer patients were less likely to get opioid analgesic pain medications than their younger counterparts.¹⁸ Two main reasons have been shown to be the cause of inadequate pain treatment in the elderly, lack of accurate pain screening and inadequate prescribing of analgesic medications. It may be more difficult to assess pain in the elderly for a variety of reasons. The elderly may underreport their pain if they perceive it as part of the aging process, they may be unwilling to complain due to fear of worsening disease process or they may see pain as low on their priority list compared to their other medical problems. There may also be increased communication difficulties due to dysphagia, hearing impairment, limited education, cultural differences or dementia. Also the elderly tend to be on a number of medications due to chronic disease processes and physicians may be less likely to add opioids to their regimen.¹⁸ Physicians who take care of the elderly on a routine basis need to be more vigilant about pain assessment. There are pain scales that have been specifically developed for patients with dementia that can help in certain patients. Also increased education regarding the pharmacology of opioids in the elderly and chronic pain states may help make physicians more at ease prescribing these medications. Physicians should remember that adverse effects of opioids are twice as likely to occur in the elderly but these medications can still be prescribed safely if you start low, go slow and watch for side effects.

Education

Even though there has been an abundance of new knowledge regarding pain management through medical science, it has been slow to enter into practice. There is a large gap between what is actually known about pain management and what is actually practiced by health care professionals.³ The idea of “opioid phobia” is very prevalent and can cloud a physician’s ability to alleviate pain. It has been documented that approximately 50% of physicians would not use an opioid even in the absence of contraindications and another third would wait until the patient had a life expectancy of less than six months.² To illustrate the point of opioid phobia one physician recounted a story of one of his patients with end stage COPD and severe pain syndrome from a thalamic stroke. The patient had an emergency admission to a hospital that was unfamiliar with his history and although he got excellent technical care, he swears he’d rather die than let an ambulance take him to that hospital again. His admitting doctor’s initial comment was “The first thing I am going to do is stop all this damn morphine”.² Physicians and families need to be aware and realize that even the most well respected institutions are susceptible to “opioid phobia” which can severely hinder a patient’s care.

Part of the problem contributing to “opioid phobia” may be lack of sufficient medical education in pain management. There is evidence that many physicians lack knowledge about pain management due in part to lack of training in medical schools. Medical education leaves much to be desired in terms of palliative care and pain management teaching. When surveyed, 67% of physicians rated the quality of their pain management training as poor.² During formal medical education it’s widely taught that pain is a symptom of an underlying disorder and emphasis should be placed on diagnosing and treating the underlying problem and not to mask the symptoms of presentation with palliative interventions. For example, there is evidence that treating acute abdominal pain does not delay diagnosis yet there is still reluctance by many to medicate patients until all exams and studies have been completed.¹² Proper use of analgesic medications has not been taught systematically nor encouraged by senior faculty. Although attitudes in medical education are changing, currently only 3% of U.S. medical schools require a separate course in pain management.¹² This suggests that policies are needed and should be in place for ongoing education in order to take a positive step toward improving pain management. One way to do this is through continuing medical education (CME) which most state medical boards require for physicians to renew their license. Recently, legislatures and state regulatory boards have begun to either require (CA, MI, OR, TN, WV) or encourage (FL, NM, OH, RI, TX) that CME include education on pain management or palliative care. Improvements in education on pain management can definitely influence health care practice and help dispel the idea of “opioid phobia”.

Palliative Care

There is not just one reason why patients with advanced illness receive inadequate care, but many of these reasons stem from traditional medicine that is focused almost exclusively on curing illness and prolonging life, rather than focusing on quality of life and relieving suffering. This has become of particular concern as medical science has gradually changed the nature of dying. Death no longer is predominately sudden in nature but is more likely to occur slowly in old age due to chronic illness. Due to this improvements must be made to improve the quality of care and the quality of life at the end of life. A step in the right direction to achieving adequate pain control on the whole is the growing field of palliative care medicine. Palliative care focuses on symptom management, communication, and other means to improve quality of life for patients and their families. Palliative care can be used in conjunction with curative or life-prolonging medical care and is not prognosis dependent, in contrast to hospice care, which offers symptom management for patients who are facing a terminal illness and no longer wish to undergo life-prolonging treatments. Palliative care is made up of an interdisciplinary team of physicians, nurses, and social workers who work closely to assess the needs and wishes of a patient and family. The team places special emphasis on assessing and managing such symptoms as pain, anxiety, depression, insomnia, constipation, and shortness of breath. The team also gathers information from all the treating physicians and translates it into language that the patient and family can understand.

Between 2000 and 2005, the number of hospitals with palliative care programs grew by 96% from 632 to 1240, according to the Center to Advance Palliative Care.¹⁹ The field of

palliative and hospice care became formally recognized as a subspecialty by the American Board of Medical Specialties in 2006. Also in 2006, the Accreditation Council for Graduate Medical Education (ACGME) decided to begin accrediting hospice and palliative medicine fellowship programs and starting in 2008, physicians will be able to become board certified in hospice and palliative care.¹⁹ Physicians need to be aware of these valuable resources and how to access them in their area as these are excellent assets to use when trying to manage complex pain issues.

Conclusion

Resources

1. End of life/Palliative Education Resource Center (EPERC), <http://www.eperc.mcw.edu/>
2. Pain and Policy Studies Group, University of Wisconsin, www.painpolicy.wisc.edu/
3. Maryland Pain Initiative, www.painfoundation.org/marylandpain/
4. American Academy of Hospice and Palliative medicine, www.aahpm.org/
5. DEA Diversion Control, Physician's manual of the US Drug Enforcement Administration, www.deadiversion.usdoj.gov/pubs/manuals/index.html
6. University of Maryland resources:
 - a. APMS/PCA service, APMS Pager 410-471-7872, Nursing PCA service pager 7622. Consider consult if pt needs a PCA/epidural, for neuropathic pain, needs a high front load of medication to decrease pain.
 - b. Palliative Care Consult, Pager 1809. The Palliative Care team is available on a consultative basis and can: help to manage uncontrolled pain and symptoms, work with patients and loved ones in their decision-making, act as a liaison between the patient and their medical team(s), provide a continuum of care, provide psychosocial support in crises and on a long-term basis, address care-giving concerns, educate the medical team as well as patient and family regarding caregiving resources and hospice care at home or inpatient, address the spiritual needs of the patient and family specific to chronic, debilitating or terminal illnesses
 - c. Intranet Resources: Physician Resources-> Pain Management-> Pain measurement tools, pain management guidelines, opioid equianalgesic conversion table, JCAHO criteria and much more; links to palliative care resources

References

- ¹ Morrison, SR, Meier, DE, Fischberg, D, Moore, C, Degenholtz, H, Litke, A, Maroney-Galin, C, Siu, AL. Improving the Management of Pain in Hospitalized Adults. *Arch Intern Med.* 2006. 166:1033-1039.
- ² Lesho, EP. Painfully Desperate. *Arch Intern Med.* 2003. 163: 2417-2418.
- ³ Pain and Policy Studies Group. Achieving Balance in State Pain Policy. 2007. http://www.painpolicy.wisc.edu/Achieving_Balance/PRC2007.pdf
- ⁴ Federation of State Medical Boards of the United States, Inc. Model Policy for the Use of Controlled Substances for the Treatment of Pain. 2004. http://www.fsmb.org/pdf/2004_grpol_Controlled_Substances.pdf
- ⁵ Joranson, D. Diversion of Prescription Opioids. 2007. <http://www.painpolicy.wisc.edu/domestic/diversion.htm>
- ⁶ Jung, B, Reidenberg, MM. The Risk of Action by the Drug Enforcement Administration Against Physicians Prescribing Opioids for Pain. *Pain Med.* 2006. 7(4): 353-357.
- ⁷ Warm, E, Weissman, DE. Fast Facts and Concepts #63 . The legal liability of under treatment of pain, 2nd Edition. July 2006. End-of-Life Physician Education Resource Center www.eperc.mcw.edu.
- ⁸ Jacox, A, Carr, DB, Payne, R. New Clinical-Practice Guidelines for the Management of Pain in Patients with Cancer. *NEJM.* 1994. 330:651-655.
- ⁹ Cleeland, CS, Gonin, R, Hatfield, AK, et al. Pain and its treatment in outpatients with metastatic cancer. *NEJM.* 1994. 330:592-596.
- ¹⁰ Trask, PC, Teno, JM, Nash, J. Transitions of Care and Changes in Distressing Pain. *Journal of Pain and Symptom Management.* 2006. 32: 104-109.
- ¹¹ Quill, TE, Meier, DE. The Big Chill -- Inserting the DEA into End-of-Life Care. *NEJM.* 2006. 354:1-3.
- ¹² Keay, T. The Role of Medical Education in Promoting Good Pain Control at the End of Life. Pain Management at the End of Life: Bridging the Gap Between Knowledge and Practice. Hospice Foundation of America. 2006: 1-15.
- ¹³ Du Pen, SL, Du Pen, AR, Polissar, N, Hansberry, J, Kraybill, BM, Stillman, M, Panke, J, Everly, R, Syrjala, K. Implementing Guidelines for Cancer Pain Management: Results of a Randomized Controlled Clinical Trial. *JCO.* 1999. 17(1): 361.
- ¹⁴ Fast Facts and Concepts #83 . Why patients do not take their opioids. Arnold, R. February 2003. End-of-Life Physician Education Resource Center www.eperc.mcw.edu.

¹⁵ Cleeland, CS, Gonin, R, Baez, L, Loehrer, P, Pandya, KJ. Pain and Treatment of Pain in Minority Patients with Cancer The Eastern Cooperative Oncology Group Minority Outpatient Pain Study. *Annals of Internal Medicine*. 1997. 127(9): 813-816.

¹⁶ Gordon, D, Bidar-Sielaff, S. Fast Facts and Concepts #78 Cultural aspects of pain management, 2nd Edition. July 2006. End-of-Life Physician Education Resource Center: www.eperc.mcw.edu.

¹⁷ Morrison, RS, Wallenstein, S, Natale, DK, Senzel, RS, Huang, L. “We Don’t Carry That”- Failure of Pharmacies in Predominately Nonwhite Neighborhoods to Stock Opioid Analgesics. *NEJM*. 2000. 342: 1023-1026.

¹⁸ Aret, K, Schug, SA. Underutilization of Opioids in Elderly Patients with Chronic Pain. *Drugs Aging*. 2005. 22 (8): 641-654.

¹⁹ Kuehn, BM. Hospitals Embrace Palliative Care. *JAMA*. 2007. 298:1263-1265.