

How Well is Chronic Pain Managed? Who Does it Well?

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ABSTRACT

Background. The variability in physician attitudes and goals for chronic pain relief and satisfaction with chronic pain management is unknown.

Objectives. To provide quantitative data regarding the status of chronic pain management by Michigan physicians. To relate physician's goals for pain management to physician confidence, preferences, and satisfaction with their chronic pain care.

Research Design. A prospective cohort study utilizing a survey with four chronic pain vignettes.

Subjects. Three hundred and sixty-eight Michigan physicians who provide clinical care.

Measures. Evaluate differences in chronic pain decision making based upon physician demographic characteristics, knowledge, and attitudes.

Results. The respondents reported a high frequency of treating patients with chronic pain. However, many expressed generally low satisfaction and confidence in their treatment of chronic pain, as well as low goals for the relief of chronic pain. A large number of respondents selected the worst or a poor treatment option for the chronic pain vignettes. In particular, prescriptions of opioid analgesics were infrequent. Younger physicians and those with pain education were more likely to choose the best responses to the vignettes.

Conclusion. Low pain relief goals and satisfaction with the management of chronic pain suggests the potential for its undertreatment. Our data highlight the variability in pain decision making and provide insight into the educational needs of physicians regarding chronic pain management.

Key Words. Physician Variability; Physician Attitudes; Chronic Pain Management; Physician Goals

Introduction

Chronic pain (also known as chronic benign pain, chronic nonmalignant pain) has a tremendous impact on the health and well-being of Americans [1-5]. Beyond the physical manifestations of chronic pain, its presence has significant socioeconomic implications in terms of lost work productivity and disability [3,4]. Substantial health care resources are also directed at managing chronic pain. However, many barriers to appropriate pain management per-

sist. Knowledge deficits and misconceptions regarding pain management among health care professionals have consistently been shown [6-13]. These barriers to pain management mean that many Americans must live with unnecessary chronic pain.

Most national initiatives directed at reducing pain have focused on the adequate assessment and appropriate management of acute and cancer pain [14-23]. Multiple modalities can be used for the management of chronic pain [24,25]. Specialty groups and societies have produced a few guidelines designed to provide effective management of specific chronic pain syndromes [26-28]. A number of social and physical factors have been used to predict outcome of chronic pain management [29-36]. Recently, the use of opioids for the management of chronic pain has received a great deal of support

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amongst pain physicians and their specialty societies [37-45]. However, in spite of these initial attempts at improving the management of specific chronic pain syndromes, the appropriate assessment of most chronic pain problems has remained largely ignored.

In general, the achievement of optimal medical and surgical care has been complicated by variability in the way physicians treat patients with similar conditions [46]. Practice variability has been related to the race and ethnicity, age, and gender of both the physician and patient [47-54]. However, quantitative analyses of physician characteristics in the management of chronic pain are lacking [55,56]. The purpose of this study is to understand more about the extent of variability in chronic pain management and the determinants of chronic pain management. In particular, we were interested in: 1) Determining which physicians treat chronic pain; 2) Evaluating the quality of chronic pain management; 3) Determining whether differences in chronic pain management are related to physician characteristics (i.e., race and ethnicity, age, gender, education, and their personal experiences with pain); and 4) Evaluating differences in physician decision making based upon physician knowledge and attitudes.

Methods

A four-page survey instrument was developed by the investigators. A draft version was reviewed by primary care physicians and faculty members in the Department of Anesthesiology for clarity and content. "The Physician Pain Management Survey" contained four chronic pain vignettes developed by the investigators to examine the physician's management of four different chronic pain syndromes: sickle cell anemia (SCA), rheumatoid arthritis (RA), arachnoiditis (ARC), and degenerative joint disease (DJD). Common chronic pain conditions that could be easily matched by gender and age were chosen such that the physician's choices and decision making could be compared. Table 1 summarizes the vignettes by patient demographic characteristics and etiology of the chronic complaint. The treatment options available for the matched vignettes were presented in the same order, in a multiple choice, best answer format. Treatment options were graded as best, fair, poor, and worst response by the principal investigator, pain management fellows, and attending physicians at the Multidisciplinary Pain Center at the University of Michigan Health System (UMHS). Complete vignettes, along with the

Table 1 Summary of chronic pain vignettes

Patient Demographic Characteristic			
Age (yrs)	Gender	Race	Etiology of Chronic Pain
24	F	*	Joint pain due to sickle cell anemia (SCA ^a)
74	F	Not identified	Low back pain due to arachnoiditis (ARC ^b)
68	M	Not identified	Low back pain due to degenerative joint disease (DJD ^b)
35	F	Not identified	Chronic pain in the joints due to rheumatoid arthritis (RA ^{†*})

^aRace assumed to be black due to its prevalence in African Americans

[†]Racial equivalent chronic pain problems

^bGender equivalent chronic pain problems

^{*}Age equivalent chronic pain problems

scoring for the treatment options are presented in Appendix I.

Incorporated into the survey instrument were physician demographic characteristics (i.e., race and ethnicity, age, education, gender), specialty designation, attitudes regarding patients with chronic pain, their personal experiences with chronic pain, and the quality of their own or a close relative's chronic pain relief. Physicians also reported on their opinions and goals for chronic pain management as: 1) Absolute and complete pain relief; 2) Adequate pain relief; 3) Moderate pain relief; 4) Pain relief only during painful periods or procedures; 5) No pain relief; or 6) Not applicable response. They also rated: 1) The frequency of treating patients with pain; 2) The frequency of prescribing pain medications or modalities for pain (never, sometimes, often, and very often); and 3) Their knowledge of treatment choices for chronic pain management.

Institutional Review Board approval was obtained for this study. Licensed Michigan physicians who provided clinical care were randomly selected to participate in the "Physician Pain Management Survey." The strategy for the distribution of the survey and accompanying cover letter, involved an initial mailing of the survey with return US postage paid envelopes. Subsequent follow-up of nonresponders entailed reminder postcards and two follow-up mailings of the survey to encourage their participation. An abbreviated questionnaire was sent to physician nonresponders to attempt to elicit their reasons for nonparticipation. No incentives were offered for physician participation.

The physician's education, experience, goals, and attitudes toward pain management were characterized by descriptive statistics such as frequency

distributions, means, and confidence intervals. T-tests were used to analyze differences in physician treatment with respect to mean age and number of educational programs attended. Associations between attitudes and treatment choices were made using Pearson's correlation coefficients. The influence of patient demographics (race and ethnicity, age, gender) and chronic pain on physician's vignette choice were assessed by Chi-Square analysis or McNamar's test where independence was not assured. Post-hoc tests and a significance level of 0.025 were used to reduce the chance of Type I error due to multiple comparisons.

Results

Three hundred and sixty-eight responses were obtained from Michigan physicians: 228 primary (63%) and 133 specialty (36%) based upon the clinical care they provided to Michigan patients. The most common primary care practice categories were Internal Medicine ($n = 100$) and Family Practice ($n = 71$) while the most common specialty care practice category was Surgery ($n = 71$). No differences were noted in the average number of years in practice between primary and specialty physicians (18.7 ± 11.6 vs 19.1 ± 12.0). The physicians reported that greater than 60% of their time was spent in the outpatient arena. The overall response rate for completion of the entire "Physician Pain Management Survey" was 26%. The gender as well as the racial and ethnic distribution of the physician respondents was comparable to the physician demographic data obtained from the state of Michigan. Except for the Hispanic/Latino physicians, the average age of women physicians was always younger. Analysis of the nonresponse questionnaire ($n = 122$) revealed that the nonrespondents did not differ from the respondents in terms of race and ethnicity, age, or gender. Fewer than 10% of the respondents reported receiving pain management education at anytime during medical school, residency training, or via Continuing Medical Education (CME).

Who Provides Chronic Pain Care?

Overall, the majority of physicians reported treating chronic pain, i.e., noncancer pain, patients often to very often. Table 2 shows the frequency with which the physicians reported treating patients with chronic pain by their type of practice on a 4-point scale (1 = never, 4 = very often). The majority of physicians, 76% of primary and 64% of specialty, possessed a State of Michigan official prescription book for schedule II drugs. Tests of proportions re-

vealed that this difference between practice category (primary vs specialty) was statistically significant, $p = 0.0312$. Primary care physicians were more likely to prescribe opioid analgesics for chronic pain than specialty physicians (59% vs 28%, $p = 0.0001$). Although, specialty physicians ($n = 43$) were more likely to use opioid contracts than primary physicians (34% vs 42%), this difference was not statistically significant ($p = 0.3322$). Table 3 shows physician use of opioid contracts and prescription of opioid analgesics for chronic pain.

What are Physician's Opinions and Attitudes Toward Chronic Pain Care?

In order to evaluate the role of regulatory scrutiny in the management of chronic pain, we asked physicians their level of agreement with a series of statements regarding chronic pain patients and the role of opioid analgesics using a 5-point agreement scale (1 = strongly disagree; 5 = strongly agree). These results are reported in Table 4. Overall, physicians were neutral (2.9 ± 1.3 , mean \pm standard deviation) in their opinion of the role of regulatory scrutiny in limiting their use of strong opioid analgesics. However, physicians tended to agree (3.5 ± 0.9) that prescribing strong opioid analgesics would attract a medical review of their prescribing habits. The physicians also tended to agree (3.6 ± 0.9) that the majority of patients with chronic pain were undertreated and that it was appropriate for these patients to ask for additional pain medication (4.0 ± 0.8). However, they were neutral in their attitude toward prescribing strong opioid analgesics for chronic pain (3.1 ± 1.0).

How Well is Chronic Pain Care Provided?

The physician respondents were asked to provide information regarding their chronic pain relief goals for patients, the quality of their own personal pain care relief, and the quality of the pain care relief of a close relative. For each question, physicians were asked to rate the quality of chronic pain care (1 = absolute and complete pain relief; 5 = no pain relief). Overall, the physicians reported a goal of (2.2 ± 0.6) for their patient's chronic pain relief. There were no differences noted in their rating of their own chronic pain care relief and their close relative's chronic pain care relief (2.8 ± 0.8). The level of satisfaction they reported with the chronic pain care provided on a 5-point scale (1 = very dissatisfied; 5 = very satisfied) revealed no differences between primary and specialty physicians (3.3 ± 1 vs 3.2 ± 1).

Table 2 Frequency Of chronic pain treating and prescribing by practice category

Frequency of...	Number of Physicians (% within category)				Mean \pm SD	Two-tailed p-value for difference in means
	Never = 1	Sometimes = 2	Often = 3	Very Often = 4		
Treating Chronic Pain						
Primary physicians	15 (6.5)	75 (32.7)	96 (41.9)	43 (18.7)	2.73 \pm 0.84	0.086
Specialty physicians	19 (14.3)	48 (36.3)	37 (28)	28 (21.2)	2.56 \pm 0.98	
Prescribing for Chronic Pain						
Primary physicians	23 (10.1)	102 (45.1)	80 (35.3)	21 (9.2)	2.44 \pm 0.80	0.004
Specialty physicians	33 (25.1)	57 (43.5)	27 (20.6)	14 (10.6)	2.17 \pm 0.93	

To evaluate the quality of chronic pain care, physician respondents were asked to choose the most appropriate treatment regimen for people with specific chronic pain conditions. These results are presented in Table 5. As expected, there was considerable variability in their responses. For all chronic pain conditions there were a large number of respondents selecting a poor treatment choice or the worst treatment choice. For rheumatoid arthritis, more physicians chose a poor treatment option than a good treatment option. In contrast, for arachnoiditis a clear majority chose the best treatment option. For all options except arachnoiditis, a plurality of respondents chose to refer the patient to a specialist rather than to provide treatment for the pain.

Physicians were classified into responder groups based upon those who provided the best and worst responses to the pain vignettes. These two responder groups were then compared in terms of five categories: 1) Physician characteristics; 2) Attitudes; 3) Knowledge; 4) Pain management; and 5) Frequency and goals. Variable means for the best and worst responder groups were then compared by the McNemar's Chi-square test for matched pairs. Table 6 is a presentation of the correlation coefficients for the variables between the two physician groups. It presents the extent to which the variable in the left column "predicts" the physician's choice in the pain vignettes.

Younger physicians were significantly more likely to be in the best responder group ($p = 0.022$). Physician attitudes seemed to matter as well. Those physicians who disagree that good patients avoid talking about pain and who thought it appropriate for patients to ask for additional drugs were more likely to prescribe correctly. Physicians who did not think pain medicine should be saved in case the pain gets worse ($p = 0.016$) and who thought physicians should prescribe strong opioids ($p = 0.001$) were significantly more likely to be in the best responder group.

The physician's perceived knowledge was very important in influencing the quality of chronic pain care. Physicians expressing confidence in their knowledge of meperidine, TENS unit, nerve blocks, triplicate drugs, and nontriplicate drugs were more likely to select the best care option. Those physicians reporting experience with the use of pain management medications were also associated with selecting quality care. Physicians who expressed confidence in their knowledge of triplicate drugs were significantly more likely to provide the best care ($p < 0.0001$) as were those who reported experience with prescribing ($p = 0.016$). Finally, and perhaps most importantly, physicians with a goal of more relief of chronic pain were more likely to provide high quality care.

Table 3 Frequency of possessing a Schedule II prescription, prescribing chronic opioid therapy, and use of opioid contracts

Questions	Practice Type (N)	n (% reporting yes)	Z Statistic	P value
Possess a State of Michigan Official Prescription Book for Schedule II Drugs	primary (230) specialty (133)	174 (75.6) 86 (64.7)	2.15	0.0312
Prescribe chronic opioids for patients with chronic pain	primary (226) specialty (130)	134 (59.3) 37 (28.5)	6.0	0.0001
Use opioid contracts for chronic opioid therapy in chronic pain patients	primary (134) specialty (43)	45 (33.6) 18 (41.9)	0.9697	0.3322

Table 4 Physicians opinion regarding pain management

Physician Opinions	N	Agreement Scores*	
		Mean \pm SD	95% Confidence Interval Lower bound, Upper bound
Appropriate to refer to pain specialists	363	4.18 \pm 0.85	4.09, 4.27
Appropriate for patients to ask for additional pain medications	366	4.05 \pm 0.80	3.97, 4.14
Physician should prescribe strong opioids	359	3.07 \pm 1.03	2.97, 3.18
Majority of patients are under-treated	361	3.63 \pm 0.90	3.53, 3.72
Majority of patients should have more control	366	3.52 \pm 0.96	3.42, 3.62
Regulatory scrutiny limits my use of strong opioids	363	2.90 \pm 1.27	2.77, 3.04
Experience of my colleagues with regulatory agencies has affected my prescribing of strong opioids for pain	364	2.50 \pm 1.24	2.36, 2.63
There is undue regulatory scrutiny of physicians who prescribe strong opioids	364	2.90 \pm 1.08	2.79, 3.02
My reputation in the physician community would be negatively affected by frequently prescribing strong opioids for pain management	368	2.76 \pm 1.02	2.65, 2.87
My reputation in the physician community would be positively affected by frequently prescribing strong opioids for pain management	368	2.56 \pm 0.77	2.48, 2.64
If I frequently prescribe strong opioids for pain management, I may attract a medical review of my prescribing habits	367	3.48 \pm 0.91	3.38, 3.57

*1 = strongly disagree to 5 = strongly agree

Discussion

Most studies directed at physician pain management knowledge have focused on pain problems other than chronic pain, such as acute and cancer pain [6,57,58]. Other studies have focused on a group of physicians from a single discipline or those with presumed familiarity and knowledge of

pain management and not those who see and treat most patients with pain [9,11,12,37]. These studies never looked at physician demographic characteristics, patient characteristics, or the etiology of the pain complaint as it potentially related to the adequacy of pain management. Our study points to the importance of the physician variable in the management of chronic pain.

Considering the significant socioeconomic and personal implications of pain, the adequate management of chronic pain is of critical importance [1,2,5,30,59-62]. Identification of physician variables that contribute to inadequate pain management may allow for strategies specifically designed to enhance pain management. The potential implications of these strategies extend to facilitating healthier lifestyles, decreasing patient morbidity, and reducing health care costs. Yet research is lacking on the determinants that promote successful pain management outcomes by physicians. Our data emphasize that there is minimal pain management ed-

Table 5 Distribution by count and percentage of physician responses to the vignettes by the etiology of chronic pain

Etiology of Chronic Pain		Physician response to vignettes				
		worst	poor	referral	fair	best
Sickle cell anemia (SCA)	Count	9	64	166	56	48
	%	2.6	18.7	48.4	16.3	14.0
Rheumatoid Arthritis (RA)	Count	16	77	150	49	35
	%	4.9	23.6	45.9	15.0	10.7
Arachnoiditis (ARC)	Count	9	60	16	61	187
	%	2.7	18.0	4.8	18.3	56.2
Degenerative Joint Disease (DJD)	Count	18	17	204	64	23
	%	5.5	5.2	62.6	19.6	7.1

Table 6 Variables associated with better pain management choices for chronic pain vignettes

Variable Category	Variable or Question	Mean (\pm SD)	Correlation Coefficient	Two-tailed p-value
Characteristics	Age of physician	45.15 \pm 12.63	-0.145	0.022
	Education of physician*	1.17 \pm 0.96	0.082	0.196
Attitudes [†]	Good patients avoid talking about pain.	1.74 \pm 0.76	-0.111	0.080
	A patient's gender affects how he or she deals with pain.	3.08 \pm 1.02	-0.018	0.782
	Pain medicine should be saved in case the pain gets worse.	1.97 \pm 0.70	-0.153	0.016
	Appropriate for chronic pain patients to ask for additional drugs.	4.04 \pm 0.82	0.215	0.001
	Physicians should prescribe strong opioids for chronic pain.	3.08 \pm 1.03	0.206	0.001
	Majority of chronic pain patients are undertreated.	3.61 \pm 0.92	0.140	0.027
Knowledge [‡]	Confidence of knowledge of meperidine	3.84 \pm 1.01	0.088	0.171
	Confidence of knowledge of TENS unit	2.31 \pm 1.25	0.076	0.237
	Confidence of knowledge of nerve blocks	2.30 \pm 1.28	0.116	0.071
	Confidence of knowledge of triplicate drugs	3.23 \pm 0.78	0.249	< 0.0001
	Confidence of knowledge of nontriplicate drugs	3.14 \pm 0.89	0.090	0.160
Frequency [§]	Treating patients with chronic pain	2.66 \pm 0.90	0.011	0.862
	Prescribing meperidine	2.30 \pm 0.94	-0.089	0.166
	Prescribing nerve blocks	1.57 \pm 0.82	0.071	0.275
	Prescribing TENS units	1.49 \pm 0.70	0.054	0.402
	Prescribing triplicate drugs	1.90 \pm 0.54	0.154	0.016
	Prescribing nontriplicate drugs	2.62 \pm 0.79	-0.073	0.257
Goals	Goal for relief of chronic pain	3.85 \pm 0.48	0.075	0.248

*Number of pain management educational programs

[†]Rated on a 5-point agreement scale; 1 = strongly disagree, 5 = strongly agree

[‡]Rated on a 5-point confidence scale; 1 = not confident, 5 = extremely confident

[§]Rated on a 4-point scale; 1 = never, 4 = very often

^{||}Rated on a 5-point scale; 1 = no pain relief, 5 = absolute and complete relief

education directed at physicians. It is important to note, however, that younger physicians and those reporting more pain education provided the best responses for chronic pain overall. Discordance was noted in the physician's goals for chronic pain relief. The percentage of primary care physicians that reported treatment of patients with chronic pain is greater than the percentage of those physicians that reported prescribing for chronic pain. More importantly, our data show low pain relief goals for chronic pain suggesting the potential undertreatment of chronic pain. This finding was also consistent with the physician's neutral attitudes toward their satisfaction with their management of chronic pain. This study also revealed that although 75% of primary and 64% of specialty physicians reported that they possessed a schedule II prescription book, their provision of opioid analgesics chronically for patients with chronic pain differed substantially (59% vs 28%, respectively). Opioid and behavioral contracts have been promoted as one method to assist physicians in the administration of opioid therapy [63]. Thus, a potential criticism of this study is that we focus on pain relief and not on function. Yet despite this potential limitation, there was minimal use of opioid contracts in both physician groups, although specialty physicians tended to use them more.

Although we might wish it otherwise, considerable variability has been noted in access to cardiovascular, primary, and cancer care. Variability has also been shown in the outcomes of therapeutic interventions, as well as surgical and medical treatment [47,48,51-54,64-70]. Lurie et al. pointed to the influence of physician gender on the provision of routine health screening [71,72]. We surmised that not only physician attitudes, but also their demographics could contribute to their goals for the management of different types of pain. This study did not include enough racial and ethnic minority or women physicians to detect the potential impact of the physician's race and ethnicity or gender upon the pain care they provided. In order to provide worthwhile answers regarding the impact of physician demographic variables on pain management, future studies may require oversampling of women or racial and ethnic minority physicians.

The clinical vignettes were utilized to determine the physician's management of different types of common chronic pain conditions. The limitation of the vignettes is that they may not represent real world clinical scenarios. For instance, details regarding the patient's insurance status, past medical and social history, and socioeconomic status were not presented. Vignettes do not allow for face validity or a presentation bias. Physicians in this study

tended to frequently refer patients with the chronically painful conditions of rheumatoid arthritis and sickle cell anemia to pain specialists. However, when they chose to manage these problems, no differences were seen in their management of these chronic pain problems. The lack of specificity of our tool may have a significant role on this finding. Refinement of our tool and more study are required to evaluate whether the race and ethnicity of the patient have an influence on how physicians manage chronic pain. The patient's perspective of the adequacy of their pain management or their response to treatment was also not addressed but deserves to be studied. Real world case management is much more challenging and patients are much more complex than any vignettes. Nonetheless, vignettes do provide valuable insights into decision making.

Self-report bias, representativeness, and nonresponse are important considerations of survey research. Another factor to consider is content and respondent burden. Our four-page survey was fairly detailed and touched upon a sensitive subject matter, both of which may have reduced the response rate. In this study, three follow-ups by mail were used to enhance response rates in survey research [73]. In general, lower response rates have been associated with physicians and with anonymous surveys. Anonymous surveys directed at a physician population, therefore, may be associated with a lower response rate. The questionnaire in this study was completed confidentially in order to reduce the potential to report untrue behaviors. Incentives may improve response rates in surveys directed at the general population, but may also introduce a selection bias. We believe the total number of respondents to this four-page survey was substantial for a group of busy clinical physicians from multiple disciplines who did not receive an incentive for participation [74].

An abbreviated questionnaire was utilized to determine reasons for nonresponse. Analysis of the demographic data (e.g., age, gender, race, and ethnicity) of the respondents did not reveal significant differences from other surveys of physicians done in the state of Michigan [75]. Despite a representative sample of physicians, the small number of female or racial and ethnic minority physicians prevents the analysis of potential pain treatment differences that could be attributed to the race and ethnicity or gender of the physician. There is not necessarily a relationship between response rate and nonresponse bias [74]. However, if a nonresponse bias is present, we believe that it did not affect our conclu-

sions in a meaningful manner. It is possible, however, that our findings could be biased by the overrepresentation of physician respondents who were more knowledgeable about pain management. This could yield a more positive interpretation of our results than what is currently real world practice.

In conclusion, this study serves as a platform for future outcome studies on physician characteristics that contribute to appropriate management of chronic pain. New expectations from the Joint Commission on Accreditation of Hospital Organizations (JCAHO) have been developed to ensure the adequate assessment and treatment of all types of pain [76]. We have shown the consistent undertreatment of chronic pain as well as lower goals for its relief. Physician variability in chronic pain management was seen in physician treatment and attitudes. The importance of the physician's age and pain education cannot be overlooked. Early educational efforts could provide significant benefits in the management of pain. Our data also suggest that physicians would benefit from education on chronic pain management in order to provide appropriate prescription for pain management. The potential role or the perception of regulatory scrutiny by physicians cannot be overlooked and needs to be evaluated as it relates to the utilization of opioid analgesics for the management of chronic pain. Despite discrepancies in their stated goals and their management of chronic pain, we emphasize the need for continuing study of the physician variable as an important factor in the adequate treatment of chronic pain. This study highlights that advancements in adequate assessment and appropriate management of chronic pain may be achievable when efforts are directed at influencing and understanding those physician variables that may be associated with best pain management strategies and practices.

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d. Use acetaminophen with codeine
e. Refer to pain management specialist

2. A 74-year-old female presents to clinic with chronic low back pain due to arachnoiditis. She has used hydrocodone with minimal relief of her pain. Her quality of life has decreased and she reports severe pain daily. She received no relief from epidural steroids. The most appropriate management would be:
a. Start methadone or oral morphine for chronic opioid therapy
b. Administer tramadol for breakthrough pain
c. Start oxycodone with acetaminophen
d. Repeat caudal epidural steroids
e. Refer to pain management specialist

3. A 35-year-old female with severe rheumatoid arthritis presents to clinic with chronic pain. In the past, her pain had been controlled with hydrocodone. She now complains of constant and increasingly severe pain. The most appropriate management for her chronic pain would be:
a. Start chronic opioid therapy with methadone or oral morphine
b. Continue her current regimen and add tramadol for breakthrough pain
c. Place her on oxycodone
d. Use acetaminophen with codeine
e. Refer to pain management specialist

4. A 68-year-old male presents with severe pain due to degenerative joint disease and low back pain. Nerve blocks have not been helpful for his pain. The most appropriate management for this pain would be:
a. Start methadone or oral morphine for chronic opioid therapy
b. Administer tramadol for breakthrough pain
c. Start oxycodone with acetaminophen
d. Repeat caudal epidural steroids
e. Refer to pain management specialist

APPENDIX I

Chronic pain vignettes from “The Physician Pain Management Survey”

1. A 24-year-old female with sickle cell anemia presents to clinic with joint pain. In the past, she used hydrocodone with variable control of her pain. She reports that her pain intensity is severe. She now complains of increasing chronic pain. The most appropriate regimen for her chronic pain would be:
 - a. Start chronic opioid therapy with methadone or oral morphine
 - b. Continue her current regimen and add tramadol for breakthrough pain
 - c. Place her on oxycodone

PV study vignette responses

Vignette Number	Best Response	Alternate Response
1	1 = a c b d	5 = e
2	1 = a c d b	5 = e
3	1 = a c b d	5 = e
4	1 = a c d b	5 = e
Pairs		
1 and 3	females with chronic pain	
2 and 4	female and male with chronic low back pain	
Singleton		
4	male and female with cancer pain	