

Satisfaction With Care After Reducing Opioids for Chronic Pain

Adam L. Sharp, MD, MS; Ernest Shen, PhD; Yi-Lin Wu, MS; Adeline Wong, MPH; Michael Menchine, MD, MS; Michael H. Kanter, MD; and Michael K. Gould, MD, MS

Prescriptions for opioid analgesics have recently risen dramatically,¹ driven by pharmaceutical marketing,² a purported low addiction potential, shortened office visits, increasing patient expectations, and regulatory pressure to ensure appropriate pain management.³⁻⁵ Opioid use, measured in morphine milligram equivalents (MME), has increased in the United States by 300%, from 180 MME per capita in 1997 to 710 MME per capita in 2010.^{6,7} Deaths due to overdose have paralleled this dramatic rise in prescriptions, with opioid-related deaths increasing 200% from 2000 to 2014.⁸

Professional groups, patient advocates, and government agencies have responded by developing guidelines for safely prescribing opioids.⁹ In August 2016, then Surgeon General Vivek Murthy, MD, sent a letter to all US physicians petitioning them to decrease opioid prescribing.¹⁰ Prescribers have been asked to consult state-level prescription drug monitoring programs, avoid coprescribing opioids with other classes of sedating drugs, and reduce individual patients' opioid consumption to less than 50 MME daily.¹¹ Despite these efforts, the alarming increase in opioid prescribing has not slowed, much less reversed, nationwide.¹² One reason physicians are reluctant to deny or reduce opioid prescriptions is fear of patient complaints or lower patient satisfaction scores.¹³ This may be particularly relevant when physicians treat patients with whom they do not have a long-term relationship.

Consequences for providers with poor patient satisfaction scores may include lower pay,¹⁴ reduced chances of promotion, and even loss of employment. Of particular concern are patients who have historically been prescribed opioids for chronic pain and are now being weaned in accordance with current recommendations.

This study investigated whether reducing opioid prescriptions for patients without cancer to safer levels is associated with low satisfaction scores among patients with high opioid use in a real-world managed care setting.

METHODS

A retrospective cohort study was conducted using clinical encounters of patients prescribed opioids for chronic noncancer pain between

ABSTRACT

OBJECTIVES: An epidemic of opioid overuse has resulted in nationwide efforts to decrease prescribing, but there is concern that implementing these recommendations will cause patients who are accustomed to opioids for chronic pain to be dissatisfied with care.

STUDY DESIGN: Retrospective cohort study of satisfaction scores for patients prescribed opioids for noncancer chronic pain for at least 6 consecutive months from 2009 to 2014.

METHODS: We used mixed effects regression to examine the association between opioid dose reduction and the frequency of unfavorable patient satisfaction scores. Subgroup analysis compared the effect of dose reduction on satisfaction scores for encounters between patients and their assigned primary care provider (PCP) versus encounters between patients and an unassigned provider.

RESULTS: Included were 2492 encounters involving patients with high-dose chronic opioid use for noncancer pain. A reduction in opioid prescribing occurred in 29% of encounters, and most of these resulted in favorable satisfaction scores (86.4%). After adjustment, the odds of an unfavorable score in the dose reduction group were just marginally higher and not significant (odds ratio [OR], 1.31; 95% CI, 1.00-1.73). Stratified by different encounter types, opioid dose reduction was not associated with unfavorable scores for visits with an assigned PCP (OR, 1.16; 95% CI, 0.79-1.70), but the odds of an unfavorable score were higher for encounters with an unassigned provider (OR, 1.50; 95% CI, 1.01-2.23).

CONCLUSIONS: Overall, reducing opioid use for chronic pain is not associated with lower patient satisfaction scores, but encounters with unassigned providers may be associated with slightly lower satisfaction when opioids are reduced.

Am J Manag Care. 2018;24(6):e196-e199

2009 and 2014 within Kaiser Permanente Southern California. Inclusion criteria included clinical encounters with patients who completed a patient satisfaction survey and had been prescribed 50 or more MME per day for at least 6 consecutive months prior to the encounter. Encounters with patients younger than 18 years and those with a known cancer diagnosis (*International Classification of Diseases, Ninth Revision* codes 140-203) were excluded. The cohort was divided into a dose-reduction group, defined by encounters with patients whose daily opioid use dropped below 50 MME for at least 30 days following the encounter related to the satisfaction survey, and a nonreduction group (continued daily use \geq 50 MME for at least 30 days after the encounter). Satisfaction surveys were sent to patients after randomly selected (approximately 15%) clinical encounters, per routine operations in our health system ([eAppendix](#) [available at [ajmc.com](#)]).

The primary outcome was defined as the proportion of encounters with unfavorable satisfaction scores. The score is derived from 10 questions related to patient satisfaction with the encounter, each response ranging from very dissatisfied (1) to very satisfied (10). We defined a favorable score as 9 or greater, in agreement with the health system's use of this cut point value to help determine financial incentives, hospital credentialing, and eligibility for associate physicians to become partners.

We adjusted for patient age, patient gender, Elixhauser score,¹⁵ provider years of experience, assigned primary care provider (PCP) visit, and provider partner status to account for observable differences between groups. We analyzed factors associated with the predictive variables using a general linear mixed effects model for logistic regression, including a provider-level random intercept to account for unmeasured provider effects. We included an interaction term to examine the effect of dose reduction in subgroups of assigned versus unassigned providers. An assigned encounter was defined as a visit between a patient and their assigned PCP. All analyses were performed using SAS statistical software, version 9.3 (SAS Institute Inc; Cary, North Carolina).

RESULTS

The sample included 2492 encounters, 29% of which were followed by a reduction in opioid prescribing. Patients in the dose reduction group were more likely to be younger than 65 years and female and to have an Elixhauser comorbidity score of 3 or greater ([Table 1](#)). Patients who experienced a reduction in opioids to below 50 MME daily had a median decrease of 80 (mean = 109) MME.

Overall, most satisfaction scores were favorable for patient encounters with (86.4%) or without (89.9%) a dose reduction

TAKEAWAY POINTS

Our retrospective study of 2492 encounters for patients accustomed to high-dose opioids for chronic pain compared patient satisfaction scores between those with a recommended decrease in opioids and those without a reduction. We found the following:

- ▶ Most encounters resulting in an opioid reduction maintained favorable overall satisfaction (86.4%).
- ▶ Reducing opioids for chronic pain is not associated with unfavorable patient satisfaction scores ($P = .051$).
- ▶ Any potential adverse effect on satisfaction from a reduction in opioids is ameliorated for encounters with an assigned primary care provider.

([Table 1](#)). Adjusted odds of an encounter resulting in an unfavorable score were not statistically different for encounters resulting in an opioid dose reduction (odds ratio [OR], 1.31; 95% CI, 1.00-1.73; $P = .051$) ([Table 2](#)).

We did not find evidence to support an interaction between an opioid reduction and a PCP satisfaction score ($P = .358$). Unadjusted favorable satisfaction scores were statistically less common after opioid reduction for both unestablished provider encounters (82.8% vs 88.0%; $P < .001$) and encounters with an assigned PCP (90.8% vs 89.5%; $P \leq .001$), but the small absolute difference in each group is of questionable clinical relevance. Adjusted odds of an unfavorable score following dose reduction were higher after an encounter with an unassigned PCP (OR, 1.50; 95% CI, 1.01-2.23) but not with an assigned PCP (OR, 1.16; 95% CI, 0.79-1.70).

DISCUSSION

In this study, we found that overall satisfaction was very high among patients with chronic use of high doses of opioids and that low patient satisfaction scores were not associated with a substantial reduction in their opioid dose. Prior research has demonstrated that opioid prescribing is not associated with patient satisfaction in emergency department settings.¹⁶ Our study of a chronic pain population had similar findings and highlights the benefits of an assigned PCP managing chronic pain, as low satisfaction had a slight association with reductions in opioid dosing for encounters with an unestablished provider.

Daily use of 50 or more MME is generally thought to significantly increase the risk of accidental overdose and death while conferring minimal advantage in terms of pain control.¹¹ Consequently, the CDC and other professional organizations have recommended that physicians attempt to reduce opioid prescribing whenever possible.^{9,17,18} Countering these recommendations are numerous barriers, including the fear of dissatisfied patients, particularly if financial remuneration or job security is tied to patient satisfaction scores.¹⁹⁻²¹ At a minimum, our findings should reassure PCPs, because reducing opioid prescribing for patients with chronic noncancer pain in our study cohort was not associated with unfavorable satisfaction scores.

TRENDS FROM THE FIELD

TABLE 1. Patient-, Provider-, and Encounter-Level Characteristics for the Study Sample Included in Our Analysis^a

	Reduction n (%)	No Reduction n (%)	Total n (%)	P
Age, years				<.001
<65	433 (60.0)	924 (52.2)	1357 (54.5)	
≥65	289 (40.0)	846 (47.8)	1135 (45.6)	
Gender				.003
Female	443 (61.4)	972 (54.9)	1415 (56.8)	
Race				.36
White	532 (73.9)	1260 (71.3)	1792 (72.0)	
African American	69 (9.2)	163 (9.6)	232 (9.3)	
Hispanic	100 (13.9)	275 (15.6)	375 (15.1)	
Asian/PI or Native American	13 (1.8)	42 (2.4)	55 (2.2)	
Other/unknown	6 (0.8)	28 (1.6)	34 (1.4)	
Elixhauser score				.006
<3	470 (65.9)	1259 (72.0)	1729 (70.26)	
≥3	243 (34.1)	489 (28.0)	732 (29.7)	
Assigned provider				<.001
Yes	390 (54.0)	1227 (69.3)	1617 (64.9)	
No	332 (46.0)	543 (30.7)	875 (35.1)	
Years of provider experience				.28
1st quartile	202 (27.0)	478 (28.0)	680 (27.3)	
2nd quartile	188 (26.0)	427 (24.1)	615 (24.7)	
3rd quartile	184 (20.5)	439 (24.8)	623 (25.0)	
4th quartile	148 (20.1)	426 (24.1)	574 (23.0)	
Mean satisfaction score				.011
<9	98 (13.6)	178 (10.0)	276 (11.1)	
≥9	624 (86.4)	1592 (89.9)	2216 (88.9)	

MME indicates morphine milligram equivalents; PI, Pacific Islander.

^aEncounters for patients with noncancer chronic pain (≥50 MME per day for ≥6 consecutive months), stratified by those who experienced a reduction in opioid prescribing below the recommended 50 MME daily.

TABLE 2. Results of Multivariable Analysis

Covariate	OR	P	95% CI
Reduction in opioids	1.31	.051	1.00-1.73
Patient age (≥65 years)	1.01	.936	0.77-1.32
Patient gender (female)	0.96	.725	0.74-1.24
Elixhauser score (≥3)	1.14	.333	0.88-1.48
Assigned primary care provider encounter	0.67	.004	0.51-0.88
Years of provider experience (1st quartile)	0.99	.232	0.98-1.01

OR indicates odds ratio.

Although patient satisfaction was generally high, unfavorable satisfaction scores appear to be slightly more likely when opioids are reduced during an encounter with someone other than an assigned PCP. However, this small increased risk of an unfavorable satisfaction score does not justify risky opioid prescribing, and failing to lower opioid doses to safe levels for 20 patients in hopes of possibly improving patient satisfaction for 1 encounter is not reasonable. Future studies should attempt to understand why this occurs and determine which strategies can maintain high patient satisfaction after opioid dose reduction for encounters with unassigned PCPs.

Limitations

Retrospective quasi-experimental study designs have several limitations. Although we adjusted for observable differences between groups, unmeasured confounders may be present. For example, we cannot determine the motivating factors associated with opioid dose reduction, and this may have confounded the results. In addition, our health system's survey response rate of approximately 18% potentially introduced a response bias. However, patients who are unhappy about dose reductions are more likely to respond and report adverse scores, biasing the results in favor of a positive association between dose reduction and unfavorable scores. Further, we believe that our results are indicative of the actual satisfaction scores that are currently reported for comparisons of hospitals, health plans, and physicians and therefore representative of how satisfaction surveys are used in practice, as opposed to research settings.

CONCLUSIONS

Overall, there is no association between decreasing opioids and an unfavorable patient satisfaction score among encounters with patients with chronic noncancer pain. Satisfaction remains favorable in most cases following opioid dose reduction. However, there may be an association with lower satisfaction scores for unestablished providers reducing opioid prescribing for those accustomed to high opioid doses. ■

Acknowledgments

Internal funding for the KPSC Care Improvement Research Team supported this project.

Author Affiliations: Department of Research and Evaluation (ALS, ES, YLW, AW, MKG), and Medical Director of Quality and Clinical Analysis (MHK), Kaiser Permanente Southern California, Pasadena, CA; Department of Emergency Medicine, Los Angeles Medical Center, Kaiser Permanente Southern California (ALS), Los Angeles, CA; Department of Emergency Medicine, University of Southern California, Los Angeles (MM), Los Angeles, CA; The Permanente Federation (MHK), Oakland, CA.

Source of Funding: Internal funding for the KPSC Care Improvement Research Team supported this project.

Author Disclosures: The authors report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

Authorship Information: Concept and design (ALS, ES, MHK, MKG); acquisition of data (YLW, MHK); analysis and interpretation of data (ALS, ES, YLW, AW, MM, MHK, MKG); drafting of the manuscript (ALS, ES, MM, MHK); critical revision of the manuscript for important intellectual content (ALS, ES, AW, MM, MHK, MKG); statistical analysis (YLW, AW); and supervision (ALS, ES).

Address Correspondence to: Adam L. Sharp, MD, MS, Department of Research and Evaluation, Kaiser Permanente Southern California, 100 S Los Robles Ave, 2nd Fl, Pasadena, CA 91101. Email: adam.l.sharp@kp.org.

REFERENCES

- Dart RC, Surratt HL, Cicero TJ, et al. Trends in opioid analgesic abuse and mortality in the United States. *N Engl J Med*. 2015;372(3):241-248. doi: 10.1056/NEJMs1406143.
- Van Zee A. The promotion and marketing of OxyContin: commercial triumph, public health tragedy. *Am J Public Health*. 2009;99(2):221-227. doi: 10.2105/AJPH.2007.131714.
- Wilkerson RG, Kim HK, Windsor TA, Mareiniss DP. The opioid epidemic in the United States. *Emerg Med Clin North Am*. 2016;34(2):e1-e23. doi: 10.1016/j.emc.2015.11.002.
- Cicero TJ, Ellis MS. Abuse-deterrent formulations and the prescription opioid abuse epidemic in the United States: lessons learned from OxyContin. *JAMA Psychiatry*. 2015;72(5):424-430. doi: 10.1001/jamapsychiatry.2014.3043.
- Manchikanti L, Helm S 2nd, Fellows B, et al. Opioid epidemic in the United States. *Pain Physician*. 2012;15(3 suppl):ES9-ES38.
- Cantrill SV, Brown MD, Carlisle RJ, et al; American College of Emergency Physicians Opioid Guideline Writing Panel. Clinical policy: critical issues in the prescribing of opioids for adult patients in the emergency department. *Ann Emerg Med*. 2012;60(4):499-525. doi: 10.1016/j.annemergmed.2012.06.013.
- Betses M, Brennan T. Abusive prescribing of controlled substances—a pharmacy view. *N Engl J Med*. 2013;369(11):989-991. doi: 10.1056/NEJMp1308222.
- Rudd RA, Aleshire N, Zibbell JE, Gladden RM. Increases in drug and opioid overdose deaths—United States, 2000–2014. *MMWR Morb Mortal Wkly Rep*. 2016;64(50-51):1378-1382. doi: 10.15585/mmwr.mm6450a3.
- Nuckols TK, Anderson L, Popescu I, et al. Opioid prescribing: a systematic review and critical appraisal of guidelines for chronic pain. *Ann Intern Med*. 2014;160(1):38-47. doi: 10.7326/0003-4819-160-1-201401070-00732.
- Parks T. Surgeon General asks physicians to lead way in fighting opioid epidemic. *AMA Wire*. August 24, 2016. www.ama-assn.org/ama-news/surgeon-general-asks-physicians-lead-way-fighting-opioid-epidemic. Accessed May 8, 2018.
- Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016 [erratum in *MMWR Recomm Rep*. 2016;65(11):295]. *MMWR Recomm Rep*. 2016;65(11):1-49. doi: 10.15585/mmwr.r6501e1.
- Volkow ND. America's addiction to opioids: heroin and prescription drug abuse. National Institute on Drug Abuse website. drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2016/americas-addiction-to-opioids-heroin-prescription-drug-abuse#_ftnref4. Published May 14, 2014. Accessed May 8, 2018.
- Frantsve LM, Kerns RD. Patient-provider interactions in the management of chronic pain: current findings within the context of shared medical decision making. *Pain Med*. 2007;8(1):25-35. doi: 10.1111/j.1526-4637.2007.00250.x.
- HCPro staff. Improve patient satisfaction scores, boost Medicare reimbursement. HealthLeaders Media website. healthleadersmedia.com/leadership/improve-patient-satisfaction-scores-boost-medicare-reimbursement?page=0%2C1. Published June 22, 2016. Accessed May 8, 2018.
- Austin SR, Wong YN, Uzzo RG, Beck JR, Egleston BL. Why summary comorbidity measures such as the Charlson Comorbidity Index and Elixhauser score work. *Med Care*. 2015;53(9):e65-e72. doi: 10.1097/MLR.0b013e318297429c.
- Schwartz TM, Tai M, Babu KM, Merchant RC. Lack of association between Press Ganey emergency department patient satisfaction scores and emergency department administration of analgesic medications. *Ann Emerg Med*. 2014;64(5):469-481. doi: 10.1016/j.annemergmed.2014.02.010.
- Broida RI, Gronowski T, Kalnow AF, Little AG, Lloyd CM. State emergency department opioid guidelines: current status. *West J Emerg Med*. 2017;18(3):340-344. doi: 10.5811/westjem.2016.12.30854.
- Deren MM. CDC opioid guidelines in today's drug culture. *Conn Med*. 2016;80(6):375-377.
- Johnson SR. New CDC guidelines are unlikely to affect opioid prescribing practices. *Mod Healthc*. 2016;46(12):11.
- Rosenau AM. Guidelines for opioid prescription: the devil is in the details. *Ann Intern Med*. 2013;158(11):843-844. doi: 10.7326/0003-4819-158-11-201306040-00632.
- Kunins HV, Farley TA, Dowell D. Guidelines for opioid prescription: why emergency physicians need support. *Ann Intern Med*. 2013;158(11):841-842. doi: 10.7326/0003-4819-158-11-201306040-00631.

Full text and PDF at www.ajmc.com

eAppendix

As part of normal operating procedures at Kaiser Permanente Southern California, patient satisfaction surveys vary slightly depending on the clinical setting and the encounter and are adapted year to year based on internal policies and industry standards. All questions are rated on a 1-10 scale (1 least favorable/most dissatisfied to 10 most favorable/completely satisfied). A combined mean score (CMS) is used to summarize overall patient satisfaction. The CMS was the outcome used in our study because it is the score used in our health system to compare physicians, clinics and departments. Below you will find a number of patient satisfaction questions representative of those used in our study to assess patient satisfaction.

1. How courteous and respectful was this doctor or health care provider?
2. How well did this doctor or health care provider understand your problem?
3. How well did this doctor or health care provider explain to you what he or she was doing and why?
4. Did this doctor or health care provider use words that were easy for you to understand?
5. How well did this doctor or health care provider listen to your concerns and questions?
6. Did this doctor or health care provider spend enough time with you?
7. How much confidence do you have in the ability or competence of this doctor or health care provider?
8. How satisfied were you with the thoroughness of care you received from the providers you saw?
9. How courteous and respectful was this doctor?
10. How caring and compassionate was this doctor?
11. How well did this doctor explain to you what he or she was doing and why?
12. Did this doctor use words that were easy for you to understand?
13. How well did this doctor listen to your concerns and questions?
14. When this doctor visited you, did he or she spend enough time with you?
15. How much confidence do you have in the ability or competence of this doctor?
16. Overall, how satisfied are you with the service you received from this doctor?
17. Overall, how satisfied were you with this medical visit?