

Original Publication

OPEN ACCESS

Effective Chronic Pain Management and Responsible Opioid Prescribing: Aligning a Resident Workshop to a Protocol for Improved Outcomes

Theresa E. Vettese, MD*, Neelima Thati, MD, Renato Roxas, MD

*Corresponding author: theresa.vettese@emory.edu

Citation: Vettese TE, Thati N, Roxas R. Effective chronic pain management and responsible opioid prescribing: aligning a resident workshop to a protocol for improved outcomes. *MedEdPORTAL*. 2018;14:10756. https://doi.org/10.15766/mep_2374-8265.10756

Copyright: © 2018 Vettese et al. This is an open-access publication distributed under the terms of the Creative Commons Attribution-NonCommercial-Share Alike license.

Abstract

Introduction: Effective chronic pain management is a core competency of internal medicine. Opioid use in the United States, both therapeutic and nonmedical in origin, has dramatically increased, as has the number of deaths due to opioid overdose. Despite this, formal training in pain management and responsible opioid prescribing is lacking for internal medicine residents. **Methods:** Our educational workshop for PGY 1-PGY 3 internal medicine residents was designed to provide a functional knowledge base and improve motivation to change behaviors in chronic pain management and responsible opioid prescribing. A secondary aim was to align our intervention with our new clinic opioid-prescribing protocol with the goal of increasing the adoption of opioid risk-reduction strategies in our resident clinic, specifically, use of urine drug screening (UDS). We collected data using pre- and postsession knowledge and motivation to change questionnaires as well as pre- and postintervention data regarding UDS in our ambulatory clinic. **Results:** Sixty-three residents participated in a workshop session. Based on pre- to posttest results, medical knowledge of principles of responsible opioid prescribing increased overall ($p = .01$). Most residents reported high motivation to change behaviors around management of chronic pain and opioid prescribing. There was also a significant postintervention ordering of UDS in patients on long-term opioid therapy. **Discussion:** Our workshop resulted in a short-term improvement in knowledge of principles of responsible opioid prescribing, a significant motivation to change behaviors, and increased adoption of opioid risk-reduction strategies in our resident clinic.

Keywords

Addiction, Opioid-Related Disorders, Opioids, Pain, Opioid Use Disorder

Appendices

- A. Effective Chronic Pain Management and Responsible Opioid Prescribing.pptx
- B. Facilitator Instructional Guide.docx
- C. Talking to Patients About Chronic Pain and Opioid Therapy.docx
- D. Chronic Pain and Opioid Role-Plays.docx
- E. Pretest.docx
- F. Posttest.docx

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of this session, learners will be able to:

1. Implement best practices in chronic pain management in the ambulatory setting.
2. Develop enhanced patient-centered communication strategies to address chronic pain and opioid use.
3. Implement safe opioid-prescribing practices in the ambulatory setting, including risk-reduction strategies.

Introduction

Up to 40% of Americans suffer from some sort of chronic pain.¹ Patients should receive treatment for their pain based on the risks and benefits of potential therapies. Opioid analgesics are frequently used in the treatment of chronic pain and, despite decreases, remain one of the most prescribed classes of medications in the United States, with 214 million prescriptions being filled in 2016.² Forty-one percent of these prescriptions were for long-term therapy (longer than 30 days). Evidence supports the efficacy of opioids for pain in the short term, but there is little evidence supporting the benefit of long-term opioid therapy in patients with chronic pain.³ Moreover, opioid analgesics have substantial risks. In 2015, it was estimated that 11.5 million people in the U.S. misused prescription opioids, and an additional 1.9 million met

criteria for opioid use disorder with prescription opioids.⁴ From 1999 to 2014, more than 165,000 persons died of an overdose of opioid pain medication in the United States.⁵

The Institute of Medicine, in its 2011 report *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*,¹ found health care provider education and training in pain to be “a central part of the necessary cultural transformation of the approach to pain” and recommended expanding and redesigning education programs to transform the understanding of pain. Despite this, there remains a lack of formal training in pain management and responsible opioid prescribing both in internal medicine residency programs⁶ and at the undergraduate level.⁷ Curriculum tools are needed to teach medical residents and students effective chronic pain management, responsible opioid use, and treatment of opioid use disorder.

In our internal medicine resident clinic at the Wayne State University School of Medicine, querying our comprehensive electronic health record (EHR) revealed that approximately 40% of our primary care patient visits in 2012-2013 ($n = 8,000$) had at least one billing diagnosis related to chronic pain. Our EHR data also demonstrated that opioid analgesics were among the most frequently prescribed medications in our clinic, yet a review of our electronic medical record revealed that less than 5% of patients receiving chronic opioid therapy had given documented informed consent via a patient-provider agreement, had a written opioid management plan, or had ever undergone urine drug screening (UDS). Additionally, our yearly survey of residents ($N = 108$) revealed that assessment and treatment of chronic pain were a major educational gap and a reported frustration among our trainees.

In 2013, our residency clinic updated our opioid-prescribing policy to align with the American Pain Society and the American Academy of Pain Medicine (APS-AAPM) guideline,⁸ determined by experts to be the highest quality published guideline at the time (the Centers for Disease Control and Prevention [CDC] guideline had yet to be developed). The policy required that patients on long-term opioid therapy (>90 days) routinely undergo UDS as part of risk monitoring.

To address educational needs, we developed a comprehensive workshop for our internal medicine residents designed to provide a functional knowledge base and improve motivation to change behaviors in chronic pain management and responsible opioid prescribing. A secondary goal was increasing the adoption of opioid risk-reduction strategies in our resident clinic, specifically, use of UDS.

Several curricular and educational initiatives aimed at teaching medical residents responsible opioid use have been previously published.⁹⁻¹⁵ Four of these educational interventions are skills based,^{10,13-15} three are case based,^{9,11,12} and one focuses on faculty development regarding teaching residents in the primary care clinic.¹³ These publications demonstrate that education can improve residents' attitudes,¹⁴ knowledge,^{10,15} and confidence¹⁰ in regard to safe opioid prescribing. However, to our knowledge, there have been no publications to date in *MedEdPORTAL* focusing on the interface between chronic pain and opioid use disorder or reporting actual improved patient-level outcomes in addition to improved educational results.

Methods

We created a 3-hour interactive workshop in chronic pain management and responsible opioid prescribing delivered to groups of 15 PGY 1-PGY 3 residents during their ambulatory block to maximize learner interaction and sharing of ideas and clinical experiences. We chose to include residents from all postgraduate years in this curriculum as a needs assessment conducted prior to developing this curriculum showed that all of the program's residents (PGY 1-PGY 3) desired additional training in management of chronic pain. The workshop was developed and implemented by three experienced faculty facilitators, including a board-certified palliative care physician.

The workshop consisted of two distinct curricular sections. First was an interactive lecture component to introduce participants to basic knowledge and concepts related to effective chronic pain management and responsible opioid prescribing, as well as approaches to patient-centered communication regarding the use of opioids for chronic pain. Designed to be delivered over 60 minutes, followed by a 10-minute break, the lecture consisted of a PowerPoint presentation (Appendix A; facilitator guide, Appendix B) with case-based discussions. It covered an overview of the prevalence of chronic pain in the United States, the epidemiology of the opioid epidemic, best practices in assessment and management of chronic pain, responsible opioid prescribing, effective communication strategies for patients with chronic pain and patients on chronic opioid therapy, assessment of risk of developing opioid use disorder, and monitoring for risk in patients on opioid therapy for chronic pain. To incorporate any additional recent evidence-based recommendations, the presentation has been updated over time to include the recent CDC guidelines for treatment of chronic pain and responsible opioid prescribing.³ The major differences between the earlier APS-AAPM and CDC guidelines are that the latter emphasizes significant risk of adverse effects with greater than 90 mg oral morphine equivalents daily, discussion of harm reduction, and a focus on evidence-based treatment of opioid use disorder. Otherwise, both guidelines provide concurrent recommendations for reducing the risks of prescription opioids.

The workshop's second section was a simulated role-play experience with feedback designed to help learners apply these skills in actual clinical environments. Because physician-patient communication regarding responsible use of opioids for chronic pain can be challenging and physicians frequently lack experience in patient-centered communication strategies in this area,¹⁶ we felt that this was an essential component. Prior to the workshop, all participants were asked to review the resource entitled "Talking to Your Patients About Chronic Pain and Opioid Therapy" (Appendix C), which was developed by us and incorporated published guidelines and patient-centered communication strategies. The role-play cases (Appendix D) were developed by three experienced faculty based on their own clinical experiences. Role-play groups were restricted to a maximum of five participants each, with one faculty facilitator. Participants played both provider and patient roles while other participants and facilitators observed and offered feedback. Feedback to learners was provided based on the previously published patient-centered framework.¹⁶ The role-play session was designed to last 60 minutes.

To evaluate the workshop, pre- and postsurveys (Appendices E & F) were administered to all residents at the beginning and conclusion of each workshop session, respectively. In both surveys, residents were asked eight knowledge questions about principles of responsible opioid prescribing. In the postintervention survey, residents were asked to rate their motivation to change behaviors around managing chronic pain and responsible opioid prescribing. Pre- and postsurveys were intended to be completed in less than 10 minutes. Preintervention EHR data regarding opioid-prescribing practices in our resident clinic were analyzed the year prior to the intervention and again the year following the intervention.

To supplement the 3-hour workshop, 1-hour, case-based, interactive sessions on chronic pain management and responsible prescribing of opioids were delivered monthly at morning report, facilitated by a faculty expert in pain management.

Results

During the 2013-2014 academic year, 63 internal medicine residents (60%) participated in the educational workshop, and all completed the pre- and postintervention surveys assessing their knowledge of safe opioid prescribing. The postworkshop survey also evaluated attitudes and commitment to change regarding chronic pain management and opioid prescribing. On the preintervention knowledge test, the average percentage correct for resident physicians was 51%, which increased to 73% correct on the follow-up postintervention test ($p = .01$), reflecting at least a short-term improvement in knowledge. After the educational session, in response to the statement "The session will help make me more effective in my practice managing patients with chronic pain," 66% of resident participants strongly agreed, and 29%

agreed. In response to the statement “I am motivated to make changes in assessing and managing risks, benefits, and abuse of opioids,” 82% of participants strongly agreed. In response to the statement “I am motivated to make changes in counseling patients and care givers about risk of and safe use of opioids,” 89% of participants strongly agreed. The workshop has been given yearly to incoming PGY 1 residents since its inception in 2013.

In the clinic setting, outcomes were reevaluated 12 months after implementing the initial educational intervention and updated opioid-prescribing protocol. During this 12-month period, our clinic received 12,000 patient visits (a 33% increase from the year prior to the intervention). Prior to the implementation, there were very few UDSs obtained from patients who received >90-day prescriptions for opioids in the past year (less than 5% of these patients). One year after implementation of our interventions, 1,156 UDSs had been ordered on the 1,078 patients on long-term opioid therapy (average: 1.02 specimens per patient).

Discussion

We developed a comprehensive workshop to educate internal medicine residents in effective chronic pain management and responsible opioid use. The workshop demonstrated a significant improvement in resident knowledge and attitudes. It addresses an educational need for increased training in these areas and can be feasibly replicated in other residency programs. Despite increased national attention to safe opioid prescribing and numerous safe opioid-prescribing guidelines,^{3,8} existing literature suggests that adherence to these guidelines remains low, including use of UDS.¹⁷⁻¹⁹ Aligning our clinic’s new opioid protocol with our educational intervention resulted in significantly increased use of one opioid risk-reduction strategy, UDS, in our resident clinic.

Strengths of this curriculum include a focus on patient-centered communication strategies when caring for patients with chronic pain and patients who are on long-term opioid therapy, an area that is rarely addressed. Although we used role-plays, the use of standardized patients, who are trained to produce a scripted clinical scenario with as little variability as possible, may create a more consistent experience for all residents during simulation and is an option for this workshop. While standardized patients have been shown to be effective for training communication skills, they are expensive educational tools. At our institution, we found it more feasible to have two experienced faculty play the roles of the patients.

Limitations of our curriculum include that our educational workshop was limited to a single, brief, focused intervention and addressed only short-term outcomes in knowledge and attitudes. Additionally, we did not evaluate communication skills with actual patients before or after the intervention. Moving forward, additional assessment of the longitudinal impact of the curriculum will be important, including evaluating actual resident behaviors with patients. Furthermore, our data collection on opioid risk-reduction strategies was limited to UDSs, the only measure that could be captured accurately at the time. While we are unable to determine the actual percentage of unique patients on long-term opioid therapy who underwent UDSs, the total number of UDSs performed after the intervention strongly suggests that this risk-mitigation strategy was increasingly adopted. Future efforts will incorporate assessment of the degree of implementation of other opioid risk-reduction strategies, including use of patient-provider agreements/informed consent and use of the state prescription drug monitoring program.

In summary, we describe the successful implementation with internal medicine residents of a curriculum on chronic pain management and responsible opioid prescribing that meets a local and national need. When combined with quality and process improvement efforts, the curriculum also has the potential to make significant positive impacts on patient care in residency clinics. We believe this curriculum is applicable to other residency programs as national data suggest there is a need for additional training in chronic pain management and responsible opioid prescribing at both the postgraduate and undergraduate levels.^{6,7} This training and curriculum could also be expanded to include faculty, medical students, and other health care providers.

Theresa E. Vettese, MD: Associate Professor, Division of General Medicine and Geriatrics, Department of Medicine, Emory University School of Medicine

Neelima Thati, MD: Assistant Professor, Division of General Medicine, Department of Internal Medicine, Wayne State University School of Medicine

Renato Roxas, MD: Assistant Professor, Division of General Medicine, Department of Internal Medicine, Wayne State University School of Medicine

Disclosures

None to report.

Funding/Support

None to report.

Prior Presentations

Vettese TE, Thati N, Roxas R. Teaching residents to manage chronic pain and improve outcomes in the ambulatory clinic. Workshop presented at: Alliance for Academic Internal Medicine (AAIM)/Association of Program Directors in Internal Medicine Spring Meeting; April 17-21, 2016; Las Vegas, NV.

Ethical Approval

Reported as not applicable.

References

1. Institute of Medicine. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington, DC: National Academies Press; 2011.
2. Centers for Disease Control and Prevention. *Annual Surveillance Report of Drug-Related Risks and Outcomes: United States, 2017*. Centers for Disease Control and Prevention website. <https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf>. Published August 31, 2017.
3. Dowell D, Haegerich T, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA*. 2016;315(15):1624-1645. <https://doi.org/10.1001/jama.2016.1464>
4. Han B, Compton WM, Blanco C, Crane E, Lee J, Jones CM. Prescription opioid use, misuse, and use disorders in U.S. adults: 2015 National Survey on Drug Use and Health. *Ann Intern Med*. 2017;167(5):293-301. <https://doi.org/10.7326/M17-0865>
5. Multiple cause of death data. Centers for Disease Control and Prevention CDC WONDER website. <https://wonder.cdc.gov/mcd.html>. Updated December 20, 2017.
6. Ogle KS, McElroy L, Mavis B. No relief in sight: postgraduate training in pain management. *Am J Hosp Palliat Care*. 2008;25(4):292-297. <https://doi.org/10.1177/1049909108315915>
7. Mezei L, Murinson BB; Johns Hopkins Curriculum Development Education Team. Pain education in North American medical schools. *J Pain*. 2011;12(12):1199-1208. <https://doi.org/10.1016/j.jpain.2011.06.006>
8. Chou R, Fanciullo GJ, Fine PG, et al; American Pain Society—American Academy of Pain Medicine Opioids Guidelines Panel. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain*. 2009;10(2):113-130.e22. <https://doi.org/10.1016/j.jpain.2008.10.008>
9. Scott E, Borate U, Heitner S, Chaitowitz M, Tester W, Eiger G. Pain management practices by internal medicine residents—a comparison before and after educational and institutional interventions. *Am J Hosp Palliat Care*. 2009;25(6):431-439. <https://doi.org/10.1177/1049909108320884>
10. Elhwairis H, Reznich CB. An educational strategy for treating chronic, noncancer pain with opioids: a pilot test. *J Pain*. 2010;11(12):1368-1375. <https://doi.org/10.1016/j.jpain.2010.03.012>
11. Baxter J. Minimizing the misuse of prescription opioids in patients with chronic non-malignant pain. *MedEdPORTAL*. 2012;8:9205. https://doi.org/10.15766/mep_2374-8265.9205
12. Gaufberg E, Barnes HR, Albanese M, Cohen P. A faculty development workshop for primary care preceptors: helping your residents care for patients requesting opioids for chronic pain. *MedEdPORTAL*. 2011;7:8396. https://doi.org/10.15766/mep_2374-8265.8396
13. Alford DP, Carney BL, Brett B, Parish SJ, Jackson AH. Improving residents' safe opioid prescribing for chronic pain using an objective structured clinical examination. *J Grad Med Educ*. 2016;8(3):390-397. <https://doi.org/10.4300/JGME-D-15-00273.1>
14. Roth CS, Burgess DJ. Changing residents' beliefs and concerns about treating chronic noncancer pain with opioids: evaluation of a pilot workshop. *Pain Med*. 2008;9(7):890-902. <https://doi.org/10.1111/j.1526-4637.2008.00458.x>
15. Smith CD. A curriculum to address family medicine residents' skills in treating patients with chronic pain. *Int J Psychiatry Med*. 2014;47(4):327-336. <https://doi.org/10.2190/PM.47.4.g>
16. Nicolaidis C. Police officer, deal-maker, or health care provider? Moving to a patient-centered framework for chronic opioid management. *Pain Med*. 2011;12(6):890-897. <https://doi.org/10.1111/j.1526-4637.2011.01117.x>

17. 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. <https://doi.org/10.7326/0003-4819-160-1-201401070-00732>
 18. Starrels JL, Becker WC, Weiner MG, Li X, Heo M, Turner BJ. Low use of opioid risk reduction strategies in primary care even for high risk patients with chronic pain. *J Gen Intern Med.* 2011;26(9):958-964. <https://doi.org/10.1007/s11606-011-1648-2>
 19. Sekhon R, Aminjavahery N, Davis CN Jr, Roswarski MJ, Robinette C. Compliance with opioid treatment guidelines for chronic non-cancer pain (CNCP) in primary care at a Veterans Affairs Medical Center (VAMC). *Pain Med.* 2013;14(10):1548-1556. <https://doi.org/10.1111/pme.12164>
-

Received: May 14, 2018 | **Accepted:** August 23, 2018 | **Published:** September 28, 2018