

MEDICAL EDUCATION

How Should Medical Education Better Prepare Physicians for Opioid Prescribing?

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Abstract

Opioid overprescribing is a key contributor to the current crisis. Changing how ethics is taught in connection with opioid prescribing is one area for improvement. In US medical schools, current training in ethics and opioid prescribing is variable, incorporating a diverse range of concepts, teaching modes, assessment strategies, and faculty experience. This article recommends integrating clinical case-based teaching and longitudinal application, comprehensive assessment, and additional training in ethical deliberation about opioid prescribing to better prepare physicians to responsibly prescribe and manage opioid-based phases of patients' pain care.

Medical Education and Overprescribing

In its current state, the opioid epidemic is a major public health issue that has garnered widespread attention. The National Institute on Drug Abuse reports that more than 130 people die every day as a result of opioid overdose.¹ Opioid overuse also poses a heavy financial burden on the nation, with the Centers for Disease Control and Prevention estimating that \$78.5 billion is spent annually to respond to opioid misuse, addiction treatment, and related health care.¹

Physician overprescribing has been cited as a contributor to the epidemic. Hirsch posits in his evaluation of the causes of the opioid crisis that though most physicians are "well meaning," they often prescribe "30 or 60 pills when 5 or 20 would have been adequate."² In the United States alone, 240 million opioid prescriptions were dispensed in 2015, nearly one for every adult in the general population.³ Between 1999 and 2015, the morphine milligram equivalents per person prescribed in the United States increased from 180 to 640.³

There is evidence that prescribing behaviors are solidified during medical school. A 2006 study concluded that the "root cause" of prescription errors could be attributed to a "lack of a knowledge base that integrated scientific knowledge with clinical know-how."⁴ And a 2017 study published by the National Bureau of Economic Research found a negative correlation between medical school ranking and physician opioid prescribing, possibly

reflecting differences in training about the appropriateness of opioid prescribing.⁵ Such findings demonstrate that there is room for improvement within medical education, especially pertaining to education about the ethics of prescribing opioids. As Stratton et al note, one potential consequence of opioid prescribing that deserves ethical attention is “adequately addressing a patient’s chronic noncancer pain without possibly setting the stage for addiction to opioid medications.”⁶ In this paper, we review the current state of ethical education and opioid-related courses in medical schools and describe strategies for improving training in the ethics of opioid prescribing. Learning from cases that encompass a broad spectrum of patient experiences and histories can better prepare students to identify potential issues such as misuse, diversion, and overdose while not negating the patient’s needs.

Training in Ethics and Prescribing Practices

Variation in pedagogical approaches, core concepts, and methods of teaching more generally underscore the lack of a standardized ethics curriculum within medical schools. A survey of 87 medical schools regarding their medical ethics curriculum elicited a total of 39 different content areas and 8 different modes of teaching, with each school incorporating an average of 4 teaching methods and 13 content areas.⁷ This diversity demonstrates the failure of the educational system to comprehensively address the ethical dimensions of physicians’ roles. Additionally, although a Delphi survey of 55 medical school deans culminated in an agreement on 19 key concepts that were determined to be important for students to learn in ethics courses, only 6 of these concepts—informed consent, health care delivery, confidentiality, quality of life, death and dying, and euthanasia—were taught in over 50% of medical schools that mandated some form of ethical training.⁷ Such findings indicate that many medical schools fail to include key concepts that medical school deans deem vital to physicians’ professional development.

In response to the opioid epidemic, medical schools in the United States are beginning to integrate courses covering pain-related incidents and substance use disorders (SUDs).⁸ A 2018 study undertaken by the Association of American Medical Colleges assessing the curricula of 102 medical schools found that 87% of these schools covered pain domains, including pain assessment, pain management, and [SUD treatment](#).⁸ The means by which medical schools go about immersing their students in these domains, however, varies. Although lectures, clinical experiences, and case-based learning were found in a majority of medical schools, 19 different teaching methods and 8 different assessment approaches were identified.⁸

In addition to the lack of a standardized ethics and prescribing curriculum, another challenge to teaching prescribing ethics is a lack of faculty adequately trained in teaching prescribing ethics and in assessing students’ learning about ethical concepts related to prescribing. Because much of the knowledge surrounding opioid prescribing and pain

management in particular has emerged only recently, many medical schools find that there is a lack of adequately experienced faculty to teach these topic areas and assess medical students' learning.⁸ Training faculty members to teach about ethical issues related to opioid prescribing, assessing the quality of teaching and student learning, and providing opportunities for students to apply what they learn would augment future physicians' capacity to more effectively respond to the opioid epidemic.

Improvement Strategies

The current state of ethical education and opioid-related courses in medical schools has proven to be ineffective in addressing the opioid epidemic. It is therefore imperative that measures be taken in order to properly equip future physicians to [appropriately prescribe opioids](#).

Multilevel interventions. Meisenberg et al found that a series of multifaceted interventions within the Anne Arundel Medical Center led to a 38% reduction in opioid overprescribing relative to the mean baseline level of prescribing.⁹ As the authors note, multilevel intervention encompasses implementing "departmental grand rounds, service meetings with data review," and "one-on-one meetings with prescribers."⁹ Although these interventions took place within health care facilities, they convey an important message: utilization of multiple modes of teaching and learning provides a better foundation for more appropriate prescribing behaviors. Translating these interventions into medical school curricula could take the form of clinically focused lessons encompassing medical simulations and case-based learning, giving students time with trained clinicians in the field and meaningful clinical exposure to real patients, and group case studies and service meetings. Increasing the clinical exposure of students while enrolled in courses in which they learn about opioid prescribing would enhance their capacity to apply their learning—for example, by identifying patients who are at greater [risk for misusing prescribed opioids](#) and by prescribing appropriately.

These proposed educational reforms are backed by qualitative findings, as a 2012 study in the *British Journal of Clinical Pharmacology* found that prescribing is a skill that requires knowledge combined with practical experience within the clinical context.¹⁰ Indeed, many physicians reported that they could not "get to grips" with prescribing after having been taught in a classroom and that they learn the most when it becomes relevant in their practice.¹⁰ Therefore, it is apparent that increased clinical exposure as a learning method would greatly enhance the preparedness of medical students.

Assessment. Improving the quality of faculty teaching and the nature and scope of student learning assessment are also crucial to preparing students to prescribe opioids appropriately. Examinations, for example, should test medical students' applied knowledge, such as their ability to write a prescription, manage pain, and deal with ethically relevant factors, including explaining conflicting responsibilities to individual

patients and the health care community and the reasons for adhering to guidelines if appropriate.¹¹ Currently, it is difficult for medical students to be properly evaluated when there are so few trained specialists in pain and addiction medicine.⁷ Training younger and enthusiastic physicians in these fields while also recruiting nurses, pharmacists, and other pharmacologists would not only increase the number of personnel available to do good cross-disciplinary assessment of students' learning⁵ but also reinforce the importance of ethical aspects of prescribing of opioids and other addictive substances.

Substance use. A 2012 study conducted by the National Center on Addiction and Substance Abuse at Columbia University found that few patients with a history of risky substance use received any form of adequate care, screening, or early intervention.¹² These results, spanning numerous patients and clinicians, reinforce the need for more robust educational experiences in addiction management. The interface of addiction and pain management presents physicians with an ethical dilemma in prescribing opioids: on the one hand, physicians are motivated to control their patients' pain well, but, on the other, they don't want to contribute to or launch a patient's addiction to opioids. This dilemma is particularly hard to manage in patients who have an opioid addiction and who also need good pain care. Implementing more courses on addiction management and helping students to recognize this dilemma would be a major step towards improving medical education about opioid prescribing.

Longitudinal curricula. A longitudinal opioid prescribing curriculum that prominently integrates ethics is vital to prescribing education. As it stands, opioid prescription training is a fairly short-term, stand-alone segment of medical education. Extending it so that it manifests at numerous points in the curriculum, however, can lead to better preparedness. In describing the development of a better prescribing curriculum, Ross and Maxwell emphasize that learning should take place within "different modules and over several years using horizontal and vertical teaching strands."¹¹ They also suggest that undergraduate medical education should focus on ethically and clinically relevant drug knowledge that can be easily applied in later years in medical training.¹¹

A current model curriculum that merits recognition exists at the University of Massachusetts Medical School. The "Opioid Conscious Curriculum" is woven into all 4 years of the educational process and involves the use of standardized patient cases along with other experiential learning.¹³ The opportunity to speak with patients with differing levels of pain, addiction status, and substance use history is an instrumental element of the curriculum.¹³ Another potentially advantageous component of the curricular setup is a framework for interdisciplinary cases involving physicians and other health care workers.¹³ The longitudinal nature of the opioid and ethical curriculum at the University of Massachusetts Medical School—combined with the numerous opportunities for simulations, clinical exposure, and interdisciplinary learning—is, we

believe, a monumental step forward in prescribing education. Such steps should be promoted at other medical schools.

Conclusion

Currently, medical education about the ethical dimensions of opioid prescribing lacks clarity, consistency, and structure. Opioid-related education is being acknowledged as an important topic, but its adoption in many schools is impeded by a lack of experienced faculty and good strategies for assessing students' learning. Medical students will be better prepared to deal with the ethical implications of opioid prescribing when steps are taken along the lines of those we've suggested here.

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