

**Meharry Medical College AU-PCTE
Research Policy Brief: Opioid Misuse**

I. Title: A Systematic Review of Medical Education Efforts to Manage the Opioid Epidemic

BACKGROUND

Rates of substance use disorders, including opioid misuse, continue to rise despite national initiatives. Opioid overdose fatalities include deaths from natural opioids (morphine and codeine), semi-synthetic opioids (oxycodone, hydrocodone), synthetic opioids (prescription and illicit fentanyl, tramadol), methadone, and heroin.^{1-4,5} From 1999 to 2017, there were 399,230 deaths attributed to opioids in the U.S.¹ In 2017, a total of ~47,600 opioid overdose deaths occurred, accounting for 67.8% of all overdose deaths, an increase of 9.6%, from 19.8 to 21.7 deaths per 100,000.¹ From 2015 to 2016, rates of overdose deaths for synthetic opioids, natural/semisynthetic opioids, and heroin increased by 100%, 12.8%, and 19.5%, respectively.⁴

Medical schools and teaching hospitals are on the front lines in our communities dealing with the opioid epidemic: responding with new approaches to prevent, identify, and treat pain and substance use disorders, delivering pain management and addiction education, and leading efforts in this area to advance medical research and promote innovations in clinical care. Yet, there remains no consensus on how to teach medical students and residents about their role and responsibilities in managing the opioid epidemic. Managing the opioid epidemic includes a wide breadth of knowledge and skills, including pain management, opioid prescribing, risk mitigation and stratification, medical assisted treatment, treating overdoses, alternative pain therapies, interprofessional team based care, and prevention counseling. The aim of this research is to identify and assess the extent to which medical schools prepares students to address the opioid epidemic with specific emphasis on vulnerable populations.

METHODS

We conducted a systematic review of the literature using the 2009 PRISMA guidelines to identify original studies that focused on teaching medical students and residents the role of physicians in responding to the opioid epidemic. An electronic search was conducted in MEDLINE/ PubMed, PsycINFO, Web of Science, Scopus, Ingenta, Science Direct, and Google Scholar databases for articles published in English prior to February 2019. For Google Scholar, key terms were entered and related searches were reviewed. The first ten pages of the search for each of the key terms and related searches were reviewed. The search strategy cross-referenced keywords for opioid use, abuse, misuse with keywords for teaching medical student and medical residents. It did not include other health professions training programs or continuing education of medical providers. It only included articles about education and training efforts that took place in US medical schools and residency training programs and only included articles written in English. These references were downloaded and entered into the citation manager.

RESULTS.

A total of 13,061 articles were identified through database searching. After duplicates were removed, 11,014 records remained. 291 records were excluded due to exclusion criteria (books = 92; book sections = 145, conference proceedings = 13, generic = 19, and serials = 22) leaving

10,723. After a full-text review was completed, only 40 remained. After a full text of article reviews was conducted, only 27 remained.

Of the 27 articles, 14 were identified from the review of seven databases, two articles were identified by Google Scholar, 11 articles were identified by both the review of seven databases and Google Scholar, and one was identified from references. One article was published before 2000, four articles were published between 2000 and 2009, and 22 were published from 2000 to 2018. Eight of the articles were recommendations for added curriculum on opioids, seven were surveys of knowledge and attitudes, and nine were evaluations of curriculum evaluations. three additional articles were reviews of secondary data. Of the nine articles that described curriculum interventions, eight of them resulted in statistically significant increases in knowledge ($p=p.05$) and only one was not significant. The interventions consisted primarily of didactic education with pre- post evaluations, seven were 2-8 hours of didactics, and two used a case based approach.

RECOMMENDATIONS. The dramatic increase in opioid misuse since 2000, has changed the need for medical education curriculum transformation to address opioid misuse. This review demonstrates that even a modest didactic educational intervention can have a significant impact on knowledge and attitudes of medical students towards opioid misuse and management. Articles that provided results of surveys ($n=7$) unanimously identified the need for national leadership in developing a core curriculum about opioid misuse.

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