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Identifying Missed Clinical Opportunities in Delivery of Overdose Prevention and Naloxone Prescription to Adolescents Using Opioids

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A B S T R A C T

Purpose: Pediatricians play a role in reducing opioid-related harms, including deaths, for patients and families. We examine knowledge, attitudes, and barriers to overdose prevention and naloxone prescribing in the clinical setting by pediatric trainees.
Methods: Pediatric trainees at an academic medical center were surveyed using an adapted 17-item instrument examining knowledge, beliefs, and attitudes of naloxone and overdose prevention.
Results: Eighty-two percent reported frequent exposure to patients using opioids and at risk of overdose. While 94% felt they had the responsibility to educate patients about overdose risk, only 42% ever discussed overdose prevention. The majority (71%) were aware of naloxone as a prevention measure, but only 10% ever prescribed naloxone.
Conclusions: Pediatric residents frequently encountered patients using opioids, but the majority failed to deliver interventions to reduce overdose and related harms. We need concerted efforts to educate pediatric providers on delivering overdose harm prevention to opioid-using adolescents as part of routine clinical care.

IMPLICATIONS AND CONTRIBUTION

Despite a crisis of opioid-related overdose and overdose deaths in adolescents and young adults, pediatricians receive inadequate training to reduce harms associated with opioid use. While they see adolescents at risk for overdose, few delivered interventions to reduce opioid-related morbidity and mortality, such as prescribing naloxone or delivering risk reduction counseling.

Amid the national opioid crisis, there are high rates of prescription opioid use and misuse amongst adolescent populations [1,2]. There is growing recognition that pediatricians have a critical role to play in screening for opioid use, diagnosing opioid use disorders, treating or referring patients for treatment, and reducing opioid-related harms, including deaths, for patients and their families [3]. Despite national efforts to reduce opioid prescribing and increase delivery of overdose counseling prevention and naloxone, an opioid antagonist that can reverse overdose, there has been limited outreach to pediatric providers [4,5]. Our research examines pediatric trainees to document current naloxone prescribing practice and exposure to patients using opioids, knowledge of overdose risk and naloxone, and attitudes and barriers to overdose prevention in pediatric settings.

Methods

Study was conducted at academic medical center in Baltimore, Maryland. We surveyed residents using an adapted 17-item instrument that was content and face-validated using cognitive

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interviews and pilot testing [6]. We examined exposure to patients with opioid use disorders and information on beliefs and attitudes related to naloxone and overdose prevention. Individuals who had not been prescribed naloxone were asked to rank barriers to naloxone prescription on a 4-point-Likert scale from one, no problem at all, to four, a major problem. Clinical vignettes, representing a range of ages from 12–21 years and diverse substances, asked the resident if the patient was at no, low, moderate or high risk of overdose and whether or not they would prescribe naloxone. The research project was deemed exempt by Institutional Review Board.

Results

Fifty-one of 69 pediatric residents (response rate of 73.9%) completed the survey. Study participants represented all 3 years. The majority of residents were female (78%; n = 40).

Exposure to opioids and baseline beliefs

Eighty-two percent of residents reported providing care to patients who had misused opioids, and 82% reported caring for patients who they assessed as at risk of opioid overdose. Ninety-four percent felt it was their responsibility to reduce overdose risk in their patients. Ninety-eight percent "somewhat agreed" or "strongly agreed" that they wanted to learn how to deliver risk reduction counseling.

Self-efficacy

There were overall low levels of self-efficacy with more than three quarters of the residents (84%) reporting low confidence in whether they would be able to prescribe naloxone in the future (Figure 1). Seventy-one percent of residents indicated that they were aware of naloxone as an overdose prevention measure and 89% were willing to prescribe it for outpatient use, however, only 42% had ever counseled patients on ways to prevent overdose, and only 10% had ever prescribed naloxone to eligible patients. There were no differences by year of training.

Barriers to naloxone prescription

The most common barriers to naloxone prescribing among those willing to prescribe were deficits on how to prescribe naloxone (mean = 3.03(1.03)) and lack of understanding of the eligibility criteria (m = 2.78(1.07)). Residents *not* willing to prescribe naloxone (n = 5) endorsed similar barriers, but they were also more concerned about factors such as side-effects of naloxone (m = 2.40 (0.89), whether naloxone would work or be used correctly (m = 2.40(0.89), costs related to naloxone (m = 2.40(0.89)), and the notion that naloxone does not treat addiction (m = 2.40(0.89)) (Figure 1).

Clinical vignettes

Despite correctly recognizing patients at elevated risk of overdose, residents were not uniformly willing to prescribe naloxone for these patients (Table 1).

Discussion

Our study is among the first to examine naloxone and barriers to overdose prevention in a pediatric setting. The majority of pediatric residents cared for patients using opioids and at risk for opioid-related harm. We found significant unmet needs for adolescent opioid-users. Among respondents, the majority of pediatricians in our study were willing to provide overdose prevention counseling and naloxone, but they were prevented by knowledge deficits about counseling patients on reducing risk or prescribing naloxone. Similar studies of providers for adults have demonstrated the same recognized need without delivery of overdose prevention [6], suggesting trainees across all disciplines require similar support and targeted education to improve self-efficacy and delivery of overdose prevention.

Pediatricians are tasked with providing age-appropriate education and anticipatory guidance in a variety of domains [7]. As adolescents are at increased risk for opioid-related harms compared to older adults using opioids [8,9], pediatricians have a unique role to address misconceptions among adolescent opioid-users. Simple messages could correct misconceptions, for example, Frank et al. found adolescents incorrectly believed prescription opioids and non-injection routes of administration protected them from overdose risks and had limited exposure or knowledge of naloxone [8]. Trainees may not receive adequate education to deliver harm reduction counseling to these patients as less than one in five residents counseled patients they believed to be at increased risk of opioid-related overdose about ways to minimize their overdose risk.

Surprisingly, data from clinical vignettes show that even when recognizing patients at medium or high-risk of overdose, not all residents would automatically prescribe naloxone. Although we do not know what influences these decisions, research suggests physicians in general do poor jobs of implementing risk reduction practices in primary care settings [10]. Future interventions should stress the importance of linking risk assessment to naloxone prescription for all medium- to high-risk patients.

The study is limited by its single institution nature. Baltimore city is a unique environment to explore naloxone prescribing as there has been a concerted effort from the state and local health departments to increase community awareness of naloxone [6], however, even in this setting, few providers ever prescribed naloxone or discussed overdose. At pediatric programs in other parts of the country, there is likely even less knowledge of and exposure to naloxone and prevention counseling and so we must be cautious about generalizing our findings to these settings. In addition, although we had a representative sample and a high survey response rate, non-survey participants in the study may be less aware of naloxone as a prevention strategy and less willing to prescribe it than non-participants.

In order to make progress addressing the opioid epidemic nationally, we need to engage clinicians seeing patients across the life-spectrum to not only reduce risks associated with opioid use disorder, but to also mitigate the harms associated with risky opioid misuse. Addiction is a disease with its roots in adolescence, and pediatric programs have to adequately train providers to address the growing need. As we continue to expand educational efforts related to overdose prevention, we should target providers in a range of specialties, including those devoted to the care of adolescents and young adults.