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Barriers to Implementation of Opioid Overdose Prevention Programs in Ohio

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Abstract

Background—Nationally, overdose fatalities have reached epidemic proportions. Ohio has one of the highest overdose death rates in the country, as well as high rates of prescription opioid trafficking.

Methods—A cross-sectional self-report survey of Opioid Overdose Prevention Programs (OOPPs) in Ohio was conducted between August and October 2014 to characterize programs and ascertain barriers to successful implementation. A 91% response rate was achieved with 18 programs participating in the study.

Results—The first Ohio OOPP opened in August 2012, a second program opened in 2013 and the remaining programs began in 2014. All of the programs distribute nasal naloxone and provide overdose prevention education, and 89% (n = 16) provide overdose kits for free. Six OOPPs are funded by the Ohio Department of Health, three programs are funded by a local health foundation and several other public and private funding sources were reported. The OOPPs have funding to distribute a combined total of 8,670 overdose kits and had distributed 1,998 kits by October 2014. The OOPPs reported 149 overdose reversals. Fifteen programs (83%) reported implementation barriers that were categorized as stigma, cost, staffing, legal, regulatory and client related problems. Legislative changes aimed at removing some of the obstacles to distribution and lay administration of naloxone have recently been enacted in Ohio.

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AUTHOR CONTRIBUTIONS

EW designed the study and developed the survey instrument, and made the initial contact with overdose program representatives. AC followed-up with participants and conducted some of the telephone interviews. EW and AC drafted the manuscript. All authors provided critical revisions to the manuscript and reviewed the final version.

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Conclusions—OOPPs have rapidly expanded in Ohio during the past three years. While recent legislative changes have addressed some of the reported implementation barriers, stigma and the cost of naloxone remains a significant problem.

Keywords

pioid overdose; prevention; naloxone

INTRODUCTION

Overdose deaths have reached epidemic proportions and overdose is now the leading cause of injury death in the United States.[1] In 2013 there were 38,851 overdose deaths and this only represents the tip of the iceberg as it has been estimated that 3.1% to 4.2% of overdoses result in a fatality.[2, 3] In addition to the devastating consequences of overdose deaths to family and community members, fatal and non-fatal overdoses represent a significant burden to the U.S. healthcare system. Emergency department visits for drug overdose have been estimated to cost more than $2 billion in 2010[4] and the estimated annual national cost of opioid overdoses in 2009 was $20.4 billion.[5]

The rate of unintentional drug overdose deaths in Ohio has increased every year since 1999, with 2,110 unintentional drug overdose deaths in 2013.[6] Ohio has one of the highest rates of overdose deaths in the country and has been identified by the Drug Enforcement Administration as a ‘hot spot’ for prescription pill trafficking.[7] The majority (73%) of overdose deaths in Ohio involves either prescription opioids or heroin.[6] Early in this epidemic, prescription opioids were associated with the majority of fatalities. However, in 2012 the number of deaths involving heroin (n = 697) surpassed those involving prescription opioids (n = 680) [6], and this trend has persisted. Non-fatal hospital admissions related to drug poisonings in Ohio are estimated to cost $40 million annually and fatal overdoses $1.9 billion.[6]

Opioid overdose, in many cases, is a preventable cause of death. Naloxone is a short-acting competitive mu opioid-receptor antagonist that can reverse an opioid overdose, preventing fatalities. Naloxone was first synthesized in 1960, was FDA-approved in 1971 and has been used by emergency responders and hospitals for over 40 years.[8] Naloxone has a very specific mechanism of action and an excellent safety profile with very few adverse events.[8] Because delays in administering naloxone can increase the probability of a fatality, delays in arrival of emergency medical services (EMS) can be problematic, particularly in suburban or rural areas where response times are longer. Additionally, some people who use opioids are afraid to notify EMS in response to an overdose.[9,10] For these reasons, opioid overdose prevention programs (OOPPs) began distributing naloxone to bystanders as a means to decrease fatalities. OOPPs provide education on how to identify the signs and symptoms of an overdose, as well as how to appropriately respond to an overdose including rescue breathing and administration of naloxone.[11]

A 2010 national survey identified 188 OOPPs across the United States, although many of states with the highest rates of drug overdose deaths did not report having a program.[12] Ohio was one such state. Early in the opioid epidemic community groups in Ohio struggled to

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implement evidence-based strategies to respond to this public health crisis[13] and understanding the barriers may inform the development of future efforts. The purpose of this study was:

1. To describe overdose prevention education and/or naloxone distribution programs in Ohio across various settings, and
2. To identify implementation barriers.

METHODS

A cross-sectional survey was administered to the program director or contact person for each OOPP in Ohio. The initial sampling frame was determined using a list of OOPPs funded by either the Ohio Department of Health (ODH) or Interact for Health (a non-profit foundation), and snowball sampling was used to identify OOPPs in Ohio funded by other sources. Programs were included if they were actively providing overdose education and naloxone distribution. Twenty-two OOPPs were identified and an email was sent to determine interest in study participation. Follow-up phone calls were placed to the OOPP contact person for programs that did not respond to the initial email. Twenty programs responded to the survey (90.9% response rate) and limited information is available on the two non-responsive programs. One non-responsive program was located in a children's hospital and the second was an addiction treatment program that may have not yet initiated OOPP services. Two programs were excluded from the analysis as their programs were still in development. One program had six separate sites, but given that all of the sites were part of a single health care organization and had a single OOPP administrative director - only one survey was completed by the program representative.

The research team, based on their experience working with OOPPs in Ohio, developed a 23-question survey including closed- and open-ended items. The survey questions asked respondents to describe their OOPP including services provided, target population, source(s) of funding, educational format, provision of naloxone, and implementation barriers. The survey was either emailed to the OOPP contact or administered over the phone. All data collection took place between August 1, 2014 and October 3, 2014. The quantitative data was analyzed using Stata SE 13.1[14] and is reported using descriptive statistics. The qualitative open-ended responses were short and easily coded into categories, which were mutually agreed upon by two study team members. This study was reviewed by the University of Cincinnati Institutional Review Board and was determined to be a program evaluation; hence, informed consent was not required.

RESULTS

Twenty OOPP sites represented 17 Ohio cities; 47.8% (n = 11) were in suburban counties, 34.8% (n = 8) were in urban counties, and 17.4% (n = 4) were in rural counties. The majority of the programs had a single fixed location, one program was mobile, and another program represented one health system with six different sites. The first OOPP opened in August 2012, a second opened in 2013, and the remaining programs began in 2014. Eighteen programs distributed overdose kits, which typically contain an educational insert

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with brief instructions on nasal naloxone administration, two nasal atomizers, and a barrier device for rescue breathing. Thirteen programs also provided two single-dose 2 mg pre-filled Leuer jet syringes of naloxone, while the remaining five provided a prescription for naloxone in the kit. Twelve programs were located within an organizational setting that had a terminal distributor license allowing them to directly dispense naloxone. The other programs either worked with a local pharmacy to deliver naloxone to the setting or provided a prescription to program participants who then had to obtain the medication on their own. Sixteen programs provided overdose kits for free and two programs charged $10.00 for the kit.

The programmatic requirements for participants to receive an overdose kit varied by setting. All programs required participants to complete some type of education either in person or by watching an educational video before they could receive an overdose kit. The length of the programs' educational component ranged from 5 to 60 minutes, with a mean length of 36.8 minutes (SD = 17.0). Four programs required participants to meet with a physician before they could receive an overdose kit and two programs reported utilizing nurse practitioners to provide naloxone. Ohio OOPPs have funding to distribute a combined total of 8,670 overdose kits and had distributed 1,998 at the time of the survey, with 149 reported overdose reversals.

The majority of programs (n = 16) provided services to patients in addiction treatment, persons actively using illicit drugs, or friends and family members. Three programs were integrated into healthcare settings that targeted specific populations: veterans, patients in the emergency department, and patients in mental health treatment with an underlying opioid dependence diagnosis. The OOPP settings included: 5 (27.8%) in hospitals, 4 (22.2%) each in health departments and mental health programs, and 1 (5.6%) each in county-level recovery boards, drug treatment programs and community drug coalitions. Six programs were funded through the ODH and three were funded by a local foundation, Interact for Health. Other funding sources included the Veterans Health Administration, local alcohol and drug county boards, local health departments, hospitals, healthcare providers or systems, foundations and other public organizations. Eight of the programs pooled funding from more than one source.

Fifteen programs (83%) reported experiencing barriers to implementing and/or sustaining their program. The barriers were categorized as stigma (n = 14), costs (n = 7), staffing (n = 5), legal (n = 4), regulatory (n = 3) and clients (n = 3).

The stigma-related barriers included difficulty in achieving buy-in internally from either staff or board members, as well as externally from key stakeholders. For example, one respondent reported "*We have had difficulty scheduling our clinics around the availability of our physician …. We could not find other physicians or nurse practitioners that were interested*." Two programs reported that they had problems with people perceiving naloxone as either a 'safety net' or as enabling opioid use. For example, one participant reported "*some people in the community, law enforcement and hospital personnel believe that it [naloxone] is considered enabling*." Barriers related to costs included the price of naloxone, lack of reimbursement for the non-medication items in the kit by third-party payers, and

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salary support for medical staff time. For example, a participant reported "*The biggest issue is cost -- cost of narcan and physician time*." Five programs experienced challenges with medical staff availability to dispense or prescribe naloxone. Four programs reported legal problems including lack of acceptance from local law enforcement agencies or other criminal justice organizations. One of the specific problems related to lack of buy-in was the belief by law enforcement that people would trade their naloxone kits for heroin. For example, on participant reported "*The law enforcement community have been the hardest to sway. They continue to say that naloxone gets traded for heroin.*" One program reported that local law enforcement had confiscated participants' kits. Two programs mentioned that regulatory changes to allow for standing orders would help them overcome staffing related problems and would expand access. There was a lack of clarity regarding how state-level regulatory policies should translate into agency-level policies and procedures. For example, a participant reported "*There is a real lack of clarity on how these kits are to be handled-who can do this? What training is required of the end user? … We have received contradictory guidance …* " Finally, three programs reported having client-related problems, such as client discomfort with the program setting (in a health department), participant preferences (some at-risk patients did not want an overdose kit) and participants' concerns regarding whether having the kits would result in legal problems.

DISCUSSION

Overdose fatalities are potentially preventable[8] and therefore it is important to expand access to both overdose prevention education and to naloxone. OOPPs rapidly expanded in Ohio between 2012–2014; within two years there were 18 programs operating in 23 sites and these programs reported having distributed 1,998 overdose kits. This reflects a similar national trend of rapid expansion of OOPPs during this time period.[15] The majority of sites (65.2%) were located in non-urban counties and in healthcare settings (hospitals or health departments); this is different from national and international data that have found programs are concentrated in urban areas and frequently located within harm reduction programs."[15,16] In Ohio, only two programs are located within harm reduction programs, which may be because Ohio only has three active syringe exchanges. As has also been documented nationally,[17–18] overdose death rates in Ohio are highest in suburban and rural counties. Rural and suburban OOPPs with naloxone distribution are particularly important as the average EMS response time is longer and not all first responders may carry naloxone. Initial funding to implement OOPPs in Ohio was provided by the Ohio Department of Health although many programs now have funding from a variety of sources, which reflect public and private partnerships. The diversity of funding sources and program settings may reflect both a broader sense of ownership of the problem of drug overdose in Ohio and efforts to expand access to naloxone beyond persons known to be either actively misusing opioids or in treatment for opioid use disorders.

Several legislative changes have affected the development of OOPPs in Ohio. The passage of House Bill 170 in 2014 allowed naloxone to be prescribed to a third party (i.e.. family member or friend of the person at risk for overdose) and provided some civil and criminal protections for naloxone prescribers and lay bystanders who administered naloxone. This bill explicitly mentioned nasal and injectable naloxone and the nasal formulation was

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promoted by the ODH OOPPs. There have been no regulations allowing third parties to be prescribed intramuscular (IM) or intravenous (IV) formulations of naloxone or providing protection for lay bystander administration of IV/IM naloxone. By addressing many of the implementation barriers experienced by early programs, House Bill 170 facilitated expansion of OOPPs. In June 2015, Ohio passed House Bill 4, which allows for naloxone to be distributed by a pharmacist under a physician's standing order without a prescription. This is likely to have additional effects on Ohio OOPPs.

The barriers to implementation of Ohio OOPPs may reflect a lack of understanding of addiction as a chronic relapsing brain disorder that can be effectively treated, which stigmatizes individuals with substance use disorders. In order to formulate effective community-based responses to the opioid epidemic, communities need to be aware of strategies, such as OOPPs, that have been empirically demonstrated to reduce the morbidity and mortality associated with opioid use disorders. [11,12,15,19] Our anecdotal experiences working in the area of overdose prevention in Ohio support findings from this survey regarding misconceptions about naloxone and fears about how it may be used and similar findings have been reported in other studies.[19,20] For example, one participant in this study reported that their local law enforcement officials were stating that people trade naloxone for heroin which we suspect is unlikely given the relative street value of naloxone compared to heroin. And other studies have reported problems with law enforcement agencies confiscating naloxone.[20] We have also heard multiple concerns that access to naloxone will enable people to use more opioids because a reversal agent is available and previous research has not found evidence that OOPPs increase drug use or overdose;[20] more specifically a study in California found a 53% reduction in drug use.[21]

Countering these erroneous and stigmatizing beliefs is essential to continued expansion of OOPPs. Developing educational information and public service announcements on the prevalence of non-fatal and fatal overdoses, as well as messaging to increase awareness that overdose is a preventable cause of death may improve community buy-in. Interventions that have been demonstrated to reduce social and structural sources of stigma associated with substance use disorders may be helpful to improve OOPP buy-in among health care professionals and law enforcement agents.[22] These interventions include motivational interviewing, education and contact-based training.[22] Some health care professionals and members of law enforcement may not know the symptoms of an opioid overdose or understand the pharmacology of naloxone. Further, training that includes interactions with people that have been saved by naloxone or includes overdose reversal stories may serve as a mechanism to accomplish contact-based training. Strategies to address the financial challenges of OOPPs, such as the rising cost of naloxone, the lack of reimbursement for staff time, and the expense of the non-medication contents of kits will also be necessary to sustain programs long-term. Countries outside the United States, have reported naloxone costs that are significantly less and it is therefore not surprising that they are reporting reaching as many as 43% of drug users.[16] For additional information on strategies to overcome barriers to OOPP implementation, see prescribetoprevent.org. (http://prescribetoprevent.org/wp-content/uploads/2012/11/strategies-for-barriers-to-od-prevention-in-sa-tx-settings.pdf). Future implementation research is needed to determine effective strategies to overcome barriers to OOPP expansion.

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In summary, OOPPs in Ohio are expanding and evolving in response to regulatory changes at the state level. OOPPs have continued to rapidly expand across the state and as of July 2015, the ODH website recognized 43 OOPPs. The passage of House Bill 4 in Ohio may address some of the staffing and regulatory barriers identified in this study, however future efforts will still be needed to address stigma and cost.

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Table 1

Descriptive Characteristics of OOPPs

	%(N)
OOPP Location	
Rural	17.4 (4)
Suburban	47.8 (11)
Urban	34.8 (8)
Target population	
Patients in addiction treatment	77.8 (14)
Persons actively using illicit drugs	88.9 (16)
Family members	88.9(16)
Funding sources	
Ohio Department of Health	33.3 (6)
Interact for Health	16.7 (3)
Terminal distributors license	64.7 (11)
Frequency of Overdose Education	
On demand/as needed	55.6 (10)
Daily	11.1 (2)
Monthly	22.2 (4)
Overdose education format	
Individual only	22.2 (4)
Group only	27.8 (5)
Individual & group	50.0 (9)
Experienced any implementation barriers or problems	52.6 (10)
Experienced problems gaining buy-in	27.8 (5)
Barriers to providing overdose prevention services in Ohio	64.7 (11)

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Table 2

OOPP Implementation Barriers*

Stigma (n = 14)	• Community buy-in Perceive naloxone as a safety net or enabling opioid use Medical professionals buy-in Internal staff or board member buy-in Stakeholder buy-in
Cost (n = 7)	• Medication Medical staff time Payor reimbursement non-medication items in kit
Staffing (n = 5)	• Nursing and physician staff and/or time to write prescriptions for naloxone
Legal (n = 4)	• Law enforcement confiscate overdose kits Believe that people are trading naloxone for heroin Buy-in from law enforcement or judicial system
Regulatory (n = 3)	• Need for standing orders Lack of clarity regarding how regulations inform organizational policies & procedures
Clients (n = 3)	• Location of program Some patients do not want overdose kits Lack of participation due to legal fears

* This table contains a summary of the responses to the open-ended question regarding the barriers or problems the organization experienced in providing overdose prevention services.