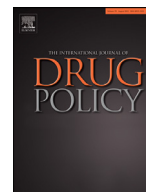




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Short report

A free mailed naloxone program in Philadelphia amidst the COVID-19 pandemic

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ABSTRACT

Background: Access to naloxone is essential as the overdose crisis persists. We described barriers to accessing naloxone among individuals who requested and received the medication from a free mailed program and explored the relationship between how individuals with and without personal proximity to overdose learned about the program.

Methods: Secondary analysis of data from a web-based form collected 1st March 2020 to 31st January 2021. Access barriers, personal proximity to overdose (broadly defined as personally overdosing or witnessing/worrying about others overdosing), and method of learning about the program were categorized and described.

Results: Among 422 respondents, the most frequently reported barriers to accessing naloxone were: COVID quarantine (25.1%), lack of knowledge about access (13.2%), and cost (11.2%). Compared to those without personal proximity to overdose (38.2%), individuals with personal proximity (61.8%) heard about the program more often through an active online search (21.4% vs. 8.8%; p -value = 0.001) and less often through word of mouth (19.8% vs. 40.9%; p -value = <0.001).

Conclusions: Longstanding barriers to naloxone access are compounded by the COVID-19 pandemic, making mailing programs especially salient. Differences in ways that individuals with and without personal proximity to substance use and overdose learned about this program can inform how such programs can effectively reach their target audience.

Introduction

Access to naloxone, the lifesaving medication that reverses the effects of opioids during an overdose, is essential as the overdose crisis persists. More than 750,000 people died from a drug overdose in the United States (US) from 1999 to 2018, with nearly 450,000 deaths involving opioids (Centers for Disease Control & Prevention, 2018). The COVID-19 pandemic has exacerbated the opioid epidemic by prompting the closure of treatment facilities, threatening the drug supply, and reducing bystander enthusiasm for overdose rescue (Khatri & Perrone, 2020).

In 2018, Pennsylvania had the fourth highest fatal overdose rate in the US with 36.1 deaths per 100,000 individuals (Philadelphia Department of Public Health, 2018). Philadelphia has been particularly impacted, with a 2017 fatal overdose rate of 59.0 per 100,000 individuals, surpassing other US large cities' rates (Philadelphia Department of Public Health, 2018). Data from 2016 shows that all demographic

and socioeconomic groups were impacted by opioid use disorder, although non-Hispanic white men had the highest fatal overdose rates (Philadelphia Department of Public Health, 2018). However, fatal overdoses have increased among Black residents since the COVID-19 pandemic began, and by June 2020 Black residents were dying of overdose at higher rates than white residents. (Khatri et al., 2021; Philadelphia Department of Public Health, 2020). Per Governor Wolf's 2016 standing order, pharmacists can dispense naloxone to anyone who requests it without a prescription (Wolf Administration, 2020), though barriers to naloxone access like cost still exist (Graves et al., 2019).

NEXT Harm Reduction (hereafter referred to as "NEXT"), founded in 2017, is a national harm reduction organization dedicated to improving access to harm reduction supplies like naloxone by mail (NEXT Distro, 2020). The mailed approach to naloxone distribution seeks to address common barriers to accessing naloxone like cost, pharmacy supply issues, and stigma (Donovan et al., 2019; Graves et al., 2019; Green et al., 2017). Since May 2019, Philadelphians have been able to access free naloxone by mail via NEXT's website

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(<https://nextdistro.org/phillytypechoice>) thanks to a partnership between NEXT (provides guidance and mailing resources like postage and envelopes), the Philadelphia Department of Public Health (provides naloxone), and Philadelphia harm reduction group SOL Collective (packages, addresses, and mails naloxone). SOL Collective is a volunteer collective of people committed to combatting the overdose crisis and racist drug policies through advocacy, direct action, and distributing drug use supplies (SOL Collective, 2021).

After participants watch a short overdose responder training video and fill out a web-based form, SOL Collective members mail them packages with two doses of naloxone, a rescue breathing mask, and a pamphlet about fentanyl. All individuals who request naloxone via this program are mailed a package. Although this service has the potential to increase access to naloxone across Philadelphia and demand for this service has dramatically increased since the start of the COVID-19 pandemic, mailing programs will be most effective if they benefit a demographically representative sample and individuals with personal proximity to opioid use and overdose. Request data from such programs can provide novel information about barriers to accessing naloxone via more traditional means. We sought to describe (1) barriers to in-person naloxone among individuals who requested from this program, (2) the methods of learning about the program, and (3) the relationship between personal proximity to overdose and method of learning about the program.

Methods

This secondary analysis utilized data collected by NEXT via a web-based form from March 1st, 2020 through January 31st, 2021. This data was primarily used to mail individuals naloxone. A list of all questions asked in the web-based form can be found in Supplementary Table 1. All data were de-identified. Demographic information included gender, race, and insurance status.

We queried the data for reported barriers to in-person naloxone access at a pharmacy or through other means in Philadelphia. Respondents were asked to explain why they were not able to access naloxone through another means (i.e., barriers) via free-text. Some respondents reported multiple barriers. We also described how individuals learned about the program based on free-text responses. Exact questions about barriers and method of learning about the program can be found in Supplementary Table 1. Free-text responses about access barriers and method of learning about the program were categorized by two authors and described using frequencies and percentages. Discussion by authors resolved the few disagreements in categorization. Social media (e.g., Facebook, Twitter, Instagram posts) was differentiated from online search by participant description; for example, "I googled where to find Narcan" was considered online search, while "It popped up on my Instagram" was social media.

We also described proximity to overdose among requestors. Personal proximity was defined as witnessing an overdose or personally overdosing in the past year, being worried that someone they know or they will overdose, or having a family member or partner who uses opioids. Supplementary Table 1 details questions used to define personal proximity.

We described the number of times each barrier was reported and provided the percentage of individuals reporting each barrier. The method of learning about the program by personal proximity was described using frequencies, percentages, and a Chi-squared test to test differences between those with and without personal proximity. This study was declared exempt by the University of Pennsylvania Institutional Review Board. StataMP Version 16.0 was used to conduct all analyses.

Results

Our sample included all 422 individuals who requested free mailed naloxone in Philadelphia from 3/1/2020 through 1/31/21. Most of the sample were cisgender women (229/420). Nearly three-quarters of the sample was White (287/390), 13.6% was Black, 8.2% was Asian, 1.5%

was American Indian, Native American, or Alaskan Native, 1.8% was mixed/biracial, and 1.3% did not report race. One in ten individuals were Latinx/Hispanic. Among the 422 respondents, the average age was 33.3 (SD = 11.8). Over a quarter (112/418) of individuals had no insurance, while 47.6% had private insurance or Medicare, 17.2% had Medicaid, and 8.4% did not report. Over three-fifths (61.8%) reported personal proximity to overdose. Of the 454 reported barriers to accessing naloxone through other means, the most frequently reported were: COVID orders/quarantine (25.1%), lack of knowledge about how to access (13.2%), and cost (11.2%). Other barriers included transportation (8.6%), COVID-related health concerns (5.8%), and stigma (4.6%).

The most common ways that individuals learned about the program were social media posts (31%), word of mouth (27.9%), online search (16.6%), and health centers or harm reduction groups (9.2%). Compared to those without, individuals with personal proximity heard about the program more often through an active online search (21.4% vs. 8.8%; p -value = 0.001) and less often through word of mouth (19.8% vs. 40.9%; p -value = <0.001). Further detail on barriers to naloxone access and the method of learning about the program is reported in Table 1.

Discussion

As the overdose crisis persists, increased naloxone access is urgently needed. This need is recognized, as evidenced by the existence of other naloxone distribution programs internationally (McAuley, Best, Taylor, Hunter, & Robertson, 2012; Torres-Leguizamon, Reynaud, Néfau, & Duplessy, 2020) and in the US (NEXT Distro, 2020). Our findings highlight how longstanding barriers to naloxone access are compounded by the COVID-19 pandemic, making mailing programs especially vital. While sustainability of this program is not guaranteed, there is contractual commitment from both the Philadelphia Department of Public Health and NEXT for the foreseeable future.

COVID-related barriers accounted for nearly a third of reasons why individuals could not access naloxone in person. While the overdose crisis is exacerbated by the COVID-19 pandemic, most reported barriers to naloxone access will transcend COVID-19. Many individuals lacked knowledge about how to access naloxone, even though all pharmacies across Philadelphia are required to carry it (Graves et al., 2019). Our finding that cost, supply issues, and stigma are also barriers to naloxone access is consistent with existing literature (Donovan et al., 2019; Green et al., 2017).

While the target audience for this program is people with personal proximity to overdose, many individuals without personal proximity want to access naloxone but face barriers. Better dissemination efforts aimed at reaching individuals and communities in need of naloxone are necessary; pharmacies should advertise that they carry naloxone and that it is available to all Pennsylvanians without a prescription (Graves et al., 2019). It is unsurprising that naloxone price is a barrier (Graves et al., 2019), especially as millions of Americans have lost work and health insurance due to the pandemic (Woolhandler & Himmelstein, 2020). The median out-of-pocket price for two doses of naloxone nasal spray (Narcan) is \$145 in Pennsylvania (Graves et al., 2019).

A frequently cited barrier to substance use disorder treatment and harm reduction services is stigma (Adams & Volkow, 2020; Tsai et al., 2019). Only 4.6% of our sample, however, cited stigma as a barrier to accessing naloxone in person, which may be because our data pertains to an urban setting and drug-related stigma is particularly pervasive in rural settings (Fadaneli et al., 2020). Naloxone-by-mail programs, however, may help address stigma by providing supplies discreetly and confidentially; individuals can request supplies from the privacy of their phones or computers and receive them in unmarked packages. Mailing is a successful distribution technique for other harm reduction supplies like safe injection kits and fentanyl testing strips and could increase access among those who live far from syringe exchange programs or are discouraged from accessing one due to stigma (Torres-Leguizamon et al., 2020; Yang, Favaro & Meacham, 2021). Syringe exchange programs are

Table 1
Barriers to naloxone access ($n = 454^{\mu}$) and methods of hearing about naloxone program by personal proximity ‡ ($n = 416^{\natural}$).

Reported barriers	N (% $^{\infty}$)	
COVID orders/physical distancing	114	(25.1)
Lack of knowledge about how to access	60	(13.2)
Cost	51	(11.2)
Transportation	39	(8.6)
Time constraints	30	(6.6)
COVID-related health concerns	26	(5.8)
Stigma	21	(4.6)
Supply issue	14	(3.1)
None	99	(21.8)

Method of learning about program, n (%)	All ($n = 416$)	Personal proximity ($n = 257$)	No personal proximity ($n = 159$)	p-value
Social media post	129 (31.0)	83 (32.3)	46 (28.9)	0.471
Word of mouth	116 (27.9)	51 (19.8)	65 (40.9)	<0.001
Online search	36 (8.7)	29 (11.3)	7 (4.4)	0.015
News (television or print)	69 (16.6)	55 (21.4)	14 (8.8)	0.001
Health center/harm reduction group	38 (9.2)	18 (7.0)	20 (12.6)	0.055
Department of public health	24 (5.6)	17 (6.6)	7 (4.4)	0.347
Advertisement	4 (1.0)	4 (1.6)	0 (0)	0.114

$^{\mu}$ Total number of responses is greater than 422 because respondents could report multiple barriers.

$^{\infty}$ Denominator for percentages is 422.

‡ Personal proximity to overdose was defined as witnessing an overdose or personally overdosing in the past year, being worried that someone they know or they will overdose, or having a family member or partner who uses opioids.

$^{\natural}$ Four individuals have missing data on their way of hearing about the naloxone mailing program.

currently illegal in Pennsylvania outside of Philadelphia and Pittsburgh (Winberg, 2018). State-wide legalization of such programs is urgently needed to reduce infectious disease transmission, and policy-makers in Philadelphia and Pittsburgh should consider explicitly allowing for mailing of safe injection kits to increase access in their cities.

Efforts aimed at reducing disparities in naloxone access are tantamount. Despite clear evidence that opioid overdose death rates are rising among Black Americans (Lippold, Jones, Olsen & Giroir, 2019) and that drug overdoses killed more Black than White Philadelphians during the first three months of the COVID-19 pandemic lockdown (Khatri et al., 2021), only 13.6% of individuals who requested mailed naloxone from our program were Black. The reach of our program is concerning and reveals that even well-intentioned initiatives can perpetuate racial disparities. NEXT and SOL Collective continue to explore methods of dissemination (e.g., focused advertising) that reach communities most in need of services. Worthy of consideration is that an online method that requires providing an address for something “free” could be alarming to individuals or communities who have previously been misled by systems (Scharff et al., 2010).

This study had few limitations. The NEXT web-based form was not created with this type of analysis in mind. For example, as previously mentioned, only 4.6% of the sample reported stigma as a barrier, but this may have been because many participants assumed the question was asking about physical barriers to naloxone access. Additionally, in converting free-text qualitative responses into thematic categories, we may have misunderstood or misrepresented participant free-text responses (Maxwell, 2010). We do not know if requestors used the mailing service multiple times. Additionally, the use of statistical significance to inform promotion efforts is imperfect and should be cautiously interpreted. Finally, we were unable to analyze whether participants who received naloxone-by-mail utilized the medication to reverse an overdose as this data is not available.

Conclusions and policy implications

Mailing programs are an important strategy for increasing access to harm reduction supplies. Widespread expansion of such programs is urgently needed, and policymakers should consider explicitly allowing

for mailing of other harm reduction supplies. In-person access to naloxone can be impeded by many barriers, including the ongoing COVID-19 pandemic and lack of knowledge about where to access supplies. Convenient and free access to this life saving medication may also help address racial and socioeconomic disparities in naloxone acquisition and overdose death, although mailing programs must make a concerted effort to ensure that supplies are reaching communities in need.

Ethics

No human subjects were used in the study.

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Data statement

Due to the sensitive nature of questions asked in this study, the data that has been used is confidential.

Declarations of Interest

The authors of this study are involved with the free mailed naloxone program. Ms. Favaro is the founder and executive director of NEXT Harm Reduction. Ms. French and Dr. Aronowitz are community organizers with SOL Collective. In her role, Ms. Favaro provides resources for mailing (e.g., postage, envelopes) to Ms. French and Dr. Aronowitz who, with other members of SOL Collective, mail the naloxone kits.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.drugpo.2021.103199](https://doi.org/10.1016/j.drugpo.2021.103199).

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