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**Massachusetts Department of Public Health**

**Data Brief**

**Overdose Education and Naloxone Distribution Programs**

# Background

The increased presence of fentanyl in the drug supply, as evidenced by post-mortem toxicology analyses, has been a key factor in overdose deathsi. A critical tool in the effort to reduce overdose deaths has been an intentional focus on prevention and access to naloxone. Naloxone is an opioid antagonist that acts as an antidote, temporarily reversing the effects of opioids when administered during an opioid overdose. The actions of naloxone are temporary, lasting for about 30-90 minutes.

Since 2018, Naloxone has been available in all MA pharmacies to individuals without a prescription via the [statewide](https://www.mass.gov/policy-statement/2018-04-naloxone-dispensing-via-standing-order) [standing order;](https://www.mass.gov/policy-statement/2018-04-naloxone-dispensing-via-standing-order) and is most often utilized by individuals who are likely to witness an opioid overdose including people who use opioids, emergency responders, direct care staff members, and family and friends of people who use opioids.ii Naloxone has no potential for abuse and does not cause adverse health effects.

# Overdose Education and Naloxone Distribution Program

The Overdose Education and Naloxone Distribution (OEND) program is the primary overdose prevention effort funded by the Department of Public Health (DPH). OEND is a targeted intervention program designed for the people who are the highest risk of experiencing or witnessing an opioid overdose. The OEND programs operate out of state-funded Syringe Services Programs (SSPs) and other community-based organizations. A local pilotiii helped lay the foundation for DPH to establish OEND pilot programs in 2007iv. Today, the Department funds 20 OEND programs with over $9 million, serving a network of communities throughout Massachusetts.

OEND programs operate out of fixed sites, mobile sites, street outreach, and other venues such as drop-in centers, shelters, and substance use disorder treatment programs. In addition to training and naloxone access, OEND programs offer access and referrals to infectious disease prevention education, risk and harm reduction counseling and education, screening for HIV/HCV/STIs, referrals to substance use disorder treatment, referrals to primary care services, and infectious disease case management.

Since 2007, data collection and evaluation has been a critical element of the OEND program. When a bystander is trained and provided a naloxone kit, the individual is enrolled in the program and an enrollment questionnaire is completed by OEND staff. When that person returns to the OEND program to receive a refill and/or report a rescue, a refill questionnaire is completed. All participants have a unique identifier that ensures that there is no duplication and allow the linking of enrollment and refill forms at the individual level but preserving participant anonymity. Several studies have been completed using the OEND program data that have shown that communities where naloxone rescue kits are distributed have lower rates of opioid overdose deathv, naloxone rescue kits distribution is feasible among people in methadone maintenance programsvi, naloxone rescue kits are used successfully to save lives by both people who are trained and not trainedvii, and families of people who use opioids are an important group to equip with naloxone rescue kitsviii.

Here we provide a data-based description of the program as a Data Brief supplement to the MDPH quarterly opioid- related overdose report. The OEND Data Brief supplement will be updated on an annual basis.

# Enrollment and Rescue Characteristics: Full Program History

16000

14000

12000

10000

**Enrollments**

8000

6000

4000

2000

0

## Figure 1: DPH OEND Program Enrollments by Year, 2007-2018

14102

13107

6386

7716

10242 10855

3930

6312

4696

6159

5202

7905

5439

4343

1750

3689

 1481

2862

11106

4656

6450

 Non- User

 People who use drugs

2012 2013 2014 2015 2016 2017 2018

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| 29850 248  | 19807071273 | 24157681647 | 381812792539 | 392313352588 |
| 2007 | 2008 | 2009 | 2010 | 2011 |

**Year**

Total Program Enrollments: 81,630

Total User Enrollments: 49,386 Total Non-User Enrollments: 32,244

***Key Points:*** Between 2007 and 2018, over 81,000 unique individuals newly enrolled in OEND and were trained in overdose prevention and equipped with naloxone rescue kits. Overall, 61% of people self-identified as actively using, in treatment, or identify as being in recovery and 39% percent identified as “non-user”, meaning they are family members, such as those enrolled through Learn to Cope, friends of people who use opioids, or human services staff. The number of refills to those who have already been enrolled continues to increase each year (data not shown).

4500

4000

3500

3000

2500

**Rescues**

2000

1500

1000

500

0

## Figure 2: DPH OEND Program Rescues by Year, 2007-2018

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

4079

3487 451

2939 389

 377

1437

161

2124

 225

3628

3098

222

 16

206

295

40

255

282

 26

256

436

52

384

458

46

412

720

61

659

2562

1899

1276

**Year**

Total Rescues: 16,480

Total Rescues by Users: 14,636 Total Rescues by Non-users: 1,844

 Non- User

 People who use drugs

***Key Points:*** Over 16,000 rescues were reported by bystanders who administered naloxone to a person who was overdosing. The majority of the overdose rescues reported to OEND programs (89%) are reported by people who identified as people who use drugs.

## Figure 3: Risk Factors among People Who Use Drugs and are Equipped with Naloxone in the DPH OEND Program, 2018

23% (1408) 77% (4698)

80% (5144)

20% (1280)

63% (3809)

52% (3319)

|  |  |  |
| --- | --- | --- |
| Reported a previous OD in lifetime | 48% (3045) |  |
|  |  |  |
| Past year treated in detox | 51% (3108) |  |
|  |  |  |
| Past year sleep on street or in Shelter | 37% (2226) |  |
|  |  |  |

49% (3007)

Past year released from Jail

 YES  NO

Lifetime witnessed OD

0 1000 2000 3000 4000 5000 6000 7000

***Key Points:*** Individuals using opioids who were enrolled in the DPH OEND program in 2018 had a high burden of overdose risk. Having witnessed an opioid overdose was very common (80%). Previous overdose experience, receiving treatment in a detoxification program, experiencing homelessness, and having been released from incarceration were other reported risk factors.

## Table 1. Where DPH OEND Rescuers Obtained Naloxone, 2018

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **OEND****Program** | **Friend/Family** | **Pharmacy with/without****Prescription** | **Other** | **Total** |
| **All Participants** | 12,632 (96%) | 161 (1%) | 62 (0%) | 244 (2%) | 13,099 (100%) |
| **People who use drugs** | 11,192 (96%) | 135 (1%) | 59 (1%) | 217 (2%) | 11,603 (100%) |
| **Non-Users** | 1140 (95%) | 26 (2%) | >5 (0%) | 25 (2%) | 1194 (100%) |

***Key Points:*** The majority of people who have reported overdose rescues to the OEND programs (96%) report having received their naloxone from an OEND program.

# OEND Enrollment Characteristics: Gender, Age, Race/Ethnicity

## Figure 4. DPH OEND Participants by Gender, 2018

Non-users People who use drugs

All Participants

 Male

 Female

**37% (1671)**

**63% (2855)**

**61% (3849)**

**39% (2502)**

**51% (5520)**

**49% (5357)**

0% 20% 40% 60% 80% 100%

***Key Points:*** 51% of 2018 program participants were male and 49% were female. The majority of enrolled people who use drugs were male (60%) and the majority of enrolled non-users were female (62%).

## Figure 5. DPH OEND Participants by age, 2018

Non-users

People who use drugs

All participants

 18-24

 25-34

**13%**

**(594)**

**23% (1050)**

**18% (832)**

**19% (900)**

**19% (897)**

**8%**

**(352)**

10%

(621)

39% (2523)

25% (1605)

16% (1018) **9%**

**(561)**

1%

(79

11%

(1215)

32% (3573)

22% (2437)

17% (1918)

13%

(1458)

4%

(431)

 35 - 44

)  45 - 54

 55 - 64

 65+

0% 20% 40% 60% 80% 100%

***Key Points*:** The majority of program enrollees are between the ages of 25-44 years. The median age of enrollees is 35 years. The majority of people who use drugs are between the ages of 25-44 years, whereas the age of non-users is more evenly spread across the ranges of 25-64. The median age of non-users is 43 years. The median age of people who use drugs is 35 years. The majority of confirmed opioid-related overdose deaths occurred between the ages of 25-44 years.ix

## Figure 6. DPH OEND Participants by Race and Hispanic Ethinicity, 2018

Statewide population estimate

White non-Hipsanic

Non-users People who use drugs All Participants

|  |  |  |
| --- | --- | --- |
|  | 12% | 5% |
| ) | (537) | (242) |

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

 Black non-Hispanic  Asian non-Hispanic  Hispanic

 Other

74% (4,900,000)

7%

7%

12% 0.2%

(492,000) (468,475) (816,947) (2,601)

72% (3,326)

10% 2%

(460) (76

74% (4,718)

8% 1% 14% 4%

(509) (40) (873) (273)

73% (8,044)

9% 1%

(969) (116)

13% 5%

(1,410) (515)

***Key points:*** The majority of OEND participants are White non-Hispanic. Enrolled people who use drugs and non-users reflect similar race and ethnicity. Program enrollee’s race and ethnicity generally reflect the statewide population estimates, with the exception of those identifying as Asian, non-Hispanic.x

# Why is this important?

OEND programs play a critical role in addressing the opioid epidemic, as the programs provide targeted services to people who use drugs and who are reluctant to go to pharmacies, clinical sites, or other programs to access overdose education, naloxone rescue kits, or other services. OEND program participants are more likely to be marginalized, experience stigma, experience housing insecurity and homelessness, and be at greater risk of infectious disease.

OEND programs operate under the model of harm reduction. Harm reduction utilizes person-centered techniques to engage people who use drugs to support any positive change to improve or protect their health. Harm reduction practitioners work with people who use drugs to find practical methods and develop individualized strategies that reduce risk, minimize damage, and optimize health in the moment. Harm reduction techniques include but are not limited to knowing how to prevent and respond to an overdose, preventing skin infections, and preventing the spread of infectious diseases.

OEND program staff train people who use drugs and/or are in treatment program settings on overdose prevention and responsexi. OEND program staff also train families of people who use drugs ([Learn to Cope](https://www.learn2cope.org/)) as well as staff of DPH/BSAS- funded substance use disorder treatment programs. The training, at minimum, provides guidance on how to prevent, recognize, and respond to an overdose. Overdose prevention training includes risk factors and harm reduction strategies. Overdose response training includes how to recognize the signs and symptoms of an overdose, the importance of calling 9-1-1, how to perform rescue breathing, how to administer naloxone, staying with the person until help arrives, and education on the [Good Samaritan Law](https://malegislature.gov/Laws/SessionLaws/Acts/2018/Chapter208). After the training, the trained bystanders receive a kit that typically includes 2 doses of naloxone as well as a [how-to guide](https://massclearinghouse.ehs.state.ma.us/PROG-BSAS-YTH/SA1067.html).

DPH also encourages residents who are concerned about opioid overdose to ask for naloxone at the pharmacy. Please see <https://www.mass.gov/service-details/ask-a-pharmacist-about-getting-naloxone> for more information. The Department has issued a [statewide standing order](https://www.mass.gov/policy-statement/2018-04-naloxone-dispensing-via-standing-order) for naloxone so it is available at all retail pharmacies in the Commonwealth.

# References

i Ciccarone D, Ondocsin J, Mars SG. Heroin uncertainties: Exploring users' perceptions of fentanyl-adulterated and -substituted 'heroin'. Int J Drug Policy. 2017;46:146-155.

ii MDPH Statewide Standing Order, <https://www.mass.gov/policy-statement/2018-04-naloxone-dispensing-via-standing-order>

iii <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2667836/>

iv State Health Department and Community Agencies Save Lives by Teaching Potential Bystanders to Recognize and Respond to Opioid-Related Overdoses, AHRQ Service Delivery Innovation Profile, 2014, [http://innovations.ahrq.gov/profiles/state-health-department-and-community-](http://innovations.ahrq.gov/profiles/state-health-department-and-community-agencies-save-lives-teaching-potential-bystanders) [agencies-save-lives-teaching-potential-bystanders](http://innovations.ahrq.gov/profiles/state-health-department-and-community-agencies-save-lives-teaching-potential-bystanders)

v Walley AY, Xuan Z, Hackman HH, Quinn E, Doe-Simkins M, Sorensen-Alawad A, Ruiz S, Ozonoff A. Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis. British Medical Journal. 2013 Jan 30;346:f174.

vi Walley AY, Doe-Simkins M, Quinn E, Pierce C, Xuan Z, Ozonoff A. Opioid overdose prevention with intranasal naloxone among people who take methadone. Journal of Substance Abuse Treatment. 2013 44(2):241-7

vii Doe-Simkins M, Quinn E, Xuan Z, Sorensen-Alawad A, Hackman H, Ozonoff A, Walley AY. Overdose rescues by trained and untrained participants and change in opioid use among substance-using participants in overdose education and naloxone distribution programs: a retrospective cohort study. BMC Public Health. 2014 Apr 1;14:297.

viii Bagley SM, Forman LS, Ruiz S, Cranston K, Walley AY. Expanding access to naloxone for family members: The Massachusetts experience. Drug and Alcohol Review 2017 Apr 20.

ix <https://www.mass.gov/files/documents/2019/05/15/Opioid-related-Overdose-Deaths-Demographics-May-2019.pdf>

x Small Area Population Estimates 2011-2020, version 2017, Massachusetts Department of Public Health, Bureau of Environmental Health. Population estimates used for years following the decennial census were developed by the University of Massachusetts Donahue Institute (UMDI) in partnership with the Massachusetts Department of Public Health, Bureau of Environmental Health.

xi MDPH OEND Program Core Competencies, <https://www.mass.gov/files/documents/2019/02/21/mdph-oend-program-core-competencies.pdf>