

***SPECIAL REPORT***

**Real World Administration  
of Naloxone in Ohio**

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*Harm Reduction Ohio (HRO) is Ohio's largest distributor of naloxone. In 2021, HRO, a non-profit founded in 2017, distributed 32,500 naloxone kits to Ohio residents. Most naloxone was provided by the Ohio Department of Health and the Ohio Department of Mental Health and Addiction Services with funding from the federal State Opioid Response grant. The naloxone was distributed via an online ordering service and a statewide network of 300 volunteer layperson distributors. The naloxone reversed several thousand overdoses in 2021.*

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# Real World Administration of Naloxone In Ohio

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This brief report summarizes the results of two surveys concerning the real-world use of naloxone in Ohio. In both surveys, people were asked about their actual experiences administering or, in the second survey, receiving naloxone following a suspected or known overdose.

The first survey was designed and conducted by NextDistro as part of Harm Reduction Ohio's online system to order naloxone. Data was collected from people who reported reversing overdoses January 1, 2022, to May 1, 2022. The second survey was designed and conducted by Harm Reduction Ohio (HRO). Data was collected March 1, 2022, to May 5, 2022. Respondents heard about the survey at lay distributor trainings, other events, and HRO's Facebook page. All respondents in both surveys were volunteers who were not reimbursed for their participation in any way. Neither survey asked the respondents to specify when they had revived people or had been revived.

Section I summarizes the results of the NextDistro survey. Section II summarizes the results of the HRO survey. The two are compared where possible in Section III. Section IV is a brief discussion of the results of both surveys, including suggestions for future distribution of and training to use naloxone. The Appendix includes the survey questions with the percentages of various responses for each survey.

## Section 1: NextDistro Ohio Reversal Survey

This survey consisted of 15 questions. The questions primarily focused on the experience of administering naloxone and characteristics of the person receiving the naloxone. There were 119 respondents.

Most people reported using Narcan (62.2%) to revive a friend or acquaintance (52.9%) with an additional 21% reporting reviving a family member or partner. The people being revived were primarily white (83.2%). Most were males (63.9%).

Respondents reported that most of the people they revived had overdosed in the past (75.6%). Most people had reportedly used heroin (58.8%) with fentanyl the next most commonly used (alone or in combination; 51.4%). Most of the overdoses occurred in the person's home (78.2%).

73.9% of the respondents administered 1 or 2 doses of naloxone but 11% gave 4 or more doses. Most were not conscious (68.9%) and only 47.9% were clearly breathing. Most respondents performed rescue breathing (68.1%) and just over half (53.8%) called EMS. In most cases (75.9%), only the respondent administered naloxone.

The person receiving the naloxone survived in 96.6% of the naloxone interventions.

## Section II: HRO Naloxone Use Survey

This survey consisted of 11 questions. The respondents were both people who had administered naloxone and people who had received naloxone to reverse an assumed opioid overdose. In this survey, the focus was on the experience of using naloxone. There were a total of 232 respondents. Some of the responses are not included in the tallies because the person had never actually given nor received naloxone. Other times, people skipped a particular question. The detailed information in the Appendix provides the specific number of respondents answering each question.

Most of the respondents had administered naloxone (80.6%) and a smaller group had received it (33.3%). Narcan was used in most revival attempts (75.1%).

Most respondents provided rescue breathing (67.3%) and 55.8% called EMS at least some of the time. 66% report waiting two or three minutes between doses. Most of the respondents (63.4%) said they had given or received one or two doses of Narcan. When people needed multiple doses, they had most commonly used fentanyl only (48.1%) and another 44.4% had used other opioids (perhaps mixed with fentanyl).

Most (61.9%) had not seen or experienced any side effects from naloxone. When side effects were evident, they were most commonly symptoms of withdrawal such as: agitation/restlessness/irritation (78.2%) or gastrointestinal symptoms such as vomiting (46.2%). 23.7% said they noticed more side effects when more than 2 doses of naloxone were given.

## Section 3: Overlapping Survey Questions

The two surveys had 5 questions that overlapped in content, though not in precise wording of the question or the possible responses. This table shows the responses to those questions in each of the surveys:

### Comparison of responses to NEXT and HRO surveys' overlapping questions

Question	NEXT %	HRO %
Type of naloxone	Narcan/Nasal = 62.2% IM = 37%	Narcan/Nasal = 78.2% IM = 18.5%
Number of Doses	One = 16.8% Two = 57.1% Three = 13.4% Four = 7.6% Five+ = 3.4%	One = 15.7% Two = 47.7% Three = 24.9% Four = 6.1% Five+ = 5.1%
Drug suspected	Fentanyl only = 16.9% Meth = 11.3%	Fentanyl only = 48.1% Meth = 2.6%

Rescue Breathing?	Yes = 68.1% No = 27.7%	Yes = 67.3% No = 32.6%
Call 911	No = 35.3 %	No = 44.2%

#### Section IV: Conclusions

Taken together, the surveys provide an interesting glimpse into the real-world experiences of Ohioans using naloxone. First, it is evident from both surveys that a large majority of people are using naloxone in the correct circumstance, i.e., when they suspect an opioid overdose. It is possible that even when non-opioids are the primary drug used that they suspect the other drugs are cut with fentanyl. A substantial majority of people in the Next Survey knew the person they were trying to revive well and likely knew their drug preferences. This is likely also true in the HRO survey. The Next data make it evident that the overdoses they are reversing are indeed emergencies, with almost 45% of people experiencing overdoses found not breathing and more than 2/3 unconscious.

Both surveys make it abundantly clear that people administering naloxone prefer to use a nasal spray. Narcan is the one cited most frequently, but that may be an artifact of availability. Narcan is more commonly available than Kloxxado, for example. There is reason to expect that more people may prefer Kloxxado as they learn more about it. HRO's outreach lay distributors are increasingly requesting Kloxxado (our current policy is only to provide it when asked). For example, between March 1 and April 12, HRO sent 1228 Narcan, 400 IM, and 84 Kloxxado kits to our lay distributors. Between May 3 and June 15, the comparable numbers were 1,492 Narcans, 347 IMs, and 360 Kloxxados. It would be premature to call the increase in Kloxxado a trend, but it continues to be clear that nasal delivery is the preferred method. Nonetheless, a substantial minority of people (nearly 40% in the Next survey, almost 20% in the HRO survey) preferred IM. This suggests that the continued availability of both forms of naloxone is important.

In both surveys, most respondents reported following recommendations in using 1-2 doses of naloxone, providing rescue breathing, and calling EMS. However, a worryingly large minority do not provide rescue breathing. Even larger minorities (over 1/3 of respondents in each survey) do not call EMS. If, as especially the HRO survey suggests, people are finding it harder to revive people (i.e., more naloxone is needed than in the past), rescue breathing and calling EMS may be increasingly crucial in order to save lives.

Naloxone does not seem to create life-threatening side effects, even at higher doses. However, there is evidence that, as expected, some people experience symptoms of withdrawal after receiving naloxone. This is concerning because withdrawal symptoms can be sufficiently painful or uncomfortable to lead people to use again. Neither survey asked whether those administering naloxone stayed with the person who received it to ensure that this doesn't happen. That is an important piece of information to get in future research.

As already noted, most people used naloxone as per the directions. However, about ¼ of the Next respondents and ⅓ of the HRO respondents reported using 3 or more doses. Furthermore, about 14% of the HRO respondents indicated that they wait a minute or less between doses. Situations where extra doses are given close together raise concerns about increased side effects. The number of people giving 3 or more doses raises concerns that naloxone may be losing some of its effectiveness in counteracting overdoses. More research is needed to address these concerns. In the meantime, the data do underscore the importance of providing rescue breathing and calling 911. This may mean improving training, particularly when people receive naloxone at events or in street outreach where training may be limited. Improving knowledge about and the breadth of Ohio's Good Samaritan Law would likely increase people's willingness to call EMS.

Finally, almost all of the people receiving naloxone in the Next survey survived their overdose. While this may be partly due to sample selection bias, it also makes it clear that widespread distribution of and training about administering naloxone is an important tool in reducing Ohio's deaths from accidental drug overdoses.

# Appendix

## NextDistro Survey

<b>Type of naloxone used</b>		
Nasal Spray/Narcan	74	62.2%
Intramuscular	44	37.0%
Evzio	1	0.8%
<i>Responses</i>	<i>119</i>	
<b>Relationship to person who overdosed</b>		
Friend or acquaintance	63	52.9%
Stranger	18	15.1%
Family Member	15	12.6%
Self	6	5.0%
Patient/Client	3	2.5%
Spouse/Partner	10	8.4%
Prefer not to say	4	3.4%
<i>Responses</i>	<i>119</i>	

<b>How many doses used</b>		
1	20	16.8%
2	68	57.1%
3	16	13.4%
4	9	7.6%
5+	4	3.4%
Don't recall	2	1.7%
<i>Responses</i>	<i>119</i>	
<b>Gender</b>		
Male	76	63.9%
Female	40	33.6%
Transgender	2	1.7%
Not sure	1	0.8%
<i>Responses</i>	<i>119</i>	
<b>Race/Ethnicity</b>		
Caucasian/White	99	83.2%
African-American/ Black	10	8.4%
Hispanic/Latinx	2	1.7%
Not sure	8	6.7%
<i>Responses</i>	<i>119</i>	

<b>Has person experienced overdose in the past</b>		
Yes	90	75.6%
No	8	6.7%
Not sure	21	17.6%
<i>Responses</i>	<i>119</i>	
<b>How was drug used</b>		
Inject heroin	59	49.6%
Sniff heroin	11	9.2%
Other drugs/No heroin	20	16.8%
Not sure if heroin used	15	12.6%
Use heroin but unsure if that was drug involved	14	11.8%
<i>Responses</i>	<i>119</i>	

<b>Had person used anything else</b>		
Fentanyl along or in combination with another drug	61	34.5%
Fentanyl only	30	16.9%
Meth	20	11.3%
Meth and fentanyl	13	7.3%
Pain pills	11	6.2%
Cocaine	8	4.5%
Cocaine and fentanyl	3	1.7%
Cocaine and meth	2	1.1%
Benzos	7	4.0%
Benzos and fentanyl	6	3.4%
Benzos and meth	3	1.7%
Methadone	5	2.8%
Alcohol	4	2.3%
Something else	4	2.3%
<i>Responses</i>	<i>177</i>	
<i>Excluded: Left blank</i>	<i>26</i>	

<b>Location of overdose</b>		
Someone's home or apartment	93	78.2%
Public Place OUTSIDE (park, street, sidewalk)	12	10.1%
Business (store, restaurant, bar)	4	3.4%
Public Place INSIDE (excluding school or library)	1	0.8%
College or trade school	1	0.8%
Shelter of supportive housing	1	0.8%
Other	7	5.9%
<i>Responses</i>	<i>119</i>	
<b>Was person conscious before naloxone used</b>		
Yes	33	27.7%
No	82	68.9%
Unknown	4	3.4%
<i>Responses</i>	<i>119</i>	
<b>Was person breathing before naloxone used</b>		
Yes	57	47.9%
No	53	44.5%
Unknown	9	7.6%
<i>Responses</i>	<i>119</i>	

<b>Was rescue breathing performed</b>		
Yes	81	68.1%
No	33	27.7%
Unknown	5	4.2%
<i>Responses</i>	<i>119</i>	
<b>Was EMS called</b>		
Yes	64	53.8%
No	42	35.3%
Unknown	13	10.9%
<i>Responses</i>	<i>119</i>	
<b>More than one person give naloxone</b>		
Yes	24	22.2%
No	82	75.9%
Unknown	2	1.9%
<i>Responses</i>	<i>108</i>	
<b>Did the person survive</b>		
Yes	115	96.6%
No	2	1.7%
Don't know	2	1.7%
<i>Responses</i>	<i>119</i>	

# Harm Reduction Ohio Survey

May 12, 2022

Total  $N = 232$

1. How many times have you used naloxone to try to revive someone from an overdose? (232)\*
  - a. Never 19.4% (45)\*\*
  - b. Once 17.7% (41)
  - c. 2-4 times 28% (65)
  - d. 5-8 times 11.6% (27)
  - e. More than 8 times 23.3% (54)
  
2. How many times have you been revived from overdose yourself with naloxone? (232)
  - a. Never 66.7% (154)
  - b. Once 10% (23)
  - c. 2-4 times 15.6% (36)
  - d. 5-8 times 2.6% (6)
  - e. More than 8 times 5.2% (12)

*Some people have never given nor received naloxone for a suspected overdose. Using the answers from Questions 1 & 2, I filtered those people out. So the following questions (3- 11 only represent answers from people who have given and/or received naloxone).*

3. How do you usually administer or receive naloxone for an overdose? (195)
  - a. Narcan nasal spray kit 75.1% (148)
  - b. Nasal self-assembled atomizer 2.6% (5)
  - c. Kloxxado Nasal Spray 0
  - d. Other nasal spray 0.5% (1)
  - e. Intramuscular 18.5% (36)
  - f. Intravenous 2.0% (4)
  - g. In the bone (IO Drill) 0.5% (1)
  
4. When you use naloxone, do you also provide rescue breathing? (196)
  - a. Yes 67.3% (132)
  - b. No 32.6% (64)
  
5. How long do you usually wait between naloxone doses? (188)
  - a. 1 minute or less 13.8% (26)
  - b. 2 minutes 38.3% (72)

- c. 3 minutes 27.7% (52)
- d. 4 minutes or more 13.8% (26)
- e. N/A 6.4% (12)

6. In your personal experience of giving or receiving naloxone for an overdose, how many doses of naloxone does it take to revive someone? (187)

- a. One 15.7% (31)
- b. Two 47.7% (94)
- c. Three 24.9% (49)
- d. Four 6.1% (12)
- e. Five or more 5.1% (10)
- f. N/A 0.5% (1)

7. During the last year or so, have you noticed that it takes more naloxone to revive someone than it used to? (187)

- a. No, it takes less 0
- b. No, it's about like it's always been 14.7% (29)
- c. Yes, a little more 31% (61)
- d. Yes, a lot more 26.4% (52)
- e. Yes, a lot more and I have more incidents when someone could not be revived on the scene of the overdose 9.1% (18)
- f. N/A 16.2% (32)

8. If you know, what is the primary drug used by people who need multiple doses of naloxone for revival? (Note: Any of these drugs might be mixed with fentanyl or carfentanil or another form of fentanyl) (192)

- a. Fentanyl without other drugs 48.1% (91)
- b. Opiates including heroin, OxyContin, other pills 44.4% (84)
- c. Meth 2.6% (5)
- d. Cocaine powder 1.0% (2)
- e. Crack 0
- f. Other pills (benzos, xanax, MDMA, adderall, etc.) 2.6% (5)
- g. Other drugs 1% (2)

9. Have you called for emergency assistance or taken someone to the hospital because of side effects from naloxone or because someone could not be revived? (Choose as many as apply) (195)

- a. No because I always call 911 or take the person to the hospital 31.3% (61)
- b. No 44.2% (76)
- c. Yes, once or twice 22.6% (44)
- d. Yes, three or more times 7.2% (14)

10. Have you seen any side effects from naloxone? (197)

- a. No 61.9% (122)
- b. Yes 38.1% (75)

What side effects have you seen or experienced? (78 answered; could check more than one)

- i. Vomiting, diarrhea, stomach pain, nausea 46.2% (36)
- ii. Agitation, restlessness, nervousness, irritability 78.2% (61)
- iii. Dizziness or weakness 35.9% (28)
- iv. Fever, chills 26.9% (21)
- v. Racing heart 29.5% (23)
- vi. Sneezing or runny nose 20.5% (16)
- vii. Breathing difficulties or irregularities 14.1% (11)
- viii. Lung issues 0
- ix. Headache 5.1% (4)
- x. Precipitated Withdrawal 2.6% (2)
- xi. Seizures 1.3% (1)
- xii. Extreme anger 1.3% (1)

*The numbers for Question 10 show how many people checked a particular side effect. However, most people checked multiple side effects. For example, 14 people checked **only** agitation, restlessness, nervousness, irritability while 4 checked **only** vomiting, diarrhea, stomach pain, nausea.*

11. Have you seen more side effects from naloxone when you administered or received more than 2 doses? (76)

- a. No, fewer 2.6% (2)
- b. No, about the same 51% (39)
- c. Yes, a few more minor side effects 15.8% (12)
- d. Yes, more serious side effects 7.9% (6)
- e. N/A 18.4% (14)

\*Number in parentheses after question is the number of people answering the question

\*\* Number in parentheses after the answer is the number of people choosing that selection