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Increasing Heroin Overdoses in Ohio: Understanding the Issue



Ohio

Governor's Cabinet
Opiate Action Team



Increasing Heroin Overdose in Ohio: Understanding the Issue

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Unintentional drug overdose deaths have increased exponentially in the last decade, both nationally and statewide. In Ohio, there has been a 366% increase in drug overdose deaths from 2000 to 2012. Unintentional drug overdoses caused 1,914 deaths in 2012. Over this period of time, prescription drugs have been involved in most of the unintentional drug overdoses and have largely driven the rise in deaths. Data from 2012 reveal a significant shift in this trend, with an apparent leveling off of prescription opioid-related overdose deaths contrasted with a large increase in heroin-related deaths.

Figure 1. Number of Deaths and Death Rate Per 100,000 from Unintentional Drug Overdose by Year, Ohio Residents, 2000-2012 (Source: ODH Vital Statistics)

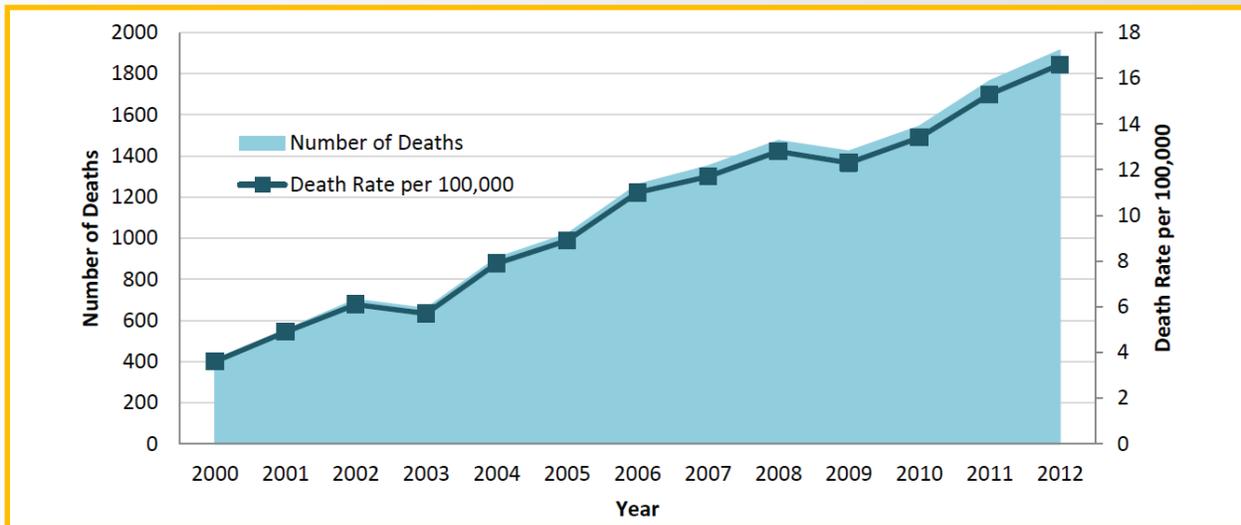
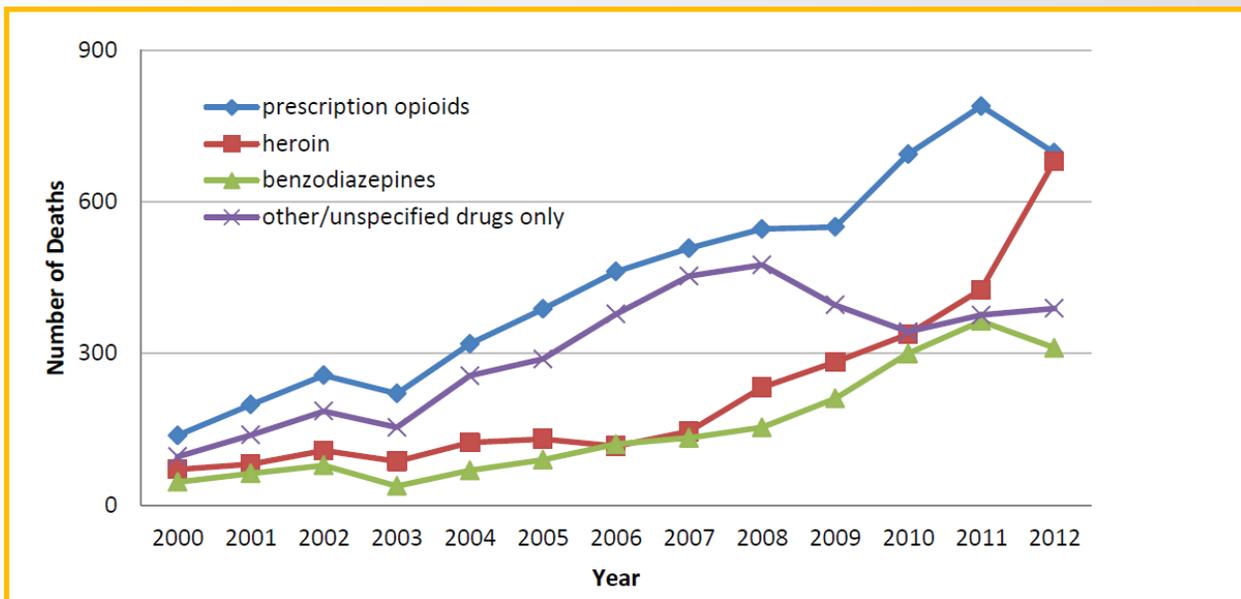


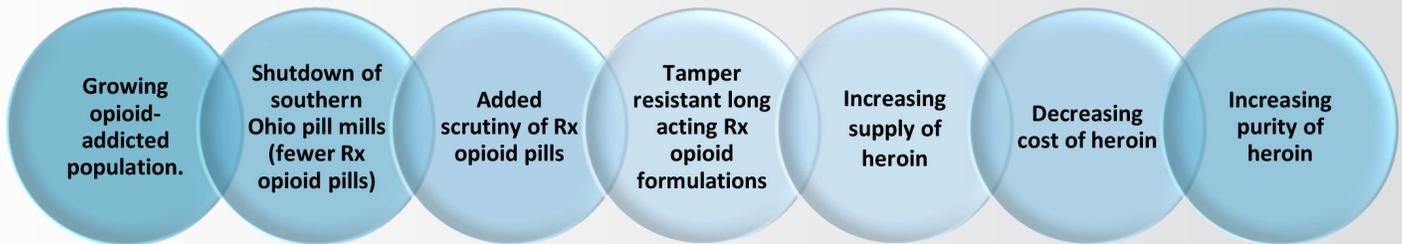
Figure 2. Number of Unintentional Drug Overdoses Involving Selected Drugs by Year, Ohio, 2000-2012 (Source: ODH Vital Statistics)



Contributing Factors to Increasing Heroin Overdose Rates

This shift is due to a number of factors, primarily the increasing availability of heroin throughout Ohio, coupled with the shutdown of southern Ohio pill mills and dissemination of prescribing guidelines on appropriate use of prescription opioids. With increasing availability, heroin has become a cheaper alternative for prescription opioid users. Although prescription opioids do remain highly available throughout Ohio, increasing heroin availability and purity, as well as changes in the formulation of some prescription opioids to make them tamper-resistant have caused users to switch to heroin. Figure 3 highlights additional contributing factors.

Figure 3. Key Contributing Factors to the Heroin Shift in Ohio



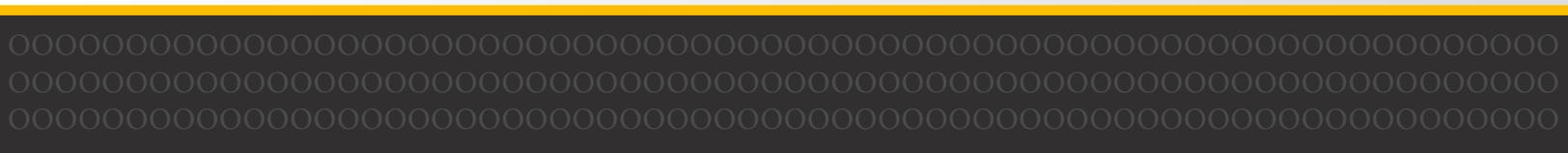
The shift towards increased heroin use has resulted in a higher death rate among younger Ohioans. Ohioans aged 45-54 are at the highest risk for prescription opioid overdose; whereas young males aged 25-34 are at the highest risk for fatal heroin overdose. White Ohioans continue to be at the greatest risk for fatal drug overdose regardless of substance; however, black males are at greater risk for heroin overdose than white females while the reverse is true for prescription opioids. From 2011 to 2012, the reduction in prescription opioid related drug overdose deaths was more pronounced among males than females, leaving females with an ever-increasing proportion of the total prescription opioid deaths (43% in 2012 vs. 36% in 2007). Heroin overdoses have also impacted urban communities and northeastern Ohio with more intensity than prescription opioid overdoses. Table 1. Highlights additional high risk groups by substance.

Table 1. High Risk Groups for Fatal Overdose by Substance

Prescription Opioids	Heroin
• White males & females	• White & black males
• Males aged 25-34 & 45-54	• Males aged 25-34
• Females aged 45-54	• Females aged 25-34
• Rural and suburban	• Urban and suburban
• Southern Ohio	• NE and Southern Ohio

Changing Characteristics of Treatment Admissions

The admissions rate for opioid (i.e., heroin and prescription opioid) abuse and dependence has increased dramatically from SFYs 2001 to 2012. While there has been virtually no change in the demographics of client admissions, the drug of choice for those clients has changed significantly. The number of clients with a primary diagnosis of opioid abuse and dependence rose from 5,790 in SFY 2001 to 24,833 in SFY 2012. The largest percentage of clients diagnosed with opioid abuse and dependence in any county for SFY 2001 was 14.3 percent, but the latest figures show this number climbed sharply to 69.7 percent by SFY 2012.



Increasingly, clients in publicly funded AOD treatment are entering with a heroin or other opioid as their drug of choice. Data from the treatment admissions system show that almost every demographic increasingly reported heroin as a primary drug of choice over time. The percentage of people reporting heroin as a primary drug of choice was higher for women than men. The average percentage of Whites reporting heroin as a primary drug of choice was two-and-a-half times than of African Americans. Most age groups show increases in the percentage reporting heroin of as a primary drug of choice, with 18 to 24 years and 25 to 34 year olds reporting the largest increases.

Prescription Opioids and Prescribing Patterns

Data from the State Board of Pharmacy’s prescription monitoring program (Ohio Automated Rx Reporting System; OARRS) reveal interesting trends when examining prescribing practices, which are especially important given the transition some addicts make from prescription opioids to heroin. The per capita opioid dosage rate rose from 2010 to 2012, slightly increasing from 66.3 pills to 66.9 pills for every man women and child in Ohio. However, preliminary data for 2013 suggest that the physicians have begun changing their practices; the number of pills prescribed per capita dropped to 65.3. While this decrease in pills per capita is headed in the right direction, it only amounts to one less pill per capita from 2010 numbers. The OARRS program also shows some notable regional trends. All Ohio counties experienced a decrease in average morphine equivalence per patient between 2010 and 2012 when weighting doses of prescription opioids by a standard unit to make prescriptions comparable. Nevertheless, the rates are still very high in some areas; southern Ohio appears to have the highest average morphine equivalence per patient, followed by eastern and central Ohio. In Southern Ohio, Trumbull and Meigs counties stand out as the top two counties experiencing the highest average morphine equivalence per patient (271 mg and 270 mg respectively) in 2012.

Heroin Use and Overdose

According to the EMS Reporting Incident System, the number of emergency medical services (EMS) runs for suspected opioid-related overdose has also increased. Approximately 74,000 naloxone administrations occurred from 2003 to 2012. The number of naloxone administrations per year grew every year from 4,010 in 2003 to 10,589 in 2012 (164%).

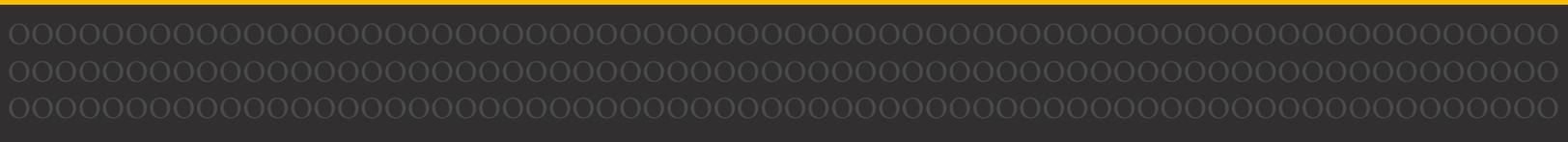
This means that, on average, there were 11 administrations per day (or 334 per month) in 2003 and 29 administrations per day (or 882 per month) in 2012.¹ Many of these overdoses are attributed to users who find themselves in one of the high risk categories (Table 2). Persons who have abstained from using (typically due to incarceration or treatment), but return to opioid abuse may find their tolerance levels had diminished. Additionally, those using multiple drugs, especially multiple central nervous system depressants or multiple opioids, are at a heightened risk for overdose.

Table 2. Highest Risk Categories for Fatal Opioid Overdose

- Users with decreased tolerance from periods of abstinence (such as those leaving jail/treatment)
- Users who use multiple drugs, especially multiple central nervous system depressants
- Users with health problems, especially those impacting the respiratory system
- New users of long-acting opioids, especially methadone
- High-dose users of prescription opioids (>80 MED/day)
- Heroin users, as the purity of heroin in Ohio increases

Source: Project Lazarus, North Carolina, OhioMHAS and ODH

¹Massatti, R. (2013, November). *Naloxone (Narcan®) Administration in Ohio, 2003-2012*. Columbus, OH: Ohio Department of Mental Health and Addiction Services.



As reported by Ohio Substance Abuse Monitoring Network (OSAM),² active and recovering drug users say the most common way to use heroin is through intravenous injection. Across all regions, 70–90 percent of heroin users reportedly inject the drug. Even if a user has only snorted prescription opioids, OSAM participants explained that users quickly progress to intravenous injection of heroin. As intravenous injection increases, so too do the risks for transmission of blood-borne diseases like Hepatitis C (HCV). Evidence of the increasing prevalence of HCV comes from the Ohio Department of Health. A majority of Ohio's counties (76.1%) experienced an increase in Hepatitis C rates between 2003 and 2012, and 36 of those counties have seen rates increase over 100%.

Current Efforts and Recommendations for Prevention of Opioid-related Death

Mortality related to heroin and other opioids can be prevented with naloxone.³ Ohio has taken many proactive steps to turn the tide through regulation and targeted funding, but more still needs to be done. Through prevention of opioid abuse, access to naloxone, regulatory changes, and education of stakeholders, we can reverse the trend and save lives.

Prevention of Opioid Abuse

Prevention efforts are essential to reverse the trend in opioid-related deaths. Some opioid addicts are first exposed to the drugs with prescriptions for legitimate pain issues, but become addicted to the powerful narcotics. To help prevent this problem, the Governor's Cabinet Opiate Action Team, established the Professional Education Workgroup (PEW). This Workgroup, composed of many state health care organizations and interested professional stakeholders, has developed two sets of prescribing guidelines:

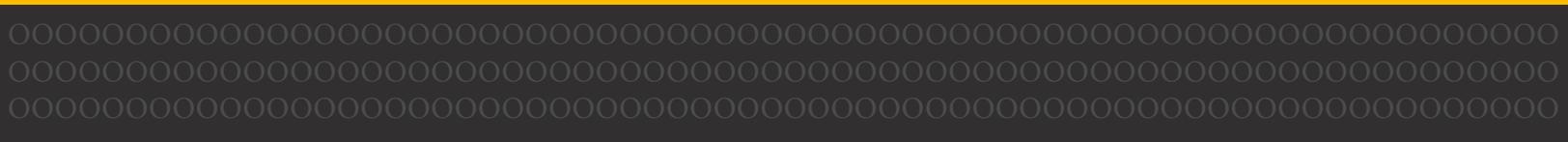
Prescribing Guidelines

1. The Ohio Emergency and Acute Care Facility Opioid and Other Controlled Substances Prescribing Guidelines (Emergency Guidelines) - The Emergency

Guidelines were developed in April 2012 to help emergency and other acute care facilities reduce inappropriate prescribing of opioid pain medication while preserving their vital role of treating patients with emergent medical conditions. They are intended to provide appropriate clinical guidance for the prescribing of opioids and other controlled substances in the unique acute care environment where the treatment of pain is frequently indicated without the benefit of an established patient-doctor relationship.

²Ohio Substance Abuse Monitoring Network. (2011). *Increases in Injection Drug Use Putting Users at Risk for Blood-borne Diseases: January-June 2011*. Columbus, OH: Ohio Department of Alcohol and Drug Addiction Services.

³Naloxone (also known as Narcan®) is a medication that can reverse an overdose that is caused by an opioid drug. When administered during an overdose, Naloxone blocks the effects of opioids on the brain and restores breathing within two to eight minutes. Naloxone has been used safely by emergency medical professionals for more than 40 years and has only one function: to reverse the effects of opioids on the brain and respiratory system in order to prevent death. Naloxone has no potential for abuse. If Naloxone is given to a person who is not experiencing an opioid overdose, it is harmless. If naloxone is administered to a person who is dependent on opioids, it will produce withdrawal symptoms. Withdrawal, although uncomfortable, is not life-threatening.



2. **Ohio's Opioid Prescribing Guidelines** - The PEW reached consensus on recommended clinical guidelines when prescribing opioids to treat chronic, non-terminal pain. These guidelines use 80 mg morphine equivalency dosing (MED) as a “trigger threshold,” as the odds of an overdose are significantly higher above that dose. The clinical guidelines recommend that at the 80 MED range or above the clinician “press pause” and re-evaluate how to optimize therapy and ensure patient safety. This pause also is a good time to consider potential adverse effects of long-term opioid therapy. Prescribing groups have announced full support of the guidelines, and several have developed policy statements around them. GCOAT is continuing to monitor prescribing trends following guideline implementation.

Ohio Automated Rx Reporting System (OARRS)

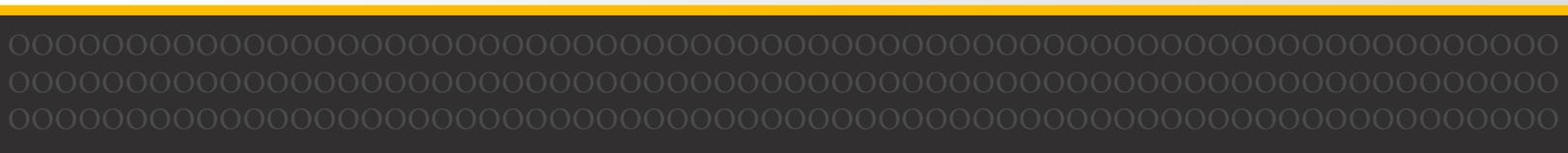
Both sets of prescribing guidelines stress the importance of using Ohio's prescription monitoring program (PMP). OARRS tracks all prescriptions for controlled substances that a patient receives regardless of pharmacy or prescriber. These medications are reported to OARRS after they are dispensed by the pharmacy. Across the nation, PMPs are recognized as a critical tool in the fight against opioid abuse and overdose. Physicians and others with prescribing authority can prevent opioid abuse and mortality by checking OARRS before prescribing controlled substances.

This system was established to improve patient care and can offer valuable insight into a patient's use of controlled substances, while also alerting providers to possible signs of abuse, addiction or diversion. The State Medical Board of Ohio developed [guidelines](#) for use of OARRS, which explains that it is mandatory for prescribers to check OARRS (1) If a patient is exhibiting signs of drug abuse or diversion; (2) When [they] have a reason to believe the treatment of a patient with controlled substances or tramadol will continue for twelve weeks or more; and (3) At least once a year thereafter for patients receiving treatment with controlled substances or tramadol for 12 weeks or more.

OARRS reports were enhanced in conjunction with the development of Ohio's Opioid Prescribing Guidelines to facilitate the identification of individuals who are using high doses of opioids, especially those with prescriptions from multiple prescribers. Additional enhancements to facilitate effective use of OARRS reports are described on the [Guidelines site](#).

Drug Disposal

Drug disposal can help to decrease the supply of narcotics, which also decreases the likelihood of drug abuse and diversion. Communities can host drug disposal days to ensure that unwanted medications are collected and destroyed using methods that are both legal and environmentally-friendly. To assist local communities with the proper disposal of prescription drugs, the Ohio Department of Health has developed helpful [guidelines](#) for drug disposal days. These guidelines provide suggestions on partner organizations, event preparation, drug collection, legal strategies, and data analysis and reporting after the event.



In addition, in order to foster a more permanent and sustainable method of drug disposal, ODH worked with the Ohio Attorney General and Drug Free Action Alliance to purchase [prescription drug drop boxes](#) from the National Association of Drug Diversion Investigators. This initiative provided 65 drug drop boxes to local law enforcement agencies across 23 Ohio counties. ODH, the Ohio EPA and the Attorney General's Office also assisted local law enforcement in identifying existing facilities capable of safely destroying drugs to serve as regional disposal sites. Through the provision of permanent drop boxes and identifying existing destruction sites, ODH hopes to create a sustainable network for collecting and disposing of prescription medication that can be replicated throughout Ohio.

Increasing Access to Naloxone

The primary way to decrease the number of opioid-related deaths is to ensure greater access to the lifesaving drug, naloxone.

Support of Naloxone Interventions

The elevation of naloxone to a harm reduction intervention requires the support of statewide and community leaders. From EMS medical directors to local police departments, stakeholder buy-in is essential to change the course of opioid-related deaths. [House Bill 170](#) is one encouraging legislative action recently promulgated by the governor in March 2014. This bill allows physicians and other health care professionals to furnish or prescribe naloxone to friends, family and other persons who may provide assistance to those at-risk of experiencing an opioid-related overdose. Peace officers are also given authority to administer naloxone when they suspect someone is experiencing an opioid-related overdose. Additionally, each of these groups is exempted from criminal or civil liability or professional disciplinary action when they act in good faith in accordance with the provisions of HB 170.

Project DAWN

To prevent further increase in opioid-related mortality, the Ohio Department of Health began several pilot naloxone distribution projects, based on similar projects in other states, to reverse the trend in unintentional drug overdose. [Project DAWN](#) (Deaths Avoided with Naloxone) provides high-risk opioid users with naloxone and trains these individuals and family members or friends on how to respond to an opioid overdose. Some of the topics covered at trainings include recognizing the signs and symptoms of overdose, the importance of calling 911 and proper administration of naloxone. Intranasal naloxone is then provided to participants as part of their take-home kit, which also includes a bag with nasal atomizer, instructional DVD and quick-reference guide on how to respond in an overdose and administer the naloxone. This take-home naloxone is to be used to reverse an opioid overdose before EMS squads arrive. The Ohio Departments of Health and Mental Health and Addiction Services should increase awareness of these projects so more individuals can access this life saving drug. To this end, they could conduct outreach to family support networks to encourage obtaining naloxone for opioid addicts.



ODH is currently expanding Project DAWN to three new sites* with seed money in 2013-2014. A list of projects to be operational in 2014 includes:

- Cuyahoga County: Metro Health – Operational
- Hamilton County: Center for Chemical Addictions Treatment (CCAT) – Operational (Naloxone is eligible for those leaving treatment.)
- Hamilton County: University of Cincinnati*
- Franklin County: Nationwide Children’s Hospital, pediatric site – Operational
- Lorain County Alcohol & Drug Abuse Services (Naloxone is eligible for those awaiting substance abuse treatment.)
- Montgomery County: Samaritan Behavioral Health, Inc. – Beginning operations in January 2014
- Ross County Health District*
- Scioto County: Portsmouth City Health Department – Operational
- Stark County: Mental Health and Recovery Services Board of Stark County*
- Summit County: Northcoast Behavioral Healthcare System – Operational

Access to naloxone should be available to groups at greatest risk for opioid-related mortality (See guidelines in Appendix A, based on the work of North Carolina’s Project Lazarus). Persons leaving or in outpatient substance abuse treatment for opioid abuse or dependence should have naloxone prescribed because they are at high risk for relapse. Released prisoners who abused opioids should have naloxone prescribed because they have reduced tolerance to the drugs, which frequently leads to death when they relapse at pre-prison doses.⁴ Individuals with specific medical conditions, especially those involving respiratory or renal dysfunction, should be co-prescribed naloxone when they are using prescription opioids because they are at greater risk for unintentional overdose.

Expanded access to naloxone means that more people have access to the lifesaving medication, but increased access may also lead to a naloxone shortage. Other states that have passed similar laws have experienced a shortage of naloxone at pharmacies. To meet the anticipated demand, pharmacies across Ohio should make sure to keep naloxone in stock when requested. The State Board of Pharmacy could play a critical role in this area to raise awareness among pharmacies and advocate they have naloxone ready for distribution.

Regulatory Changes

Regulatory action is one strategy to reduce opioid-related mortality. Regulatory statements on the prescribing of naloxone to high-risk individuals should also be promoted on behalf of state departments and other governmental bodies. The [State Medical Board](#), Nursing Board and Board of Pharmacy developed a [joint regulatory statement](#) in April 2013 that encourages authorized prescribers (e.g., physicians, physician assistants and advanced practice nurses) to prescribe naloxone for the prevention of overdose. Other state agencies and organizations including payer organizations like the Ohio Department



⁴Dasgupta, N., Brason, F.W., Albert, S., & Sanford, K. (2008). Project Lazarus: Overdose prevention and responsible pain management. *NCMB Forum*, 13(1), 8-12.

of Medicaid and the Bureau of Worker's Compensation, could follow suit and develop similar statements. Then, these statements could be actively promoted to their members to increase awareness of the epidemic of opioid overdose death and preventive actions they can take.

Education of Stakeholders

In October 2013, the Emergency Medical, Fire, and Transpiration Services Board updated their [scope of practice](#) for who can legally administer naloxone. For the first time, this guideline allows Emergency Medical Responders (EMRs) and Emergency Medical Technicians (EMTs), upon completion of training and the approval of the medical director, to administer the drug to persons suspected of suffering an opioid overdose. This is an important advance; previously only Advanced EMTs and Paramedics were able to administer naloxone in the event of an opioid overdose. Many rural areas of Ohio, including parts of southern Ohio with long hospital transport times and high overdose rates, only have access to EMRs and basic-level EMTs. Now that the scope of practice has been updated, EMRs and EMTs need to be educated about the rule change and trained on the proper techniques to administer the medication. Local Emergency Medical Services (EMS) units can use the [training materials](#) recently developed by the Ohio Division of EMS to ensure all EMS professionals can appropriately treat an opioid overdose. The training session gives an introduction to the history and biochemistry of naloxone along with administration techniques and safety considerations.

Now that HB 170 has been signed by the governor, there will be a need for an education campaign for those groups impacted by the law. Physicians and other prescribing health care professionals will need to be made aware they can prescribe naloxone to friends, family and other persons who may provide assistance to those at-risk for experiencing an opioid-related overdose. Educational materials will need to be developed for these professionals, so they can distribute them to anyone receiving a prescription for the drug. HB 170 also allows peace officers to dispense naloxone, if obtained from their agency in accordance with the provisions of HB 170. These officers will need to be educated about naloxone. Training programs could be modeled after the Ohio Division of EMS materials and emphasize topics like recognizing signs of an overdose and the proper administration of the medication.

Resources

Additional resources and related data are available at:

- [ODH Drug Overdose](#)
- [ODH Project DAWN](#)
- [Ohio MHAS Opiate Maps](#)

Appendix A. Potential indications for prescription naloxone and risk factor for poisoning⁴

Potential Indication/Patient Population	Documentable Risk Factor for Poisoning	Recommendation to Increase Naloxone Access
1 Emergency medical care for opioid poisoning	Increased risk for subsequent unintentional poisoning and self-harm	Emergency Departments - EDs refer non-fatal overdose survivors to PD site or provide naloxone Rx
2 Suspected illicit or nonmedical opioid user	Risk for multiple drug use; continued (multiple) drug use	Prescribers - co-prescribe naloxone or refer to Project DAWN site Law Enforcement – refer to PD site
3 High-dose opioid prescription (>80 mg morphine equivalence/day)	Patient incorrectly administers opioid resulting in higher risk of toxic levels	Prescribers - co-prescribe naloxone or refer to Project DAWN site Provide links to Project DAWN and SMB policy on state prescribing guidelines site
4 Any methadone Rx to opioid naïve patient	Low threshold for overdose; inexperience with long-acting opioids	Prescribers - co-prescribe naloxone or refer to Project DAWN site
5 Any opioid use and smoking, COPD, emphysema or other respiratory illness or obstruction	Increased risk of respiratory depression due to comorbidities	Prescribers- co-prescribe naloxone or refer to Project DAWN site
6 Any opioid use and renal dysfunction or hepatic disease	Prolonged or increased serum concentrations of opioid due to decreased metabolism or excretion	Prescribers - co-prescribe naloxone or refer to Project DAWN site
7 Any opioid use and HIV/AIDS	HIV seropositivity is associated with an increased risk of overdose mortality	Prescribers - co-prescribes naloxone or refer to Project DAWN site HIV Service Providers - Coordinate information on naloxone
8 Any opioid use and known or suspected concurrent alcohol use	Additive effect of multiple central nervous system depressants	Treatment Providers and Prescribers- co-prescribe naloxone or refer to Project DAWN site
9 Any opioid use and concurrent benzodiazepine or sedating medication use	Additive effect of multiple central nervous system depressants	Treatment Providers and Prescribers - co-prescribe naloxone or refer to Project DAWN site

⁴ Information adapted from Dasgupta, N., Brason, F. W., Albert, S., & Sanford, K. (2008). Project Lazarus: Overdose prevention and responsible pain management. *NCMB Forum*, 13(1), 8-12.

Appendix A. Continued

10	Any opioid use and concurrent SSRI or TCA anti-depressant use	Increased toxicological risk for opioid poisoning; higher risk for substance use and self-harm	Prescribers - co-prescribe naloxone or refer to Project DAWN site
11	Released prisoners	Relapse to/initiation of nonmedical opioid use; reduced opioid tolerance; risk for multiple substance use	Referral to Project DAWN site or appropriate prescriber.
12	Release from opioid detoxification or mandatory abstinence program	Relapse to nonmedical opioid use; reduced opioid tolerance; risk for multiple substance use	Treatment - Provide naloxone Rx upon release or refer to Project DAWN site
13	Voluntary request	Perceived risk for opioid exposure	Prescribers- co-prescribe naloxone or refers to Project DAWN site
14	Patients entering MAT programs	Increased risk for poisoning in first month; risk for multiple substance use	MAT sites - Co-prescribe naloxone or refer to Project DAWN site

