

# Using Naloxone to Reverse Opioid Overdose in the Workplace: Information for Employers and Workers

## Introduction

Opioid misuse and overdose deaths from opioids are serious health issues in the United States. Overdose deaths involving prescription and illicit opioids doubled from 2010 to 2016, with more than 42,000 deaths in 2016 [CDC 2016a]. Provisional data show that there were more than 49,000 opioid overdose deaths in 2017 [CDC 2018a]. In October 2017, the President declared the opioid overdose epidemic to be a public health emergency.

Naloxone is a very effective drug for reversing opioid overdoses. Police officers, emergency medical services providers, and non-emergency professional responders carry the drug for that purpose. The Surgeon General of the United States is also urging others who may encounter people at risk for opioid overdose to have naloxone available and to learn how to use it to save lives [USSG 2018].

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(NIOSH), part of the Centers for Disease Control and Prevention (CDC), developed this information to help employers and workers understand the risk of opioid overdose and help them decide if they should establish a workplace naloxone availability and use program.

## Background

### What are opioids?

Opioids include three categories of pain-relieving drugs: (1) natural opioids (also called opiates) which are derived from the opium poppy, such as morphine and codeine; (2) semi-synthetic opioids, such as the prescription drugs hydrocodone and oxycodone and the illicit drug heroin; (3) synthetic opioids, such as methadone, tramadol, and fentanyl. Fentanyl is 50 to 100 times more potent than morphine. Fentanyl analogues, such as carfentanil, can be 10,000 times more potent than morphine. Overdose deaths from fentanyl have greatly increased since 2013 with the introduction of illicitly-manufactured fentanyl entering the drug supply [CDC 2016b; CDC 2018b]. The National Institute on Drug Abuse [NIDA 2018] has more information about types of opioids.

### What is naloxone?

Naloxone hydrochloride (also known as naloxone, NARCAN® or EVZIO®) is a drug that can temporarily stop

many of the life-threatening effects of overdoses from opioids. Naloxone can help restore breathing and reverse the sedation and unconsciousness that are common during an opioid overdose.

#### *Side effects*

Serious side effects from naloxone use are very rare. Using naloxone during an overdose far outweighs any risk of side effects. If the cause of the unconsciousness is uncertain, giving naloxone is not likely to cause further harm to the person. Only in rare cases would naloxone cause acute opioid withdrawal symptoms such as body aches, increased heart rate, irritability, agitation, vomiting, diarrhea, or convulsions. Allergic reaction to naloxone is very uncommon.

#### *Limitations*

Naloxone will not reverse overdoses from other drugs, such as alcohol, benzodiazepines, cocaine, or



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amphetamines. More than one dose of naloxone may be needed to reverse some overdoses. Naloxone alone may be inadequate if someone has taken large quantities

of opioids, very potent opioids, or long acting opioids. For this reason, call 911 immediately for every overdose situation.

## Opioids and Work

Opioid overdoses are occurring in workplaces. The Bureau of Labor Statistics (BLS) reported that overdose deaths at work from non-medical use of drugs or alcohol increased by at least 38% annually between 2013 and 2016. The 217 workplace overdose deaths reported in 2016 accounted for 4.2% of occupational injury deaths that year, compared with 1.8% in 2013 [BLS 2017]. This large increase in overdose deaths in the workplace (from all drugs) parallels a surge in overall overdose deaths from opioids reported by CDC [2017]. Workplaces that serve the public (i.e. libraries, restaurants, parks) may also have visitors who overdose while onsite.

### *Workplace risk factors for opioid use*

Opioids are often initially prescribed to manage pain arising from a work injury. Risky workplace conditions that lead to injury, such as slip, trip, and fall hazards or

heavy workloads, can be associated with prescription opioid use [Kowalski-McGraw et al. 2017]. Other factors, such as job insecurity, job loss, and high-demand/low-control jobs may also be associated with prescription opioid use [Kowalski-McGraw et al. 2017]. Some people who use prescription opioids may misuse them and/or develop dependence. Prescription opioid misuse may also lead to heroin use (Cicero et al. 2017). Recent studies show higher opioid overdose death rates among workers in industries and occupations with high rates of work-related injuries and illnesses. Rates also were higher in occupations with lower availability of paid sick leave and lower job security, suggesting that the need to return to work soon after an injury may contribute to high rates of opioid-related overdose death [MDPH 2018, CDC 2018c]. Lack of paid sick leave and lower job security may also make workers reluctant to take time off to seek treatment.

## Considering a Workplace Naloxone Use Program

Anyone at a workplace, including workers, clients, customers, and visitors, is at risk of overdose if they use opioids. Call 911 immediately for any suspected overdose. Overdose without immediate intervention can quickly lead to death. Consider implementing a program to make naloxone available in the workplace in the event of an overdose. The following considerations can help you decide whether such a program is needed or feasible:

- Does the [state](#) where your workplace is located allow the administration of naloxone by non-licensed providers in the event of an overdose emergency?
- What liability and legal considerations should be addressed? Does your state's Good Samaritan law cover emergency naloxone administration?
- Do you have staff willing to be trained and willing to provide naloxone?
- Has your workplace experienced an opioid overdose or has there been evidence of opioid drug use onsite (such as finding drugs, needles or other paraphernalia)?
- How quickly can professional emergency response personnel access your workplace to



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- provide assistance?
- Does your workplace offer other first aid or emergency response interventions (first aid kits, AEDs, trained first aid providers)? Can naloxone be added?
- Are the risks for opioid overdose greater in your geographic location? The National Center for Health Statistics provides data on drug overdose deaths in an online state dashboard. [CDC 2018a.]

- Are the risks for opioid overdose greater in your industry or among occupations at your workplace? [See MDPH 2018 and CDC 2018c.]
- Does your workplace have frequent visitors, clients, patients, or other members of the public that may be at increased risk of opioid overdose?

Review the above questions periodically even if a program is not established right away. Ideally, a naloxone program is but a part of a more comprehensive workplace program on opioid awareness and misuse prevention.

## Establishing a Program

You will need policies and procedures for the program. These should be developed in consultation with safety and health professionals. Involve the workplace safety committee (if present) and include worker representatives. You also will need a plan to purchase, store, and administer naloxone in case of overdose. Additional considerations for establishing a program are described below.

### Risk assessment

Conduct a risk assessment before implementing the naloxone program.

- Decide whether workers, visiting clients, customers, or patients are at risk of overdose.
- Assess availability of staff willing to take training and provide naloxone.
- Consult with professional emergency responders and professionals who treat opioid use disorders in your area.

### Liability

Consider liability and other legal issues related to such a program.

### Records management

Include formal procedures for documenting incidents and managing those records, to include safeguarding the privacy of affected individuals. Maintain records related to staff roles and training.

### Staff roles

Define clear roles and responsibilities for all persons designated to respond to a suspected overdose. Include these roles and responsibilities in existing first aid or emergency response policies and procedures (first aid kits, AEDs, training for lay first-aid providers, and/or onsite health professionals).

## Training

Train staff to lower their risks when providing naloxone. Staff must be able to:

- Recognize the symptoms of possible opioid overdose.
- Call 911 to seek immediate professional emergency medical assistance.
- Know the dangers of exposure to drug powders or residue.
- Assess the incident scene for safety concerns before entering.
- Know when NOT to enter a scene where drug powders or residues are visible and exposure to staff could occur.
- Know to wait for professional emergency responders when drug powders, residues, or other unsafe conditions are seen.
- Use personal protective equipment (PPE; nitrile gloves) during all responses to protect against chemical or biological exposures including opioid residues, blood, or other body fluids.
- Administer naloxone and recognize when additional doses are needed.
- Address any symptoms that may arise during the response, including agitation or combativeness from the person recovering from an overdose.
- Use additional first aid, CPR/basic life support measures. Opioid overdose can cause respiratory and cardiac arrest.

Prepare for possible exposure to blood. Needles or other sharps are often present at the scene of an overdose. Provide bloodborne pathogen training to responding staff members and consider additional protection, such as hepatitis B vaccination.

## Purchasing naloxone

Naloxone is widely available in pharmacies. Most states allow purchase without a prescription. Choose nasal sprays or injectable forms that can be delivered with an auto-injector, a pre-filled syringe, or a standard syringe/needle. Customize training to fit the formulation stocked at your workplace.

Consider the nasal spray formulation for its safety to lay providers and its ease of administration. Research shows that people trained on intranasal spray reported higher confidence both before and after training compared with people trained on injectable forms [Ashrafioun et al. 2016].

Stock a minimum of two doses of naloxone. Some workplaces may choose to stock more. In some cases, one dose of naloxone is inadequate to reverse an overdose. The size, layout, and accessibility of the workplace may require placement of doses in multiple locations. Consider the time needed to replace supplies when determining the number of doses to stock.

## Naloxone storage

Follow manufacturer instructions for storing naloxone. Keep in the box or storage container until ready for use. Protect from light and store at room temperature (59-77°F or 15-25°C). Naloxone can expire and its potency can wane over time. Note the expiration date for timely replacement.

## PPE and other equipment storage

Store personal protective equipment, such as disposable nitrile gloves, and other first aid equipment, such as a responder rescue mask, face shield, or bag valve mask (for use in rescue breathing or CPR) close to the naloxone for quick response. Include sharps disposal containers if injectable naloxone is used.

## Follow-up care planning

Develop a plan for immediate care by professional healthcare providers, referral for follow-up care, and ongoing support for any worker who has overdosed. Include emergency assistance and support (i.e. Employee Assistance Program, mental health services) for lay staff responders and bystanders if necessary.



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## Maintaining a program

Re-evaluate your program periodically. Assess for new risks. Plan for maintaining equipment and restocking of naloxone (including replacement of expired naloxone), other first aid supplies, and PPE.

### *Check for updates to procedures and guidance*

Incorporate new medical and emergency response guidance regarding naloxone purchase, storage, and administration.

### *Training review and update*

Schedule refresher training annually. Training on opioid overdose and naloxone use can be combined with other first aid/CPR training and certifications.

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# Resources

## *Burden of opioid use*

[edworkforce.house.gov/news/documentsingle.aspx?DocumentID=402497](http://edworkforce.house.gov/news/documentsingle.aspx?DocumentID=402497)

## *Commonly abused drugs*

[drugabuse.gov/drugs-abuse/commonly-abused-drugs-charts](http://drugabuse.gov/drugs-abuse/commonly-abused-drugs-charts)

## *Confidentiality*

[hhs.gov/hipaa](http://hhs.gov/hipaa)

## *Emergency response resources*

[cdc.gov/niosh/topics/emres/responders](http://cdc.gov/niosh/topics/emres/responders)

[hhs.gov/about/news/2018/04/05/surgeon-general-releases-advisory-on-naloxone-an-opioid-overdose-reversing-drug](http://hhs.gov/about/news/2018/04/05/surgeon-general-releases-advisory-on-naloxone-an-opioid-overdose-reversing-drug)

[cdc.gov/niosh/docs/wp-solutions/2010-139](http://cdc.gov/niosh/docs/wp-solutions/2010-139)

## *Fentanyl*

[cdc.gov/niosh/topics/fentanyl/risk](http://cdc.gov/niosh/topics/fentanyl/risk)

[cdc.gov/niosh/ershdb/emergencyresponsecard\\_29750022](http://cdc.gov/niosh/ershdb/emergencyresponsecard_29750022)

[cdc.gov/drugoverdose/opioids/fentanyl](http://cdc.gov/drugoverdose/opioids/fentanyl)

## *Liability Issues*

[drugpolicy.org/sites/default/files/Fact%20Sheet\\_State%20based%20Overdose%20Prevention%20Legislation%20%28January%202016%29](http://drugpolicy.org/sites/default/files/Fact%20Sheet_State%20based%20Overdose%20Prevention%20Legislation%20%28January%202016%29)

[shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/employers-naloxone](http://shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/employers-naloxone)

[networkforphl.org/\\_asset/qz5pvn/legal-interventions-to-reduce-overdose](http://networkforphl.org/_asset/qz5pvn/legal-interventions-to-reduce-overdose)

## *Naloxone*

[samhsa.gov/medication-assisted-treatment/treatment/naloxone](http://samhsa.gov/medication-assisted-treatment/treatment/naloxone)

[drugabuse.gov/related-topics/opioid-overdose-reversal-naloxone-narcan-evzio](http://drugabuse.gov/related-topics/opioid-overdose-reversal-naloxone-narcan-evzio)

[tn.gov/health/health-program-areas/health-professional-boards/csmd-board/csmd-board/naloxone-training-information](http://tn.gov/health/health-program-areas/health-professional-boards/csmd-board/csmd-board/naloxone-training-information)

[ccohs.ca/oshanswers/hsprograms/firstaid\\_naloxone](http://ccohs.ca/oshanswers/hsprograms/firstaid_naloxone)

## *Naloxone access*

[drugabuse.gov/publications/medications-to-treat-opioid-addiction/naloxone-accessible](http://drugabuse.gov/publications/medications-to-treat-opioid-addiction/naloxone-accessible)

[narcan.com/availability](http://narcan.com/availability)

[getnaloxonenow.org](http://getnaloxonenow.org)

## *NIOSH resources on opioids*

[cdc.gov/niosh/topics/opioids](http://cdc.gov/niosh/topics/opioids)

[cdc.gov/niosh/topics/fentanyl](http://cdc.gov/niosh/topics/fentanyl)

## *Overdose prevention*

[surgeongeneral.gov/priorities/opioid-overdose-prevention](http://surgeongeneral.gov/priorities/opioid-overdose-prevention)

[surgeongeneral.gov/priorities/opioid-overdose-prevention/naloxone-advisory](http://surgeongeneral.gov/priorities/opioid-overdose-prevention/naloxone-advisory)

[cdc.gov/drugoverdose/prevention](http://cdc.gov/drugoverdose/prevention)

To receive documents or other information about occupational safety and health topics, contact NIOSH:  
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TTY: 1-888-232-6348  
CDC INFO: [www.cdc.gov/info](http://www.cdc.gov/info)

or visit the NIOSH website at <http://www.cdc.gov/niosh>  
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