



NIOSH Confronts the Opioid Crisis

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“As your Surgeon General, I am committed to doing everything I can to educate the public about the severity of the opioid epidemic. Together, we can stop this crisis.”

-U.S. Surgeon General, Jerome Adams



Understanding the Opioid Epidemic in the US

- In 2016, the number of overdose deaths involving opioids (including prescription opioids and illegal opioids like heroin and illicitly manufactured fentanyl) was **5 times higher** than in 1999.
- On average, **115** Americans die **every day** from an opioid overdose.
- Around **66%** of the more than 63,600 drug overdose deaths in 2016 involved an opioid.

Understanding the Opioid Epidemic among US Workers

95% – In 2016, 95% of the 63,632 US drug overdose deaths occurred among the working age population, persons aged 15-64 years.

4.5% – According to the National Survey of Drug Use and Health, an estimated 4.5% of respondents age 18 years or older reported illicit opioid use in the past year. An estimated 66.2% of these self-reported illicit opioid users were employed full- or part-time.

Understanding the Opioid Epidemic among US Workers

38% – The Bureau of Labor Statistics reported that overdose deaths at work from non-medical use of drugs or alcohol increased by at least **38%** annually between 2013 and 2016. Workplace overdose deaths reported in 2016 accounted for 4.2% of occupational injury deaths that year, compared to 1.8% in 2013.

14.8 days – Workers with a current substance use disorder miss an average of **14.8 days** per year, while those with a pain medication use disorder miss an average of 29 days per year. This is in contrast to an average of 10.5 days for most employees.

A More Comprehensive View of the Opioids Crisis: Social and Economic Determinants

- Origins in earlier “under-treatment” of chronic pain
- Crisis far more complex than over-prescribing
- Intertwining of prescription opiates and heroin
- Shift to more dangerous drugs; illicit fentanyl and analogues
- Social, structural, economic antecedents
- Role of “suffering” - underlying poverty, absent opportunities, isolation, hopelessness
- Need for more comprehensive, broader-based approaches
- “Compassion,” social cohesion, advocacy, life satisfaction

Exploring the Link: Opioids and Work



- Lack of employment, insecure employment and opioid risks
- Lower wage work, hazardous work and increased risk of work-related injury
- Working conditions can predispose to chronic health deficits (pain)
- New employment arrangements
 - Do they correlate with social distress, isolation, loneliness, hopelessness?

Total Worker Health[®]

....policies, programs, and practices that
integrate protection from work-related safety & health hazards
with promotion of injury and illness prevention efforts
to advance worker well-being.

Why does it matter for opioid use and misuse?

- Effects of opioid use and misuse **not isolated** to work or home environments
- Potential for addiction may be preceded by injuries that happen in the workplace, with the consequences affecting **both** an individual's **working life as well as their home life**

The NIOSH Framework to Address Opioid Misuse



The NIOSH Framework to Address Opioid Misuse

The “lifecycle” of opioid use from antecedents of use to decontamination of workplaces

- I. Determine the antecedent factors for opioid overutilization among workers



- II. Identify opioid use conditions that affect workers



- III. Develop strategies for protecting and assisting workers involved in the opioid crisis response



- IV. Develop methods for opioid detection and decontamination of workplaces

Approaches to Implement Framework:

How will we put this into practice at NIOSH?

- Obtain relevant data to characterize and address opioid crisis in workers
- Conduct field investigations, exposure surveys, and research studies to determine the extent of opioid exposures and best approaches to prevention
- Develop information and knowledge to address the problem
- Transfer knowledge to all stakeholders and agencies to promote effective interventions

NIOSH's Ongoing Work to Address the Crisis

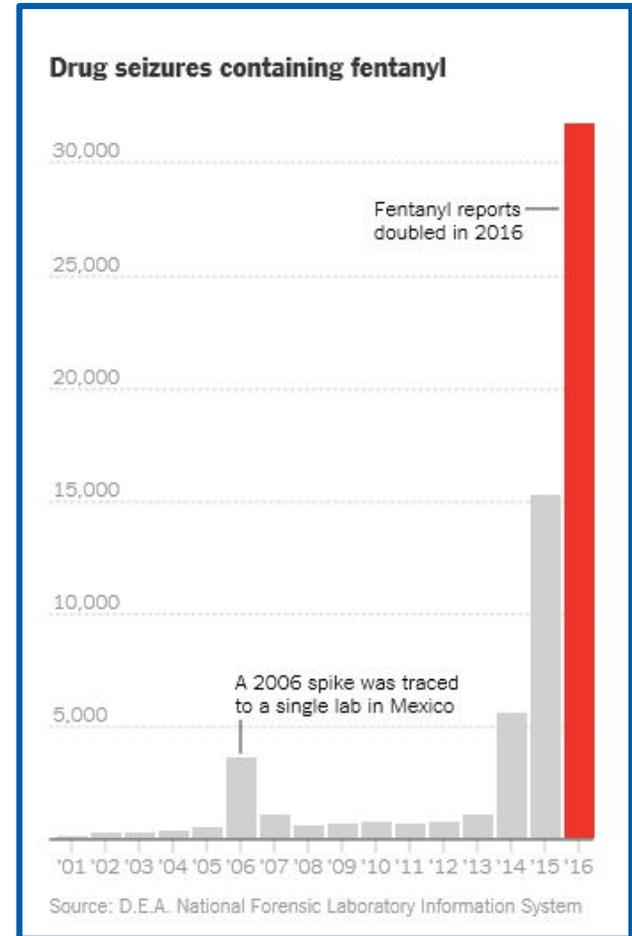
- Examine work-related factors and exposures as risk factors for opioid use
- Coordinate with intramural and extramural partners addressing this crisis
- Create topic pages and education materials relevant for workers and employers facing this epidemic together
- Conduct health hazard evaluations
- Develop recommendations for exposure prevention for first responders, healthcare workers, and other frontline groups

NIOSH Research Examples

- Identify research gaps
- Risk factors
 - Work-related exposures
 - Chronic medical conditions
 - Overutilization of opioids in physician prescribing
- Opioid use conditions that affect workers
 - Contribution to workplace injuries and decreased productivity
 - Workforce education about risks
 - Availability of medication-assisted therapy
 - Integration of opioid-affected workers back into workplace

Fentanyl

- Pharmaceutical fentanyl is a synthetic opioid pain medication and schedule II prescription drug approved for treating severe pain, typically after surgery or advanced cancer pain.
- Among the more than 72,000 drug overdose deaths estimated in 2017, the sharpest increase occurred among deaths related to fentanyl and fentanyl analogs (synthetic opioids) with nearly 30,000 overdose deaths.
- It is 50 to 100 times more potent than morphine!
- Illicitly-made fentanyl is sold illegally for its heroin-like effect, and often mixed with heroin and/or cocaine.



NIOSH Field Investigations

- NIOSH Health Hazard Evaluation Program (HHE)
- 12 projects assessing hazards to emergency responders and other groups of workers
- Example of Findings
 - Questions about exposure and health effects remain after retrospective analyses of emergency situations
 - HHEs as source of objective information
 - Multiple types of substances (drugs) present at most responses
 - Ill effects were related to work activities and impacted the ability to perform job duties

Fentanyl: NIOSH Webpage

The screenshot shows the NIOSH website with the following elements:

- Header:** CDC Centers for Disease Control and Prevention. Search bar with "Search NIOSH" and "SEARCH" buttons. "CDC A-Z INDEX" dropdown.
- Section Header:** "The National Institute for Occupational Safety and Health (NIOSH)"
- Left Sidebar:**
 - Workplace Safety & Health Topics
 - Fentanyl** (selected)
 - Protecting Workers at Risk
 - Illegal Use of Fentanyl
 - Resources
 - Follow NIOSH: Facebook, Flickr, Pinterest, Twitter, YouTube
- Main Content:**
 - NIOSH > Workplace Safety & Health Topics
 - Promoting productive workplaces through safety and health research. NIOSH logo.
 - Fentanyl: Preventing Occupational Exposure to Emergency Responders**
 - Social media icons: Facebook, Twitter, Plus.
 - Overview**
 - Text: "Fentanyl is a powerful synthetic drug that is similar to morphine and heroin but is 50 to 100 times more potent. Fentanyl and its analogs are the class of drugs known as rapid-acting synthetic opioids that alleviate pain. Other drugs in this class include fentanyl analogs, such as acet butyrfentanyl, carfentanyl, alfentanil, sufentanil and remifentanyl. Fentanyl acts quickly to depress central nervous system and respiratory function. Exposure to fentanyl may be fatal."
 - Text: "The U.S. Drug Enforcement Administration (DEA) classifies fentanyl and some of its analogs as schedule II prescription drugs, which are typically used to treat patients with severe pain or to manage pain after surgery. They are sometimes used to treat patients with chronic pain who are physically dependent on opioids. However, per the CDC Guideline for Prescribing Opioids for Chronic Pain, only clinicians who are familiar with the dosing and effects of these drugs should prescribe them."

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- Left Sidebar:**
 - Workplace Safety & Health Topics
 - Fentanyl
 - Protecting Workers at Risk
 - Emergency Responders
 - Personnel in Hospital and Clinic Settings** (selected)
 - Illegal Use of Fentanyl
 - Resources
 - Follow NIOSH: Facebook, Flickr
- Main Content:**
 - NIOSH > Workplace Safety & Health Topics > Fentanyl > Protecting Workers at Risk
 - Promoting productive workplaces through safety and health research. NIOSH logo.
 - Fentanyl**
 - Social media icons: Facebook, Twitter, Plus.
 - Preventing Occupational Exposure to Healthcare Personnel in Hospital and Clinic Settings**
 - Text: "Illicit fentanyl and its analogues (for the purpose of this document, referred to as illicit fentanyl) pose a potential hazard to healthcare personnel who could come into contact with these drugs in the course of their work in hospital and clinic settings. This potential risk, which is related to external sources of fentanyl (i.e., originating in the community), is distinct from the hazards posed by diversion of pharmaceutical fentanyl (which is used in many healthcare settings as part of routine patient care: see for information related to drug diversion)."
 - Text: "Healthcare personnel who could potentially be exposed to illicit fentanyl include nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students, and trainees. Healthcare personnel not directly involved in patient care, but who could be potentially be exposed to"

Naloxone

What is it?

- Naloxone hydrochloride (also known as naloxone, NARCAN® or EVZIO®) is a non-addictive, life-saving drug that can reverse the effects of an opioid overdose when administered in time
- Can be given nasally to a person suspected of overdose, allowing trained lay persons to administer the drug without injection

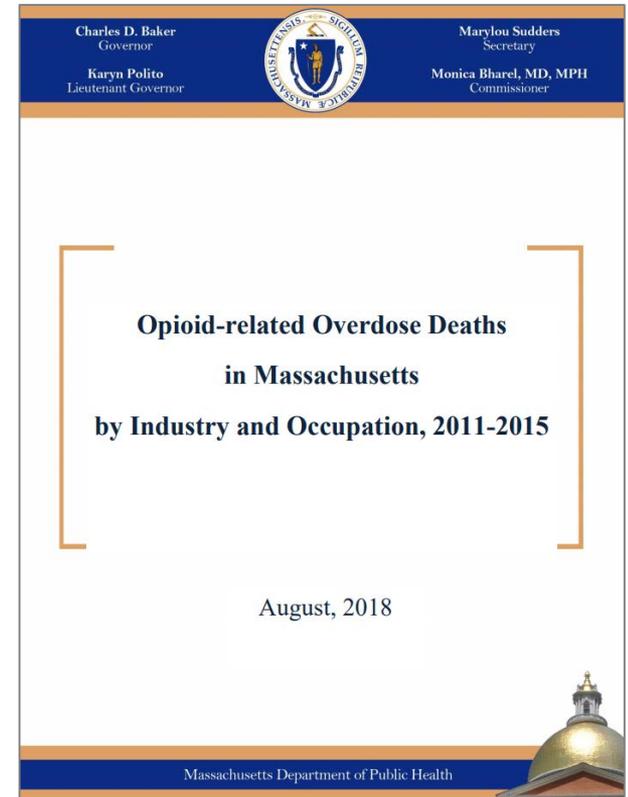


Data to Characterize and Address the Crisis

- **August 2018 MMWR: Occupational Patterns in Opioid-Involved Overdose Deaths**
- NIOSH researchers analyzed drug overdose deaths within 26 job groups from 2007-2012.
 - 57,810 drug overdose deaths
 - Majority were: male (61.8%), white (89.8%), aged 45-54 (30.1%) or 35-44 (24.1%)
- PMRs from drug overdose were highest for six occupation groups
 - Construction (highest PMR for heroin and methadone)
 - Extraction (highest PMR for natural and semi-synthetic opioids)
 - Food preparation and serving
 - Health care practitioners and technical occupations (highest PMR for synthetic)
 - Health care support
 - Personal care and service
- PMR also significantly elevated for “unpaid/unemployed”

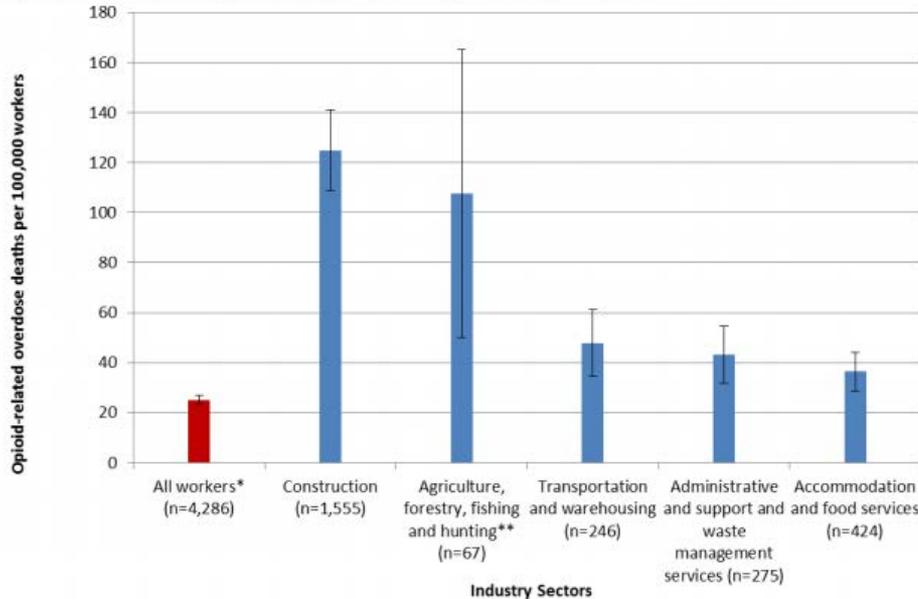
Opioid-related Overdose Deaths in MA by Industry and Occupation, 2011-2015

- Massachusetts Department of Public Health on opioid-related overdose deaths by industry/occupation, 2011-2015, in their state.
- Found that the opioid-related death rate for those employed in construction and extraction occupations was 6 times the average rate for all Massachusetts workers.
- Other occupational groups with higher than average rates included: farming, fishing and forestry; material moving; installation, maintenance and repair; and transportation among others.



Opioid-related Overdose Deaths in MA by Industry and Occupation, 2011-2015

Figure 1. Industry sectors with opioid-related overdose death rates significantly higher than the average rate for all workers, Massachusetts workers, 2011-2015, n=4,302



- The report also found that the rate of fatal opioid-related overdose was higher among workers employed in industries known to have high rates of work-related injuries and illnesses.
- Additionally, rates were higher among workers in occupations with lower availability of paid sick leave and lower job security.

NEW NIOSH Webpages on Opioids

- Features the NIOSH Framework and sub-pages:
 - Data Collection
 - Field Investigations
 - Research
 - Resources

The National Institute for Occupational Safety and Health (NIOSH)

Workplace Safety & Health Topics

NIOSH's Framework

Data Collection

Field Investigations

Research

Resources

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Promoting productive workplaces through safety and health research **NIOSH**

NIOSH > Workplace Safety & Health Topics

Opioids

NIOSH Confronts the Opioid Crisis

The effects of opioid use and misuse are not isolated to work or home environments, and the potential for addiction may be preceded by injuries that happen in the workplace, with the consequences affecting both an individual's working life as well as their home life.

By using *Total Worker Health* principles, NIOSH is developing solutions to help workers and employers facing this epidemic in their communities. [Learn more](#) about the specific steps NIOSH is taking to approach this challenge.

Determine Risk Factors

- DATA COLLECTION
- FIELD INVESTIGATIONS
- RESEARCH

NIOSH will obtain relevant data to characterize and address the opioid crisis in workers. [More >](#)

NIOSH is conducting field investigations to determine the extent of opioid exposures and best approaches for prevention. [More >](#)

Transfer knowledge into practice to promote effective interventions. [More >](#)

Featured Resources

Below you will find featured NIOSH, CDC and other resources related to the opioid epidemic. Check back frequently for new information. For a full list of resources, see our resources page on this website.

NIOSH Resources	CDC Resources	Additional Resources
<ul style="list-style-type: none">FentanylPrescription Drug Overdose Prevention	<ul style="list-style-type: none">CDC National Center for Injury Prevention and Control: Opioid Overdose	<ul style="list-style-type: none">National Institute on Drug AbuseU.S. Surgeon General Opioid Response

Source: <https://www.cdc.gov/niosh/topics/opioids/default.html>

NEW NIOSH Webpages on Opioids: Resources

- Resources related to the Opioid Epidemic
 - Tools for Workplaces
 - Research on Workplaces
 - General Resources

The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research

Workplace Safety & Health Topics

- Opioids
- NIOSH's Framework
- Data
- Field Investigations
- Research
- Resources

NIOSH > Workplace Safety & Health Topics > Opioids

Opioids

Resources related to the Opioid Epidemic

Tools for Workplaces

- [Fentanyl](#)
- [Prescription Drug Overdose Prevention](#)
- [SAMHSA Opioid Overdose Prevention Toolkit](#) (en Español)
 - [Opioid Use Disorder Facts](#)
 - [Five Essential Steps for First Responders](#)
 - [Information for Prescribers](#)
 - [Safety Advice for Patients & Family Members](#)
 - [Recovering from Opioid Overdose](#)
- [CDC National Center for Injury Prevention and Control: Opioid Overdose](#)

Research on Workplaces

- [Opioid-related Overdose Deaths in Massachusetts by Industry and Occupation 2011-2015](#)
- [Landscape Study of Field Portable Devices for Presumptive Drug Testing](#)
- [A NIOSH Role in Prescription Drug Abuse Prevention](#)
- [The Opioid Overdose Epidemic and the Workplace](#)
- [Fentanyl and the safety of first responders: Science and recommendations](#)
- [NIOSH Science Blog](#)
- [MMWR Occupational Patterns in Unintentional and Undetermined Drug-Involved and Opioid-Involved Overdose Deaths](#)
- [National Safety Council Prescription Drug Employer Toolkit](#) *Note: Signup may be required to download resource

General Resources

- [National Institute on Drug Abuse](#)
- [Opioids.gov](#)
- [U.S. Surgeon General Opioid Response](#)
- [HHS.gov/Opioids](#)
- [MMWR Opioid Reports](#)

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Questions for the BSC

- Social and Economic Determinants of Health
 - What should NIOSH's role be in addressing them?
- Industries and Occupations
 - What can we do to prevent stigma from high-risk industries/occupations?
 - What kind of industry-specific interventions are needed?
- Research Gaps
 - What priority research gaps should NIOSH address?
 - What new information should NIOSH provide for workers or employers?

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

