NIOSH Construction Update

CAPT Alan Echt, DrPH, CIH

CDR Elizabeth Garza, MPH, CPH

Scott Earnest, PhD, PE, CSP

NIOSH Office of Construction Safety and Health

NORA Construction Sector Council Meeting

November 19-20, 2019

NIOSH National Construction Center Awarded – CPWR!

- Published in Grants.gov
- Announcement number RFA-OH-19-001.
- 5-year cycle

NORA

CPWR

NIOSH Strategic Plan & Goals (October 2019 update)

- Goal added to specifically address Total Worker Health® Healthy Work Design and Well-Being Cross-Sector.
  - Researchers, insurance companies, employers, owners and labor unions effectively integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being (i.e. *Total Worker Health* [TWH] approach) in the Construction sector.
- Goal added to address the opioid overdose epidemic, specifically prescription drug (incl. opioids), illicit drug, and substance use/misuse.
  - Insurance companies (including workers' compensation), businesses, policy-makers, professional associations, government agencies, and unions adopt interventions to reduce injuries and risk factors for opioid use, illicit drugs, and substance use/misuse.

NORA

NIOSH Strategic Plan & Goals (October 2019 update)

- Burden & need narratives for several goals revised to address recommendations made by an expert panel that reviewed the Construction Program:
  - CONxHLP 2.1 – Engineering controls to reduce noise exposure
  - CONxHLP 2.2 – Hearing loss prevention education for employers and workers
  - CONxMUS 4.2 – MSD interventions
  - CONxRHP 5.2 – Exposures to mineral dusts
  - CONxRHP 5.3 – Mixed exposures
  - CONxTIP 6.2 – Falls
  - CONxTIP 6.3 – Injuries related to emerging technologies (e.g., robots)
  - CONxHWD 7.1 – Non-standard work arrangements

NORA

Program Review Recommendations

Recommendation #2: The Panel recommends that NIOSH increase its efforts to improve r2p dissemination and outreach efforts to make the construction industry, construction workers, and construction safety and health personnel more aware of the NIOSH Construction program and the NIOSH products that could help improve safety and health at construction sites.

Project ID	D/L/O	FY Initiated	FY Ended	Project Title	Project Officer
93908LR	DART	2018	2021	Developing, Evaluating, and Promoting Noise Control Strategies	Bryan Beamer
9391300	OD	2012	2025	Office of Construction Safety and Health	G. Scott Earnest
	CPWR	2019	2024	Research to Practice Core	Betit, Eileen
	CPWR	2019	2024	Communication, Outreach, and Education Core	Sinyai, Clayton
U60OH009762-10E	OEP	9/1/2014	8/31/2020	Construction Solutions	Memarian (CPWR)
U60OH009762-10J	OEP	9/1/2014	8/31/2020	r2p Coordinating Project	Betit (CPWR)
U60OH009762-10L	OEP	9/1/2014	8/31/2020	Communications Plan	Watters (CPWR)
R13OH011707-01	OEP	9/2/2019	3/31/2020	Prevention Through Design Workshop Initiative	Grau (Arizona State University)

Recommendation #3: The Panel recommends that NIOSH focus on developing software products (applications, interactive web pages, virtual reality learning, etc.) to provide the construction industry safety and health tools that use technology and algorithms, allowing large numbers of construction employers, employees, and safety professionals to get construction safety assistance when needed. Review of existing products may provide insight into best practices for software design; input from construction stakeholders may help identify products with greater potential for impact.

Project ID	D/L/O	FY Initiated	FY Ended	Project Title	Project Officer
927ZLGG	DSI	2017	2021	Developing dissemination products to prevent WMSDs in construction worker	Juliann Scholl
	DSR	2018	2020	MCWP Daily Inspection Walkthrough	Brian Wimer
9391300	OD	2012	2025	Office of Construction Safety and Health	G. Scott Earnest
	CPWR	2019	2024	Safety Climate – Safety Management Information System	Goldenhar, Linda
	CPWR	2019	2024	Research to Practice Core	Betit, Eileen
U60OH009762-10I	OEP	9/1/2014	8/31/2020	Development and Evaluation of Contractor Safety Pre-Qualification Tool	Dennerlein (Northeastern University)

Recommendation #4: The Panel recommends that NIOSH perform research on the most effective methods to communicate and interact with small construction employers. The research would investigate methods for finding small employers, reaching them quickly, and motivating them to implement safety measures. This may be used to support awareness projects, marketing activities, and other r2p efforts. Research on the motivations of small employers who are successfully managing safety and health may be beneficial.

Recent HHE Reports

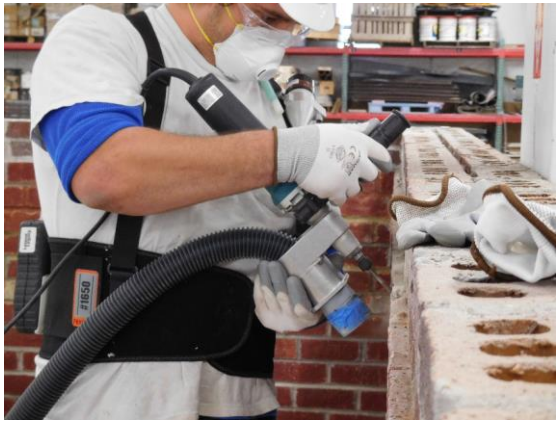
HHE Health Hazard Evaluation Program

- Micro trenching with drivable saw
  - The vacuum trailer appeared to control exposures.
  - Emptying the vacuum and loading the dumpster produced the most dust.
  - Compliance with health and safety programs needs improvement.
- Cured in place pipe
  - Styrene exposures > NIOSH STEL (100 ppm) once during grinding of a cured pipe when the manhole was not ventilated.
  - Tasks with the highest exposure risks: grinding cured pipe and cutting and taping the liner.
  - Recommend ventilating the manholes when employees might be exposed to uncured or cured liners.
- Paradise, CA debris cleanup
  - Potential exposures to RCS, asbestos, metals, PAHs.
  - Some skid steer operators overexposed to RCS.
  - Found metals (including Pb) and PAHs on the hands & necks of some workers.

Recent Engineering Control Technology Reports

- Laboratory Evaluation of Saw Blades for Cutting Fiber-Cement Siding
- Removing Mortar with a Die Grinder with on-Tool Local Exhaust Ventilation
- Removing Mortar With a Powered Saw and Modified On-Tool Hood

#	Manufacturer	Brand	Model name	Number of teeth	Kerf width	Picture
1	Freud	Diablo	DO704DH	4	0.071	
2	Gila tools	Gila	1037250T04	4	0.087	
3	Gila tools	Gila	1037250T06	6	0.087	
4	Gila tools	Gila	1037250T08	8	0.087	

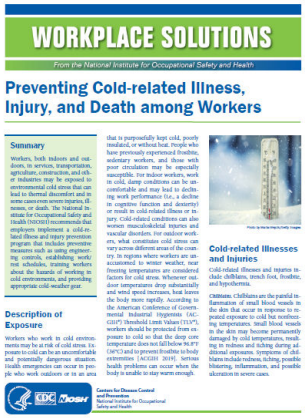


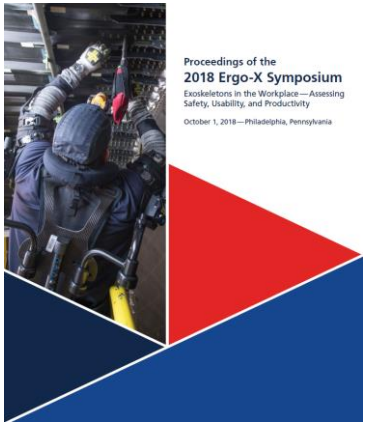
Recent FACE Reports

- Michigan
  - Plasterer/Drywall Installer Dies From 30-Foot Fall Through Skylight
  - Sole Proprietor Falls Eight Feet from Flat Roof While Installing Siding
  - Construction Laborer Died in Trench Wall Collapse
  - Construction Foreman/Carpenter Dies from Complications From Fall From Roof
- Kentucky
  - Gutter Installer Dies After Falling from Ladder Placed on Roof While Taking Measurements

Recent NIOSH Numbered Publications

- Workplace Solution – Preventing Cold-Related Illness, Injury, and Death Among Workers
- Response to CON Expert Review Panel's Report
- Proceedings of the 2018 Ergo-X Symposium
- Prevent Construction Falls from Roofs, Ladders, and Scaffolds





Recent Peer-reviewed Papers

- Hindman, B. et al. Carbon nanotubes and crystalline silica stimulate rc production, inflammasome activation, and IL-1β secretion in macrophages to induce myofibroblast transformation. Arch Toxicol. 2019 Apr;93(4):887-907. doi: 10.1007/s00204-019-02411-y.
- Upaassana, VT et al. Highly sensitive lab on a chip (LOC) immunoassay for early diagnosis of respiratory disease caused by respirable crystalline silica (RCS). Anal Chem. 2019 May 21;91(10):6652-6660. doi: 10.1021/acs.analchem.9b00582.
- Sisler, JD et al. Toxicological assessment of dust from sanding micronized copper-treated lumber *in vivo*. J Hazard Mater. 2019 Jul 5;373:630-639. doi: 10.1016/j.jhazmat.2019.02.068.
- Zeidler-Erdley PC et al. Influence of welding fume metal composition on lung toxicity and tumor formation in experimental animal models. J Occup Environ Hyg. 2019 Jun;16(6):372-377. doi: 10.1080/15459624.2019.1587172.

Recent Peer-reviewed Papers

- Breloff, SP et al. Assessing work-related risk factors for musculoskeletal knee disorders in construction roofing tasks. Appl Ergon. 2019 Nov;81:102901. doi: 10.1016/j.apergo.2019.102901.
- Breloff SP et al. Lower extremity kinematics of cross-slope roof walking. Appl Ergon. 2019 Feb;75:134-142. doi: 10.1016/j.apergo.2018.09.013.
- Luckhaupt SE et al. Prevalence, recognition of work-relatedness, and effect on work of low back pain among U.S. workers. Ann Intern Med. 2019 May 14. doi: 10.7326/M18-3602.

Recent Peer-reviewed Papers

- Asfaw, A. et al. Suicide and drug-related mortality following occupational injury. Am J Ind Med. 2019 Sep;62(9):733-741. doi: 10.1002/ajim.23021.
- Asfaw, A. et al. Prevalence and expenses of outpatient opioid prescriptions, with associated sociodemographic, economic, and work characteristics. Int J Health Serv. 2019 Oct 11:20731419881336. doi: 10.1177/0020731419881336
- Yorio PL et al. Safety culture across cultures. Safety Science. 2019 Dec; 120:402-410. doi: 10.1016/j.ssci.2019.07.021.
- Meyers, A. et al. Degree of integration between occupational safety and health programs and wellness programs: First-year results from an insurer-sponsored wellness grant for smaller employers. J Occup Environ Med. 2019 Sep;61(9):704-717. doi: 10.1097/JOM.0000000000001644.

Recent Peer-reviewed Papers

- Rose C. et al. Severe Silicosis in Engineered Stone Fabrication Workers — California, Colorado, Texas, and Washington, 2017–2019. MMWR Morb Mortal Wkly Rep 2019;68:813–818. DOI: http://dx.doi.org/10.15585/mmwr.mm6838a1.
- Groenewold, M. et al. Burden of occupational morbidity from selected causes in the United States overall and by NORA industry sector, 2012: A conservative estimate. Am J Ind Med. 2019 Sep 14. doi: 10.1002/ajim.23048.
- Spector JT et al. Heat exposure and occupational injuries: Review of the literature and implications. Curr Environ Health Rep. 2019 Sep 13. doi: 10.1007/s40572-019-00250-8.

Recent NIOSH Science Blogs

- The Safety Climate Assessment Tool (S-CAT) for Construction
- Preventing Trenching Fatalities
- Wearable Technologies

Wearable Technologies for Improved Safety and Health on Construction Sites

Posted on November 14, 2019 by Scott Earnest, PhD, PE, CSP; CAPT Alan Echt, DrPH, CIH; CDR Elizabeth Garza, MPH, CPH, John Snawder, Ph.D., DABT, Rick Rinehart, ScD.

Getty Images

Background

Wearable technologies are an increasingly popular consumer electronic for a variety of applications at home and at work. In general, these devices include accessories and clothing that incorporate advanced electronic technologies, often with smartphone or 'internet of things' (IoT) connectivity. While wearables are increasingly being used to improve health and well-being by aiding in personal fitness, innovative applications for monitoring occupational safety and health risk factors are becoming more common. Many of these devices have reached the market while others are still in development. As more wearables become available, they have the potential to positively impact and alter the landscape of society and work as we know it [Awolusi et al 2018].

The Safety Climate Assessment Tool (S-CAT) for Construction

Posted on October 22, 2019 by Linda M. Goldenhar, PhD

Organizational safety climate is defined as shared perceptions among employees regarding what is rewarded, expected, valued, and reinforced in the workplace with respect to safety (Zohar, 1980). It can positively influence employee safety knowledge, motivation, attitudes, and behaviors, as well as reduce injury outcomes (e.g., Clarke, 2010, Probst et al., 2008, Probst and Estrada, 2010, Zohar, 2010). Research reported in the Journal of Safety Research shows that the Safety Climate Assessment Tool (S-CAT) is a reliable and valid tool for construction companies to self-assess their safety climate. The article, summarized below, details the creation and evaluation of the S-CAT, the first rubric-based safety climate measure designed for the construction industry.

Despite advances to improve safety and health in the construction industry, construction remains one of the most hazardous industries. In 2016, construction represented less than 7% of employment (Bureau of Labor Statistics, 2016b), yet accounted for nearly 20% of all occupational fatalities (Bureau of Labor Statistics, 2016a). Employees face daily hazards that result in an experienced injury rate that is 44% higher than the national average (Bureau of Labor and Statistics, 2016).

Preventing Trenching Fatalities

Posted on June 6, 2019 by CAPT Alan Echt, DrPH, CIH; Scott Earnest, PhD, PE, CSP; and CDR Elizabeth Garza, MPH, CPH

Figure 1 – He lived [Photo Scott Haviland, Oregon Occupational Safety and Health]

Construction workers are at risk of death or serious injury if they enter an unprotected trench and the walls collapse. A trench is defined as a narrow underground excavation that is deeper than it is wide, and is no wider than 15 feet or 4.5 meters [OSHA]. Hazards associated with trench work and excavation are well defined and preventable. From June 17-21, 2019, the National Utility Contractor Association (NUCA), the North American Excavation Shoring Association (NAXSA), the Trench Shoring and Shielding Association, the National Association of Home Builders (NAHB), and the Safety Ambassadors Club (SAC) are sponsoring the 2019 Trench Safety Stand Down. The Stand Down is a safety campaign to raise awareness about the hazards of working in trenches and how to prevent associated injuries and fatalities.

From 2013-2017 there were 97 trenching fatalities in the construction industry – an average of 19 per year, from a low of 10 deaths in 2014 to a high of 33 in 2016 [BLS, 2019]. While the total number of 85 construction-trenching deaths in the previous five years, 2008-2012, was lower, the average of 17 construction-trenching deaths during that five-year period is not significantly different (p=.59) [BLS, 2019]. Furthermore, there was no trend in the number of deaths over the 10 year period 2008-2018 (p=.59).

Recent Web Pages

- Driver Fatigue on the Job
- Suicide and Occupation

MOTOR VEHICLE SAFETY AT WORK

Driver Fatigue on the Job

Put simply, fatigue is the need for sleep. It's how your body responds to not getting enough sleep or not getting quality sleep. Fatigue impairs your ability to safely perform tasks, including driving. Job-related factors (e.g., long hours of work and driving, long commutes) can contribute to workers' risk of driver fatigue. The good news: A fatigue risk management system will help employers and workers work together to reduce the risks of driver fatigue.

Animated Image (GIF)

The more hours awake,

Fact Sheets

These fact sheets identify

Suicide and Occupation

Need Help? Know Someone Who Does?

NATIONAL SUICIDE PREVENTION LIFELINE 1-800-273-TALK (8255) suicidepreventionlifeline.org

Contact the National Suicide Prevention Lifeline

- Call 1-800-273-TALK (1-800-273-8255)
- Use the online Lifeline Crisis Chat

Both are free and confidential. You'll be connected to a counselor in your area.

For more information, visit the National Suicide Prevention Lifeline

What is suicide?

Suicide is death caused by injuring oneself with the intent to die, and is a serious public health problem.

Meetings of Interest

Promoting productive workplaces through safety and health research NIOSH

Working Hours, Sleep, & Fatigue Forum

Working Hours, Sleep & Fatigue

Meeting the Needs of American Workers & Employers

September 13-14, 2019 | Coeur d'Alene, Idaho

Meetings of Interest

Meetings of Interest

Session Breakout Information

MONDAY, AUGUST 5

1pm-5pm

Safety: Research Methodology Foundation for Advancement

Touching on topics including Introduction to Safety and Health Intervention Evaluation, Planning and Evaluation, Different Types of Evaluation Design, Who and What to Measure, Quantitative and Qualitative Methods, and Creating a Favorable Intervention Evaluation Climate at Work.

Jonathon Thomas
Senior Director, Research and Safety Management Solutions, NSC

TUESDAY, AUGUST 6

8:30am-9am

"Work to Zero"

John Dong, Director, Campbell Institute

9:10am-10:00am

Practical Power of Investing in Research and Innovation

10:15am-11am

Executive Panel: Research and Future of Safety

Moderator: Tony Militello, CSP, MPA (Director, OSH, Department of Navy)
Teresa M. Turnbaugh, PhD, CSP (CEO of BCSP), Chris Trahan Cair, CIH (CEO of CPWR) Dawn Castillo, MPH (Director, Division of Safety Research, NIOSH)
John Dony, MA (Director, Campbell Institute at NSC) , Jennifer McNelly (CEO of ASSP)

11:15am-12pm

Research Roundtable Workshop:

Facilitated in Partnership by BCSP and ASSP

12pm-1pm

Complimentary Lunch

12:30pm-1pm Lunch and Learn - Vivid Learning Systems: The power of learning systems to contribute to a safer global community through training and education.

1:15pm-2:15pm / Construction Track

Selected Topics on Fall Safety Research Conducted by NIOSH

The Division of Safety Research, National Institute for Occupational Safety and Health, Morgantown, WV has investigated a variety of fall-related research topics. These include projects focused on both fall protection and fall prevention in residential, industrial, and commercial construction. Fall protection research topics to be discussed include the development of updated sizing criteria for personal fall arrest systems, along with the evaluation of suspension intolerance. Fall prevention research topics to be discussed include the development, testing, and commercialization of a patented guardrail design for use on residential construction sites, the use of a slide guard system, and the proper placement and use of ladders.

Tom Bobick
CPF Safety Engineer, NIOSH, DSR

DARPA Subterranean Challenge

DARPA
SUBTERRANEAN
CHALLENGE

New NIOSH Research Projects

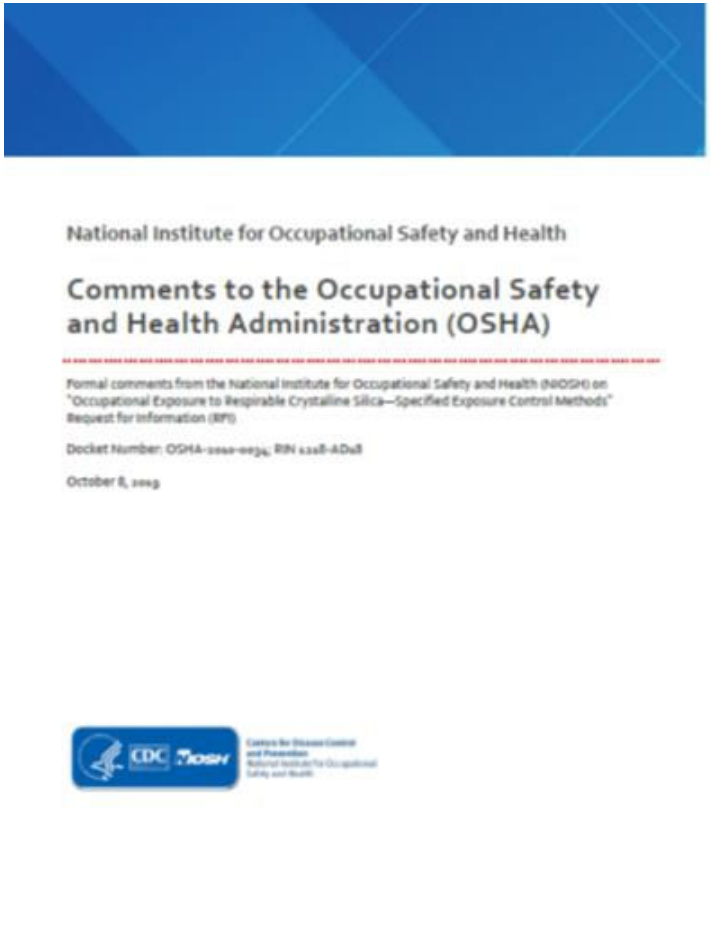
- Identifying overlapping occupational health risk factors in the new economy
- Evaluation of exoskeletons for construction workers on elevated work platforms
- Engineering control of silica dust from stone countertop grinding and polishing
- Isocyanate oligomer toxicity assessment
- Drone use in construction and their effects on workers at height

New NIOSH Research Projects

- Metabolic syndrome: risk factor for silicosis
- Mixed exposure and age ask risk factors for pulmonary response to silica exposure
- Effects of footwear on roofers' slip potential and musculoskeletal disorder risk
- From dustiness to exposure banding
- Assessing and controlling exposure to respiratory hazards from cured-in-place pipe

Support for OSHA Silica Table 1 Update

- Led the NIOSH response to update and expand Table 1
  - Additional Exposure Control Methods for Equipment or Tasks Listed on Table 1
  - Additional Equipment or Tasks to Include on Table 1


National Institute for Occupational Safety and Health

Comments to the Occupational Safety and Health Administration (OSHA)

Formal comments from the National Institute for Occupational Safety and Health (NIOSH) on "Occupational Exposure to Respirable Crystalline Silica—Specified Exposure Control Methods" Request for Information (RFI)

Docket Number: OSHA-2010-0034; RIN 1218-AD18

October 8, 2013

NIOSH Confronts the Opioid Crisis

Workplace Resources

- Using Naloxone to Reverse Opioid Overdose
- Medication-Assisted Treatment
- Health Hazard Evaluation Program
- Data

Information for:

- First Responders
- Healthcare Personnel
- Researchers
- Employers and Workers

Find Help and Treatment for Opioid Abuse

Responding to a Suspected Overdose

https://www.cdc.gov/niosh/topics/opioids/

Opioids in the Workplace - Resources

Responding to a Suspected Opioid Overdose

Call 911 if an overdose is suspected. ***Even if the person experiencing an overdose wakes up or appears to have improved significantly after one or two doses of naloxone, emergency medical assistance is still necessary.***

A medical professional should evaluate anyone who has experienced an overdose as soon as possible. Overdose symptoms may not fully improve or may quickly return after initial treatment with naloxone. Other medical complications also are possible. Note that an incapacitated individual's symptoms may be unrelated to opioids.

1. Assess the scene of the incident

Do not enter any area that appears unsafe for any reason. If you see drug powders or residues, do not risk exposure. Wait for professional emergency responders. Avoid contact with drug containers, needles and other paraphernalia.

2. Call trained staff to the scene and put on gloves for personal protection

3. Recognize and evaluate signs and symptoms

Try to wake up the person by speaking loudly or rubbing the breastbone with knuckles. A person experiencing opioid overdose often shows the following signs:

- Unconsciousness, or inability to wake up
- Limp body
- Falling asleep, extreme drowsiness
- Slow, shallow, irregular or no breathing
- Pale, blue, cold and/or clammy skin
- Choking, snoring or gurgling sounds
- Slow or no heart beat
- Very small or "pinpoint" pupils

Recognizing an opioid overdose may be difficult. If it is unclear, treat the situation like an overdose and proceed with treatment.

4. Administer naloxone

- Administer naloxone following all manufacturer's instructions for safe use.
- Administer a second dose of naloxone if the person is still unresponsive after 2-3 minutes and professional emergency responders have not arrived.
- Note that it may take 5 minutes or more for signs of overdose to reverse.

Naloxone effects are temporary. Immediate medical attention is necessary. Calling 911 is always the first course of action. A person with an overdose who is revived by naloxone can become unconscious or stop breathing again.

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Revised April 2019

WORKPLACE SOLUTIONS

From the National Institute for Occupational Safety and Health

Medication-Assisted Treatment for Opioid Use Disorder

Summary

The opioid overdose epidemic continues to claim lives across the country with a record 47,600 overdose deaths in 2017. (This number represents 67.8% of the 70,237 overdose deaths from all drugs) [CDC 2018a]. More Americans now die every year from drug overdoses than in motor vehicle crashes [CDC 2016]. The crisis is taking an especially devastating toll on certain parts of the U.S. workforce. High rates of opioid overdose deaths have occurred in industries with high injury rates and physically demanding working conditions such as construction, mining, or fishing [Massachusetts Department of Public Health 2018; CDC 2018b]. Certain job factors such as high job demands, job insecurity, and lack of control over tasks have also been linked to opioid use [Kowalski-McGraw et al. 2017]. Medication-assisted treatment (MAT) (also known as medication-based treatment*) has been shown to be effective for many people with opioid use disorder [SAMHSA 2015b; National Academies of Sciences, Engineering, and Medicine 2019]. In addition to providing general information about MAT, this document provides information for employers wishing to assist or support workers with opioid use disorder.

Background

Challenges related to prescription drug misuse, illicit drug use, and addiction affect individual workers, their families, and both large and small businesses. In a 2017 National Safety Council survey, 70% of employers reported suffering the negative effects of prescription drug misuse, noting positive drug tests, absenteeism, injuries, accidents, and overdoses [Hersman 2017]. In 2013, the total U.S. societal costs of prescription opioid use disorder (OUD) and overdoses were $78 billion. Of that, about $2.8 billion was for treatment [Florence et al. 2016].†

In 2016, individuals with insurance coverage received $2.6 billion in services for treatment of opioid addiction and overdose, a dramatic increase from $0.3 billion in 2004 (based on claims data from large employers). Of that $2.6 billion, $1.3 billion was for outpatient treatment, $911 million was for inpatient care, and $435 million was for prescription drugs [Cox et al. 2018].

Employers may save up to $2,607 per worker annually (based on 2012-2014 data) by getting workers into treatment [NSC et al. 2016; NORC].

Despite these findings, 80% of individuals in need of treatment for a substance use disorder in 2016 did not receive treatment [CBHSQ 2017]. Making medication-assisted treatment (MAT) more readily available to people with OUD can help diminish the opioid crisis in the United States.

Treatment

What is medication-assisted treatment (MAT)?

MAT uses medications approved by the U.S. Food and Drug Administration (FDA) in combination with counseling and behavioral therapies to treat OUD involving misuse of either prescription

*Note that some experts recommend the term "medication-based treatment" or MBT instead of MAT. This change in nomenclature aligns with the premise that OUD is a chronic disorder for which medications are first-line treatments (often an integral part of a person's long-term treatment plan) rather than complementary or temporary aids on the path to recovery [National Academies of Sciences, Engineering, and Medicine 2019].

†The White House Council of Economic Advisers [CEA 2017] estimated the economic cost of these deaths related to opioids "using conventional economic estimates for valuing life routinely used by U.S. Federal agencies." The CEA report "also adjusts for underreporting of opioids in overdose deaths, includes heroin-related fatalities, and incorporates nonfatal costs of opioid misuse." CEA estimates that in 2015, the economic cost of the opioid crisis was $504.0 billion, or 2.8 percent of GDP that year."

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Published May 2019

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].

Photo by ©Thinkstock

The National Institute for Occupational Safety and Health (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

Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Published Oct. 2018

Opioids in Construction

NIOSH Working Groups Addressing the Opioids Crisis

- Workplace Integration
- Extramural Activities
- Data Framework
- Research Gaps
- Responder and Worker Safety and Health

NIOSH funded CPWR (Sept 2019) to address opioids in construction

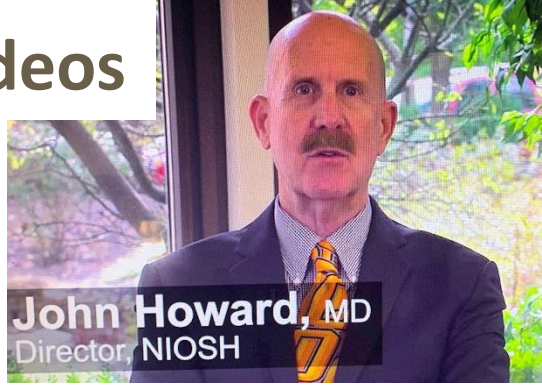
- produce an improved opioid-related awareness-training program for construction
- produce a document / report detailing the groundwork to design and promote a peer advocacy and support network for the construction trades
- produce a report to frame optimal communication strategies to close the gap between current expert recommendations and the public's and industry's (workers and employers) perceptions of the problem and their related solutions

Opioids in Construction

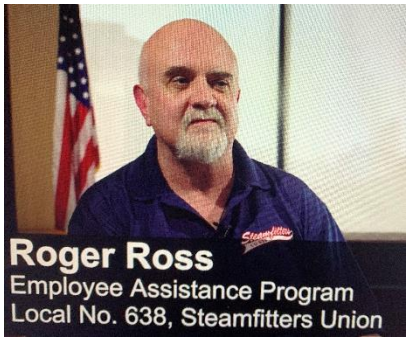
- Workers in occupations at **higher risk for injury and illness** – including **construction** – were more likely to **obtain opioid prescriptions**.
- Workers employed in industries in which the rate of **occupational injury is high**, such as mining and **construction**, were **more likely than other workers to die from opioid overdose**
- **Opioid-related overdose deaths were highest for workers in construction** and others with high risk for ergonomic injury.
- **Construction** workers reported a relatively **high level of pain** that limited their normal work
- **Reducing work-related risk factors associated with pain** may help reduce the prevalence of opioid use.

Opioids in Construction – Series of NORA videos

- Video 1: discuss what the problem is
- Video 2: discuss some of the experiences that led the workers into addiction & impact addiction has had on the worker, their families & co-workers
- Video 3: share some recommendations for how employers can help



Opioids in Construction – Series of NORA videos



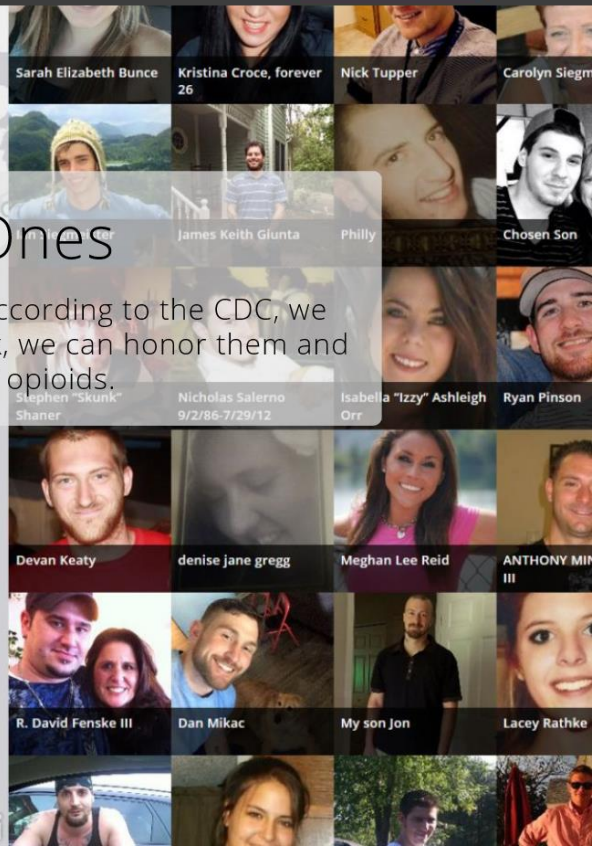
NSC Memorial Site - Celebrating Lost Loved Ones

Add Lost Loved One

NORA opioids in construction video series
in memory of…

Celebrating Lost Loved Ones

We are losing far too many loved ones to the opioid epidemic. According to the CDC, we lost over 72,000 people in 2017. While we cannot bring them back, we can honor them and continue to educate the public on the dangers of opioids.



Credit: National Safety Council
https://www.nsc.org/home-safety/get-involved/memorial/

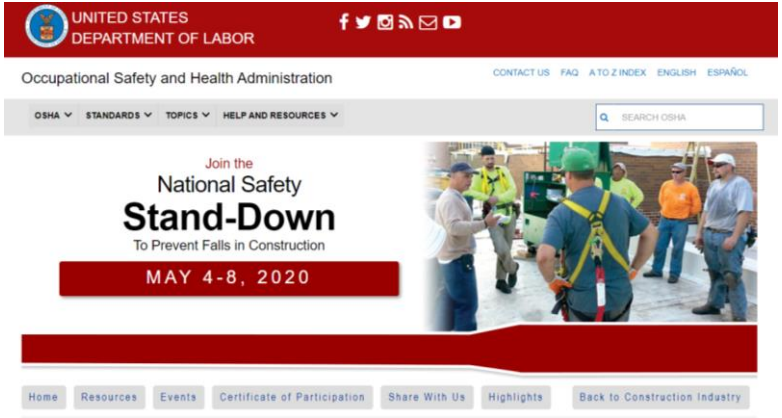
Suicide among Construction Workers

- Suicide Rates by Major Occupational Group — 17 States, 2012 and
  - From 2000 to 2016, the U.S. suicide rate among working aged (16–64 years) adults increased 34% from 12.9 per 100,000 population to 17.3.
  - 2012 and 2015, **largest percentage of male suicides** (**15%–16%** of decedents) occurred among **Construction** and Extraction group
    - **Highest male suicide rate** (43.6 [2012] & 53.2 [2015] per 100,000).
- 102 workplace suicides in the private construction industry 2013-2017
  - 13 Construction managers
  - 21 First-line supervisors
  - 46 Construction trades workers
  - 40 Self-employed
  - 62 Wage and salary workers
  - 36 Building construction
  - 5 Heavy and civil engineering construction
  - 55 Specialty trade contractors

Suicide among Construction Workers

- The etiology of suicide is multifactorial, and identifying the specific role that occupational factors might play in suicide risk is complicated; both work (e.g., **little job control or job insecurity**) and nonwork (e.g., relationship conflict) factors are associated with **psychological distress and suicide.**
- Because many adults spend a substantial amount of their time at work, the workplace is an important but underutilized location for suicide prevention.
- Workplaces could potentially benefit from suicide prevention activities. Additional and **tailored prevention approaches** might be necessary to support **workers at higher risk**.
- More **research on the role of the workplace in primary suicide prevention** is needed, including improving working conditions and reducing stress.

2020 Campaign & Stand-Down



- 2020 Stand-Down Videos
  - Another FACE state highlight
  - How to do a Stand-Down?
- 2020 NORA Construction Falls Campaign & Stand-Down App
  - Stand-Down ‘Check-in’ Feature
  - Resources at your fingertips to prevent falls

U.S. Department of Labor

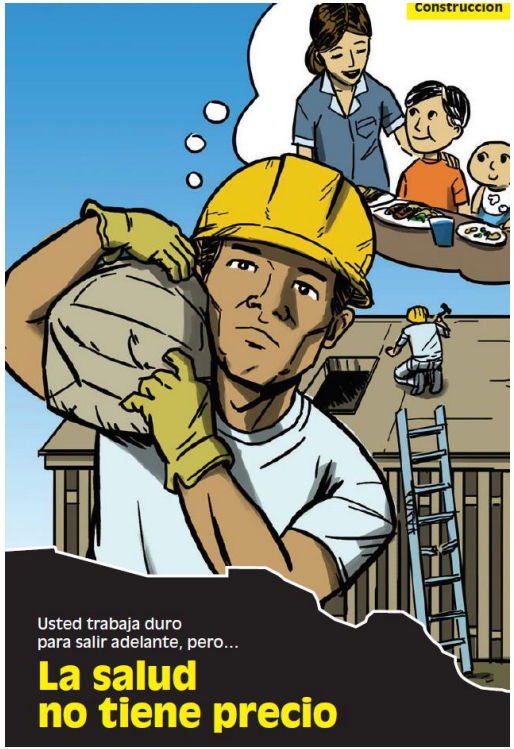
CDC Workplace Safety and Health NIOSH NORA

OSHA Occupational Safety and Health Administration

Safety Pays. Falls Cost.

CPWR

2020 Stand-Down Focal Point: Fall Prevention



- Making it personal
- Stories of how fall prevention saves lives

Upcoming PtD Conferences

- Prevention through Design workshop
  - Arizona State University - Tempe Campus
  - March 2020, first of a five year series
  - Goals
    - To drive the implementation of PtD at large industry organizations
    - To advance knowledge in PtD
    - To promote the instruction of PtD in construction management and construction engineering programs at US colleges and universities.

ASU Arizona State University

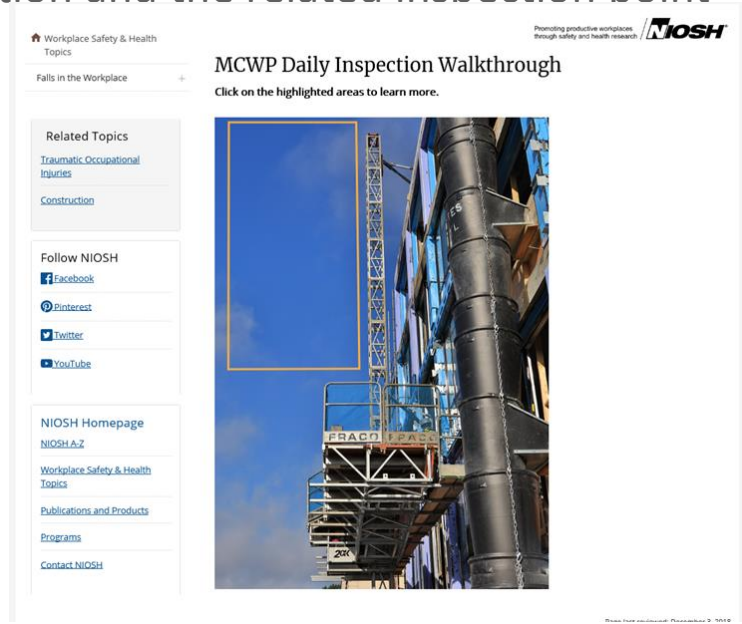
Upcoming PtD Conferences

- Prevention Through Design (PtD) - A Changing Mindset
  - NYC, March 2020
    - Prevention through Design – A NIOSH gamechanger
    - Key components for a successful safety in design initiative
    - Applying PtD concepts to control exposure to occupational health hazards
    - PtD….What's in this for me?
    - PtD and the triple bottom line
    - Leveraging technology in your design using lean, LEED and BIM

PtD
Prevention through Design

Coming Soon

- This free daily inspection walkthrough tool allows mast climber users to navigate through what is commonly inspected during a pre-shift daily inspection.
- Prompted to click on the orange outlined section and the related inspection point will be displayed.



Scott Earnest, PhD, PE, CSP
513-841-4539 **GEarnest@cdc.gov**

Elizabeth Garza, MPH
202-245-0668 **EGarza@cdc.gov**

Alan Echt, DrPH, CIH
513-841-4111 **AEcht@cdc.gov**

Questions?

http://www.cdc.gov/niosh/topics/construction/

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