



**Title: *Cost of Drug Abuse in Safety Sensitive Industries***

No industry is exempt from the potential workplace impacts of employee drug and/or alcohol abuse. However, employers in safety-sensitive industries experience a greater financial burden from the abuse of drugs and/or alcohol in the workplace. Although oftentimes difficult to measure on a P/L statement, the costs of drug and/or alcohol abuse in the workplace are very real. The increased costs to employers due to employee drug use and abuse include higher insurance premiums, increased accident rates, increased workers compensation claims, higher employee turnover, higher absenteeism, lower productivity, increased errors, etc. Seasoned HR and safety professionals know all too well the impact substance use has on the workplace though they often struggle with the means to control it.

Safety-sensitive industries, such as construction and petrochemical, generally incur higher workers' compensation rates than non-safety-sensitive industries due to their higher number of occupational injuries. In addition to being subject to higher insurance rates, safety-sensitive employers also shoulder the burden of higher costs when an accident or injury does occur. With the continued opioid epidemic and rising popularity and acceptance of marijuana as a "safe" recreational drug, employers must also be aware of the increasing costs that will result in their safety-sensitive workplaces.

**Non-fatal Accidents and Incidents in Safety-Sensitive Industries**

Workplace accidents and incidents occur across all industries; however, safety-sensitive industries generally have high occurrences of both fatal and non-fatal accidents and injuries. Construction and trucking, as two of the largest safety-sensitive industries in the U.S., have higher non-fatal injury and incident rates than the combined average of all U.S. industries.

<i>Industry</i>	<i>Incidence Rate</i>	<i>Number of Cases (in thousands)</i>
<i>All industries, including private, state, and local government</i>	3.0	3351.2
<i>Construction</i>	3.2	197.7
<i>Truck Transportation</i>	4.2	64.4

*Table 1: Addressing the Opioid Epidemic Among Midwest Construction Workers, February 2018*

Truck transportation employees experienced a 40% higher rate of nonfatal occupational injuries in 2016 than the total employees in all industries across the United States. Although lower than the incident rate of the truck transportation industry, the construction industry also had nonfatal occupational injuries at a rate higher than that of the all U.S. industries (6.6%). Not only are nonfatal incidences occurring at much higher rates in safety-sensitive industries, but fatal injuries are high in these industries as well.

## Fatal Accidents in Safety-Sensitive Industries

Today's safety-sensitive employers are finding themselves faced with higher rates of workplace accidents and injuries, many of them fatal. 2016 saw construction and transportation/warehousing as the two industries with the most fatalities nationwide.

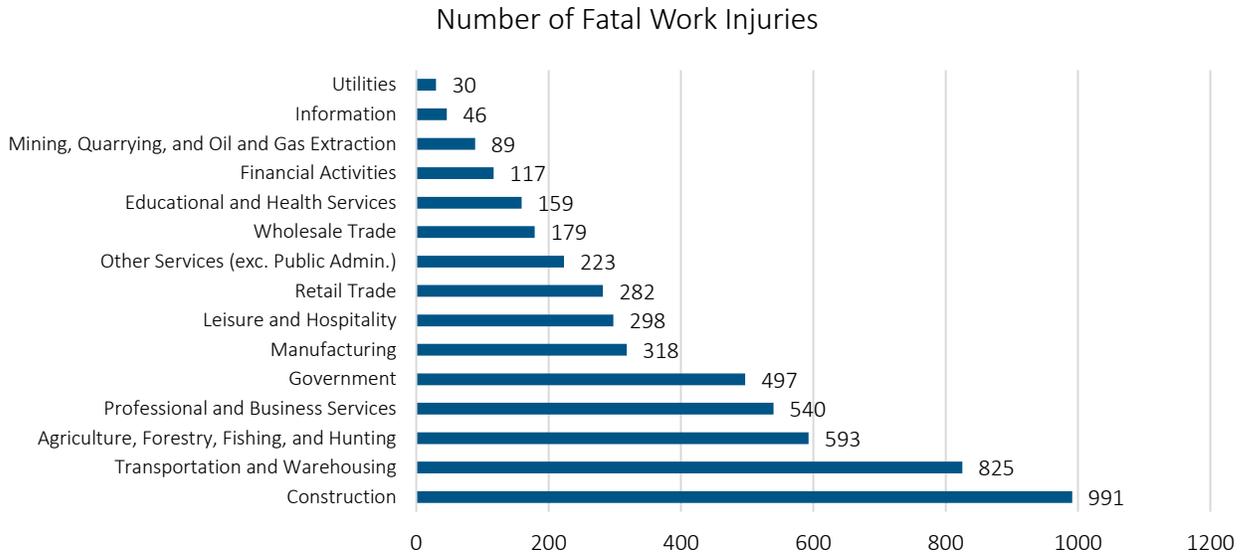


Figure 1: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2017

With the highest count of fatal injuries in 2016, private construction totaled 991 fatal workplace injuries with various causes. Approximately 15% of construction workers have a substance abuse disorder. Undoubtedly some of these injuries were caused by employees under the influence of drugs and/or alcohol<sup>1</sup>. The U.S. Department of Health and Human Services reports that substance abusers perform at only 67% of their potential, making them a hazard in any workplace, regardless of job function. However, in a safety-sensitive industry, this reduced job potential can often be reflected by heightened instances of accidents, some resulting in fatalities.

<sup>1</sup> <http://www.nsc.org/RxDrugOverdoseDocuments/Calculator-Methodology.pdf>

Fatal Work Injury Rate (per 100,000 full-time equivalent workers)

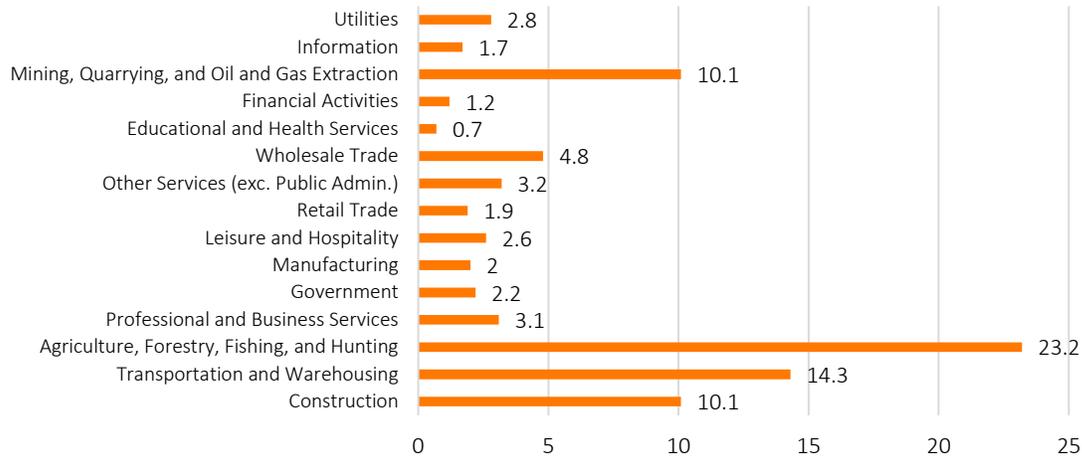


Figure 2: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2017

2016 saw a total of 825 fatal occupational injuries in the transportation and warehousing sectors, an increase of 60 fatal injuries in those industries from 2015. The trucking transportation sector, in particular, was responsible for 570 of those deaths, constituting almost 70% of fatal occupational injuries in the transportation and warehousing sectors in 2016, a slight decrease from the 71% of fatal occupational injuries the sector made up in 2015<sup>2</sup>.

Although the construction industry had the highest reported number of fatal injuries in 2016, it did not have the highest reported fatal injury rate. Transportation incidents caused 42% of the fatalities in the top ten occupations with the highest fatal injury counts. Heavy and tractor trailer truck drivers, farmers, ranchers, and other agricultural managers, first-line supervisors of construction trades and extraction workers, and landscaping and grounds keeping workers all had transportation-related incidents as the leading cause of fatal injuries in 2016. Other industries leading causes of fatal-injuries included falls, slips, and trips, violence and other injuries by persons or animals, and contact with objects or equipment, amongst other events.

<sup>2</sup> <https://www.bls.gov/news.release/pdf/cfoi.pdf>

### Civilian Occupations with High Fatal Injury Counts by Leading Event, 2016

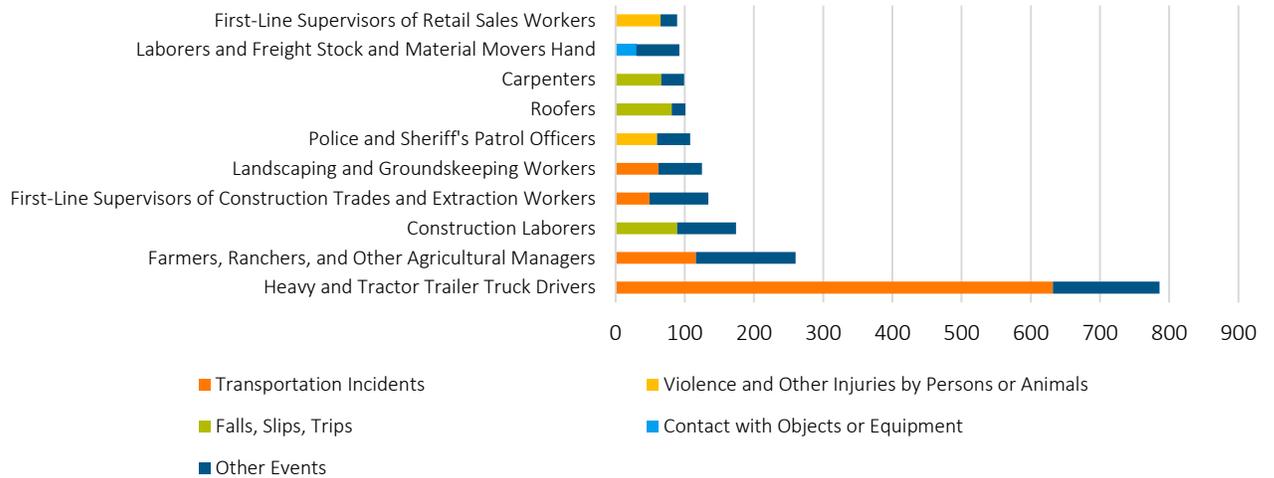


Figure 3: U.S. Bureau of Labor Statistics, 2017

There was a total of 5,190 fatal workplace injuries recorded in the U.S. in 2016, a 7% increase from the 4,836 fatal workplace injuries reported in 2015<sup>3</sup>. This is the third consecutive increase in annual workplace fatalities, and the first time more than 5,000 fatalities have been recorded by the Census of Fatal Occupational Injuries (CFOI) since 2008. The growing support and use of marijuana across the country and the ever-present opioid epidemic could be sources for this increase in fatal workplace incidents across the country. Additionally, the fatal injury rate increased to 3.6 per 100,000 full-time equivalent workers from 3.4 in 2015, the highest rate since 2010.

Fatal injuries among transportation and material moving occupations increased by 7% in 2016, totalling 1388 total injuries, the highest count since 2007. These fatal injuries accounted for more than one quarter of all work-related fatalities in the U.S. in 2016<sup>4</sup>. Trucking and construction were the only industries that experienced more fatal occupational injuries than transportation and material moving occupations in 2016, with 30% of all fatal injuries in U.S. workplaces coming from trucking and construction employees.

Since the oil and gas industry is much smaller, the U.S. Bureau of Labor Statistics (BLS) does not currently provide statistics on occupational injuries, illnesses, or fatalities that occur within the industry. However, the North American Industry Classification System (NAICS) has classified the oil and gas industry into three industry groups across two subsectors (Oil and Gas Extraction (NAICS 211), Drilling Oil and Gas Wells (NAICS 213111), and Support Activities for Oil and Gas Operations (NAICS 213112)) that allow for some statistics. BLS data on fatal injuries in the industry is an aggregation of fatalities in these three industries<sup>5</sup>.

<sup>3</sup> U.S. Bureau of Labor Statistics

<sup>4</sup> <http://www.nsc.org/RxDrugOverdoseDocuments/Calculator-Methodology.pdf>

<sup>5</sup> "Addressing the Opioid Epidemic Among Midwest Construction Workers." Midwest Economic Policy Institute. February 2018. <https://midwestepi.files.wordpress.com/2018/02/opioids-and-construction-final2.pdf>.

Private mining, compared to the transportation and/or construction industries, only suffered 89 fatal occupational injuries in 2016. The oil and gas extraction industries, however, accounted for over 71% of these fatalities.

Fatal Occupational Injuries in the Private Sector Mining, Quarrying, and Oil and Gas Extraction Industry, 2003-2016

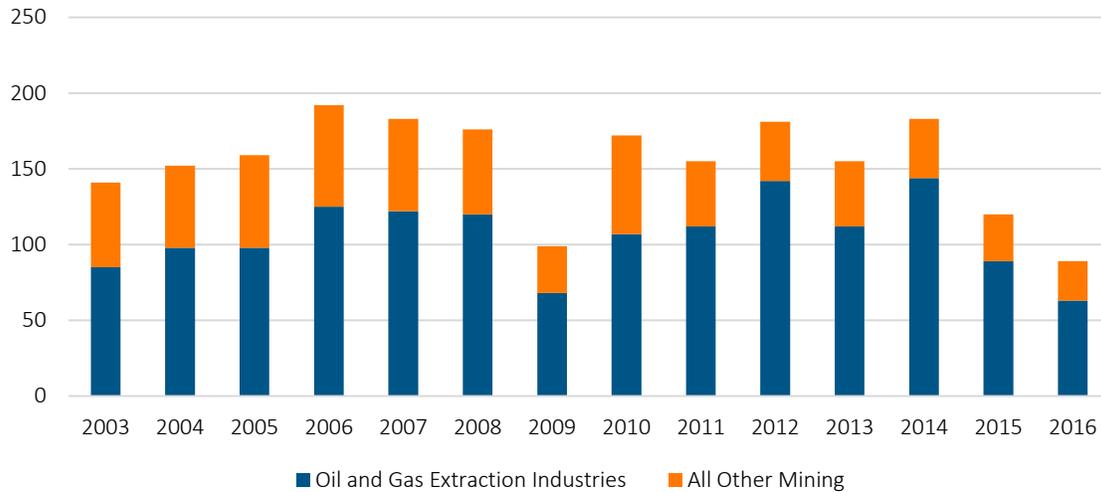


Figure 4: U.S. Bureau of Labor Statistics, Current Population Survey, Census of Fatal Occupational Injuries, 2017

Fatal occupational injuries in safety-sensitive industries such as construction, transportation, and the oil and gas industries are traditionally higher than those in other industries. Employers in these safety-sensitive industries have special reason to be concerned about the impact of increased drug use in the workplace due to their already high rates of workplace injuries, fatal or not.

### The Opioid Epidemic in the Workplace

No workplace is exempt from the impact of the opioid epidemic or the use of recreational drugs. Overdoses from the non-medical use of drugs and/or alcohol while on the job increased from 165 total overdoses in 2015 to 217 total overdoses in 2016, a 32% increase. As of 2012, overdose fatalities across the country have increased by at least 25% annually, correlated with the continuation of the opioid epidemic as well as the legalization and popularization of marijuana use.

The monetary impact of employee drug and/or alcohol abuse is difficult to measure. What we do know is that addiction and substance abuse cost the U.S., as a whole, over \$467 billion per year, a hefty portion of which comes from employers<sup>6</sup>. Nationally, U.S. companies lose approximately

<sup>6</sup> Centeronaddiction.org



\$100 billion per year due to drug and alcohol-related abuse by employees, a number that continues to rise<sup>7</sup>.

Many drug using and/or abusing employees experience the following, including but not limited to:

- Inconsistent work quality
- Poor concentration and lack of focus
- Lowered productivity and/or erratic focus
- Increased absenteeism
- Unexplained disappearances from the jobsite
- Carelessness, mistakes, or errors in judgement
- Needless risk taking
- Disregard for safety for self and others
- On-the-job and off-the-job accidents and/or incidents
- Extended lunch periods and early departures
- Increased driver accidents

While these “small” costs might not be immediately visible to employers, over time their impacts add up to cost employers’ significant amounts in lost time, re-hiring costs, and potential lawsuits due to safety risks. For example, the average car accident costs an employer a *mere* \$16,500. Add in an injury as a result of said accident, and the cost to the employer suddenly rises to \$74,000. When an accident results in a fatality, costs rise even further to \$500,000, sometimes exceeding that number<sup>8</sup>.

From 2001 to 2017 the cost of the opioid epidemic is estimated to have exceeded \$1 trillion and is anticipated to cost a further \$500 billion by the year 2020<sup>9</sup>. The majority of these costs have been borne by employers, particularly by those in such safety-sensitive industries as construction, manufacturing, etc. The very nature of those industries not only heightens the risks of employee drug use in the workplace, but it also increases the costs should an accident occur.

The International Brotherhood of Electrical Workers (IBEW) represents many electrical contractors throughout the U.S. and cites two insurance claims in 2017 that individually exceeded \$250,00, both relating to opioid abuse<sup>10</sup>. Employers who are a part of IBEW can expect insurance premiums to rise substantially in response to these and other similar claims, in addition to funding any incidents that occur on-the-job for opioid using employees. Opioids, amongst other drugs of abuse, are highly misused in safety-sensitive industries. The National Safety Council reported in 2017 that 15% of construction workers struggle with substance abuse, a number nearly twice that of the national average.

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<sup>7</sup> “Drugs and Alcohol in the Workplace.” *Addiction Update*, April 2015.

<sup>8</sup> “Guidelines for Employers to Reduce Motor Vehicle Crashes.” OSHA. Unknown. [https://www.osha.gov/Publications/motor\\_vehicle\\_guide.pdf](https://www.osha.gov/Publications/motor_vehicle_guide.pdf).

<sup>9</sup> “Economic Toll of Opioid Crisis In U.S. Exceeded \$1 Trillion Since 2001.” *Altarum*. 13 February 2018. <https://altarum.org/about/news-and-events/economic-toll-of-opioid-crisis-in-u-s-exceeded-1-trillion-since-2001>.

<sup>10</sup> “Opioid Crisis Has Growing Cost for Businesses and their Employees.” *WXXI News*. 13 April 2018. <http://wxxinews.org/post/opioid-crisis-has-growing-cost-businesses-and-their-employees>.



Industry experts point to an aging workforce as one of the potential causes for the high substance abuse rate in construction and other safety-sensitive industries. With fewer young people entering the industry in recent years, the older workforce is more prone to injuries and therefore more likely to need painkillers. With the highly-addictive nature of opioids and other strong pain medications, it's easy for a short-term need to become a long-term dependence, eventually leading to the use of other drugs to get a fix.

### The Cost of Opioids in Safety-Sensitive Industries

Although many of the costs of drug and/or alcohol abuse in the workplace are not easily quantifiable, researchers have recently been trying to understand the reality of how much one opioid/substance-abusing employee can have on the workplace. As such, researchers have taken a closer look at the construction industry in the Midwest. They found that each construction worker with an untreated substance abuse disorder costs their employer an average of \$6,800 per year in excess healthcare expenses, absenteeism, and turnover costs<sup>11</sup>.

That almost \$7,000 price tag only includes costs from healthcare, absenteeism, turnover, and, in some cases, productivity. The costs of other impacts to an employer can vary widely by industry and their impact on the workplace. For example, a substance-abusing employee in the mining industry that obtains an occupational injury as a result of their substance abuse costs their employer an average of \$970 per injury. However, costs can quickly rise to more than \$50,000 depending on the injury in question<sup>12</sup>. The average cost of a car accident to an employer is \$16,500 *per involved employee*. Accidents resulting in fatalities can cost upwards of \$500,000.

When a substance-abusing employee shuts down a facility or jobsite in a safety-sensitive industry, costs can dramatically increase. The 141 refineries in the U.S. typically run 24 hours a day, 7 days a week, 365 days a year, producing an average of 132,000 barrels of oil per day<sup>13</sup>. With crude oil prices costing approximately \$65 per barrel, any downtime to the facility would cost the average refinery more than \$6,000 a minute, \$360,000 per hour, and in excess of \$8.6 million per day.

Other safety-sensitive industries see similar high costs due to lost productivity due to unexpected shutdowns. A 2017 shutdown of BMW's Munich factory caused by two substance-abusing workers for a mere 40 minutes cost the company more than \$1 million in lost productivity<sup>14</sup>.

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<sup>11</sup> "Addressing the Opioid Epidemic Among Midwest Construction Workers." Midwest Economic Policy Institute. February 2018.

<https://midwestepi.files.wordpress.com/2018/02/opioids-and-construction-final2.pdf>.

<sup>12</sup> "Safety Pays in Mining." Centers for Disease Control and Prevention, unknown.

<https://www.cdc.gov/niosh/mining/content/economics/safetypays.html>.

<sup>13</sup> AFPM United States Refining and Storage Capacity Report. August 2017.

<https://www.afpm.org/uploadedFiles/Content/documents/2017-Capacity-Report.pdf>.

<sup>14</sup> "BMW Factory Workers Show Up High, Shut Down Line, Cost \$1 Mil." AutoFocus, 27 March 2017. <http://www.autofocus.ca/news-events/news/bmw-factory-workers-show-up-high-shut-down-line-cost-1-mil>.

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Finally, add in the cost of a lawsuit due to the actions of a substance-abusing employee, totaling an average of \$90,000 (for an out-of-court settlement) or \$165,000 (for an in-court judgement, not including the cost of defense)<sup>15</sup>.

Once you factor in the average costs of substance-abusing employees in a safety-sensitive industry, the total cost to an employer could reach **\$164,270 on the low end, or up to \$1,721,800 in one year.**

Combine the individual cost with the knowledge that an estimated 15% of construction workers have a substance abuse disorder, and suddenly the opioid epidemic becomes quite expensive for both small and large employers alike.

The construction industry the only safety-sensitive industry to report high substance abuse rates. Extraction workers have approximately twice the substance abuse disorder rates of educators, professional, office, and administrative support workers<sup>16</sup>. The construction and extraction industries combined had an average of 188 out of 10,000 workers miss work because of an on-the-job injury or illness from 2012-2016, a major jump from the 106.5 national average for other professions in the same time period<sup>17</sup>. In an industry with more than 1.5 times the injuries as other industries, it's no wonder that the number of opioid-abusing workers is on the rise.

With more opioid and/or drug-abusing employees in the workplace, the chance of an employee's opioid-related death becomes higher. Even if the employee does not die in a work-related incident or accident, employers still bear hefty costs in terms of lost productivity, income, pain, suffering, replacement costs, etc.

<i>State</i>	<b>Estimated Number of Construction Worker Deaths from Opioid Overdoses in 2015</b>	<b>Estimated Long-Term Cost per Construction Fatality (Lost Production, Lost Income, and Pain and Suffering)</b>	<b>Estimated Total Cost of Construction Worker Fatal Opioid Overdoses Per Year</b>
<i>Illinois</i>	164	\$5.28 million per fatality	\$865.9 million
<i>Indiana</i>	83	\$5.42 million per fatality	\$449.9 million
<i>Iowa</i>	32	\$5.24 million per fatality	\$167.7 million
<i>Michigan</i>	160	\$5.36 million per fatality	\$857.6 million
<i>Minnesota</i>	54	\$5.4 million per fatality	\$291.6 million
<i>Ohio</i>	380	\$5.36 million per fatality	\$2,036.8 million
<i>Wisconsin</i>	92	\$5.69 million per fatality	\$523.5 million
<b>Totals</b>	<b>962</b>	<b>\$5.40 million per fatality</b>	<b>\$5,193.0 million</b>

<sup>15</sup> "Employee Charge Trends Across the United States." Hiscox, 2015. <https://www.hiscox.com/documents/The-2015-Hiscox-Guide-to-Employee-Lawsuits-Employee-charge-trends-across-the-United-States.pdf>.

<sup>16</sup> "Addressing the Opioid Epidemic Among Midwest Construction Workers." Midwest Economic Policy Institute. February 2018. <https://midwestepi.files.wordpress.com/2018/02/opioids-and-construction-final2.pdf>.

<sup>17</sup> "The \$5 billion Cost of Construction Fatalities in the United States." Midwest Economic Policy Institute, 8 May 2018. <https://midwestepi.files.wordpress.com/2017/05/mepi-construction-fatalities-nationwide-final.pdf>.

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Table 2: The Midwest Economic Policy Institute, "Addressing the Opioid Epidemic Among Midwest Construction Workers"

Although the actual number of opioid-related construction worker deaths varies from state-to-state, as does the cost, the average cost to an employer is astronomical - **\$5.4 million per fatality**. This number does not include additional costs to the employer if the employee overdosed on the job-site or while performing a job-related function. To reach this number, experts estimate costs which are then multiplied by recent data in order to provide applicable estimates. These include direct costs, indirect costs, and quality-of-life costs that determine total state costs. Direct costs include health-related payments, rehabilitation, funeral expenses, administrative insurance costs, property damage, and more. Indirect costs include productivity losses, wage losses, administrative costs, and more. Quality-of-life costs include the pain and suffering of the victims as well as their families.

A recent study quantified the costs incurred in certain safety-sensitive industries for employers with substance-abusing employees. The manufacturing industry (nondurable goods) had the highest annual cost incurred by missed work from employees with a substance abuse disorder, totaling \$1,692 per person in additional costs to the employer. Manufacturing (durable goods) was close behind with costs totaling \$1,399 per employee, construction totaling \$1,040 per employee, and the mining industry totaling \$881 per employee<sup>18</sup>.

Extra costs vary for employers that have employees with pain medication use disorders (such as opioids). The manufacturing industry (durable goods) incurs the most extra costs for employers, with a massive \$14,830 per pain-medication abusing employee per year, in addition to costs of incidents, accidents, etc. Manufacturing (nondurable goods) followed with an extra \$1,677 of costs per employee/year, and construction had the smallest extra costs to employers with only \$455 per pain-medication abusing employees per year<sup>19</sup>.

The National Survey on Drug Use and Health<sup>20</sup> calculates the annual costs of substance use in a workforce population. Using the example of a Transportation/Utilities industry employer with 1000 employees located in Texas, the estimated total cost of substance use is \$209,438 with \$27,548 in lost time, \$100,323 in Job turnover and re-training and \$81,496 in Healthcare costs. That same employer located in Louisiana would experience \$217,752 in total costs.

## Conclusion

A drug abuser in a safety-sensitive industry could cost a company thousands of dollars in lost time, fees for injuries, incidents, fatalities, lawsuits, facility downtime, etc. As popularity in recreational drug use, such as marijuana, begins to rise, it is especially important in safety-sensitive industries to be aware of the potential cost a drug abuse poses to the company.

If a single drug-abusing employee costs an employer a minimum of \$164,270 over the course of a year, the cost to an employer is already staggering. However, an average of 15% of construction employees have a substance abuse disorder, and that number varies in other safety-sensitive

<sup>18</sup> <http://www.nsc.org/RxDrugOverdoseDocuments/Calculator-Methodology.pdf>

<sup>19</sup> <http://www.nsc.org/RxDrugOverdoseDocuments/Calculator-Methodology.pdf>

<sup>20</sup> <https://www.nsc.org/forms/substance-use-employer-calculator>

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industries. For a small employer with 100 construction-related employees, approximately 2 employees will be substance abusers. With two substance-abusers on staff, an employer would lose approximately \$328,540 per year due to those substance-abusing employees – a cost many employers are not prepared to pay. A robust drug and alcohol testing program can help identify workers in safety-sensitive industries with substance abuse problems before accidents and/or incidents occur, saving employers money in the long run. While the cost of implementing a drug and alcohol testing program may seem steep up front, \$10,000 now can help save hundreds of thousands of dollars down the road for small businesses, and even more for large, multi-state companies.

If an employer in the construction industry has simply one employee overdose from opioids, one employee with a substance-abuse disorder, and one with a pain medication disorder, costs would total nearly **\$5,401,500**, not including raised insurance premiums, incidents and/or accidents, etc. Although no industry is exempt from the impacts of the opioid crisis, it's clear that safety-sensitive industries have real, tangible costs related to drug use and abuse in the workplace that can cripple small and large companies alike.