

Construction Worker Injuries, Overdoses, and Suicides

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OVERVIEW

The construction industry is [one of the most dangerous](#) in the U.S., accounting for nearly one-fifth of all workplace deaths in 2023. Construction workers face hazards such as dangerous equipment, falls and slips, overexertion, transportation accidents, and exposure to harmful substances. While fatal and nonfatal injuries have their greatest effects on workers and their families, they also affect construction companies, who experience [loss of productivity](#) and [financial costs](#). In addition, research shows that hazardous work is associated with poor mental health.

This Data Bulletin examines fatal and nonfatal on-the-job injuries, as well as mortalities by *cause of death* among U.S. construction workers. Injury data was collected from the U.S. Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI) and Survey of Occupational Injuries and Illnesses (SOII). Fatal injuries were examined by demographics, *major subsector*, *event/exposure*, work activity, and *worker location*. CFOI does not typically include illnesses with long latency periods, such as cancers caused by exposure to work-related carcinogens. Nonfatal injuries are only those that resulted in *days away from work (DAFW)*. Nonfatal injuries were examined by major subsector, event/exposure, and *primary source*. Because SOII data changed from annual to biennial estimates in 2021, nonfatal data are shown for two-year periods. Data on cause of death for construction workers 16 to 64 years old was obtained from the National Center for Health Statistics National Vital Statistics System (NVSS). NVSS data does not capture employment status (full-time, unemployed, retired, etc.) at time of death. Construction workers are defined in NVSS data as those whose usual industry was construction, including individuals currently employed, retired, or no longer in the workforce. Data for rate calculations were obtained using the Current Population Survey (CPS). Rates calculated per 100,000 *full-time equivalents (FTEs)* for fatal injuries and per 10,000 FTEs for nonfatal injuries.



THIS ISSUE

This issue examines on-the-job injuries, as well as suicides and overdoses using mortality data.

KEY FINDINGS

In 2023, workers aged 35-44 years old had the highest number of fatal injuries (n=256), while those 65 years or older had the highest rate (20.0 per 100,000 FTEs).

Chart 2

Specialty Trade Contractors (NAICS 238) accounted for 62.0% of fatal injuries in 2023 that had a reported major subsector.

Chart 3

The rate of nonfatal on-the-job injuries decreased 29.5% from 2011-2012 to 2021-2022 (119.8K to 84.4K per 10,000 FTEs).

Chart 7

From 2021 to 2022, the most common events/exposures for nonfatal injuries were contact incidents, falls, slips, and trips, and overexertion/bodily reaction incidents (n=126.6K, 88.1%).

Chart 8

In 2023, there were 15.9K overdose deaths among construction workers, with synthetic opioids involved in three out of four overdoses.

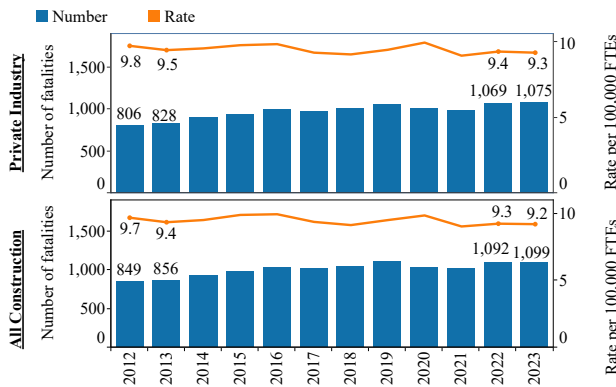
Charts 11, 12

NEXT DATA BULLETIN

Musculoskeletal disorder (MSDs) trends in construction

From 2012 to 2023, there were 12.0 thousand (K) fatal injuries in construction, of which the majority (96.6%; n=11.6K) occurred among *private construction workers* (Chart 1). Over this period, the number of fatal injuries in all construction firms increased 29.4% (849 to 1,099) and fatal injuries in private construction increased 33.4% (806 to 1,075). Meanwhile, rates decreased 5.2% in all construction (9.7 to 9.2 per 100,000 FTEs) and 5.1% in private construction (9.8 to 9.3 per 100,000 FTEs) from 2012 to 2023.

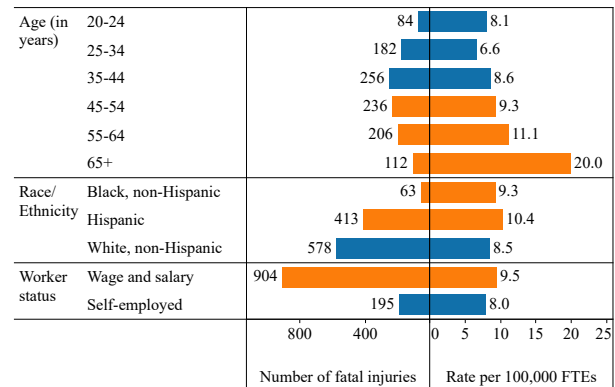
1. Number and rate of fatal injuries, private versus all construction (2012-2023)



Source: U.S. Bureau of Labor Statistics, 2012-2023 Census of Fatal Occupational Injuries and 2012-2023 IPUMS Current Population Survey.

Next, the number and rate of fatal construction injuries were examined by age, race/ethnicity and worker status (Chart 2). In 2023, the number of fatal injuries was highest among workers 35 to 44 years old (n=256), which is not surprising given the average age in construction is 42.1 years (Brooks et al., 2025). Fatality rates, however, were higher among workers 65 years and older (20.0 per 100,000 FTEs), followed by those 55 to 64 years old (11.1 per 100,000 FTEs). By race/ethnicity, White, non-Hispanics (n=578) and Hispanics (n=413) accounted for most fatal injuries, which reflects the [overall demographics in construction](#). Fatality rates were highest among Hispanics (10.4 per 100,000 FTEs) and Black, non-Hispanics (9.3 per 100,000 FTEs). By worker status, wage-and-salary construction workers had a higher number (n=904) and rate (9.5 per 100,000 FTEs) of fatal injuries than self-employed workers (n=195; 8.0 per 100,000 FTEs).

2. Fatal injuries, by select demographics/characteristics* (2023)



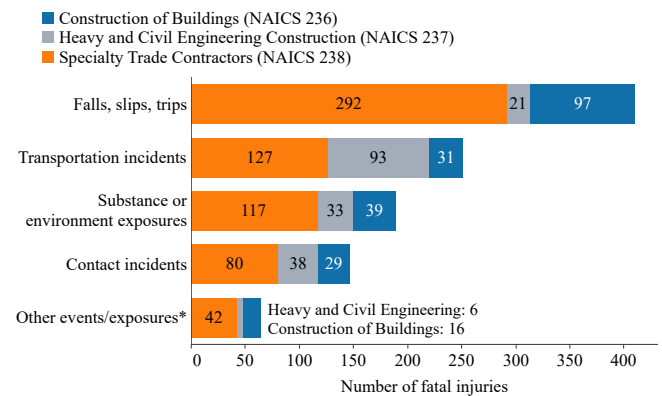
Source: U.S. Bureau of Labor Statistics, 2023 Census of Fatal Occupational Injuries and 2023 IPUMS Current Population Survey.

*Demographics/characteristics with less than 25 fatal injuries excluded.

^Bars colored orange indicate a higher fatality rate than all construction (9.2 per 100,000 FTEs).

Of construction’s three major subsectors, Specialty Trade Contractors (NAICS 238) accounted for 62.0% (n=658) of all fatal injuries with a reported subsector (Chart 3); a majority of construction workers are [employed in this subsector](#). Construction of Buildings (NAICS 236) accounted for 20.0% (n=212) of these injuries and Heavy and Civil Engineering Construction (NAICS 237) 18% (n=191). When looking at events/exposures resulting in fatal injuries, falls, slips, trips was most common for Specialty Trade Contractors (n=292) and Construction of Buildings (n=97), whereas transportation incidents were most common for Heavy and Civil Engineering Construction (n=127). For Construction of Buildings, 18.4% of fatalities involved exposure to harmful substances or environments (n=39), while 19.9% of fatalities in Heavy and Civil Engineering Construction were contact incidents (e.g., caught-in, struck-by equipment; n=38).

3. Fatal injuries, by major subsector and event/exposure (2023)

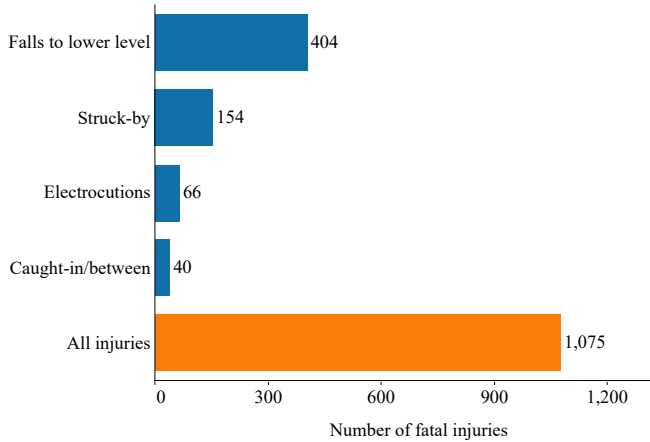


Source: U.S. Bureau of Labor Statistics, 2023 Census of Fatal Occupational Injuries and Illnesses.

*Includes violent acts (n=41), explosions and fires (n=15), and other events/exposures (n=8).

Fatal *Focus Four* injuries among private construction workers were then analyzed for the 1,075 fatal injuries in private industry construction (Chart 4). Consistent with [previous years](#), falls to lower level accounted for the most Focus Four fatalities (60.8%; n=404) in 2023. Struck-by injuries were the second largest category (23.2%; n=154), while electrocutions and caught-in/between injuries accounted for 9.9% (n=66) and 6.0% (n=40) of Focus Four fatalities, respectively.

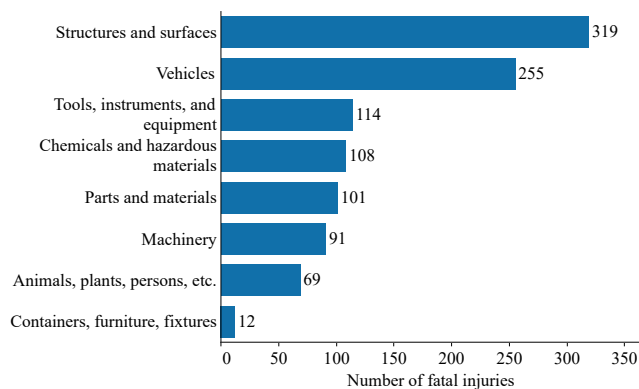
4. Fatal Focus Four injuries (2023; private industry)



Source: U.S. Bureau of Labor Statistics, 2023 Census of Fatal Occupational Injuries.

Looking at the 1,099 fatal injuries in construction by primary source, structures and surfaces (e.g., bridges, tunnels, towers, dams, confined spaces; n=319) were the most common primary source, contributing to 29.0% of construction fatalities in 2023 (Chart 5). Vehicles (n=255; 23.2%), tools, instruments, and equipment (n=114; 10.4%), and chemicals and hazardous materials (n=108; 9.8%) were also leading sources. These top primary sources are consistent with the top event/exposures observed in Chart 3 above.

5. Fatal injuries, by primary source* (2023)

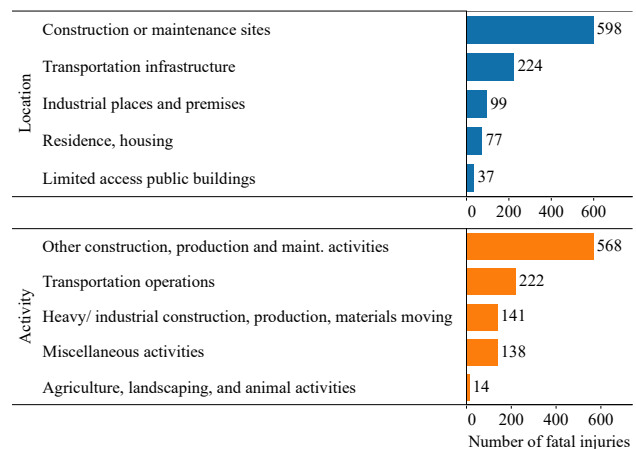


Source: U.S. Bureau of Labor Statistics, 2023 Census of Fatal Occupational Injuries.

*May not sum to total fatal injuries in construction due to unreported/unavailable data.

Over half (55.2%; n=598) of all construction worker fatalities in 2023 with a reported location occurred at construction or maintenance sites, while 20.7% and 9.1% occurred at transportation infrastructure (n=224) and industrial places and premises (n=99). Meanwhile, the most common activities associated with fatal construction injuries included other construction, production and maintenance activities (52.4%; n=568), transportation operations (20.5%; n=222), and heavy industrial construction, production, and materials moving operations (13.0%; n=141).

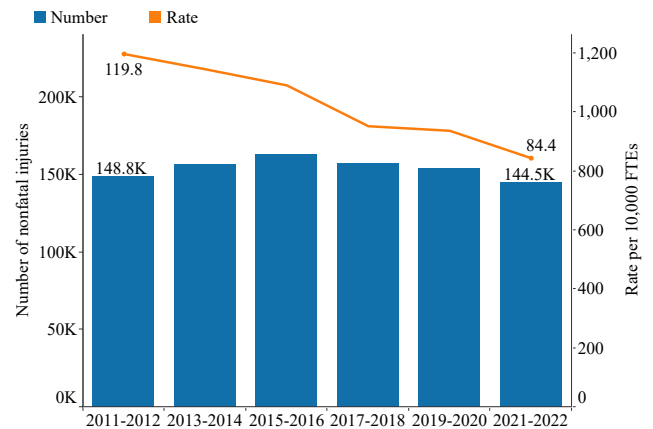
6. Top 5 worker locations and worker activities for construction injuries (2023)



Source: U.S. Bureau of Labor Statistics, 2023 Census of Fatal Occupational Injuries.

Next, nonfatal injuries involving construction workers were examined for six two-year periods from 2011 to 2022. Nonfatal injuries have been declining since 2015-2016 (Chart 7). During the 2021-2022 period, there were 144.5 thousand (K) nonfatal injuries, a 2.9% decrease from 2011-2012 (148.8K). The rate fell by 29.5% from 2011 to 2022 (119.8 per 10,000 FTEs to 84.4 per 10,000 FTEs).

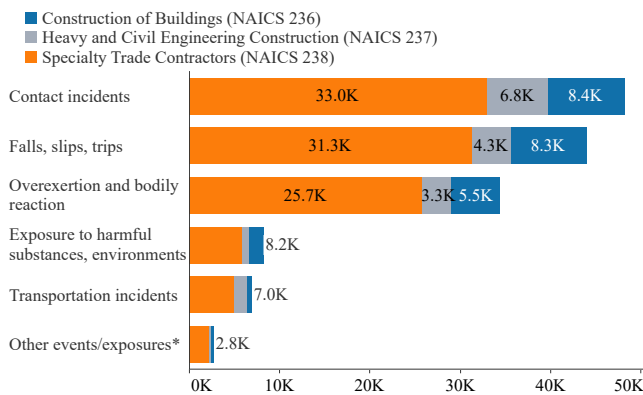
7. Number and rate of nonfatal injuries (2011-2022)



Source: U.S. Bureau of Labor Statistics, 2011-2022 Survey of Occupational Injuries and Illnesses.

From 2021 to 2022, the most common nonfatal event exposures for the major subsectors were contact incidents, falls, slips, and trips, and *overexertion/bodily reaction injuries*. Together they accounted for 88.1% (n=126.6K) of nonfatal injuries with a reported major subsector (Chart 8). Contact incidents involving objects and equipment were the most common event/exposure for each major subsector. Specialty Trade Contractors (NAICS 238) had 102.3K total reported injuries by event/exposure, 2.5 times the number of the other major subsectors combined (41.3K). Heavy and Civil Engineering Construction (NAICS 237) recorded the least nonfatal injuries (17.0K).

8. Nonfatal injuries, by major subsector and event/exposure (2021-2022)

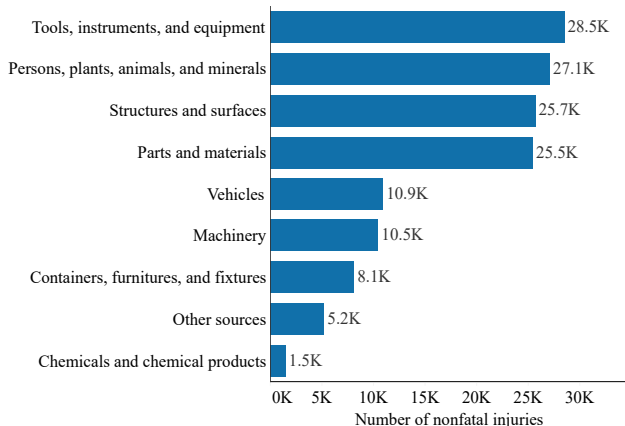


Source: U.S. Bureau of Labor Statistics, 2021-2022 Survey of Occupational Injuries and Illnesses.

*Includes violent acts (n=1.6K), explosions and fires (n=360), and other events/exposures (n=870).

The most common primary source of nonfatal construction injuries from 2021 to 2022 were tools, instruments, and equipment, accounting for 20.0% (n=28.5K) of nonfatal injuries with a primary source reported (Chart 9). Within that category, ladders (43.2%; n=11.6K) and powered hand tools (28.0%; n=7.5K) were most frequently involved (data not shown). The second leading source was persons, plants, animals, and minerals (e.g., insects, infectious diseases; 19.0%; n=27.1K).

9. Nonfatal injuries, by primary source (2021-2022)



Source: U.S. Bureau of Labor Statistics, 2021-2022 Survey of Occupational Injuries and Illnesses.

Cause of death for all fatalities was examined next. In 2023, a majority (91.1%, n=838) of at-work fatalities among construction workers aged 16 to 64 years old resulted from an *unintentional injury* (Chart 10). There were also 109 *overdoses* and 38 *suicides* that occurred at work in 2023. From 2022 to 2023, at-work suicides increased 72.7% (22 to 38) and at work overdoses decreased 4.4% (114 to 109).

10. Number of at-work fatalities among construction workers aged 16 to 64 years old, by injury type* (2022-2023)

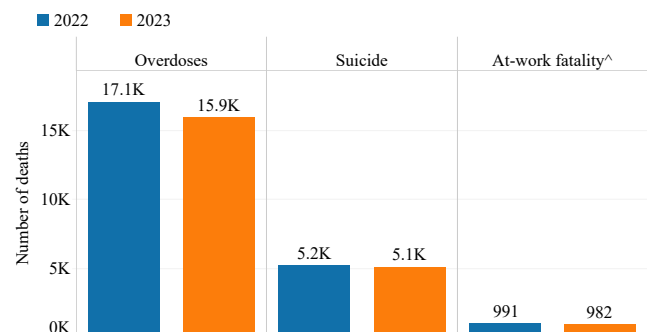


Source: National Center for Health Statistics, 2022-2023 Mortality Multiple Cause File.

*See injury type definitions as ICD-10 codes overlap for commonly used definitions. For example, suicides resulting from an overdose are included in both categories.

All deaths among construction workers aged 16 to 64 years old were then evaluated for 2022 (n=95.0K, data not shown) and 2023 (86.4K, data not shown). There were 15.9K overdoses and 5.1K suicides among construction workers in 2023. In comparison, CFOI reported 982 fatal at-work injuries among those 16 to 64 years old that same year (Chart 11). A small percentage of these overdoses (0.7%; n=109) and suicides (0.7%; n=38) occurred at work, as shown in Charts 10 and 11. Suicides (-2.7%; 5.2K to 5.1K) and overdoses (-6.7%; 17.5K to 15.9K) decreased from 2022 to 2023.

11. Fatalities by cause among construction workers aged 16 to 64 years old (2022-2023)*



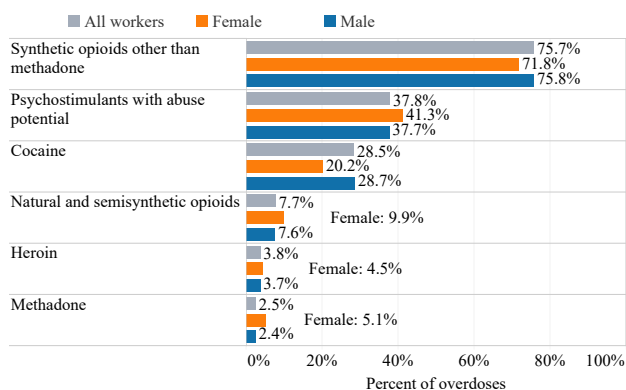
Source: National Center for Health Statistics, 2022-2023 Mortality Multiple Cause File and U.S. Bureau of Labor Statistics, 2022-2023 Census of Fatal Occupational Injuries.

*See injury type definitions as ICD-10 codes overlap for commonly used definitions. For example, suicides resulting from an overdose are included in both categories.

^At-work fatalities reduced to 16 to 64 years old to match mortality data.

Next, *drug types* involved in overdoses (both at work and away from work) were examined (Chart 12). Synthetic opioids other than methadone were involved in a majority of overdoses in 2023 (75.7%). By sex, females had a slightly lower percentage of overdoses involving a synthetic opioid other than methadone than males (71.8% versus 75.8%), as well as a lower percentage of overdoses involving cocaine (20.2% versus 28.7%). In comparison, females had a higher percent of overdoses involving psychostimulants (41.3% versus 37.7%), natural and semisynthetic opioids (9.9% versus 7.6%), heroin (4.5% versus 3.7%), and methadone (5.1% versus 2.5%).

12. Drug type involvement for overdoses among construction workers aged 16 to 64 years old, by sex (2023)



Source: National Center for Health Statistics, 2023 Mortality Multiple Cause File.

* May sum to greater than 100% as more than one type of drug could have been involved in an overdose.

From 2011 to 2022, nonfatal injuries in construction decreased 2.9%, with rates falling nearly 30%. Meanwhile, fatal injuries continue to rise, most notably among private construction firms, which experienced a 33.4% increase in total fatal injuries from 2012 to 2023. Fatality rates decreased 5.2% during this same period.

[Mental health is a growing area of concern](#) across the construction industry. Suicides overall among construction workers aged 16 to 64 years old decreased from 2022 to 2023; however, the number of at-work suicides increased 72.7% (22 to 38). From 2022 to 2023, overdoses and at-work overdoses declined. In 2023, there were 15.9K construction workers aged 16 to 64 years old who died from an overdose, with synthetic opioids (including highly dangerous drugs such as [fentanyl and tramadol](#)) involved in three out of four of them. Of the 15.9K overdoses, 99.3% occurred away from work (n=15.8K).

To prevent injuries, proper workplace safety training is crucial. CPWR provides many resources and training tools to address common hazards and exposures, including falls and struck-by incidents. CPWR also provides [mental health resources](#), [REASON newsletter](#), (Resources and Effective programs Addressing Suicides and Opioids Now). [OSHA](#) and [NIOSH](#) also have materials that address hazards and exposures in the construction industry.

ACCESS THE CHARTS & MORE

View the [charts](#) in PowerPoint and the [data](#) underlying the charts in Excel. Downloading will start when you click on each link. These files can also be found under the Data Bulletin at: <https://www.cpwr.com/research/data-center/data-reports/>.

DEFINITIONS

- **Cause of death** – The specific condition that caused the death based on the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM [“ICD10”]) diagnosis Code.
- **Days away from work (DAFW)** – nonfatal injury cases resulting in at least one day away from work beyond the day of injury or illness onset.
- **Drug Type** – the type of drug involved in the overdose determined using the multiple-cause-of death ICD-10 code, coded as: heroin (T40.1), natural and semisynthetic opioids (T40.2), methadone (T40.3), synthetic opioids other than methadone (T40.4), cocaine (T40.5), and psychostimulants (T43.6). An overdose could involve more than one drug type.
- **Event/Exposure** – The way the injury or illness was produced or inflicted, such as a fall, heat-related illness, etc. For example, a worker using a hand-held electric auger that struck a powerline would have a reported event or exposure of “Exposure to electricity,” with their reported primary source being “Tools, instruments, and equipment: Handtools-powered.” Full definitions for categories can be found in the [Occupational Injury and Illness Classification Manual](#).
 - **Overexertion/bodily reaction injury** – Injury resulting from excessive effort, unnatural positions, repetitive motions, maintaining a position for a long period of time. These are included in the musculoskeletal disorder definition by BLS. For more information, see: [BLS OSH Definitions](#).
- **Focus Four** – Defined by OSHA as the four injuries that cause the most fatalities among construction workers, including falls to a lower level, struck-by, electrocutions, and caught-in/between injuries.
- **Full-time equivalent worker (FTEs)** – Determined by the hours worked per employee on a full-time basis, defined as working 2,000 hours (40 hours x 50 weeks) per year.
- **Major subsector** – 3-digit NAICS codes within construction.
- **Overdose** – a death with one of the following ICD-10 codes: X40–X44, X60–X64, X85, and Y10–Y14. ICD-10 codes X60–X64 are intentional, self-poisonings by drugs which are included in the poisoning means and suicide definitions.

- **Primary source** – *The objects, substances, equipment, and other factors that were responsible for the injury or illness incurred by the worker. For example, a worker who was climbing up a ladder when they slipped and fell would have a reported primary source of, “Ladders.” For more details see: [Occupational Injury and Illness Classification Manual](#).*
- **Private construction** – *Employment in construction businesses owned by individuals or groups of individuals.*
- **Suicide** – *a death with one of the following ICD-10 codes U03, X60–X84, and Y87. ICD-10 codes X60–X64 are intentional, self-poisonings by drugs which are included in the poisoning means and overdose definitions.*
- **Unintentional injury** – *a death with one of the following ICD-10 codes V01–X59, Y85–Y86. Codes X40–X44 are also included in the overdose definition.*
- **Worker location** – *Where the fatal injury incident or exposure occurred, such as residence or road construction. For more details see: [Occupational Injury and Illness Classification Manual](#).*

DATA SOURCES

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- COVID-19 Construction Clearinghouse
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- Electronic Library of Construction Occupational Safety and Health
<https://www.elcosh.org/index.php>
- eLCOSH Nano
<https://nano.elcosh.org/>
- Exposure Control Database
<https://ecd.cpwrconstructionsolutions.org/>
- Nano Safety Data Sheet Improvement Tool
<https://nanosds.elcosh.org/>
- Safety Climate—Safety Management Information System (SC-SMIS)
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