# State of California Department of Industrial Relations



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# **Fatal Occupational Injuries in California**

2013 - 2023





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## Message from Cal/OSHA Chief Debra Lee

This annual report has been crafted by the Census of Fatal Occupational Injuries Program. This program is run by the Division of Occupational Safety and Health, commonly referred to as Cal/OSHA, of the California Department of Industrial Relations, along with the U.S. Bureau of Labor Statistics. Within these pages, you'll find crucial insights into the numbers and demographics surrounding occupational fatalities in California. Each statistic represents a human life lost while on the job, underscoring the imperative of our workplace regulations aimed at averting such tragedies. At Cal/OSHA, we meticulously analyze these data to discern how we can fortify and enhance workplace safety across California. This involves outreach, education, rulemaking, and enforcement, among other initiatives. It's a collaborative effort involving employers, industry groups, safety professionals, worker organizations, workers, and concerned stakeholders, all pivotal in safeguarding and enhancing working conditions for California's workers. As you peruse this report, I urge you to pause and reflect on all who have been grievously affected by workplace accidents, and consider how together, we can proactively strive to prevent future fatalities.

### Introduction

Cal/OSHA collects comprehensive statistics on work-related fatalities through the Census of Fatal Occupational Injuries (CFOI) Program. Established by the U.S. Bureau of Labor Statistics (BLS) in 1992, the CFOI Program compiles state and national data to support public health practitioners, researchers, regulators, and safety and health policy analysts in their efforts to prevent work-related deaths. The program aims to identify all workers fatally injured on the job, regardless of their employment status or coverage under state and federal laws.

The California Department of Industrial Relations (DIR) oversees the CFOI Program, utilizing a wide range of sources to identify and validate work-related fatalities. These sources include death certificates, workers' compensation records, news articles, Cal/OSHA incident reports, OSHA Information System (OIS) records, coroner and police reports, and records from agencies such as the National Highway Traffic Safety Administration (NHTSA) and National Transportation Safety Board (NTSB). Additional sources like military reports, social media, and obituaries are also used to cross-reference information.

Through comprehensive and meticulous cross-referencing, the program gathers detailed data on each incident, including worker demographics, equipment involved, circumstances of the event, and specifics of the injury. This comprehensive data is aggregated and analyzed to inform and promote safety initiatives aimed at reducing workplace fatalities, benefiting employers, employees, and other stakeholders.

## Scope

The CFOI program focuses exclusively on fatalities caused by work-related traumatic injuries. These injuries are defined as any harm or damage to the body resulting from acute exposure to energy, such as heat or electricity, impact from a crash or fall, or the absence of vital essentials like heat or oxygen, all caused by a specific event or incident within a single workday or shift. Examples of included injuries are heatstroke, intracranial and internal injuries, open wounds, hypothermia, asphyxiation, acute poisoning from short-term exposures limited to the worker's shift, suicides, homicides, and work injuries listed as underlying or contributory causes of death. Workplace drug overdoses are included, regardless of where the drugs were consumed.

Deaths from fatal occupational illnesses are excluded unless they result from an acute injury or exposure event. Fatal diseases caused by prolonged exposure—such as asbestos-related illnesses, silicosis, heart disease, and cancers—are not included.

Cases are included in CFOI if the injury or injuries played a contributing role in the death, even if they were not the sole or primary cause. For instance, while deaths solely caused by COVID-19 are excluded, fatalities resulting from a traumatic injury complicated by COVID-19 are included.

A fatal injury is considered work-related if the event or exposure:

- 1. Occurred on the employer's premises while the person was present to work, or
- 2. Took place off the employer's premises and either involved work-related activities or was connected to the worker's employment.

Details about CFOI's scope are made publicly available by the U.S. Bureau of Labor Statistics.

This report provides a comprehensive analysis of occupational fatalities within the scope of CFOI that occurred in California between 2013 and 2023. This report covers an eleven-year period, beginning in 2013 to present a broader amount of data available, rather than restrict the data to a ten-year period. Older CFOI data can be accessed <u>online at the Bureau of Labor Statistics</u> <u>Profiles search</u>.

## **Revision of Classification Systems**

The 2022 updates to the North American Industry Classification System (NAICS) and the Occupational Injury and Illness Classification System (OIICS) were introduced with the release of 2023 data. The NAICS 2022 update included minor revisions across five industries and significant changes within the Retail Trade and Information sectors. Detailed information about these updates is <u>available online</u>. A list of major changes implemented in the comprehensive OIICS revision is also <u>available online</u>.

## Key Insights

This report highlights critical trends and insights regarding workplace fatalities in California. Over the past decade, the state has seen fluctuating numbers of work-related fatalities, with notable increases in some areas and a few recent declines. Key findings from the 2013–2023 period include:

- California maintained a lower average fatality rate (2.5 per 100,000 workers) compared to the national rate but showed gradual increases in recent years.
- Occupational fatalities peaked in 2022 at 504 cases but decreased to 439 in 2023, marking the first decline since 2018.
- Hispanic and African American workers (2.9 and 2.4 per 100,000 workers respectively) face disproportionately higher rates of workplace fatalities, compared to White and Asian workers (1.1 and 1.6 per 100,000 workers respectively).
- Workers aged 45 and older accounted for over half of workplace fatalities annually during the 11-year period.
- The trade, transportation, and utilities sector recorded the most fatalities, averaging over 100 deaths per year.
- Transportation incidents consistently were the leading cause of fatalities, contributing 26% of all cases from 2013 to 2023.
- Unintentional overdoses became a significant cause of fatalities in just the past few years, representing 20% of all workplace deaths in 2023.

## **General Trends**

This report presents a comprehensive analysis of CFOI data, offering a thorough examination of trends and changes over time. Particular attention is given to the experiences of subpopulations across the state, shedding light on disparities and challenges faced by certain groups. The analysis delves into the influence of various factors, such as industry and employment status, demographic characteristics, on key outcomes, providing a nuanced understanding of their impact. Additionally, the report conducts an in-depth exploration of causes of mortality, identifying patterns and key risk factors. Furthermore, we interpret a range of significant trends that Cal/OSHA continues to monitor closely, offering valuable context and foresight into emerging issues and priorities.

The report begins by analyzing total fatality rates alongside the absolute counts of fatalities. Following this, the report delves into subpopulation distributions, starting with an examination of gender.

### **Fatality Rates**

Fatal occupational injuries in California had been declining steadily since 1999, when over 600 workers lost their lives due to on-the-job injuries. From 2010 to 2017, the state reported fewer than 400 fatal work-related injuries annually under the scope of CFOI. However, this downward trend reversed in 2018, with California recording 422 fatal occupational injuries—a significant increase. The following years saw a continued rise in such fatalities: 451 deaths in 2019, 463 in 2020, 462 in 2021, culminating in a peak of 503 deaths in 2022. In 2023, for the first time since 2018, the number of fatal occupational injuries decreased. CFOI recorded 439 fatalities in 2023, marking a reduction of 64 deaths compared to the previous year (Figure 1).

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total CA Fatalities	390	375	396	344	388	376	376	422	451	463	462	504	439
Year		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total CA Fatalities		602	553	515	478	459	467	465	537	461	465	409	326

Table 1. California Fatal Occupational Injuries Within the Scope of CFOI (1999–2023)



#### Figure 1. California Fatal Occupational Injuries Within the Scope of CFOI (1999–2023)

The rate of fatal occupational injuries per 100,000 California workers had been decreasing steadily until 2017. Between 2006 and 2014, the rate dropped by more than one-third—from 3.2 to 2.0. It then remained stable at 2.2 fatalities per 100,000 workers from 2015 to 2017. In 2018, this trend reversed as the rate began to climb alongside the increase in total fatalities. The rate peaked at 2.9 fatalities per 100,000 workers in both 2020 and 2021, before declining to 2.5 fatalities per 100,000 workers in 2023 (Figure 2).

Although not directly comparable due to differences in industrial composition, California's fatality rate has consistently been lower than the U.S. national rate throughout the recent period. While the national rate remained stable at approximately 3.5 fatalities per 100,000 workers over the past five years, California's rate rose closer to the national average. Despite this increase, California's rate remains below the nationwide rate.

Rate per 100,000	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
U.S. Rate	3.3	3.4	3.4	3.6	3.5	3.5	3.5	3.4	3.6	3.7	3.5
California Rate	2.4	2	2.2	2.2	2.2	2.3	2.5	2.9	2.8	2.9	2.5

Table 2. California and U.S. Occupational Fatality Rate (2013–2023, per 100,000 workers)



#### Figure 2. California and U.S. Occupational Fatality Rate (2013–2023, per 100,000 workers)

### Gender

Next, we explore how fatalities are distributed by gender. Each year, men account for a substantially higher number of fatal occupational injuries compared to women. In 2023 alone, 402 men and 37 women lost their lives due to work-related injuries. Over the decade from 2013 to 2023, 4,254 of the victims in California were men, while 367 victims (Figure 3). This gender disparity remained consistent throughout the past 11-year period.

Table 3. Table of Total Number of Occupational Injury Fatality by Gender

Gender	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Men	363	311	361	349	349	384	414	428	424	469	402
Women	33	33	27	27	27	38	37	35	38	35	37

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Figure 3. California Fatal Occupational Injuries Within the Scope of CFOI, by Gender (2013–2023)



California Fatal Occupational Injuries Within the Scope of CFOI, by Gender

## Age

Next, we analyze work-related fatalities by age. Fatal occupational injuries are reported across all age groups every year in Table 4. Since 2013, the age group with the highest number of work-related fatalities shifted from middle-aged workers to older workers. In 2013, workers aged 45–54 made up the largest group of fatalities, followed by those aged 35–44 and 55–64 (Table 4).

In 2022, workers aged 45–54 years and 55–64 years experienced the highest number of fatalities (Figure 4b). In 2023, workers aged 45–54 continued to experience the highest number of fatalities, closely followed by those aged 35–44 and 55–64 (Figure 4a). Beginning in 2020, the most notable increase in fatalities was seen in older age groups, particularly among workers aged 55–64 and 65+ (Table 4).

Age	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
16 to 19 years	6	4	1	4	N/A	5	8	14	N/A	6	N/A
20 to 24 years	21	15	28	27	20	27	30	27	28	25	32
25 to 34 years	69	56	74	65	51	97	70	84	74	101	85
35 to 44 years	92	68	76	70	86	59	86	71	82	105	90
45 to 54 years	98	95	81	80	83	98	98	91	106	109	95
55 to 64 years	75	68	80	82	89	85	101	108	106	109	82

Table 4. Table of Total Number of Occupational Injury Fatality by Age

65 years and older	35	38	46	46	46	50	58	67	55	49	52
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#### Figure 4a. California Fatal Occupational Injuries Within the Scope of CFOI by Age, 2023

#### Age Distribution in 2023



Figure 4b. California Fatal Occupational Injuries Within the Scope of CFOI by Age, 2022



## **Race and Ethnicity**

Next, we consider fatalities by race and ethnicity. The CFOI program collects comprehensive data on race and ethnicity for all fatal occupational injury cases displayed in Table 5a.

Race or Ethnic Origin	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Hispanic or Latino	194	130	178	148	173	190	211	214	234	252	210
White (Non-Hispanic)	163	155	167	160	144	163	169	180	142	164	146
Asian (Non-Hispanic)	20	30	26	33	31	37	43	31	41	55	52
Black or African American (Non-Hispanic)	16	21	12	25	19	28	20	28	33	25	28
Native Hawaiian or Pacific Islander (Non-Hispanic)	N/A	3	N/A/	3	5	N/A	4	N/A	7	N/A	N/A
American Indian or Alaska Native (Non-Hispanic)	N/A	5	N/A	4	N/A	N/A	N/A	7	N/A	N/A	N/A
Other Races or Not Reported	3	N/A	5	3	4	4	4	3	5	8	N/A

Table 5a. Table of Total Number of Occupational Injury Fatality by Race/Ethnicity

From 2013 to 2023, Hispanic or Latino workers accounted for 2,134 (46%) of all occupational fatalities in California. Non-Hispanic white workers represented 1,753 (38%) of the fatalities in this period, while Asian workers accounted for 399 (9%). Black or African American workers accounted for 255 fatalities (6%) of the total during this period.



Figure 5a. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2013–2023)

In 2022, Hispanic/Latino workers accounted for 252 (50% of total) of occupational injury fatalities in California, followed by white workers with 164 (33% of total), Black/African American workers with 25 (5% of total), and Asian workers with 52 (11% of total) (Figure 5b2). By 2023, the proportion of Hispanic/Latino workers decreased slightly to 210 (48% of total), while the number of white workers decreased to 146 (33% of total). Meanwhile, fatalities among Black/African American workers increased to 28 (6% of the total), and the total number of fatalities among Asian workers decreased to 52 (12% of the total) (Figure 5b1).

Figure 5b1. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2023)





Figure 5b2. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2022)



According to the U.S. Bureau of Labor Statistics (BLS) publication on national occupational fatality rates for 2023, Hispanic or Latino workers experienced higher fatality rates in 2023 compared to the national all-worker rate of 3.5 per 100,000 full-time equivalent (FTE) workers. The fatality rate for Hispanic or Latino workers was 4.4 per 100,000 FTE workers, while the rate for Black or African American workers was 3.6 per 100,000 FTE workers.<sup>1</sup> The BLS does not provide state-specific rates of occupational injury fatalities broken down by race or ethnicity. However, California employment data from the Employment Development Department can be utilized to estimate such rates.<sup>2</sup> Estimates of fatal occupational injury rates in California reveal

<sup>&</sup>lt;sup>1</sup> www.bls.gov/news.release/pdf/cfoi.pdf

<sup>&</sup>lt;sup>2</sup> CA\_Employment\_Summary\_Table.pdf

<sup>(</sup>labormarketinfo.edd.ca.gov/specialreports/CA\_Employment\_Summary\_Table.pdf)

Table 5b. Table of Estimated of Rates of Occupational Injury Fatality by Race/Ethnicity

Races/Ethnicities	Employed (January 2025)	Occupational Injury Fatalities 2023 (Calif)	Estimated Rate per 100,000 workers
All	18,353,000	439	2.5
White	12,823,000	146	1.1
Black	1,162,000	28	2.4
Hispanic	7,323,000	210	2.9
Asian	3,301,000	52	1.6

Figure 5c. California Rates of Occupational Injury Fatality by Race/Ethnicity (February 2024 Employment Data and 2023 Fatality Rate)



## **Employment Status**

In the next section, we explore the distribution of workers by employment status. The CFOI program includes work-related fatal injuries as specified in the Introduction, covering employed workers typically subject to OSHA regulations. However, CFOI also accounts for self-employed individuals, independent contractors, freelancers, and others who do not work for a specific employer.

In 2023, the total number of wage and salary workers fatally injured on the job declined compared to 2022, whereas fatalities among self-employed workers increased (Figure 6b). As a result, the proportion of wage and salary worker fatalities dropped to 80.6%, while the share of self-employed worker fatalities rose to 19.4% for 2023. (Figure 6a). This means that nearly one-fifth of workers fatally injured on the job operate outside of a traditional employee-employer relationship and are typically not covered under Cal/OSHA regulations or state workers' compensation programs.

Table 6. Table of Total Number of Occupational Injury Fatality by Employment Status

Employment Status	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Wage and Salary Workers	339	275	329	309	301	350	351	380	379	432	354
Self-Employed	57	69	59	67	75	72	100	83	83	72	85

Figure 6a. California Fatal Occupational Injuries Within the Scope of CFOI, by Employment Status (2023)



Data on work-related fatalities by employment status from the 2013–2023 period reveals yearto-year fluctuations. However, the number of wage and salary workers fatally injured on the job consistently surpasses the corresponding counts for self-employed workers (Figure 6b). Figure 6b. California Fatal Occupational Injuries Within the Scope of CFOI, by Employment Status (2013-2023)



Fatal Occupational Injures by Employment Status (2013-2023)

## **Causes of Fatal Events**

We also analyze the data by categorizing it based on the cause of the fatality. Transportation incidents have consistently been the leading cause of occupational injury fatalities in California. Between 2013 and 2023, there were 1,492 (32%) work-related fatalities caused by transportation incidents. During the same period, assaults and violent acts accounted for 937 (20%) of fatalities, while falls, slips, and trips accounted for 855 (19%). Contact with objects and equipment accounted for 562 (12%), exposure to harmful substances for 686 (15%), and fires and explosions account for 51 (1%) of the total fatalities during this period (Table 7 and Figure 7a).

In 2023, transportation incidents and exposure to harmful substances each represented nearly 25% of all occupational fatalities. Notably, the category of "exposure to harmful substances" has shown a sharp upward trend, increasing from 5% in 2016 to 24% in 2023. This rise is largely driven by a growing number of workplace drug overdose deaths over the past five years.

Causes of Fatal Events	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Transportation Incidents	138	119	150	145	139	155	141	122	142	133	108
Assaults and Violent Acts	80	75	77	77	66	92	94	97	87	97	95
Contact with Objects or Equipment	61	38	39	58	52	59	55	52	44	55	49
Falls, Slips and Trips	64	72	77	64	82	73	88	99	78	79	79
Exposure to Harmful Substances	39	34	33	20	29	39	66	85	103	132	106
Fires and Explosions	9	3	10	9	4	3		5		8	
Other	5	3	2	3	4	1	7	3	8	0	

Table 7. Table of Fatal Occupational Injuries Within the Scope of CFOI by Event

(NOTE: Blank values in table indicates no data reported or data that do not meet BLS publication criteria.)



Figure 7a. California Fatal Occupational Injuries Within the Scope of CFOI, by Event (2013–2023)

In 2023, CFOI reported 108 workers fatally injured in transportation incidents (Figure 7c1). Among these fatalities, 91 were wage and salary workers, while 17 were self-employed. This marked a slight decrease from 2022, when 133 transportation-related fatalities were recorded (Figure 7c2).

The data for 2023 also revealed 95 deaths resulting from violent acts. Of these, 53 were caused by acts of violence from other individuals, including 44 shootings, while 42 involved intentional self-harm. Notably, self-employed workers accounted for 27% of work-related violence fatalities, compared to 20% of total occupational fatalities. Additionally, 69 of the 95 violence-related deaths occurred among private sector workers. In 2023, men accounted for 92% of violence-related related occupational fatalities (Figure 7c1).

Fatalities resulting from exposure to harmful substances or environments totaled 106 in 2023, compared to 132 in 2022. Nearly half of these workers were Hispanic, and eight were women. Additionally, 33 of the victims (31%) were under the age of 35. An increase of this segment of fatalities is addressed below in this report.

Falls, slips, and trips caused 79 fatal injuries in both 2022 and 2023 (Figures 7c1 and 7c2). Construction workers represented 34 of these fatalities (43%) in 2023. Of the 79 deaths from falls, slips, and trips in 2023, 65 resulted from falls to lower levels, while 14 were due to falls on

the same level. In 2022, 49 fatal injuries involved contact with objects or equipment. Of these fatalities, 32 were Hispanic or Latino workers, and 23 (47%) were over 45 years old.

Figure 7c1. California Fatal Occupational Injuries Within the Scope of CFOI, by Event, Percentage of total (2023)



Fatal Occupational Injuries by Event 2023

Figure 7c2. California Fatal Occupational Injuries Within the Scope of CFOI, by Event, Percentage of total (2022)



## Fatal Exposure to Harmful Substances

A notable recent increase in work-related fatalities by event has been among those caused by exposure to harmful substances. This sharp rise began in 2018 and continued through 2022, with fatalities climbing from 39 in 2018 to 66 in 2019, 85 in 2020, 103 in 2021, and peaking at 132 in 2022. However, 2023 saw a slight decline to 106 fatalities. Data from the Centers for Disease Control and Prevention shows that all overdose deaths in the U.S. decreased for the first time in 2023. <sup>3</sup>

A substantial portion of this increase is attributed to drug or alcohol overdoses (Table 8). In 2018, 23 of the 39 fatalities from harmful substance exposures were due to unintentional overdoses. This number rose to 47 of 66 in 2019, 59 of 85 (69%) in 2020, and 85 of 103 (83%) in 2021. By

<sup>&</sup>lt;sup>3</sup> https://www.cdc.gov/nchs/pressroom/nchs\_press\_releases/2024/20240515.htm

2022, unintentional overdoses accounted for 117 of the 132 fatalities (89%). In 2023, these overdoses represented 87 of the 106 fatalities (82%) from harmful substance exposures (Figure 8a).<sup>4</sup>

Table 8. Table of Total Number of Fatal Occupational Overdoses and Other Exposure

Overdoses and Exposure	2015	2016	2017	2018	2019	2020	2021	2022	2023
Unintentional Overdoses	15	8	14	23	47	59	85	117	87
Other Fatal Exposures	18	12	15	16	19	26	18	15	19

Figure 8a. California Fatal Unintentional Overdoses and Other Fatal Exposures to Harmful Substances Within the Scope of CFOI (2015–2023)

Fatal Unintentional Overdoses (2015-2023)



<sup>&</sup>lt;sup>4</sup> CFOI. TABLE A-9. Fatal occupational injuries by event or exposure for all fatal injuries and major private industry<sup>1</sup> sector, California. See, for 2022, <u>https://www.dir.ca.gov/DOSH/cfoi/CFOI\_2022/cfoi2022-A-9.pdf</u>. The column "total fatal injuries (number)" is not limited to private industry.

The proportion of overall fatalities within the scope of CFOI attributed to unintentional overdoses rose sharply since 2018. By 2023, unintentional overdoses accounted for 20% of all occupational fatalities in California within the scope of CFOI (Figure 8b). Nationally, the Bureau of Labor Statistics reported 512 workplace fatalities due to unintentional overdoses in 2023, representing 9.6% of all occupational fatalities in the United States for that year.<sup>5</sup> In 2023, unintentional overdose fatalities in California workplaces accounted for 20% of all such fatalities reported nationwide.

Figure 8b. California Fatal Unintentional Overdoses as a Percentage of All Fatalities Within the Scope of CFOI (2015–2023)



Unintentional Overdoses as a & of All Fatalities (2015-2023)

<sup>&</sup>lt;sup>5</sup> https://www.bls.gov/news.release/pdf/cfoi.pdf

### Industry

Next, we explore the data based on industry where the fatality occurred. The figures below illustrate the total number of work injury fatalities by industry in California from 2013-2023 (Table 9 and Figure 9a) and the trends over 2022 and 2023 (Figures 9b1 and 9b2).

Industries	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Trade, Transportation, and											
Utilities	119	92	71	116	98	101	118	113	110	139	116
Construction	61	49	75	55	69	71	84	94	79	79	78
Professional and Business											
Services	50	55	54	37	67	70	60	77	56	75	64
Government	46	38	38	39	39	57	42	45	54	46	34
Agriculture / Natural											
Resources	33	28	58	38	39	35	52	38	39	47	45
Other Non-Government											
Sectors	20	32	28		15	31	23	31	21	21	20
Manufacturing	35	20	18	19	24	20	24	18	32	35	21
Leisure and Hospitality	19	15	22	26	12	24	26	20	26	34	28
Educational and Health	1 1										
Services	13	15	24	12	10	13	23	27	27	28	15

Table 9. California Fatal Occupational Injuries Within the Scope of CFOI by Industry

(NOTE: Blank values in table indicates no data reported or data that do not meet publication criteria.)

Fatal Occupational Injuries by Industry (2013-2023) 100 Fatal Occupational Injuries 50 0 2013 2014 2015 2017 2018 2019 2020 2021 2022 2016 2023 Year Agriculture/Natural Resources Educational and Health Services 🔶 Leisure and Hospitality Other Non-Government Sectors Trade, Transportation, and Utilities Construction Government Manufacturing Professional and Business Services

Figure 9a. California Fatal Occupational Injuries Within the Scope of CFOI, by Industry (2013-2023 totals)

The trade, transportation, and utilities (TTU) industry has consistently reported the highest number of occupational fatalities in California over the past seven years, averaging over 100 deaths annually—accounting for approximately one-fourth of all cases. Between 2013 and 2023, this sector recorded a total of 1,193 fatalities. In 2023, TTU reported at least 116 fatalities, including 38 from transportation incidents, 13 from falls, slips, and trips, 23 from exposure to harmful substances or environments, and 10 from contact with objects or equipment.

The construction industry ranked second in occupational fatalities, recording 794 deaths between 2013 and 2023. Fatalities in construction peaked at 94 in 2020, before declining to 79 in 2021—a number that remained consistent through 2022 and slightly decreased to 78 in 2023. In 2023, construction fatalities included 12 from transportation incidents, 34 from falls, slips, and trips, 18 from exposure to harmful substances or environments, and 9 from contact with objects or equipment.

The professional and business services sector, which includes roles such as accountants, lawyers, engineers, computer programmers, consultants, and researchers, recorded 665 fatalities between 2013 and 2023. In 2023, there were 64 fatalities reported within the scope of CFOI.

The manufacturing industry reported a total of 266 fatalities over the same period. In 2023, 21 workers in manufacturing lost their lives, including 6 fatalities due to exposure to harmful substances, 5 from transportation incidents, and 4 from falls, slips, and trips.

The leisure and hospitality industry accounted for 252 fatalities between 2013 and 2023. In 2023, this sector reported 28 fatalities, with 13 resulting from violent acts and 12 due to exposure to harmful substances or environments.

Figure 9b1. California Fatal Occupational Injuries Within the Scope of CFOI, by Industry Group (2023)



Fatal Occupational Injuries by Industry 2023

Figure 9b2. California Fatal Occupational Injuries Within the Scope of CFOI, by Industry Group (2022)



### Fatality Rate by Industry

Hazardous industries are identified through an analysis of fatal injury rates, which measure the risk of fatal work injuries among workers in a specific group. These rates are expressed as the number of fatal injuries per 100,000 full-time equivalent (FTE) workers, allowing for risk comparison across different worker groups.

To calculate the fatal injury rate for an industry, the total number of fatal work injuries in that sector is divided by the total hours worked within the industry. This result is then multiplied by 200,000,000, which represents the base for 100,000 equivalent FTE workers working 40 hours per week for 50 weeks per year.

The CFOI provides data on fatal injury rates by industry. For the period from 2013 to 2023, California's average fatality rate across all industries was 2.4 fatalities per 100,000 full-time workers. Agriculture recorded the highest fatality rate during this time, averaging 11.8 fatalities per 100,000 workers. The trade, transportation, and utilities sector followed with a rate of 7.2 fatalities per 100,000 workers, while the construction industry had an average fatality rate of 6.1 per 100,000 workers (Table 10 and Figure 10).

Industries	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Trade, Transportation, and											
Utilities	9.1	7.9	4.9	7.4	5.9	7.8	7.5	6.5	7.1	7.4	
Construction	6.2	4.5	6.8	5.2	6.1	6.1	6.5	8	6.3	5.8	6
Professional and Business											
Services	2.2	2.4	2.3	1.5	2.6	2.7	2.2	3.1	2.3	2.7	2.4
Public Administration	1.5	2.2	3	2.3	1.6	2.8	1.3				1.6
Agriculture / Natural											
Resources	9.2	8.2	17.1	10.4	10	9.3	13.9	10.2	11.4	14.3	15.4
Other Services	1.5	2.2	1.6	2.5	1.1	1.4	2.7	2.7	2.7	2.4	2.6
Manufacturing	2.0	1.2	1.0	1.1	1.4	1.2	1.5	1.2	2.1	2.4	1.4
Leisure and Hospitality	1.5	1.1	1.5	1.7	0.9	1.5	1.7	1.8	2.0	2.3	2.0
Educational and Health											
Services	0.6	0.7	0.7	0.5	0.5	0.5	0.7	0.8		0.8	0.6
Wholesale and Retail Trade	2.4	1.1	1.4	1.9	2.0	1.3	1.9	2.7	2.4	2.6	2.6

Table 10. California Fatality Rate Within the Scope of CFOI by Industry by Year (per 100,000 workers)

(NOTE: Blank values in table indicates no data reported or data that do not meet publication criteria.)

Figure 10. California Fatality Rate Within the Scope of CFOI, by Industry by Year (2013–2023, per 100,000 workers)



Over the 2013–2023 period, an average of 2.4 workers per 100,000 in California lost their lives on the job each year. Three industries in the state consistently recorded higher fatality rates: agriculture, construction, and trade, transportation, and utilities.

In the agriculture sector, the fatality rate exceeded 10 deaths per 100,000 workers from 2015 to 2017, and again from 2017 to 2023. During the same period, the transportation and utilities sector reported an average fatality rate of 7.2 per 100,000 workers, while the construction industry averaged 6.1 fatalities per 100,000 workers over the decade.

## **Occupation Groups**

Finally, we explore fatalities by occupational group. In 2023, transportation and material moving occupations accounted for 105 fatalities, representing 24% of all occupational injuries reported within the scope of CFOI in California. The construction and extraction occupation groups reported 77 fatal injuries, while the professional and related services occupation groups recorded 79 fatalities. Protective services occupations experienced the smallest number of fatalities in 2023 (Table 11, Figures 11a and 11b).

The professional and related services occupations include roles in management, arts and design, healthcare support, personal care and service, sales and related occupations, office and administrative support, and food preparation.

Between 2013 and 2023, transportation and material moving occupations, including truck drivers, contributed to 26% of all occupational fatalities. Construction and extraction occupations ranked second, accounting for 18% of cases. These were followed by professional and related occupations, agricultural occupations (farming, fishing, and forestry), and installation, maintenance, and repair occupations.

Occupation Groups	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Transportation and Material Moving	108	86	81	109	97	99	115	104	112	132	105
Construction and Extraction	64	49	69	54	71	79	75	90	81	80	77
Farming, Fishing, and Forestry	25	20	46	38	28	21	37	25	29	41	36
Building and Grounds Cleaning/ Maintenance	36	38	29	19	28	21	34	44	38	48	40
Installation, Maintenance, and Repair/Production	27	26	25	40	25	30	36	44	70	56	39
Professional and Related	20	26	38	26	18	24		97	82	91	79
Protective Services	26	24	18	18	30	31	34	30	35	35	30
Other Occupations	90	75	82	72	79	117		29	15	21	33

Table 11. Distribution of California Fatal Occupational Injuries Within the Scope of CFOI by Occupation

(NOTE: Blank values in table indicates no data reported or data that do not meet publication criteria.)

Figure 11a. Distribution of California Fatal Occupational Injuries Within the Scope of CFOI, by Occupation Group (2023)

#### Fatal Occupational Injuries by Occupation Group 2023



Figure 11b. Distribution of California Fatal Occupational Injuries Within the Scope of CFOI, by Occupation Group (2022)

#### Fatal Occupational Injuries by Occupation Group 2022



Fatal injuries occurred throughout all types of work. Of the 4,501 worker injury fatalities since 2013, over 1,100 transportation and material moving workers have been fatally injured on the job. In the construction and extraction industries, 789 have died. Another 418 have died as installation and repair workers, and 346 in farming, fishing, or forestry occupations. Other fatalities include professional and related workers (501), buildings and grounds cleaning or maintenance workers (375), and protective services workers (311).

In 2023, transportation and material moving workers accounted for 105 occupational fatalities. Among these, 50 were due to transportation incidents, 21 to exposure to harmful substances or environments, 14 to violent acts, 11 to contact with objects or equipment, and 8 to falls, slips, and trips.

The construction and extraction occupations recorded 77 fatalities in 2023. Of these, 35 resulted from falls, slips, and trips; 19 from exposure to harmful substances or environments; 10 from transportation incidents; and 9 from contact with objects or equipment.

The professional and related occupation group experienced 79 fatal occupational injuries in 2023. These included 21 deaths from violent acts and 25 from exposure to harmful substances or environments (a category that includes fatal overdoses). Within this group, food preparation workers recorded 13 fatalities, split between violent acts (6) and exposure to harmful substances or environments (7). Meanwhile, the sales and related occupations subgroup reported 26 fatalities, with more than half (15) caused by violent acts (Table A-5).

### Summary

The Census of Fatal Occupational Injuries (CFOI) compiles annual data on fatal work-related injuries in the United States. The CFOI program for California is administered jointly by California's Division of Occupational Safety and Health within the Department of Industrial Relations and the U.S. Bureau of Labor Statistics. It utilizes diverse state, federal, and independent data sources to identify, verify, and describe fatal work-related injuries.

For many years following 1999, when over 600 workers died from on-the-job injuries, fatal occupational injuries in California showed a downward trend. Between 2010 and 2017, annual fatalities consistently stayed below 400. However, this trend reversed in 2018, when 422 fatal injuries were recorded. Subsequent years saw rising numbers, with 451 fatalities in 2019 (an average of nine deaths per week), 463 in 2020, and 462 in 2021. Fatalities peaked in 2022 with 504 cases—the highest figure since 2006, when 537 fatalities were recorded. In 2023, the number of fatal occupational injuries decreased for the first time since 2018, falling to 439.

Men are disproportionately impacted by workplace fatalities, with Hispanic and African American workers experiencing higher rates of on-the-job deaths. Additionally, Asian American workers are seeing a rise in the total number of fatalities. One of the fastest-growing causes of death in recent years has been unintentional overdoses in the workplace. In 2015, workplace overdoses accounted for 15 fatalities (approximately 4% of California's total), rising to 59 deaths in 2020 (13% of the total). This figure climbed to 85 deaths in 2021 (18%), and then to 117 deaths in 2022 (24%). While the number of overdose fatalities dropped slightly to 106 in 2023, they still represented 20% of California's occupational fatalities.

California's rate of fatal injuries—measured as the number of fatalities per 100,000 workers—has remained consistently below the national average. Since 2002, California's rate has been below three fatalities per 100,000 workers annually, except in 2006. However, the state's rate has been gradually rising, narrowing the gap with the national average. U.S. rates stabilized around 3.5 fatalities per 100,000 workers over the last half-decade. In California, the rate was stable at 2.2 between 2015 and 2017 but rose to 2.3 in 2018, 2.5 in 2019, and 2.9 in 2020. After dropping slightly to 2.8 in 2021, the rate increased again to 2.9 in 2022 before declining to 2.5 in 2023.

Over the entire 2013–2023 period, California recorded an average fatal injury rate of 2.4 fatalities per 100,000 workers annually. Agriculture consistently reported the highest fatality rate, followed by transportation and utilities, and construction. The agricultural sector's fatality rate surged nearly 50% in 2019, dropped somewhat in 2020, and then rose again in 2021 and 2022. The wholesale and retail trade industry also experienced sharp increases, rising from 1.9 fatalities per 100,000 workers in 2019 to 2.7 in 2020, then declining slightly to 2.4 in 2021 before increasing to 2.6 in 2022.

Fatal occupational injuries by age group have remained consistent over the years, with individuals aged 45 and older accounting for 53–58% of fatalities annually during the 2013–2023 period.

Occupational injury causes have largely remained constant, except for the increasing prevalence of overdoses and harmful substance exposures. Transportation incidents were the leading cause of fatalities, comprising 26% of all cases during the 2013–2023 period. Fatal injuries from assaults and violent acts, as well as falls, slips, and trips, each accounted for 19% of fatalities.

By industry, the trade, transportation, and utilities sector reported the highest number of fatalities from 2013 to 2023, averaging over 100 deaths per year—more than a quarter of all cases annually. The construction industry ranked second, averaging over 70 fatalities per year.

When analyzing fatal injury rates (the ratio of fatalities to at-risk populations), agriculture had by far the highest rate, followed by transportation and utilities, and then construction. Each of these industries recorded rates two to four times higher than the statewide average.

Although California has consistently maintained a lower fatality rate than the national average, CFOI data highlights opportunities to address emerging trends and the rising overall fatality rates observed in recent years.

## Appendix—About CFOI

The Injuries, Illnesses, and Fatalities (IIF) program of the U.S. Bureau of Labor Statistics (BLS) provides annual information on the rate and number of work-related injuries, illnesses, and fatal injuries and how these statistics vary by incident, industry, geography, occupation, and other characteristics. These data are collected through the Survey of Occupational Injuries and Illnesses (SOII) and the Census of Fatal Occupational Injuries (CFOI).

The CFOI compiles a count of all fatal workplace injuries in the U.S. during the calendar year. The CFOI Program uses diverse state, federal, and independent data sources to identify, verify, and describe fatal work-related injuries. This approach ensures counts are as complete and accurate as possible. For technical information and definitions for the CFOI, please go to Chapter 9 of the BLS Handbook of Methods on the BLS website, at <u>www.bls.gov/opub/hom/pdf/homch9.pdf</u>.

Data compiled by the CFOI Program are issued annually for the preceding calendar year. This data can be used by safety and health policy analysts and researchers to help prevent fatal work injuries in these ways:

- Informing workers of life-threatening hazards associated with various jobs.
- Promoting safer work practices through enhanced job safety training.
- Assessing and improving workplace safety standards.
- Identifying new areas of safety research.

Fatal injury rates are per 100,000 full-time equivalent workers (FTEs). Complete national rates can be found at <u>www.bls.gov/iif/oshcfoi1.htm#rates</u>. Complete state rates can be found at <u>www.bls.gov/iif/oshstate.htm</u>. National and state rates are calculated using different methodology and cannot be directly compared. Please see <u>www.bls.gov/iif/oshfaq1.htm#q17</u> for more information on how rates are calculated and caveats for comparison.

**Note:** For 2019, starting with the release of 2019 CFOI data, BLS implemented new disclosure rules to protect confidential data from secondary disclosure. There has been a significant reduction in the detail that can be published compared to prior years.

Note: COVID-19 and the Census of Fatal Occupational Injuries

CFOI reports fatal workplace injuries only. These may include fatal workplace injuries complicated by an illness such as COVID-19. Fatal workplace illnesses not precipitated by an injury are not within the scope of CFOI. CFOI reports no illness-related information, including COVID-19. Additional information is available online from bls.gov: Effects of COVID-19 Pandemic on Workplace Injuries and Illnesses, Compensation, Occupational Requirements, and Work Stoppages Statistics : U.S. Bureau of Labor Statistics can be found here: www.bls.gov/covid19/effects-of-covid-19-on-workplace-injuries-and-illnesses-compensation-and-occupational-requirements.htm.