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Fatal Occupational Injuries in California

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Division of Occupational Safety and Health

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Message from Cal/OSHA Chief Jeff Killip

This annual report is developed by the Census of Fatal Occupational Injuries Program (CFOI) within the Department of Industrial Relations' (DIR's) Division of Occupational Safety and Health - commonly known as Cal/OSHA. The annual report provides important information on the numbers and demographics of occupational deaths in California. These numbers represent real people who died on the job, and must serve as a stark reminder of why our workplace regulations exist - to prevent these fatalities from ever happening. We at Cal/OSHA review this data, and use it to determine how we can best protect and improve California's workplaces, via outreach and education, rulemaking and/or enforcement. Employers, employer groups, occupational safety and health professionals, worker organizations, and other interested stakeholders all play an important role in protecting and improving working conditions for California's workers. As you read this report, I encourage you to take a moment and think about those who have been tragically killed or injured on the job, and what we can do collaboratively to prevent workplace fatalities.

Introduction

Cal/OSHA gathers statistics on work-related deaths through the CFOI Program. The CFOI Program was established by the U.S. Bureau of Labor Statistics (BLS) to compile state and national data useful to public health practitioners, researchers, regulators, and safety and health policy analysts to help prevent fatal work-related injuries. The program is meant to identify all workers fatally injured at work, notwithstanding their employment status and not restricted to those workers who are covered under other state and federal laws. DIR's CFOI Program uses numerous sources to identify and verify work-related injury fatalities. These sources include death certificates, workers' compensation records, news articles, Cal/OSHA incident reports and OSHA Information System (OIS) records, coroner and police reports, National Highway Traffic Safety Administration (NHTSA) and National Transportation Safety Board (NTSB) records, military reports, social media, and obituaries. Cross-referencing these documents provides thorough information about each work-related fatality including worker characteristics, equipment involved, circumstances of the event and details of the injury. The detailed data is then aggregated and used to promote safety efforts by employers, workers and others.

As its name indicates, the Census looks only at fatalities resulting from work-related traumatic injuries. This is defined as any wound or damage to the body resulting from acute exposure to energy, such as heat or electricity; impact from a crash or fall; or from the absence of such essentials as heat or oxygen, caused by a specific event or incident within a single workday or shift. Included are heatstroke, intracranial and internal injuries, open wounds, hypothermia, asphyxiation, acute poisoning resulting from short-term exposures limited to the worker's shift, suicides and homicides, and work injuries listed as underlying or contributory causes of death. Drug overdoses at work are included, regardless of where the drugs were taken.

The Census does not include deaths from fatal occupational illnesses unless precipitated by an acute injury or exposure event. Fatal diseases resulting from cumulative exposure—for

instance asbestos-related illnesses, heart disease, and many cancers—are not included.

A case is included in CFOI if the injury or injuries contributed to the death. The injury or injuries need not be the sole, or even the primary, cause of death. Thus, although deaths caused solely by COVID-19 are not included, a traumatic injury complicated by COVID-19 will be included if it results in a death.

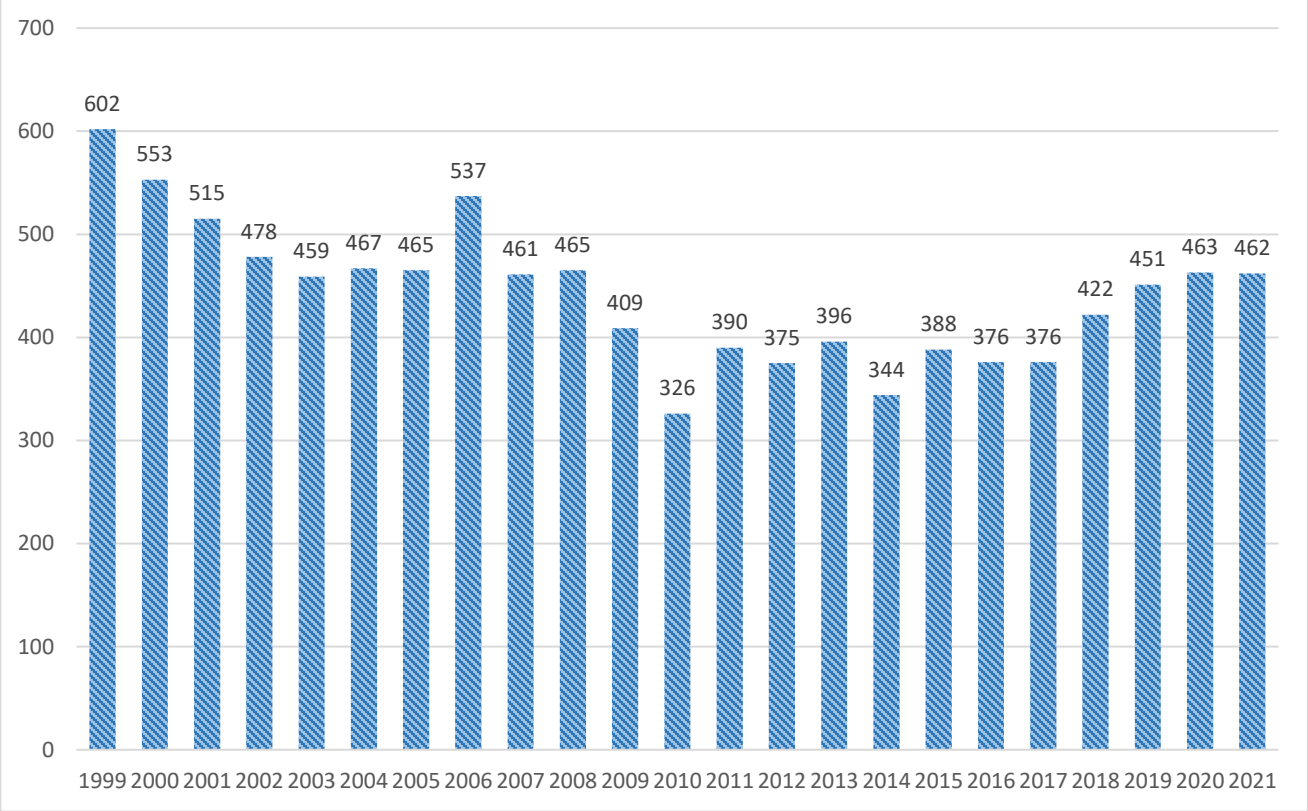
A fatal injury is considered to have a relationship to work if the event or exposure 1) occurred on the employer's premises, and the person was there to work; or 2) occurred off the employer's premises, and either the person was there to work, or the event/exposure was related to the person's work or status as an employee. BLS has posted details about CFOI's scope online.

This report provides a detailed overview of occupational fatalities that occurred in California between 2013 and 2021.

General Trends

Fatal occupational injuries had been on a downward trend in California since 1999, when over 600 California workers died from on-the-job injuries. In more recent times, from 2010 to 2017, California counted fewer than 400 fatal work-related injuries within the scope of CFOI each year. The trend shifted in 2018, when California counted 422 fatal occupational injuries within the scope of CFOI, and in 2019 when the number of work-related injury fatalities rose again to 451. In 2020, the number of fatal job injuries in California within the scope of CFOI rose to 463 and in 2021, CFOI registered 462 fatal occupational injuries (Figure. 1)

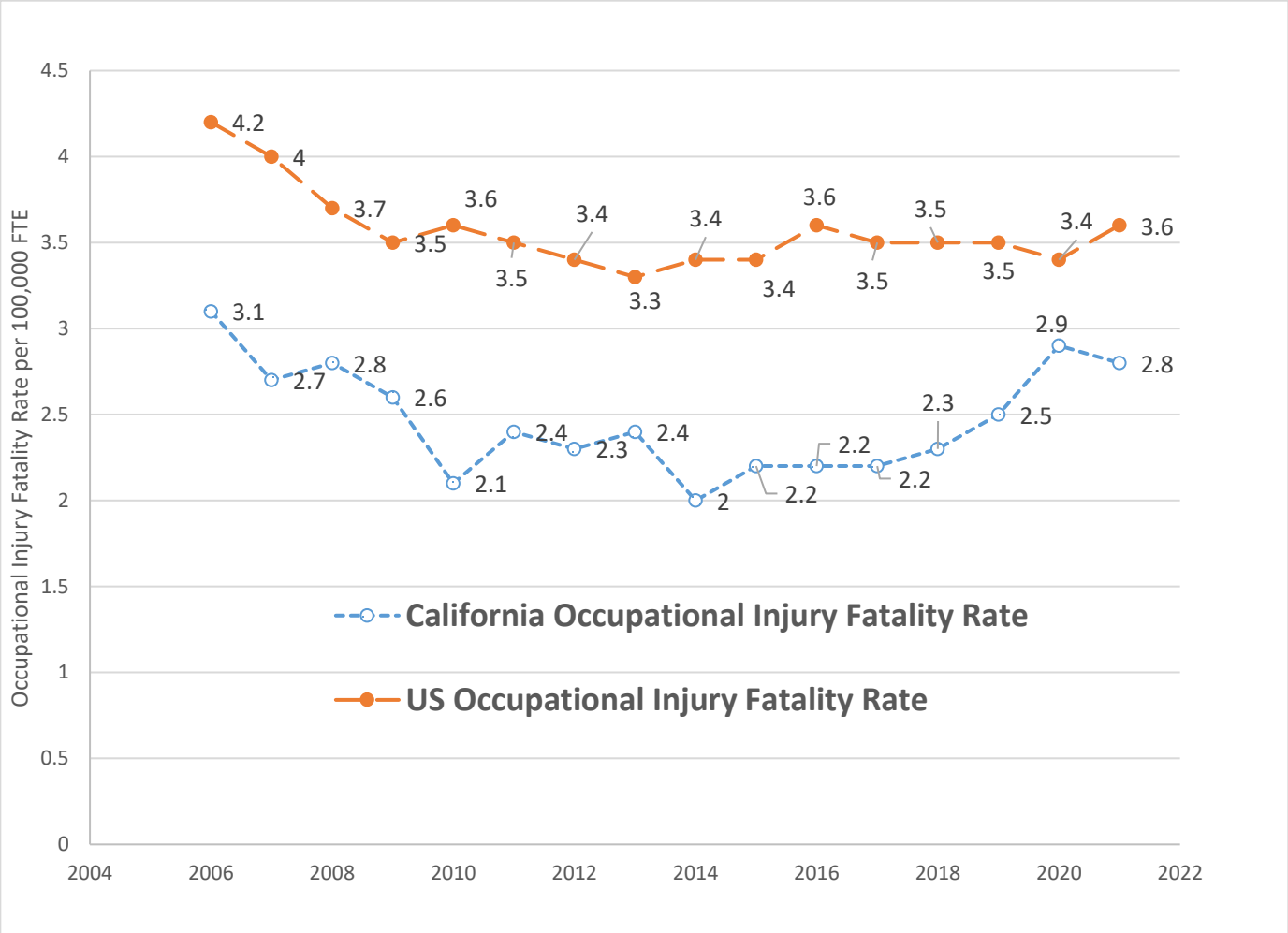
Figure 1. California Fatal Occupational Injuries Within the Scope of CFOI (1999–2021)



The rate of fatal occupational injuries per 100,000 California workers had been falling over time through 2017. From 2006 to 2014, the rate fell by over a third from 3.2 to 2.0, and then remained at 2.2 per 100,000 workers from 2015 to 2017. In 2018, the rate rose to 2.3. It rose to nearly 2.5 per 100,000 workers in 2019 and again rose to 2.9 per 100,000 workers in 2020 before slightly dropping to 2.8 per 100,000 workers in 2021.

While not technically comparable because of differences in industrial mix, the California fatality rate has been consistently lower than U.S. national rates throughout the recent period (Figure. 2). Rates for the U.S. as a whole have stabilized around 3.5 per 100,000 workers throughout the last half decade. California's fatality rate has risen higher, closer to the national average, but is still well below the national level.

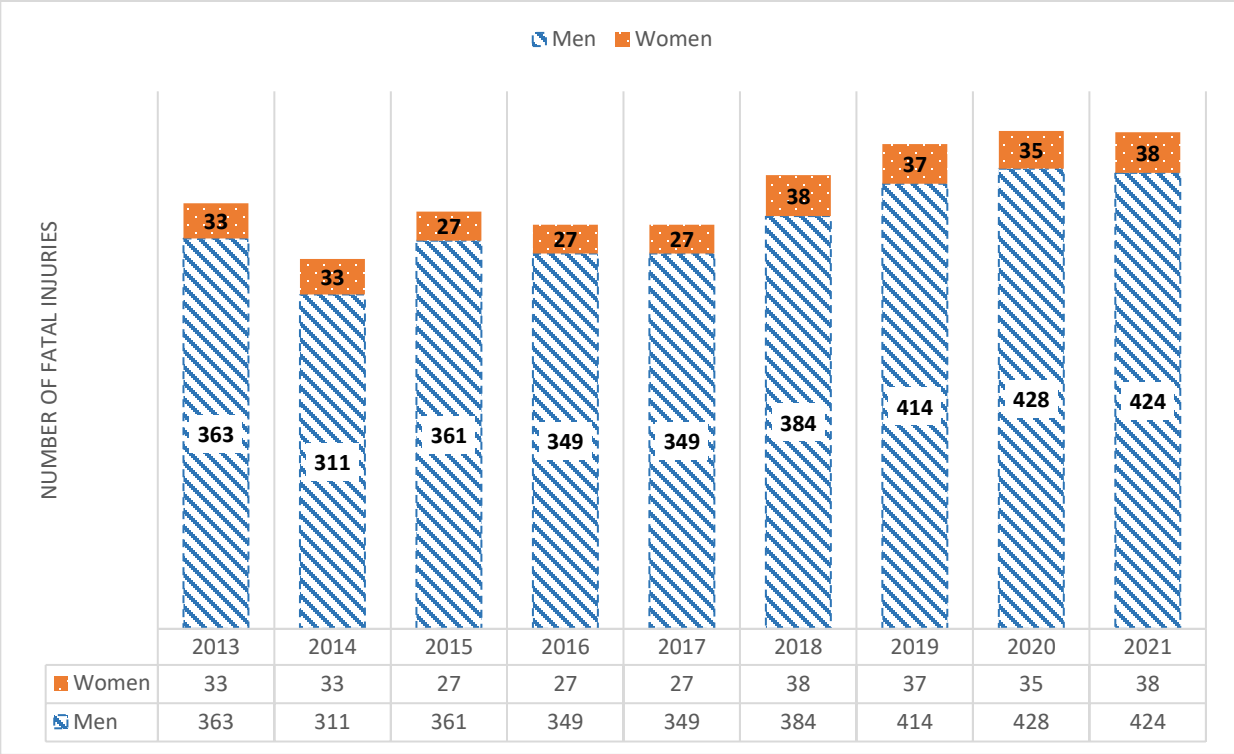
Figure 2. California and U.S. Occupational Fatality Rate (2006–2021, per 100,000 workers)



Gender

Every year, more men die as a result of occupational injuries than women. Among the fatal occupational injuries in 2014-21, 3,383 (92%) of occupational injury victims in California were men and 295 (8%) were women. (Figure. 3). This ratio has persisted through most of the last decade.

Figure 3. California Fatal Occupational Injuries Within the Scope of CFOI, by Gender (2014–2020)



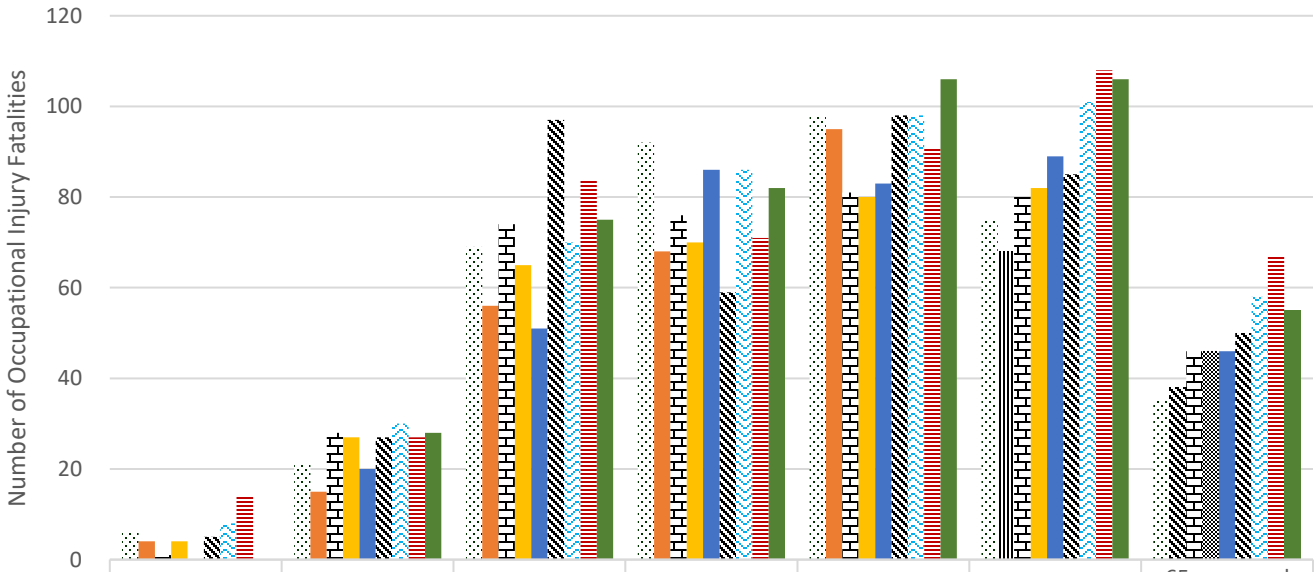
	2013	2014	2015	2016	2017	2018	2019	2020	2021
Women	33	33	27	27	27	38	37	35	38
Men	363	311	361	349	349	384	414	428	424

Age

Fatal occupational injuries occur among all age groups each year. Since 2013, the highest number of work-injury fatalities has shifted from those of middle age to older workers. In 2014, the largest group was among workers 45–54 years of age, followed by workers 35 to 44 and those 55 to 64 years of age. By 2020, the greatest number of fatalities occurred in older workers, age 55-64 (Figure 4b), while the number of fatalities among those aged 65 and older was approaching double the 2014 number (Figure 4a).

In 2020, deaths in the oldest age categories, 55 to 64 and 65+, showed the largest increase over prior years. Figure 4a shows fatalities by age for the 2014 to 2020 period.

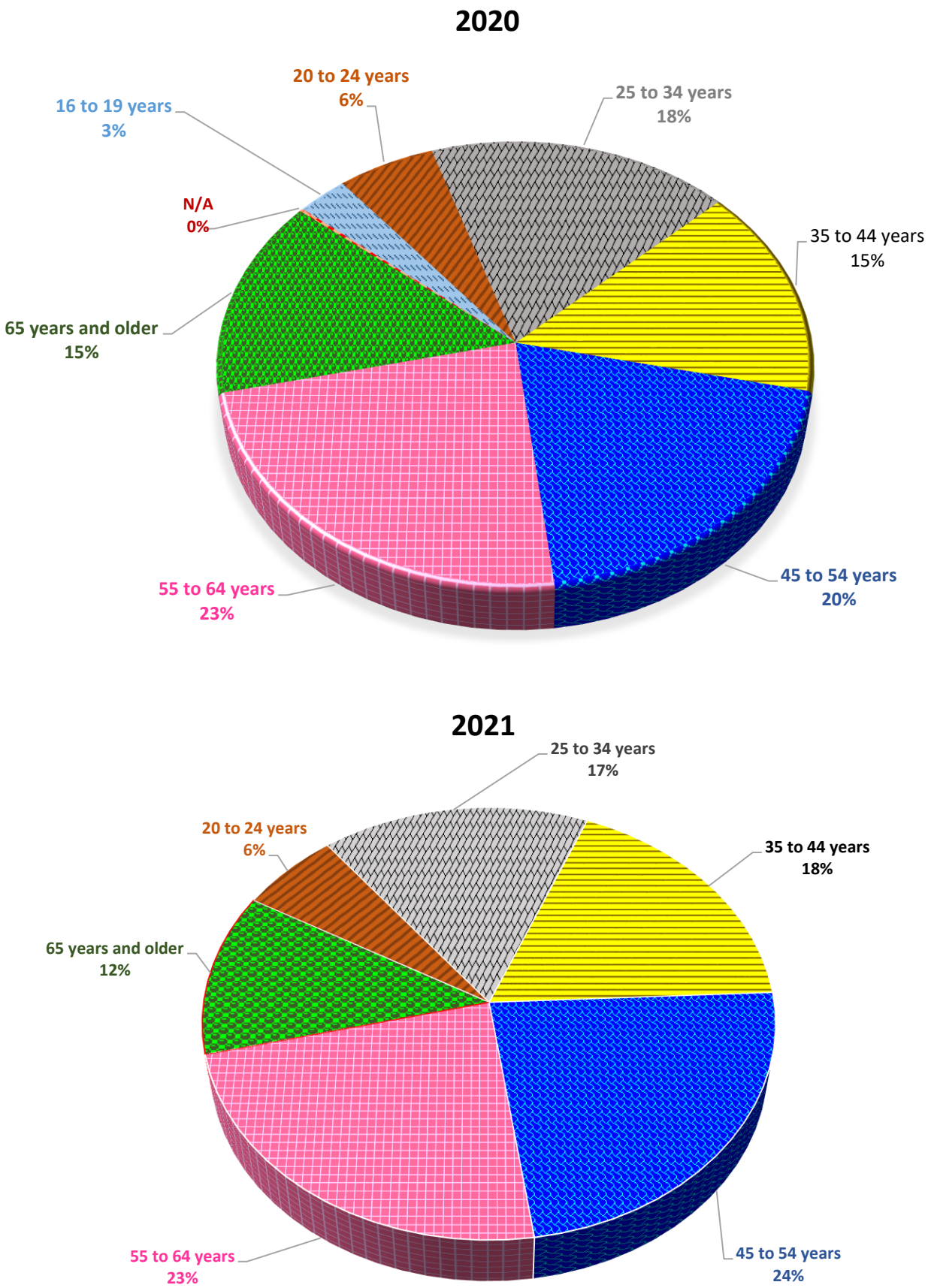
Figure 4a. California Fatal Occupational Injuries Within the Scope of CFOI, by Age 2013-2021



	16 to 19 years	20 to 24 years	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years and older
2013	6	21	69	92	98	75	35
2014	4	15	56	68	95	68	38
2015	1	28	74	76	81	80	46
2016	4	27	65	70	80	82	46
2017		20	51	86	83	89	46
2018	5	27	97	59	98	85	50
2019	8	30	70	86	98	101	58
2020	14	27	84	71	91	108	67
2021		28	75	82	106	106	55

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

Figure 4b. Distribution of Fatalities Within the Scope of CFOI by Age, 2020 and 2021

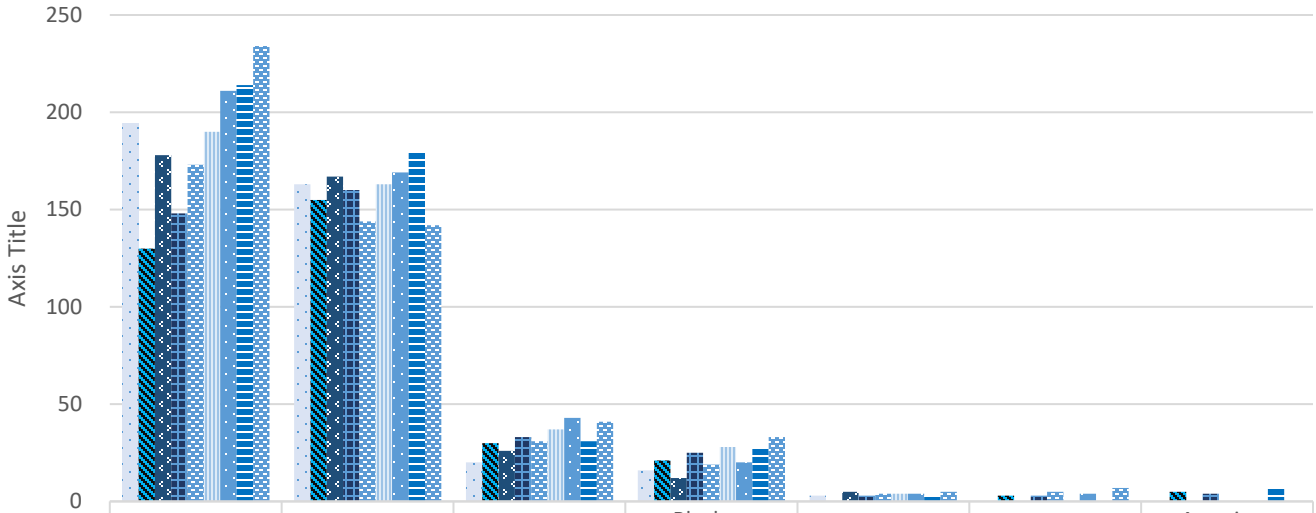


Race and Ethnicity

The CFOI program compiles information on race and ethnicity in all fatal occupational injury cases. This stands in contrast to the nonfatal occupational injury series collected by BLS, known as the Survey of Occupational Injury and Illness, where race and ethnicity are optional data elements.

Between 2013 and 2021, approximately 45% of occupational fatalities were among Hispanic or Latino workers. Fatal injuries to non-Hispanic white workers comprises 39% of the occupational fatalities recorded over that period. Asian, Pacific Islander, and Hawaiian workers comprised 8%, while Black/African American workers made up over 5% of the total (Figure 5a).

Figure 5a. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2013–2021)



	Hispanic or Latino	White (Non-Hispanic)	Asian (Non-Hispanic)	Black or African-American (Non-Hispanic)	Other Races or Not Reported (Non-Hispanic)	Native Hawaiian or Pacific Islander	American Indian or Alaskan Native (Non-Hispanic)
2013	194	163	20	16	3		
2014	130	155	30	21		3	5
2015	178	167	26	12	5		
2016	148	160	33	25	3	3	4
2017	173	144	31	19	4	5	
2018	190	163	37	28	4		
2019	211	169	43	20	4	4	
2020	214	180	31	28	3		7
2021	234	142	41	33	5	7	

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

In 2020, Hispanic/Latino workers comprised 46% of the fatalities. White workers were 39%, Asian were 7% and Black workers rose to 6% of the total. In 2021, Hispanic/Latino workers for the first time comprised over 50% of occupational injury fatalities in California, while the portion of white workers fell to 31%. Non-Hispanic black workers were 9% of the occupational injury fatalities in 2021, while Asian workers comprised 7% of those deaths.

Figure 5b1. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2020), Total counted by CFOI in 2020 was 463 fatalities

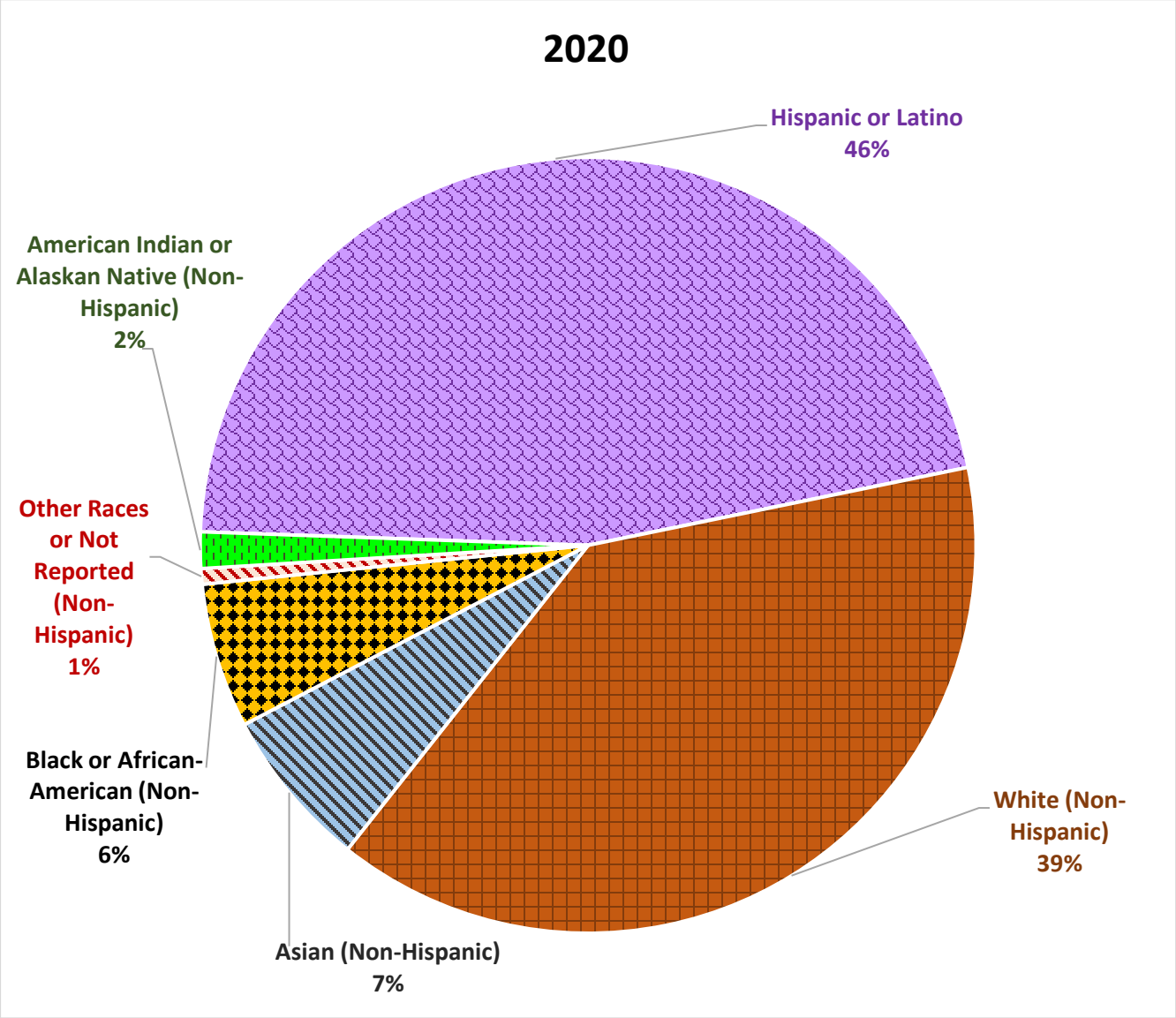
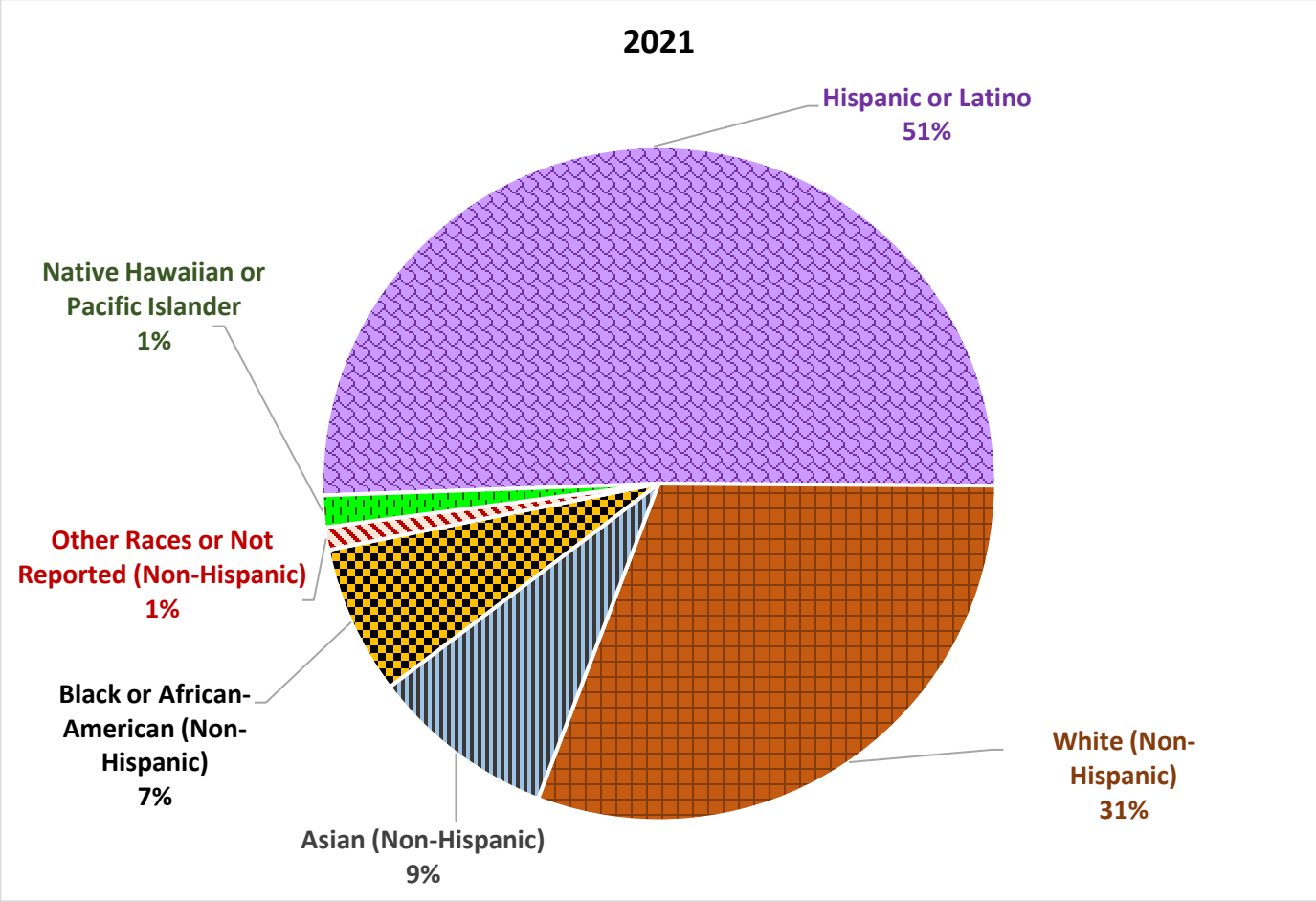


Figure 5b2. California Fatal Occupational Injuries Within the Scope of CFOI, by Race/Ethnicity (2020), Total counted by CFOI in 2021 was 462 fatalities



The U.S. Bureau of Labor Statistics publication on national (2021) occupational fatality rates indicates that Hispanic or Latino Black workers, as well as African American workers, had fatality rates (4.5 and 4.0 per 100,000 FTE workers respectively) in 2021 that were higher than the national All Worker rate of 3.6 per 100,000. [i] BLS does not publish state-specific rates of occupational injury fatalities by race or ethnicity. Using California employment statistics from the Employment Development Department[ii], one can calculate estimates of the race and ethnicity rates in California showing that Black, and Hispanic/Latino workers had rates of fatal occupational injuries at more than 3 times the rate of White workers.

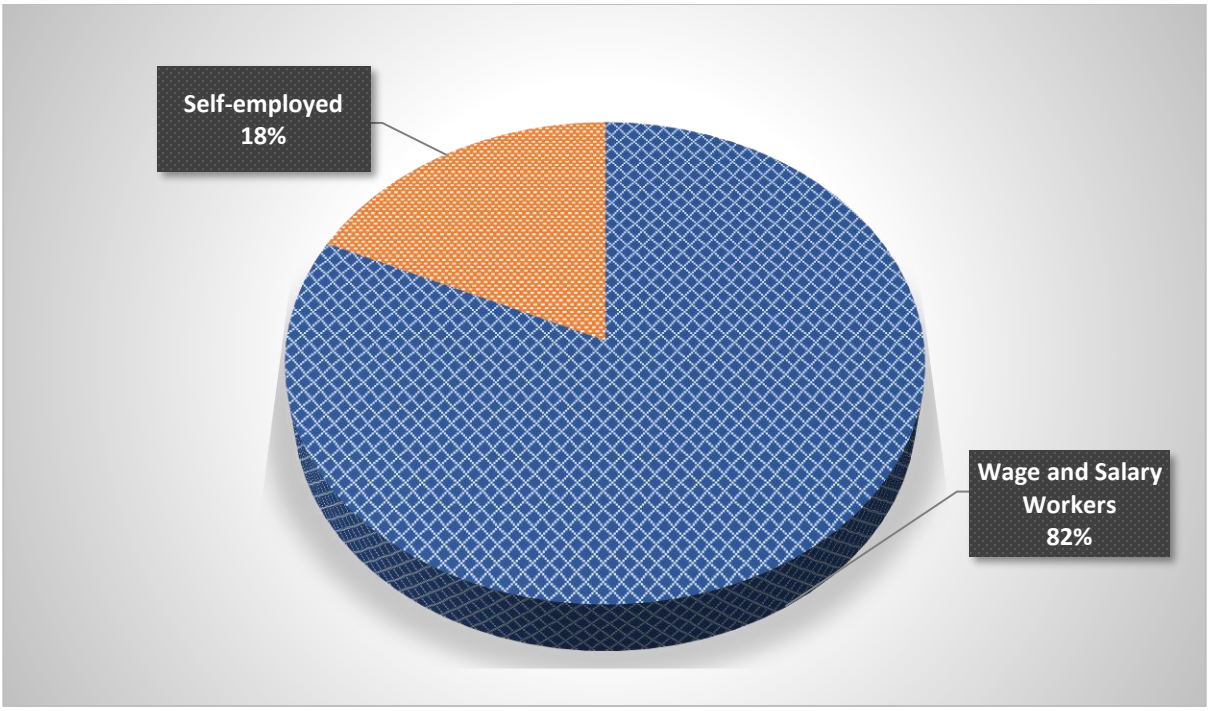
Table of Estimates of Rates of Occupational Injury Fatality by Race/Ethnicity California

Races/Ethnicities	Employed (Feb 2022)	Occupational Injury Fatalities 2021 (Calif)	Rate per 100,000 workers
All	17,813,000	462	2.6
White	12,793,000	142	1.1
Black	1,068,000	41	3.8
Hispanic	6,802,000	234	3.4

Employment Status

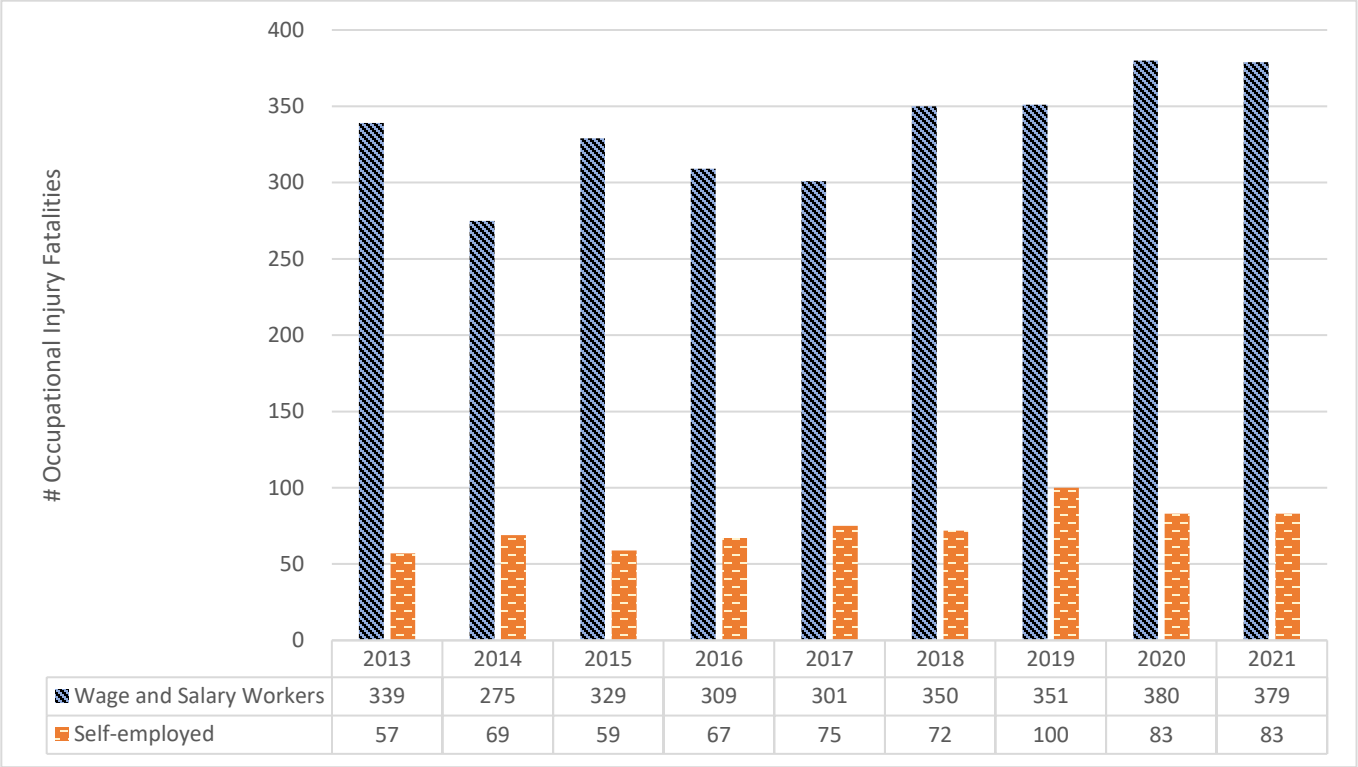
CFOI covers the work-related fatal injuries specified in the Introduction above and includes employed workers who are typically covered under OSHA regulation, but CFOI also incorporates the self-employed, independent contractors, freelancers, and others who do not work for a specific employer. For the 2013 to 2021 period, four out of five fatalities within the scope of CFOI (82%) occurred to persons employed as wage and salary workers, compared with self-employed workers, who made up 18% of fatalities (Figure 6a). Thus nearly 1/5 of workers fatally injured on the job are not under an employee-employer relationship, and typically not covered either under Cal/OSHA or state workers' compensation programs.

Figure 6a California Fatal Occupational Injuries Within the Scope of CFOI, by Employment Status (2013–2021)



Counts of those fatally injured on the job by employment status for the 2013-2021 period show some fluctuation from one year to the next, but the number of wage and salary workers who were fatally injured on the job consistently exceeds such reports for self-employed workers (Figure 6b).

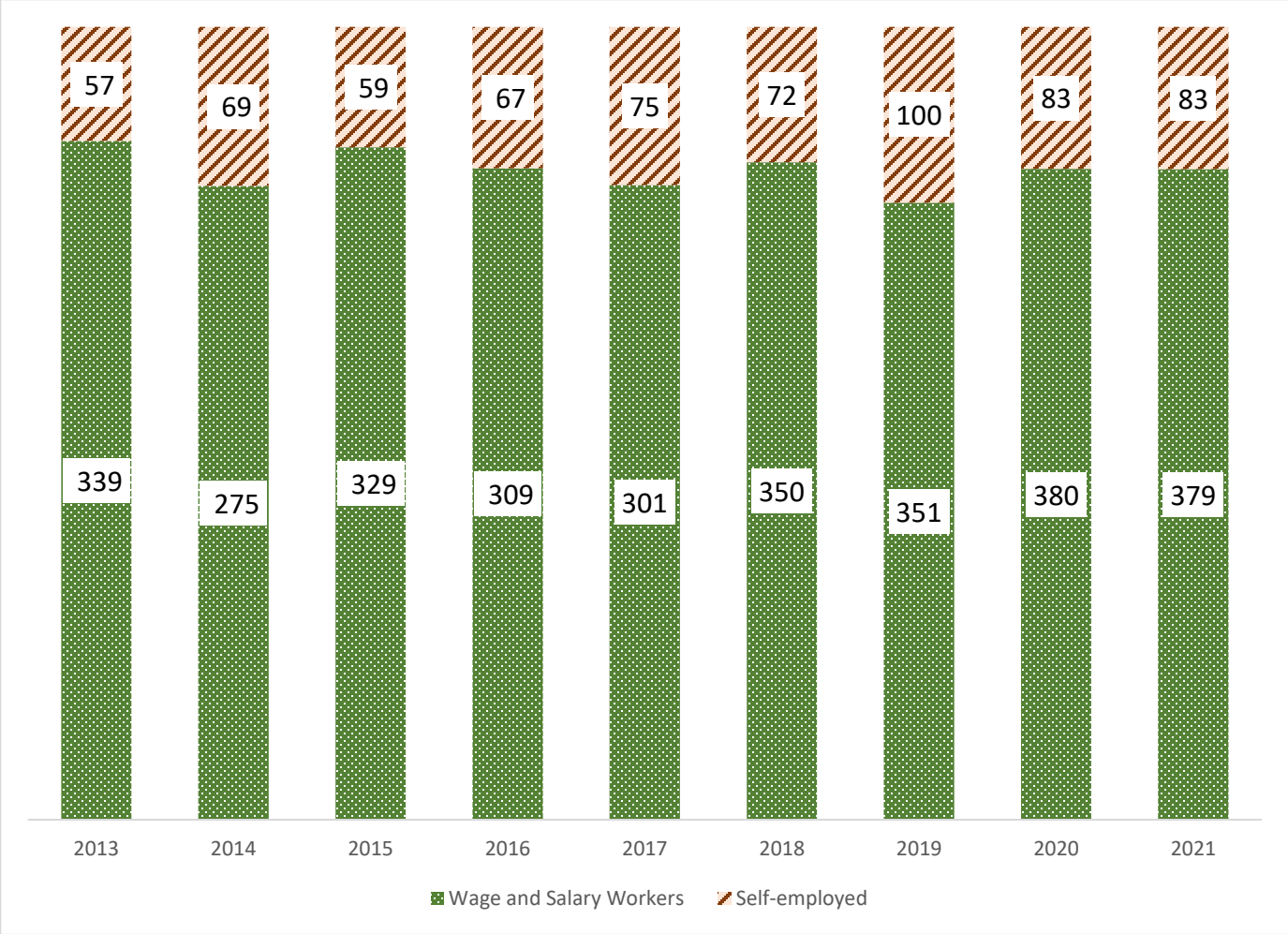
Figure 6b California Fatal Occupational Injuries Within the Scope of CFOI, by Employment Status (2013–2021)



	2013	2014	2015	2016	2017	2018	2019	2020	2021
Wage and Salary Workers	339	275	329	309	301	350	351	380	379
Self-employed	57	69	59	67	75	72	100	83	83

The total number of wage and salary workers fatally injured on the job in 2020 increased over 2019 figures, while the number of self-employed workers dropped. The proportion of wage and salary workers fatally injured rose to 82%, while that of self-employed workers fell to 18% (Figures 6b and 6c).

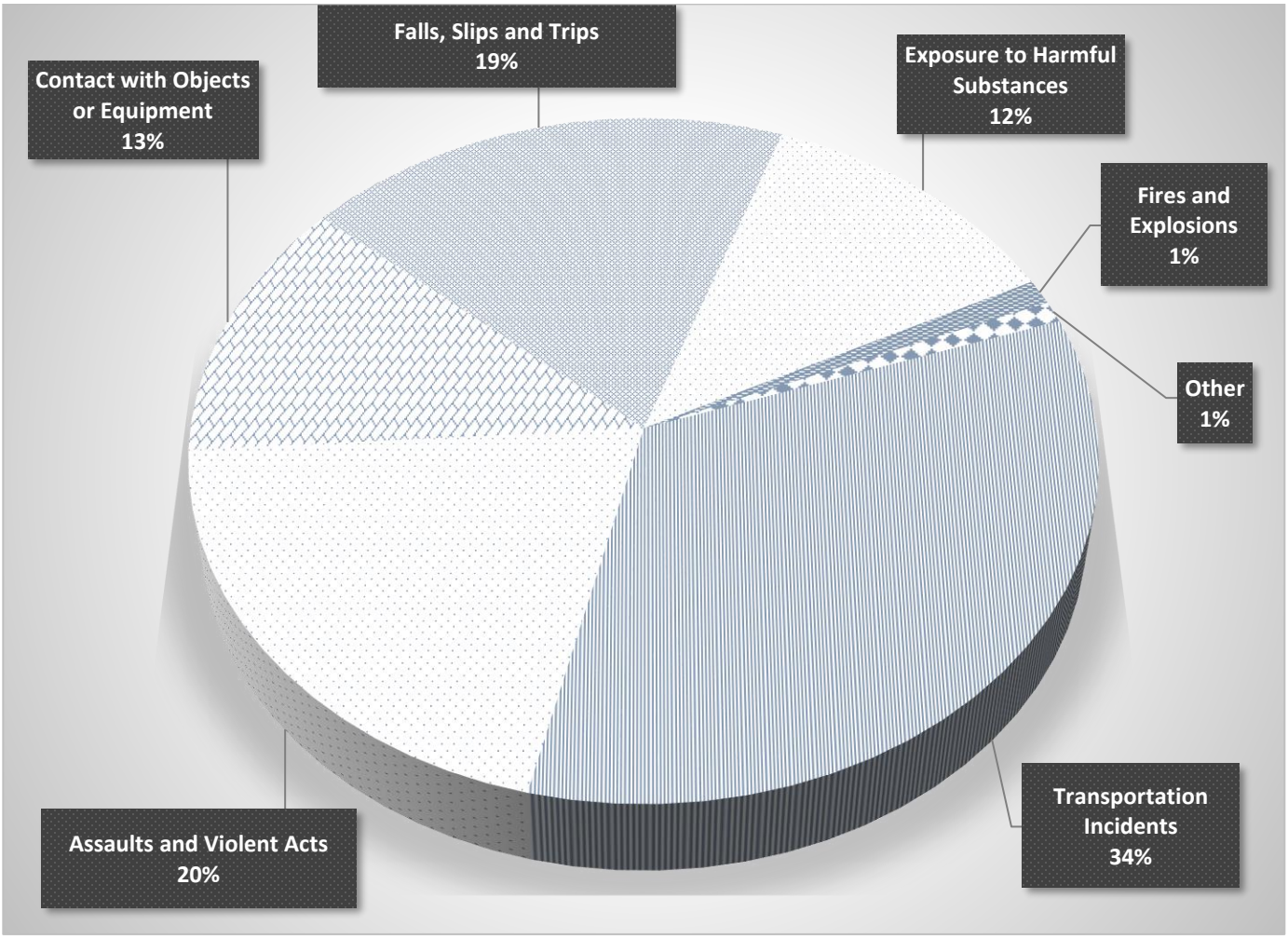
Figure 6c. California Fatal Occupational Injuries Within the Scope of CFOI, by Percentage Employment Status (2013-21)



Causes of Fatal Events

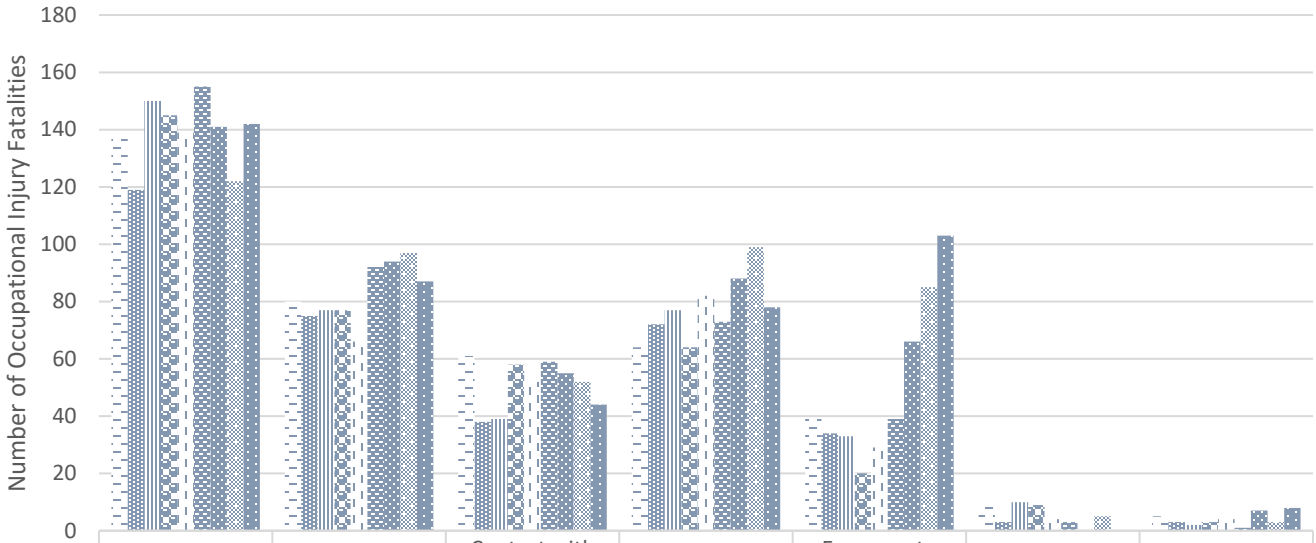
Transportation incidents have consistently caused the most occupational injury fatalities in California. Such events led to 34% of all occupational fatalities during the 2013-2021 period. In those seven years, fatal injuries due to assaults and violent acts, and due to falls, slips and trips each accounted for 20% of fatalities. Contact with objects and equipment caused 13% of the total. Eleven percent of the recorded deaths in 2013-2021 were caused by exposure to harmful substances, and fires and explosions accounted for 1% of cases. (Figures 7a).

Figure 7a. California Fatal Occupational Injuries Within the Scope of CFOI, by Event (2013–2021)



In 2021, transportation incidents remained the largest category of occupational fatality cause with 31% of the total. The category of “exposure to harmful substances” was the second largest in 2021, rising rapidly every year from 5% in 2016 to over 22% in 2021. This category is fueled by the escalating number of drug overdose deaths that have occurred at work during the past 4 years. The number of deaths by assaults and violent acts dropped for the first time since 2017, but still accounted for 87 deaths (19%) in 2021. Falls, slips and trips accounted for 1 in 6 fatalities(17% of cases) in 2021.

Figure 7b. California Fatal Occupational Injuries Within the Scope of CFOI, by Event (2013–2021)



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

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

In 2020, CFOI counted 122 workers involved in fatal transportation incidents. One hundred and eight were wage and salary (w/s) workers, while 14 were self-employed. Transportation-related fatalities jumped to 142 in 2021, with 122 deaths among wage and salary workers, and 20 fatalities among self-employed.

In 2020, there were 92 deaths involving intentional injury by persons: 47 homicides and 45 suicides. Two-thirds of the homicides and one-third of the suicides involved shootings. In 2020, 23% of work-related violence fatalities involved self-employed workers, compared to 18% of the overall fatality count. Eighty-four of the 97 violence-related deaths involved private sector workers. By occupation, 18 sales workers, 15 protective service workers and 13 transportation workers died from intentional violence on the job. The number of violence related fatalities dropped to 87 in 2021, including 57 homicides (42 by firearms) and 28 suicides. Twenty percent of work-related violence fatalities involved self-employed workers, Ninety percent of the fatalities were men.

In 2021, there were 85 deaths involving intentional injury by persons: 57 homicides and 28 suicides. Three-quarters of the homicides involved shootings. In 2021, 54 (52%) of the 103 persons fatally injured in that category were Hispanic. The number of women fatally injured by harmful substances doubled to 12. In 2021, reversing the earlier year, over 70% of 103 fatalities from exposure to harmful substances were over age 35.

Among the 52 fatal injuries involving contact with objects or equipment in 2020, three were women and 49 were men. Hispanic workers died in 33 such incidents. Twenty-one were over 55 years old. In 2021, 44 persons died from contact with objects or equipment. Twenty five were Hispanic.

Ninety-nine fatal injuries in 2020 involved falls, slips, and trips. Construction workers died in 36 such incidents, and 15 building and grounds maintenance workers were fatally injured from falls, slips, and trips. In 2021, 78 workers died from falls, slips and trips. Including 33 construction workers. Sixty-five (83%) resulted from falls to lower levels, while 12 fatalities were from falls on same level.

Figure 7c1. California Fatal Occupational Injuries Within the Scope of CFOI, by Event, Percentage of total (2020)

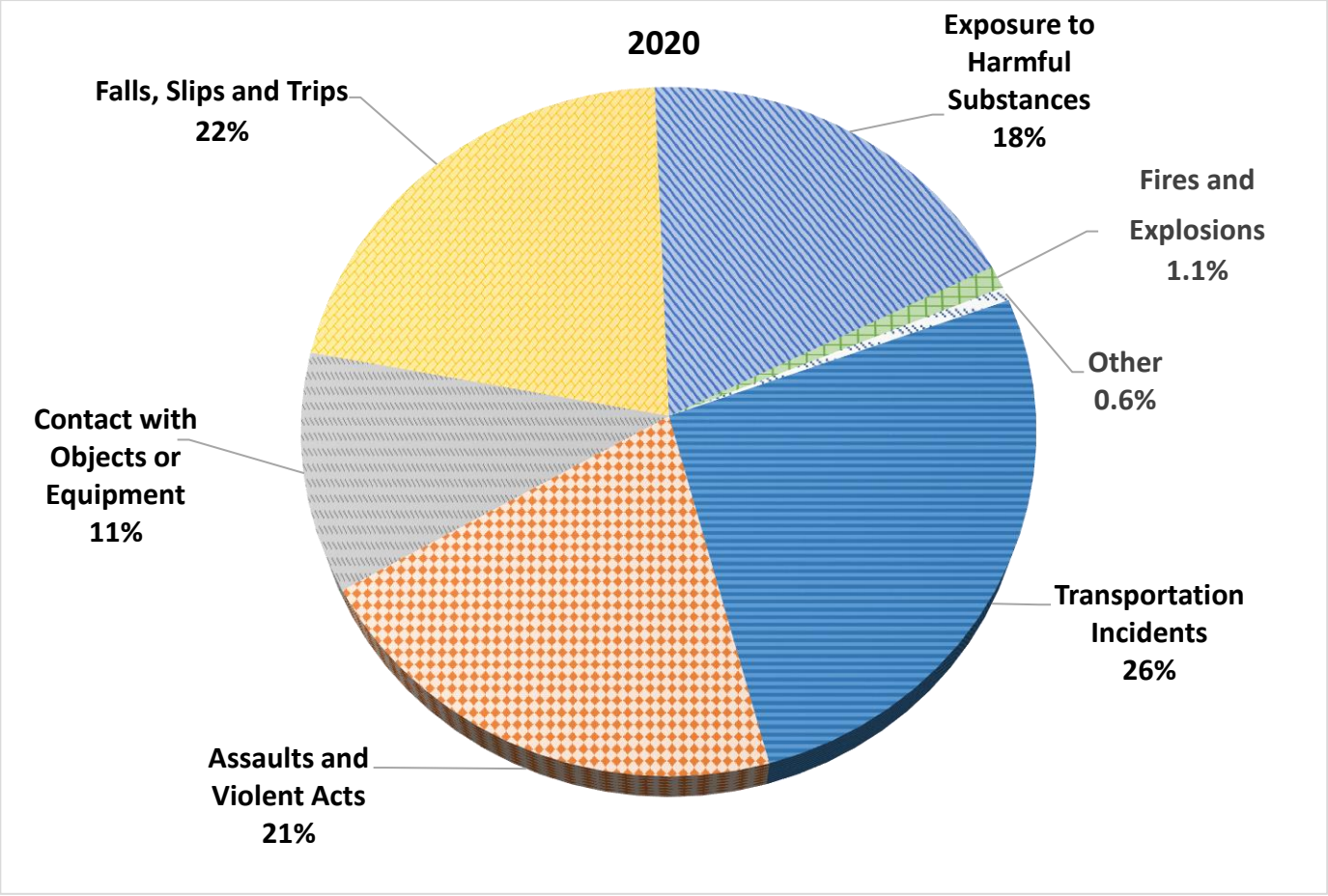
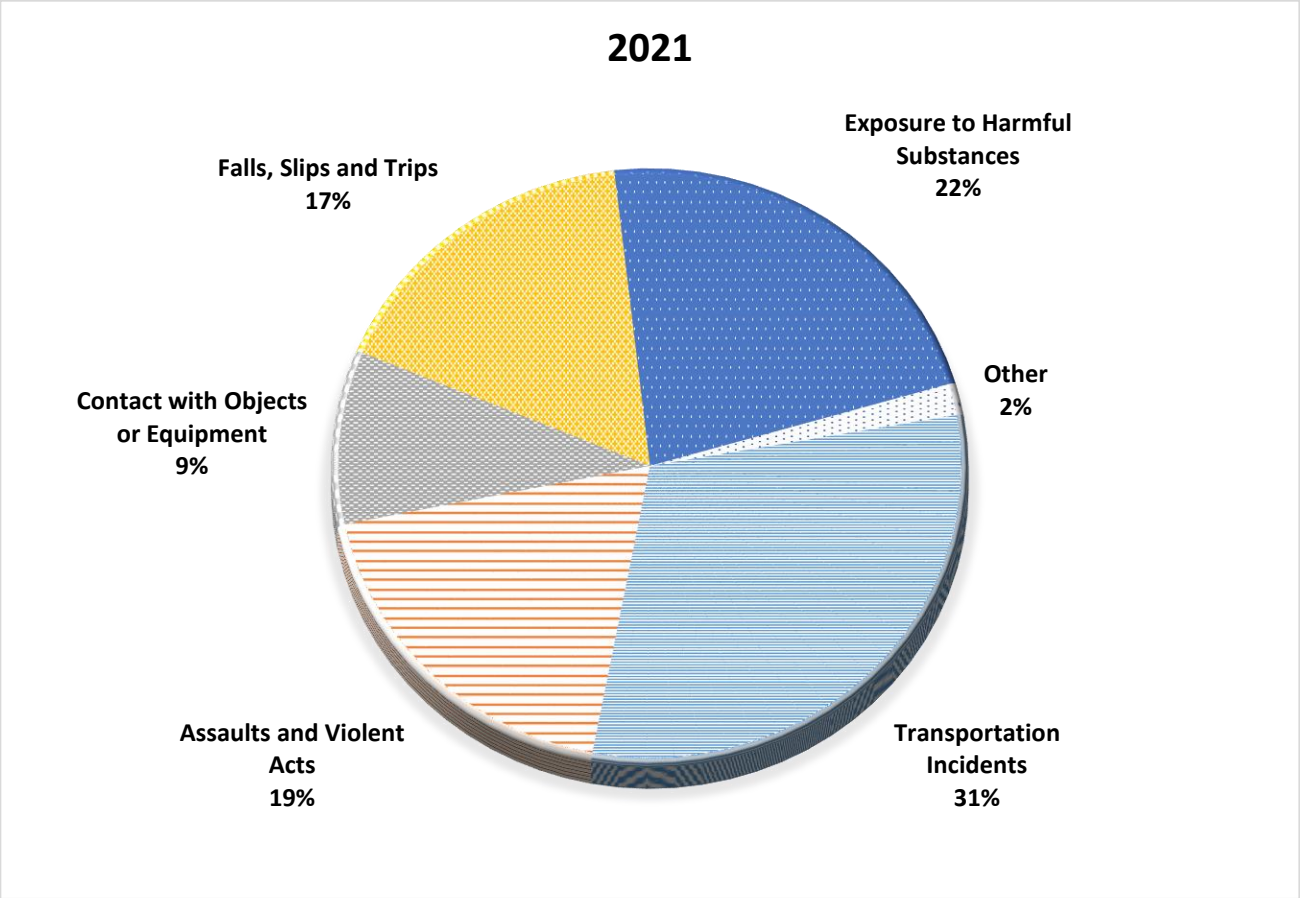


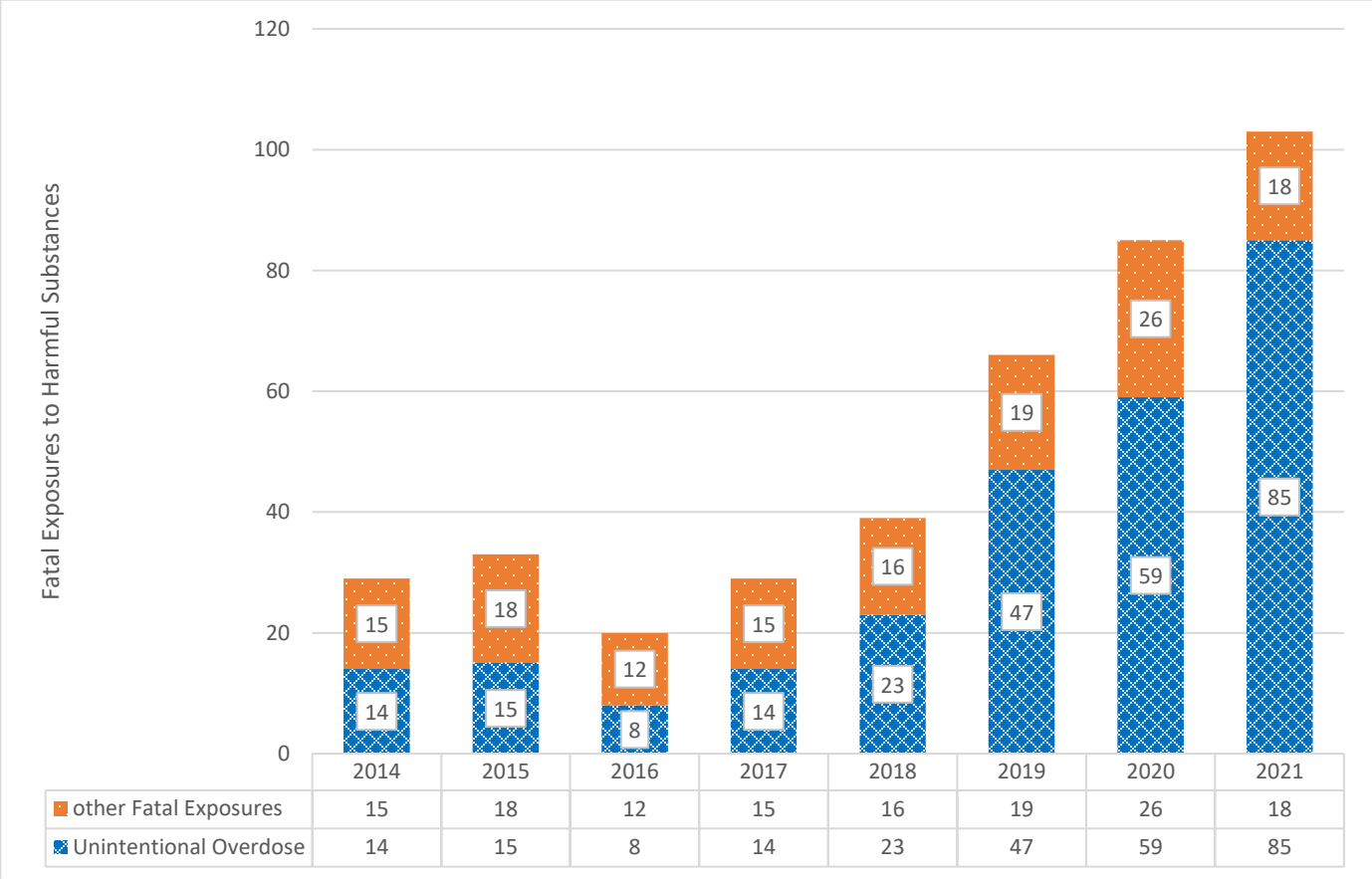
Figure 7c2. California Fatal Occupational Injuries Within the Scope of CFOI, by Event, Percentage of total (2021)



Fatal Exposure to Harmful Substances

The largest recent increase in fatalities by event occurred among those fatally exposed to harmful substances. This occurred 2018 through 2021, when such deaths rose from 39 in 2018 to 66 in 2019, 85 in 2020, and 103 in 2021. Much of that increase in fatal exposures, however, was due to one particular cause: drug or alcohol overdoses. In 2018, 23 of 39 fatal occupational injuries from exposures to harmful substances were from unintentional overdoses, while in 2019, 47 of 66 were so categorized. By 2020, 59 of the 85 fatal occupational injuries, and in 2021, 85 (83%) of these 103 fatalities from exposure to harmful substances were from unintentional overdoses that occurred at work. [1]

Figure 8a. California Fatal Unintentional Overdoses and Other Fatal Exposures to Harmful Substances Within the Scope of CFOI (2014–2021)

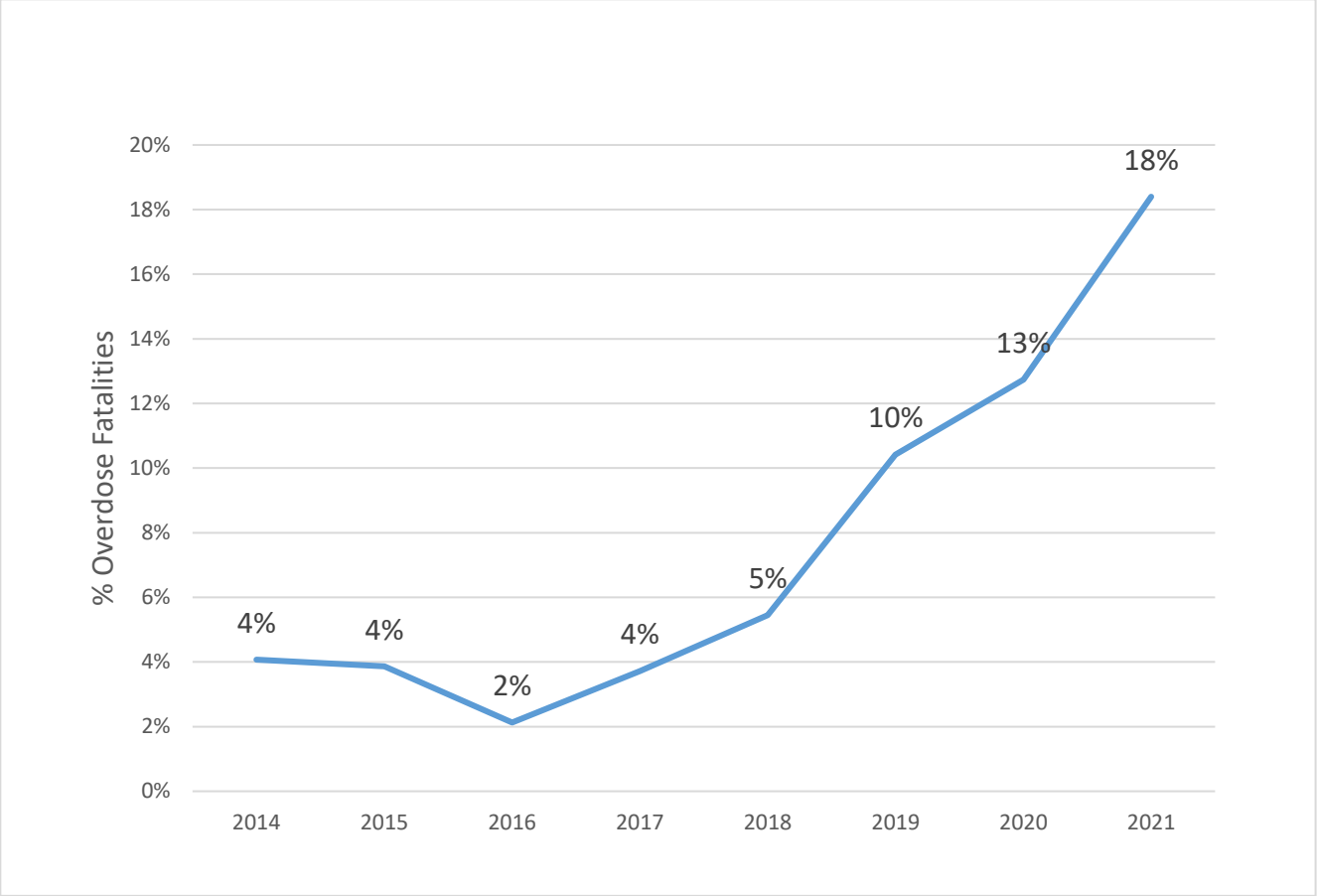


	2014	2015	2016	2017	2018	2019	2020	2021
other Fatal Exposures	15	18	12	15	16	19	26	18
Unintentional Overdose	14	15	8	14	23	47	59	85

The proportion of overall fatalities within the scope of CFOI which resulted from unintentional overdoses has recently increased rapidly. From 2014 to 2021, unintentional overdoses rose from 4% to 18% of all fatalities within the scope of CFOI.

[1] CFOI. TABLE A-9. Fatal occupational injuries by event or exposure for all fatal injuries and major private industry[1] sector, California. See, for 2021, www.dir.ca.gov/DOSH/CFOI/cfoi_2021/cfoi2021-A-9.pdf. The column "total fatal injuries (number)" is not limited to private industry.

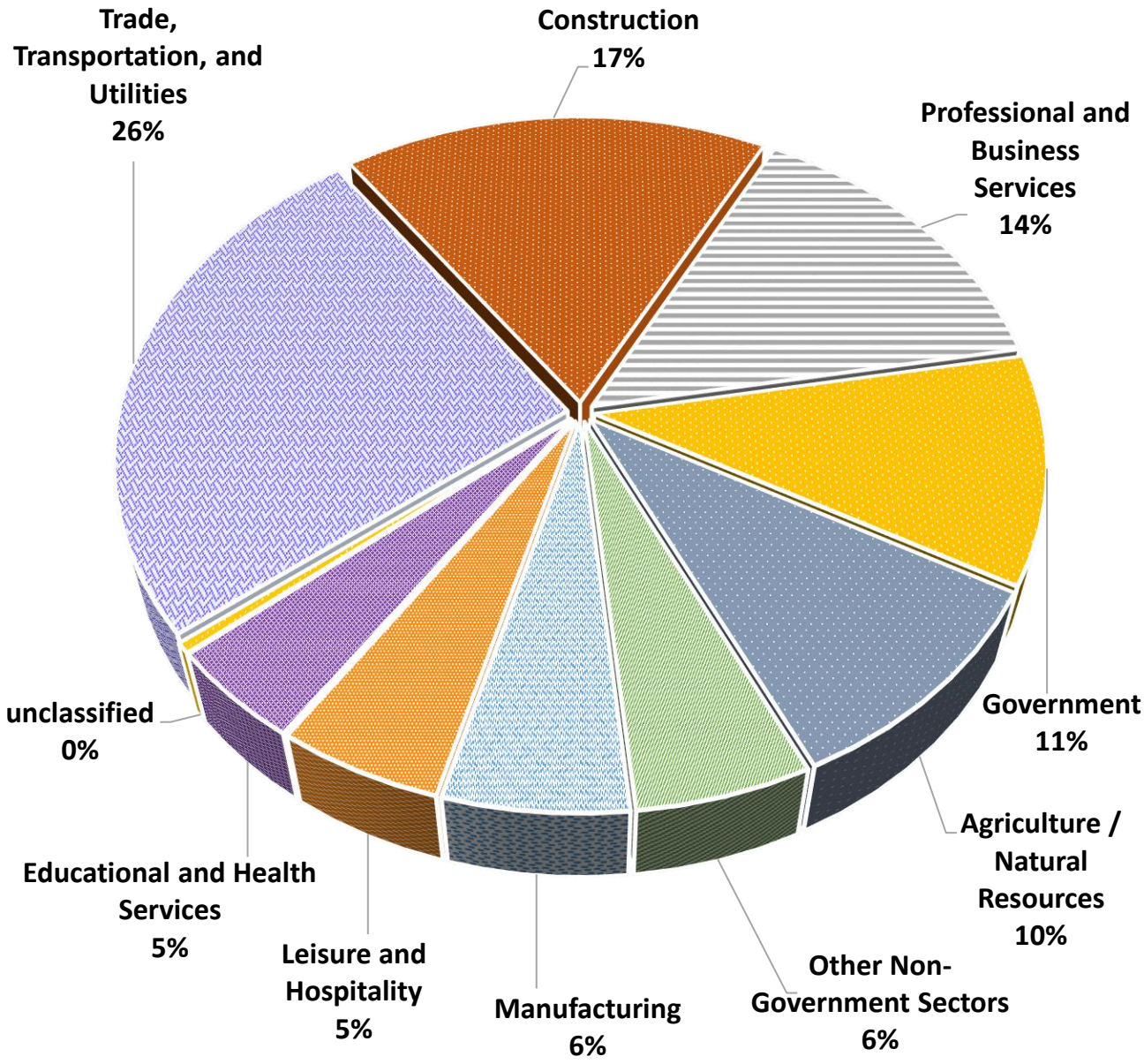
Figure 8b. California Fatal Unintentional Overdoses as a Percentage of All Fatalities Within the Scope of CFOI (2014–2021)



Industry

The figures below show totals (Figure 9a) and trends (Figure 9b) in California work injury fatalities by industry for years 2013-2021.

Figure 9a. California Fatal Occupational Injuries Within the Scope of CFOI, by Industry Group (2013–2021 totals)



The trade, transportation, and utilities (TTU) industry had the highest number of fatalities during each of the past seven years, averaging over 100 occupational deaths annually, or one-fourth of cases. From 2013 to 2021, this sector accounted for 938 deaths. In 2019, TTU accounted for

118 fatalities, with 55 deaths from transportation incidents, 16 homicides, and 10 from falls, slips and trips. In 2020, the death toll in TTU was 113. Forty-three fatalities were in transportation incidents, and 10 each in contact with objects and equipment, and in falls, slips and trips. In 2021, TTU had 110 fatalities, including 51 Transportation incidents, 20 cases of exposure to harmful substances, and 19 deaths by violent injury.

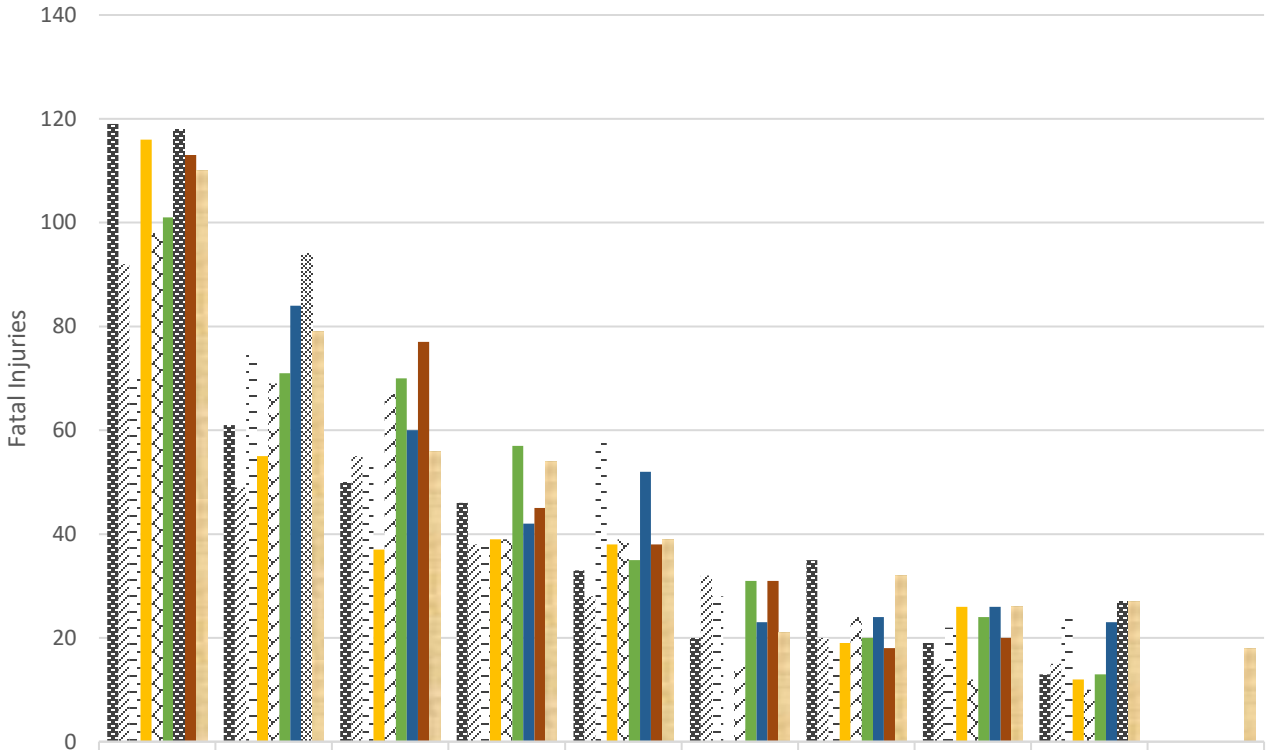
The construction industry had the next highest number of fatalities with 637 fatalities (17%) for the 2013-2021 period. In 2019, construction fatalities rose to 84 from 71 the prior year, including 35 falls, slips, and trips, 17 transportation incidents, and 13 case involving contacts with objects and equipment. In 2020, it rose again to 94 fatalities, with 37 from falls, slips, and trips, 19 from exposure to harmful substances, or environments, and 17 fatalities in transportation incidents. Construction fatalities fell to 79 in 2021, with 33 from falls, slips and trips, 24 from exposure to harmful substances or environments, and 10 fatalities in transportation incidents.

Professional and business services, including accountants, lawyers, engineers, computer programmers, consultants, and researchers, accounted for 526 deaths (14% of total) in the 2013-2021 years. Of the 77 fatalities in 2020 (up from 60 cases in 2019), 16 fatalities resulted from exposure to harmful substances or environments.

The manufacturing industry had 210 fatalities in the 2013–2021 period. In 2019, 24 died in manufacturing, including 11 from contacts with objects and equipment, five from violence, and four each from transportation incidents and falls, slips, and trips. In 2020, 18 manufacturing workers were fatally injured, with five from contact with objects, four from workplace violence, and three in transportation incidents. In 2021, 32 workers in manufacturing died of injuries on the job, 10 from exposure to harmful substances, 6 from transportation incidents and 5 from falls to a lower level.

The leisure and hospitality industry accounted for 190 deaths during the 2013-21 period. In 2019, 26 workers died, including five in transportation incidents, five from exposure to harmful substances, and four from falls, slips and trips. In 2020, which included a major slowdown in the industry, 20 workers were fatally injured, with half from exposure to harmful substances or environments. Twenty six leisure and hospitality workers died in 2021 from on-the-job injuries.

Figure 9b. California Fatal Occupational Injuries Within the Scope of CFOI, by Industry Group by Year (2013-21)



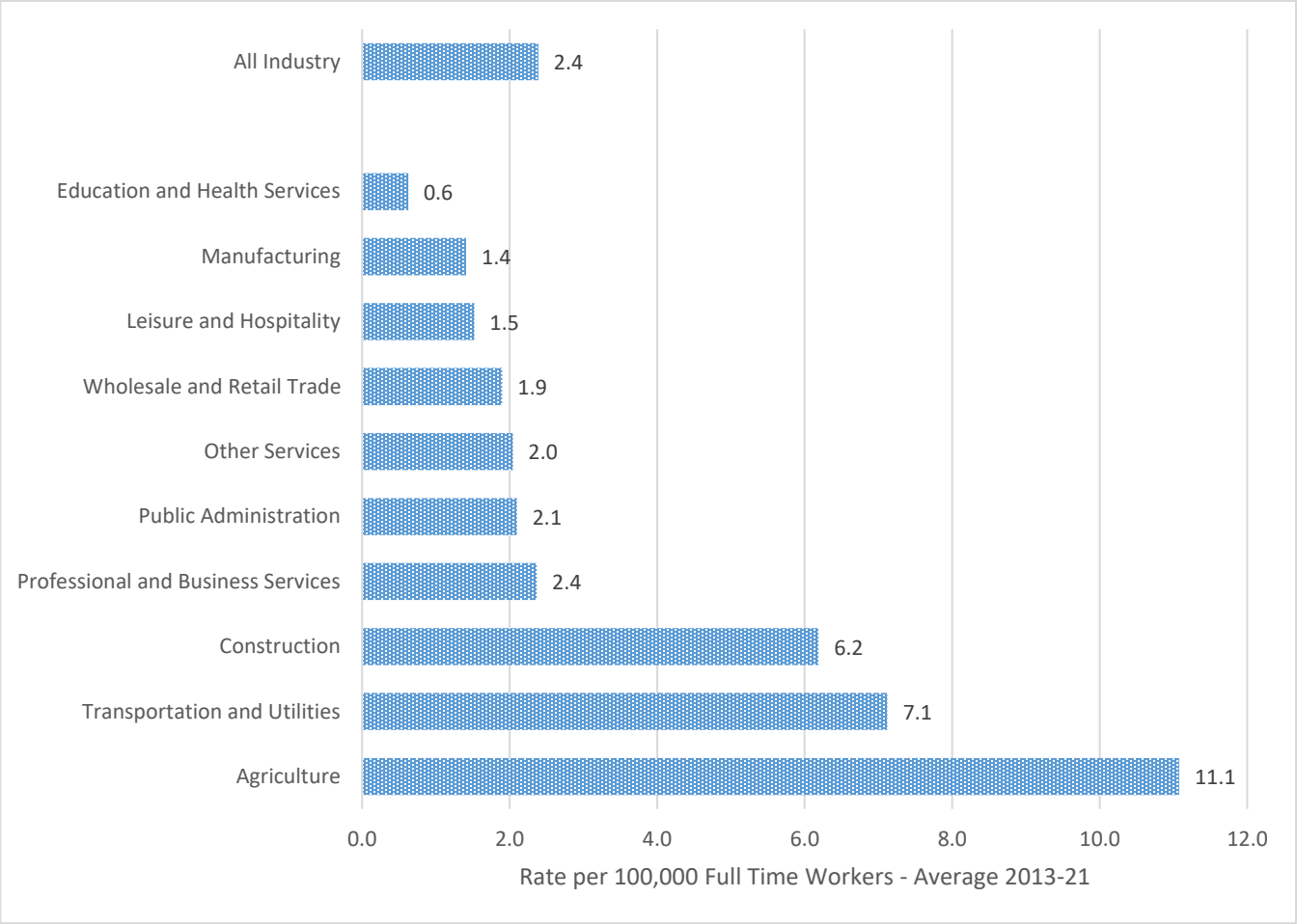
	Trade, Transportation, and Utilities	Construction	Professional and Business Services	Government	Agriculture / Natural Resources	Other Non-Government Sectors	Manufacturing	Leisure and Hospitality	Educational and Health Services	unclasified
2013	119	61	50	46	33	20	35	19	13	0
2014	92	49	55	38	28	32	20	15	15	
2015	71	75	54	38	58	28	18	22	24	
2016	116	55	37	39	38	0	19	26	12	
2017	98	69	67	39	39	15	24	12	10	
2018	101	71	70	57	35	31	20	24	13	
2019	118	84	60	42	52	23	24	26	23	
2020	113	94	77	45	38	31	18	20	27	
2021	110	79	56	54	39	21	32	26	27	18

Fatality Rate by Industry

Hazardous industries are identified by analyzing fatality rates. Fatal injury rates depict the risk of incurring a fatal work injury for workers in a given worker group, expressed as the number of fatal injuries per 100,000 full-time equivalent workers. This allows risks to be compared among different worker groups. To produce a fatal injury rate for an industry, the number of fatal work injuries in a given industry is divided by the total hours worked in that industrial sector and multiplied by 200,000,000 (the base for 100,000 equivalent full-time workers working 40 hours per week, 50 weeks per year).

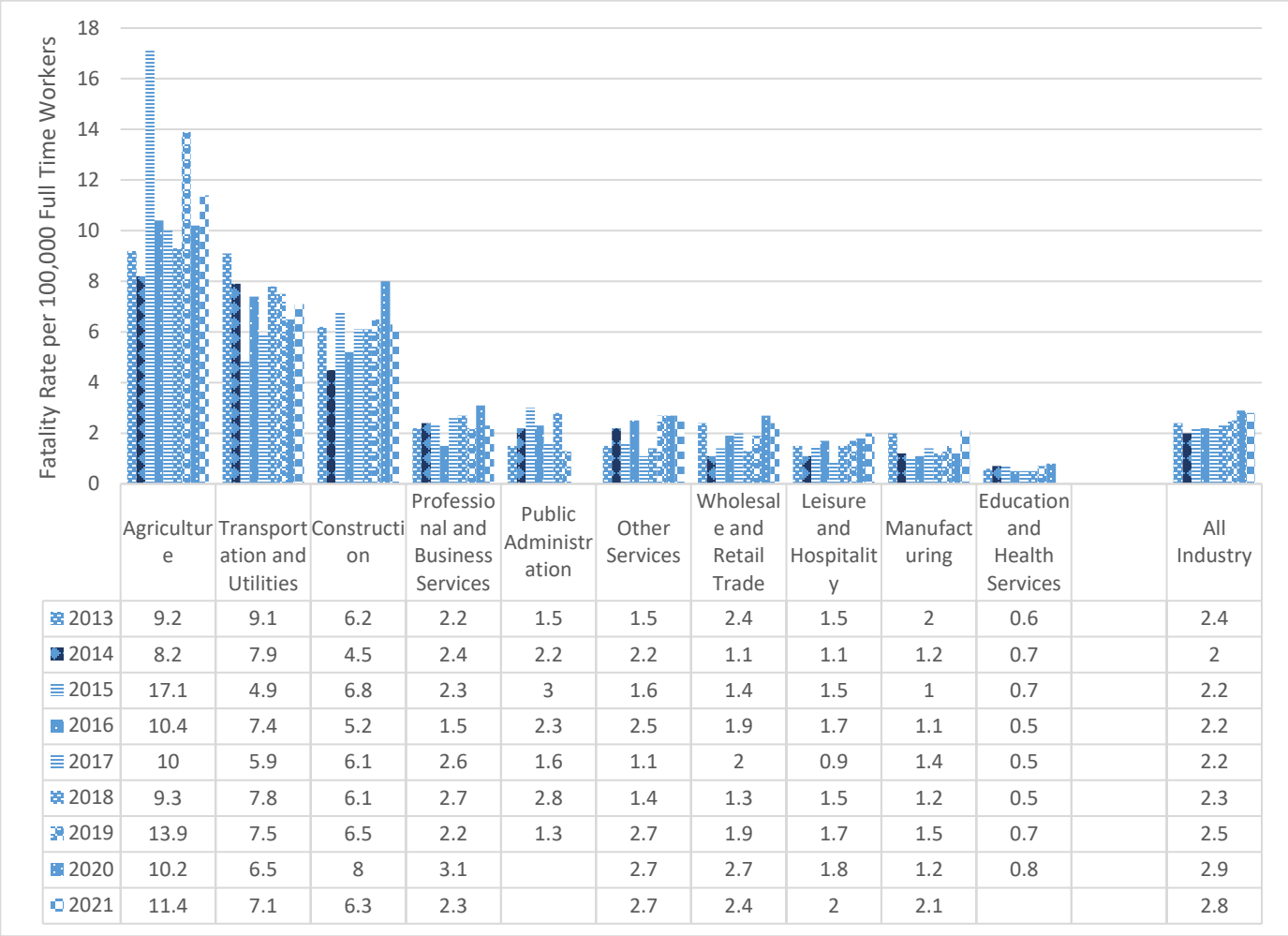
CFOI publishes data on fatal injury rates by industry. The average fatality rate for California by industry for 2013–2021 is shown below as 2.4 fatalities per 100,000 full-time workers. Agriculture, with an average rate of 11.1 fatalities per 100,000 workers, had the highest fatality rate over the past nine years. The transportation and utilities (7.1 per 100,000) and construction (6.3 fatalities per 100,000) industries also generated high fatality rates (Figure 9a).

Figure 10a. California Average Rate of Fatalities Within the Scope of CFOI, by Industry (2013–2021, per 100,000 workers)



(NOTE: Data not available for Public Administration (2020 and 2021) and Education and Health Services (2021))

Figure 10b. California Fatality Rate Within the Scope of CFOI, by Industry by Year (2013–2021, per 100,000 workers)



	Agriculture	Transportation and Utilities	Construction	Professional and Business Services	Public Administration	Other Services	Wholesale and Retail Trade	Leisure and Hospitality	Manufacturing	Education and Health Services		All Industry
2013	9.2	9.1	6.2	2.2	1.5	1.5	2.4	1.5	2	0.6		2.4
2014	8.2	7.9	4.5	2.4	2.2	2.2	1.1	1.1	1.2	0.7		2
2015	17.1	4.9	6.8	2.3	3	1.6	1.4	1.5	1	0.7		2.2
2016	10.4	7.4	5.2	1.5	2.3	2.5	1.9	1.7	1.1	0.5		2.2
2017	10	5.9	6.1	2.6	1.6	1.1	2	0.9	1.4	0.5		2.2
2018	9.3	7.8	6.1	2.7	2.8	1.4	1.3	1.5	1.2	0.5		2.3
2019	13.9	7.5	6.5	2.2	1.3	2.7	1.9	1.7	1.5	0.7		2.5
2020	10.2	6.5	8	3.1		2.7	2.7	1.8	1.2	0.8		2.9
2021	11.4	7.1	6.3	2.3		2.7	2.4	2	2.1			2.8

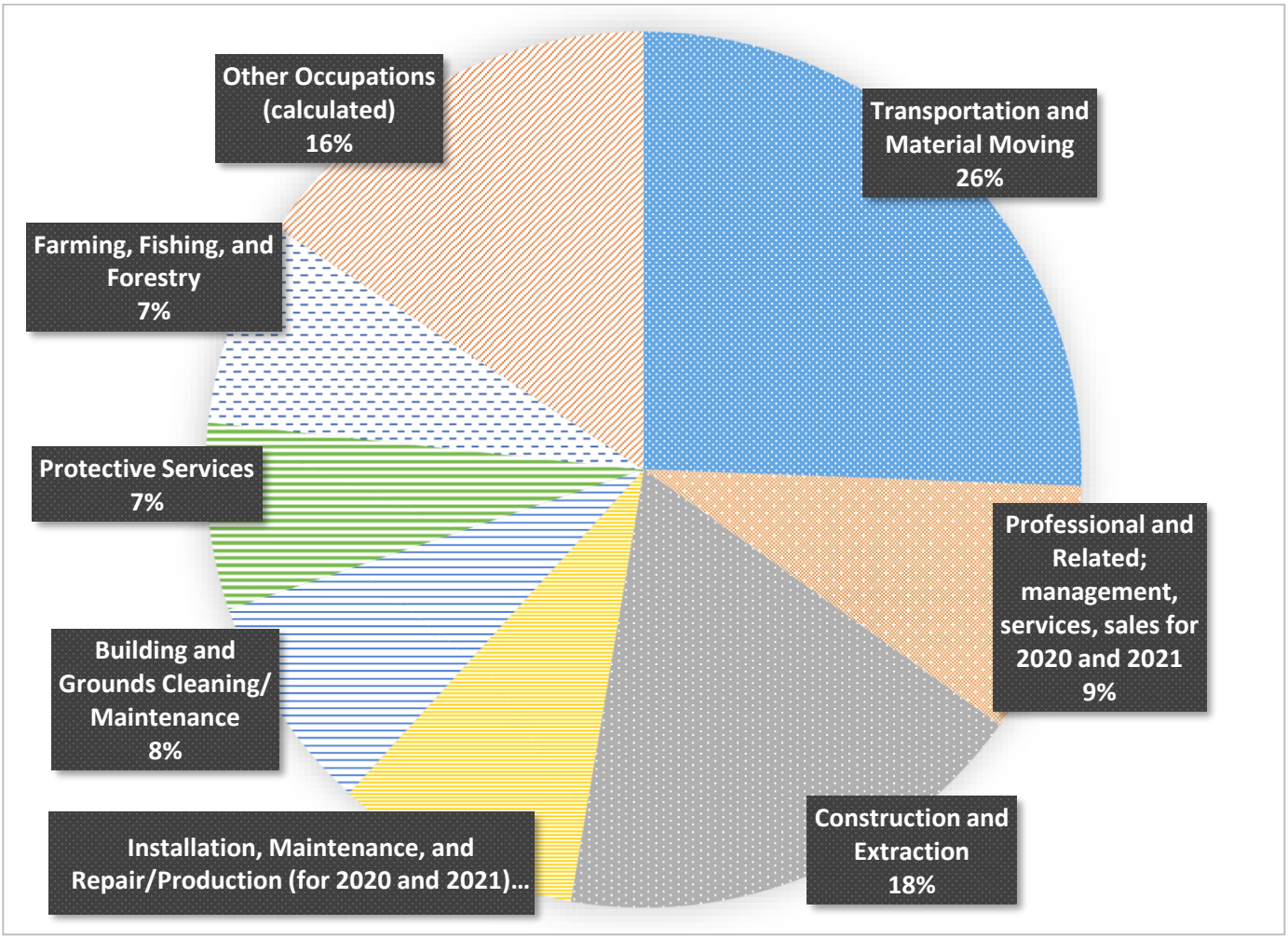
(NOTE: Blank values in table indicates no data reported or data that do not meet publication criteria.)

On average, 2.4 workers per 100,000 in California were killed on the job each year over the 2013-2021 period. Three industries in California show high rates of worker deaths: agriculture, transportation and utilities, and construction. The fatality rate in the agriculture industry has exceeded 10 workers per 100,000 66 times in the past nine years, as well as the last three years. During the same period, the fatality rates for the transportation industry average 7.1 per 100,000 workers, while in construction, the rate averaged 6.2 over the 2013-21 period.

Occupation Groups

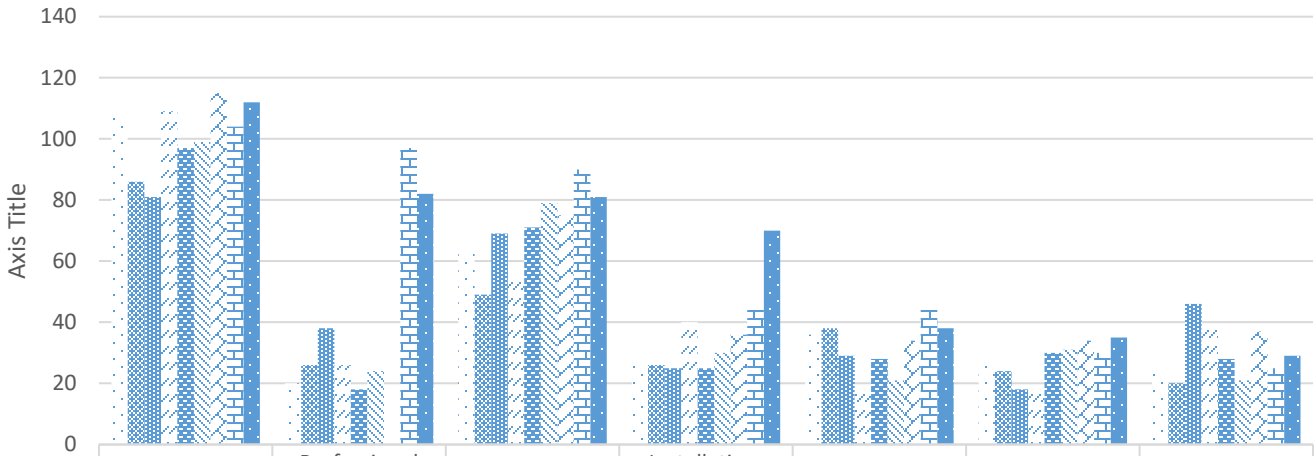
One in four occupational fatalities over the period of 2013–2021 involved transportation and material moving occupations, including truck drivers. Construction and extraction occupations have the next highest share, with 17% of cases, followed by agricultural occupations (farming, fishing and forestry), installation, maintenance, and repair occupations. Building and grounds cleaning and maintenance workers each accounted for 7% (Figures 10a and 10b).

Figure 11a. Distribution of California Fatal Occupational Injuries Within the Scope of CFOI, by Occupation Group (2013–2021)



Fatal injuries occurred throughout all types of work. Of the 3,678 worker injury fatalities since 2013, over 900 transportation and material moving workers have been fatally injured on the job. In the construction and extraction industries, 632 have died. Another 323 have died as installation and repair workers, and 269 in farming, fishing, or forestry occupations. Other fatalities include professional and related workers (331), buildings and grounds cleaning or maintenance workers (287), and protective services workers (246).

Figure 11b California Fatal Occupational Injuries Within the Scope of CFOI, by Selected Occupation Group (2014–2020)



	Transportation and Material Moving	Professional and Related; management, services, sales for 2020 and 2021	Construction and Extraction	Installation, Maintenance, and Repair/Production (for 2020 and 2021)	Building and Grounds Cleaning/ Maintenance	Protective Services	Farming, Fishing, and Forestry
2013	108	20	64	27	36	26	25
2014	86	26	49	26	38	24	20
2015	81	38	69	25	29	18	46
2016	109	26	54	40	19	18	38
2017	97	18	71	25	28	30	28
2018	99	24	79	30	21	31	21
2019	115		75	36	34	34	37
2020	104	97	90	44	44	30	25
2021	112	82	81	70	38	35	29

There were 115 deaths among transportation and material moving workers in 2019. Sixty-nine of those were transportation incidents, but the other 40% included 14 fatal injuries by violence, 12 by contacts with equipment and objects, and 10 from hazardous exposures. In 2020, among the 104 transportation worker fatalities, 56 were transportation incidents, while 13 involved workplace violence, and another 13 were from falls, slips and trips. In 2021, 112 transportation and material moving workers were fatally injured. Sixty-six (59%) deaths were from transportation incidents, 17 were ascribed to harmful substances (nine drivers and 8 material movers and laborers.

Summary

The Census of Fatal Occupational Injuries (CFOI) compiles a count of fatal work-related injuries in the U.S. during each calendar year. The CFOI Program for California, 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, uses diverse state, federal, and independent data sources to identify, verify, and describe fatal work-related injuries.[2]

For many years after 1999, when over 600 workers died from on-the-job injuries, fatal occupational injuries in California were on a downward trend. From 2010 to 2017, the number of such fatalities was below 400 every year. During the past three years, however, numbers have risen. In 2018, there were 422 fatal occupational injuries in California, at the time the highest number since 2008 (Figure. 1). The number of fatalities rose again in 2019 to 451, or an average of nine deaths a week in the state. In 2020, the number rose again to 463 and in 2021, 462 fatalities were recorded. One of the fastest growing causes of death in recent years was unintentional overdoses that occurred at the workplace. In 2015, 15 persons were recorded as dying at work from unintentional overdose; approximately 4 percent of the total state toll. By 2020, this figure reached 59 deaths 13% of all fatalities within the scope of CFOI, and in2021 the number again grew dramatically to 85 or over 18% of fatalities.

Overall, California's rate of fatal injury, the number of fatalities per 100,000 workers, remains consistently below the national average. California's rate has been below three fatal injuries per 100,000 workers in every year since 2002, with the exception of 2006. California's rate of fatal injury is nonetheless rising, and the difference between the state and national rate has diminished. Rates for the U.S. have stabilized around 3.5 per 100,000 workers throughout the last half decade. From 2015 to 2017, the California rate was stable at 2.2, but in 2018 it rose to 2.3 and then to 2.5 fatalities per 100,000 workers in 2019. Fatalities per 100,000 workers in California was 2.9 in 2020, dropping slightly to 2.8 in 2021.

Over the entirety of the nine-year period (2013-2021) covered by this report, an average of 2.4 workers per 100,000 in California were involved in fatal incidents on the job each year. Agriculture consistently had the highest fatality rate, followed by transportation and utilities, and construction. The fatality rate in the agriculture industry rose nearly 50% in 2019 over the prior year, then fell back somewhat in 2020 before rising another 12 percent in 2021. The wholesale and retail trade industry fatality rates rose sharply, from 1.9 per 100,000 workers to 2.7 fatalities in 2020, then retreated to 2.4 in 2021..

The distribution of fatal occupational injuries by age remains relatively constant over the 2013-21 period, with fatalities among those over age 45 each year ranging between 53 and 58% of the total.

The causes of occupational injury fatalities have stayed relatively constant in past years, with one exception, the addition of increasing numbers of overdoses and exposures to harmful

[2] Starting with the release of 2019 CFOI data, the Bureau of Labor Statistics (BLS) implemented new disclosure rules to protect confidential data from secondary disclosure. There has been a reduction in the detail that can be published compared to prior years.

substances at work. Transportation Incidents comprise about 1/3 of all occupational fatalities over the 2013-2021 years. Fatal injuries due to assaults and violent acts, and falls, slips, and trips accounted for another 1 in 5 cases each. In addition to the change in the number of people fatally exposed to harmful substances—including overdoses, as stated above—there was also a large increase between 2019 and 2020 in falls, slips, and trips (from 88 to 99 fatalities, the most recorded since at least 2013). This figure went back closer to the long term average in 2021,

By industry, the trade, transportation, and utilities sector had the highest number of fatalities during 2013-2021 averaging over 100 occupational deaths or more than a quarter of all cases per year. The construction industry had the next highest number of fatalities, averaging over 70 fatalities per year.

The fatality rate (ratio of fatalities with the at-risk populations), provides a different view: the death rate per 100,000 workers was highest by far in agriculture, followed by transportation and utilities, and then construction. Each of these industries had rates 2 to 4 times as high as the state's average rate.

As noted in the Chief's introduction to the report, these numbers represent real people who died on the job and must serve as a stark reminder of why our workplace regulations exist.[iii] Although California has maintained a lower fatality rate than the national average, over the course of many years, the CFOI data provides an opportunity to respond to emerging trends and the rising overall fatality rates of the last few 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 www.bls.gov/opub/hom/pdf/homch9.pdf.

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; and
- 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 www.bls.gov/iif/oshcfoi1.htm#rates. Complete state rates can be found at www.bls.gov/iif/oshstate.htm. National and state rates are calculated using different methodology and cannot be directly compared. Please see www.bls.gov/iif/oshfaq1.htm#q17 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. For instance, no data on month or quarter of injury in 2019 was available for this report.

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.

END NOTES

[E]www.bls.gov/news.release/pdf/cfoi.pdf
[ii] CA_Employment_Summary_Table.pdf
(labormarketinfo.edd.ca.gov/specialreports/CA_Employment_Summary_Table.pdf)

iii "Statistics are human beings with the tears wiped away" . In Irving Selikoff, Asbestos Disease : The Risks of Asbestos Risk Assessment, Toxicology and Industrial Health, v 7, #516, 1991, p. 126.