Fatal Occupational Injuries in California

2013–2017

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California Department of Industrial Relations
California Division of Occupational Safety and Health
Census of Fatal Occupational Injuries (CFOI) Program
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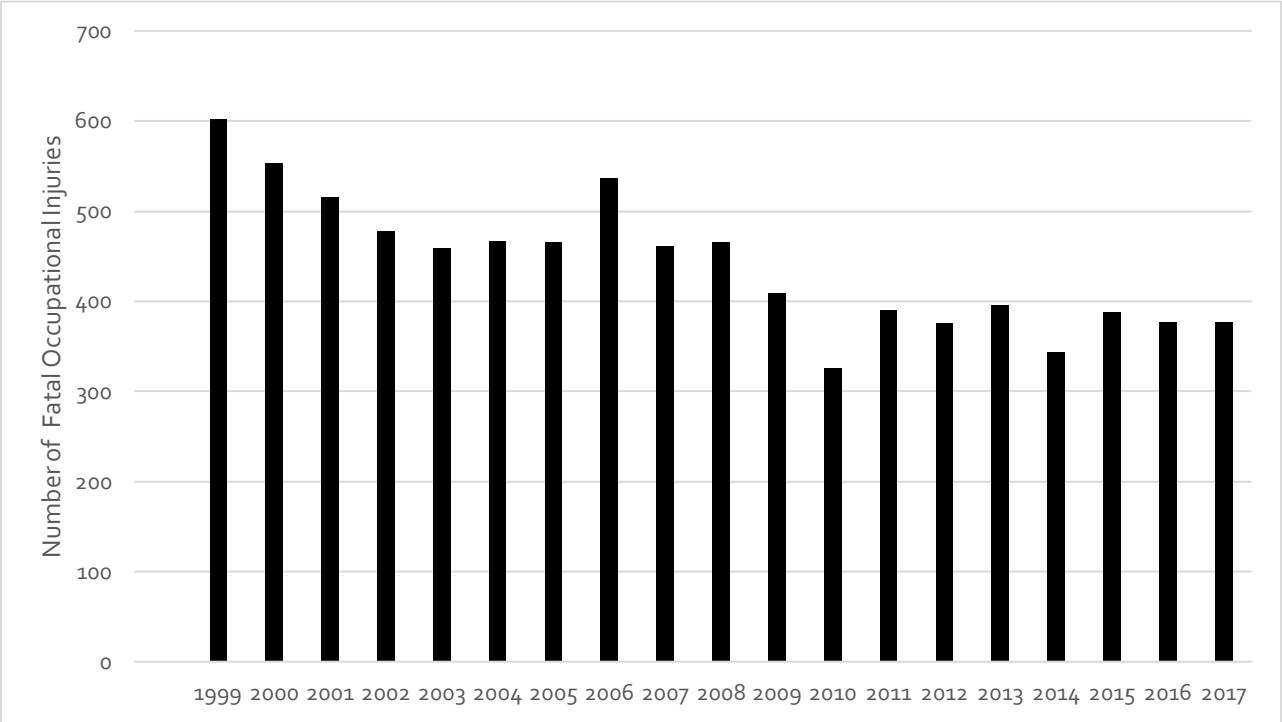
CONTENTS

Introduction

The Division of Occupational Safety and Health (DOSH or Cal/OSHA) of the California Department of Industrial Relations (DIR) gathers statistics on work-related deaths through the Census of Fatal Occupational Injuries (CFOI) Program. The CFOI Program is implemented by the U.S. Bureau of Labor Statistics to compile data that will be used by safety and health policy analysts and researchers to help prevent fatal work-related injuries. DIR's CFOI 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) records, social media, and obituaries. Cross-referencing these documents provides detailed information about each work related fatality including worker characteristics, equipment involved, circumstances of the event, and details of the injury. The detailed data are then aggregated and used to promote safety efforts by employers, employees, and others. As its name indicates, the Census looks only at fatalities resulting from work-related injuries, and does not include deaths from chronic disease resulting from underlying illnesses that manifest on the job, such as heart disease, heart attacks, and cancer. This report provides a detailed overview of occupational fatalities that occurred in California between 2013 and 2017.

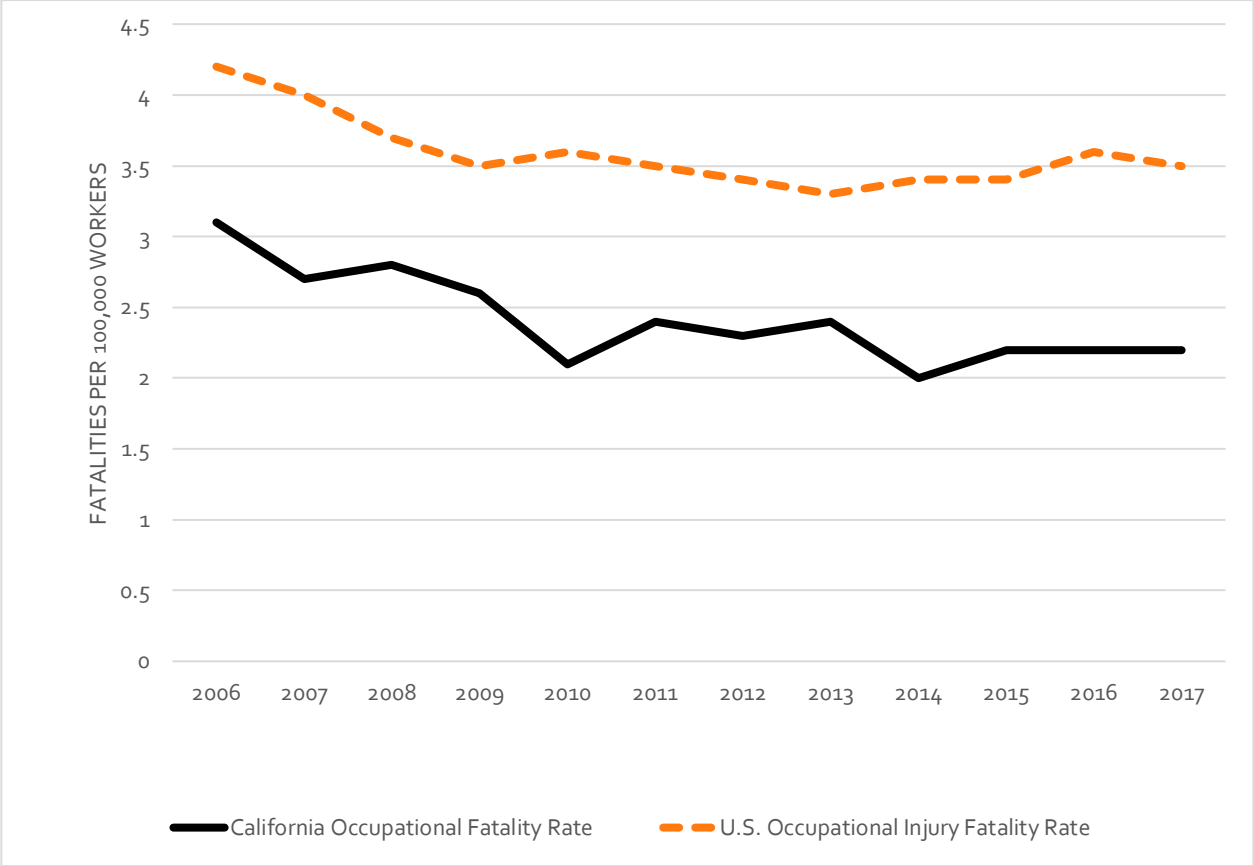
Fatal occupational injuries have been on a downward trend since 1999 when over 600 workers died from on-the-job injuries. The number of such fatalities has been below 400 every year since 2010. In 2017, there were 376 fatal occupational injuries in California, equal to the number found in 2016. (Figure. 1)

Figure 1. California Fatal Occupational Injuries (1999-2017)



The rate of fatal occupational injuries per 100,000 California workers has also been falling over time. Since 1999, the overall rate in California has fallen by about 40%. While not completely comparable because of differences in industrial mix, the California fatality rate has been consistently lower than national rates throughout the recent period. (Figure. 2)

Figure 2. California and U.S. Occupational Fatality Rate (2006–2017, per 100,000 Workers)



Over time, more occupational fatalities have occurred in the summer (Q3, that is, July, August, and September) than in other seasons (figures 3a and 3b), In 2017, June was the peak month for fatal injuries (Figure 3c).

Figure 3a. California Fatal Occupational Injuries, by Calendar Quarter (2013-2017)

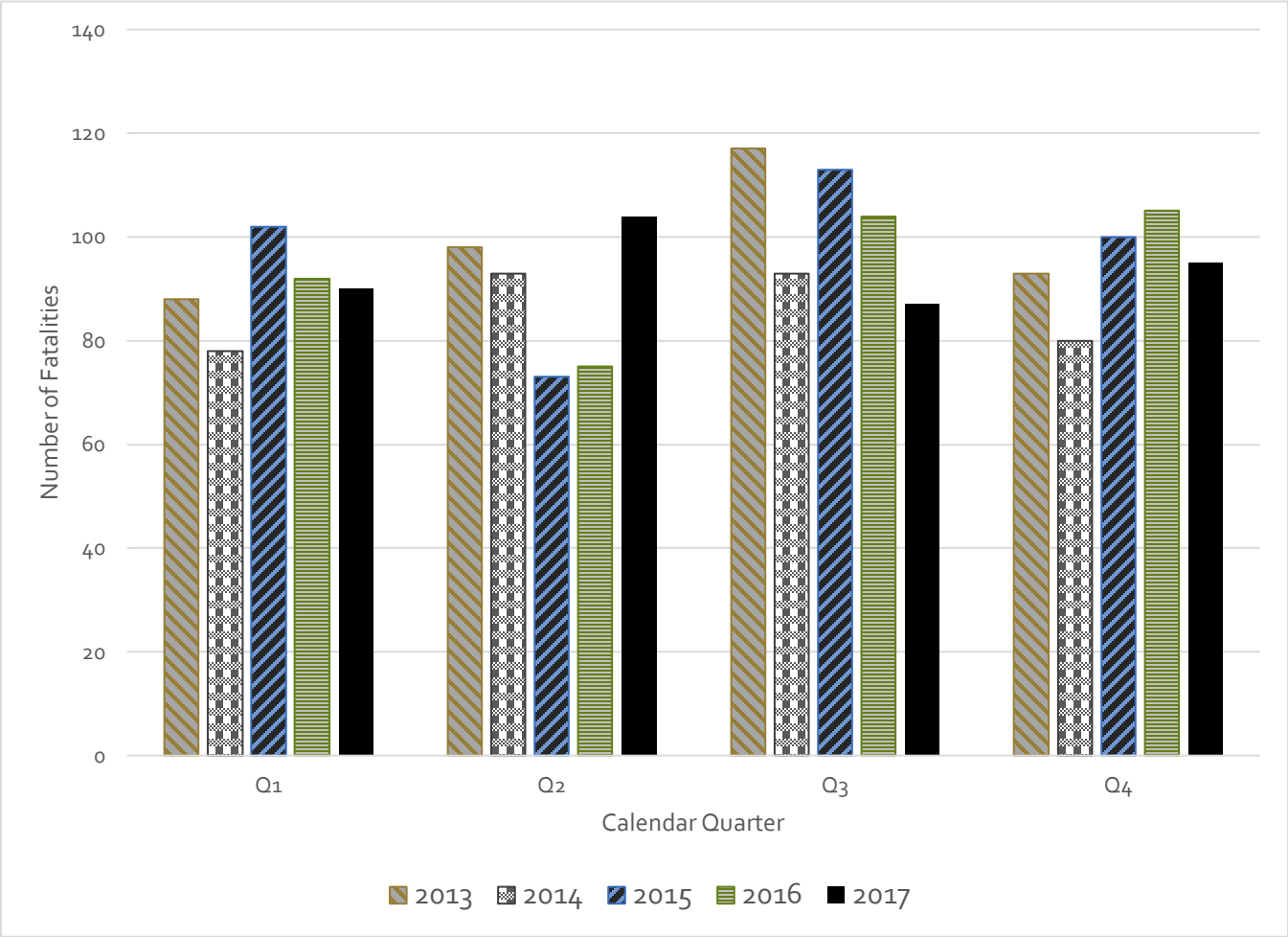
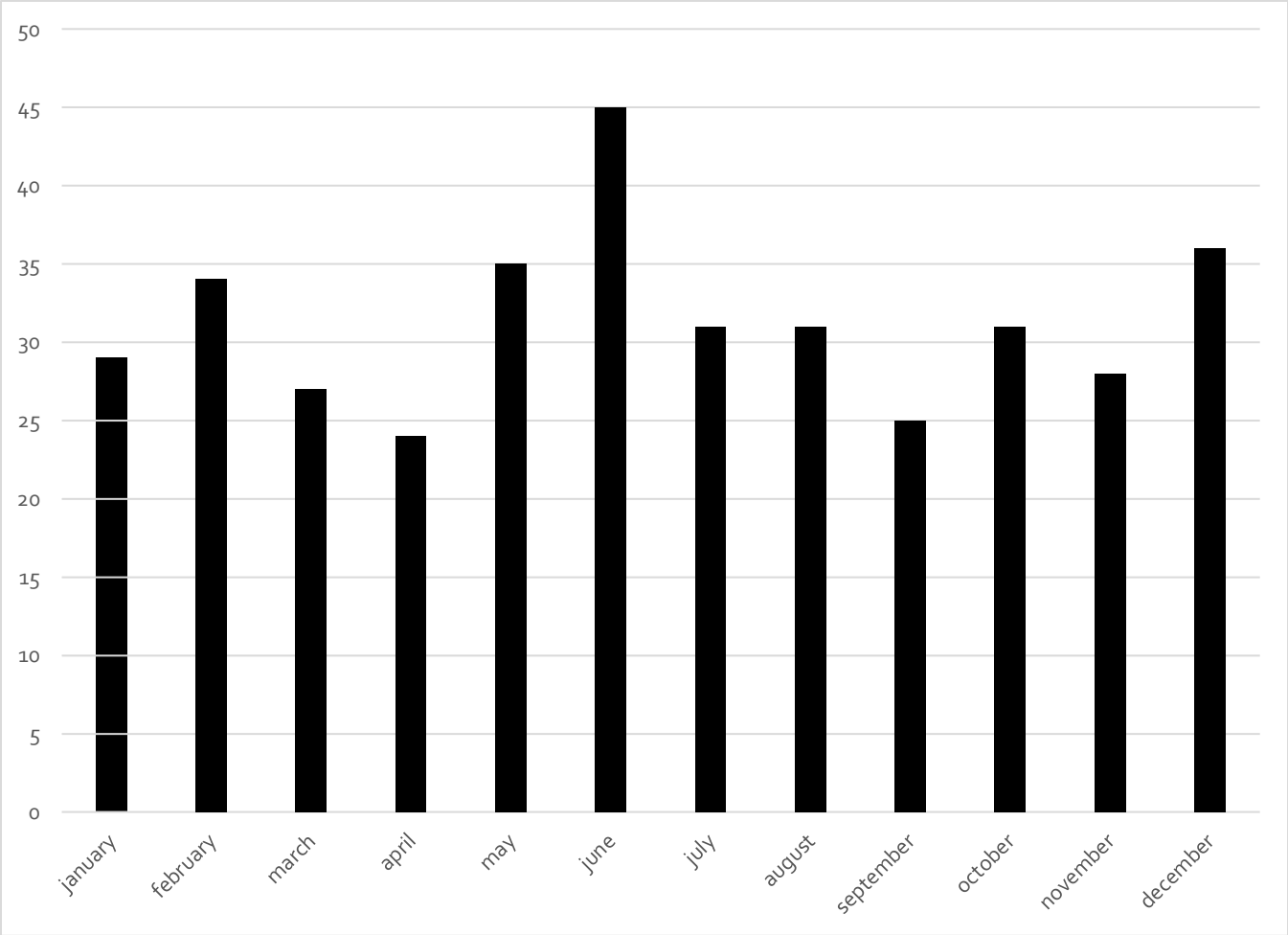


Figure 3b. California Fatal Occupational Injuries, by Calendar Quarter (2013-2017)

	2013	2014	2015	2016	2017	Total	Quarterly average
Q1	88	78	102	92	90	450	90
Q2	98	93	73	75	104	443	89
Q3	117	93	113	104	87	514	103
Q4	93	80	100	105	95	473	95

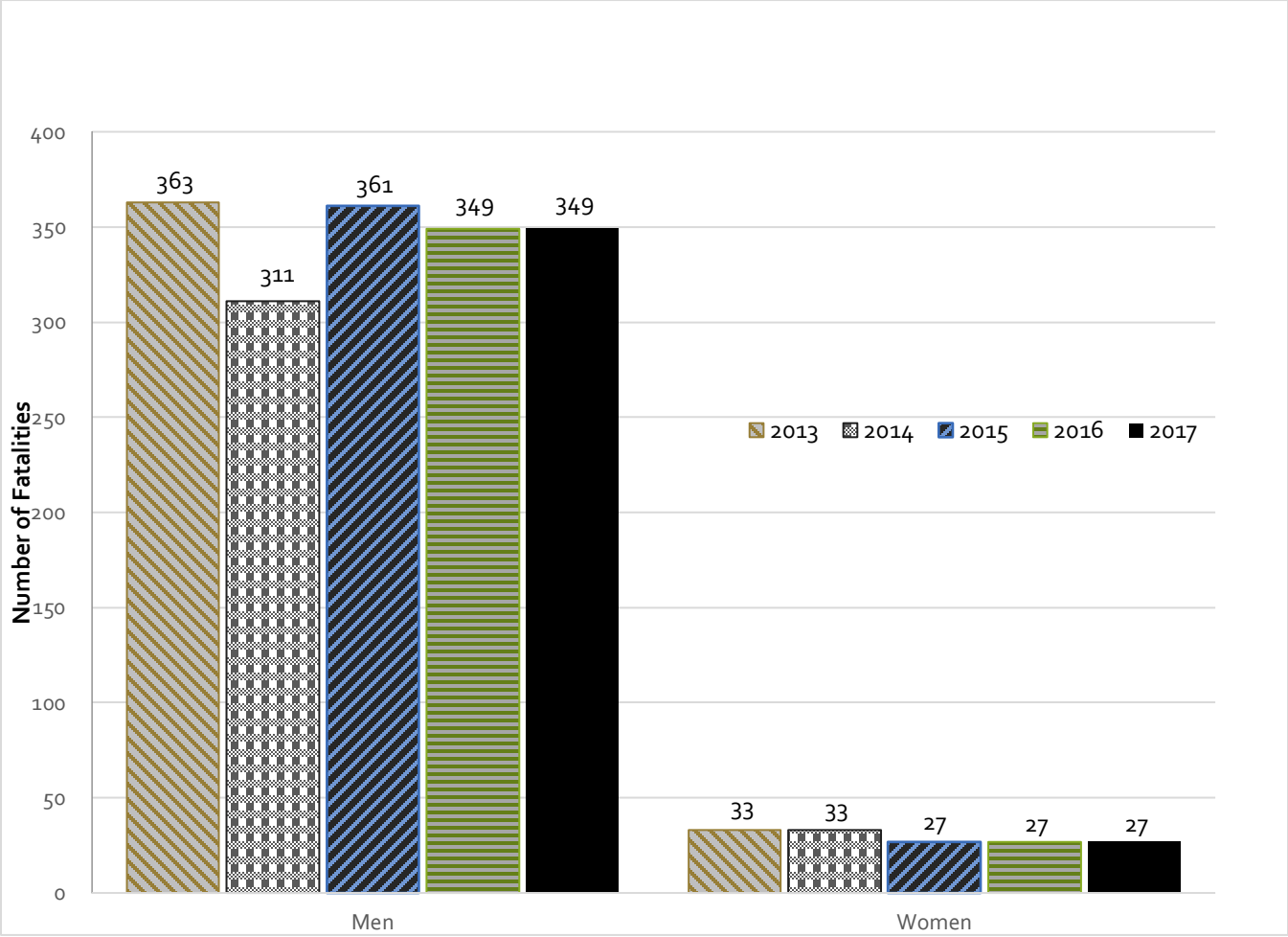
Figure 3c. California Fatal Occupational Injuries, by Calendar Month 2017



Gender

Each year, men are fatally injured by occupational injuries at a much higher rate than women. Among the fatal occupational injuries in 2013-16, 1,384 or 92% of occupational injury victims in California were men and 120, or 8%, were women. (Figure. 4)

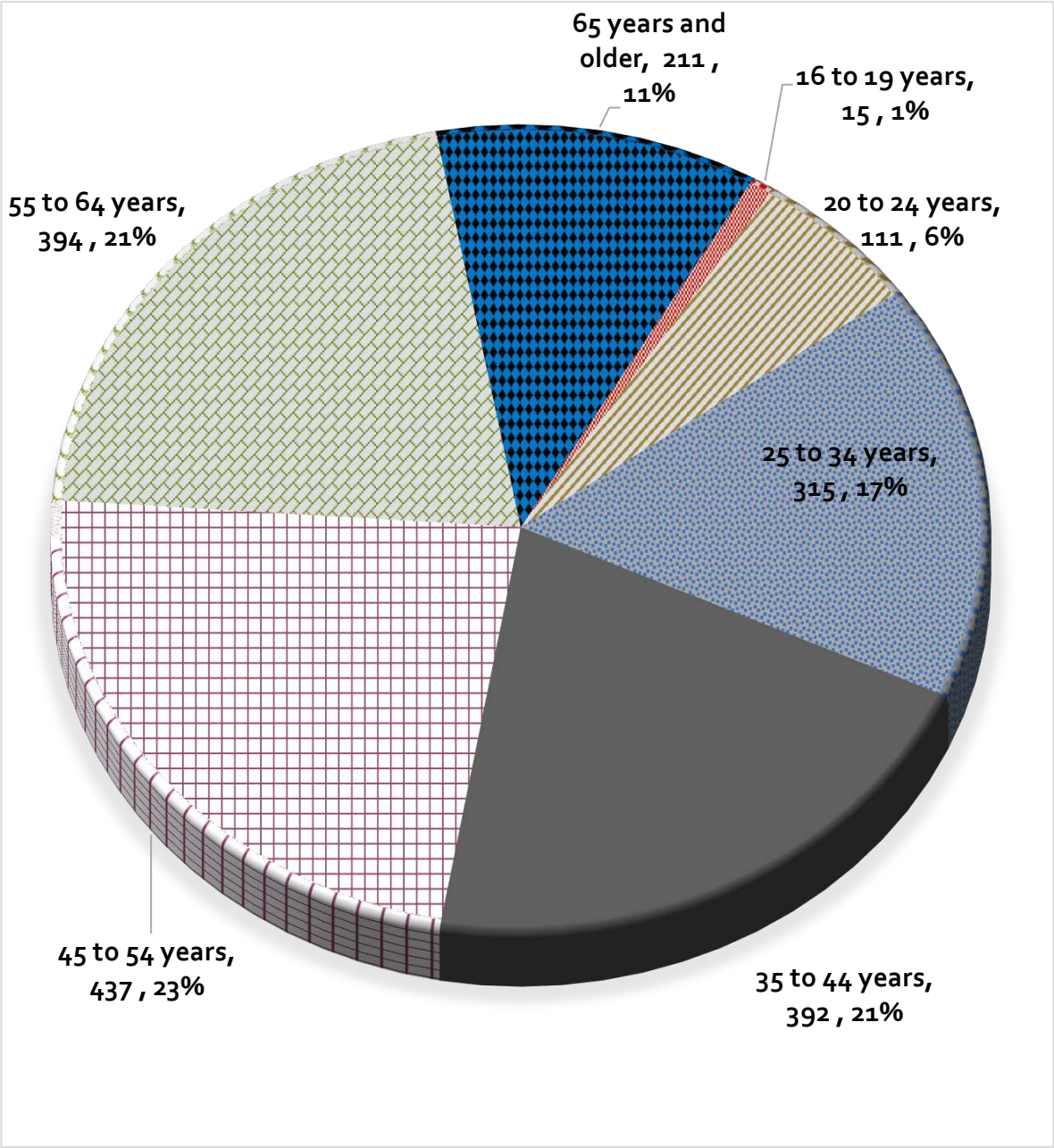
Figure 4. California Fatal Occupational Injuries, by Gender (2013-2017)



Age

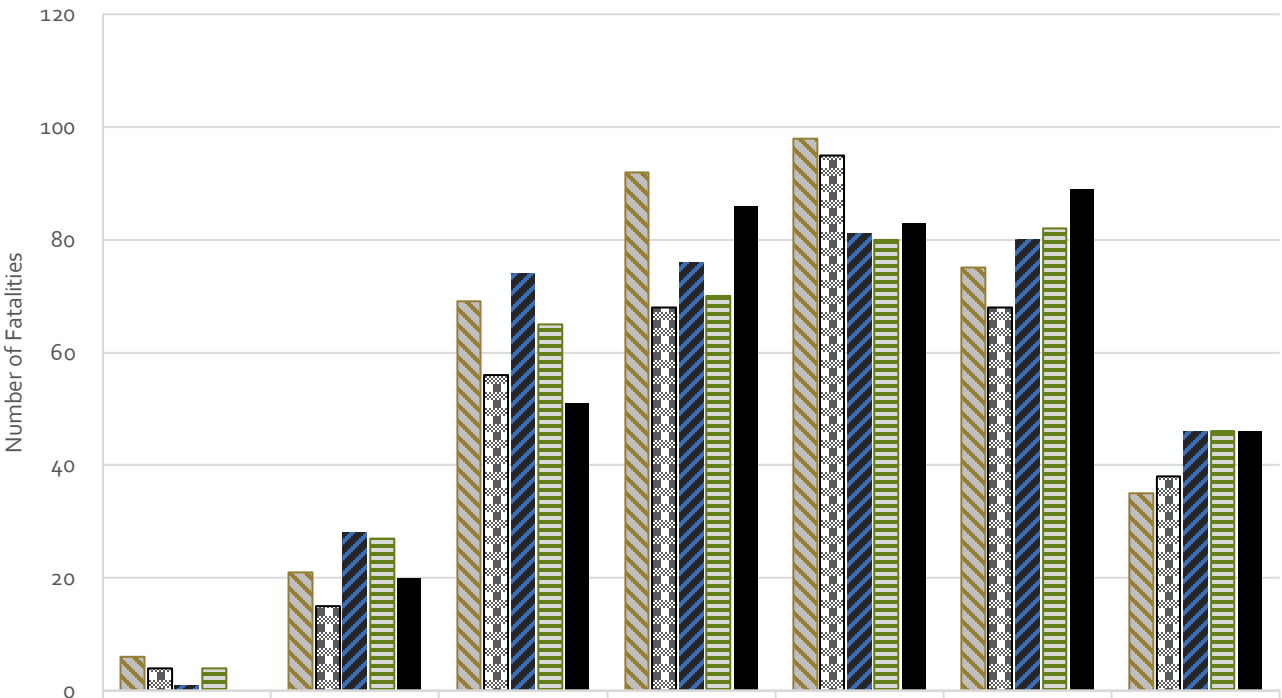
The age group with the highest number of fatalities between 2013 and 2017 was 45–54 years of age, with 354 fatalities, or 1 in 4 deaths. Workers 35–44 years of age made up the second largest group of fatalities, with 306 deaths, followed very closely by workers 55–64 years of age, with 305 fatalities. (Figure 5)

Figure 5. California Fatal Occupational Injuries, by Age (2013-2017, N=1880)



In 2017, the death toll among older workers, ages 55 and older, has increased, while workers in the range of 20-34 years of age have seen the death toll go down. (Figure 6)

Figure 6. California Fatal Occupational Injuries, by Age (2013–2017)



	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

Race and Ethnicity

Unlike nonfatal injury cases where reporting is optional, Race and Ethnicity is determined in all fatal occupational injury cases. Approximately 44% of occupational fatalities between 2013 and 2017 were among Hispanic or Latino workers. Fatal injuries to non-Hispanic white workers comprised 42% of the occupational fatalities recorded over the five-year period. Asian, Pacific Islander, and Hawaiian workers comprised 8% of the five-year total, while Black/African American workers made up 5% of the total. (Figures. 7a and 7b)

Figure 7a. California Fatal Occupational Injuries, by Race/Ethnicity (2013-2017, N=1,880)

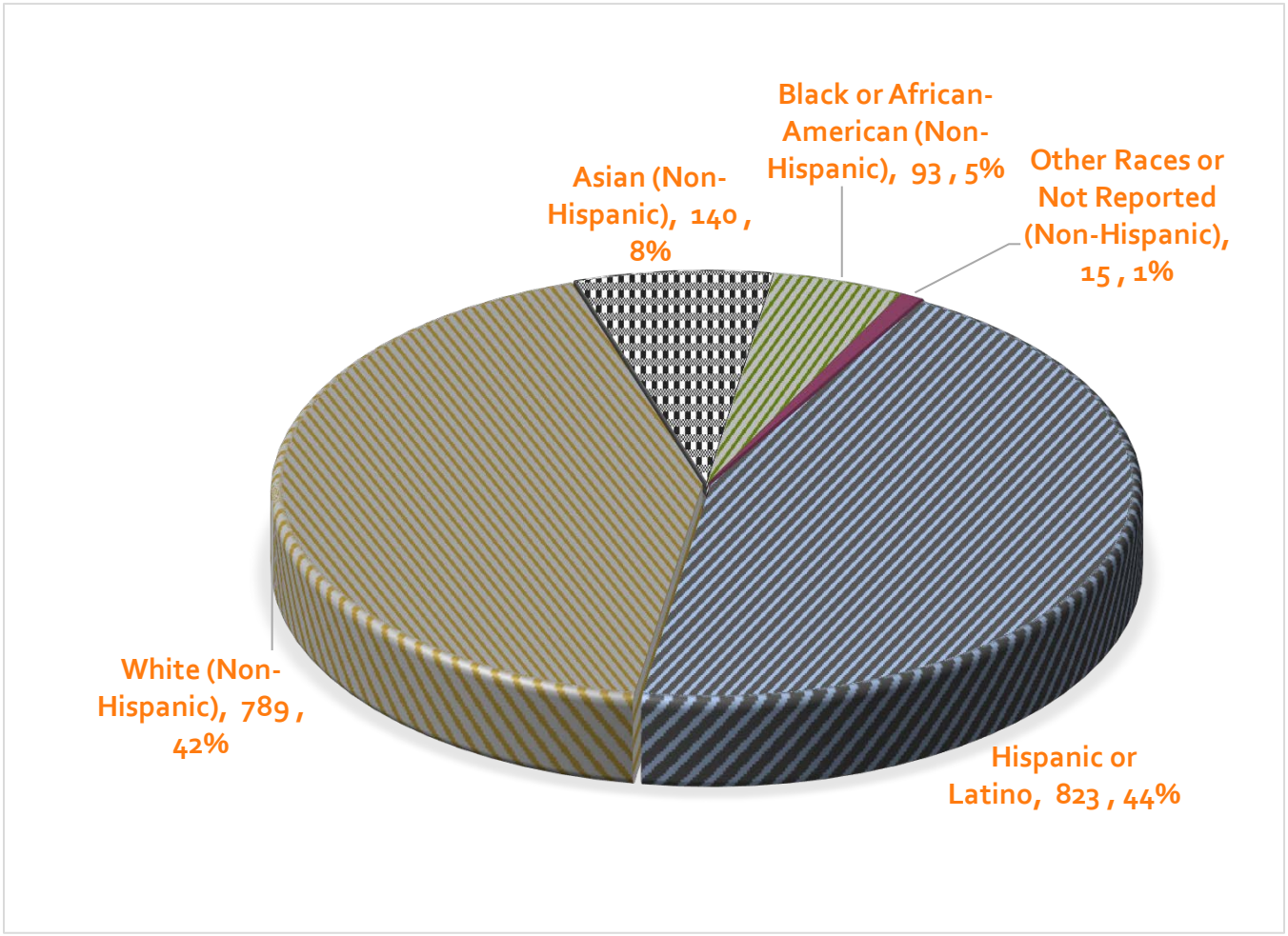
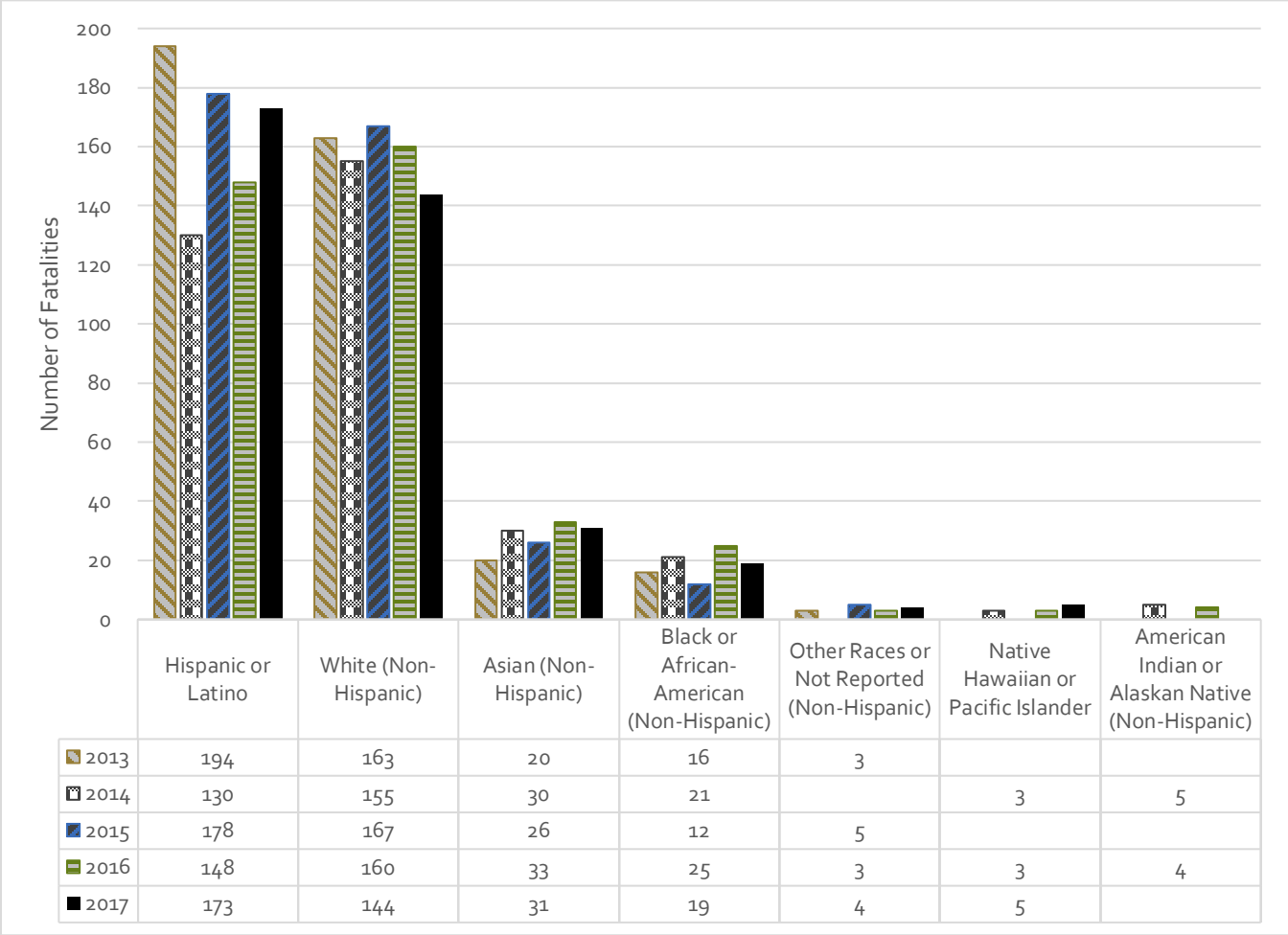


Figure 7b. California Fatal Occupational Injuries, by Race/Ethnicity (2013–2017, N=1,880)

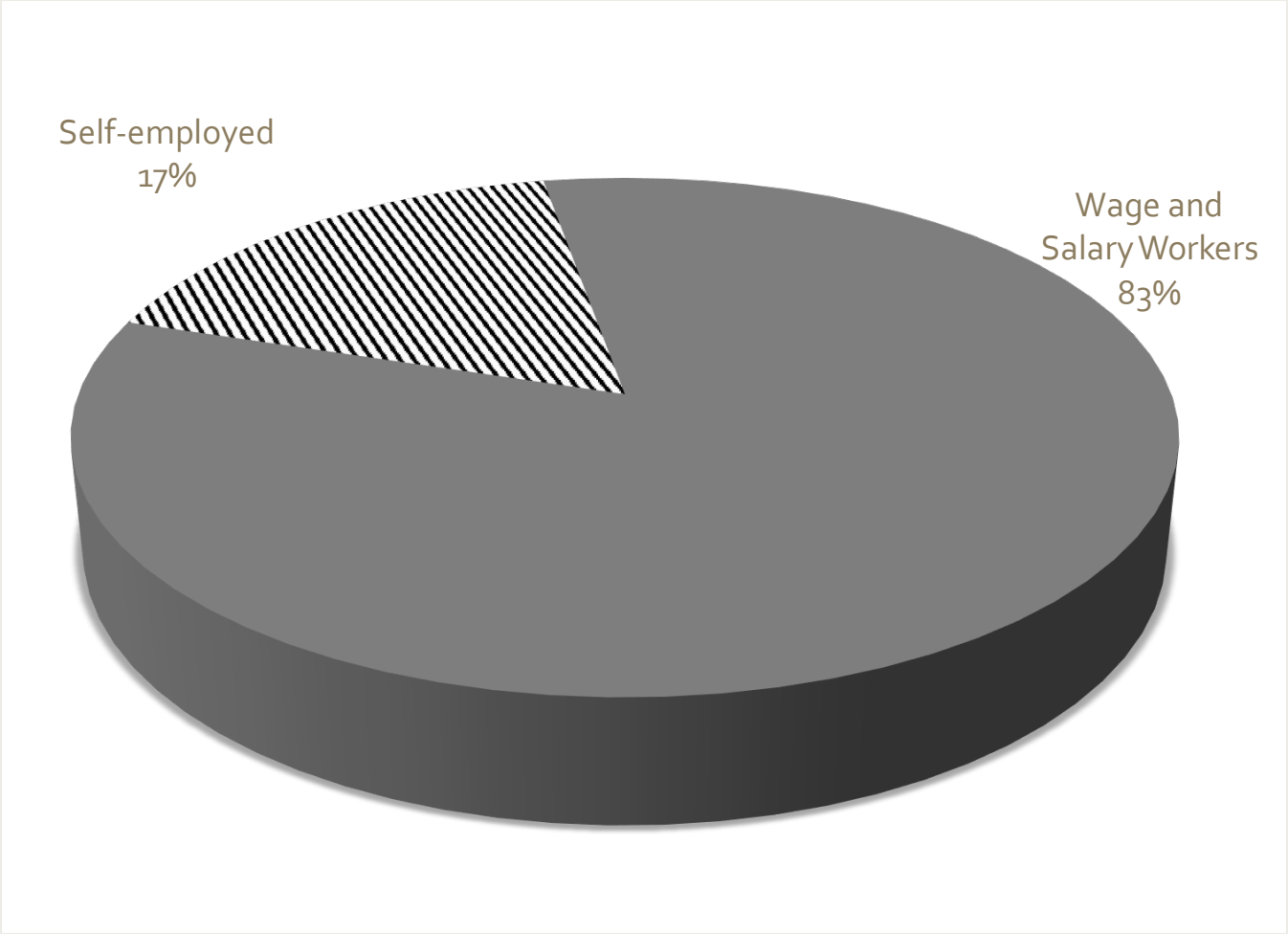


	Hispanic or Latino	White (Non-Hispanic)	Asian (Non-Hispanic)	Black or African-American (Non-Hispanic)	Other Races or Not Reported (Non-Hispanic)	Native Hawaiian or Pacific Islander	American Indian or Alaskan Native (Non-Hispanic)
2013	194	163	20	16	3		
2014	130	155	30	21		3	5
2015	178	167	26	12	5		
2016	148	160	33	25	3	3	4
2017	173	144	31	19	4	5	

Employment Status

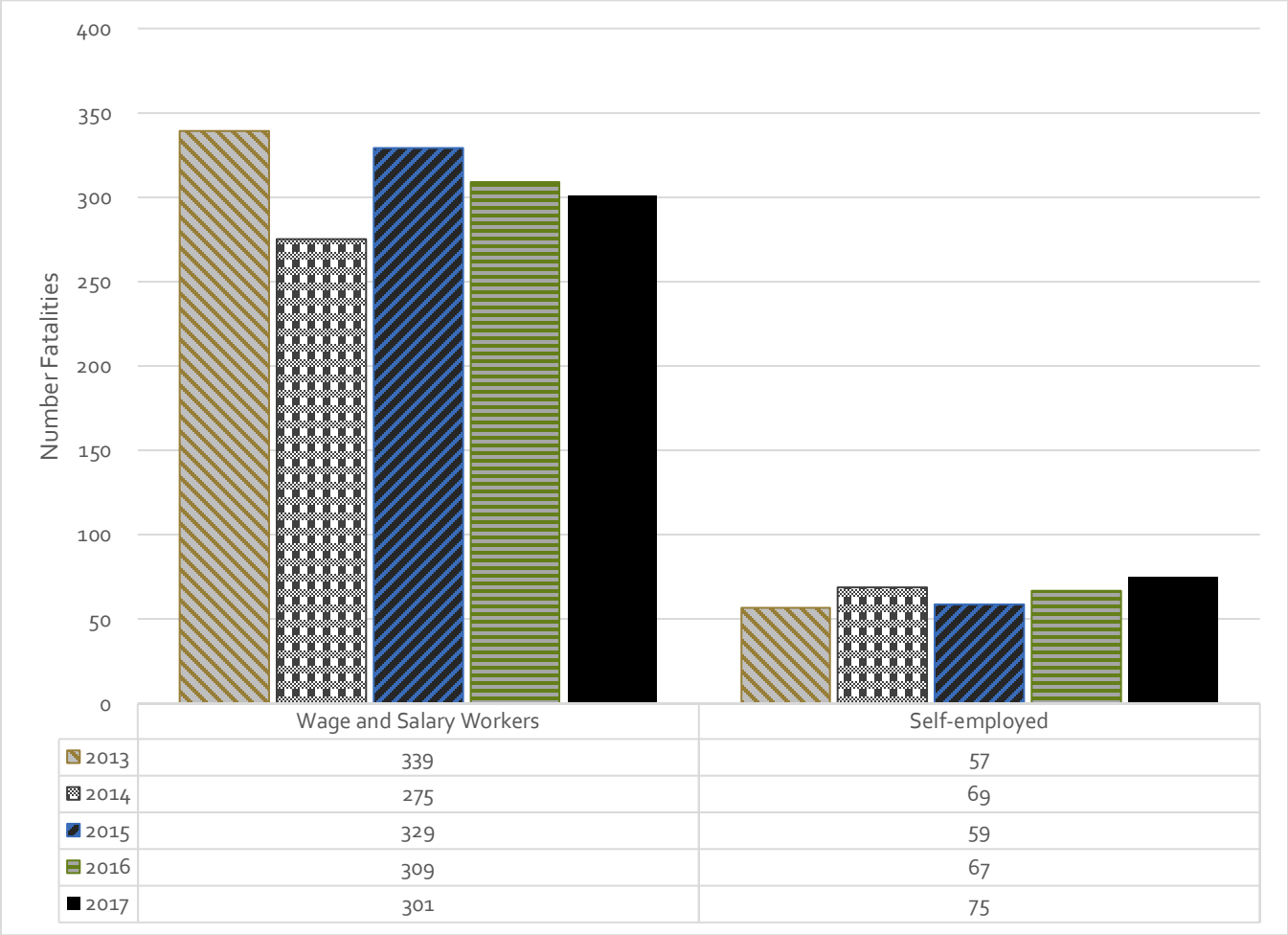
CFOI covers all work-related deaths in California and includes the self-employed, independent contractors, freelancers, and others who do not work for a specific employer. For the period examined (2013–2017), 5 out of 6 fatalities (83%) occurred to persons employed as wage and salary workers, compared with self-employed workers, who made up 17% of fatalities. (Figure 8)

Figure 8. California Fatal Occupational Injuries, by Employment Status (2013-2017)



Counts of those fatally injured on the job by employment status for the five years show some fluctuation from one year to the next; however, the number of wage and salary workers killed on the job consistently exceeds such reports for self-employed workers by a large amount. (Figure 9)

Figure 9. California Fatal Occupational Injuries, by Employment Status (2013-2017)



	Wage and Salary Workers	Self-employed
2013	339	57
2014	275	69
2015	329	59
2016	309	67
2017	301	75

Causes of Fatal Events

Transportation Incidents continue to be the most prevalent occupational injury fatalities. Such events led to 37% of all occupational fatalities over the 2013–2017 period. During the past five years, fatal injuries due to *Assaults and Violent Acts* made up the next largest portion with 20%, and *Falls, Trips, and Slips* accounted for 19% of fatalities. *Contact with Objects and Equipment* caused 13% of the total. *Exposure to Harmful Substances* caused 8% of the recorded deaths, and *Fires and Explosions* accounted for 2% of cases. (Figures 10a and 10b). In 2017 alone, falls, trips and slips accounted for more fatalities than assaults and violent acts, reversing the order of the prior four years.

Figure 10a. California Fatal Occupational Injuries, by Event (2013-2017)

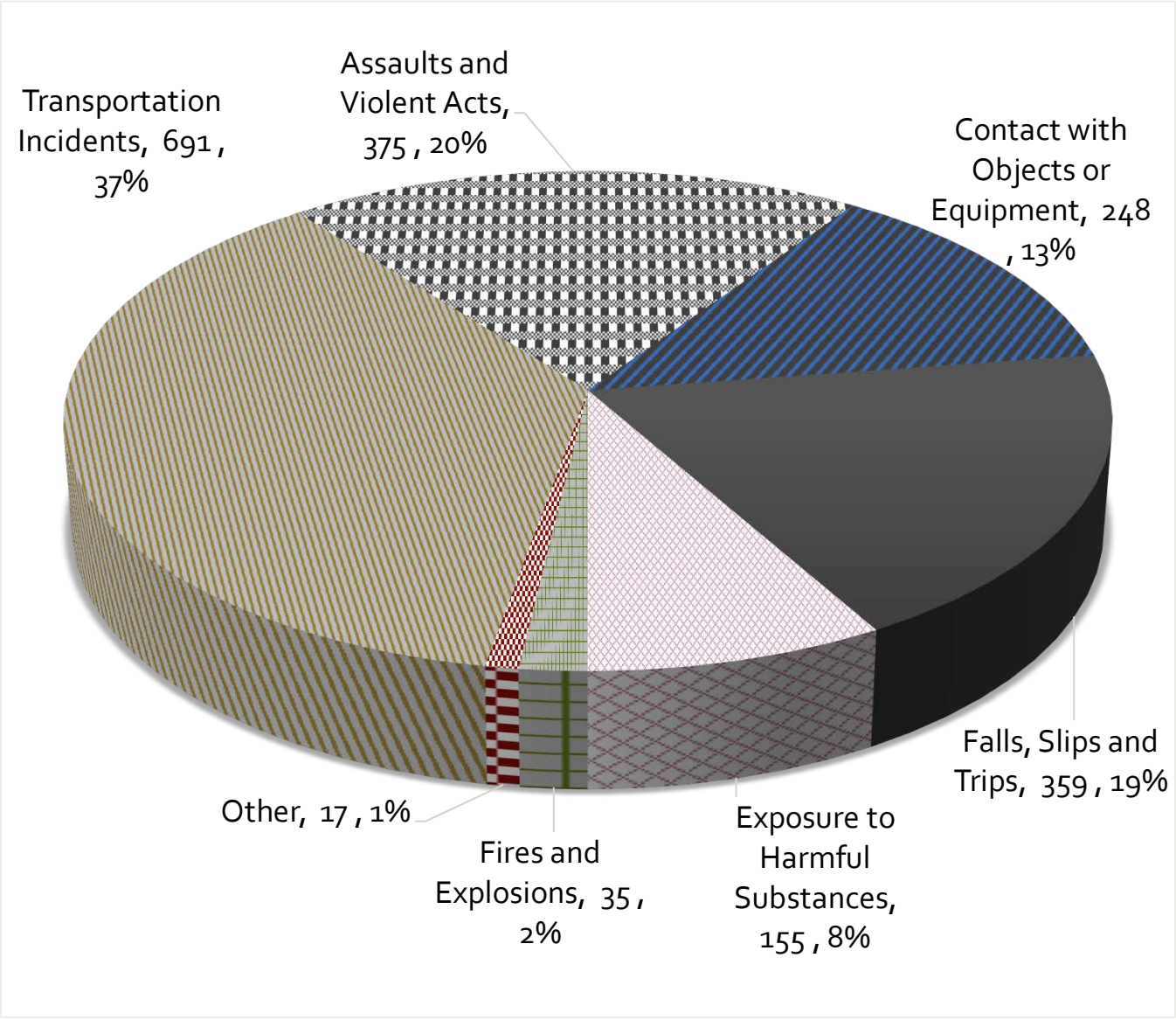
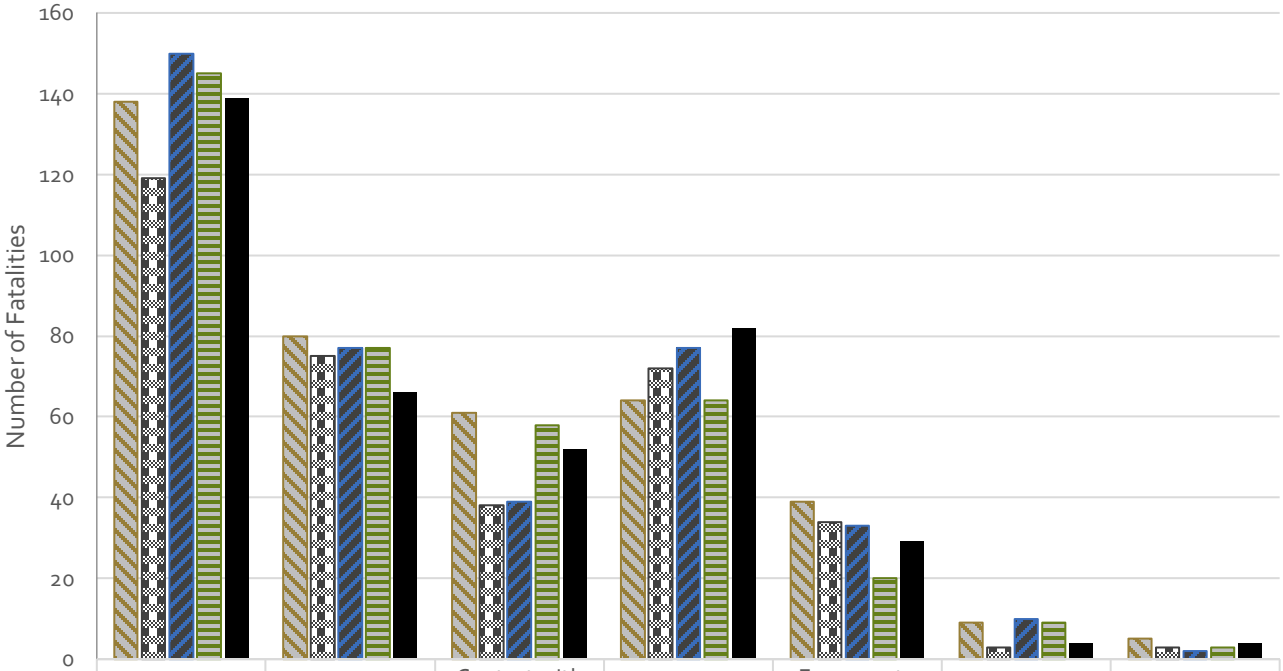


Figure 10b. California Fatal Occupational Injuries, by Event (2013–2017)



	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

Industry

The *Trade, Transportation, and Utilities* (TTU) industry had the highest number of fatalities during each of the past five years, averaging about 99 occupational deaths annually, or more than one-fourth of cases. In 2017, TTU reported a total of 98 cases, including 51 fatalities from *Transportation Incidents,* 22 cases of violence-related fatality, 10 cases of *Contact with Objects and Equipment*, and 9 from *Falls, Trips, and Slips*.

The *Construction* industry had the next highest number of fatalities with a total of 309 fatalities (16%) for the five-year period. Of the 69 cases in 2017, 32 fatalities in *Construction* were from *Falls, Trips, and Slips* and 15 from *Transportation Incidents*.

Professional and Business Services, including accountants, lawyers, engineers, computer programmers, consultants, and researchers, accounted for 263 deaths (14% of total) in the five years. Of the 67 fatalities in 2017 (up from 37 cases in 2016), 19 were involved in *Transportation Incidents,* while 18 fatalities resulted from *Falls, Trips, and Slips,* and 12 from violent acts. 32 workers in Landscaping services were fatally injured in 2017, nearly triple the number (11) fatally injured in 2016. .

The *Manufacturing* industry had 116 fatalities in the 2013–2017 period. Of the 24 fatalities in 2017, 9 were from *Falls, Trips, and Slips,* and 7 from *Transportation Incidents.*

The *Leisure and Hospitality* industry accounted for 94 deaths during the five-year period. Among the 12 fatalities in 2017 (down from 26 in 2016*) Falls* accounted for 4 cases and 3 were attributed to *Exposures to Harmful Substances or Environments*.

(See Figures 11a and 11b)

Figure 11a. California Fatal Occupational Injuries, by Industry Group (2013-2017)

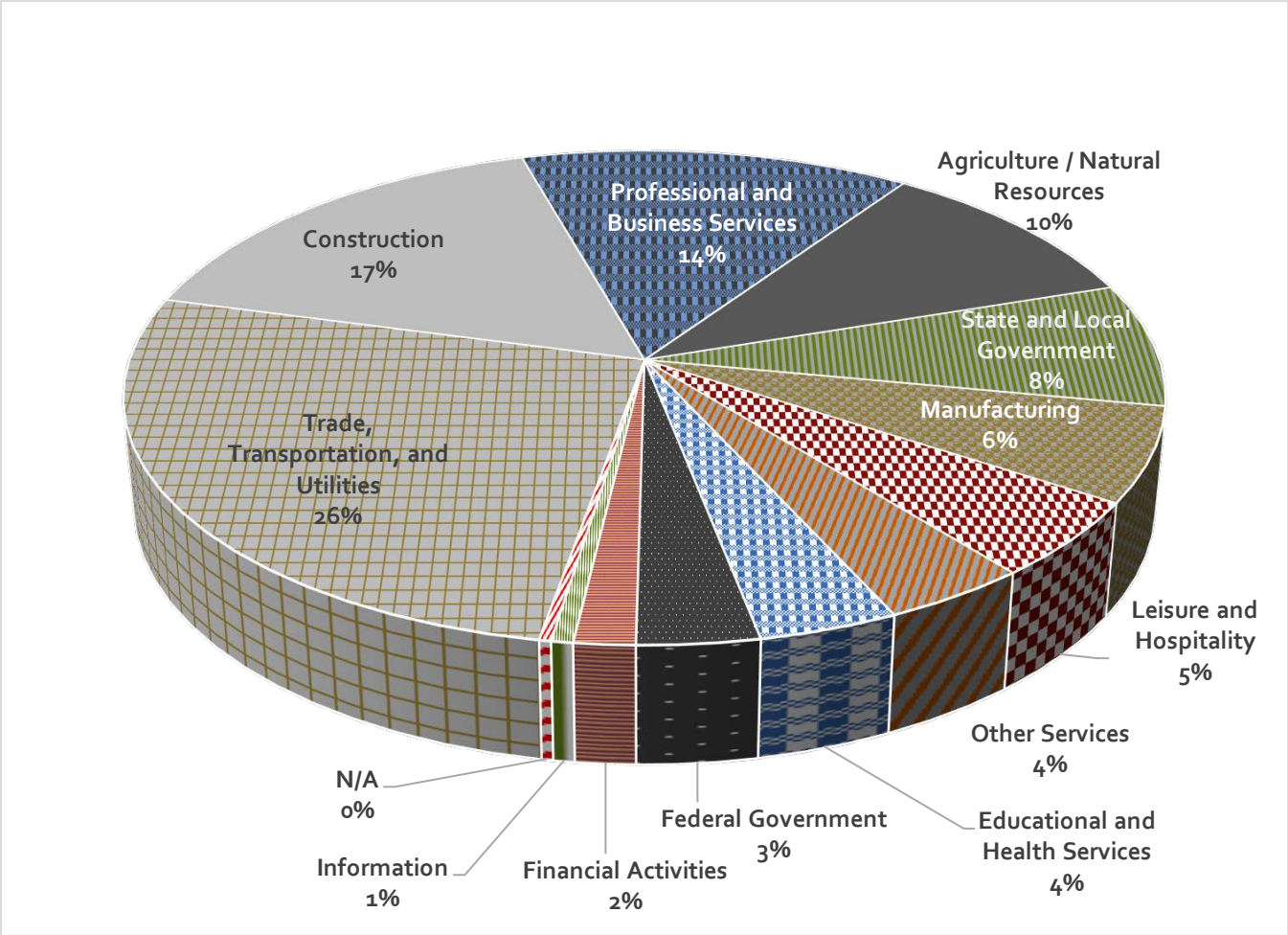
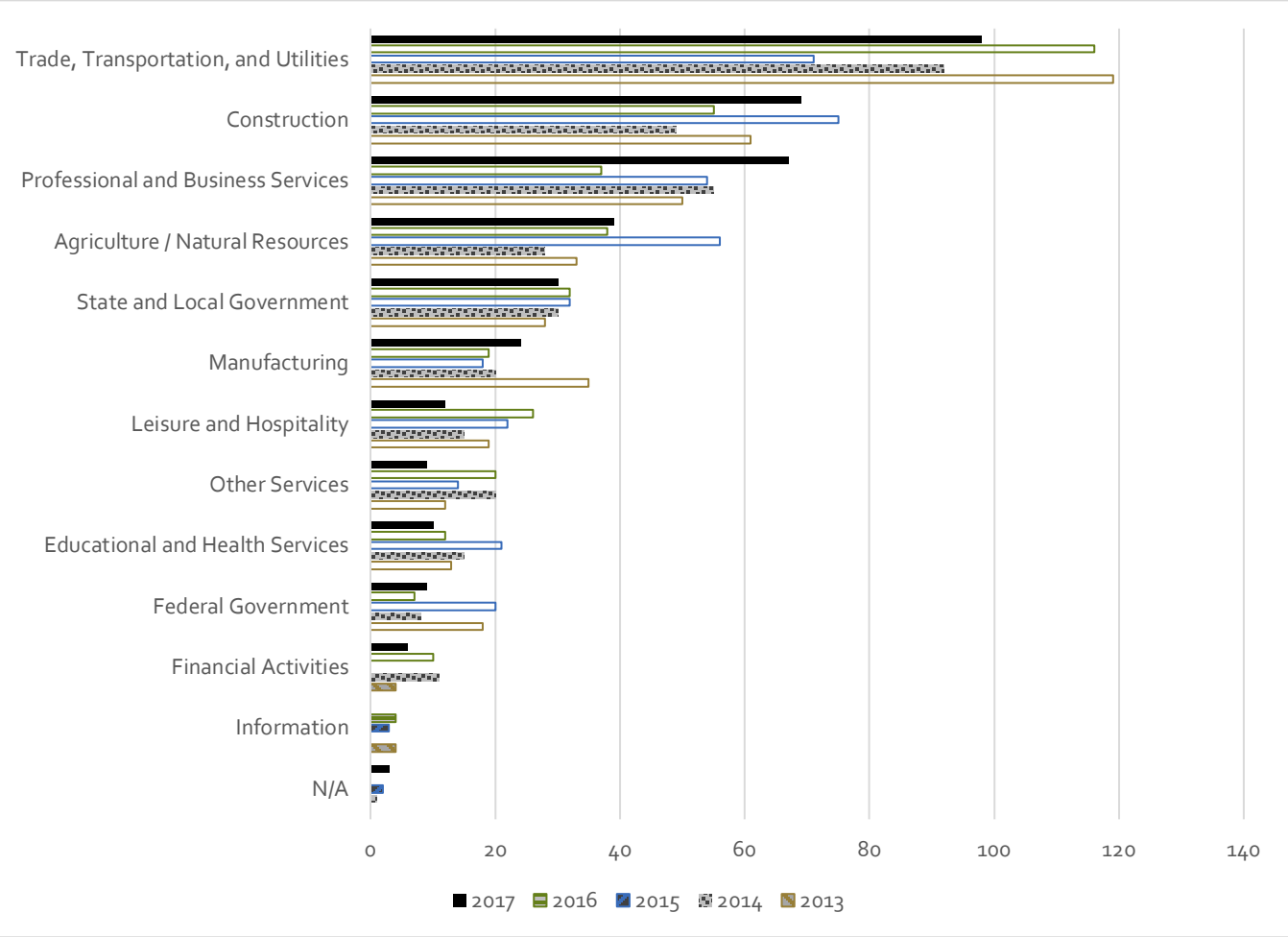


Figure 11b. California Fatal Occupational Injuries, by Industry Group (2013-2017)



Fatality Rate by Industry

Dangerous industries are identified by analyzing fatality rates. CFOI publishes data on fatal injury rates by industry. 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).

The average fatality rate for California by industry for 2013–2017 is shown below as 2.2 fatalities per 100,000 full-time workers. Agriculture, with a rate of 11 fatalities per 100,000 workers (or 5 times the statewide average) had the highest fatality rate over the five years. Transportation and Utilities (7 per 100,000) and Construction (nearly 6 per 100,000) also generated high fatality rates. (Figure 12a) Figure 12b shows the rates by industry for each of the past 5 years.

Figure 12a. California Average Fatality Rate, by Industry (2013-2017, per 100,000 workers)

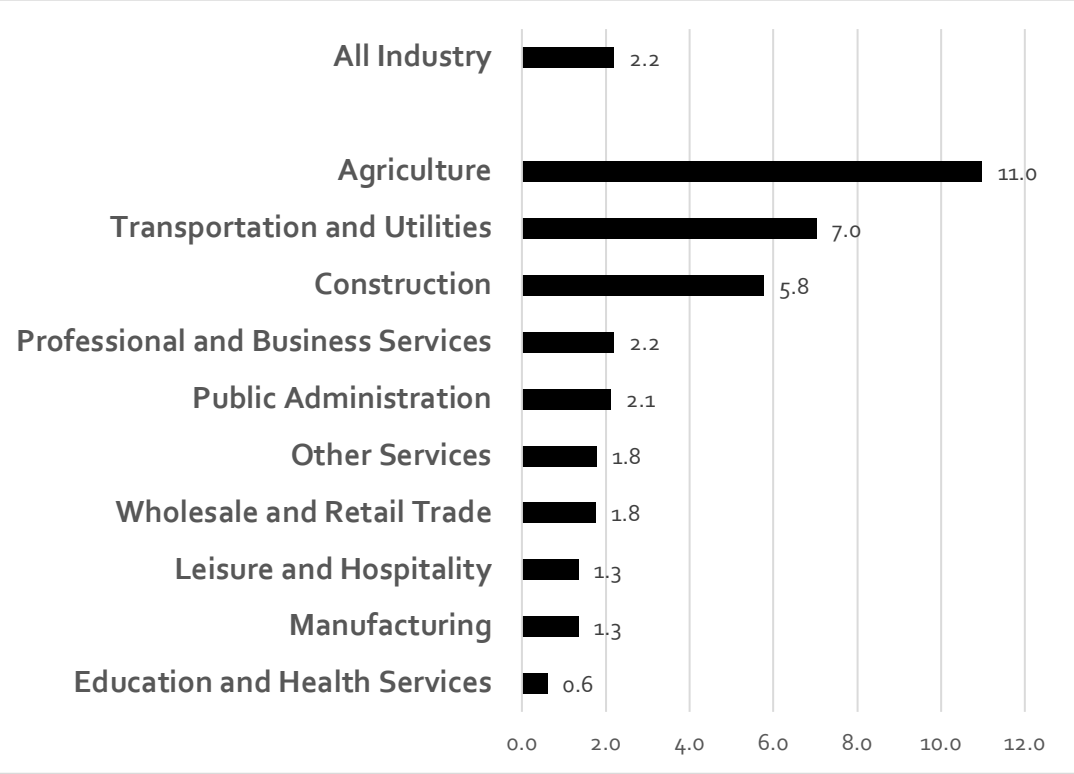
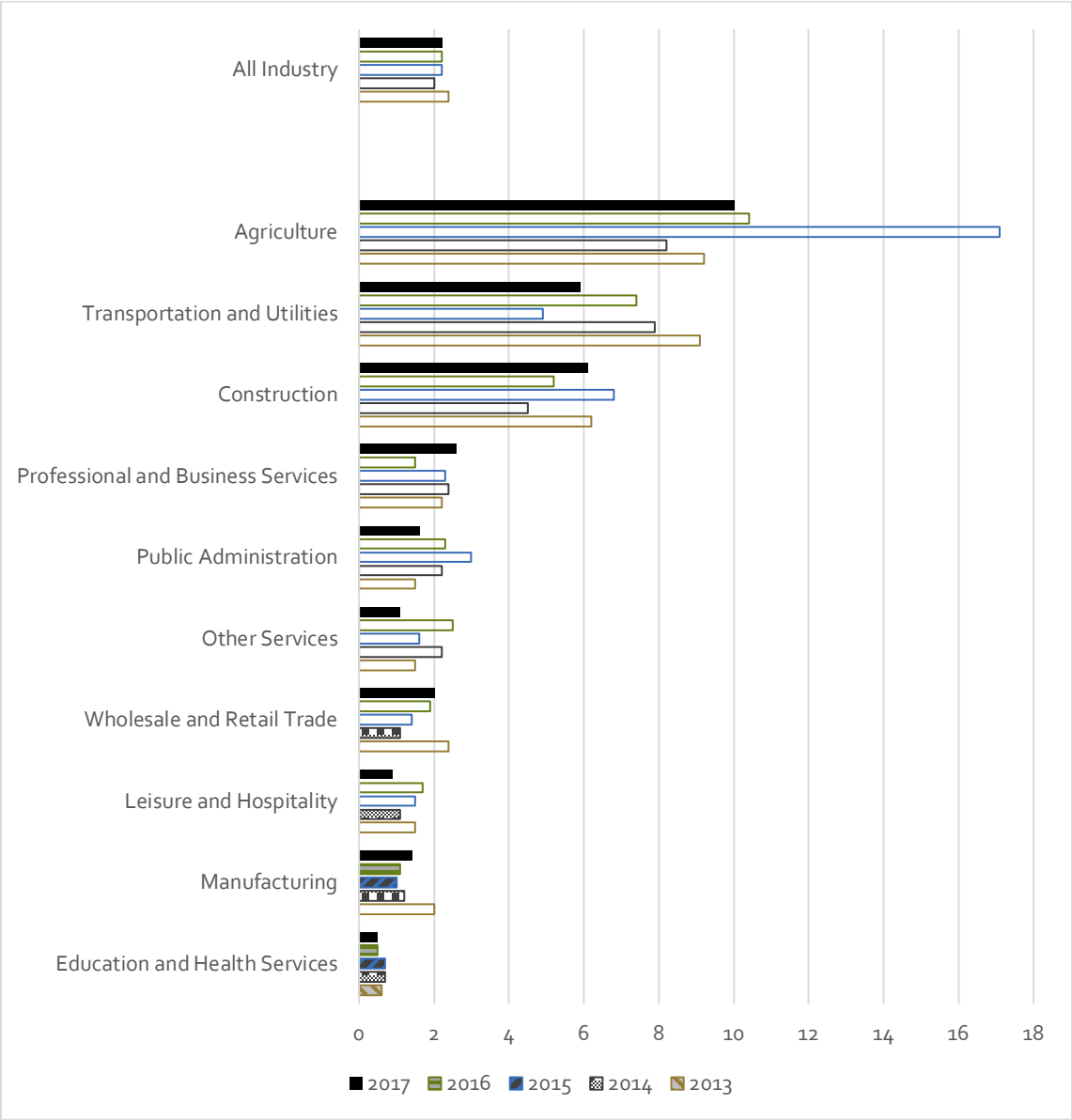


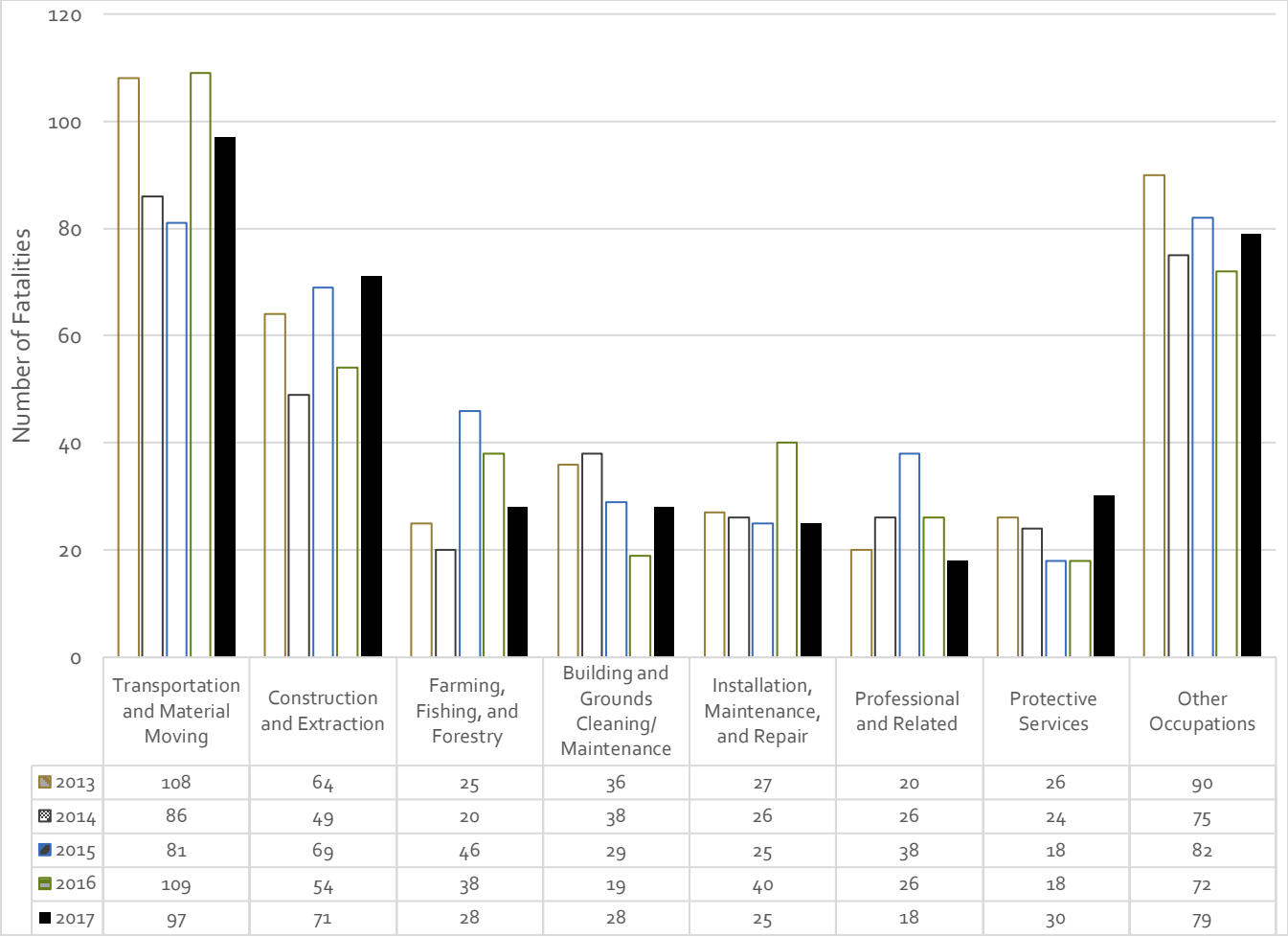
Figure 12b. California Average Fatality Rate, by Industry by Year (2013-2017, per 100,000 workers)



Occupation

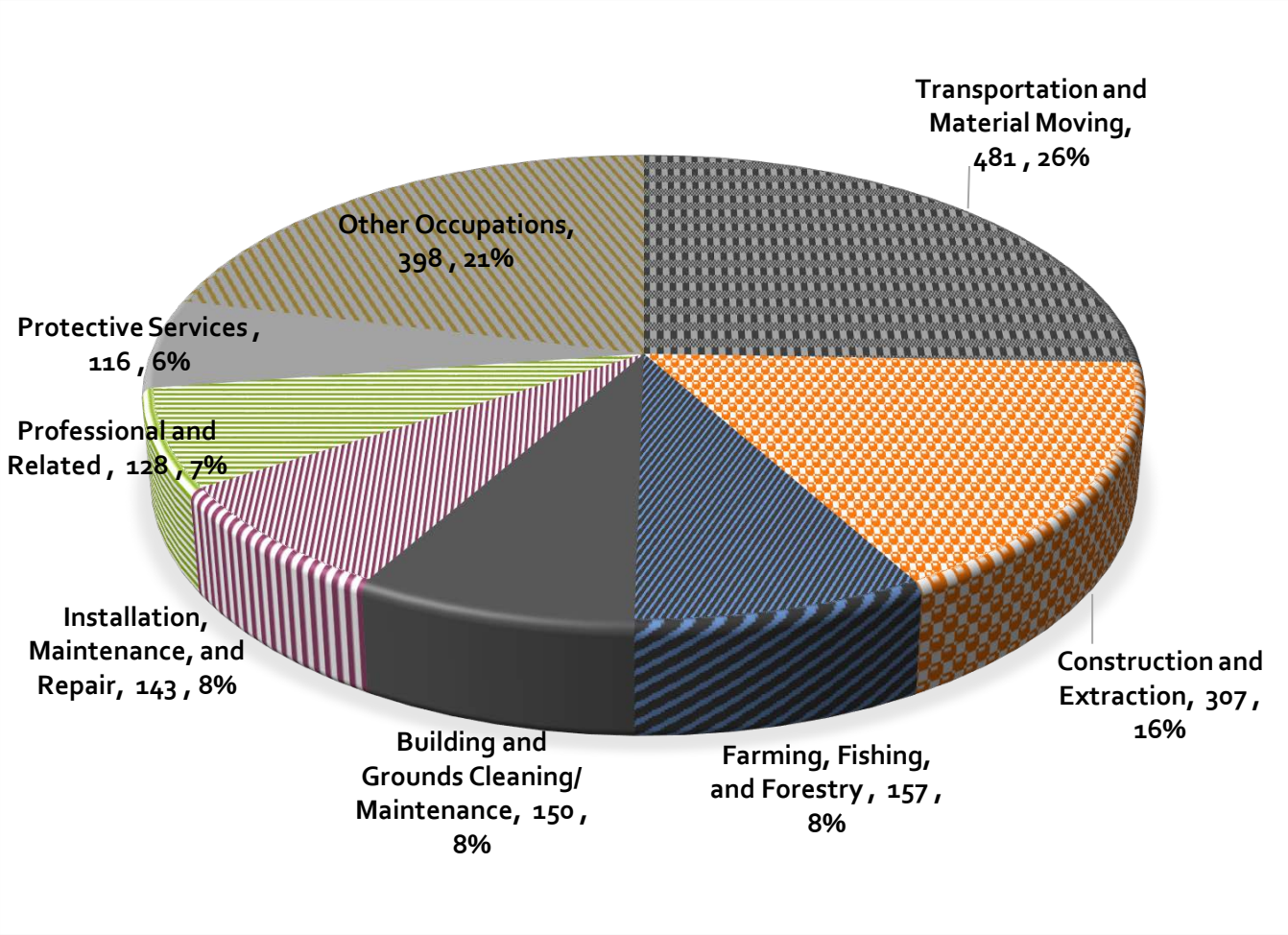
More than 25% of occupational fatalities over the 2013–2017 period involved *Transportation and Material Moving* occupations, including truck drivers. *Construction and Extraction* industries have the next highest share, with 16% of cases, followed by *Agricultural Occupations* (Farming, Fishing and Forestry) 8%. *Building and Grounds Cleaning and Maintenance* workers and *Installation, Maintenance, and Repair* occupations each also accounted for 8% of cases. (Figures 13a and 13b)

Figure 13a. California Fatal Occupational Injuries, by Selected Occupation Group (2013-2017)



	Transportation and Material Moving	Construction and Extraction	Farming, Fishing, and Forestry	Building and Grounds Cleaning/ Maintenance	Installation, Maintenance, and Repair	Professional and Related	Protective Services	Other Occupations
2013	108	64	25	36	27	20	26	90
2014	86	49	20	38	26	26	24	75
2015	81	69	46	29	25	38	18	82
2016	109	54	38	19	40	26	18	72
2017	97	71	28	28	25	18	30	79

Figure 13b. California Fatal Occupational Injuries, by Selected Occupation Group (2013-2017)



Conclusions and Findings

CFOI compiles a count of all fatal work-related injuries occurring in the U.S. during the calendar year. The CFOI Program for California, administered jointly by the Division of Occupational Safety and Health/California 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.

Fatal occupational injuries in California have been on a downward trend since 1999 when over 600 workers died from on-the-job injuries. The number of such fatalities has been below 400 every year since 2010.

Over time, more occupational fatalities have occurred in the summer (July, August, and September, i.e., the third quarter) than in other seasons.

Each year, men are fatally injured by occupational injuries at a much higher rate than women. Among the fatal occupational injuries in 2013–2017, 92% of occupational injury victims in California were men and 8% were women.

Approximately 44% of occupational fatalities in 2013–2017 were among Hispanic or Latino workers. Fatal injuries to non-Hispanic white workers comprised 42% of the occupational fatalities recorded over the five-year period.

CFOI covers all work-related deaths in California and includes the self-employed, independent contractors, freelancers and others who do not work for a specific employer. For the period in question, the majority of fatalities (83%) occurred to persons employed as wage and salary workers, compared with self-employed workers, who made up 17%.

Transportation Incidents comprised 37% of all occupational fatalities over the period. Fatal injuries due to *Assaults and Violent Acts* were the next largest portion with 20%, and *Falls, Trips, and Slips* accounted for 19%.

The *Trade, Transportation, and Utilities* industry had the highest number of fatalities during each of the past five years, averaging nearly 100 occupational deaths or more than a quarter of all cases per year. The *Construction* industry had the next highest number of fatalities, with a total of 309 fatalities (16%) for the five-year period.

The highest rate (cases per 100,000 workers) of recorded fatal occupational injuries by industry in California consistently occurs in *Agricultural* work with a fatality rate of about 11 cases per 100,000, approximately 5 times the statewide average. *Transportation and Utilities industries*, and *Construction* also generate high fatality rates, while the lowest California fatality rates occur among those in *Education and Health Services*, *Manufacturing*, and *Leisure and Hospitality* industries.

More than 25% of occupational fatalities over the 2013–2017 period involved *Transportation and Material Moving* occupations, including truck drivers. *Construction and Extraction* industries are next in number with 16% of cases, followed by *Agricultura*l occupations (8%). *Cleaning and Maintenance* workers (8%) and *Installation, Maintenance, and Repair* each accounted for 8% of fatalities.

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 occurring 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. These data are used by safety and health policy analysts and researchers to help prevent fatal work injuries in the following 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.