



California Occupational Health Indicators

Annual measures of worker health and safety for years 2014–2019

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Contact

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Acknowledgments

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This report provides important data about the 18 million workers employed in California in 2014-2019, and the key “indicators” or measures of how the work environment affects their health status. There clearly is much more work to be done to reduce the burden and cost to workers, their families, and communities. Among the findings in this report:

451 workers died from injuries sustained on the job (more than one per day). Almost all fatalities can be prevented by comprehensive injury and illness prevention programs. Hispanic/Latino workers continue to be at increased risk of dying on the job.

There were almost 380,000 private sector workers who had an injury or illness, more than 119,000 workers who lost work time because of these injuries or illnesses, and nearly 14,000 who were hospitalized. The total burden of work-related injury and illness resulted in over \$12 billion paid in workers’ compensation benefits.

Nearly 40,000 workers had a musculoskeletal disorder (MSD) that caused them to miss work, and almost 3,200 filed claims for carpal tunnel syndrome. Many of these injuries are caused by well recognized ergonomic hazards (repetition, excessive force and awkward posture).

Over 680 workers suffered a preventable amputation.

More than 1 million Californians reported that their asthma was caused or made worse by work. There are many chemicals and dusts that can cause or aggravate asthma, leading to medical visits and costly care.

Over 300 Californians were diagnosed with mesothelioma—a legacy of the decades-old hazard of exposure to asbestos dust.

Over 1,400 workers had blood lead levels at or above 10 micrograms per deciliter, increasing their risk of kidney and heart disease, high blood pressure, and cognitive damage.

The California Department of Public Health’s Occupational Health Branch—partnering with industry, labor, academic institutions, health and safety professionals, Cal/OSHA, and many others – strives to reduce hazards in California workplaces and prevent work-related injuries and illnesses. We welcome your collaboration as we move forward together in this effort.

Robert Harrison, MD, MPH, Chief

Occupational Health Surveillance and Evaluation Program

Occupational Health Branch

California Department of Public Health

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Introduction

Every year, thousands of California workers are injured on the job or become ill as a result of health hazards at work. These work-related injuries and illnesses result in substantial human and economic costs. California's workers' compensation benefits paid in 2019 alone totaled \$12.4 billion. As large as this figure is, it represents only a fraction of the indirect and direct costs of work-related injuries and illnesses annually. Work-related injuries and illnesses can be prevented. Having the data necessary to understand the problem is the first step.

A health indicator is a numerical value or statistic that helps us measure the state of health. Indicators can be tracked over time to tell us whether our health is getting better or worse, and they can be compared with other regional or national values. Using indicators over time can help us to track our progress toward improving health. This report includes Occupational Health Indicator data from 2014 through 2019. Data from earlier years are available on request. A report with OHI data from 2011–2016 is available on the Occupational Health Branch (OHB) website. Data from subsequent years will be added to the OHB website as they become available.

OHB worked with several other states and the National Institute for Occupational Safety and Health (NIOSH) to develop a set of Occupational Health Indicators. These Indicators are used to measure work-related injuries, illnesses, exposures, or factors that can influence occupational health. Each Indicator was selected because it is important to public health and can be calculated using a data source that is readily available for most states. States, NIOSH, and the Council of State and Territorial Epidemiologists (CSTE) develop and pilot new Indicators periodically for national adoption. Some states create additional State-specific Indicators such as California's "Fatal Injuries Among Hispanic/Latino Workers" Indicator.

OHB shares California Occupational Health Indicator data with interested parties, other states, and the federal government. We help other states learn to use the Occupational Health Indicators by partnering with them and maintaining detailed "how-to" guides on how to generate the Indicators. Finally, we use the Indicators and further analyses of these data sources to guide our efforts to prevent workplace injury and illness in California.

California Employment Demographics Profile

California Employment Demographics	Year					
	2014	2015	2016	2017	2018	2019
Employed persons in millions	17.4	17.8	18.0	18.3	18.5	18.6
Percentage of civilian	7.5	6.2	5.4	4.8	4.2	4.1
Percentage of civilian employment self-employed	9.0	8.6	8.5	8.5	8.5	7.9
Percentage of civilian employment in part-time jobs	20.3	19.6	19.3	18.4	17.3	17.7
Percentage of civilian employment by number of hours worked	0	0	0	0	0	0
<40 hours	34.1	34.5	32.5	31.7	30.3	29.7
40 hours	44.7	45.3	46.6	48.9	50.6	51.3
41+ hours	21.2	20.1	20.9	19.4	19.1	19.0
Percentage of civilian employment by sex						
Males	54.5	54.8	55.1	54.6	54.7	54.6
Females	45.5	45.2	44.9	45.4	45.3	45.4
Percentage of civilian employment by age group						
16 to 17 years	0.5	0.6	0.6	0.7	0.6	0.6
18 to 64 years	94.4	94.0	94.0	93.9	93.5	93.4
65+ years	5.2	5.4	5.4	5.5	5.8	5.9
Percentage of civilian employment by race						

White	74.8	73.8	72.4	72.5	72.4	72.4
Black	5.5	5.8	5.8	6.0	6.0	6.0
Other	19.7	20.3	21.8	21.5	0.2	21.6
Percentage of civilian employment by Hispanic origin	36.1	35.7	35.4	36.6	37.5	37.0

Data Source: U.S. Bureau of Labor Statistics Current Population Survey Geographic Profiles of Employment and Unemployment

California Employment Demographics	Year					
	2014	2015	2016	2017	2018	2019
Percentage of civilian employment by industry	0	0	0	0	0	0
Mining	0.3	0.2	0.2	0.1	0.1	0.2
Construction	6.5	6.6	6.5	6.5	6.6	7.0
Manufacturing: Durable goods	5.9	6.2	6.1	5.8	5.5	5.5
Manufacturing: Nondurable goods	3.4	3.3	3.5	3.5	3.5	2.9
Wholesale and retail trade	14.1	13.7	13.4	12.8	12.3	11.9
Transportation and utilities	4.9	5.2	5.5	5.4	5.4	5.7
Information	2.9	2.9	2.6	2.6	2.7	2.6
Financial activities	6.2	6.0	5.9	6.2	6.5	6.3
Professional and business services	14.1	13.9	14.4	15.1	14.9	15.2
Education and health services	20.0	20.4	20.4	20.1	20.5	20.9
Leisure and hospitality	9.9	9.8	9.8	10.0	10.2	10.7
Other services	5.3	5.4	5.2	5.3	5.2	5.3
Public administration	4.5	4.6	4.6	4.5	4.7	4.2
Agriculture	1.9	1.8	2.0	2.1	2.0	2.0

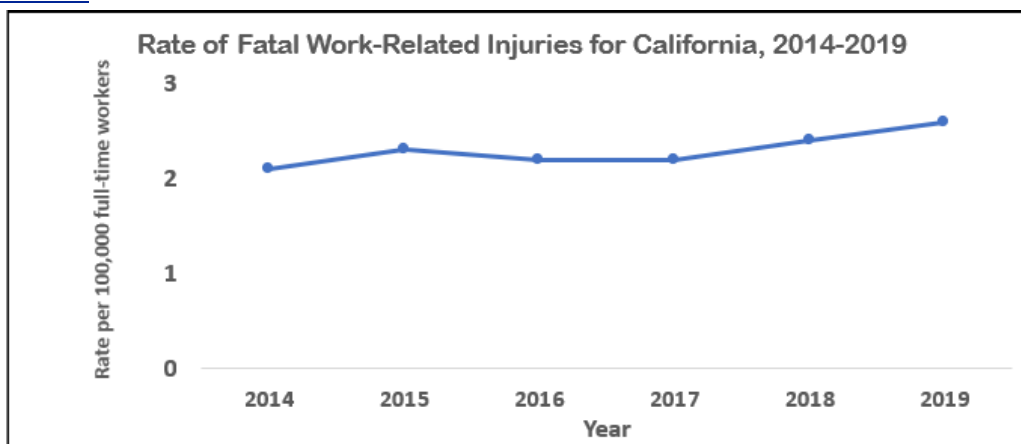
Source: U.S. Bureau of Labor Statistics Current Population Survey Geographic Profiles of Employment and Unemployment

California Employment Demographics	Year					
	2014	2015	2016	2017	2018	2019
Percentage of civilian employment by occupation	0	0	0	0	0	0
Management, business, and financial operations	16.5	16.1	16.8	16.6	16.7	16.7
Professional and related occupations	23.0	23.1	23.3	23.6	24.2	24.9
Service occupations	18.4	18.0	18.0	18.0	17.8	17.7
Sales and related occupations	10.8	10.8	10.5	10.1	9.9	9.8
Office and administrative support	11.6	11.9	11.3	11.2	11.2	11.3
Farming, forestry, fishing	1.2	1.2	1.4	1.5	1.5	1.4
Construction and extraction	5.0	4.9	5.0	4.7	5.1	5.3
Installation, maintenance, and repair	2.8	3.0	2.8	2.9	2.8	2.6
Production	4.8	5.0	4.8	5.0	4.9	4.2
Transportation, material moving	5.8	5.9	6.0	6.3	5.9	6.1
Percentage of civilian employment by union membership	0	0	0	0	0	0
Union members	N/A	N/A	15.9	15.5	14.7	15.2
Represented by a union	N/A	N/A	17.5	16.9	15.8	16.5

Data Source: U.S. Bureau of Labor Statistics Current Population Survey Geographic Profiles of Employment and Unemployment

Fatal Work-Related Injuries

Each day in the U.S., approximately 13 workers die from injuries at work. To identify risk factors for fatal injuries and better protect workers, data are gathered on the characteristics of workplace fatalities. The U.S. Bureau of Labor Statistics conducts the Census of Fatal Occupational Injuries (CFOI), using multiple data sources to count every work-related fatality. A fatal work-related injury is defined as an injury occurring at work that results in death. CFOI includes deaths from non-intentional injuries (falls, electrocutions, acute poisonings, motor vehicle crashes during travel for work (but not while commuting)), and intentional injuries (homicides, suicides) that occurred at work. Heart attacks and strokes are considered illnesses and are excluded. Seven states, including California, have programs that investigate work-related fatalities. To learn more about the California Fatality Assessment and Control Evaluation (FACE) Program, see the [FACE website](#).

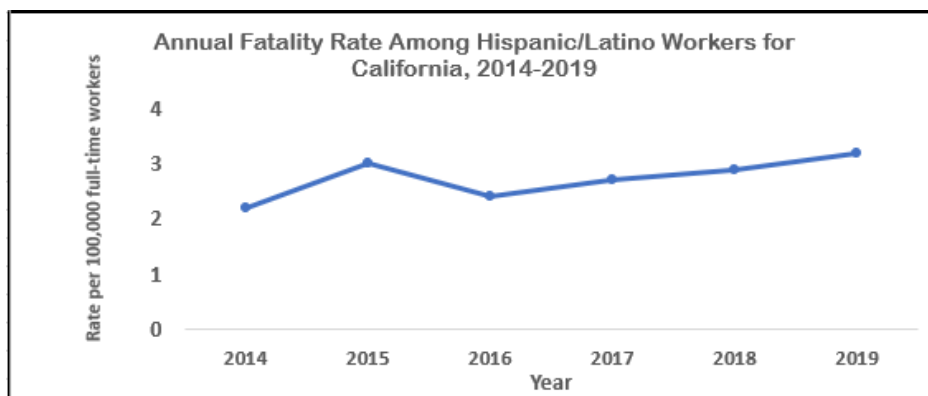


Rate and Number of Fatal Work-Related Injuries for California and U.S., 2014-2019							
Year	California						U.S.
	2014	2015	2016	2017	2018	2019	2019
Rate per 100,000 Full-Time Workers	2.1	2.3	2.2	2.2	2.4	2.6	3.5
Number of Fatal Work-Related Injuries	344	388	376	376	422	451	5,333

Data Sources: U.S. Bureau of Labor Statistics Census of Fatal Occupational Injuries, U.S. Bureau of Labor Statistics Current Population Survey

Fatal Injuries Among Hispanic/Latino Workers

Hispanic/Latino workers continue to be at increased risk of dying on the job. These vulnerable workers have a disproportionate rate of injuries, illnesses, and fatalities in the workplace largely because they work in dangerous industries, may be particularly vulnerable due to their immigration status, and may be subject to employer exploitation. Many are foreign-born, do not speak English, and are not informed about their rights on the job. The U.S. Census Bureau defines 'Hispanic or Latino' as a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. This Indicator was developed by the Occupational Health Branch as part of its focus on health equity.

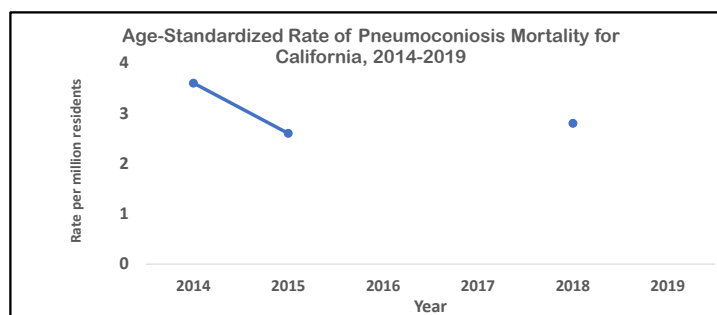


Incidence Rate and Number of Fatalities Among Hispanic/Latino Workers for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate of Work-Related Fatalities Among Hispanics per 100,000 Hispanic /Latino Employees	2.2	3.0	2.4	2.7	2.9	3.2
Number of Work-Related Fatalities Among Hispanics/Latinos	130	178	148	173	190	211

Data Sources: Not an official product of the Census of Fatal Occupational Injuries (CFOI). Rates were calculated using data from CFOI for the number of fatalities, and a count of workers taken from Table 14, Employment status of the civilian noninstitutionalized population, by sex, age, race, Hispanic or Latino ethnicity, and marital status, from the [Geographic Profile of Employment and Unemployment, Estimates for States](#).

Pneumoconiosis Mortality

Pneumoconiosis is a term for lung diseases caused by the inhalation of mineral dust, nearly always in a work setting. Most cases of pneumoconiosis develop only after many years of exposure to agents such as asbestos or coal dust; thus they are usually diagnosed in older individuals. These diseases are incurable and may ultimately result in death. Types of pneumoconioses include silicosis, asbestosis, and coal workers' pneumoconiosis. Death certificates are used to estimate the number of deaths due to pneumoconiosis or with pneumoconiosis as a contributing factor. The causes of death on death certificates may be recorded or coded inaccurately or incompletely, resulting in an underestimate of mortality due to pneumoconiosis. In addition, workers with these conditions may remain undiagnosed or die of other causes. See also the Indicator "Pneumoconiosis Hospitalizations".



Age-Standardized Mortality Rate and Number of Pneumoconiosis Deaths for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Age-Standardized* Rate of Total Pneumoconiosis Mortality per Million Residents	3.6	2.6	N/A	N/A	2.8	N/A
Number of Pneumoconiosis Deaths	109	82	N/A	N/A	82	N/A

*Age-standardized rates provide an estimate of what the rates of each condition would be if the age distribution in California were the same as the age distribution in the U.S. as a whole; this allows comparison between states.

N/A is Not Available. Death data was not available to OHB for 2016, 2017, and 2019.

Data Sources: California Department of Public Health Vital Records, U.S. Census Bureau Population Estimates

Rate and Number of Coal Worker Pneumoconiosis, Asbestosis, Silicosis, and Unspecified Pneumoconiosis Deaths for California and U.S., 2014-2019						
Year	California					
	2014	2015	2016	2017	2018	2019
Age-Standardized* Rate of Coal Worker Pneumoconiosis Mortality per Million Residents	0.6	0.2	N/A	N/A	0.3	N/A
Number of Coal Worker Pneumoconiosis Deaths	20	7	N/A	N/A	10	N/A
Age-Standardized* Rate of Asbestosis Mortality per Million Residents	2.9	1.2	N/A	N/A	2.0	N/A
Number of Asbestosis Deaths	86	62	N/A	N/A	66	N/A
Age-Standardized* Rate of Silicosis Mortality per Million Residents	N/A	0.3	N/A	N/A	N/A	N/A
Number of Silicosis Deaths	<5	8	N/A	N/A	<5	N/A

Age-Standardized* Rate of Unspecified Pneumoconiosis Mortality per Million Residents	N/A	0.2	N/A	N/A	N/A	N/A
Number of Unspecified Pneumoconiosis Deaths	N/A	6	N/A	N/A	<5	N/A

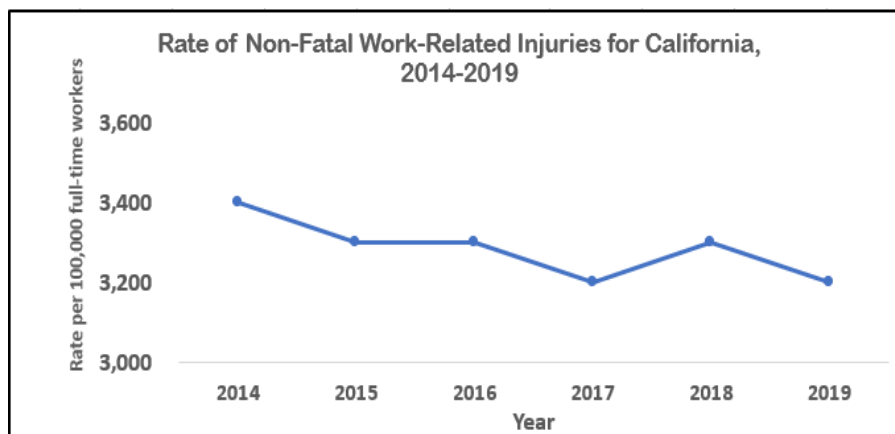
* Age-standardized rates provide an estimate of what the rates of each condition would be if the age distribution in California were the same as the age distribution in the U.S. as a whole; this allows comparison between states.

N/A is Not Available. Death data was not available to OHB for 2016, 2017, and 2019.

Data Sources: California Department of Public Health Vital Records, U.S. Census Bureau Population Estimates

Non Fatal Work-Related Injuries and Illnesses Reported by Employers

Thousands of workers are injured each day in the United States. The U.S. Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries and Illnesses provides an estimate of non-fatal occupational injury and illness rates based on a nationwide survey of a sample of employer establishments. It is well recognized that the Annual Survey has a number of limitations and underestimates the full extent of the problem. Occupational diseases are difficult to identify and are not well documented in the Annual Survey. There is also evidence that injuries are underreported. In addition, the survey excludes some public sector workers, the self-employed, household workers, and workers on farms with fewer than 11 employees.



Rate and Number of Non-Fatal Work-Related Injuries and Illnesses
Reported by Private Sector Employers for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Rate per 100,000 Full-Time Workers	3,400	3,300	3,300	3,200	3,300	3,200
Number of Injuries and Illnesses	353,900	363,100	360,100	362,600	363,800	379,900

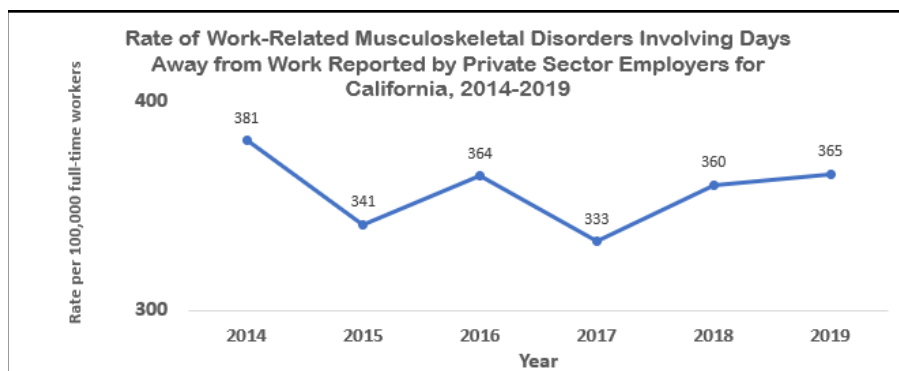
Data Source: U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Rate and Number of Non-Fatal Work-Related Injuries and Illnesses Reported by Private Sector Employers for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Incidence Rate of Injuries and Illnesses Involving Days Away From Work per 100,000 Full-Time Workers	1,000	1,000	1,000	1,000	1,100	1,000
Number of Injuries and Illnesses Involving Days Away From Work	109,400	110,900	113,200	114,600	117,100	119,500
Number of Injuries and Illnesses Involving More Than 10 Days Away From Work	60,230	55,790	61,400	60,860	59,490	61,030

Data Source: U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Musculoskeletal Disorders Reported by Employers

Work-related musculoskeletal disorders (MSDs) are some of the most common and costly work-related health problems. MSDs are injuries or disorders of muscles, tendons, nerves, ligaments, joints, or spinal discs that are caused or aggravated by work activities. These injuries can significantly impact the ability of workers to perform their job and affect quality of life both on and off the job. The majority of cases involve the back, neck, shoulders, or upper extremities. The U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses provides yearly estimates of work-related MSDs with days away from work. The Annual Survey may underestimate the true number of MSDs due to underreporting and exclusion of certain groups of workers. Furthermore, workers with MSDs may be treated by their personal health care provider and not report these injuries to their employer, or they may develop the disorder after leaving the employment responsible. See also the Indicators “Carpal Tunnel Syndrome Cases Identified in State Workers’ Compensation Systems” and “Hospitalizations for Work-Related Lower Back Disorders”.



Rate and Number of Work-Related Musculoskeletal Disorders Involving Days Away From Work Reported by Private Sector Employers for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Incidence Rate per 100,000 Full-Time Workers	381	341	364	333	360	335
Number of Work-Related MSDs	39,760	37,100	39,890	37,340	40,060	39,240

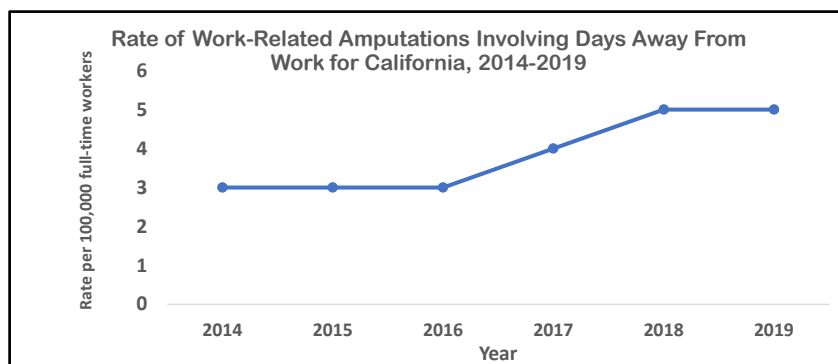
Data Source: U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Rate and Number of Work-Related Musculoskeletal Disorders Involving Days Away From Work Reported by Private Sector Employers for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Incidence Rate of MSD Cases Involving the Neck, Shoulder, and Upper Extremities per 100,000 Full-Time Workers	132	113	116	119	122	107
Number of MSDs of the Neck, Shoulder, and Upper Extremities	13,800	12,220	12,790	13,310	13,540	12,550
Incidence Rate of Carpal Tunnel Syndrome Cases per 100,000 Full-Time Workers	12.0	7.0	7.0	11.0	6.0	4.0
Number of Carpal Tunnel Syndrome Cases	1,230	770	720	1,200	650	480
Incidence Rate of MSD Cases Involving the Back per 100,000 Full-Time Workers	137	134	137	126	132	119
Number of MSD Cases Involving the Back	14,330	14,570	14,960	14,090	14,650	13,910

Data Source: U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Amputations Reported by Employers

Amputations are severe injuries that can result in a worker being unable to perform his or her original job, resulting in reduced earning potential or permanent disability. An amputation is defined as full or partial loss of a protruding body part – an arm, hand, finger, leg, foot, toe, ear, or nose. The most common work-related amputation involves a finger. The U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses provides yearly estimates of the number and rate of work-related amputations that involve at least one day away from work. The Annual Survey may underestimate the number of amputations due to underreporting and exclusion of certain groups of workers. See also the Indicator “Amputations Identified in State Workers’ Compensation Systems”.

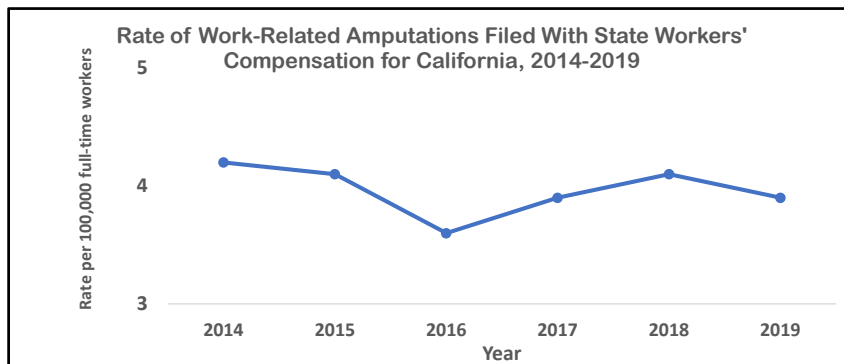


Rate and Number of Work-Related Amputations Involving Days Away From Work for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate per 100,000 Full-Time Workers	3.0	3.0	3.0	4.0	5.0	5.0
Number of Amputations With Days Away From Work	260	360	340	400	590	530

Data Source: U.S. Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Amputations Identified in State Workers' Compensation Systems

The California Workers' Compensation Information System is used to identify claims filed for amputation injuries, including lost time and medical claims. The number of amputations may be undercounted, since some workers are not covered by workers' compensation, and some workers who are eligible do not file for workers' compensation. Because of differences among state workers' compensation systems, national data are not available for this Indicator. See also the Indicator "Amputations Reported by Employers".



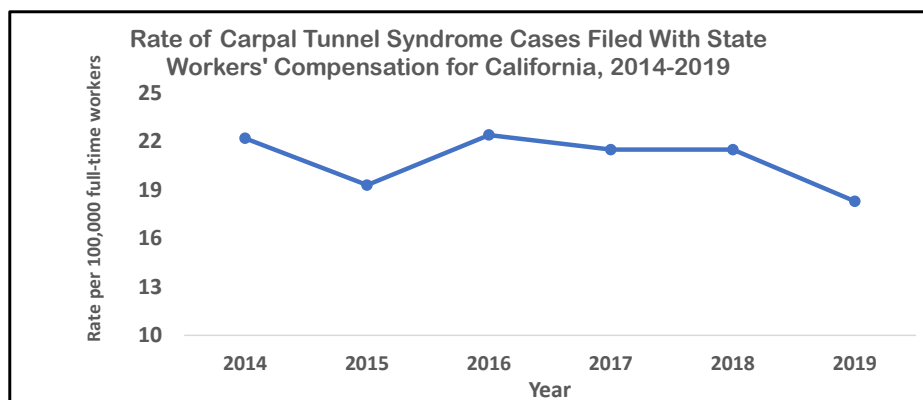
Rate and Number of Work-Related Amputations Filed with State Workers' Compensation for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Rate per 100,000 Covered Workers	4.2	4.1	3.6	3.9	4.1	3.9
Number of Work-Related Amputations	650	655	591	667	699	684

Data Sources: California Workers' Compensation Information System, National Academy of Social Insurance (NASI)

Carpal Tunnel Syndrome Cases Identified in State Workers' Compensation Systems

Carpal tunnel syndrome (CTS) is a painful and disabling condition that occurs when the median nerve through the wrist is compressed. Symptoms range from burning, tingling, or numbness in the fingers to difficulty gripping or holding objects. Workplace factors that may cause or aggravate CTS include direct trauma, repetitive forceful motions or awkward postures of the hands, and use of vibrating tools or equipment. Tracking work-related CTS can guide prevention efforts and identify contributing factors. The California Workers' Compensation Information System is used to identify claims filed for CTS, including lost time and medical claims. Since many workers do not file claims and some employees are excluded from workers' compensation, the number may be an undercount. Because of differences among state workers' compensation systems, national data are not available for this Indicator. See also the Indicator "Musculoskeletal Disorders Reported by Employers".



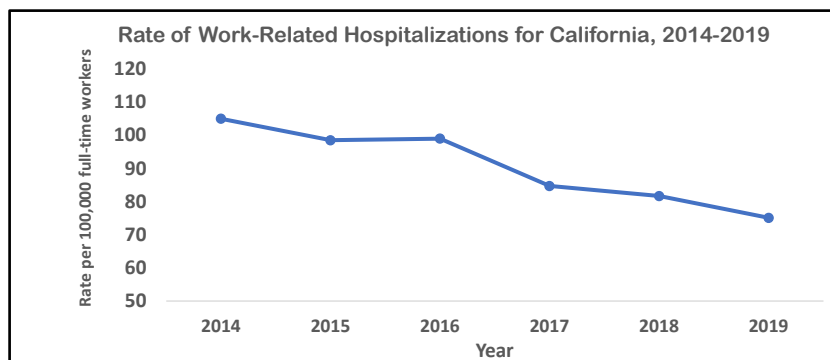
Rate and Number of Carpal Tunnel Syndrome Cases Filed with State Workers' Compensation for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Rate per 100,000 Covered Workers	22.2	19.3	22.4	21.5	21.5	18.3
Number of CTS Cases Filed	3,452	3,097	3,692	3,613	3,672	3,186

Data Sources: California Workers' Compensation Information System, National Academy of Social Insurance (NASI)

Work-Related Hospitalizations

Workers who are hospitalized due to injuries and illnesses caused by work suffer some of the most serious and costly adverse work-related health outcomes. Hospital discharge data from non-federal acute care hospitals are used to calculate the number of work-related hospitalizations per year by counting the individuals whose care was paid for by workers' compensation. Since many people with work-related illnesses and injuries do not file for workers' compensation, or are not covered by workers' compensation (e.g., self-employed individuals), the true numbers of hospitalizations due to a work-related injury or illness are likely to be undercounted. Most identified work-related hospitalizations are for treatment of musculoskeletal disorders or acute injuries, rather than illnesses.

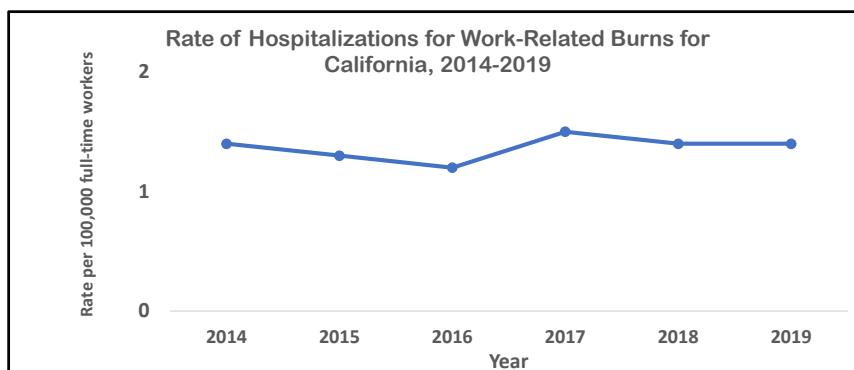


Rate and Number of Work-Related Hospitalizations for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate per 100,000 Full-Time Workers	105.0	98.5	99.0	84.7	81.7	75.1
Number of Hospitalizations	18,256	17,556	16,238	15,526	15,171	13,951

Data Sources: Office of Statewide Health Planning and Development Non-Public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Hospitalizations for Work-Related Burns

Work-related burns can be painful and disabling injuries and are among the most expensive to treat. They are the most common cause of work-related hospitalization for young workers, who are employed in large numbers by the food service industry. Burns include injuries to tissues caused by contact with dry heat (fire), moist heat (steam), chemicals, electricity, friction, or radiation. Hospital discharge data from non-federal acute care hospitals are used to identify burn hospitalizations that are paid for by workers' compensation. The number of hospitalizations for work-related burns is likely to be undercounted, since not all workers are eligible for workers' compensation, and there may be inaccuracies in identifying payment source.

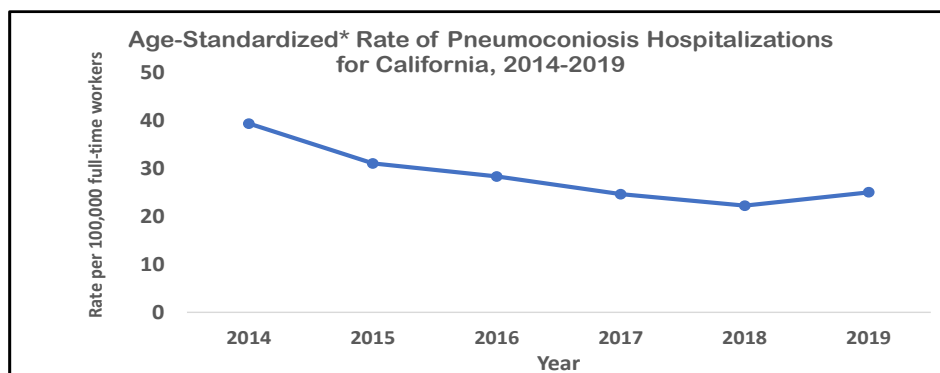


Rate and Number of Work-Related Burns for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate per 100,000 Full-Time Workers	1.4	1.3	1.2	1.5	1.4	1.4
Number of Hospitalizations for Work-Related Burns	237	237	212	261	267	251

Data Sources: Office of Statewide Health Planning and Development Non-public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Pneumoconiosis Hospitalizations

Pneumoconiosis is a term for lung diseases caused by the inhalation of mineral dust, nearly always in a work setting. Most cases of pneumoconiosis develop only after many years of exposure to agents such as asbestos or coal dust; thus they are usually diagnosed in older individuals. These diseases are incurable and may ultimately result in death. Types of pneumoconioses include silicosis, asbestosis, and coal workers' pneumoconiosis. Hospital discharges with primary or contributing diagnoses of any of the types of pneumoconiosis are used to calculate the number of hospitalizations among persons aged 15 or older. These data probably underestimate pneumoconiosis cases because not all workers with that condition are hospitalized. Furthermore, patients may be hospitalized with pneumoconiosis in a state other than where they acquired it. Since pneumoconioses are generally diagnosed long after exposure to the causative agent, current hospitalizations may not reflect current occupational conditions. See also the Indicator "Pneumoconiosis Mortality".



Age-Standardized* Rate and Number of Pneumoconiosis Hospitalizations for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Age-Standardized* Rate of Total Pneumoconiosis Hospitalizations per Million Residents	39.3	31.0	28.3	24.6	22.2	25.0

Number of Pneumoconiosis Hospitalizations	1,218	989	911	808	741	849
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* Age-standardized rates provide an estimate of what the rates of each condition would be if the age distribution in California were the same as the age distribution in the U.S. as a whole; this allows comparison between states.

Data Sources: Office of Statewide Health Planning and Development Non-Public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Age-Standardized* Rate and Number of Coal Worker Pneumoconiosis, Asbestosis, Silicosis, and Unspecified Pneumoconiosis Hospitalizations for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Age-Standardized* Rate of Coal Worker Pneumoconiosis Hospitalizations per Million Residents	2.3	3.2	2.3	2.6	2.4	2.6
Number of Coal Worker Pneumoconiosis Hospitalizations	76	103	79	91	82	89
Age-Standardized* Rate of Asbestosis Hospitalizations per Million Residents	33.2	24.2	21.6	17.9	15.9	18.1
Number of Asbestosis Hospitalizations	1,023	771	689	581	527	612
Age-Standardized* Rate of Silicosis Hospitalizations per Million Residents	2.5	1.6	1.8	1.8	1.5	2.0
Number of Silicosis Hospitalizations	78	50	58	60	52	65

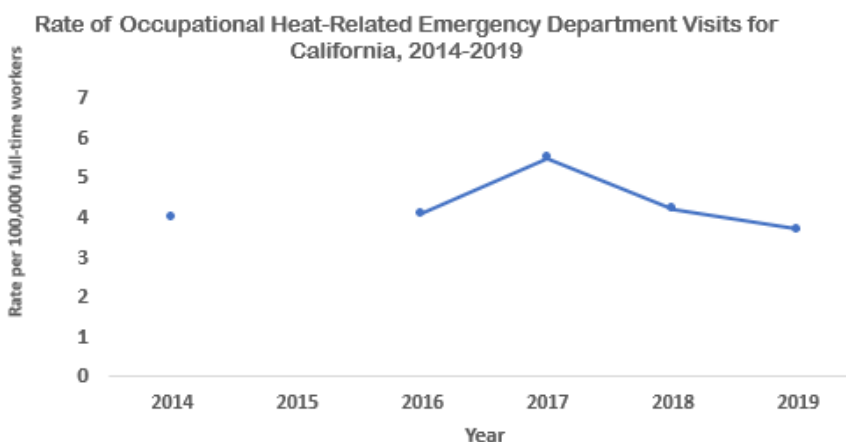
Age-Standardized* Rate of Unspecified Pneumoconiosis Hospitalizations per Million Residents	1.6	2.1	2.8	2.4	2.5	2.5
Number of Unspecified Pneumoconiosis Hospitalizations	48	69	91	81	85	85

* Age-standardized rates provide an estimate of what the rates of each condition would be if the age distribution in California were the same as the age distribution in the U.S. as a whole; this allows comparison between states.

Data Sources: Office of Statewide Health Planning and Development Non-Public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Occupational Heat-Related Emergency Department Visits

Many workers – such as those in agriculture, construction, and firefighting – are at risk of heat-related illness that can range from mild heat stress to death. Occupational heat-related illness can be prevented with adequate hydration, acclimatization, shade, and rest breaks. In California, all employers with outdoor workers are required to comply with [Cal/OSHA's heat illness prevention standard](http://www.dir.ca.gov/title8/3395.html), Title 8 CCR Section 3395 (<http://www.dir.ca.gov/title8/3395.html>). Often only the more serious heat-related illnesses may require an emergency room visit; there are many more cases of occupational heat-related illness that are seen by other outpatient health care providers or may not seek medical attention. This Indicator was developed by the states and added starting in 2010.



Incidence Rate and Number of Occupational Heat-Related Emergency Department Visits for California, 2014-2019

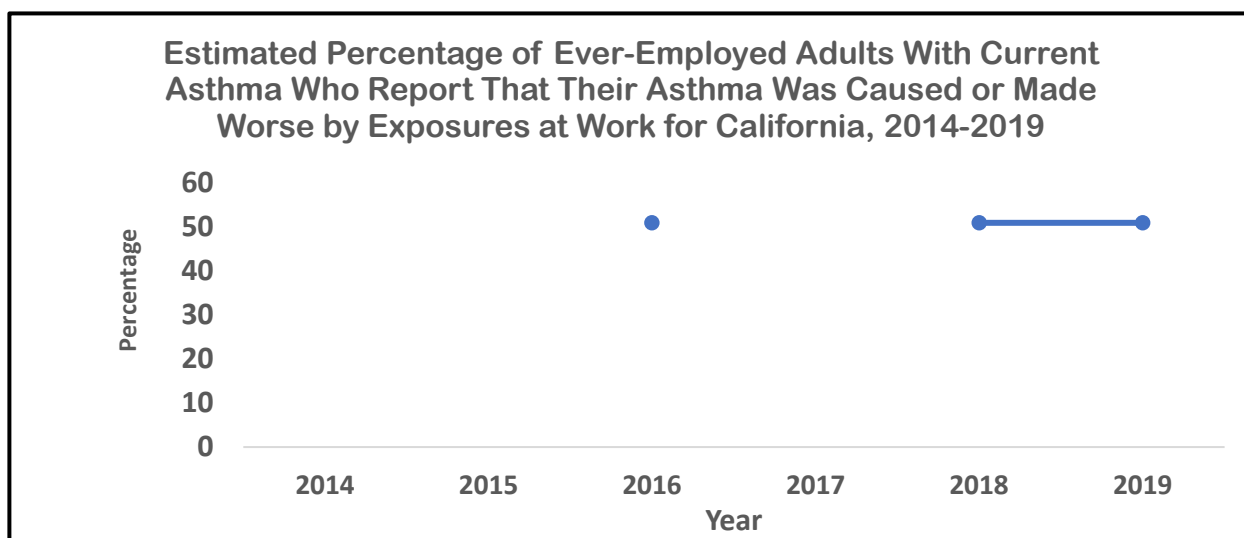
	2014	2015	2016	2017	2018	2019
Rate of Occupational Heat-Related Emergency Department Visits per 100,000 Employees	4.0	N/A	4.1	5.5	4.2	3.7

Number of Occupational Heat-Related Emergency Department Visits	702	N/A	742	1006	771	689
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Data Sources: Office of Statewide Health Planning and Development Non-Public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Work-Related Asthma

Asthma is a chronic inflammatory condition of the airways that affects over 21 million adults nationwide. In 2019, approximately 5.8 million Californians had asthma. Symptoms can include wheezing, shortness of breath, coughing, and chest tightness and can lead to significant disability. Work-related asthma (WRA) refers to asthma that is associated with conditions in the workplace, and can include new disease in workers, as well as exacerbations of current disease. While WRA is preventable, there is substantial evidence that WRA is under-recognized and underdiagnosed. The Behavioral Risk Factor Surveillance System (BRFSS) is a nationwide telephone health survey of adults that collects data about asthma and many other health outcomes and behaviors. Some states conduct the Asthma Call-back Survey, an in-depth follow-up component of the BRFSS to collect additional information from respondents who report an asthma diagnosis. The survey includes questions that allow us to estimate the number and percentage of people with asthma in a state who have work-related asthma. Because it is a telephone survey in limited languages, it may exclude some individuals from participating, and data are subject to the bias of a self-reported asthma diagnosis. This Indicator was developed by the states and added starting in 2011.



Data Source: Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call Back Survey (ACBS) respondents.

Asthma Among Adults Caused or Made Worse by Work for California, 2014-2019						
	2014 ¹	2015 ¹	2016 ²	2017 ¹	2018 ²	2019 ²
Weighted Estimate of the Number of Ever-Employed Adults With Current Asthma Who Report That Their Asthma Was Caused or Made Worse By Exposures at Work	N/A	N/A	1,062,861	N/A	1,062,861	1,062,861
Estimated Percentage of Ever-Employed Adults With Current Asthma Who Report That Their Asthma Was Caused or Made Worse By Exposures at Work	N/A	N/A	51	N/A	51	51

¹California data not available due to inadequate number of interviews.

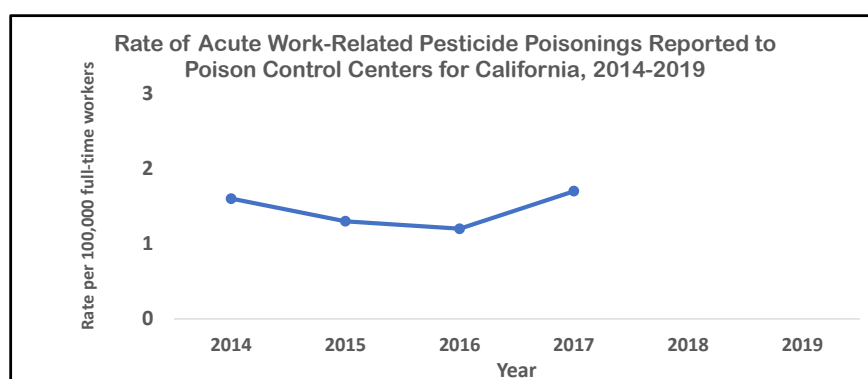
²Estimate based on landline and cell phone Asthma Call Back Survey.

N/A is Not Available.

Data Source: Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call Back Survey (ACBS) respondents.

Acute Work-Related Pesticide Poisonings Reported to Poison Control Centers

According to the U.S. EPA, between 20,000 and 40,000 workers are poisoned by pesticides each year. Agricultural workers and pesticide applicators are at greatest risk for the more severe pesticide poisonings. Some of these cases are reported to poison control centers (PCCs), which gather information about the exposed worker and the pesticide. Calls to PCCs have been estimated to capture only approximately 10% of acute work-related pesticide illness cases. Ten states, including California, have active programs that track acute occupational pesticide illness using additional data sources; see the [Occupational Pesticide Illness Prevention Program website](#). These data do not reflect adverse health effects in workers related to chronic, long-term exposure to pesticides.



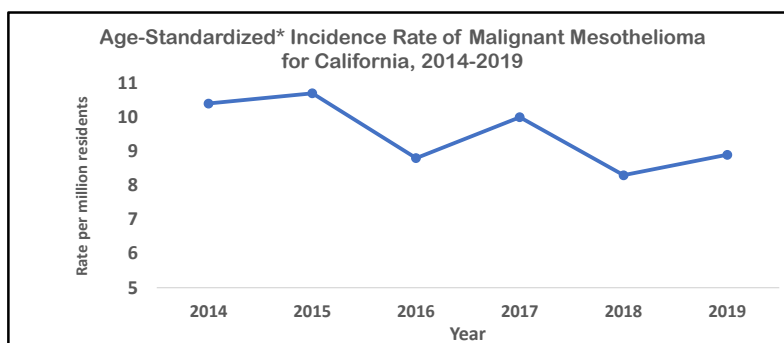
Rate and Number of Acute Work-Related Pesticide Poisonings Reported to Poison Control Centers for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate per 100,000 Employed	1.6	1.3	1.2	1.7	N/A	N/A
Number of Work-Related Pesticide Poisonings	280	235	217	308	N/A	N/A

N/A is Not Available. Data were not available these years.

Data Source: American Association of Poison Control Centers (AAPCC), U.S. Bureau of Labor Statistics Current Population Survey

Incidence of Malignant Mesothelioma

Mesothelioma is a rare but highly fatal cancer of the thin membranes surrounding the chest cavity or abdominal cavity. The only well-established risk factor for mesothelioma is exposure to asbestos fibers. Prior asbestos exposure, primarily in the workplace, has been reported in 62 to 85 percent of all mesothelioma cases. Mesothelioma is a disease of long latency, typically with 20-40 years between exposure and onset of disease. The California Cancer Registry collects data on newly diagnosed cancer cases. Since some cases of mesothelioma are not due to work-related exposure, and Cancer Registry completeness varies, these data may over- or underestimate the true incidence of work-related malignant mesothelioma.



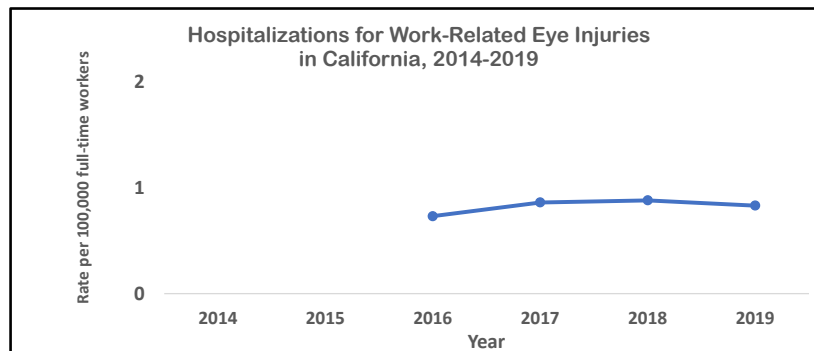
Age-Standardized* Incidence Rate and Number of Malignant Mesothelioma Cases for California, 2014-2019

	2014	2015	2016	2017	2018	2019
Age-Standardized* Rate of Malignant Mesothelioma per Million Residents	10.4	10.7	8.8	10.0	8.3	8.9
Number of Malignant Mesothelioma Cases	331	344	291	332	284	314

* Age-standardized rates provide an estimate of what the rates of each condition would be if the age distribution in California were the same as the age distribution in the U.S. as a whole; this allows comparison between states. Data Sources: State of California Cancer Registry, U.S. Census Bureau Population Estimates

Hospitalizations for Work-Related Eye Injuries

Work-related eye injuries are common yet preventable. In severe cases, ocular trauma can lead to permanent vision loss, a lifetime disability. These injuries can be complicated, costly to treat, and have poor prognoses. It is widely recognized that failure to use protective eyewear is one factor that increases the risk of eye injury among workers. Estimating the burden of work-related eye injuries and investigating other associated risk factors can help target prevention programs and activities in populations and occupations most at risk. This Indicator was developed by the states and added starting in 2016.



Rate and Number of Hospitalizations for Work-Related Eye Injuries for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Rate per 100,000 Employed	N/A	N/A	0.73	0.86	0.88	0.83
Number of Work-Related Eye Injuries	N/A	N/A	131	157	163	153

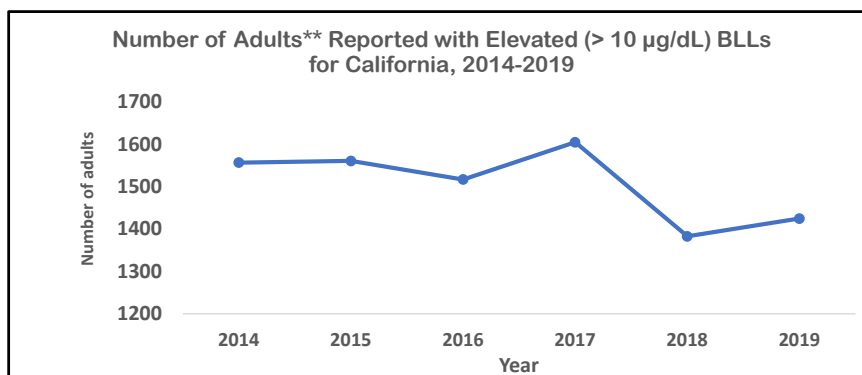
Data Sources: Office of Statewide Health Planning and Development Non-Public Hospital Discharge Data, U.S. Bureau of Labor Statistics Current Population Survey

Elevated Blood Lead Levels Among Adults

Despite being a well-known and preventable illness, lead poisoning remains a significant problem for many adults in California. Most lead exposure in adults is from the workplace. Lead exposure at work occurs in a variety of industries, and overexposure to lead can cause anemia, nervous system or kidney damage, high blood pressure, decreased fertility, and miscarriage. Lead from work can also be brought home on a worker's clothing or shoes, and can cause health damage to family members.

The blood lead level (BLL) is the best biological indicator of recent lead exposure, and most states require laboratories to report BLL results. A BLL of 5 µg/dL is now considered "elevated", and the current Healthy People 2020 goal is to reduce the proportion of adults with BLLs at or above 10 µg/dL.* Cal/OSHA requires that employers regularly monitor the BLLs of lead-exposed workers. New information about health effects at lower BLLs show that workers are not adequately protected under current OSHA standards; Cal/OSHA's more protective updated regulations go into effect in January 2025.

The true number of Californians with elevated BLLs is likely even greater than reported, as not all employers in lead-using workplaces provide the required BLL testing. Approximately 30 states, including California, have active programs that track adult BLLs; see the [Occupational Lead Poisoning Prevention Program website](#).



*In 2015, the National Institute for Occupational Safety and Health lowered its definition of "elevated BLL" to 5 µg/dL due to emerging science on health effects at lower BLLs.

** Because determining whether BLLs are work-related can be difficult, this Indicator reports BLLs in all adults, not just workers.

Data Sources: State of California Occupational Lead Poisoning Prevention Program (OLPPP), U.S. Bureau of Labor Statistics Current Population Survey

Rate and Number of Elevated Blood Lead Levels Among Adults for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Number of Residents with Elevated Blood Lead Levels $\geq 10 \mu\text{g/dL}$	1,557	1,561	1,517	1,605	1,383	1,425
Prevalence Rate of Elevated Blood Lead Levels $\geq 10 \mu\text{g/dL}$ Among Adults per 100,000 employed	9.0	8.8	8.4	8.9	8.0	7.7
Number of Residents with Elevated Blood Lead Levels $\geq 25 \mu\text{g/dL}$	152	172	133	185	150	129
Prevalence Rate of Elevated Blood Lead Levels $\geq 25 \mu\text{g/dL}$ Among Adults per 100,000 employed	0.9	1.0	1.0	1.0	1.0	0.7

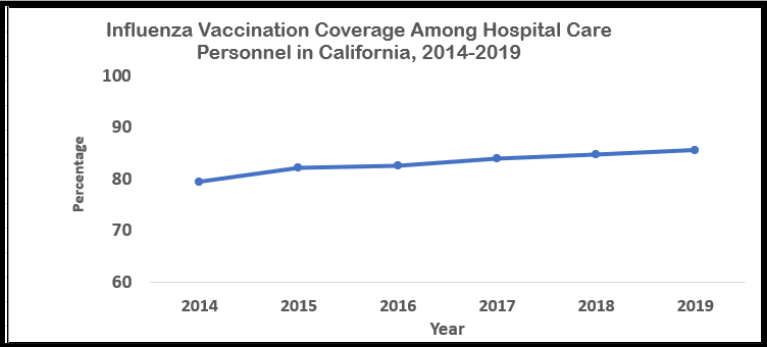
Data Sources: State of California Occupational Lead Poisoning Prevention Program (OLPPP), U.S. Bureau of Labor Statistics Current Population Survey

Rate and Number of Elevated Blood Lead Levels Among Adults for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Number of Residents with Elevated Blood Lead Levels $\geq 40 \mu\text{g/dL}$	18	30	37	35	25	20
Prevalence Rate of Elevated Blood Lead Levels $\geq 40 \mu\text{g/dL}$ Among Adults per 100,000 employed	0.1	0.2	0.2	0.2	0.1	0.1

Data Sources: State of California Occupational Lead Poisoning Prevention Program (OLPPP), U.S. Bureau of Labor Statistics Current Population Survey

Influenza Vaccination Coverage Among Hospital Care Personnel

Health care workers are at risk of nosocomial infection with influenza virus, and may have significant morbidity that can interfere with patient care. The influenza vaccine can prevent influenza infection and reduce the severity and length of influenza symptoms. Each year, acute care hospitals offer and administer the influenza vaccine to health care workers at risk. The proportion of those who are immunized is an important measure of worker protection, and can be used to evaluate the effectiveness of one aspect of employee health programs in acute care facilities. This indicator was developed by the states and added starting in 2015.

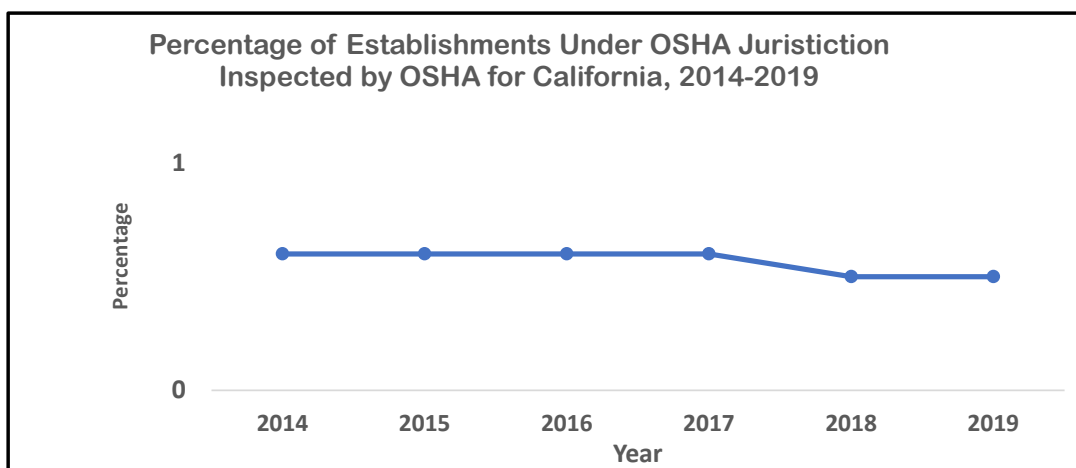


Proportion of Healthcare Personnel Influenza Vaccination Coverage in Acute Care Hospitals for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Proportion of Healthcare Personnel Influenza Vaccination Coverage in Acute Care Hospitals	79.4	82.1	82.6	83.9	84.7	85.6

Data Source: Healthcare Safety Network (NHSN) "Healthcare Personnel Influenza Vaccination Summary Data Tables"

OSHA Enforcement Activities

In California, the Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), enforces health and safety standards in most workplaces, while the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) covers some workplaces such as federal facilities. This Indicator provides a measure of the numbers and proportions of workers and worksites covered by inspections conducted by Cal/OSHA and Federal OSHA. Since OSHA programs perform activities other than enforcement, such as education and voluntary compliance assistance, these figures may not reflect the full benefit provided by OSHA activities. The numbers may be slightly overestimated since OSHA may inspect one establishment more than once in a year.



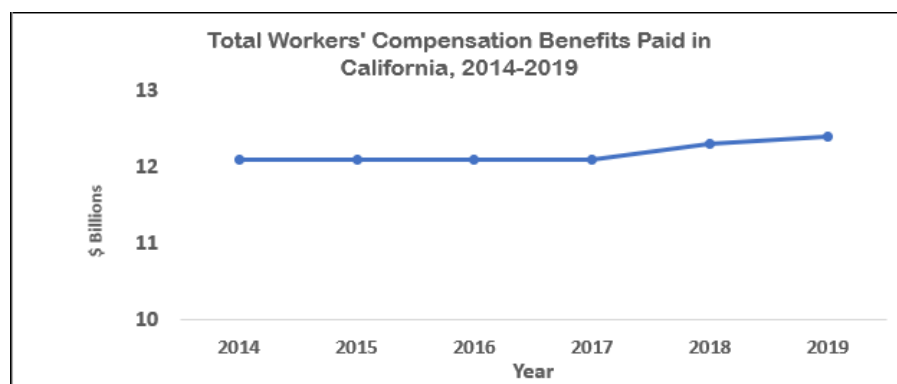
Data Sources: U.S. Department of Labor Occupational Safety and Health Administration Inspection Reports, U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

Percentage and Number of Establishments Under OSHA Jurisdiction, Inspected, and Employees Whose Work Areas Were Inspected by OSHA for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Percentage of Establishments Under OSHA Jurisdiction Inspected by OSHA	0.6	0.6	0.6	0.6	0.5	0.5
Number of Establishments Inspected by OSHA	7,788	8,081	7,972	8,240	7,954	7,836
Number of Establishments Under OSHA Jurisdiction	1,372,562	1,416,107	1,458,759	1,503,522	1,525,496	1,560,781
Number of Employees Whose Work Areas Were Inspected by OSHA	323,886	318,423	317,979	348,577	400,647	342,561
Estimated Percentage of Employees Under OSHA Jurisdiction Whose Work Areas Were Inspected	2.1	2.0	1.9	2.0	2.3	1.9

Data Sources: U.S. Department of Labor Occupational Safety and Health Administration Inspection Reports, U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

Workers' Compensation Awards

State workers' compensation programs were developed to provide guaranteed compensation for work-related injuries or illnesses while limiting the liability exposure of employers. Workers' compensation provides benefits to partially replace lost wages, pay for medical expenses associated with an injury or illness, and provide survivor benefits in the case of a death. The total dollar amount of benefits paid annually is calculated using data from the National Academy of Social Insurance, which also provides the number of workers covered by workers' compensation. This Indicator also reports the average amount paid per worker if the total cost is averaged over all workers covered by the workers' compensation system. While the amount of benefits paid helps define the direct financial cost of work-related injuries and illnesses, it does not reflect their true burden. Indirect costs to the employer and worker are not taken into account. In addition, some workers who are eligible for benefits do not file. Finally, several types of workers may not be covered by state workers' compensation systems, including the self-employed, domestic workers, federal employees, and railroad, longshore, and maritime workers.



Data Source: National Academy of Social Insurance (NASI)

Total Workers' Compensation Benefits Paid and Average per Covered Worker for California, 2014-2019						
	2014	2015	2016	2017	2018	2019
Total Amount of Workers' Compensation Benefits Paid in Billions	\$12.1	\$12.1	\$12.1	\$12.1	\$12.3	\$12.4
Average Amount of Workers' Compensation Benefits Paid per Covered Worker ¹	\$777	\$752	\$737	\$723	\$717	\$702

¹ All workers in the state who are eligible for compensation should they sustain work-related injuries or illnesses are considered "covered" workers.

Indicator Data Resources

[Occupational Health Indicators: A Guide for Tracking Occupational Health Conditions and Their Determinants](#) – “how-to” guide for states on generating Occupational Health Indicators (Council of State and Territorial Epidemiologists/CSTE, updated 2022)

[Occupational Health Indicators – Council of State and Territorial Epidemiologists](#) – website that provides other states’ and national data

[Data Sources Used to Calculate Occupational Health Indicators](#) – adapted from 2005 CSTE report

[Guidelines for State Occupational Public Health Programs](#) – National Institute for Occupational Safety and Health (NIOSH)-CSTE document (2008)

[Indicators for Occupational Health Surveillance](#) – MMWR article (Centers for Disease Control, 2007)

[NIOSH Workplace Data and Statistics Gateway](#) – NIOSH data website

[NIOSH Workplace Health and Safety Tracking Publications and Resources](#) – NIOSH website

[Occupational Health Indicators from 13 Pilot States for 2000](#) – CSTE report (2005)

[State-based Occupational Health Surveillance Clearinghouse](#) – NIOSH website listing state publications, including Indicators reports