Occupational Health Indicators

Louisiana 2013-2017

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Introduction and Background

There are about two million workers in Louisiana; every year thousands of them are injured, killed, or become ill because of exposure to health and/or safety hazards at work. Not only do work-related injuries and illnesses decrease work-productivity and lead to excessive healthcare costs for both employers and employees, they are nearly always preventable. Workers' compensations claims alone in Louisiana cost more than $798 million in 2017. The Louisiana Department of Health (LDH), Office of Public Health (OPH), Section of Environmental Epidemiology and Toxicology's (SEET) Occupational Health and Injury Surveillance Program has been conducting surveillance of injuries, illnesses, deaths, and hazards among Louisiana workers since 2006 through a cooperative agreement funded by the Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH). The program generates a suite of occupational health indicators, developed by representatives from state occupational health programs, the Council of State and Territorial Epidemiologists (CSTE), and NIOSH, as part of our primary annual surveillance activities. Each occupational health indicator is a specific measure of a work-related disease or injury, or a factor associated with occupational health, such as a workplace exposure, hazard, or intervention, in a specified population. These indicators allow a state to compare its health or risk status to that of other states, to evaluate within state trends over time, and to guide priorities for prevention and intervention efforts. Generating a report of occupational injuries and illnesses is the first step to successful identification and intervention of current and future health hazards.

This document summarizes the occupational health status of Louisiana workers, including influential factors such as demographics and workforce distribution by industry and occupation, for the years 2013-2017.

Methods

The CSTE document entitled "OCCUPATIONAL HEALTH INDICATORS: A Guide for Tracking Occupational Health Conditions and their Determinants" (www.cste.org) served as the guide for data collection. This document provides detailed methods on how to collect data and calculate frequency measurements for each indicator that are consistent at a national level. The majority of the data were collected from publicly available, national datasets; however, some data were acquired through sources that are specific to Louisiana, such as emergency department discharge, hospital inpatient discharge, and Vital Records mortality databases.

This report describes the significance, methods, results, and limitations for each occupational health indicator (OHI). When appropriate, state-to-national comparisons are presented to give an idea of Louisiana's ranking for that indicator. Several Indicators should NOT be used to make state-to-state or state-to-national comparisons. This is noted in the limitations section for each of those indicators.

An explanation discussing why data from certain indicators are not included can be found in the limitation section for each. All data sources and websites can be found in the appendix at the end of this report.

Louisiana Employment Demographics Profile

From 2013-2017, there was an annual average of 1,999,800 employed persons in Louisiana aged 16 years and older. The workforce had slightly more males than females (52.34% vs 47.66%). This closely followed national trends, where 53.20% of the workforce was male and 46.88% was female. Virtually the entire workforce was between the ages of 18-64 years, at 93.66%. The majority of the workforce was white (67.96%); nearly a third was black (27.90%). Nationwide, whites represented approximately 81.78% of the workforce during 2013-2017; blacks represented 11.66%. About 5.3% of workers were Hispanic. About 45% of employed Louisianans worked a standard 40-hour workweek, a 1.4% decrease from last year's report (2012-2016). Louisiana's workforce was most heavily concentrated in the Education and Health Services (24%), Wholesale and Retail Trade (14%), and Leisure and Hospitality (10%) industry sectors. Most workers were employed in Professional and Related (21%), Service (18%), and Management, Business, and Financial Operations (13%) occupations.

Table P.1 Number of Employed Persons in Louisiana, 2013-2017

	2013	2014	2015	2016	2017
Employed Persons	1,949,000	2,021,000	2,032,000	1,995,000	2,002,000

Table P.2 Louisiana Demographics Profile, 2013-2017

Percentage of civilian employment	Annual Average
Workforce Unemployment	6.18
Self-employment	6.02
Part-time employment*	16.48
Number of hours worked	
< 40 hours	31.50
40 hours	44.80
41+ hours	22.76
Sex	
Males	52.34
Females	47.66
Age group	
16 to 17	0.90
18 to 64	93.66
65+	5.44
Race	
White	67.96
Black	27.90
Other	3.76
Hispanic origin**	5.28

Note: Percentages may not add up to 100, due to rounding. *Individuals employed part-time work 1 to 34 hours per week. **Persons identified as Hispanic may be of any race.

SIGNIFICANCE

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Research has shown relationships between demographic characteristics of workers and the risk of occupational injury or illness. Understanding the characteristics of a state's workforce will guide development and implementation of preventive strategies and target research efforts.

METHODS

Age, sex, race/ethnicity, and employment characteristics are described for the years 2013-2017 for Louisiana and the United States. The Bureau of Labor Statistics' (BLS) Geographic Profiles of Employment and Unemployment estimates, which are derived from the Current Population Survey (CPS), provided demographic (except for age group) and employment data. Because

employment data by detailed age category are not available in the Geographic Profiles, the CDC's Employed Labor Force (ELF) query system was used to obtain the percent of civilian employment by age group.

Data include all persons aged 16+ years employed in the civilian non-institutional population. State demographic and employment stratifications percentages may not add up to 100 due to rounding.

LIMITATIONS

- The Geographic Profiles estimates are derived primarily from the CPS, which is a monthly probability sample of households across the United States. As such, the estimates are subject to a sampling error, meaning there is potential for over- or under-sampling the number of workers in each of the demographic categories listed.
- Geographic Profiles exclude workers less than 16 years of age, active-duty members of the military, and people living in institutions (i.e., prisoners, living institutions for the elderly).
- Data may underestimate the percentage of certain racial or ethnic worker populations that do not have permanent residences, or are migratory in nature.
- The ELF system uses a subset of CPS data that uses slightly different methods to apply population controls from those used by BLS. As a result, demographic estimates obtained through ELF will differ slightly from estimated provided by BLS.
- The Geographic Profiles estimates are only available for major industry and occupational groups; however, ELF can be used to obtain industry and occupation sub-sector estimates.

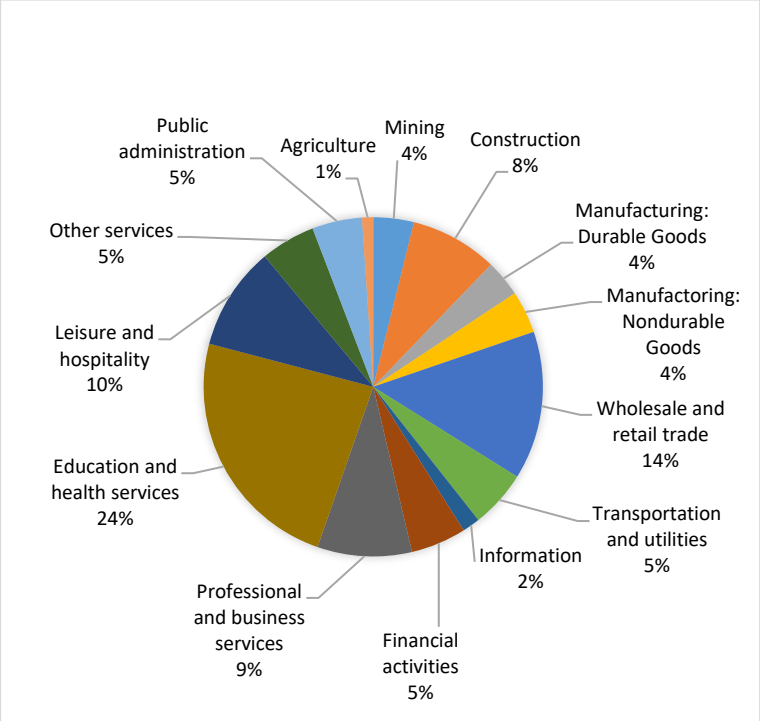

Figure P.1 Percentage of Civilian Employment by industry

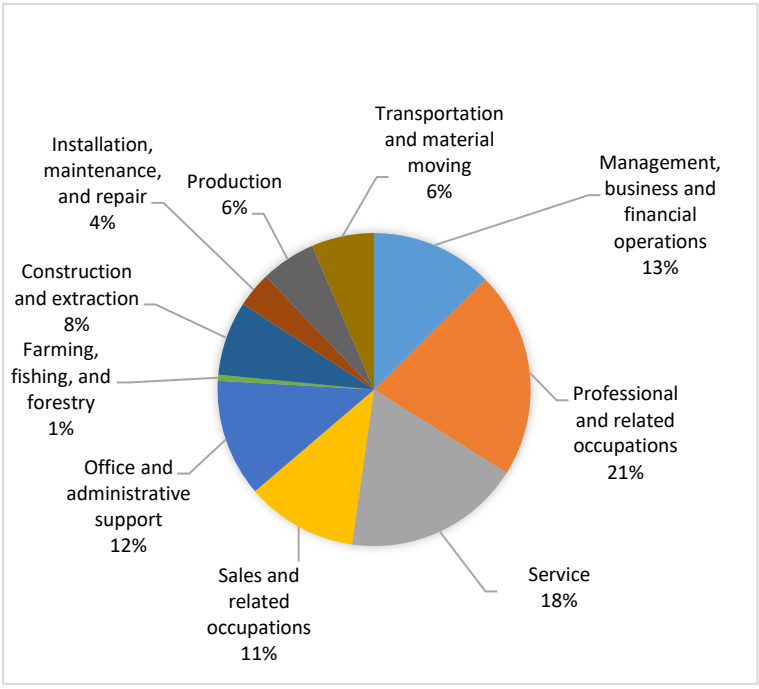

Figure P.2 Percentage of Civilian Employment by Occupation

Indicator 1: Non-Fatal Work-Related Injuries and Illnesses Reported by Employers

There was a linear decrease in Louisiana's count and rate of all non-fatal work-related injury and illness from 2013-2017, with an overall rate decrease of 13.64%. This represents a smaller overall percent decrease than what was observed in last year's report (2012-2016, 17.4%). The number of cases of non-fatal work-related injuries and illnesses involving days away from work (DAFW) decreased by about 19% and the rate decrease by 25%. There was an 18.2% decrease in the number of non-fatal work-related injuries and illnesses involving more than 10 DAFW.

Table 1 Non-Fatal Work-Related Injuries and Illnesses Reported by Employers

	All injuries and illnesses		Injuries and illnesses involving days away from work	
Year	**Count**	**Rate***	**Count**	**Rate***
2017	25,400	1,900	8,900	600
2016	25,700	1,900	9,600	700
2015	26,100	1,900	8,800	600
2014	28,500	2,000	9,300	700
2013	30,000	2,200	11,000	800

*per 100,000 Full-Time Equivalents

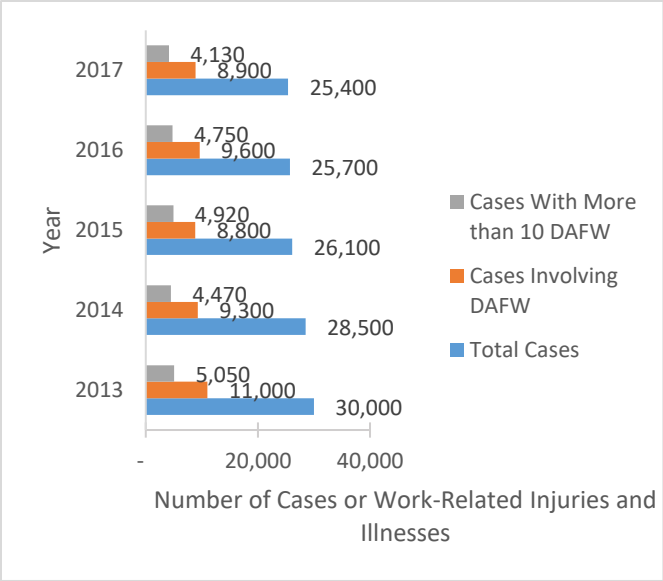

Figure 1.1 Number of cases of work related injuries and illnesses; *DAFW (days away from work)

SIGNIFICANCE

Work-related injuries and illnesses are largely preventable, and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries can help target prevention programs and activities. Information on reported cases can be used to further identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

METHODS

Numbers and incidence rates of non-fatal work-related injuries and illnesses were obtained from the BLS Survey of Occupational Injuries and Illnesses (SOII). Employers are required to record events that resulted in death, loss of consciousness, days away from work, restricted work activity or job transfer, medical treatment beyond first aid, or a significant injury or illness diagnosed by a physician or other licensed health care professional. The incidence rate describes the number of new injuries and illnesses per 100,000 Full-Time Equivalents (FTE) in each listed year. FTE measures time on the job, which gives a more accurate representation of at-risk experience than employment status would.

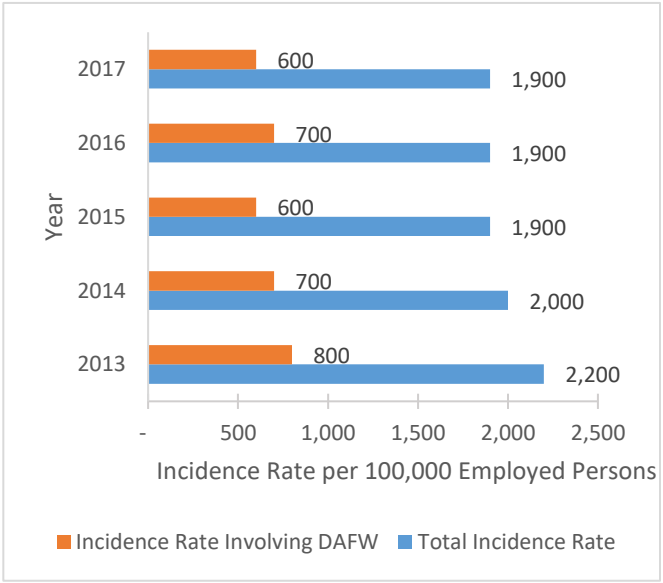

Figure 1.2 Incidence rate of work related injuries and illnesses per 100,000 employed persons; *DAFW (days away from work)

LIMITATIONS

- Due to differences in industry concentration and sample size, caution should be taken when making direct state-to-state and state-to-national comparisons of these data.
- The SOII is based on a probability sample of employer establishments, not a census of all employers. As such, SOII estimates are subject to sampling error, meaning that the estimates may differ from the true population values they represent.
- SOII estimates are also subject to non-sampling error, such as mistakes in recording or coding data that are not measured.
- The SOII relies on employer reporting of injuries and illnesses and is therefore subject to both willful and unintentional underreporting of cases.
- Employers may place affected workers on restricted work activity, thereby avoiding the reporting of cases as lost workday cases.
- Employers may not be aware of work-related conditions for which employees obtained medical care from their personal health care providers, or for conditions that have long latencies and are diagnosed after an employee leaves their employment.
- The SOII only collects data for the incident year, and does not capture lost work-time that may carry over to a new calendar year.
- This indicator is limited to the private sector workforce only.

Indicator 2: Work-Related Hospitalizations

From 2013-2015, the number of work-related hospitalizations in Louisiana decreased a little each year, and the rate dropped from 84.1 to 73.9, a decrease of nearly 12%. In 2016, the rate dropped again by about 14%. The large drop from 2015-2016 may have been at least partially related to the switch from ICD-9 to ICD-10 codes in medical billing systems that occurred in the 4th quarter of 2015. In 2017, the number of work-related hospitalizations rose again, similar to what was observed in 2014 and 2015. From 2016 to 2017, the rate increased 22%.

Table 2 Work-Related Hospitalizations in Louisiana

Year	Count	Rate*
2017	1,550	77.4
2016	1,263	63.3
2015	1,502	73.9
2014	1,595	78.9
2013	1,640	84.1

*per 100,000 Employed Persons

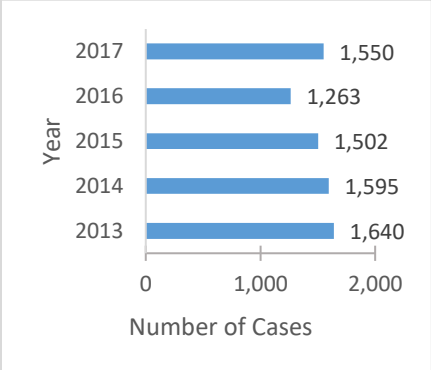

Figure 2.1 Annual Number of Work-Related Hospitalizations in Louisiana

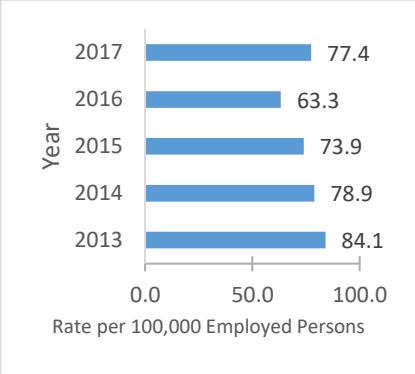

Figure 2.2 Annual Crude Rate of Work-Related Hospitalizations in Louisiana

SIGNIFICANCE

Individuals hospitalized with work-related injuries and illnesses have some of the most serious and costly work-related adverse health outcomes. Tracking of these significant adverse health effects is undertaken to document the burden of occupational injuries and illnesses. Tracking efforts are also useful for designing, targeting, and evaluating prevention efforts over time.

METHODS

The number of work-related hospitalizations were obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). Cases were Louisiana residents, aged 16 years or older who had workers' compensation listed as the primary payer. Crude rates of hospitalizations per 100,000 employed persons were calculated for each year from 2013-2017 using BLS CPS civilian employment estimates as the denominator.

LIMITATIONS

- Inpatient hospital discharge records are only available for non-federal, acute care hospitals.
- Individuals hospitalized for work-related injuries and illnesses represent less than 10% of all workers who receive workers' compensation.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Attribution of payer in hospital discharge may not be accurate.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- State residents may be hospitalized in another state and not reflected in LAHIDD data.
- All admissions are counted, including multiple admissions for a single individual.

Indicator 3: Fatal Work-Related Injuries

The work-related fatality rate in Louisiana has been consistently above the national rate each year. From 2013-2017, work-related fatality rates in Louisiana ranged from 1.4 to 1.9 times the national average rate each year. With the exception of 2016, the state was between 5th and 7th for the highest work-related fatality rate in the country. Between 2015 and 2016, the rate fell 15.5% to a 5-year low of 4.9 deaths per 100,000 FTE, and then rose over 22% the following year in 2017 to 6.0 per 100,000 FTE.

Table 3 Work-Related Fatalities in Louisiana and the United States

Year	Louisiana Count (Rate)*	United States Count (Rate)*
2017	117(6.0)	5,147 (3.5)
2016	95 (4.9)	5,190 (3.6)
2015	112 (5.8)	4,836 (3.4)
2014	120 (6.3)	4,821 (3.4)
2013	114 (6.3)	4,585 (3.3)

* per 100,000 FTE

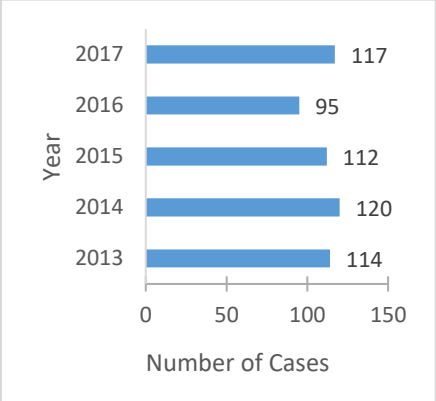

Figure 3.1 Annual Number of Work-Related Traumatic Fatalities

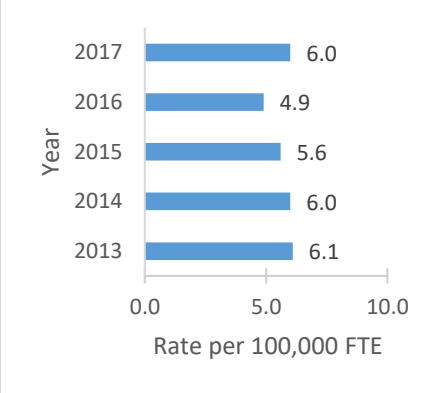

Figure 3.2 Annual Crude Fatality Rate in Louisiana

SIGNIFICANCE

Multiple factors and risks contribute to work-related fatalities, including workplace/process design, work organization, worker characteristics, economics, and other social factors. Surveillance of work-related fatalities can identify new hazards and case clusters, leading to the development of new interventions and development of new or revised regulations to protect workers.

METHODS

Cases were obtained from the BLS Census of Fatal Occupational Injuries (CFOI). The average annual number of FTEs aged 16 years or older, the denominator for rate calculations, was obtained using NIOSH's ELF query system, which is based on the CPS.

LIMITATIONS

- Fatalities of people younger than 16 years of age may be included in the numerator (CFOI data) but not in the denominator (ELF CPS estimates), since employment statistics are only available for those 16+ years of age.
- CFOI reports data on work-related fatalities by the state in which they occurred, which is not necessarily the state of death or the state of residence. CPS estimates are based on state of residence, thus rates may overestimate risk if fatal incidents involved victims who were out of state residents. Likewise, rates may be underestimated if fatal incidents occurred in other states.
- Deaths among military personnel and volunteers are included in the numerator but not the denominator.
- The BLS uses a different methodology to calculate fatal work-related rates from what is presented here; therefore, these rates may differ from rates published by BLS.

FOR MORE INFORMATION/ FURTHER READING

Tracking Work-Related Fatal Injuries in Louisiana, 2015-2016

Indicator 4: Work-Related Amputations with Days Away from Work Reported by Employers

From 2013 to 2014 the rate of work-related amputations in Louisiana doubled, and nearly doubled again the following year in 2015 to 5-year high of 15.0 amputations per 100,000 FTE. The work-related amputation rate reported by employers for 2016 decreased to 4.0 amputations per 100,000 FTE. The number of cases decreased slightly, but the rate remained the same for 2017.

Table 4 Work-Related Amputations with Days Away from Work

Year	Count (Rate*)
2017	50 (4.0)
2016	60 (4.0)
2015	210 (15.0)
2014	120 (8.0)
2013	50 (4.0)

* per 100,000 FTE

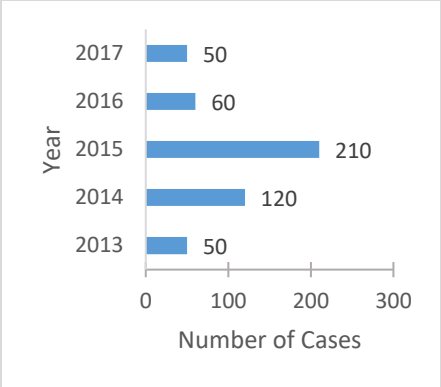

Figure 4.1 Estimated Annual Number of Amputations Involving Days Away from Work

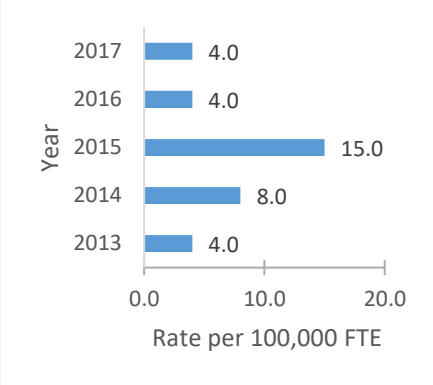

Figure 4.2 Estimated Annual Rate of Amputations Involving Days Away from Work

SIGNIFICANCE

Work-related amputations are serious yet preventable injuries, and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries can help target prevention programs and activities. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

METHODS

Data was obtained from the annual BLS SOII that provides annual estimates on the number and incidence rates of work-related amputations involving at least one day away from work.

LIMITATIONS

- Due to differences in industry concentration and sample size, caution should be taken when making direct state-to-state and state-to-national comparisons of these data.
- The SOII is based on a probability sample of employer establishments, not a census of all employers. As such, SOII estimates are subject to sampling error, meaning that the estimates may differ from the true population values they represent.
- SOII estimates are also subject to non-sampling error, such as mistakes in recording or coding data that are not measured.
- The SOII relies on employer reporting of injuries and illnesses and is therefore subject to both willful and unintentional underreporting of cases.
- Employers may place affected workers on restricted work activity, thereby avoiding the reporting of cases as lost workday cases.
- Employers may not be aware of work-related conditions for which employees obtained medical care from their personal health care providers, or for conditions that have long latencies and are diagnosed after an employee leaves their employment.
- The SOII only collects data for the incident year, and does not capture lost work-time that may carry over to a new calendar year.
- This indicator is limited to the private sector workforce only.

Indicator 5: State Workers' Compensation Claims for Amputations with Lost Work-Time

In Louisiana, there was a decrease in the number of workers' compensation claims for amputations with lost work-time from 2014-2016, with no change between 2016 and 2017. Overall, the claim rate remained relatively stable from 2014-2017, with a small (12.8%) drop in rate from 2015-2016. In Louisiana, the workers' compensation first report of injury did not begin electronic reporting until 2014; therefore, data prior to this year is not available.

Table 5 State Workers' Compensation Claims for Amputations with Lost Work-Time

Year	Count	Rate*
2017	64	3.4
2016	64	3.4
2015	74	3.9
2014	73	3.9
2013	N/A	N/A
*per 100,000 Workers Covered by State Workers' Compensation		

SIGNIFICANCE

Work-related amputations are preventable, and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries can help target prevention programs and activities. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

METHODS

The annual number of amputation cases with lost work-time workers' compensation claims filed was obtained from the Louisiana Workforce Commission. Population data for rate calculations was obtained from the National Academy of Social Insurance (NASI), which tracks the overall number of workers covered by workers' compensation across the United States.

LIMITATIONS

- Workers' compensation eligibility criteria varies among states, caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Workers' compensation data are not complete, as the majority of individuals with work-related illnesses and many with work-related injuries do not file for workers' compensation.
- Workers' compensation claims may be denied.
- Self-employed individuals, federal employees, railroad, and longshore or maritime workers may not be covered by state workers' compensation systems.

Indicator 6: Hospitalizations for Work-Related Burns

On average, about 36 workers were hospitalized annually for work-related burns from 2013-2017 in Louisiana. The average annual rate during this time period was 1.8 cases per 100,000 workers. The rate of hospitaliztions for work-related burns remained relatively unchanged during the 5-year period, but was highest in 2015 with 2.2 cases per 100,000 workers.

Table 6 Work-Related Burn Hospitalizations

Year	Count (Rate*)
2017	34 (1.7)
2016	35 (1.8)
2015	45 (2.2)
2014	30 (1.5)
2013	34 (1.7)

*per 100,000 Employed Persons

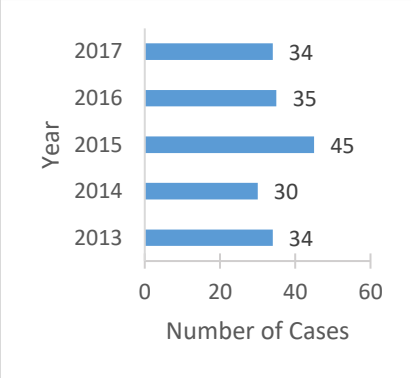

Figure 6.1 Annual Number of Work-Related Burn Hospitalizations

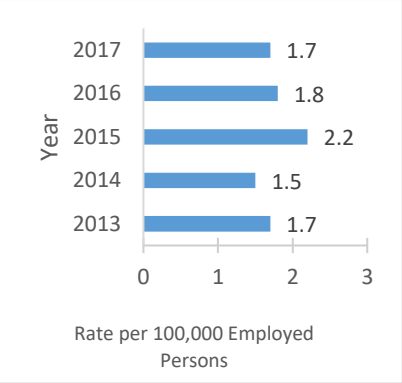

Figure 6.2 Annual Rate of Work-Related Burn Hospitalizations

SIGNIFICANCE

Work-related burns are some of the most devastating injuries affecting workers. Although hospitalized burns are unusual events, they are painful, disabling, and expensive to treat. Many result in significant disfigurement. In addition, burns are the most common cause of work-related hospitalization for young workers.

METHODS

The number of hospitalizations due to work-related burns was obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). Criteria for inclusion were Louisiana residents aged 16+ years with a principle ICD-9-CM diagnosis code (for 2013-Q3 2015) or principle ICD-10-CM diagnosis code (Q4 2015-2016) indicative of a burn injury and workers' compensation was the primary payer. The data does not include cases of unknown age, out-of-state residents, unknown residence, and out-of-state hospitalizations. Rates per 100,000 employed persons were calculated using BLS CPS data from the Geographic Profiles of Employment and Unemployment for the denominator.

LIMITATIONS

- Inpatient hospital discharge records are only available for non-federal, acute care hospitals.
- Individuals hospitalized for work-related injuries and illnesses represent less than 10% of all workers who receive workers' compensation.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Attribution of payer in hospital discharge may not be accurate.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- State residents may be hospitalized in another state and not reflected in LAHIDD data.
- All admissions are counted, including multiple admissions for a single individual.

Indicator 7: Work-Related Musculoskeletal Disorders (MSDs) with Days Away from Work Reported by Employers

There was a linear decline in the number and rate of all work-related musculoskeletal disorders (MSDs) with days away from work, with an overall 32% rate decrease from 2013-2017. The counts and rates of MSDs of the neck, shoulder, & upper extremities and of the back followed a pattern similar to that of all MSDs. From 2013-2017, MSDs of the neck, shoulder, & upper extremities experienced a 27.9% overall rate decrease, and MSDs of the back decreased 44.4%. Carpal tunnel syndrome cases and rates were also similar, but with a much lower number of cases reported each year, and no cases reported in 2015.

Table 7 Work-Related Musculoskeletal Disorders (MSDs) with Days Away from Work Reported by Employers

	All MSDs	MSDs of neck, shoulder & upper extremities	Carpal tunnel syndrome cases	MSDs of back
Year	**Count (Rate*)**	**Count (Rate*)**	**Count (Rate*)**	**Count (Rate*)**
2017	2,160 (157.0)	600 (44.0)	20 (2.0)	890 (65.0)
2016	2,210 (162.0)	600 (43.0)	30 (2.0)	920 (68.0)
2015	2,350 (167.0)	620 (45.0)	0 (---)	1,010 (71.0)
2014	2,640 (186.0)	780 (56.0)	20 (1.0)	1,280 (91.0)
2013	3,100 (231.0)	820 (61.0)	70 (5.0)	1,580 (117.0)

* per 100,000 FTE

SIGNIFICANCE

Work-related musculoskeletal disorders (MSD) are preventable and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking these injuries helps target prevention programs and activities. Information on reported cases can be used to identify contributory factors and develop improved or new prevention strategies or regulations to protect workers.

METHODS

The BLS Annual Survey of Occupational Injury and Illness (SOII) provided data for musculoskeletal disorders in Louisiana. The BLS definition of musculoskeletal disorders involving days away from work includes persons with one or more nature code in combination with an event code. Occupational Injury and Illness Codes include: musculoskeletal system and connective tissue diseases and disorders, carpal tunnel syndrome, tarsal tunnel syndrome, hernia, pinched nerve, herniated disk, meniscus tear, and Raynaud's syndrome as well as other symptoms such as numbness, swelling, and sprains. If these occurred from overexertion, repetitive motion, or via constant vibration, then it is counted as a musculoskeletal disorder.

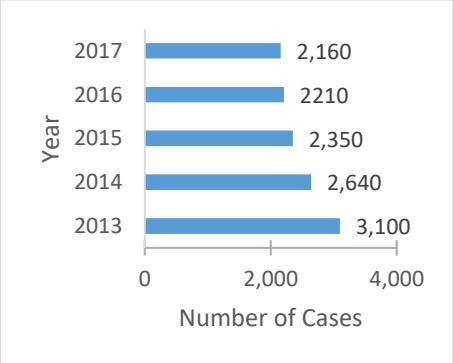

Figure 7.1 Estimated annual number of all musculoskeletal disorders

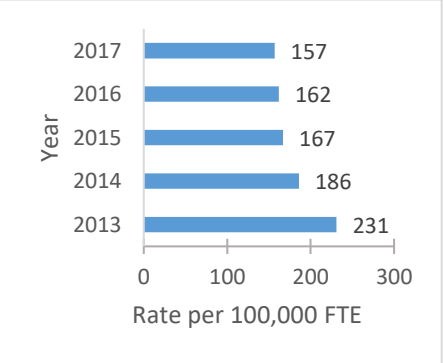

Figure 7.2 Estimated annual rate of all musculoskeletal disorders

LIMITATIONS

- Due to differences in industry concentration and sample size, caution should be taken when making direct state-to-state and state-to-national comparisons of these data.
- The SOII is based on a probability sample of employer establishments, not a census of all employers. As such, SOII

- estimates are subject to sampling error, meaning that the estimates may differ from the true population values they represent.
- SOII estimates are also subject to non-sampling error, such as mistakes in recording or coding data that are not measured.
- The SOII relies on employer reporting of injuries and illnesses and is therefore subject to both willful and unintentional underreporting of cases.
- Employers may place affected workers on restricted work activity, thereby avoiding the reporting of cases as lost workday cases.
- Employers may not be aware of work-related conditions for which employees obtained medical care from their personal health care providers, or for conditions that have long latencies and are diagnosed after an employee leaves their employment.
- The SOII only collects data for the incident year, and does not capture lost work-time that may carry over to a new calendar year.
- This indicator is limited to the private sector workforce only.

Indicator 8: State Workers' Compensation Claims for Carpal Tunnel Syndrome with Lost Work-Time

In Louisiana, from 2014-2016 there was a yearly decrease in the count and rate of workers' compensation claims related to carpal tunnel syndrome that resulted in time away from work; however, in 2017, the count more than doubled and the rate increased 131.3% from the previous year. Overall, from 2014-2017, the rate of workers' compensation claims for carpal tunnel syndrome increased 68.2%. It is interesting to note that the number and rate of carpal tunnel cases being reported by employers (see OHI # 7) decreased from 2016-2017, but there was a substantial increase in this indicator from 2016-2017. In Louisiana, the workers' compensation first report of injury did not begin electronic reporting until 2014; therefore, data prior to this year is not available.

Table 8 State Workers' Compensation Claims for Carpal Tunnel Syndrome with Lost Work-Time

Year	Count	Rate*
2017	70	3.7
2016	30	1.6
2015	39	2.1
2014	41	2.2
2013	N/A	N/A
*per 100,000 Worker's Covered by State Workers' Compensation		

SIGNIFICANCE

Carpal tunnel syndrome is preventable, and control of occupational hazards is the most effective means of prevention. Estimating the burden and tracking carpal tunnel syndrome can help target prevention programs and activities. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

METHODS

The annual number of carpal tunnel syndrome cases with lost work-time workers' compensation claims filed was obtained from the Louisiana Workforce Commission. Population data for rate calculations was obtained from the National Academy of Social Insurance (NASI) tracks the overall number of workers covered by workers' compensation across the United States.

LIMITATIONS

- Workers' compensation eligibility criteria varies among states, caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Workers' compensation data are not complete, as the majority of individuals with work-related illnesses and many with work-related injuries do not file for workers' compensation.
- Workers' compensation claims may be denied and thus not counted.
- Self-employed individuals such as farmers and independent contractors, federal employees, railroad, and longshore or maritime workers may not be covered by state workers' compensation systems.

Indicator 9: Hospitalizations from or with Pneumoconiosis

There was a 30.9% decrease in the rate of total pneumoconiosis cases from 2013-2014; however, since 2014 the number of cases and rate has been steadily increasing. There was a 33.9% increase from 2014-2017, but an overall 7.5% decrease in the total pneumoconiosis hospitalization rate from 2013-2017. Asbestosis cases made up the majority of all pneumoconiosis cases in Louisiana, and age-adjusted asbestosis hospitalization counts and rates followed a similar pattern. There was a 49.1% increase in asbestosis hospitalization rates from 2014-2017, but an overall 8.8% decrease in rates from 2013-2017. Silicosis rates in Louisiana remained relatively stable over the past five years, within the range of 5.0 to 5.8 hospitalizations per 1,000,000 residents. The Occupational Health and Injury Surveillance Program also collects data on hospitalizations from or with coal workers' pneumoconiosis and other/unspecified types of pneumoconioses, which are not reported here due to low case numbers.

Table 9 Hospitalizations from or with Pneumoconiosis

Year	Total Pneumoconiosis Count (Rate*)	Asbestosis Count (Rate*)	Silicosis Count (Rate*)
2017	345 (86.5)	305 (76.8)	21 (5.0)
2016	311 (80.0)	282 (72.9)	20 (5.1)
2015	261 (66.1)	230 (58.5)	21 (5.3)
2014	248 (64.6)	221 (58.0)	24 (5.7)
2013	353 (93.5)	316 (84.2)	23 (5.8)

*Age-adjusted rate per 1,000,000 residents

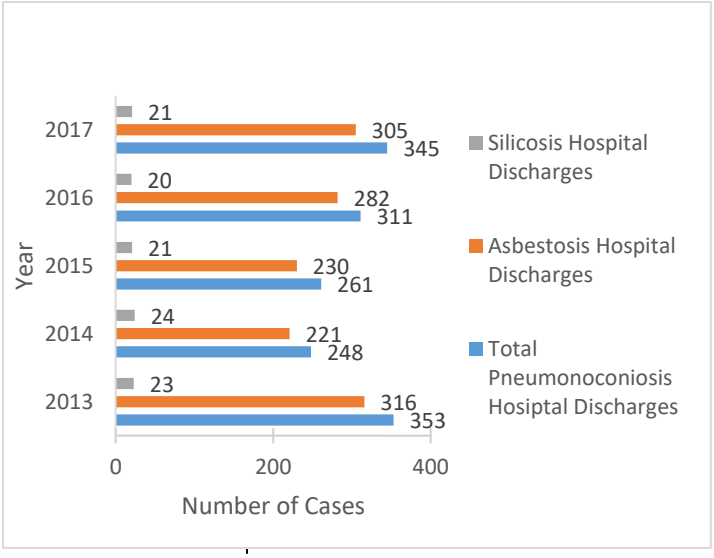

Figure 9.1 Annual number of cases of hospitalizations from or with pneumoconiosis

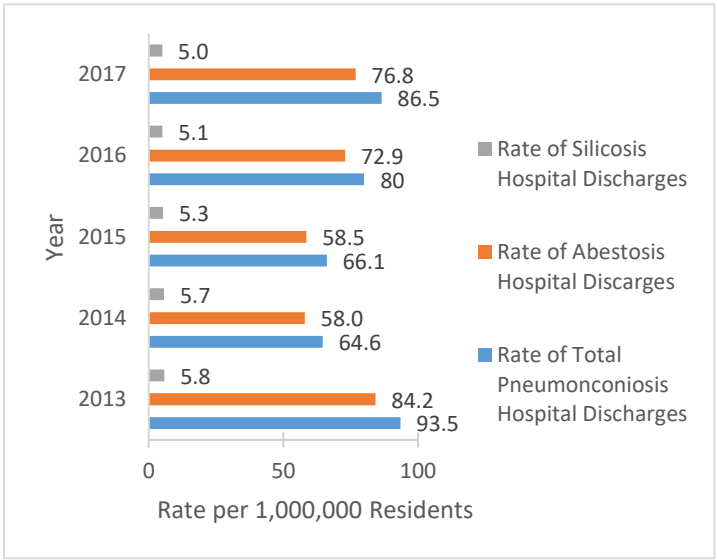

Figure 9.2 Annual, age adjusted, rates of hospitalizations from or with pneumoconiosis

SIGNIFICANCE

Pneumoconiosis is a term for lung diseases caused by the inhalation of mineral dusts. Nearly all pneumoconioses are attributable to occupational exposures, and millions of workers in the U.S. are at risk. Common types include asbestosis, coal workers' pneumoconiosis, and silicosis. Complications of various pneumoconioses and other conditions associated with exposure to the same dusts that cause pneumoconiosis include respiratory infections (including tuberculosis), chronic bronchitis, emphysema, lung cancer, pleuritis, progressive systematic sclerosis, renal disease, and respiratory failure. Pneumoconiosis usually develops after many years of continuous exposure; therefore, hospitalizations usually involve individuals at least 45 years of age.

Pneumoconiosis frequency varies geographically, being largely determined by local industrial activities and migration of affected individuals. **Control of occupational dust exposure is the single most effective means of preventing pneumoconiosis.** Tracking of pneumoconiosis is essential for measuring progress towards elimination of the disease, as well as for targeting prevention and disease management programs.

METHODS

The number of hospitalizations for total pneumoconiosis, asbestosis, and silicosis was obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). Hospital records were limited to Louisiana residents aged 15+ years. ICD-9-CM diagnostic codes were used for 2013-Q3 2015 LAHIDD records and ICD-10-CM diagnostic codes were for Q4 2015-2016 LAHIDD records. These data exclude patients whose age is unknown, out-of-state residents, unknown state of residence, and out-of-state hospitalizations. State population estimates for rate calculations were obtained from the U.S. Census Bureau, and the Year 2000 U.S. Standard population was used for age-adjustment of rates.

LIMITATIONS

- Because pneumoconioses are typically diseases of long latency, current incidence is not necessarily indicative of current exposure, and it may be many years before reductions in occupational exposures affect the number of hospitalizations.
- The number of diagnoses listed on discharge summaries may vary by regional practice patterns and by the persons completing the summaries.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to diagnose pneumoconiosis, and/or to list pneumoconiosis as a discharge diagnosis.
- Residents of one state may be hospitalized in another state and not be reflected in his/her state's inpatient hospitalization data.
- All admissions are counted, including multiple admissions for a single individual.
- Hospital discharge records are only available for non-federal, acute care hospitals. Veterans Affairs and institutionalized (e.g., prison) population records are not included in these data.

Indicator 10: Mortality from or with Pneumoconiosis

Asbestosis accounts for nearly all of the pneumoconiosis deaths that occurred in Louisiana. The number and rate of total pneumoconiosis and asbestosis cases remained about the same from 2013-2014; the rate then decreased 22.7% and 15.5%, respectively in 2015. In 2016, the rates increased by nearly 20% and 12.2%, and then dropped again in 2017 by 27.9% and 20%, respectively. While Louisiana's age-adjusted total pneumoconiosis mortality rate was similar to that of the U.S. for 2013-2016, the state's age-adjusted asbestosis mortality rate was between 16.7%-41% higher than that of the U.S. The Occupational Health and Injury Surveillance Program also collects data on mortality from/with coal workers' pneumoconiosis, silicosis, and other/unspecified types of pneumoconioses, which are not reported here due to low case numbers. U.S data for 2017 data was not available when this report was completed.

Table 10 Mortality from or with Pneumoconiosis

	Louisiana		United States	
Year	Total Pneumoconiosis Deaths (Rate*)	Asbestosis Deaths (Rate*)	Total Pneumoconiosis Deaths (Rate*)	Asbestosis Deaths (Rate*)
2017	17 (4.4)	17 (4.4)	N/A	N/A
2016	24 (6.1)	21 (5.5)	1,662 (5.6)	1,142 (3.9)
2015	20 (5.1)	19 (4.9)	1,735 (6.0)	1,188 (4.2)
2014	24 (6.6)	21 (5.8)	1,790 (6.4)	1,218 (4.3)
2013	24 (6.5)	22 (6.0)	1,859 (6.8)	1,229 (4.5)

*Age-adjusted rate per 1,000,000 residents

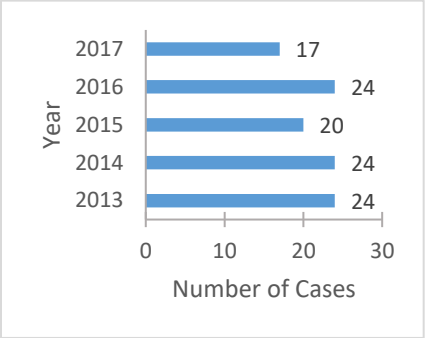

Figure 10.1 Annual number of total pneumoconiosis deaths in Louisiana

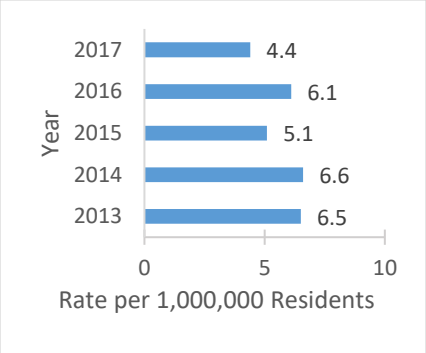

Figure 10.2 Annual, age-adjusted, total pneumoconiosis death rate

SIGNIFICANCE

Nearly all pneumoconioses are attributable to occupational exposures, and millions of workers in the U.S. are at risk. Pneumoconiosis is more commonly listed as a contributing cause of death than as the underlying cause of death; therefore, this indicator monitors all listed causes of death on the death certificate. Pneumoconiosis frequency varies geographically, being largely determined by local industrial activities and migration of affected individuals. **Control of occupational dust exposure is the single most effective means of preventing pneumoconiosis.**

METHODS

Pneumoconiosis mortality cases were obtained from death records, which are maintained by LDH's Office of Vital Records. Total pneumoconiosis and asbestosis mortality cases were selected based on the presence of an appropriate ICD-10 code as any cause of death. Additional inclusion criteria were that decedents were aged 15+ years and were Louisiana residents. Records were excluded if the decedent's age was unknown, they were an out-of-state resident, or their residence was undetermined. State population estimates for rate calculations were obtained from the U.S. Census Bureau, and the Year 2000 U.S. Standard population was used for age-adjustment of rates.

LIMITATIONS

- Because pneumoconioses are typically chronic diseases with a long latency, current incidence is not necessarily indicative of current exposures, and it may be several years before reduction in exposures affect mortality.
- Causes of death listed on the death certificate and coding of those causes may be inaccurate.
- The number of contributing causes of death listed on the death certificate may vary by person completing the death certificate and geographic region.
- Death certificates identify only a small percentage of the individuals who develop pneumoconiosis.
- The state of residence of the decedent may not have been the state of exposure.

Indicator 11: Acute Work-Related Pesticide-Associated Illness and Injury Reported to Poison Control Centers

On average, there where around 35 cases of work-related pesticide-associated illnesses reported in Louisiana from 2013-2017. The average annual rate during this time was 1.7 cases per 100,000 workers. The annual rate in Louisiana fluctuated from 1.4 to 2.1 cases per 100,000 workers. Louisiana's annual average rate was the same as that of the U.S. for 2013-2016 (1.7). U.S data for 2017 data was not available when this report was completed.

Table 11 Acute Work-Related Pesticide-Associated Illness and Injury Reported to Poison Control Centers

	Louisiana	United States
Year	**Count (Rate*)**	**Count (Rate*)**
2017	43 (2.1)	N/A
2016	33 (1.7)	2,490 (1.7)
2015	32 (1.6)	2,490 (1.7)
2014	39 (1.9)	2,484 (1.7)
2013	27 (1.4)	2,631 (1.8)

* per 100,000 Employed Persons

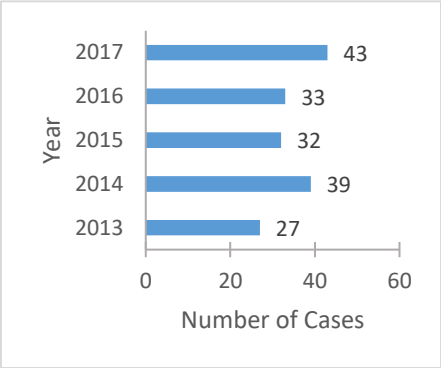

Figure 11.1 Annual number of reported work-related pesticide poisoning cases

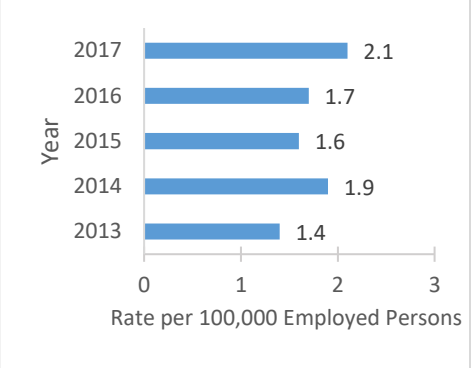

Figure 11.2 Annual incidence rate of reported work-related pesticide poisoning cases

SIGNIFICANCE

Pesticides are among the few chemicals that are specifically designed to kill and cause harm. In the U.S., about one billion pounds of pesticide, contained in more than 160,000 products, are used annually.[1] Workers who handle pesticides are at increased risk for exposure. The Environmental Protection Agency estimates 20,000 to 40,000 work-related pesticide poisonings each year.[2] Poison Control Centers (PCCs) are important sources of reports of acute poisonings and chemical exposures. These data can be useful to target prevention. The type of data collected is comparable across states due to the uniformity in case handling by PCC.

METHODS

The American Association of Poison Control Centers collects information on reported cases of work-related pesticide poisoning resulting in acute illness. Pesticide poisonings include exposures to disinfectants, fungicides, fumigants, herbicides, insecticides, repellents and rodenticides. The incidence of reported work-related pesticide poisonings per 100,000 employed persons age 16 years and older was calculated for Louisiana for the years 2013 to 2016 using the BLS Current Population Survey data for the denominator.

LIMITATIONS

- PCCs capture only a small proportion of acute occupational pesticide-related illness cases, an estimated 10%.
- PCCs do not systematically collect information on industry and occupation; however, cases associated with occupational exposures can be identified.
- Not all states have PCCs.
- State health agencies may have to enter into an agreement with their state-based PCC to obtain local data, or may obtain less timely PCC data from the Toxic Exposure Surveillance System, which is administered by the American Association of Poison Control Centers.

FOR MORE INFORMATION/ FURTHER READING:

Summary of Pesticide Surveillance Data: Louisiana, 2006-2014

Indicator 12: Incidence of Malignant Mesothelioma

Louisiana has a long history with off shore drilling and oil refineries, both of which have historically used a lot of asbestos to prevent and contain possible fires that might break out. Some other industries in which workers may have been exposed to asbestos include shipbuilding and repair (building material and fire prevention), cement plants (ingredient), power plants (insulation), and agriculture (harvesting machines and at mills). On average there where 67 new cases of malignant mesothelioma reported each year in Louisiana from 2013-2017. The average annual rate during this time was 16.3 cases per 100,000 residents. The rate ranged from 15.0 to 19.1 cases per 100,000 residents, and peaked in 2015. Malignant mesothelioma incidence data for the U.S. for 2016-2017 was not available at the time of publication, but from 2013-2015 Louisiana's incidence rate of mesothelioma was 1.4-1.7 times higher than that of the U.S.

Table 12 Incidence of Malignant Mesothelioma, Ages 15 and Older

	Louisiana	United States
Year	**Count (Rate*)**	**Count (Rate*)**
2017	62 (15.0)	N/A
2016	65 (15.2)	N/A
2015	78 (19.1)	3,098 (11.1)
2014	65 (16.6)	3,127 (11.6)
2013	65 (16.6)	3,114 (11.7)

*Age-adjusted rate per 1,000,000 residents

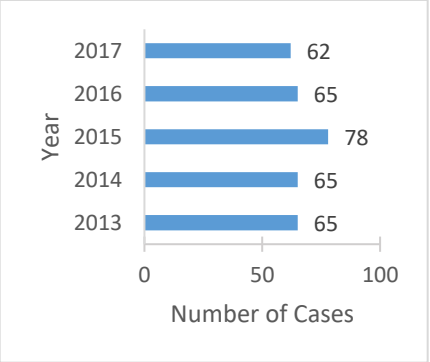

Figure 12.1 Annual number of incident mesothelioma cases

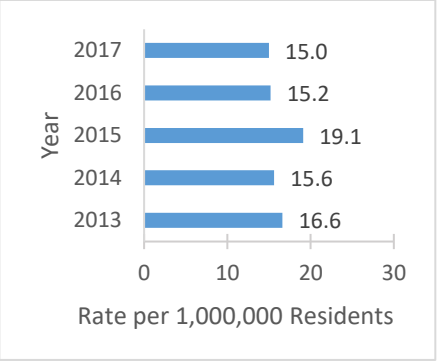

Figure 12.2 Annual, age-adjusted mesothelioma incidence rate

SIGNIFICANCE

Malignant mesothelioma, while relatively rare, is a fatal cancer that occurs in the thin membranes surrounding the chest or abdominal cavity. The only well-established risk factor for malignant mesothelioma is exposure to asbestos and related fibers. It has been estimated that as much as 90% of cases are caused by exposure to asbestos. Most asbestos exposures occur in the workplace. Mesothelioma is a disease of long latency, typically with 20-60 years between exposure and onset of disease.[3] Tracking of malignant mesothelioma should be undertaken to document the burden of occupational disease, to design, target, and evaluate the impact of prevention efforts over time, and to identify previously unrecognized settings in which workers may continue to be at risk for asbestos exposure. Tracking may also assist with designing, targeting, and evaluating the impact of prevention efforts over time.

METHODS

Incident mesothelioma case data for 2013-2017 was obtained from the Louisiana Tumor Registry (LTR), which is a population-based Surveillance, Epidemiology, and End Results (SEER) cancer registry operated and maintained by the Louisiana State University Health Sciences Center in New Orleans. By law, every health care provider is required to report newly diagnosed cancers to the Tumor Registry. Cases were limited to Louisiana residents aged 15+ years, and were excluded if the patients' age or state of residence was unknown, or if the patient resided out of state. State population estimates for rate calculations were obtained from the U.S. Census Bureau and the Year 2000 U.S. Standard population was used for age-adjustment of rates.

LIMITATIONS

- Not all cases of malignant mesothelioma are caused by occupational exposures.
- Because cancer is a disease of long latency, current incidence is not indicative of current exposures and it may be many years before reductions in occupational exposures affect incidence.
- State of residence of the decedent may not have been the state of exposure.
- Data from some existing statewide central cancer

registries do not yet meet standards for data completeness and quality; therefore, nationwide estimates may be incomplete.

- CSTE may use a different methodology for calculating state specific incidence rates than the LTR; therefore, rates published here may differ from those published by the LTR.

Indicator 13: Elevated Blood Lead Levels (BLL) among Adults

Louisiana law requires healthcare providers and laboratories to report the results of **all** blood lead tests, regardless of level, to the LDH. In Louisiana, cases and prevalence rates have decreased steadily from 2013-2017 in the ≥ 10 and ≥ 25 µg/dL BLLs (blood lead levels). From 2013-2016, prevalent cases and rates for the ≥ 40 µg/dL BLL remained steady and sharply declined in 2017. The majority of work-related elevated BLLs occur among those employed in the construction industry. Louisiana prevalence rates at the ≥ 10 and ≥ 25 µg/dL BLL concentration were relatively similar to U.S. rates from 2013-2015; however, beginning in 2016, Louisiana's prevalence rates were 1.4-1.5 and 1.6-1.8 times lower than the rates for the U.S. at the ≥ 10 and ≥ 25 µg/dL BLL concentration, respectively. Data on ≥ 40 µg/dL was not available at the U.S. level.

Table 13 Number and Prevalence Rate of Reported Adult Residents with Elevated BLL

	Louisiana			United States		
Year	≥ 10 µg/dL Count (Rate^)	≥ 25 µg/dL Count (Rate^)	≥ 40 µg/dL Count (Rate^)	≥ 10 µg/dL Count (Rate^)	≥ 25 µg/dL Count (Rate^)	≥ 40 µg/dL Count (Rate^)
2017	216 (10.8)	43 (2.1)	*	19,396 (15.8)	4,272 (3.3)	N/A
2016	239 (12.0)	44 (2.2)	15 (0.8)	20,133 (16.6)	5,128 (4.0)	N/A
2015	308 (15.2)	65 (3.2)	15 (0.7)	19,161 (16.2)	4,849 (3.9)	N/A
2014	328 (16.2)	84 (4.2)	17 (0.8)	20,527 (18.3)	5,667 (4.7)	N/A
2013	380 (19.5)	92 (4.7)	16 (0.8)	21,231 (18.3)	6,342 (5.1)	N/A

^per 100,000 Employed Persons; * data suppressed

SIGNIFICANCE

Lead adversely affects multiple organ systems and can cause permanent damage. Among adults, lead poisoning is a persistent, mainly occupational, health issue that continues to be an important public health problem. The most reliable test for exposure is the blood lead level (BLL). The average BLL for the general US population is below 1 µg/dL of venous whole blood. BLLs ≥ 5 µg/dL are considered elevated according to the case definition used by CSTE, NIOSH, and the CDC.

METHODS

The Occupational Health and Injury Surveillance Program participates in CDC's ABLES program. To this end, the Occupational Health Program maintains database of all blood lead laboratory test results for adult (aged 16+ years) Louisiana residents. Cases were retrieved from this database. Annual prevalence (existing case) and incidence (new case) rates were calculated using the BLS CPS estimates with numbers of employed persons aged 16 years and older serving as the denominator.

LIMITATIONS

- BLLs reflect the combination of acute external exposure to lead as well as the release of internal bone lead stores to the blood. For persons without a significant lead body burden, a BLL is a good indicator of recent (preceding 3-5 weeks) external lead exposure. For persons with a significant body burden, a single BLL may not be an accurate indicator of recent external exposure, as lead is also being released into the blood from bone stores.

The true burden of lead exposure is likely underestimated because:

- Louisiana law requires healthcare providers and laboratories to report the results of all blood lead tests, regardless of level, to LDH; however, even with a reporting requirement, data from laboratories are frequently incomplete.
- Not all employers offer BLL testing to employees, even if employees are exposed to lead.
- Some workers may not be tested using appropriate methods.
- Although most elevated BLLs are presumed to be occupationally-related, approximately 10-15% come from non-occupational exposures. It may not be possible to distinguish occupational exposures from non-occupational exposures.

FOR MORE INFORMATION/ FURTHER READING:

Prevent Lead Exposure in Indoor Shooting and Firing Ranges

Work-related Lead Exposures and U.S. 190 Old Mississippi River Bridge Renovations - Louisiana - 2013-2014

Tracking Exposures Through Louisiana's Adult Blood Lead Epidemiology Surveillance (ABLES), 2013-2017

Indicator 14: Workers Employed in Industries at High Risk for Occupational Morbidity

The number and percentage of Louisiana workers employed in industries at high-risk for occupational morbidity has remained relatively constant over the last five years (4.8%-4.9%). In 2017, nearly 60% of all workers employed in industries at high-risk for injury or illness worked in the Health Care and Social Assistance sector. Of these, 36% worked in nursing care, including skilled nursing, facilities. The Manufacturing sector contained the second highest number (16%); nearly half of these employees (7%) worked in the shipbuilding and repairing or boat building industries. Within the Transportation and Warehousing sector, half (6%) of the employees worked in the couriers and delivery services industry.

Table 14 Workers Employed in Industries at High Risk for Occupational Morbidity

Year	Count (%)
2017	80,280 (4.8)
2016	81,790 (4.8)
2015	83,448 (4.8)
2014	81,906 (4.8)
2013	83,472 (4.9)

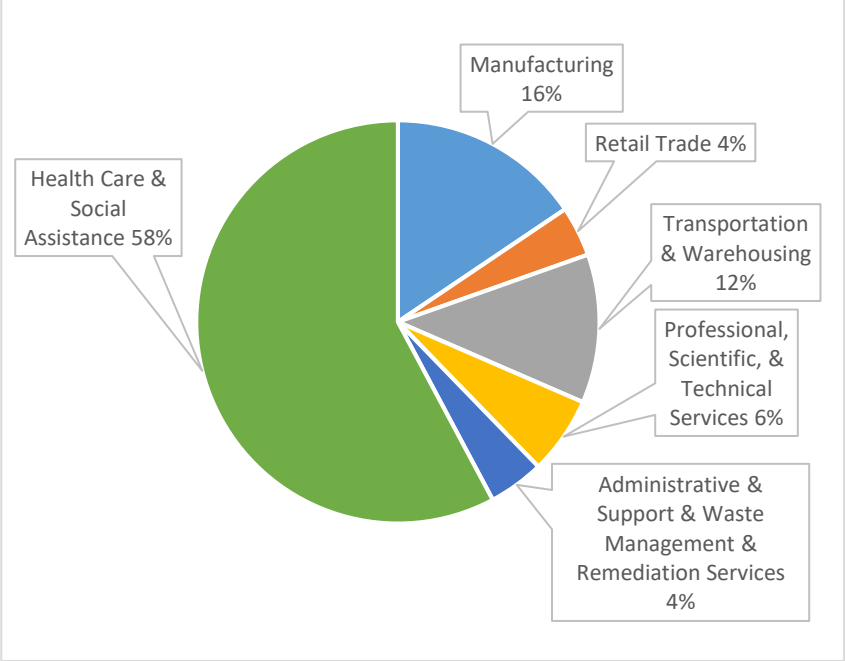

Figure 14.1 Most Common Industries at High Risk for Occupational Morbidity with Highest Employed Person Count 2013-2017

SIGNIFICANCE

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Concentrating on high-risk industries for non-fatal injuries and illnesses helps prioritize limited resources

METHODS

Data was obtained from the U.S. Census Bureau's County Business Patterns (CBP). High morbidity risk industries were identified based on BLS "total reportable cases incidence rates" for private sector workers. These industries had rates that were more than double the national rate. The percentage of workers in Louisiana employed in industries with high risk for occupational morbidity is described for the years 2013-2017.

LIMITATIONS

- It is possible that some new employers are not counted in the CBP mid-March survey.
- Differences in regional industrial practices could mean that industries considered "high-risk" according to national BLS estimates may be more or less risky in an individual state. The list of high-risk industries was constructed using an across-the-board threshold for "high-risk" based on national data; therefore, this indicator is not a direct estimate of how much risk workers in a particular state experience at work. It only provides an aggregate estimate of how many workers are employed in industries, which, at the national level, have been deemed high-risk.
- The list of high-risk industries is based on SOII data, and are therefore subject to the limitations inherent in SOII data (see limitations for OHI # 1).

Indicator 15: Workers Employed in Occupations at High Risk for Occupational Morbidity

On average 16.1% of employed people in Louisiana worked in occupations at high risk for occupational morbidity from 2013-2017, with 2017 having the highest percentage of all five years. In 2017, nearly 30% of those employed in occupations at high risk for occupational morbidity worked Transportation and Material Moving jobs. Of these, nearly 20% were people who drive for a living (sales, truck, taxi, and bus drivers, and chauffeurs). Construction laborers and carpenters made up 17% of the 21% of workers employed in Construction and Extraction occupations, and of the nearly 20% of those employed in Building and Grounds Cleaning and Maintenance occupations approximately 15% worked as janitors and building cleaners or maid and housekeeping cleaners.

Table 15 Workers Employed in Occupations at High Risk for Occupational Morbidity

Year	Count (%)
2017	264,894 (17.8)
2016	233,252 (15.7)
2015	243,186 (16.0)
2014	253,514 (16.5)
2013	212,692 (14.5)

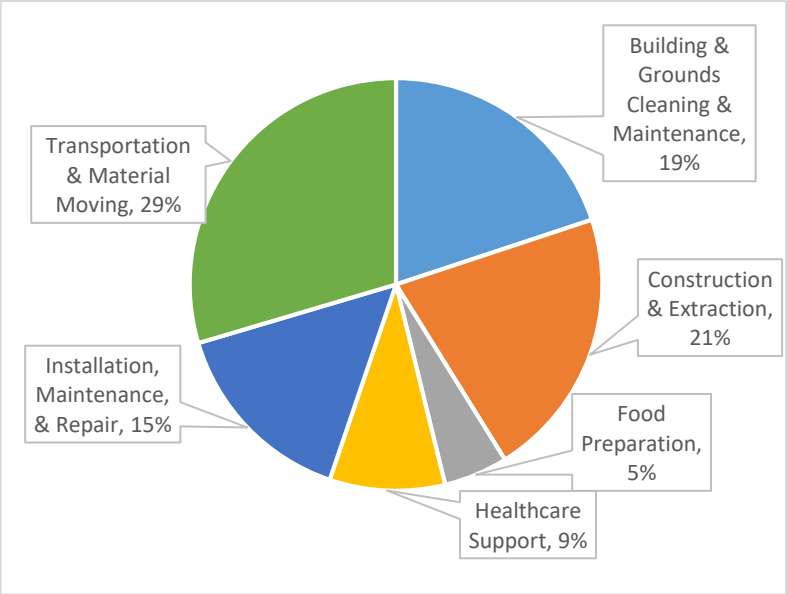

Figure 15.1 Occupations at High Risk for Occupational Morbidity with Highest Employed Person Count 2013-2017

SIGNIFICANCE

Work-related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. Concentrating on high-risk occupations for non-fatal injuries and illnesses helps prioritize limited resources.

METHODS

Data were obtained from the BLS CPS using the NIOSH ELF query system. High-risk morbidity occupations are based on the BLS "days away from work" cases and employment estimates for private sector workers. These occupations had rates that were more than double the rate for all workers nationwide. The percentage of workers employed in high-risk occupations is reported for 2013-2017 based on 2010 Bureau of Census Occupation Codes for employed persons age 16 years and older in Louisiana.

LIMITATIONS

- Differences in regional industrial practices could mean that occupations considered "high-risk" according to national BLS estimates may be more or less risky in individual states. The list of high-risk occupations was constructed using an across-the-board threshold for "high-risk" based on national data.
- It is possible that certain occupations are more or less risky in an individual state; therefore, this indicator is not a direct estimate of how much risk workers in a particular state experience at work. It only provides an aggregate estimate of how many workers are employed in occupations, which, at the national level, have been deemed high-risk.
- The list of high-risk industries is based on SOII data, and are therefore subject to the limitations inherent in SOII data (see limitations for OHI # 1)

Indicator 16: Workers Employed in Industries and Occupations at High Risk for Occupational Mortality

On average, from 2013-2017, 21.8% of workers in Louisiana were employed in industries at high-risk for occupational mortality. In 2017, nearly half (49%) of these workers were employed in the Construction industry. Approximately half of the 16% employed in the Transportation and Warehousing sector worked in the truck transportation industry, and 98% of those employed in the Mining sector worked in the oil and gas extraction industry. On average, 15.4% of Louisiana workers were employed in high mortality risk occupations from 2013-2017. In 2017, 39% worked in the Construction and Extraction occupational group; of these about 67% worked in construction jobs (construction laborers, painters, electricians, roofers, masons, etc.) and about 13% worked in extraction jobs (extraction workers; mining machine operators; derrick, rotary drill, and service unit operators). Of the 27% of workers employed in the Transportation and Material Moving occupational group, nearly 80% worked in jobs involved in the operation of motor vehicle (driver/sales workers, truck drivers, taxi drivers, chauffeurs, etc.).

Table 16.1 Workers Employed in Industries at High Risk for Mortality

Year	Count (%)
2017	368,952 (21.6)
2016	324,310 (19.3)
2015	363,522 (21.2)
2014	426,898 (24.5)
2013	376,056 (22.4)

Table 16.2 Workers Employed in Occupations at High Risk for Mortality

Year	Count (%)
2017	274,375 (16.1)
2016	239,605 (14.3)
2015	265,559 (15.5)
2014	272,996 (15.7)
2013	260,793 (15.5)

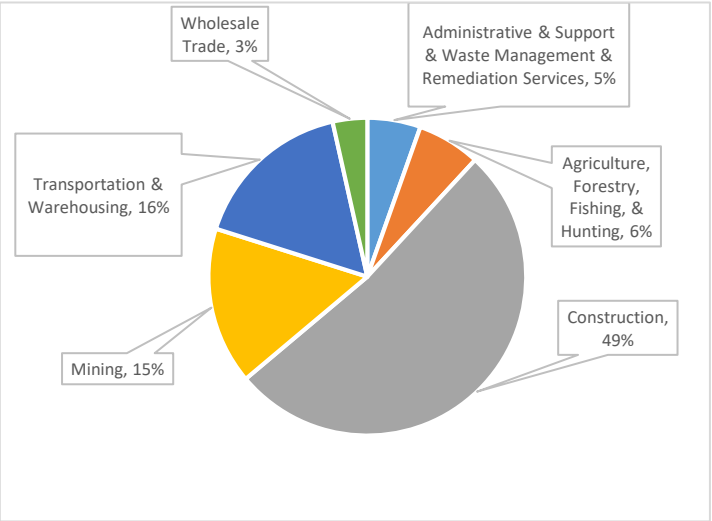

Figure 16.1 Top Five Industries at High Risk for Occupational Mortality, 2013-2017

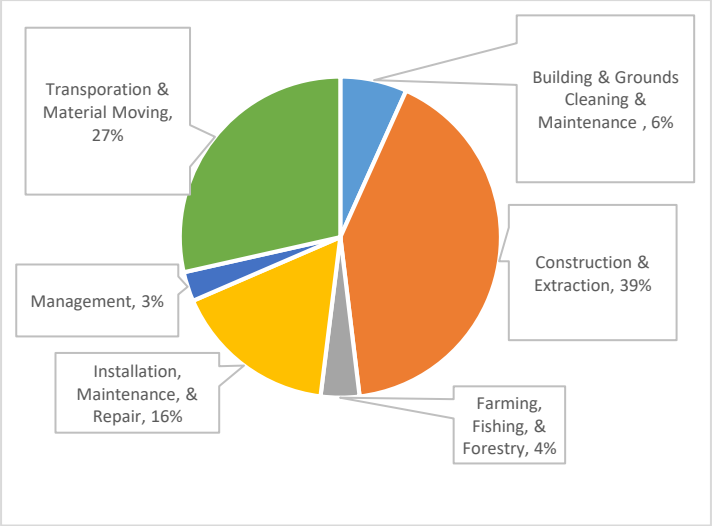

Figure 16.2 Top Five Occupations at High Risk for Occupational Mortality, 2013-2017

SIGNIFICANCE

Multiple factors and risks contribute to work-related fatalities, including workplace and process design, work organization, worker characteristics, economics, and other social factors. Surveillance of work-related fatalities can identify new hazards and case clusters, leading to the development of new interventions and development of new or revised regulations to protect workers. Concentrating on high-risk occupations and industries for fatalities helps prioritize limited resources.

METHODS

All data were obtained from the BLS CPS using the NIOSH ELF query system. High-risk mortality industries and occupations

are based on the BLS CFOI for private sector workers aged 16+ years. These industries and occupations had rates at least twice as high as the national rate. The percent of workers in Louisiana employed in industries and occupations with high risk for occupational mortality is reported for the years 2013-2017.

LIMITATIONS

- Differences in regional industrial practices may cause the ranking of high-risk industries and occupations within a specific state to differ from national data. The list of high-risk industries and occupations were constructed using across-the-board thresholds for "high-risk" based on national data. It is possible that certain industries and occupations on this list are more or less risky in an individual state; therefore, this indicator is not a direct estimate of how much risk the workers in a particular state experience at work. It only provides an aggregate estimate of how many workers are employed in industries and occupations, which, at the national level, have been deemed high-risk.
- The list of high-risk industries and occupations is based on SOII data, and are therefore subject to the limitations inherent in SOII data (see limitations for OHI # 1)

Indicator 17: Occupational Safety and Health Professionals

Occupational safety and health professionals share the common goal of identifying workplace hazards and preventing or reducing workers' risks to these hazardous conditions or processes. Due to the difficulty obtaining consistent, reliable data, the CSTE Occupational Health Subcommittee voted to discontinue this indicator following the 2015 data collection year in 2018. Indicator data is available for 2001-2013 on the Louisiana Health Data Portal.

SIGNIFICANCE

Work-related injuries and illnesses are preventable. It is important to determine if there are sufficient trained personnel to implement occupational health preventative services.

METHODS

NIOSH routinely collected and distributes the number of occupational safety and health professionals in each category for the current Occupational Health Indicator development year to state surveillance grantees. **Due to the difficulty obtaining consistent, reliable data, the CSTE Occupational Health Subcommittee voted to discontinue this indicator following the 2015 data collection year in 2018.**

LIMITATIONS

- Other important occupational health specialties such as fire prevention, health physicists, and ergonomists are not included.
- The numerator data include retired individuals and individuals who may devote the majority of their time to research and limited or no time to provision of actual preventive services.
- An individual may practice part-time or even full-time in the field of occupational health and not be board certified or a member of the organization representing occupational health professionals.
- The completeness and frequency of updating addresses varies by each organization.
- Members are often listed in a database by a preferred address, which may not be the address there they practice.
- Due to privacy concerns, individuals may opt out of being listed in membership rolls.

Indicator 18: OSHA Enforcement Activities

OSHA is federal regulatory agency that sets and enforces standards to protect workers' safety and health. OSHA's federal and state plan jurisdictions (Louisiana is a federal OSHA state) includes private sector employers and excludes the mining industry, the self-employed, the agricultural industry, and government workers, with some exceptions. The State OSHA Office in Baton Rouge conducts OSHA worksite inspections in Louisiana. From 2013-2017, the number of establishments OSHA inspected in Louisiana decreased by about 27%. From 2013-2016, this number also decreased in the U.S., but to a lesser extent (about 16%). In Louisiana, from 2013-2016, the number of employees that had their workplace inspected increased by about 24%, but dropped dramatically by approximately 72% in 2017. For the entire U.S., the number of employees whose work areas were inspected by OSHA remained relatively constant except for 2014 when there was a slight uptick.

Table 18 Number of OSHA-Covered Establishments that are Eligible for OSHA Inspection (excluding mines & farms)

	Establishments Inspected by OSHA*		Employees whose Work Areas were Inspected by OSHA**	
Year	Louisiana Count (%)	United States Count (%)	Louisiana Count (%)	United States Count (%)
2017	410 (0.3)	DNR	8,596 (0.5)	DNR
2016	470 (0.4)	74,350 (0.8)	30,605 (1.9)	3,409,034 (2.9)
2015	521 (0.4)	79,281 (0.9)	20,832 (1.3)	3,262,194 (2.8)
2014	644 (0.6)	83,701 (0.9)	17,797 (1.1)	4,235,194 (3.7)
2013	564 (0.5)	88,239 (1.0)	24,587 (1.3)	3,301,630 (3.0)

* Reports the number and percentage of establishments inspected out of all establishments under OSHA jurisdiction and eligible for inspection. **Reports the number and percentage of OSHA-covered employees eligible for inspection whose work areas were inspected by OSHA. DNR = Data Not Ready

SIGNIFICANCE

Under OSHA law, employers are responsible for providing a safe and healthful workplace for their workers. To this end, OSHA targets workplace inspections by identifying high-hazard industries and employers that have the highest injury and illness rates. Inspections can also be triggered by a fatality, a hospitalization of at least one worker, a work-related amputation, a work-related injury resulting in the loss of an eye, or a worker complaint or referral. The measures of frequency for this indicator may approximate the added health and safety benefits and protections felt by workers because of their worksites being inspected.

METHODS

Enforcement activities conducted on establishments under OSHA jurisdiction (excluding mines and farms) are reported for Louisiana for 2013-2017. Data sources included OSHA annual reports on inspections and the number of workers covered by these inspections. The BLS' Quarterly Census of Employment and Wages data (ES-202/QCEW) was used to estimate the number of workers employed and establishments in the public and private sectors.

LIMITATIONS

- This indicator measures only enforcement activity, not other measures of OSHA activity such as education and compliance assistance.
- Because OSHA may conduct multiple inspections of the same establishment during the calendar year, the percentage of establishments inspected may be slightly overestimated. In addition, if OSHA conducts multiple inspections of the same worksite during the year, the number of workers covered by OSHA inspections may be over-counted.
- In federal OSHA states and some OSHA stat plan states, OSHA does not inspect farms with 10 or fewer employees.
- Agricultural establishments are excluded from the denominator; therefore, the percentage of establishments and employees covered may be overestimated.

- Employers participating in an OSHA Voluntary Protection Program (VPP) or the Safety and Health Achievement and Recognition Program (SHARP) are exempted from routine inspections. Excluding workers from these programs will reduce the numerator, resulting in an underestimate of the protective function.
- In QCEW data, individuals holding more than one job are counted multiple times.

Indicator 19: Workers' Compensation Awards

Workers' compensation, introduced in the U.S. in 1911, is a state-based social insurance program that guarantees financial compensation for workers who become injured or ill on job and limits' employers' liability.[4] The amount of benefits paid is directly related to the financial costs of work-related injuries and illnesses, yet it does not reflect the true burden. The average annual amount of workers' compensation claims paid in Louisiana from 2013-2017 was $805 million per year. On average, about $428 of workers' compensation benefits were paid per covered worker during this time. From 2013-2015, the amount of workers' compensation claims paid in Louisiana and the amount of benefits paid per covered worker decreased by about 13% and 15%, respectively, but increased by 6% and 7% from 2015-2017.

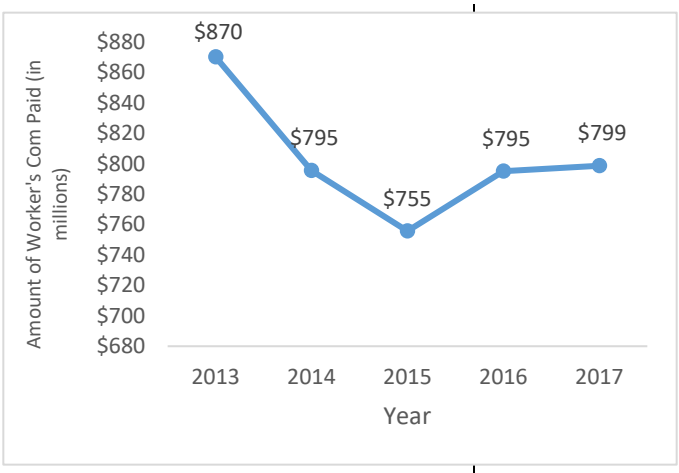

Figure 19.1 Total amount of worker's compensation benefits paid

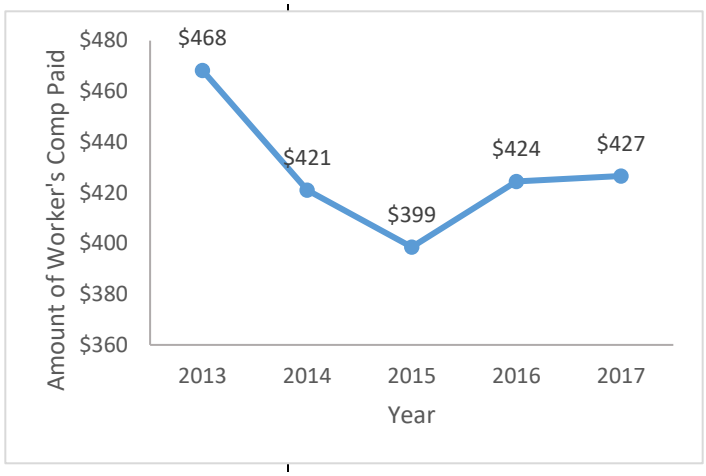

Figure 19.2 Average amount of workers' compensation benefits paid per covered worker

SIGNIFICANCE

Workers' compensation awards are reviewed to establish whether the reported medical condition is work-related. Accepted awards represent known work-related injuries and illnesses, and often more severe cases. The total and average amounts of benefits paid estimate the burden of these events, which can help justify prevention programs and activities.

METHODS

The National Academy of Social Insurance (NASI) collects and reports estimated annual benefits, coverage and costs associated with workers' compensation programs. The total amount of workers' compensation benefits paid and the average benefit paid per covered worker in Louisiana are reported for 2013-2017.

LIMITATIONS

- This is a gross indicator of the burden of occupational injury and illness. It does not include human, noneconomic costs nor all the economic costs associated with occupational injuries and illnesses.
- These data are appropriate for evaluating trends within a state rather comparisons between states because of differences in wages and medical costs, the compensation determination, industry types and risks, and policies on permanent disability payments. Even within a state, changes in policies, wages, and medical care expenses must be considered.
- Workers' compensation data are not complete, as many individuals with work-related illnesses do not file for workers' compensation.
- Workers' compensation claims may be denied.
- The number of days away from work required before a case is recorded in the workers' compensation system varies by state.
- Self-employed individuals, corporate executives, and domestic and agricultural workers may be exempt from coverage. Federal employees, railroad, and longshore or maritime workers are not covered by state workers' compensation systems.
- Compensation award payments are frequently made over time, thus annual awards may not reflect the full cost of, injuries and illnesses for a given year.

Indicator 20: Work-Related Low Back Disorder Hospitalizations

From 2013-2014 there was an annual average of about 183 cases of work-related hospitalizations **surgical** for lower back disorders among workers aged 16 and up, and the rate of hospitalizations was 9.2 cases per 100,000 employed persons. From 2013-2014 the annual number of work-related low back disorder hospitalizations for persons age 16 years or older was on average about 227 cases. The average rate for these incidents was 11.4 cases per 100,000 employed persons. ICD-10—CM codes for this indicator are not yet finalized; therefore, data for Q4 2015-2017 are not reported here. When CSTE and NIOSH make the ICD-10-CM codes available, this report will be updated.

Table 19 Number and Rate of Work-Related **Surgical** Low Back Disorder Hospitalizations for Persons Age 16 Years or Older

Year	Count	Rate*
2017	DNR	DNR
2016	DNR	DNR
2015	123**	DNR
2014	184	9.1
2013	181	9.3
*per 100,000 Employed Persons; **Quarters 1-3; DNR = Data Not Ready		

Table 20 Number and Rate of Work-Related Low Back Disorder Hospitalizations for Persons Age 16 Years or Older

Year	Count	Rate*
2017	DNR	DNR
2016	DNR	DNR
2015	141**	DNR
2014	222	11.0
2013	232	11.9
*per 100,000 Employed Persons; **Quarter 1-3; DNR = Data Not Ready		

SIGNIFICANCE

Each year 15-20% of Americans report back pain, resulting in over 100 million lost workdays and more than 10 million physician visits. The National Health Interview Survey data estimates that two-thirds of all low back pain cases are attributable to occupational activities. Hospitalizations for work-related back disorders have serious and costly effects including high direct medical costs, significant functional impairment and disability, high absenteeism, reduced work performance, and lost productivity. Well-recognized prevention efforts can be implemented for high risk job activities and reduce the burden of work-related low back disorders.

METHODS

All lower back disorder hospitalizations and lower back disorder hospitalizations that required surgery were obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). All cases were Louisiana residents aged 16+ years with a primary payer code indicating workers' compensation. Lower back disorder hospitalizations were identified with a relevant diagnostic code (ICD-9-CM diagnostic code categories: herniated disc, probable degenerative changes, spinal stenosis, possible instability, and miscellaneous). Surgical low back disorder hospitalizations were identified with the same ICD-9-CM diagnostic codes in combination with a relevant surgical procedure code (procedural code categories: laminectomy, discectomy, fusion, other). Excluded data included patient age unknown, out-of-state residents, unknown state of residence and out-of- state hospitalizations. **Effective October 1, 2015 (Q4 2015) healthcare organizations and providers were required to start using ICD-10-CM coding system. At this time, the CSTE Occupational Health Subcommittee is still working to finalize ICD-10-CM**

codes for this indicator; therefore, only data through Q3 of 2015 is presented in this report. This report will be updated when ICD-10-CM codes for this indicator become available.

LIMITATIONS

- Inpatient hospital discharge records are only available for non-federal, acute care hospitals.
- Individuals hospitalized for work-related injuries and illnesses represent less than 10% of all workers who receive workers' compensation.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Attribution of payer in hospital discharge may not be accurate.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- State residents may be hospitalized in another state and not reflected in LAHIDD data.
- All admissions are counted, including multiple admissions for a single individual.

Indicator 21: Asthma among Adults Caused or Made Worse by Work

The data source for this indicator is the Behavioral Risk Factor Surveillance System Asthma Callback Survey. Louisiana ended participation in the Asthma Callback Survey in 2014. Indicator data is available for 2009-2014 on the Louisiana Health Data Portal.

SIGNIFICANCE

Asthma is characterized by chronic inflammation of the lungs, wheezing, shortness of breath, chest tightness, and persistent cough. More than 18 adults in the U.S., and one in ten adults in Louisiana has asthma.[5, 6] Work-related asthma is diagnosed when asthma symptoms are aggravated or caused by the work environment. From 36-58% of adult asthma cases in the U.S. may be work-related.[7] Work-related asthma is preventable but often goes undiagnosed by physicians. If detected early and further exposures are reduces, work–related asthma may be reversible.[8] Research has shown that work-related asthma can have adverse effects on the worker, including increased morbidity, adverse socioeconomic impacts, and difficulty getting and sustaining work. Estimating the burden of asthma caused or made worse by work can help target prevention programs and activities.

METHODS

Data on asthma was collected from the Behavioral Risk Factor Surveillance System (BRFSS) Asthma Call-back Survey (ACBS). The ACBS gathers data that are more detailed from BRFSS respondents who originally indicated that they had ever been diagnosed with asthma, including asking participants whether their asthma was caused or made worse by exposures at work for current asthma status. The ACBS results reflect the number and percentage of adults who responded that their current asthma status was caused or made worse by exposures at work.

LIMITATIONS

- Louisiana's ACBS data was collected for landline use only from 2011-2014.
- The data represent a population-based estimate of asthma caused or made worse by work and are subject to measurement, nonresponse, and sampling errors.
- The indicator does not distinguish between new-onset and work-aggravated asthma.
- The ACBS began new weighting methods in 2011 and the wording and order of questions changed in 2013l therefore, any trend analysis should be restricted to 2013 forward.
- States using landline only vs. landline and cellphone methodology do not have comparable estimates.
- Not all states participate in the ACBS, and the number of states that participate varies by year.
- Because it is a telephone health survey, individuals must have a telephone to participate.
- The ACBS is only conducted in select languages that can vary by state; therefore, it does not include individuals who speak all languages.
- The data is subject to the bias of self-reported data.

Indicator 22: Work-Related Severe Traumatic Injury Hospitalizations

From 2013-2015 there was an annual average of 203 cases of work-related severe traumatic injury hospitalizations among workers aged 16 and up. The average rate for these incidents from 2013-2014 was 11.4 cases per 100,000 employed persons. ICD-10—CM codes for this indicator are not yet finalized; therefore, data for Q4 2015-2017 are not reported here. When CSTE and NIOSH make the ICD-10-CM codes available, this report will be updated.

Table 21 Work-Related Severe Traumatic Injury Hospitalizations

Year	Count	Rate*
2017	DNR	DNR
2016	DNR	DNR
2015	139**	DNR
2014	269	13.3
2013	204	10.5

*per 100,000 Employed Persons; **Quarter 1-3; DNR = Data Not Ready

SIGNIFICANCE

Changes in hospitalization practices and workers' compensation coverage/reporting may increasingly reduce capture of minor injuries but have little effect on severe injuries. Use of a severity threshold can decrease the impact of changing utilization and service delivery patterns on observed injury trends.[9] When hospitalization data are used to calculate occupational injury trends in the absence of severity restriction, observed trends are biased downward.[10] Accurate characterization of injury trends is critical to understanding how we are doing as a nation with regard to occupational injury prevention.

METHODS

Severe work-related hospitalization records were obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). Cases are Louisiana residents, aged 16+ years, workers' compensation as primary payer, and the primary diagnosis of a severe traumatic injury and an estimated Abbreviated Injury Scale (AIS) severity score of 3 or above or that have high probability of hospital admission. The list excludes late effects of injury, superficial injuries, foreign bodies, burns, and traumatic complications. BLS CPS data was used to estimate the worker population for rate calculations. **Effective October 1, 2015 (Q4 2015) healthcare organizations and providers were required to start using ICD-10-CM coding system. At this time, the CSTE Occupational Health Subcommittee is still working to finalize ICD-10-CM codes for this indicator; therefore, only data through Q3 of 2015 is presented in this report.**

LIMITATIONS

- Inpatient hospital discharge records are only available for non-federal, acute care hospitals.
- Individuals hospitalized for work-related injuries and illnesses represent less than 10% of all workers who receive workers' compensation.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Attribution of payer in hospital discharge may not be accurate.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- State residents may be hospitalized in another state and not reflected in LAHIDD data.
- All admissions are counted, including multiple admissions for a single individual.
- Severe traumatic injury hospitalizations are based only on first-listed ICD-9-CM diagnoses that have been estimated to have an AIS severity of 3 or above. As a result, some severe traumatic injuries will not be counted.

FOR MORE INFORMATION/ FURTHER READING:

Traumatic Injury Hospitalizations among Louisiana Workers, 2006-2014: Results of a Severity Threshold

Indicator 23: Influenza Vaccination Coverage among Hospital Care Personnel

Each year influenza vaccination coverage among hospital care personnel has increased, with an overall 21% change from 2014-2017. Data from before 2013 is not available.

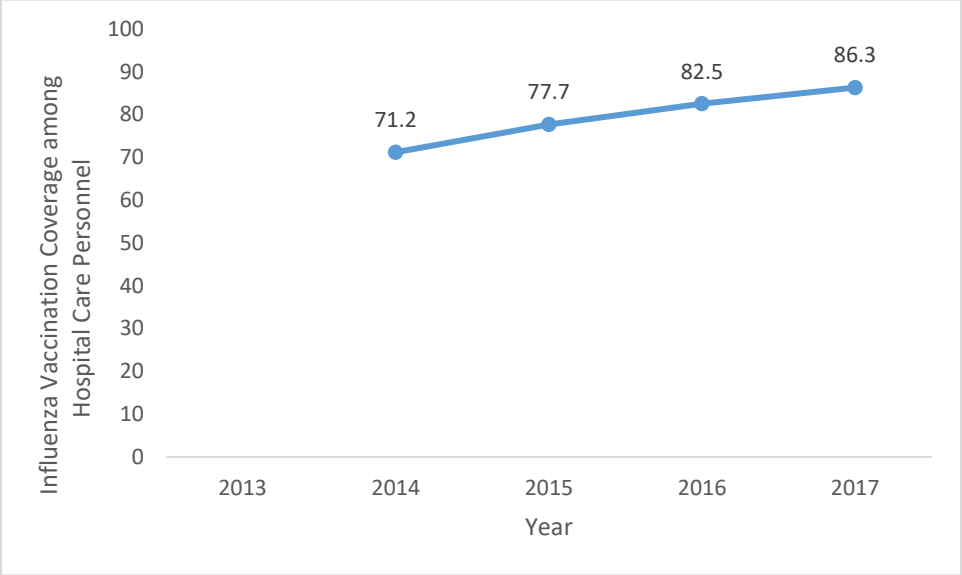

Figure 23 Influenza Vaccination Coverage Percentage among Hospital Care Personnel

SIGNIFICANCE

Influenza, especially among vulnerable populations, is a significant cause of morbidity and mortality. Influenza virus infections caused, on average, 23,607 deaths directly related to influenza complications from 1976 to 2007; approximately 90% of the deaths were among persons aged 65 years and older. Healthcare personnel may have an important role in influenza transmission, since they are at high risk of getting influenza through contact with patients and potentially spreading the virus to patients when they go to work while ill.

METHODS

Data was obtained from the Healthcare Safety Network (NHSN) web page.

LIMITATIONS

- Calculation of overall mean influenza vaccination coverage for all facilities will not provide specific information on significant predictors for vaccination coverage for each group of HCP.
- Results of pilot testing of reporting of influenza vaccination coverage among HCP in acute care facilities has demonstrated that acute care hospitals were more likely than other types of facilities to be unable to report denominator data for credentialed non-employees and other non-employees, as were larger healthcare institutions (as measured by number of employees). Measure specifications were modified by the CDC to include a more limited number of non-employee healthcare personnel

Indicator 24: Occupational Heat-Related Emergency Department (ED) Visits

From 2013-2017, on average, there were 201 occupational heat-related emergency department visits annually. The average annual rate was 15.7 cases per 100,000 employed persons. The rate increased approximately 42% from 2013-2015 then decreased by about 44% from 2015-2017. Beginning Q4 2015 healthcare organizations and providers were required to start using ICD-10-CM coding system. These changes required a change in the case definition for this indicator, and may be part of the reason there was a decline in case counts and rates for 2016-2017.

Table 24 Occupational Heat-Related Emergency Department (ED) Visits, Louisiana 2013-2017

Year	Count	Rate*
2017	185	9.2
2016	250	12.5
2015	332	16.3
2014	257	12.7
2013	233	11.5

*Per 100,000 Employed Persons

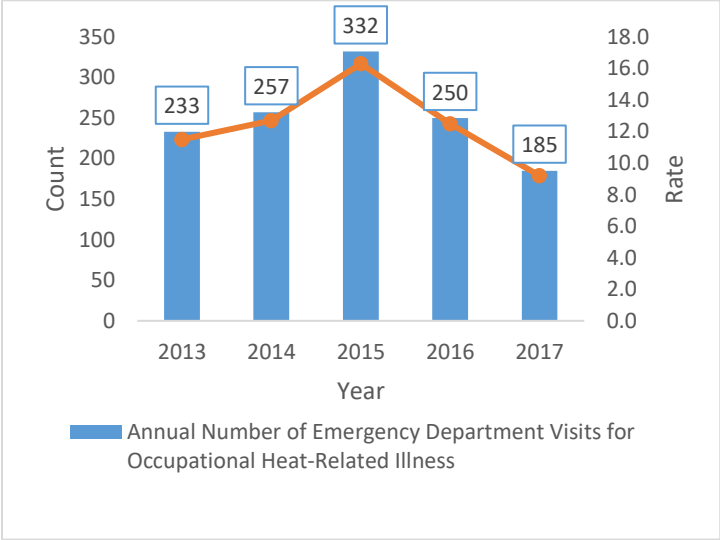

Figure 24.1 Occupational Heat-Related Emergency Department (ED) Visits

SIGNIFICANCE

Exposure to environmental heat is a clear recognized hazard for many occupations where individuals are not able to maintain thermal equilibrium due to their work environment (e.g., hot and humid), required clothing type, and usage of protective equipment. Minimal epidemiological information about occupational heat-related morbidity is available. Tracking occupational heat-related illness using ED data establishes a baseline to understand the magnitude of the disease burden in the population and support implementation and evaluation of prevention measures.

METHODS

Data was obtained from the State ED records database. Cases were defined as work-related (ED) visit records for Louisiana residents aged 16+ years containing an ICD-9-CM/ICD-10-CM diagnostic code or external cause of injury (e-code) indicating heat-related illness. A record was defined as work-related if workers' compensation was the primary payer or it contained a work-related e-code. ICD-9-CM codes were used for finding cases in 2013-Q3 2015 ED records, and ICD-10-CM codes were used for finding Q4 2015-2016 ED records. Annual rates per 100,000 workers were calculated using BLS CPS population estimates as the denominator.

LIMITATIONS

This indicator likely underestimates the burden of work-related heat illness.

- Residents of outside states, or cases with unknown residents are not counted, even if their heat illness occurred while working in the state where care was sought.
- Patients of unknown age are not counted.
- The attribution of payer in ED discharge records may not be accurate.
- The number of diagnostic fields in ED records vary by state.
- Utilization of EDs varies geographically.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data
- This indicator uses ICD-9-CM/ICD-10-CM "e codes" as a supplement to workers' compensation, to identify additional work-related cases. However, the effectiveness of "e codes" for identifying work-relatedness is not well established and will vary by code usage within each medical facility.
- All visits are counted, including multiple visits for a single individual.

FOR MORE INFORMATION/ FURTHER READING:

Extreme Heat and Heat-related Illness. Environmental and Occupational Edition. Louisiana Morbidity Report. November 2019.

Indicator 25: Hospitalizations for or with Occupational Eye Injuries

This is a new indicator as of 2016. The number of cases of occupational eye injuries requiring hospitalizations has not changed much from the previous year.

Table 25 Hospitalizations for or With Work-Related Eye Injuries

Year	Count (Rate*)
2017	18 (0.9)
2016	21 (1.1)

* per 100,000 employed persons

SIGNIFICANCE

Occupational eye injuries (OEIs) are commonly treated in hospital emergency departments. The more severe cases are complicated, expensive to treat, and have poor prognoses.[11] Although it is widely recognized that protective eyewear can reduce the risk of OEI, identification of other potential risk factors is integral in the prevention of OEIs.[12]

METHODS

Hospitalization records were obtained from the Louisiana Hospital Inpatient Discharge Database (LAHIDD). Cases were defined as inpatient hospitalizations of Louisiana residents aged 16+ years with an ICD-10-CM diagnosis or procedure code consistent with OEI. Workers' compensation as the primary payer was used to determine work-relatedness.

LIMITATIONS

This indicator likely underestimates the burden of work-related eye injuries.

- Although the indicator likely undercounts work-related eye injuries, some of the cases it captures may be hospitalizations for head injuries (affecting the eyes) that may not have been preventable by standard precautions against eye injuries.
- Inpatient hospital discharge records are only available for non-federal, acute care hospitals.
- Individuals hospitalized for work-related injuries and illnesses represent less than 10% of all workers who receive workers' compensation.
- The majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation.
- Self-employed individuals, federal employees, and railroad or longshore and maritime workers are not covered by workers' compensation systems.
- Attribution of payer in hospital discharge may not be accurate.
- Due to the differences in states' workers' compensation programs caution should be taken when making state-to-state and state-to-national comparisons of these data.
- Practice patterns and payment mechanisms may affect decisions by health care providers to hospitalize patients, to correctly diagnose work-related conditions, and/or to list the condition as a discharge diagnosis.
- State residents may be hospitalized in another state and not reflected in LAHIDD data.
- All admissions are counted, including multiple admissions for a single individual.

Appendix

Source	Web address
BLS Geographic Profile of Employment and Unemployment	http://www.bls.gov/opub/gp/laugp.htm
NIOSH Employed Labor Force	https://wwwn.cdc.gov/wisards/cps/
BLS Survey of Occupational Injuries and Illnesses	https://www.bls.gov/iif/oshstate.htm#LA
BLS Census of Fatal Occupational Injuries	https://www.bls.gov/iif/oshcfoi1.htm
BLS Current Population Survey	https://www.bls.gov/cps/
National Academy of Social Insurance	https://www.nasi.org/
Census American Community Survey	https://www.census.gov/programs-surveys/acs
Year 2000 U.S. Standard Population	https://seer.cancer.gov/stdpopulations/
Poison Control Center Data	Obtained via NIOSH
Louisiana ABLES Program	https://ldh.la.gov/index.cfm/page/559
U.S. Census Bureau County Business Patterns	https://www.census.gov/programs-surveys/cbp.html
OSHA Reports of Annual Inspections	Obtained via NIOSH
BLS Data on Covered Employers and Wages	https://www.census.gov/programs-surveys/cbp.html
State-specific aggregate National Healthcare Safety Network data published by CDC	https://www.cdc.gov/nhsn/datastat/index.html
Louisiana Hospital Inpatient Discharge Database	https://ldh.la.gov/index.cfm/page/2192
Louisiana Tumor Registry	https://sph.lsuhsc.edu/louisiana-tumor-registry/
Louisiana Department of Health Services, Emergency Department Visit Database	N/A
Louisiana Workers' Compensation Database	N/A
Louisiana Death Certificate Records	N/A

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