

**Louisiana Office of Public Health's  
Section of Environmental Epidemiology & Toxicology's  
Occupational Health Surveillance Program:**

## **Report on Louisiana's Occupational Health Indicators**

### **Introduction:**

Through a CDC/NIOSH cooperative agreement, the OPH/Section of Environmental Epidemiology and Toxicology is developing its capacity to conduct **surveillance of injuries, illnesses, and hazards among Louisiana workers**. Surveillance data are needed to determine the magnitude and trend of work-related injuries and illnesses, identify workers at greatest risk, and establish prevention strategies. To reach these objectives, a set of occupational health indicators was developed by a State-Federal Workgroup composed of representatives from state occupational health programs, the Council of State and Territorial Epidemiologists (CSTE), and the National Institute of Occupational Safety and Health (NIOSH). The indicators, along with a detailed companion document on how to access data for each indicator, are intended as a tool for state health departments to use to generate essential information concerning their state's occupational health status and to build occupational health capacity within the state. The standard set of indicators allows states to uniformly define, collect, and report occupational illness, injury, and risk data.

An **occupational health indicator** is a specific measure of a work-related disease or injury, or a factor associated with occupational health, such as workplace exposures, hazards, or interventions, in a specified population. Indicators allow a state to compare its health or risk status to that of other states, to evaluate trends over time within the state, and to guide priorities for prevention and intervention efforts. The CSTE/NIOSH workgroup selected a set of indicators based on their importance to public health, the availability of the data in most states, and their potential for workplace intervention activities.

This document summarizes occupational indicator data for Louisiana. When available, national trend data are also presented for comparison purposes. The reporting period may vary by indicator due to differences in the number of years of data available from the various data sources. Data tables and figures will be updated as data become available.

### **Important reference documents for this project include:**

- Occupational Health Indicators: A Guide for Tracking Occupational Health Conditions and Their Determinants
- Putting Data to Work: Occupational Health Indicators from Thirteen Pilot States for 2000
- The Role of States in a Nationwide Comprehensive Surveillance System for Work-related Diseases, Injuries and Hazards

*These documents are available on CSTE's website: [www.cste.org/OH/occupationalhealthpublications.asp](http://www.cste.org/OH/occupationalhealthpublications.asp)*

- MMWR Recommendations and Reports – Indicators for Occupational Health Surveillance  
[www.cdc.gov/mmwr/preview/mmwrhtml/rr5601a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5601a1.htm)

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# I. Bureau of Labor Statistics: Workforce Demographics

Statistics on Louisiana's workforce distribution by demographic and employment characteristics were obtained from the Bureau of Labor Statistics' (BLS) Current Population Survey (CPS) and Geographic Profile of Employment and Unemployment.

## ***Current Population Survey***

The Current Population Survey (CPS) is designed to provide accurate state and federal statistics of the labor force such as employment and unemployment figures classified by a variety of demographic, social and economic characteristics. The CPS is a monthly probability sample of about 60,000 households designed to represent the civilian non-institutional population of the U.S. It is conducted by the U.S. Census Bureau for the Bureau of Labor Statistics (BLS). The CPS collects information on demographics, employment status, weekly hours worked, and industry and occupation of each household member 15 years of age and older. The survey refers to activity or work status during the calendar week that includes the 12<sup>th</sup> day of the month.

The occupational and industry classifications of CPS data for 1992 to 2002 were based on the 1990 Census Industry and Occupation Coding System. Beginning in 2003, the CPS changed to the 2000 Census Industry and Occupation Coding Systems.

Excluded from the survey are active-duty members of the military and inmates in institutions. The CPS undercounts certain racial or ethnic workers who do not have a permanent address or are migratory in nature. Because CPS estimates are based on a random sampling of the population rather than a complete census, they are subject to sampling error.

CPS data can be accessed online through 'TheDataWeb' using the 'DataFerrett' application. 'TheDataWeb' is a comprehensive network of online data libraries that brings together demographic, economic, health, and other data from several Federal agencies.

Additional information about the CPS is available at <http://www.bls.gov/cps/home.htm>.

Additional information about DataFerrett is available at <http://dataferrett.census.gov/>.

## ***Geographic Profile of Employment and Unemployment***

Each year, the BLS produces annual average employment information for census regions, states, and metropolitan areas in its "Geographic Profile of Employment and Unemployment" series. The profiles contain information on the employed and unemployed by select demographic and economic characteristics based on data from the CPS. The profiles exclude workers less than 16 years of age, active duty members of the military and inmates in institutions.

Additional information about the Geographic Profile of Employment and Unemployment is available at <http://www.bls.gov/opub/gp/laugp.htm> .

## ***Louisiana Workforce Characteristics: Age, Sex, Race, Hispanic Ethnicity, Self-Employment, Part-Time Workers, and Hours Worked Per Week***

Louisiana's workforce characteristics include percentage of workers by age, sex, race, Hispanic ethnicity, self-employment, part-time workers, hours worked per week, industry, and occupation. Diversity in age, race, sex, ethnicity, and levels of employment in certain industries and occupations varies from state to state. These differences in workforce characteristics are important to consider because they can influence rates of work-related injuries, illnesses, and fatalities.

**Louisiana Civilian Worker Demographics and Employment Characteristics, Ages 16 and Older, 1997-2004 Annual Averages**

<b>Louisiana</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>Civilian Labor Force</b>	2,024,000	2,063,000	2,052,000	2,030,000	2,050,000	2,006,000	2,037,000	2,058,000
<b>Number Employed</b>	1,900,000	1,945,000	1,948,000	1,917,000	1,928,000	1,883,000	1,904,000	1,934,000
<b>% Workforce Unemployed</b>	6.1	5.7	5.1	5.5	6.0	6.1	6.6	6.0
<b>% Male</b>	53.1	53.6	52.0	52.5	52.9	53.7	51.8	52.1
<b>% Female</b>	46.9	46.4	48.0	47.5	47.1	46.3	48.1	47.9
<b>% Ages 16 - 17</b>	1.7	1.6	2.1	1.9	1.6	1.4	1.3	0.9
<b>% Ages 18 - 64</b>	95.9	95.9	95.3	95.3	94.9	94.8	95.4	96.0
<b>% Ages = 65</b>	2.4	2.4	2.6	2.8	3.6	3.8	3.3	3.1
<b>% White</b>	72.2	70.1	68.7	71.4	71.4	71.2	69.6	70.9
<b>% Black</b>	26.2	27.6	29.2	27.5	27.4	27.1	28.5	27.6
<b>% Other</b>	1.7	2.3	2.1	1.1	1.2	1.7	1.9	1.5
<b>% Hispanic*</b>	2.6	2.4		2.4	2.3	3.9	3.3	2.4
<b>% self-employed</b>	-	-	7.2	7.0	6.7	7.0	8.0	7.9
<b>% employed part-time**</b>	16.3	15.2	15.6	15.2	15.0	14.7	15.1	15.2
<b>% work &lt;40 hrs per week</b>	34.3	34.3	31.5	30.5	32.4	31.0	30.7	33.4
<b>% work 40 hours per week</b>	37.9	36.9	41.8	42.6	41.4	42.5	43.0	39.6
<b>% work &gt;40 hours per week</b>	27.8	28.8	26.7	26.9	26.2	26.4	26.4	27.1

\* White, Black, and Other are race categories; "Hispanic" refers to ethnicity and is calculated separately from race.

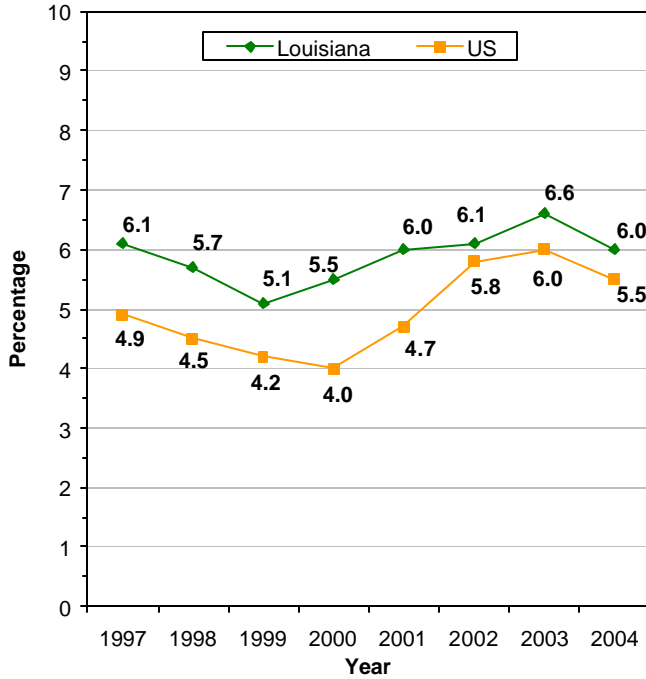
\*\* "Employed part-time" describes individuals who work 1 to 34 hours per week.

- Data not available.

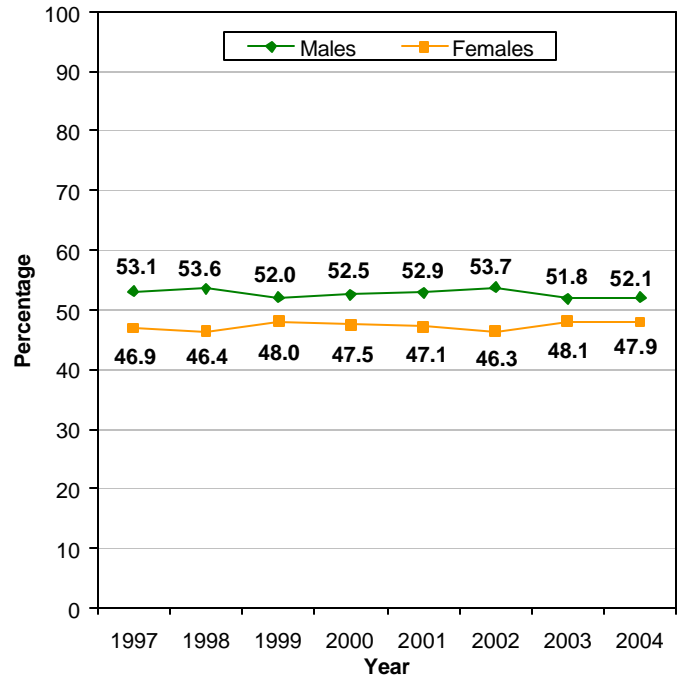
Data Sources: Bureau of Labor Statistics' Geographic Profile of Employment & Unemployment and Current Population Survey (age distribution only).

# Unemployed Workforce, Employment by Sex, Race, and Hispanic Ethnicity

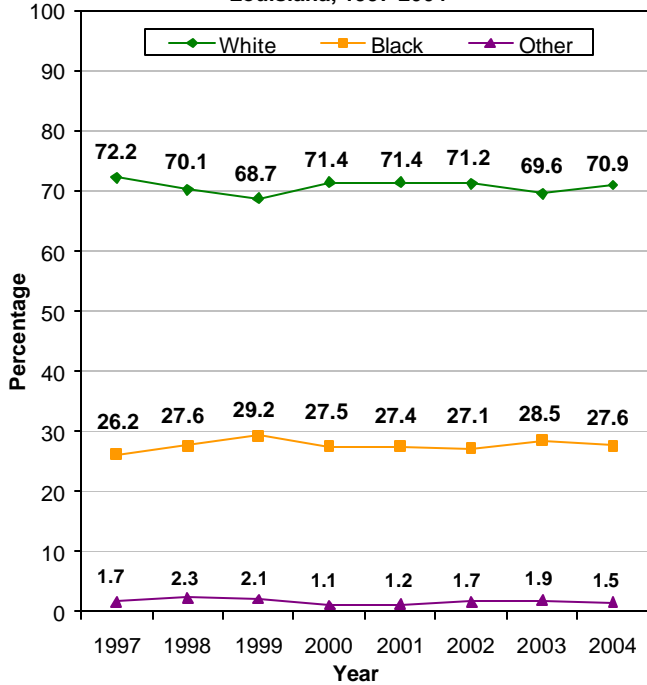
Percentage of Civilian Workforce Unemployed; Louisiana and U.S., 1997-2004



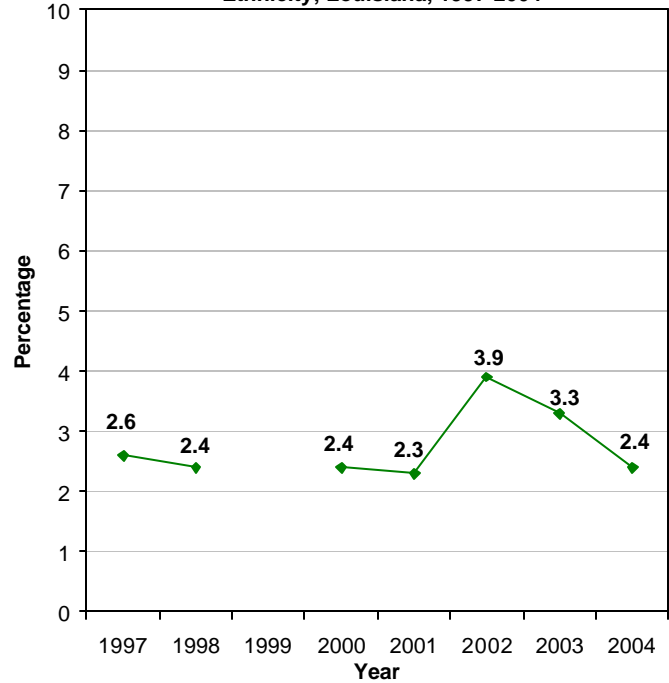
Percentage of Civilian Employment by Sex; Louisiana, 1997-2004



Percentage of Civilian Employment by Race; Louisiana, 1997-2004



Percentage of Civilian Employment by Hispanic Ethnicity; Louisiana, 1997-2004



\*Data unavailable for 1999

## Louisiana's Workforce by Industry

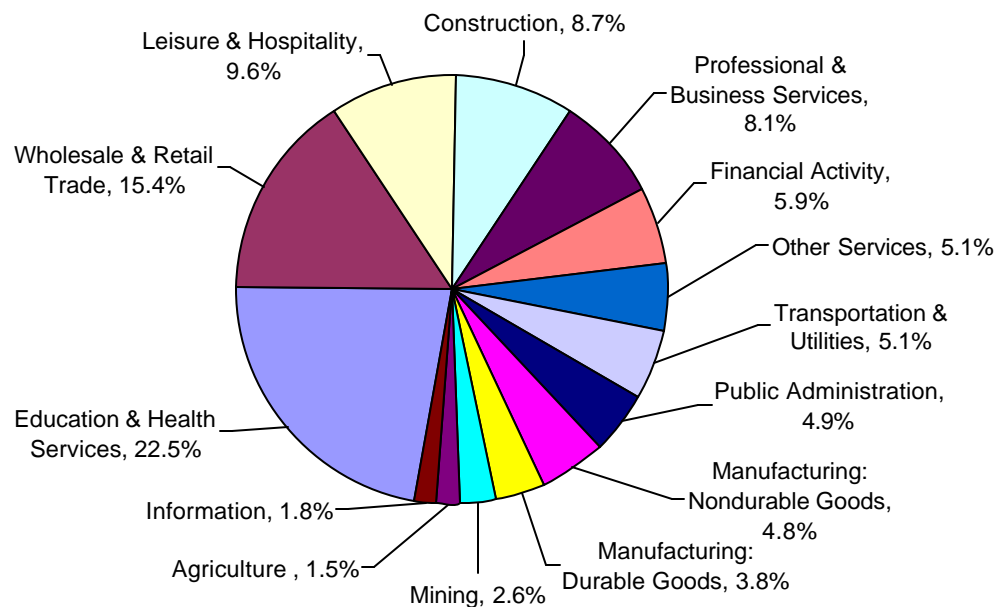
Industry was coded using the 2000 Census Industry Codes. Industry data prior to 2003 was coded using 1990 Census codes which cannot be compared with the 2000 codes. Because of the different coding systems, only data from 2003 and later are presented.

Percent Distribution of Civilian Workforce by 2000 Census Major Industry Categories; Louisiana, 2003-2005

	2003	2004	2005	2003-2005 Average
<b>Total Employed Population</b>	1,904,000	1,934,000	1,973,000	1,937,000
<b>Industry</b>				
Education & Health Services	22.3	22.9	22.3	22.5
Wholesale & Retail Trade	14.8	15.3	16.0	15.4
Leisure & Hospitality	9.5	9.4	10.0	9.6
Construction	9.0	8.3	8.8	8.7
Professional & Business Services	8.6	8.5	7.2	8.1
Financial Activity	5.8	6.6	5.2	5.9
Other Services	6.2	4.2	4.8	5.1
Transportation & Utilities	4.5	5.0	5.9	5.1
Public Administration	4.7	4.7	5.3	4.9
Manufacturing: Nondurable Goods	4.8	4.6	4.9	4.8
Manufacturing: Durable Goods	3.9	4.2	3.4	3.8
Mining	2.5	2.8	2.6	2.6
Agriculture	1.6	1.6	1.4	1.5
Information	1.9	1.9	1.6	1.8

NOTE: Items may not add up to 100% due to rounding

Distribution of Civilian Workforce by 2000 Census Major Industry Categories; Louisiana, 2003-2005 Percent Average



## Louisiana's Workforce by Occupation

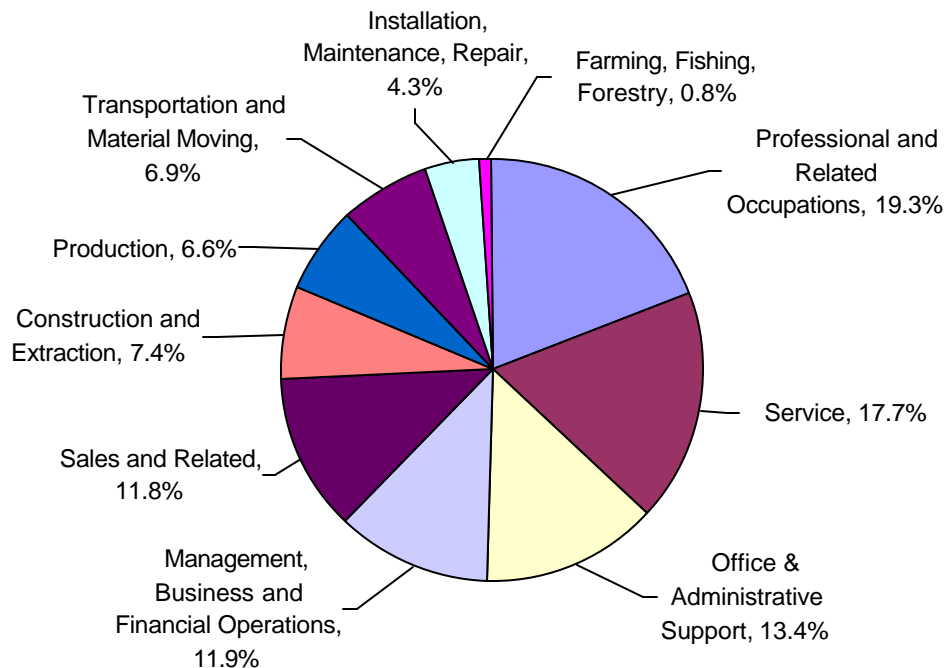
Occupation was coded using the 2000 Census Occupation Codes. Occupation data prior to 2003 was coded using 1990 Census codes which cannot be compared with the 2000 codes. Because of the different coding systems, only data from 2003 and later are presented.

### Percent Distribution of Civilian Workforce by 2000 Census Major Occupation Categories; Louisiana, 2003-2005

	2003	2004	2005	2003-2005 Average
<b>Total Employed Population</b>	1,904,000	1,934,000	1,973,000	1,937,000
<b>Occupation</b>				
Professional and Related Occupations	19.9	20.3	17.6	19.3
Service	18.3	17.2	17.6	17.7
Office & Administrative Support	13.7	12.6	13.9	13.4
Management, Business and Financial Operations	11.2	12.3	12.2	11.9
Sales and Related	11.4	12.0	12.1	11.8
Construction and Extraction	7.4	7.8	7.0	7.4
Production	6.7	6.2	6.8	6.6
Transportation and Material Moving	6.1	6.7	7.9	6.9
Installation, Maintenance, Repair	4.6	4.3	4.1	4.3
Farming, Fishing, Forestry	0.7	0.7	0.9	0.8

NOTE: Items may not add up to 100% due to rounding.

**Distribution of Civilian Workforce by 2000 Census Major Occupation Categories; Louisiana, 2003-2005 Percent Average**



## II. Bureau of Labor Statistics – Injuries and Fatalities

### ***Census of Fatal Occupational Injuries***

The ***Census of Fatal Occupational Injuries (CFOI)***, a Federal/State cooperative program administered by the Bureau of Labor Statistics (BLS), is charged with annually collecting detailed information on all work-related fatalities occurring in the U.S. The CFOI uses diverse State and Federal data sources to identify, verify, and profile fatal work-related injuries. Information about each workplace fatality (e.g., circumstance of the event, industry, occupation, type of machinery or equipment involved, and other worker characteristics) is obtained by cross-referencing source documents, such as death certificates, workers' compensation records, medical examiner reports, and police reports as well as news and other non-governmental reports.

A ***fatal work-related injury*** is an injury occurring at work that results in death. CFOI includes fatalities resulting from non-intentional injuries such as falls, electrocutions, and acute poisonings as well fatal injuries from motor vehicle crashes that occurred during travel for work. Also included are intentional injuries (i.e., homicides and suicides) that occurred at work. Fatalities that occur during a person's commute to or from work are not counted nor are illnesses or any condition produced in the work environment over a period longer than one workday or shift.

Additional information about CFOI data can be obtained from BLS's CFOI website:

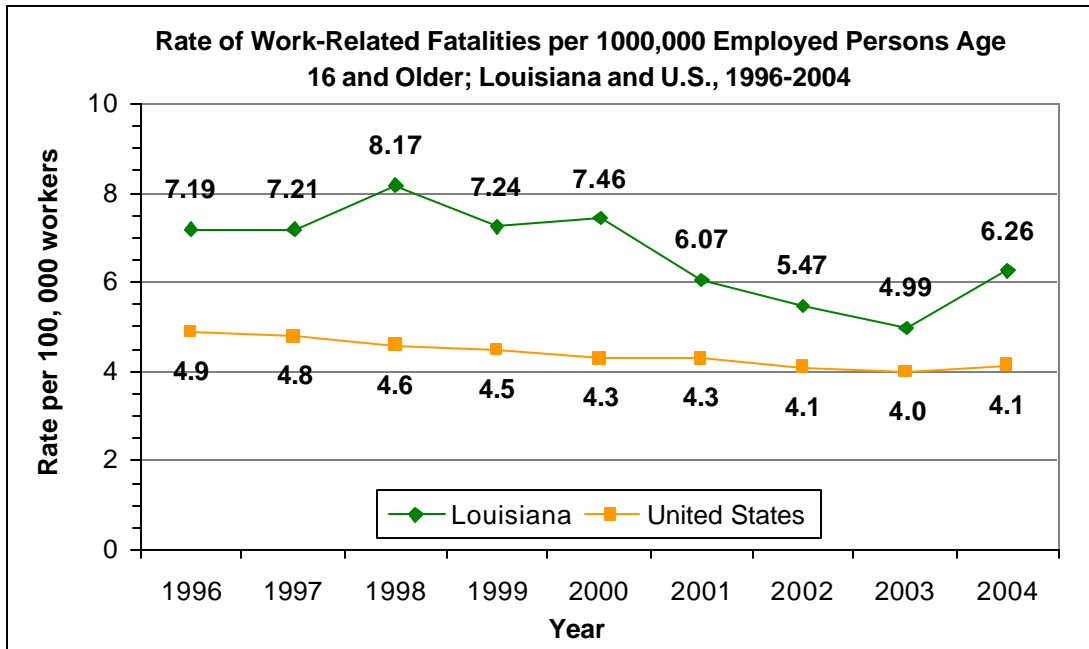
<http://www.bls.gov/iif/>



## Work-Related Fatalities

The annual rate of work-related fatalities was obtained by dividing the total number of fatalities by the number of employed persons age 16 years or older for the corresponding year. The number of employed persons age 16 years or older was obtained from the Bureau of Labor Statistics' Geographic Profile of Employment and Unemployment.

Between 1996 and 2004, the U.S. work-related fatal injury rate declined 16 percent. Louisiana's rate declined 31 percent between 1996 and 2003, but increased in 2004. Louisiana's rate of work-related fatalities has been consistently higher than the U.S. rate. The average rate for Louisiana is 6.67 fatalities per 100,000 workers compared with 4.40 for the United States.



**Number of Work-Related Fatalities; LA 1996-2004**

	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Number</b>	134	137	159	141	143	117	103	95	121

## Industries at High Risk of Occupational Mortality

In 2003, there were 5,575 work-related injury deaths in the United States, according to the Bureau of Labor Statistic's Census of Fatal Occupational Injuries (CFOI). This was equivalent to 4.3 deaths per 100,000 workers. Workers in certain industries and occupations sustain fatal injuries at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk industries and occupations varies by state. This variation can help explain differences in injury mortality rates among states.

CFOI data from 2003 indicate that 30 industries had national injury fatality rates of at least 9.5 deaths per 100,000 workers. These 30 industries are considered "*industries at high risk of occupational mortality*." Workers in these industries comprised 15% of the private sector workforce, but accounted for 61% of the fatal work-related injuries that year.

The percentage of Louisiana workers employed in the 30 industries was obtained using DataFerrett. Only industries with a population were listed. Industries were grouped according to 2000 Census Industry Categories. Overall, 18.65% of Louisiana's workers are employed in industries that are considered high risk of occupational mortality.

### Percent of Employed Persons Age 16 and Older in High Mortality Risk Industries; Louisiana, 2003-2005

Major Industry Category	2000 Census Industry Title	2003-2005 Percent Average
Construction	<b>Construction Total</b>	<b>8.69</b>
	Construction	8.69
Mining	<b>Mining Total</b>	<b>2.77</b>
	Support activities for mining	2.49
	Oil and gas extraction	0.25
	Nonmetallic mineral mining and quarrying	0.03
	Coal mining	0.00
Transportation and Warehousing	<b>Transportation and Warehousing Total</b>	<b>2.63</b>
	Truck transportation	1.54
	Services incidental to transportation	0.68
	Water transportation	0.24
	Taxi and limousine service	0.10
	Scenic and sightseeing transportation	0.08
Agriculture, Forestry, Fishing, and Hunting	<b>Agriculture, Forestry, Fishing, and Hunting Total</b>	<b>1.50</b>
	Animal production	0.49
	Crop production	0.46
	Logging	0.38
	Support activities for agriculture and forestry	0.10
	Fishing, hunting, trapping	0.09
Administrative and Support and Waste Management Services	<b>Administrative and support &amp; Waste Management Services Total</b>	<b>1.25</b>
	Landscaping services	0.82
	Waste management and remediation services	0.43

<b>Manufacturing</b>	<b>Manufacturing Total</b>	<b>0.50</b>
	Sawmills and wood preservation	0.28
	Veneer, plywood, and engineered wood product manufacturing	0.13
	Cement, concrete, lime, and gypsum product manufacturing	0.10
	Misc nonmetallic mineral product manufacturing	0.00
	Foundries	0.00
<b>Accomodation and Food Services</b>	<b>Accomodation and Food Services Total</b>	<b>0.50</b>
	Drinking places and alcoholic beverages	0.40
	Recreational vehicle parks and camps, and rooming and boarding houses	0.10
<b>Wholesale and Trade</b>	<b>Wholesale Trade Total</b>	<b>0.41</b>
	Petroleum and petroleum product wholesalers	0.32
	Recyclable material wholesalers	0.06
	Farm product raw materials wholesalers	0.03
<b>Real Estate and Rental and Leasing</b>	<b>Real Estate and Rental and Leasing Total</b>	<b>0.31</b>
	Commercial, industrial, and other intangible assets rental and leasing	0.31
<b>Retail Trade</b>	<b>Retail Trade Total</b>	<b>0.08</b>
	Other motor vehicles dealers	0.07
	Fuel dealers	0.01
<b>Total</b>		<b>18.65</b>

## Occupations at High Risk of Occupational Mortality

According to 2003 Census of Fatal Occupational Injury data, 57 occupations had national fatality rates of at least 9.5 per 100,000 workers. These 57 occupations are considered “*occupations at high risk of occupational mortality.*” Workers in these occupations made up 11% of the private sector workforce, but sustained 60% of the fatalities.

The percentage of Louisiana workers employed in the 57 occupations at high risk of occupational mortality were calculated using DataFerrett. Only occupations with a population were listed. Occupations were grouped according to 2000 Census Occupation Categories.

Overall, 12.93% of Louisiana workers are employed in occupations that are considered high risk of occupational mortality.

**Percent of Employed Persons Age 16 and Older in High Mortality Risk Occupations; Louisiana, 2003-2005**

Major Occupational Category	2000 Census Occupation Title	2003-2005 Percent Average
<b>Construction &amp; Extraction</b>	<b>Construction &amp; Extraction Total</b>	<b>4.43</b>
	First-line supervisors/managers of construction trades and extraction workers	1.00
	Electricians	0.86
	Construction laborers	0.84
	Operating engineers and other construction equipment operators	0.39
	Other extraction workers	0.23
	Cement masons, concrete finishers, and terrazzo workers	0.20
	Derrick, rotary drill, and service unit operators, oil, gas, and mining	0.19
	Roofers	0.17
	Mining machine operators	0.14
	Helpers, Construction Trades	0.11
	Boilermakers	0.09
	Structural iron and steel workers	0.09
	Earth drillers, except oil and gas	0.03
	Explosives workers, ordnance handling experts, and blasters	0.02
	Plasterers and stucco masons	0.02
	Roustabouts, oil and gas	0.02
Miscellaneous construction and related workers	0.01	
Helpers--extraction workers	0.01	
<b>Transportation &amp; Material Moving</b>	<b>Transportation &amp; Material Moving Total</b>	<b>3.99</b>
	Driver/sales workers and truck drivers	2.79
	Sailors and marine oilers	0.39
	Ship and boat captains and operators	0.21
	Crane and tower operators	0.16
	Taxi drivers and chauffeurs	0.11
	Dredge, excavating, and loading machine operators	0.09
	Aircraft pilots and flight engineers	0.08
	Refuse and recyclable material collectors	0.07
	Material moving workers, all other	0.06
	Railroad brake, signal, and switch operators	0.03
	Pumping station operators	0.01
	Railroad conductors and yardmasters	0.01

<b>Installation, Maintenance, &amp; Repair</b>	<b>Installation, Maintenance, &amp; Repair Total</b>	<b>1.22</b>
	First-line supervisors/managers of mechanics, installers, and repairers	0.41
	Heavy vehicle and mobile equipment service technicians and mechanics	0.24
	Maintenance and repair workers, general	0.12
	Electrical power-line installers and repairers	0.12
	Helpers--installation, maintenance, and repair workers	0.09
	Commercial divers	0.09
	Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers	0.06
	Maintenance workers, machinery	0.05
Telecommunications line installers and repairers	0.05	
<b>Building and Grounds Cleaning &amp; Maintenance</b>	<b>Building &amp; Grounds Cleaning &amp; Maintenance Total</b>	<b>1.00</b>
	Grounds maintenance workers	0.92
	First-line supervisors/managers of landscaping, lawn service, and groundskeeping workers	0.07
<b>Architecture &amp; Engineering</b>	<b>Architecture &amp; Engineering Total</b>	<b>0.10</b>
	Petroleum engineers	0.10
<b>Protective Services</b>	<b>Protective Services Total</b>	<b>0.89</b>
	Security guards and gaming surveillance officers	0.55
	Fire fighters	0.32
	Crossing guards	0.03
<b>Farming, Fishing, &amp; Forestry</b>	<b>Farming, Fishing, &amp; Forestry Total</b>	<b>0.74</b>
	Miscellaneous agricultural workers	0.36
	Logging workers	0.22
	Fishers and related fishing workers	0.10
	First-line supervisors/managers of farming, fishing, and forestry workers	0.06
<b>Management</b>	<b>Management Total</b>	<b>0.51</b>
	Farmers and ranchers	0.45
	Farm, ranch, and other agricultural managers	0.06
<b>Personal Care &amp; Service</b>	<b>Personal Care &amp; Service Total</b>	<b>0.03</b>
	Animal trainers	0.03
<b>Production</b>	<b>Production Total</b>	<b>0.02</b>
	Water and liquid waste treatment plant and system operators	0.02
<b>Total</b>		<b>12.93</b>

## ***Survey of Occupational Injuries and Illnesses***

The Occupational Safety and Health Administration (OSHA) requires employers to maintain records (referred to as OSHA Logs of Work-Related Injuries and Illnesses) of all work-related illnesses and injuries that result in death, loss of consciousness, days away from work, restricted work, or medical treatment beyond first aid. Employers do not always record all relevant events and are often unaware of work-related conditions for which employees have obtained medical care from their personal health care providers, and conditions that have long latencies and are diagnosed after an employee leaves their employment. In addition, employers vary in their use of restricted work activity as a means of reducing lost workdays among employees with work-related conditions

The Bureau of Labor Statistics' (BLS) Annual Survey of Occupational Injuries and Illnesses (SOII) provides yearly estimates of the numbers and incidence rates of work-related injuries and illnesses at national and state levels. Information is collected from a nationwide sample of employers' OSHA Logs of Work-Related Injuries and Illnesses.

While SOII is a valuable source of information about work-related injuries and illnesses, it is well-recognized that it has a number of limitations and underestimates the full extent of the burden. Excluded from the survey are public sector workers, military, self-employed, and farms with fewer than 11 employees. Together these sectors comprise approximately 21% of the U.S. workforce.<sup>1</sup> The industry exclusions limit SOII data to private workforce only. In addition, occupational diseases are not well-documented in the SOII and there is evidence that injuries are underreported.<sup>2 3</sup> It is also subject to sampling error.

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<sup>1</sup> Leigh JP et al. An estimate of the US government's undercount of nonfatal occupational injuries. *J Occup and Environ. Med.* 2004; 46 (No. 1)

<sup>2</sup> Conway H, Svenson J. Occupational injury and illness rates, 1992-1996: why they fell. *Mon Labor Rev.* 1998; 121(11)36-58.

<sup>3</sup> Azaroff LS, Levenstein C, Wegman DH. Occupational Injury and Illness Surveillance: Conceptual Filters Explain Underreporting. *AJPH.* 2002;92(9):1421-1429.

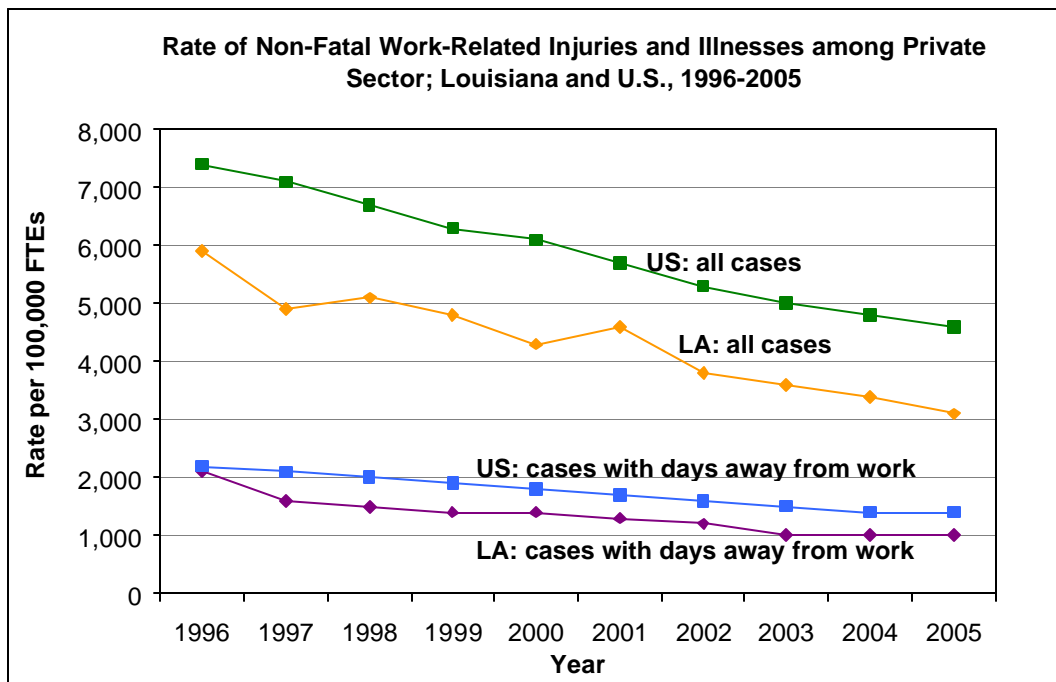
## Non-Fatal Work-Related Injuries and Illnesses among Private Sector

Work-related injuries are generally defined as injuries that result from single events such as falls, being struck or crushed by objects, electric shocks, or assaults. Work-related illnesses, such as asthma, silicosis and carpal tunnel syndrome, typically occur as the result of longer-term exposure to hazardous chemicals, physical hazards (e.g., radiation, noise), or repeated stress or strain at work. Infectious diseases also can be caused by workplace exposures. It is more difficult to track work-related illnesses than injuries because many of the conditions also can be caused by non-occupational factors. Also, many work-related illnesses take a long time to develop and symptoms may not appear until many years after an individual has left employment.

The estimated annual incidence rate for non-fatal work-related injuries and illnesses, and for cases involving days away from work, were obtained directly from the BLS Survey of Occupational Injuries and Illnesses. The number of full-time equivalent workers (FTEs) is calculated as the total number of hours worked by all employees in a period, divided by the average number of hours worked by a full-time employee in that period.

The figure below illustrates rates of non-fatal injuries and illnesses for Louisiana and the United States, for the period 1996-2005, according to data from the BLS Annual Survey. Louisiana's rates for all cases were an average of 27% lower than national rates, and Louisiana's rates for cases with days away from work were an average of 24% lower than national rates.

Rates of reported injuries and illnesses declined from 1996 to 2005. For total cases, the rate decreased by 48% in Louisiana, and by 38% nationally. For cases involving days away from work, the rate decreased by 52% in Louisiana, and by 36% nationally.



**Number of Non-Fatal Work-Related Injuries and Illnesses Reported by Private Industry,  
LA, 1996-2005**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>All Cases</b>	74,800	64,900	69,100	64,800	59,800	62,600	50,900	47,200	45,300	40,300
<b>Cases with Days Away from Work</b>	26,400	21,700	2,100	19,200	19,800	18,100	15,800	13,600	13,100	13,200



## Work-Related Musculoskeletal Disorders (MSD) Involving Days Away from Work

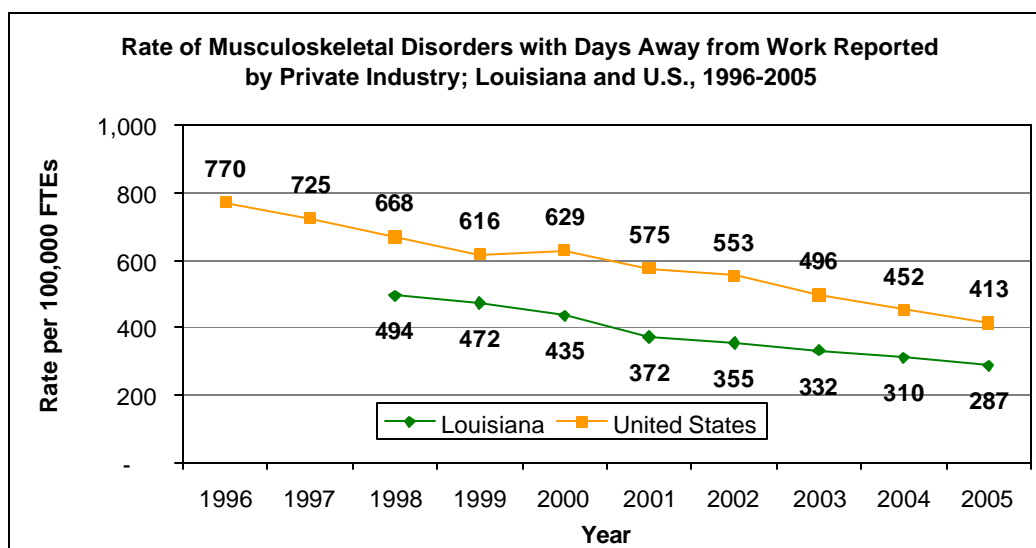
Work-related musculoskeletal disorders (MSDs) are injuries or disorders of muscles, tendons, nerves, ligaments, joints, or spinal discs that are caused or aggravated by work activities. Workplace risk factors for MSDs include repetitive forceful motions, awkward postures, use of vibrating tools or equipment, and manual handling of heavy, awkward loads. These disorders can also be caused by single, traumatic events such as falls.

The BLS definition of MSDs includes sprains, strains, pain, hurt back, carpal tunnel syndrome, and hernia in which the event leading to the condition is reported as overexertion, repetitive motion, or bending, reaching, or twisting. BLS excludes MSDs reportedly caused by single events such as slips and falls and motor vehicle crashes.

MSDs are some of the most common and costly work-related health problems. These injuries can significantly impact the ability of workers to perform their jobs and affect quality of life both on and off the job. According to Survey of Occupational Illnesses and Injuries, MSDs have consistently accounted for over one-third of all work-related injuries and illnesses involving days away from work reported by employers over the last decade.<sup>1</sup>

Annual incidence rates of total MSDs and MSDs by back, neck, shoulder, and upper extremities, and carpal tunnel syndrome were obtained directly from the BLS Survey of Occupational Injuries and Illnesses. The number of full-time equivalent workers (FTEs) is calculated as the total number of hours worked by all employees in a period, divided by the average number of hours worked by a full-time employee in that period.

The figure below illustrates the estimated rates of all work-related MSDs resulting in days away from work, for Louisiana from 1998 to 2005, and for the U.S. from 1996 to 2005. Rates decreased substantially over this time period. From 1998 to 2005, Louisiana's rate decreased 42%, and national rates decreased 38%. National rates exceeded Louisiana rates by an average of 31%.



<sup>1</sup> National Institute for Occupational Safety and Health. Worker Health Chartbook, 2004. Cincinnati OH: U.S. Department of Health and Human Services, Center for Disease Control and Prevention, DHHS (NIOSH) Publication No. 2004-146. 2004. Available: <http://www.cdc.gov/niosh/docs/chartbook/pdfs/2004-146.pdf>

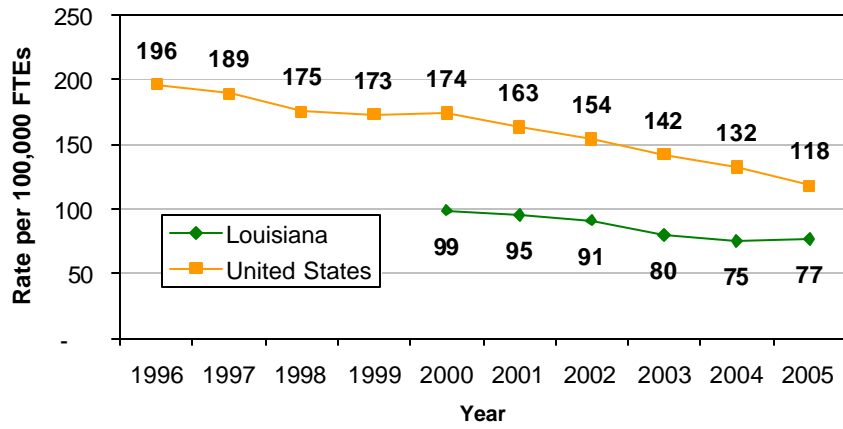
Annual numbers of cases in Louisiana are presented in the table below.

**Number of Musculoskeletal Disorders with Days Away from Work  
Reported by Private Industry; LA, 1998-2005**

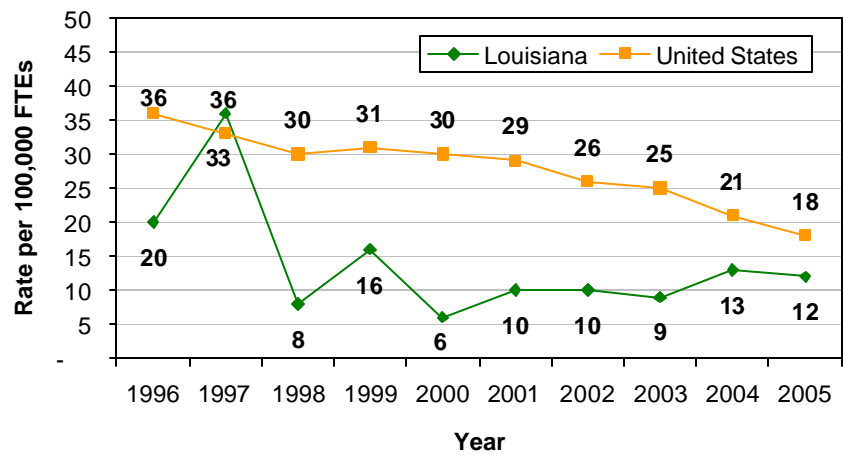
	1998	1999	2000	2001	2002	2003	2004	2005
<b>Number</b>	6717	6390	6079	5079	4754	4390	4070	3740

The figures below illustrate the estimated rates for (1) MSDs of the neck, shoulder and upper extremities; (2) carpal tunnel syndrome; and (3) MSDs of the back. These 3 categories of MSDs represent some of the most commonly occurring MSDs, but do not represent all MSDs. Overall, MSDs of the back account for approximately half of the total MSDs reported for both Louisiana and the U.S. For all years, national MSD rates exceeded Louisiana rates, except for carpal tunnel syndrome in 1997. Overall, national and Louisiana rates for MSDs are trending downwards.

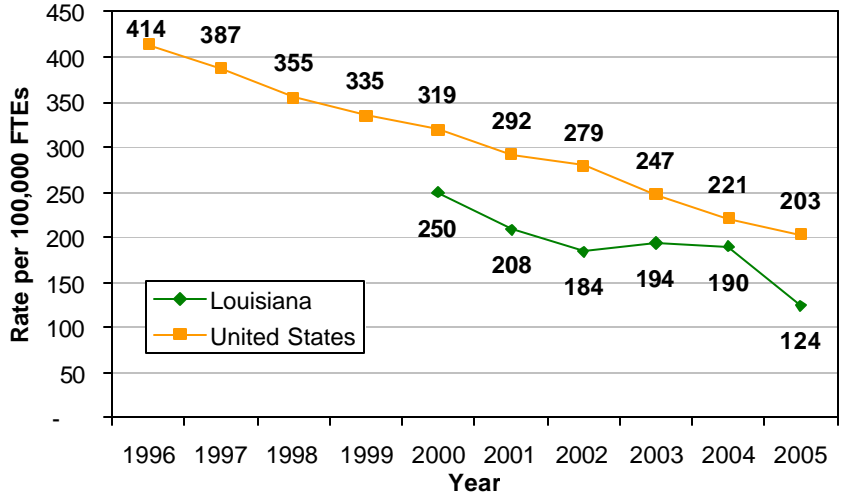
**Incidence Rate of MSD of the Neck, Shoulder, & Upper Extremities Involving Days Away from Work; LA and U.S., 1996-2005**



**Incidence Rate of Carpal Tunnel Syndrome Involving Days Away from Work; LA and U.S., 1996-2005**



**Incidence Rate of MSD of the Back Involving Days Away from Work; LA and U.S., 1996-2005**



## ***Industries at High Risk of Occupational Morbidity***

In 2003, the Bureau of Labor Statistics reported a national estimate of 4.4 million injury and illness cases within the private sector workforce, an estimated incidence rate of 5.0 cases per 100 full-time workers. Workers in certain industries sustain non-fatal injuries and illnesses at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk industries varies by state. This variation can help explain differences in injury and illness rates among states.

According to BLS data from the Survey of Occupational Injuries and Illnesses, 37 industries had occupational injury and illness rates at least twice the national rate. Workers in these industries made up 6.7% of the national private sector workforce, but 17% of the Occupational Safety and Health Administration (OSHA) reportable injuries and illnesses<sup>1</sup>. These 37 industries are considered “high-risk” for occupational morbidity.

The percentage of Louisiana residents employed in the 37 high risk industries were calculated using DataFerrett. Only industries with a population were listed. Industries were grouped according to 2002 North American Industry Classification System (NAICS) codes.

Overall, 10.07% of Louisiana workers were employed in an industry considered high risk of occupational morbidity.

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<sup>1</sup> United States Department of Labor, BLS Bulletin 2579. Occupational Injuries and Illnesses: Counts, Rates, and Characteristics, 2003.

**Percent of Employed Persons Age 16 and Older in High Morbidity Risk Industries; Louisiana, 2003-2005**

<b>Major Industry Category</b>	<b>2002 NAICS Industry Title</b>	<b>2003-2005 Percent Average</b>
<b>Manufacturing</b>	<b>Manufacturing Total</b>	<b>4.41</b>
	Ship and boat building	1.20
	Wood product manufacturing	0.79
	Plate work and fabricated structural product manufacturing	0.59
	Animal slaughtering and processing	0.49
	Motor vehicle manufacturing	0.31
	Beverage and tobacco product manufacturing	0.18
	Sugar manufacturing	0.17
	Fluid milk manufacturing	0.17
	Other concrete product manufacturing	0.11
	All other miscellaneous fabricated metal product manufacturing	0.07
	Commercial laundry, drycleaning, and pressing machine manufacturing	0.05
	Steel product manufacturing from purchased steel	0.04
	Glass container manufacturing	0.04
	Foundries	0.04
	Motor vehicle body and trailer manufacturing	0.03
	Overhead traveling crane, hoist, and monorail system manufacturing	0.02
	Ornamental and architectural metal work manufacturing	0.02
	Concrete block and brick manufacturing	0.02
	Spring and wire product manufacturing	0.02
	Cookie and cracker manufacturing	0.02
	Enameled iron and metal sanitary ware manufacturing	0.01
	All other converted paper product manufacturing	0.01
Other metal valve and pipe fitting manufacturing	0.01	
Motor vehicle transmission and power train parts manufacturing	0.01	
<b>Healthcare and Social Assistance</b>	<b>Healthcare and Social Assistance Total</b>	<b>4.18</b>
	Nursing and residential care facilities	4.18
<b>Transportation and Warehousing</b>	<b>Transportation and Warehousing Total</b>	<b>1.01</b>
	Couriers and messengers	0.40
	General warehousing and storage	0.27
	Scheduled air transportation	0.18
	Urban transit systems	0.16
<b>Wholesale Trade</b>	<b>Wholesale Trade Total</b>	<b>0.34</b>
	Beer, wine, and distilled alcoholic beverage merchant wholesalers	0.34
<b>Construction</b>	<b>Construction Total</b>	<b>0.07</b>
	Framing contractors	0.07
<b>Arts, Entertainment, and Recreation</b>	<b>Arts, Entertainment, and Recreation Total</b>	<b>0.05</b>
	Amusement parks and arcades	0.05
<b>Total</b>		<b>10.07</b>

## ***Occupations at High Risk of Occupational Morbidity***

In 2003, the Bureau of Labor Statistics (BLS) reported a national estimate of 1.3 million injury and illness cases within the private sector that resulted in days away from work. This was equivalent to 1.3 cases per 100 full-time workers.<sup>1</sup> Workers in certain occupations sustain non-fatal injuries and illnesses at much higher rates than the overall workforce. The proportion of the workforce that is employed in these high-risk occupations varies by state. This variation can help explain differences in injury and illness rates among states.

According to data from the Bureau of Labor Statistic's' Survey of Occupational Injuries and Illnesses, 83 occupations had injury and illness rates at least double the national rate. While workers in these occupations made up only 12.2% of the national private sector workforce, they accounted for 41.3% of cases with one or more days away from work. These 83 occupations are considered "high-risk" for occupational morbidity.

The percentage of Louisiana residents employed in the 83 high risk occupations were calculated using DataFerrett. Only occupations with a population were listed. Occupations were grouped according to 2000 Census Occupation Codes.

Overall, 13.2% of Louisiana workers were employed in an occupation considered high risk of occupational morbidity.

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<sup>1</sup> United States Department of Labor, BLS Bulletin 2579. Occupational Injuries and Illnesses: Counts, Rates, and Characteristics, 2003.

**Percent of Employed Persons Age 16 and Older in High Morbidity Risk Occupations; Louisiana, 2003-2005**

<b>Major Occupation Category</b>	<b>2000 Census Occupation Title</b>	<b>2003-2005 Percent Average</b>
<b>Transportation &amp; Material Moving</b>	<b>Transportation &amp; Material Moving Total</b>	<b>4.81</b>
	Driver/sales workers and truck drivers	2.83
	Laborers and freight, stock, and material movers, hand	1.27
	Sailors and marine oilers	0.41
	Refuse and recyclable material collectors	0.08
	Machine feeders and offbearers	0.06
	Material moving workers, all other	0.06
	Conveyor operators and tenders	0.04
	Railroad brake, signal, and switch operators	0.03
	Shuttle car operators	0.01
	Railroad conductors and yardmasters	0.01
	Ship engineers	0.00
<b>Construction &amp; Extraction</b>	<b>Construction &amp; Extraction Total</b>	<b>3.06</b>
	Carpenters	1.16
	Construction laborers	0.90
	Other extraction workers	0.24
	Derrick, rotary drill, and service unit operators, oil, gas, and mining	0.19
	Sheet metal workers	0.16
	Helpers, construction trades	0.15
	Structural iron and steel workers	0.09
	Insulation workers	0.06
	Earth drillers, except oil and gas	0.03
	Reinforcing iron and rebar workers	0.02
	Miscellaneous construction and related workers	0.02
	Roustabouts, oil and gas	0.02
	Pile-driver operators	0.01
Helpers--extraction workers	0.01	
<b>Healthcare Support</b>	<b>Healthcare Support Total</b>	<b>1.73</b>
	Nursing, psychiatric, and home health aides	1.73
<b>Production</b>	<b>Production Total</b>	<b>1.20</b>
	Production workers, all other	0.75
	Helpers--production workers	0.13
	Cutting workers	0.06
	Lay-out workers, metal and plastic	0.06
	Food cooking machine operators and tenders	0.05
	Extruding, forming, pressing, and compacting machine setters, operators, and tenders	0.04
	Extruding and forming machine setters, operators, and tenders, synthetic and glass fibers	0.03
	Crushing, grinding, polishing, mixing, and blending workers	0.03
	Sawing machine setters, operators, and tenders, wood	0.01
	Bookbinders and bindery workers	0.01
	Extruding and drawing machine setters, operators, and tenders, metal and plastic	0.01
	Food and tobacco roasting, baking, and drying machine operators and tenders	0.01
	Molders, shapers, and casters, except metal and plastic	0.00

<b>Installation, Maintenance, &amp; Repair</b>	<b>Installation, Maintenance, &amp; Repair Total</b>	<b>1.14</b>
	Heating, air conditioning, and refrigeration mechanics and installers	0.33
	Heavy vehicle and mobile equipment service technicians and mechanics	0.24
	Maintenance and repair workers, general	0.13
	Aircraft mechanics and service technicians	0.10
	Helpers--installation, maintenance, and repair workers	0.09
	Miscellaneous vehicle and mobile equipment mechanics, installers, and repairers	0.06
	Maintenance workers, machinery	0.05
	Home appliance repairers	0.05
	Telecommunications line installers and repairers	0.05
	Signal and track switch repairers	0.03
Riggers	0.01	
<b>Food Preparation &amp; Serving Related</b>	<b>Food Preparation &amp; Serving Related Total</b>	<b>0.35</b>
	Combined food preparation and serving workers, including fast food	0.18
	Food servers, nonrestaurant	0.16
	Food preparation and serving related workers, all other	0.01
<b>Protective Services</b>	<b>Protective Services Total</b>	<b>0.32</b>
	Fire fighters	0.32
<b>Farming, Fishing, &amp; Forestry</b>	<b>Farming, Fishing, &amp; Forestry Total</b>	<b>0.22</b>
	Logging workers	0.22
<b>Healthcare Practitioner and Technical</b>	<b>Healthcare Practitioner and Technical Total</b>	<b>0.20</b>
	Emergency medical technicians and paramedics	0.20
<b>Office &amp; Administrative Support</b>	<b>Office &amp; Administrative Support Total</b>	<b>0.09</b>
	Cargo and freight agents	0.05
	Reservation and transportation ticket agents and travel clerks	0.04
<b>Building and Grounds Cleaning &amp; Maintenance</b>	<b>Building &amp; Grounds Cleaning &amp; Maintenance Total</b>	<b>0.04</b>
	Pest control workers	0.04
<b>Personal Care &amp; Service</b>	<b>Personal Care &amp; Service Total</b>	<b>0.04</b>
	Transportation attendants	0.04
<b>Arts, Design, Entertainment, Sports &amp; Media</b>	<b>Arts, Design, Entertainment, Sports &amp; Media Total</b>	<b>0.02</b>
	Actors	0.02
<b>Total</b>		<b>13.20</b>



### III. Louisiana Hospital Inpatient Discharge Data

In 1998, the Louisiana Legislature mandated the reporting of hospital discharge data to the Office of Public Health. The Louisiana Hospital Inpatient Discharge Database, or LaHIDD, serves as the state registry containing inpatient discharge data from Louisiana hospitals. LaHIDD contains detailed information on all hospital admissions: patient demographics, age, admission and discharge date, diagnosis (ICD-9 codes), cost of hospitalization, and payer information. The designation of workers' compensation payment as primary payer on hospital discharge records is a good proxy for the work-relatedness of hospitalized injuries.<sup>1</sup>

Hospital discharge records are only available for non-federal, acute care hospitals. Selecting work-related hospitalizations based on payer source is not a complete measure of work-related illness as the majority of individuals with work-related illnesses and many others with injuries do not file for workers' compensation. Additionally, self-employed individuals such as farmers and independent contractors, federal employees, and railroad, longshore and maritime workers are not covered by state workers' compensation systems.

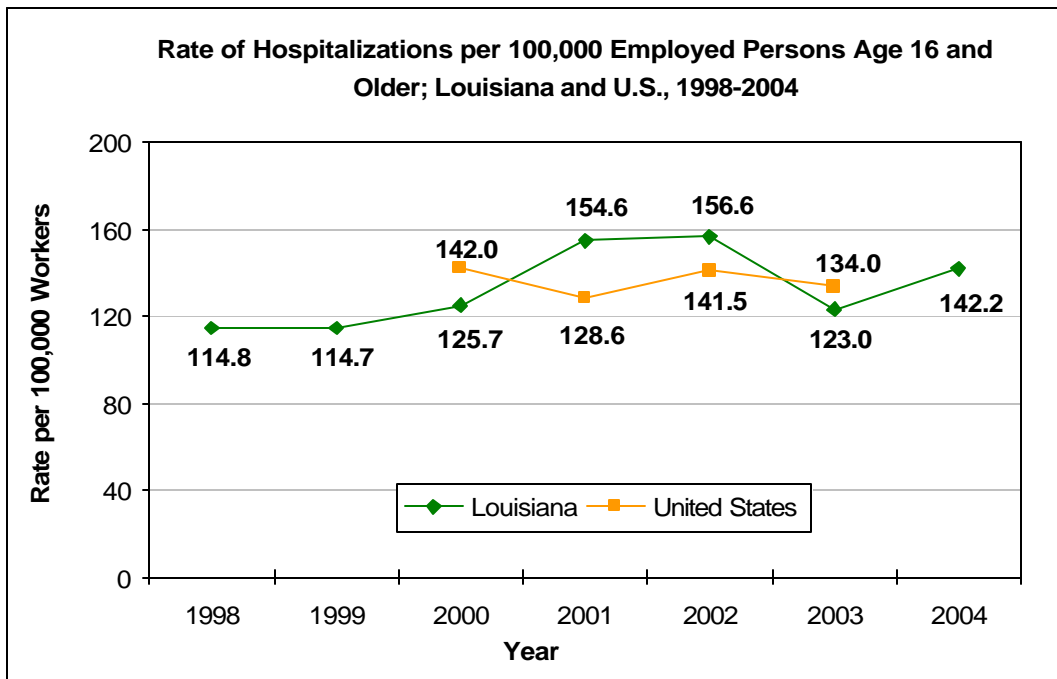
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<sup>1</sup> Sorock GS, Smith E, Hall N. An evaluation of New Jersey's hospital discharge database for surveillance of severe occupational injuries. *Am J Ind Med.* 1993; 23:427-437.

## Work-Related Hospitalizations

The annual rate of work-related hospitalizations was calculated by dividing the total number of work-related hospitalizations by the number of employed persons age 16 years or older for the same time period. A hospitalization is considered work-related if the primary payer was workers' compensation. The number of employed persons age 16 years or older was obtained from the Bureau of Labor Statistics' Geographic Profile of Employment and Unemployment.

The figure below illustrates hospitalization rates by year for individuals with workers' compensation reported as the primary payer for Louisiana and the U.S. Louisiana rates exceeded U.S. rates in 2001 and 2002, while U.S. rates exceeded Louisiana rates in 2000 and 2003. The U.S. rates remained fairly stable while rates for Louisiana are variable. The average rates of hospitalization per year are comparable: 133.1 hospitalizations per 100,000 workers for Louisiana and 136.5 for the U.S.



### Number of Work-Related Hospitalizations for Persons $\geq 16$ Years; LA, 1998-2004

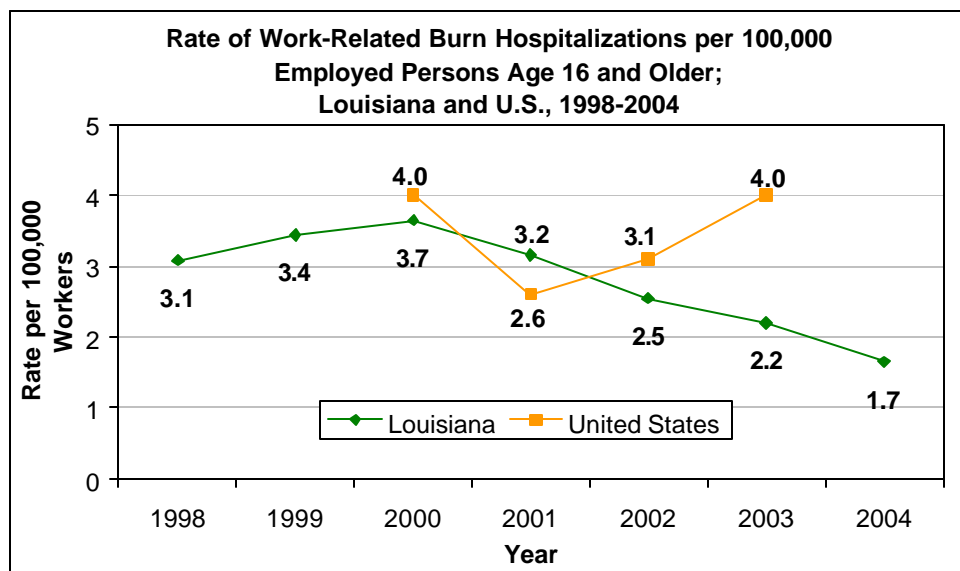
	1998	1999	2000	2001	2002	2003	2004
<b>Number</b>	2232	2234	2409	2,981	2,948	2,341	2,751

## Hospitalizations for Work-Related Burns

Burns encompass injuries to tissues caused by contact with dry heat (fire), moist heat (steam), chemicals, electricity, friction, or radiation. Burns are among the most expensive work-related injuries to treat and can result in significant disability. Thermal and chemical burns are the most frequent types of work-related burn injury. Nationally, it has been estimated that 150,000 people with work-related burns are treated in emergency rooms annually, and approximately 30% to 40% of hospitalizations for burns among adults have been found to be work-related.<sup>1 2</sup>

Annual crude rates of hospitalizations for work-related burns were calculated by dividing the number of work-related hospitalizations with a primary diagnosis of a burn injury by the number of employed persons aged 16 years or older for the same time period. A hospitalization is considered work-related if the primary payer was workers' compensation. Burn injury diagnoses include ICD-9 codes 940 - 949. The number of employed persons aged 16 years or older was obtained from the Bureau of Labor Statistics' Geographic Profile of Employment and Unemployment.

The figure below illustrates burn hospitalization rates by year for individuals with workers' compensation reported as the primary payer for Louisiana and the U.S. National rates exceeded Louisiana rates for all years in which data are available, excluding 2001. Louisiana's rate decreased from 3.1 to 1.7 hospitalizations per 100,000 workers, a 45% reduction over the seven-year period.



### Number of Hospitalizations for Work-Related Burns for Persons ≥16 Years; LA 1998-2004

	1998	1999	2000	2001	2002	2003	2004
<b>Number</b>	60	67	70	61	48	42	32

<sup>1</sup> Rossignol AM, Locke JA, Burke JF. Employment status and the frequency and causes of burn injuries in New England. J Occup Med. 1989; 31:751-757.

<sup>2</sup> Baggs J, Curwick C, Silverstein B. Work-related burns in Washington State, 1994-1998. J Occup Environ Med. 2002; 44:692-9.

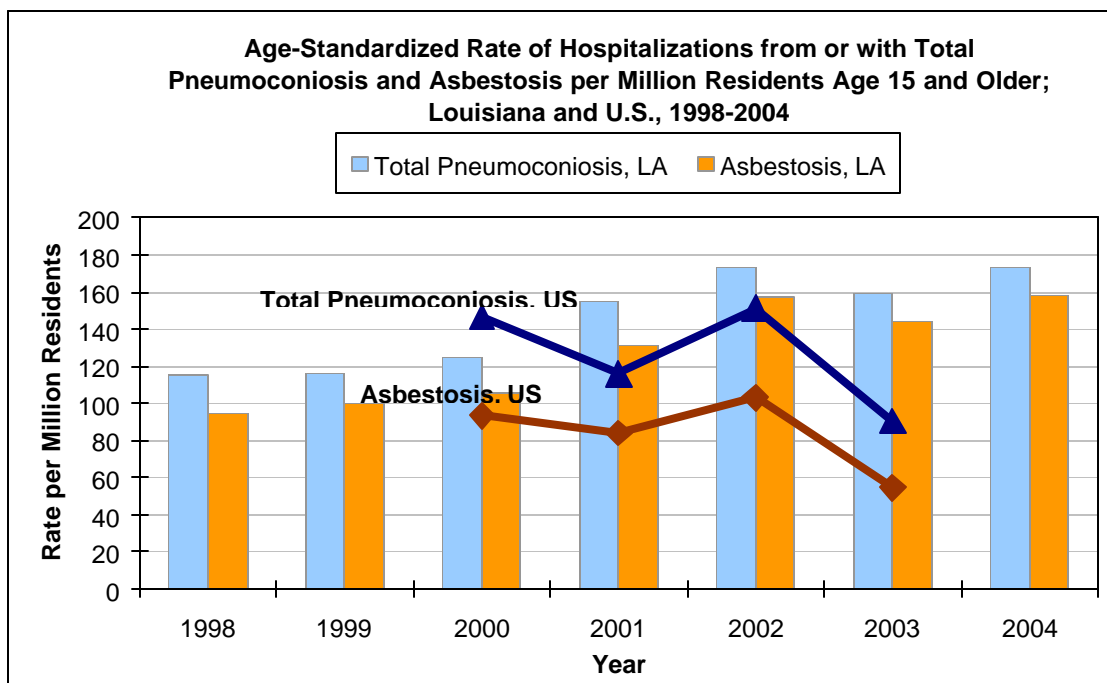
## ***Pneumoconiosis Hospitalizations***

Pneumoconiosis is a term for a class of non-malignant lung diseases caused by the inhalation of mineral dust, nearly always in occupational settings. Most cases of pneumoconiosis develop only after many years of cumulative exposure; thus they are usually diagnosed in older individuals, often long after the onset of exposure.

Pneumoconiosis includes: silicosis, asbestosis, coal workers' pneumoconiosis (CWP), and, less commonly, pneumoconiosis due to a variety of other mineral dusts, including talc, aluminum, bauxite, and graphite. Byssinosis and several other dust-related lung diseases are sometimes grouped with "pneumoconiosis," even though they are caused by occupational exposure to organic (e.g., cotton) dust. Individuals with certain kinds of pneumoconiosis are at increased risk of other diseases, including cancer, tuberculosis, autoimmune conditions, and chronic renal failure.

Annual crude rates of pneumoconiosis hospitalizations were calculated by dividing the number of hospitalizations with a primary or contributing diagnosis of pneumoconiosis by Louisiana's population age 15 years and older for the same calendar year. Crude rates were standardized to the U.S. population to create annual, age-standardized rates. Pneumoconiosis includes ICD-9 diagnoses 500-505. Louisiana population data were obtained from the US Census Bureau's Population Estimates. Because some workers are hospitalized more than once for pneumoconiosis, this indicator is a measure of hospitalizations for pneumoconiosis, not of persons with pneumoconiosis.

Between 1998 and 2004, the age-standardized hospitalization rate for pneumoconiosis among Louisiana residents aged 15 and older increased 50%, from 115.7 to 173.3 per million residents. The increase can be attributed to asbestosis; the asbestosis hospitalization rate increased 67%, and asbestosis cases accounted for approximately 87% of all pneumoconiosis cases.



The number and age-standardized rate of total pneumoconiosis hospitalizations and asbestosis hospitalizations are presented in the following table.

**Number & Age-Standardized Rate of Hospitalizations from or with Pneumoconiosis per Million Residents Age 15 & Older; LA, 1998-2004**

Year	1998		1999		2000		2001		2002		2003		2004	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
<b>Total Pneumoconiosis</b>	363	115.7	366	116.3	402	124.6	506	155.2	575	173.2	535	159.3	587	173.3
<b>Asbestosis</b>	296	94.6	314	100.0	341	106.0	426	131.1	523	157.7	483	144.0	534	158.2
<b>Coal Workers' Pneumoconiosis</b>	21	6.6	29	9.3	29	8.9	33	9.9	20	6.0	18	5.3	12	3.4
<b>Silicosis</b>	36	11.2	21	6.4	30	9.0	41	12.4	30	8.8	33	9.8	35	10.0
<b>Other</b>	10	3.3	<5	-	<5	-	6	1.8	<5	-	<5	-	6	1.7

## IV. Vital Records: Mortality

The Louisiana Office of Public Health maintains a file of all deaths of state residents. Mortality information is gathered from data recorded on the *Certificate of Death* for Louisiana residents. Data are recorded on death certificates by funeral directors, who solicit demographic information from available next-of-kin, and by physicians or coroners, who record information on time, place, and cause of death. Louisiana law requires that funeral directors send death certificates to the Vital Records Registry within five days of the occurrence of a death. Information from death certificates recorded in the Mortality Database includes detailed information about each death: demographics, residence, date of death, place of injury, and ICD-10 codes for the underlying and secondary or contributing causes of death. The *underlying cause of death* is defined as the disease or injury that initiated the sequence of events leading to death.

## ***Mortality from Pneumoconiosis***

Pneumoconiosis is a term for a class of non-malignant lung diseases caused by the inhalation of mineral dust, nearly always in occupational settings. Most cases of pneumoconiosis develop after many years of cumulative exposure and are often diagnosed in older individuals, long after the onset of exposure. These diseases are incurable and may ultimately result in death.<sup>1</sup>

Pneumoconiosis includes: silicosis, asbestosis, coal workers' pneumoconiosis (CWP), and, less commonly, pneumoconiosis due to a variety of other mineral dusts, including talc, aluminum, bauxite, and graphite. Byssinosis is also grouped with "pneumoconiosis" although byssinosis is caused by exposure to organic (e.g., cotton) dust. Individuals with certain kinds of pneumoconiosis are at increased risk of other diseases, including cancer, tuberculosis, autoimmune conditions, and chronic renal failure. Deaths due to pneumoconiosis are undercounted on death certificates because clinicians under-recognize it as a cause of death for a number of reasons, including the long latency between exposure and onset of symptoms and the non-specificity of symptoms.<sup>2 3</sup>

Annual crude mortality rates were calculated by dividing the number of deaths with a pneumoconiosis diagnosis as the underlying or contributing cause of death by Louisiana's population age 15 years and older for the corresponding year. Crude rates were standardized to the U.S. population to create annual, age-standardized rates. Pneumoconiosis diagnoses include ICD-10 codes J60 – J66.8. Louisiana population data were obtained from the US Census Bureau's Population Estimates.

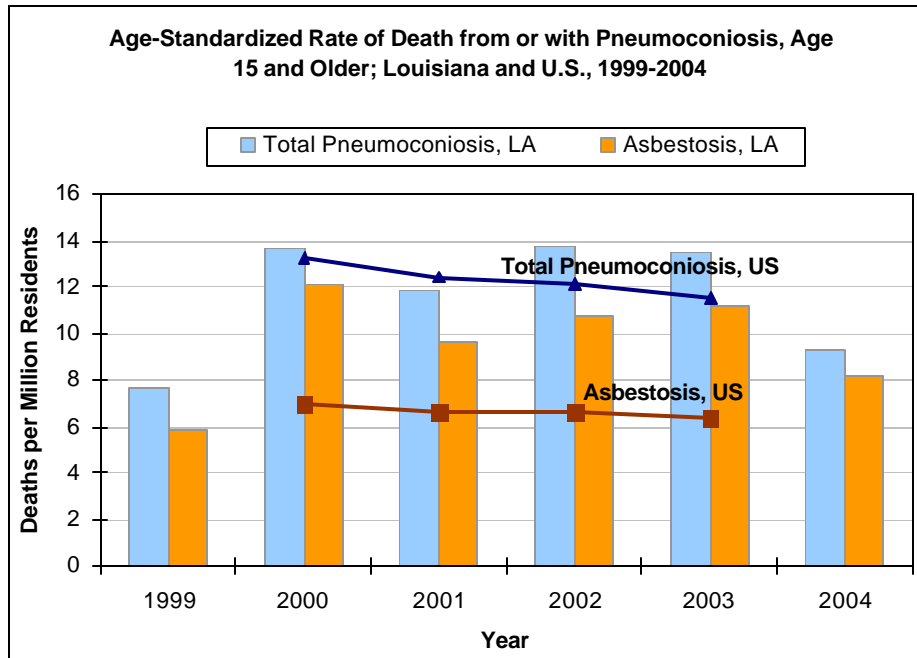
The figure below compares age-standardized death rates for all pneumoconiosis and asbestosis from 1999 to 2004 for Louisiana and 2000 to 2003 for the U.S. For the 4-year period (2000-2003), total pneumoconiosis death rates in Louisiana approximated U.S. rates: there was an average rate of 13 deaths per 1,000,000 residents in Louisiana compared with 12 deaths in the U.S. During this same 4-year period, asbestosis comprised an average of 83% of all the pneumoconiosis-related deaths in Louisiana, compared to an average of 54% in the U.S. Louisiana's asbestosis death rate exceeded the national death rate by an average of 65%.

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<sup>1</sup> Christiani DC, Wegman DH. Respiratory disorders in occupational health: recognizing and preventing work-related disease (3rd ed.) Levy BS, Wegman DH (eds.) Little Borwn, 1995:427-454

<sup>2</sup> Rosenman KD, Reilly MJ, Henneberger PK. Estimating the total number of newly recognized silicosis cases in the US. Am J Ind Med. 2003; 44:141-147.

<sup>3</sup> Goodwin S., Stanbury M, Wang, M-L, Silbergeld, E, Parker, JE. Previously undetected silicosis in New Jersey decedents. Am J Ind Med. 2003; 44:304-311.



The table below presents the annual age-adjusted rates for all pneumoconiosis and asbestosis deaths among Louisiana residents aged 15 and older during the period 1999-2004. Asbestosis rates increased 39% from 1999 to 2004 while rates for other forms of pneumoconiosis showed little or no change.

**Number and age-standardized rate of death from or with pneumoconiosis, age 15 and older; LA, 1999-2004**

	1999		2000		2001		2002		2003		2004	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Total Pneumoconiosis</b>	25	7.7	44	13.6	38	11.8	45	13.7	45	13.5	31	9.3
<b>Asbestosis</b>	18	5.9	39	12.1	31	9.6	35	10.8	37	11.2	27	8.2
<b>Coal Workers' Pneumoconiosis</b>	<5	*	<5	*	<5	*	5	1.5	<5	*	<5	*
<b>Silicosis</b>	5	1.5	<5	*	<5	*	<5	*	<5	*	<5	*
<b>Other</b>	0	-	<5	*	<5	*	<5	*	<5	*	0	-

\*If fewer than 5 deaths, rates were not calculated, as number may be too small to produce reliable rate estimate. The sum of particular types of pneumoconiosis deaths may be greater than the total because more than one type could be listed for an individual death.



## **V. Tumor Registry**

The Louisiana Tumor Registry, operated by the Louisiana State University Health Sciences Center, is a population-based Surveillance, Epidemiology, and End Results (SEER) cancer registry covering the entire state of Louisiana. The registry has been in operation in the New Orleans metropolitan area since 1974, in South Louisiana since 1983 and in the rest of the state since 1988. By law, every health care provider is required to report newly diagnosed cancers to the Tumor Registry. The Tumor Registry database contains information about cancer cases including patient demographics, primary site of cancer, histology codes, and location at date of diagnosis.

## ***Incidence of Malignant Mesothelioma***

Malignant mesothelioma is a rare but highly fatal cancer of the thin membranes surrounding the chest cavity (pleura) or abdominal cavity (peritoneum). Much less frequently, this tumor affects other anatomical sites (e.g., pericardium). The only well-established risk factor for mesothelioma is exposure to asbestos fibers. Prior asbestos exposure, primarily from exposure in the workplace, has been reported in 62 to 85 percent of all mesothelioma cases.<sup>1</sup>

Mesothelioma is a disease of long latency, typically with 20-40 years between exposure and onset of disease. The incidence of mesothelioma in the United States has risen steadily since the 1960s, reflecting high levels of asbestos use and occupational exposure to asbestos during World War II through the 1970s. In the 1970s, new Occupational Safety and Health Administration regulations limited workplace exposures and the Environmental Protection Agency began regulating asbestos uses. It has been projected that the mesothelioma incidence rate in the U.S. would begin to decline in 2004.<sup>2</sup>

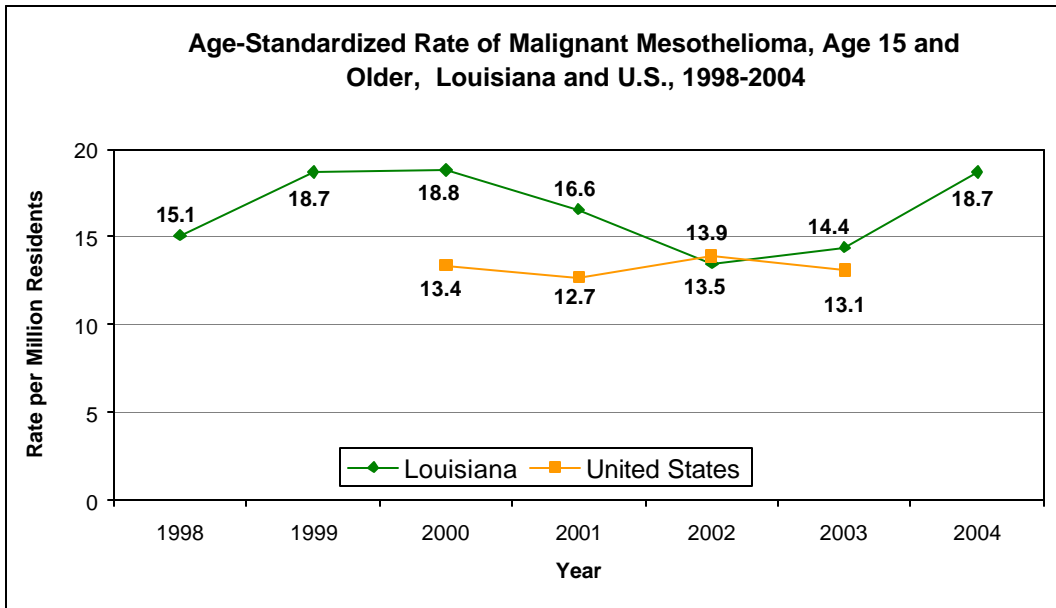
Annual incidence rates of mesothelioma were calculated by dividing the number of incident mesothelioma cases by the Louisiana population for the corresponding year. Incidence rates were standardized to the 2000 U.S. population to obtain age-standardized incidence rates. Mesothelioma diagnoses include ICD-0 histology codes 9050-9053. Louisiana population data were obtained from the US Census Bureau's Population Estimates.

The figure below illustrates age-standardized incidence rates of malignant mesothelioma among Louisiana and U.S. residents from 1998 to 2004. Over the seven-year period, Louisiana rates fluctuated, while over a four-year period national rates remained level (2000-2003). Overall, Louisiana rates exceeded national rates and increased 24% over the seven-year period (1998-2004).

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<sup>1</sup> Albin, M, Magnani, C, Krstev, S, Rapiti, E, and Shefer, I. Asbestos and cancer: An overview of current trends in Europe. *Environ Health Perspect.* 1999; 107(2): 289-298.

<sup>2</sup> Price, B and Ware, A. Mesothelioma trends in the United States: an update based on Surveillance, Epidemiology, and End Results Program data for 1973 through 2003. *Am J Epidemiol.* 2004;159(2): 107-112.



**Number of Malignant Mesothelioma Cases, LA 1998-2004**

	1998	1999	2000	2001	2002	2003	2004
Number	47	60	62	54	46	49	64

## VI. SUMMARY

This report examines Louisiana's occupational health trends using nationally developed indicators. The results can be used to prioritize health conditions for preventative efforts.

In 2001, a national panel of experts in occupational disease surveillance developed a set of occupational health indicators. These indicators are constructs of public health surveillance that define specific measures of health or risk status among specified populations. The indicators can be used to track trends within a state, and in some cases, compare states to each other or the nation.

The Council of State and Territorial Epidemiologists (CSTE) published a report in 2003 that provides a step-by-step process for generating state-level indicator data. This process was used to develop trend data for Louisiana's occupational health indicators. National trend data were also obtained where available for comparison. Results of these analyses may indicate targeted interventions to reduce risk.

### Conclusions

- The employed population in Louisiana grew from 1,900,000 in 1998 to 1,934,000 in 2004.
- During this 6-year period (1998-2004), Louisiana's employed population was, on average 53% male, 47% female, 70.9% white, 27.6% black, and 1.5% other.
- Between 2003 and 2005, approximately half (47.5%) of Louisiana's employed population worked in one of three major industry categories: leisure and hospitality, wholesale and retail trade, or education and health services
- Between 2003 and 2005, approximately half (50.4%) of Louisiana's employed population worked in one of three major occupational categories: professional and related occupations, service, or office and administrative support.
- Louisiana rates exceeded national rates on for four health outcomes: (1) work-related fatalities (1996-2004), (2) asbestosis hospitalizations (2000-2003) (3) asbestosis mortality (2000-2003), and (4) malignant mesothelioma.
- Asbestosis was the only form of pneumoconiosis that had a rate increase. Asbestosis-related hospitalizations increased 67% between 1998 and 2004, and asbestosis-related mortality increased 39% between 1999 and 2004.
- Between 1998 and 2004, Louisiana's rates for malignant mesothelioma increased 24%.