

Occupational Health Indicators

Illinois, 1998-2011


Report from the Illinois Occupational Surveillance Program



Illinois Workers'
Compensation Commission

**ENVIRONMENTAL
AND
OCCUPATIONAL
HEALTH SCIENCES
SCHOOL OF
PUBLIC HEALTH**





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For more information on the Illinois Center for Injury Prevention at the University of Illinois at Chicago, School of Public Health, please visit:

www.illinoisinjuryprevention.org

For more information on the Council of State and Territorial Epidemiologist (CSTE) Occupational Health Effect and Biologic Exposure Indicators, consult the CSTE's web page at:

www.cste.org

Introduction

Goal

This report examines Illinois trends in occupational health using indicators developed by the Council of State and Territorial Epidemiologists (CSTE). The CSTE published a report in 2003 that detailed the steps necessary to obtain state-level data for each of their 19 indicators. The CSTE report has been intermittently updated since 2003. The workgroup who selected the indicators based them on: the availability of state-wide data; the public health importance of the exposure or health effect; and the potential for intervention (CSTE 2003). This comprises what the CSTE work group considers to be a “fundamental program” in occupational surveillance.

Data for Illinois are presented here for 16 of the 19 indicators for 1998-2011. For some indicators, the first set of data was obtained after 1998. Where possible, data are compared with other states and national findings to help provide national context. The states chosen for comparison were selected because of regional similarities and difference and because data were available for comparable years. Of note is that there is a 3+ year lag time for publication of some of the indicators.

Because occupational injuries and illnesses are preventable, these data are intended to provide help for stakeholders charged with the goal of prevention in the realms of occupational health and safety and general public health in a priority setting. Strengths and limitations of each indicator presented here are mostly reproduced from those listed in the CSTE How-to-Guide (<http://www.cste.org/?OHIndicators>).

Findings

- The following show a clear decline over time: Occupational Health indicator (OHI) #1 Non-fatal work-related injuries and illnesses reported by employers, OHI #4 Work-related amputations with days away from work reported by employers, OHI #5 Workers' compensation claims for amputations with lost work time, OHI #7 Work-related musculoskeletal disorders with days away from work reported by employers, Indicator #13 Elevated blood lead levels among adults.
- The following indicators are relatively steady over time—either rising then falling to pre-rise level, or staying steady over the entire period: OHI #3 Fatal work-related injuries, OHI #11 Acute work-related pesticide-associated illness and injury, OHI #12 Incidence of malignant mesothelioma, OHI #14 &15 Workers employed in industries at high risk for occupational morbidity, OHI #16 Workers employed in industries and occupations at high risk for occupational mortality and OSHA enforcement activities, OHI #17 Number of Occupational Health and Safety professionals.
- Four indicators show a rise in the last few years: OHI # 9 Hospitalization from or with pneumoconiosis, OHI #10 Mortality from or with pneumoconiosis, OHI #18 OSHA enforcement activities in the private sector, OHI #19 Workers' compensation awards.
- As the institution responsible for compiling occupational health indicators (OHIs) in Illinois since 2009, the University of Illinois at Chicago, School of Public Health, Environmental and Occupational Health Sciences division obtains data from the Illinois Department of Public Health and the Illinois Workers Compensation Commission, which requires intergovernmental agency agreements. Resources to conduct surveillance activities (data analysis, dissemination, intervention) are not readily available in the State. Publicly available data is accessed from the internet.

Conclusions and Recommendations

- Use of multiple data sources in the State provides better and more detailed estimates than those available from the Bureau of Labor Statistics and other public sources
 - Public health surveillance of occupational illnesses and injuries should be used to focus preventive action
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Summary of sources

Indicator	Description	Sources of data
1	Non-fatal work related injuries and illnesses reported by employers.	Annual BLS Survey of Occupational Injuries and Illness (SOII) www.bls.gov/iif/oshstate.htm#IL
3	Fatal work-related injuries	Census of Fatal Occupational injuries; BLS Current Population Survey Data http://www.bls.gov/iif/oshstate.htm#IL
4	Work-related amputations with days away from work reported by employers.	Annual BLS Survey of Occupational Injuries and Illness (SOII) www.bls.gov/iif/oshstate.htm#IL
5	State workers' compensation claims for amputations with lost work time	Illinois Workers' Compensation Commission; National academy of Social Insurance estimate of workers covered by WC
7	Work-related musculoskeletal disorders with days away from work reported by employers	Annual BLS Survey of Occupational Injuries and Illness (SOII) www.bls.gov/iif/oshstate.htm#IL
9	Hospitalization from or with pneumoconiosis.	Illinois Department of Public Health, Hospital Discharge data; state Population estimates from the U.S. Bureau of Census
10	Mortality from or with pneumoconiosis	Centers for Disease Control and Prevention, National Center for Health Statistics Death Certificate records from National Vital Statistics System www.cdc.gov/nchs/deaths.htm ; state population estimates from the U.S. Bureau of Census
11	Acute work-related pesticide associated illness & injury reported to poison control centers	Illinois Poison Center data; BLS Current Population Survey data
12	Incidence of malignant mesothelioma	Illinois Department of Public Health, Cancer in Illinois Statistics http://www.idph.state.il.us/cancer/08/state_rpt/Hispanic_Incidence_Mesothelioma.pdf ; U.S. Bureau of Census
13	Elevated blood lead levels among adults	Reports of elevated BLLs from Laboratories, ABLES; BLS Current Population Survey data http://www.cdc.gov/niosh/topics/ABLES/pdfs/2002-2005%20lead_data.pdf
14	Percentage of workers employed in industries at high risk for occupational morbidity	Bureau of the Census County Business Patterns http://censtats.census.gov/cbpnaic/cbpnaic.shtml
15	Percentage of workers employed in occupations at high risk for occupational morbidity	BLS Current Population Survey Data http://www.thedataweb.org ; http://dataferrett.census.gov
16	Percentage of workers employed in industries and occupations at high risk for occupational mortality.	BLS Current Population Survey Data http://www.thedataweb.org ; http://dataferrett.census.gov
17	Occupational health and safety professionals	CSTE at (770) 458-3811 ext. 2003
18	OSHA enforcement activities in the private sector.	CSTE at (770) 458-3811 ext. 2003 or by e-mail at apatel@cste.org ; OSHA
19	Workers' Compensation Awards	National Academy of Social Insurance (NASI)

* Data obtained from the BLS website are no longer available at those sites.

Indicator #1 Non-fatal work-related injuries and illnesses reported by employers

Figure 1.1

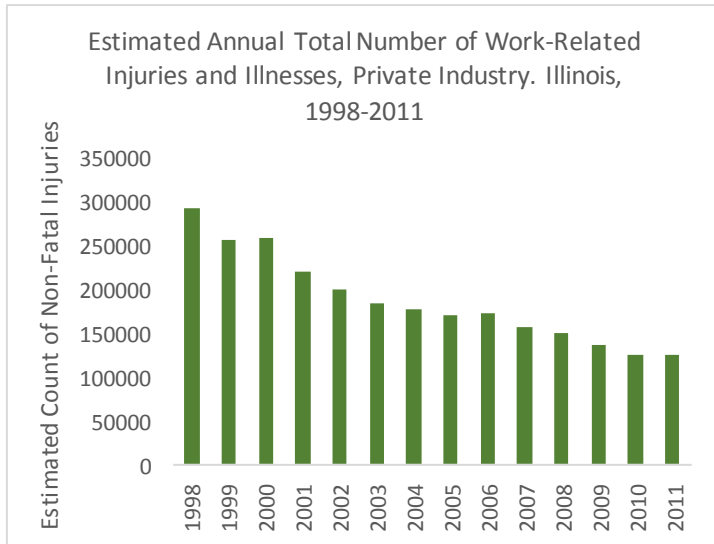
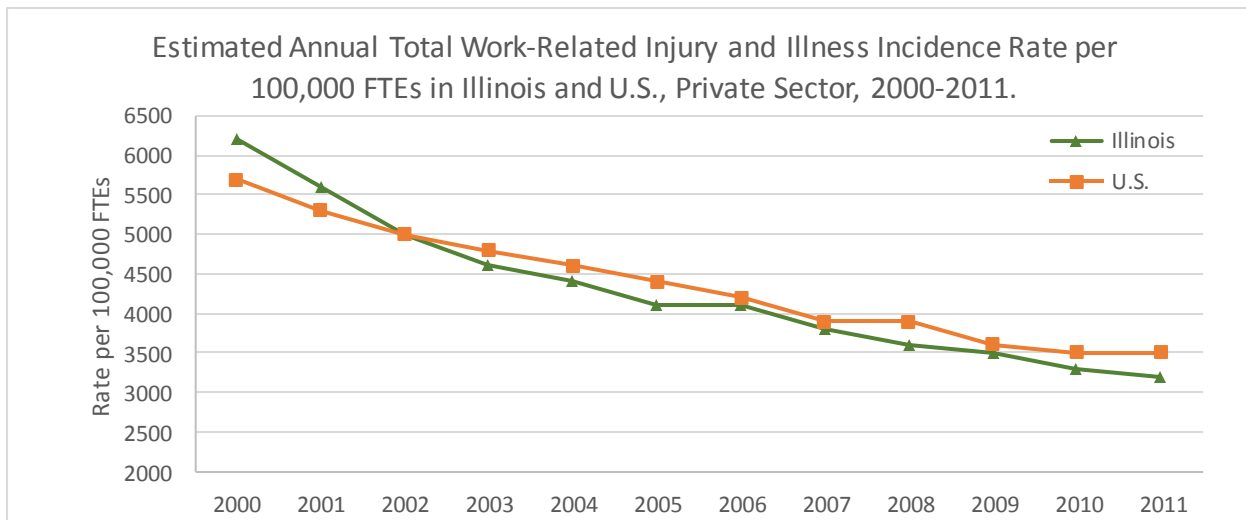


Figure 1.1 shows the estimated total number of non-fatal work-related injuries and illnesses in Illinois for the period of 1998-2011. There has been an overall decline during this period, with no change in the last 2 years.

Figure 1.2 compares Illinois and U.S. incidence rates for non-fatal work-related injuries and illnesses for the years 2000-2011 (the period for which data are available for both). Illinois has attained a decline of about 39%, giving a rate lower than those for the U.S. for most of the period.

Data source: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses, private industry

Figure 1.2



Data sources: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses, Bureau of Labor Statistics Current Population Survey

Limitations:

Data come from the Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries and Illnesses, which uses a nationwide sample of employers to gain information on occupational injuries and illnesses. Data are limited to those cases considered recordable, meaning: they result in death, lost work time, medical treatment beyond first aid, loss of consciousness, restriction of work activity or transfer to another job. They may not include conditions for which employees obtain care from their personal health care providers and are affected by differences in the way employers implement modified work activity. These estimates do not include public sector workers, the self-employed, household workers, or workers on farms with less than 11 employees. Though the most comprehensive data available, it is generally understood that these are underestimates (Azaroff, 2002; BLS, 2015).

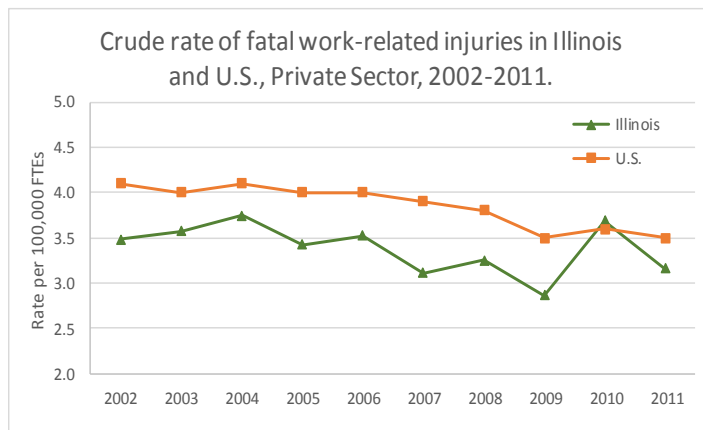
Indicator #3 Fatal work-related injuries

A fatal work-related injury is one that occurs at work and results in death. The BLS Census of Fatal Occupational Injuries (CFOI) counts both unintentional injuries that result in deaths and intentional injuries (homicides and suicides). Injuries that occur during a person's commute to and from work are not included, whereas those that result from travel as part of a person's job are.

Figure 3.1 (right) shows the evolution of the number of fatal work-related injuries in Illinois for the period of 1998-2011.

Figure 3.2 (below) shows the crude fatality rate for Illinois and the U.S. as a whole. During the period where data are available for both, Illinois' fatality rate decreased by about 10%, while the rate for the U.S. declined by 11%. The fatality rate is lower in Illinois than the U.S. in every year except 2010.

Figure 3.2



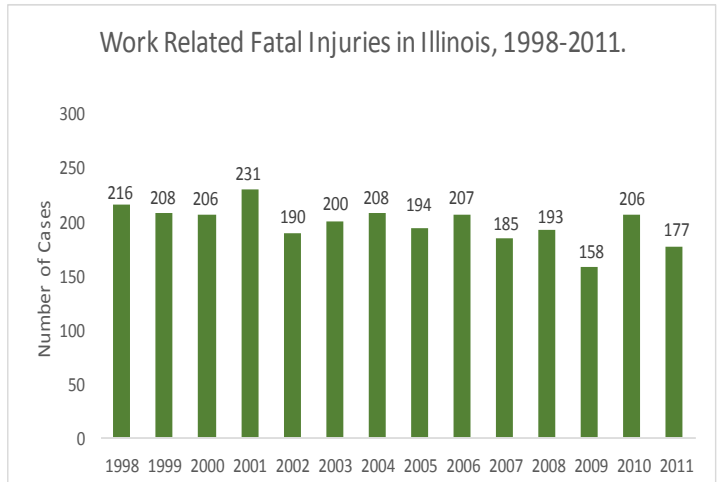
Data sources: Bureau of Labor Statistics Census of Fatal Occupational Injuries, Bureau of Labor Statistics Current Population Survey

Limitations:

Rates may be slightly over-estimated because workers under the age of 16 and military personnel are included in the numerator but not the denominator. Data are reported by the state in which the injury occurs, but not the death. It also may not be the state in which the deceased worker usually resided.

Data sources: Bureau of Labor Statistics Census of Fatal Occupational Injuries, Bureau of Labor Statistics Current Population Survey

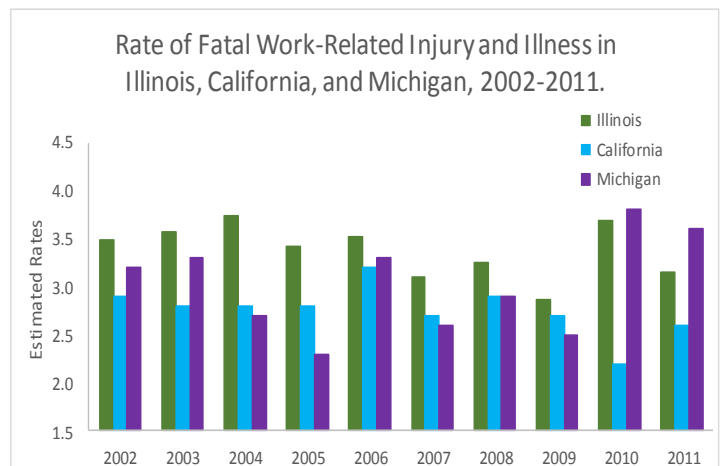
Figure 3.1



Data sources: Bureau of Labor Statistics Census of Fatal Occupational

Figure 3.3 (below) shows that California's rate of fatal work-related injuries declined by 21%, Michigan's decreased by 16% and Illinois' declined by 10% in the first 8 years, but then rose again in each state in 2010. 2011 is lower for Illinois and Michigan and higher for California.

Figure 3.3

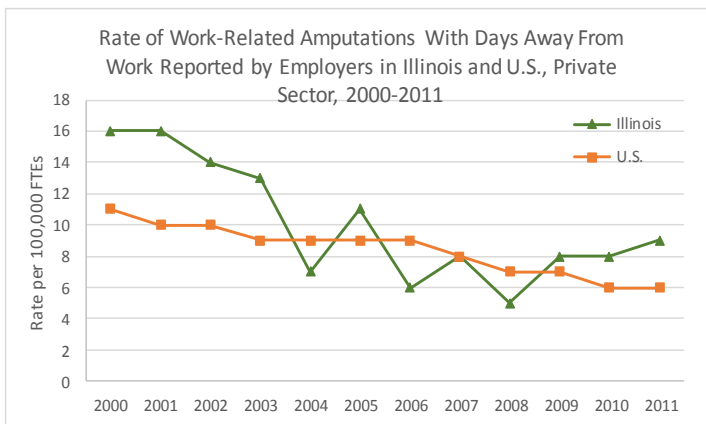


Indicator #4 Work-related amputations with days away from work reported by employers

An amputation occurs when a protruding body part is partially or fully lost. Work-related amputations are serious and preventable, mostly by controlling workplace hazards. The Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII) gives estimates of numbers and rates of work-related amputations that involve at least one day away from work.

Figure 4.1 shows the estimated numbers of work-related amputations in Illinois reported by private industry employers for the period 2000-2011.

Figure 4.2



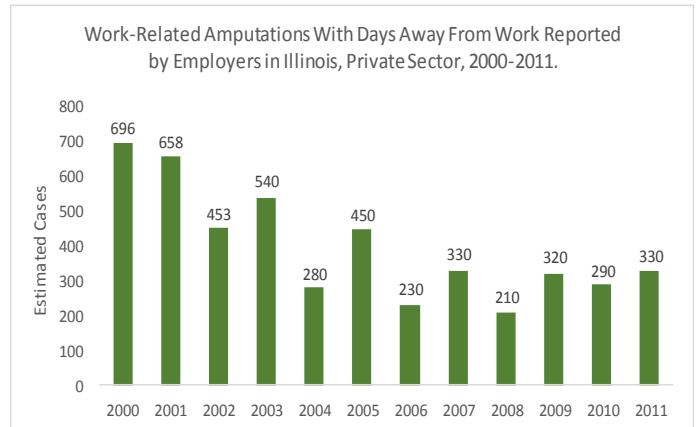
Data sources: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses; Bureau of Labor Statistics Current Population

Figure 4.2 illustrates the rate of work-related amputations per 100,000 full-time workers for Illinois, and the U.S. as a whole from 2000-2011. Illinois' rate declined through 2008, but appears to be rising in the last 4 years. These injuries declined by half for the U.S. for the whole period.

Limitations:

The SOII data are gathered from a probability sample and are not a census of all employers. These estimates do not include the military, self-employed, farms with fewer than 11 employees, Federal agencies and in some states, public employees. Amputation injuries may be significantly under-reported because crush injuries may turn into amputations following the initial recording, reporting of amputations is not mandatory in most states, and many workplaces are exempted in this count. Using multiple data sources, there were ~500 amputations/year in Illinois (Friedman, 2013).

Figure 4.1



Data source: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

Figure 4.3

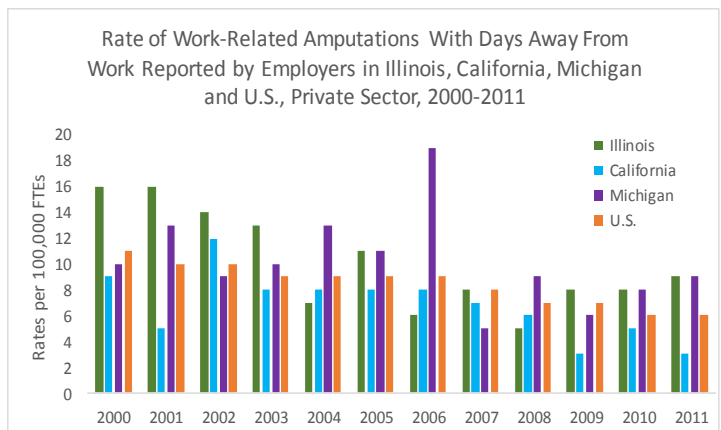
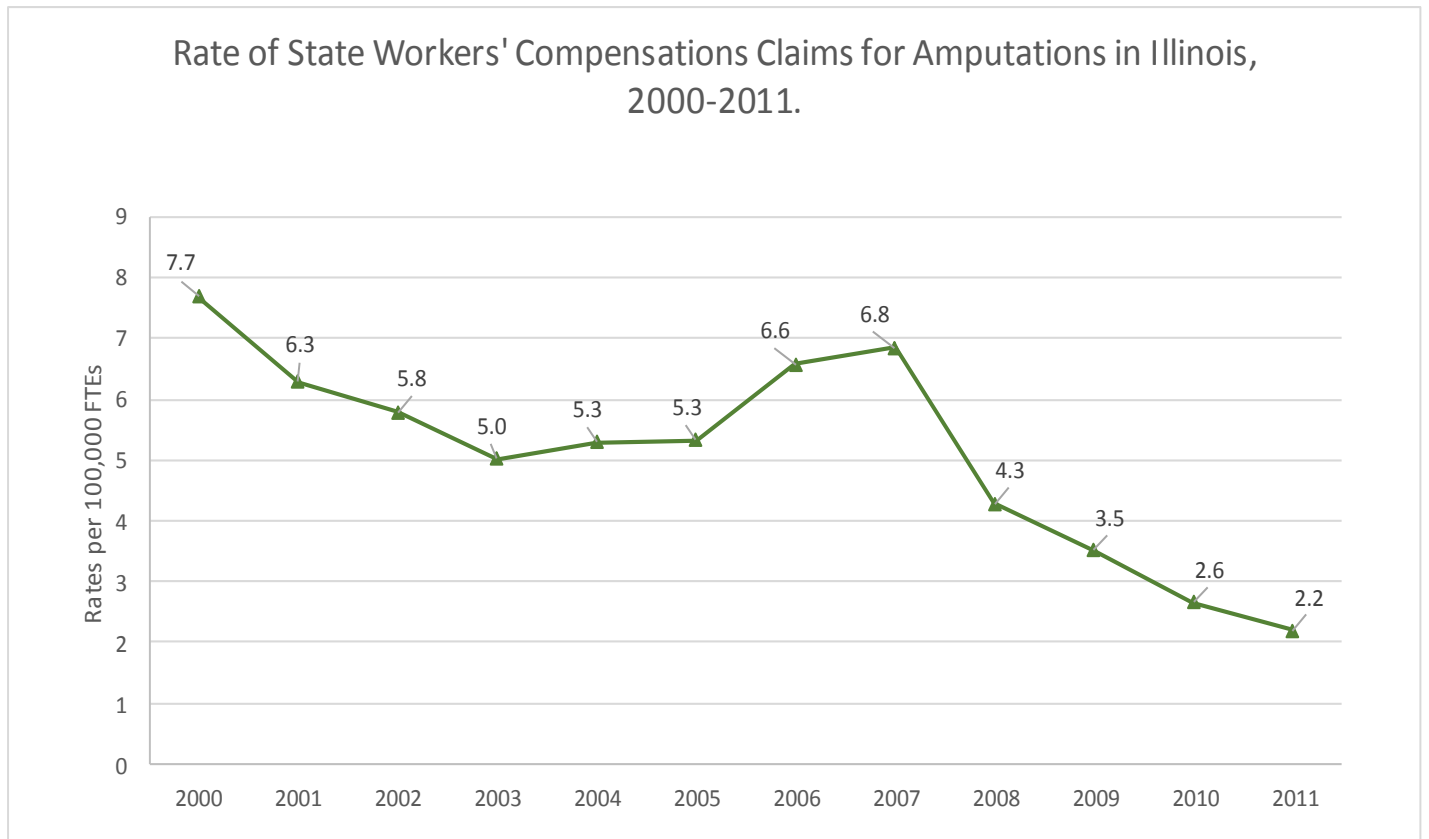


Figure 4.3 gives the rates of work-related amputations per 100,000 full-time workers for Illinois, California, Michigan and the U.S.

Data sources: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses; Bureau of Labor Statistics Current Population Survey

Indicator #5 State Workers' Compensation claims for amputations with lost work-time

Figure 5.1



Data sources: Illinois Workers' Compensation Commission; National Academy of Social Insurance estimate of workers covered by workers' compensation

In addition to the BLS data used for Indicator #4, Illinois workers' compensation claims were used as a source of data on work-related amputations for OHI #5.

Figure 5.1 illustrates a 71% drop in claims rate for work-related amputations for every 100,000 individual workers covered by Illinois state Workers' Compensation between 2000-2011.

Limitations:

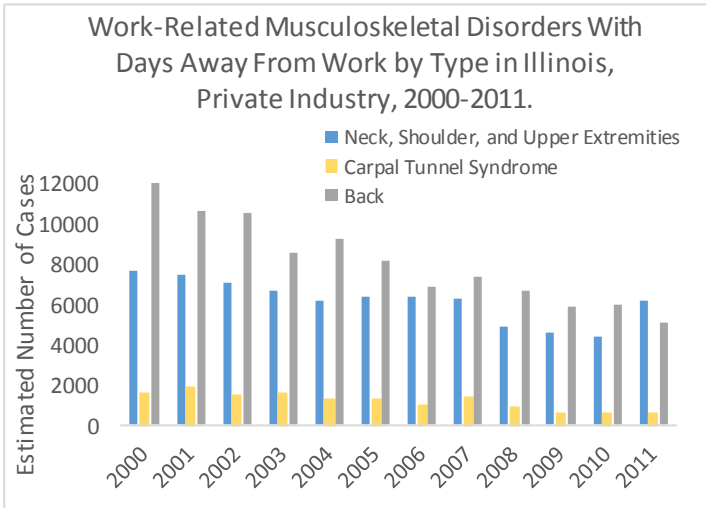
This indicator should not be used for state-to-state comparisons because of differences in availability of data and criteria for claims among states. Workers' compensation data are not complete, as many workers do not file, and claims may be denied. In addition, some workers may not be covered. Our research shows that Workers' Compensation claims capture only one-third to one-half of occupational amputations in Illinois (Friedman, 2013).

Indicator #7 Work-related musculoskeletal disorders with days away from work reported by employers

Work-related musculoskeletal disorders involve injuries of muscles, tendons, nerves, ligaments, joints and spinal disks that are caused or aggravated by work. Musculoskeletal disorders are very common and costly; they significantly affect a person's ability to work and quality of life.

All numbers and rates are as reported by employers.

Figure 7.1



Data source: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses

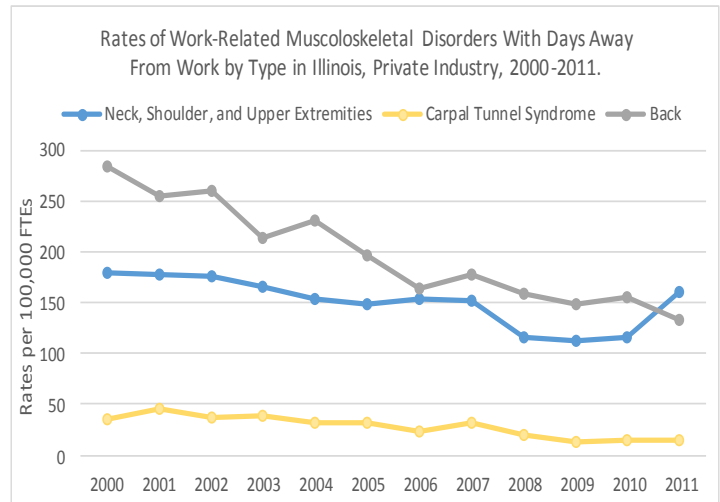
Figure 7.1 shows the number of work-related musculoskeletal disorders with days away from work for Illinois by type for the years 2000-2011. For all years except 2011, disorders of the back are by far the most common. Changes in unemployment are not reflected here since rates are not calculated.

Figure 7.3 compares the rates of work-related musculoskeletal disorders with days away from work for Illinois and the U.S. for the years 2000-2011. Though rates are very similar, Illinois had rates higher than those for the U.S. as a whole from 2004-2010.

Limitations: See Indicator 1.

Data source: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses; denominator from the Current Population Survey.

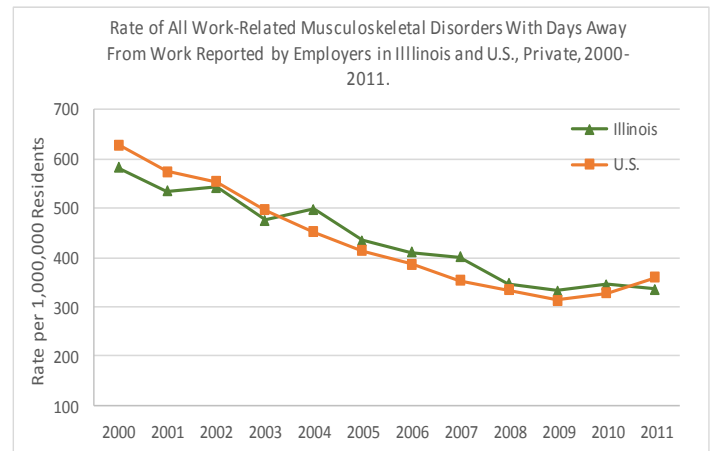
Figure 7.2



Data source: Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses. Current Population Survey used for denominator.

Figure 7.2 illustrates the rate of work-related musculoskeletal disorders with days away from work for Illinois by type for the years 2000-2011. Disorders of the back declined by about 48% for the period; neck, shoulder and upper extremity disorders declined by 37% through 2010, but rose in 2011; and carpal tunnel syndrome declined by about 63%.

Figure 7.3

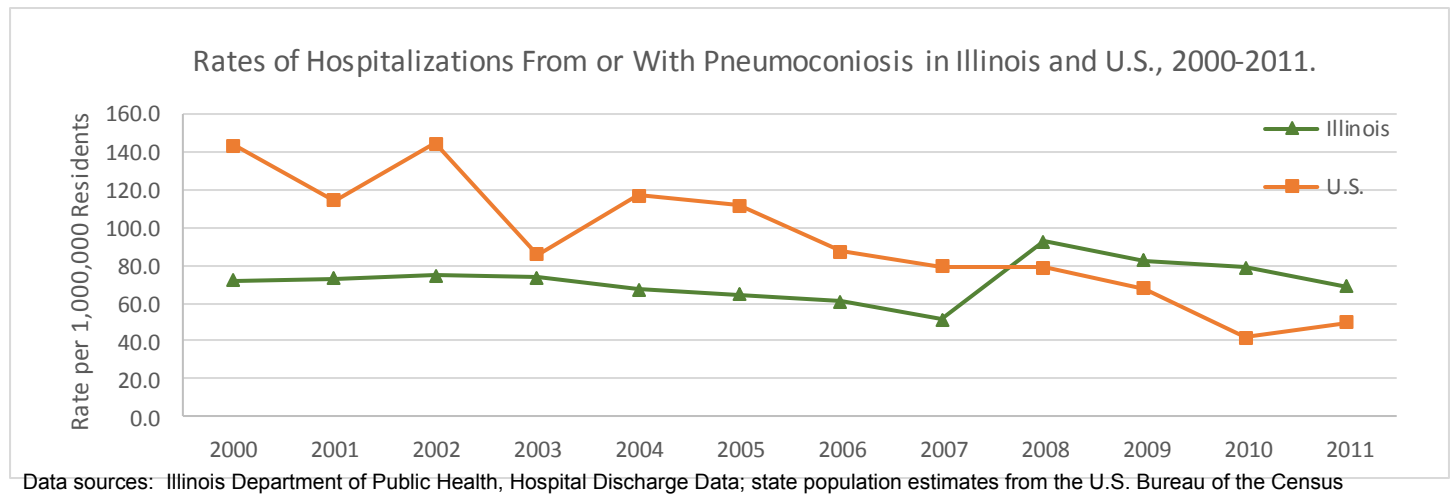


Indicator #9 Hospitalization from or with pneumoconiosis

Pneumoconiosis is scarring of the lung as a reaction to inhalation of certain types of dusts. Almost all cases of pneumoconiosis can be attributed to occupational exposures (NIOSH 2004); asbestosis, coal workers pneumoconiosis, and silicosis are the major types of pneumoconiosis. Respiratory infections, chronic bronchitis, emphysema, lung cancer, pleuritis, progressive systemic sclerosis, renal disease and respiratory failure are complications associated with pneumoconiosis and conditions caused by other kinds of dusts. Controlling occupational dust exposure is the best way to prevent pneumoconiosis. There is a call for an international ban on asbestos.

Figure 9.1 illustrates the rates of hospitalizations in Illinois and the U.S. from or with pneumoconiosis per one million residents. The Illinois rates are age standardized and the U.S. rates are not. Figure 9.2 shows rises and falls in hospitalization rates for the period 2000-2011, with only a slight difference between rates in 2000 vs 2011.

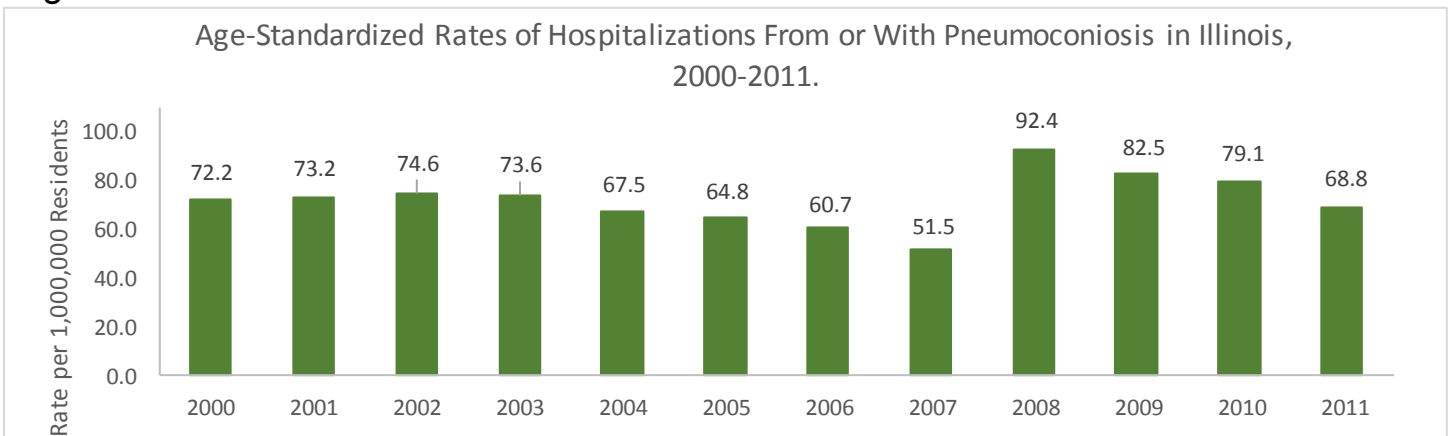
Figure 9.1



Limitations:

Because of the long latency period (time from first exposure to development of disease) for pneumoconioses, current incidence is not indicative of current exposures to workers. The number and types of diagnoses listed on discharge documents may vary by person, region and by payment mechanisms. People may be hospitalized in a different state than that in which they reside; they also may have had dust exposure in a different state. Hospital discharge data are not available in all states, so national aggregations based on state data are incomplete. Pneumoconioses have a 20+ year latency, so population at risk (denominator) should be historical, not current. Because of the rarity of these disorders, the OHI requires calculation of rates per 1,000,000, which is not customary in most public health rate calculations.

Figure 9.2



Indicator #10 Mortality from or with pneumoconiosis

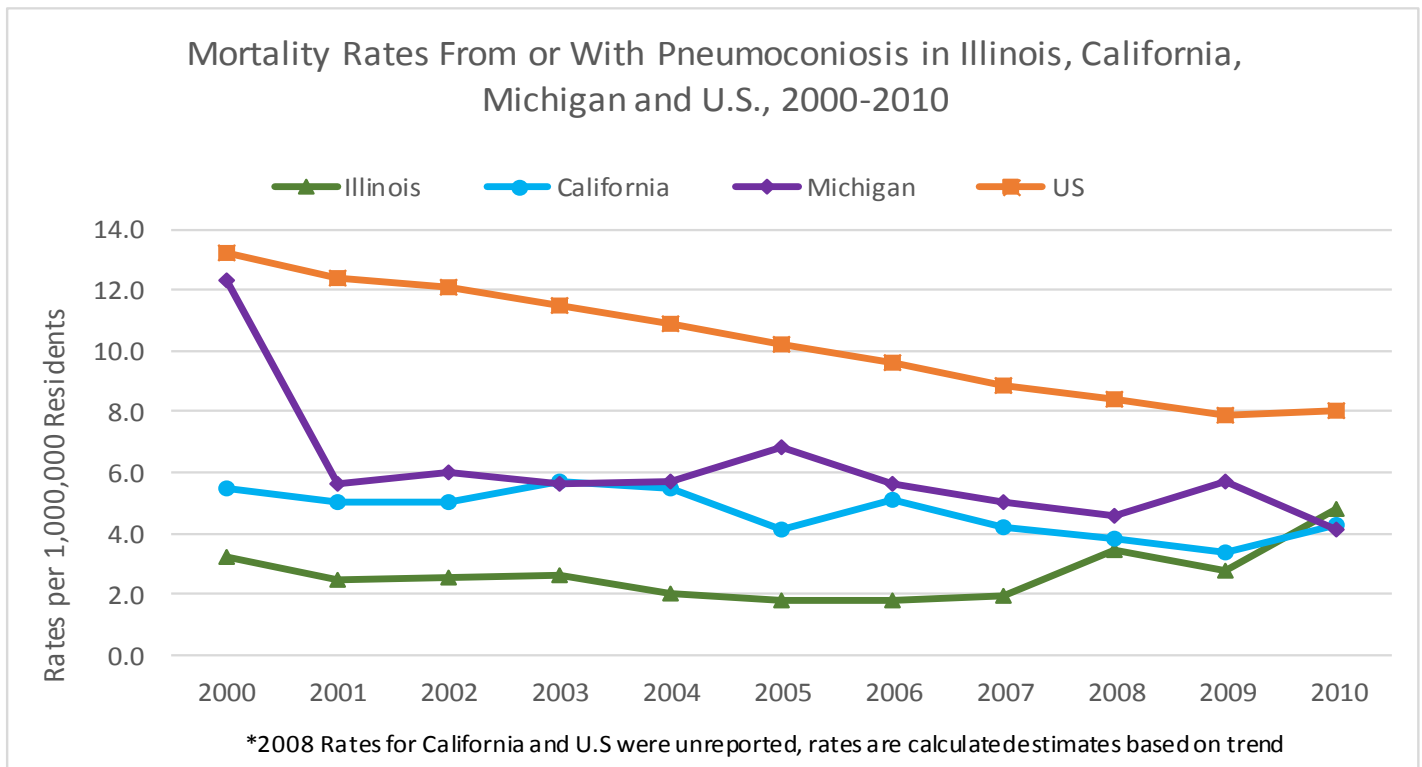
Because all states collect cause of death and underlying and contributing causes on death certificates, deaths from or with pneumoconiosis can be tracked. Pneumoconiosis often has a long-latency period (20+ years from first exposure to disease manifestation) and non-specific signs and symptoms, and is under-recognized by physicians; therefore, counts are likely to underestimate the actual numbers (Rosenman, Reilly & Henneberger 2003).

Figure 10.1 shows the mortality rate from or with pneumoconiosis for Illinois from 2000 to 2011. During that period, mortality from pneumoconiosis initially declined, but has now gone up from 3.2 deaths per million residents in 2000 to over 4 deaths per million Illinois residents in 2011. The rate per million is used because of the rarity of these diseases.

Limitations:

Because of the long latency period from first exposure to manifestation of disease, current incidence is not indicative of current exposures. Also, people may not die in the same state where the exposure took place. There may be inaccuracies on death certificates. Note that the rate calculation is based on total population as opposed to working population or number of dust-exposed workers in that year.

Figure 10.1



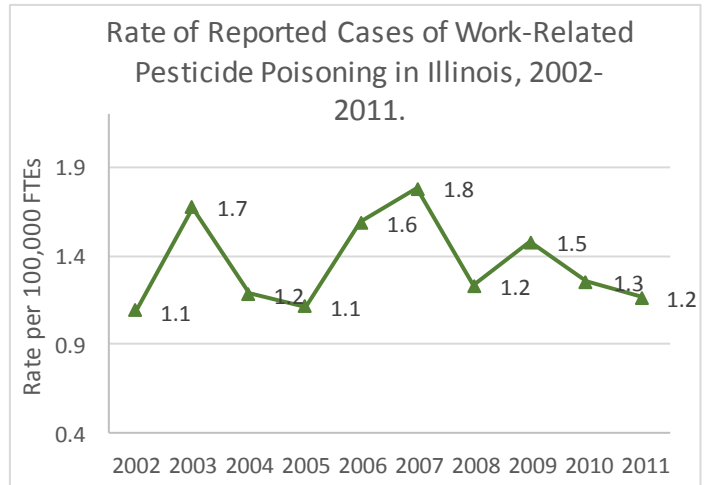
Data source: Centers for Disease Control and Prevention, National Center for Health Statistics Death Certificate records from National Vital Statistics System; state population estimates from the U.S. Bureau of the Census Current Population Survey

Indicator #11 Acute work-related pesticide-associated illness and injury reported to poison control centers

Pesticides are agents designed to control or kill unwanted insects, plants, animals or fungi. Workers who are in direct contact with pesticides are at increased risk for exposure, but environmental pesticides are also of concern. While data reported to Poison Control Centers are thought to significantly underestimate work-related pesticide illnesses (Calvert *et al* 2003), they are nonetheless a source of data that allows cross-state comparison.

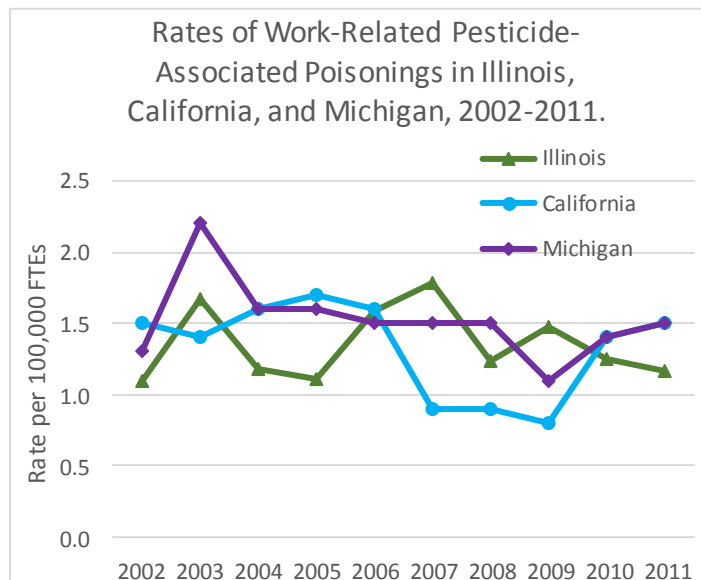
Figure 11.1 (right) shows the rate of work-related pesticide poisonings in Illinois for the period from 2002-2011. During this period, rates fluctuated with increases in 2003, 2006, 2007 and 2009.

Figure 11.1



Data sources: Illinois Poison Control Center data; BLS Current Population Survey Data

Figure 11.2



Data sources: American Association of Poison Control Centers; BLS Current Population Survey data

Figure 11.2 compares Illinois rates to California and Michigan for the years 2002-2011.

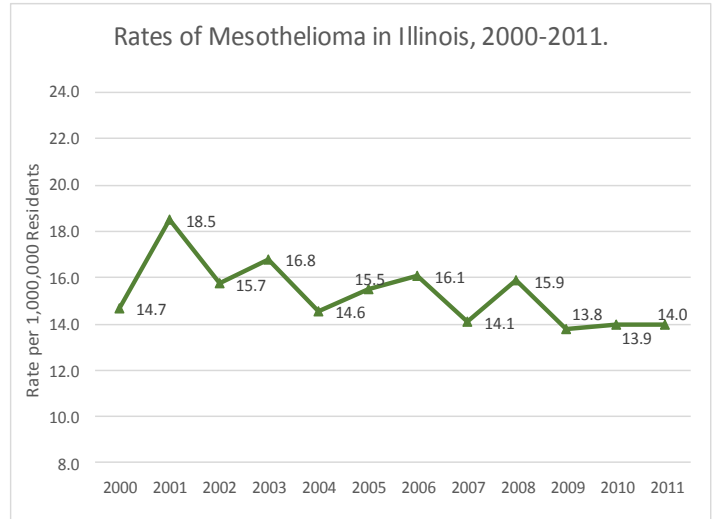
Limitations: Not all states have Poison Control Centers, and a small proportion of occupationally-related poisonings are thought to be captured in those that do exist. PCCs do not collect systematic data on industry and occupation. Rural areas may call PCCs regarding suspected pesticide related illnesses. In California and Michigan reporting of pesticide poisoning is mandatory, and other databases may be a better source of information. Denominator data for rate calculation could better stratify by the number of people at risk than the BLS Current Population Survey does.

Indicator #12 Incidence of malignant mesothelioma

While a relatively rare cancer, malignant mesothelioma is uniformly fatal, with death generally occurring within two years of diagnosis. It is mostly attributable to workplace exposure to asbestos (NIOSH 2004). Mesothelioma is a disease of the membranes surrounding the chest, abdomen, and less frequently, other sites, and has a latency period from 20-40 years. Diagnosis in 2011 likely reflects exposure in the 1970s or even earlier.

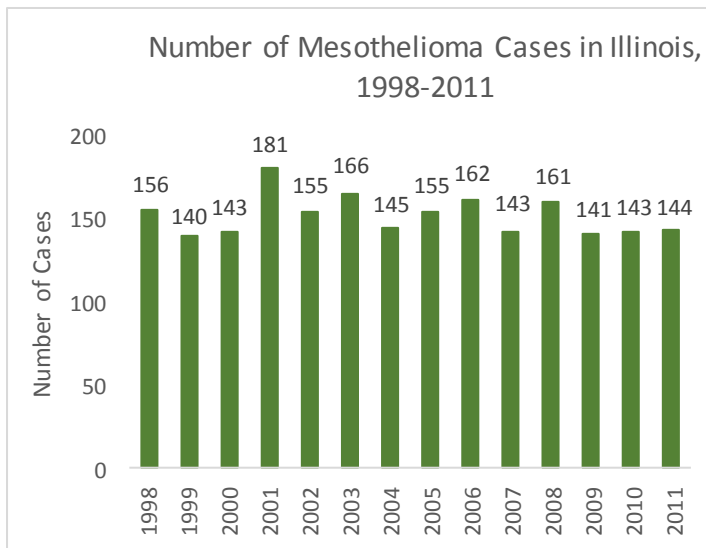
Figure 12.1 shows the rate of malignant mesothelioma per million residents in Illinois from 2000-2011. Rates were highest in 2001, at 18.5 cases per million. States generally calculate cancer rates per 100,000 and adjust for age. The CSTE indicator calls for a denominator of one million without age adjustment. The per million rate is used because of the rarity of these disorders.

Figure 12.1



Data sources: Illinois Department of Public Health, Cancer in Illinois Statistics; U.S. Bureau of the Census Current Population Survey

Figure 12.2



Data source: Illinois Department of Public Health, Cancer in Illinois Statistics.

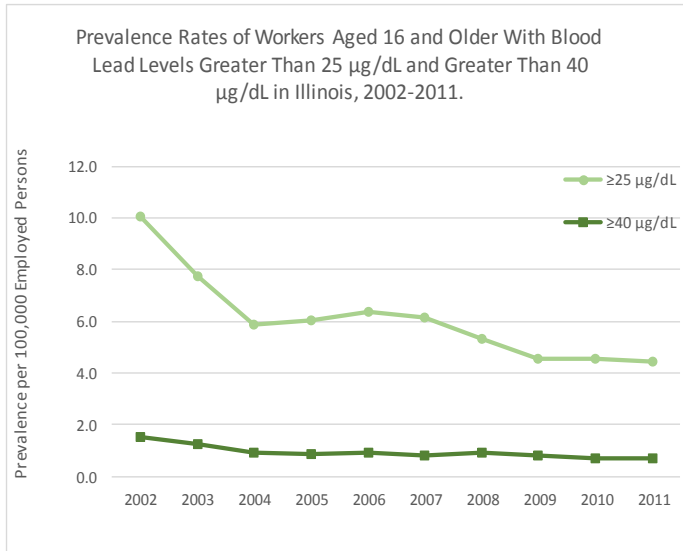
Figure 12.2 graphically displays the numbers of malignant mesothelioma cases in Illinois from 1998-2011. For this period, the numbers have remained fairly constant.

Note:

The Illinois Cancer Registry has been designated as a Registry of Excellence by CDC due to quality, completeness and timeliness. It also has achieved Gold Certification for the past 17 years from the North American Association of Central Cancer Registries, a standard-setting organization. This is probably the most complete and accurate indicator in this report.

Indicator #13 Elevated blood lead levels among adults

Figure 13.1



Data sources: Reports of elevated BLLs from Laboratories, ABLES, BLS Current Population Survey Data

Blood lead level (BLL) is the best biological indicator for measuring recent lead exposure. In adults, elevated blood lead levels are mainly due to occupational exposure. Many states participate in a laboratory reporting program that allows surveillance of population BLLs in adults.

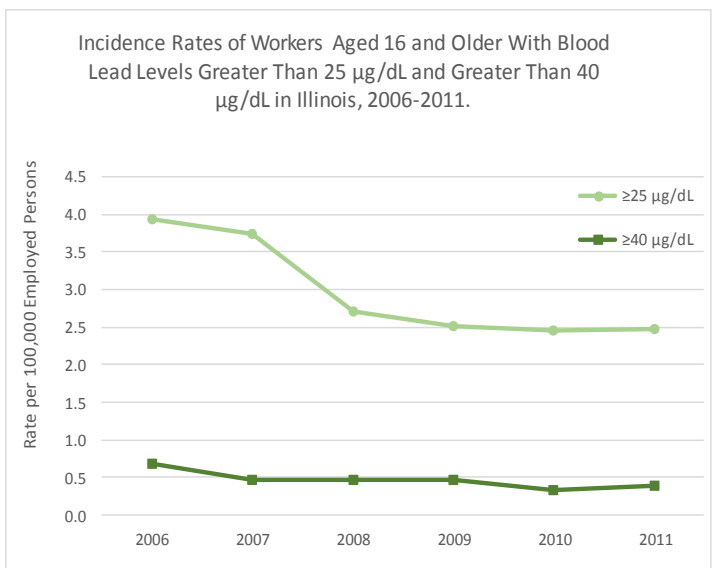
Figure 13.1 shows that, in Illinois, prevalence rates for BLL of $\geq 25 \mu\text{g}/\text{dL}$ decreased by 55% from 2002-2011. For the same period, levels of $\geq 40 \mu\text{g}/\text{dL}$ also declined by about 60%.

Figure 13.2 shows the incidence rates for BLLs of $\geq 25 \mu\text{g}/\text{dL}$ and $\geq 40 \mu\text{g}/\text{dL}$ in Illinois from 2006-2011. The former declined by 36% for the period and the latter by 43%.

Limitations:

BLL indicates exposure over the last few weeks, but is not a good indicator of longer-term or cumulative exposure. Also, not all states require laboratory reporting and data may be incomplete. Although OSHA mandates testing of lead exposed workers, not all adults at risk are tested. It can be difficult to differentiate non-occupationally exposed people from those occupationally exposed.

Figure 13.2



Data sources: Reports of elevated BLLs from Laboratories, ABLES, BLS Current Population Survey Data

Indicator #14 Percentage of workers employed in industries at high risk for occupational morbidity

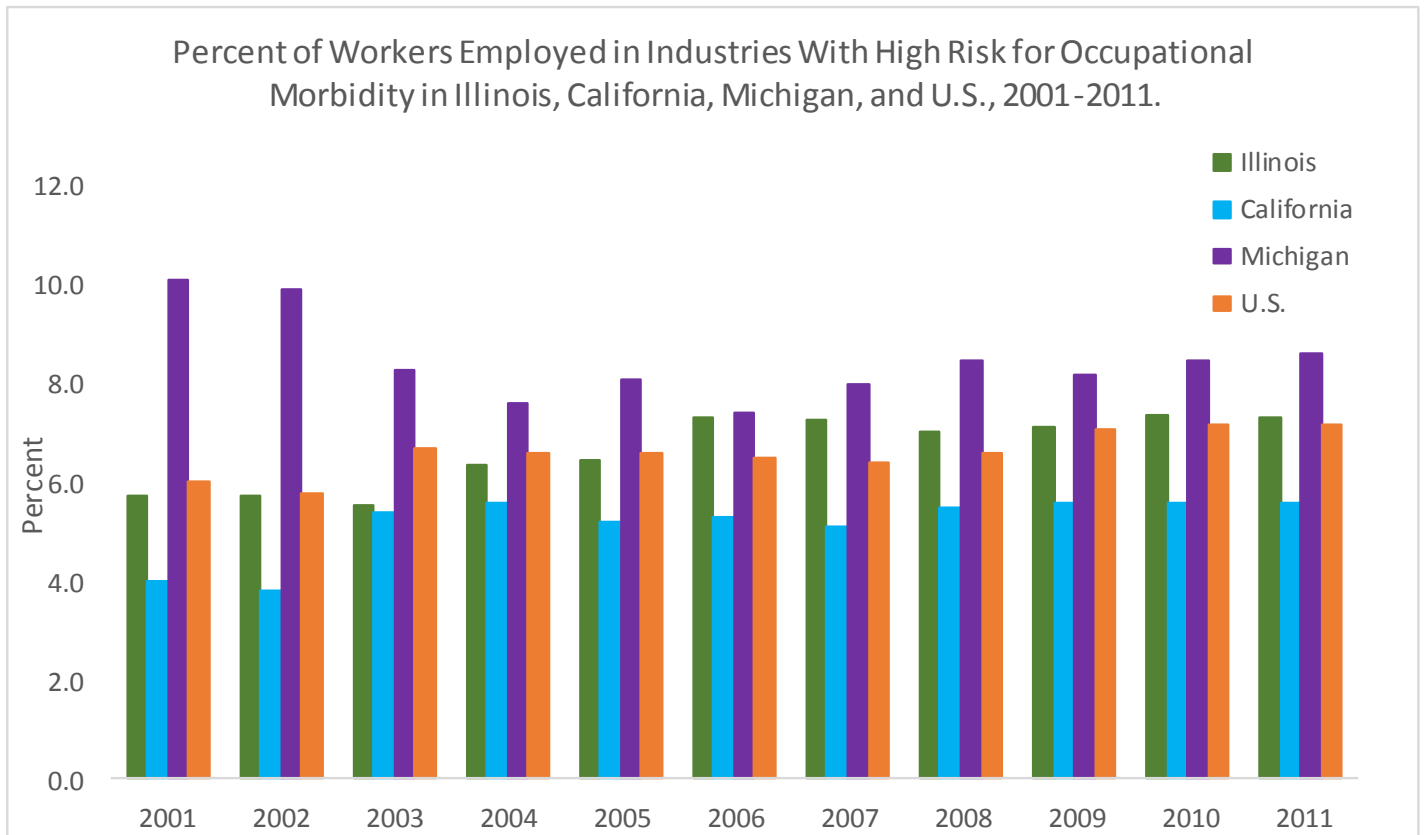
Not all industries expose workers to the same types and levels of risk, and workers in some industries are at much higher risk than others. Work-related injuries and illnesses can be prevented, and concentrating on those at highest risk may be important in prioritizing prevention efforts.

Figure 14.1 compares the percentages of workers employed in industries at high risk for occupational morbidity in Illinois, Michigan, California, and the U.S. as a whole. Between 2000-2005, Illinois had a lower percentage of workers employed in industries at high risk for occupational morbidity than both Michigan and the U.S. as a whole, but higher than California. From 2006-2008 Illinois had a higher percentage than both the U.S. and California. Subsequently, the U.S. rate has risen.

Limitations:

See Indicator 1. Also, this measure is a very crude indicator of employment in high risk industries.

Figure 14.1



Data source: Bureau of the Census County Business Patterns

Indicator #15 Percentage of workers employed in occupations at high risk for occupational morbidity

Not all occupations expose workers to the same types and levels of risk, and workers in some occupations are at much higher risk than others. Work-related injuries and illnesses can be prevented, and concentrating on those at highest risk may be important in prioritizing prevention efforts. Some occupations categorized as high risk for occupational morbidity by the CSTE OHI Guide include emergency medical technicians and paramedics, maids and housekeeping cleaners, transportation attendants, carpenters, construction laborers, roofers, aircraft mechanics and service technicians, industrial and refinery machinery mechanics and bus drivers.

Figure 15.1 shows that after a decline between 2003 and 2005, the percentage of workers employed in high-morbidity occupations in Illinois grew from 15.5% to 17.3% from 2005 to 2008. It declined again from 2008 to 2011 by 9.2%.

Limitations:

See Indicator #1. The Current Population Survey may not be a perfect match for the workers covered as a part of SOII. The conversion of SIC codes to NAICS codes in 2003 limits the ability to look at trends over time. Not all high risk workers are formally employed—many work in the “cash” economy (e.g., housekeepers, day laborers, construction workers) and would be absent from this estimate. Note that this indicator is “occupations,” alone, not industries and occupations.

Figure 15.1



Data source: BLS Current Population Survey

Indicator #15 Percentage of workers employed in occupations at high risk for occupational morbidity

Figure 15.2 lists the occupations considered to be high risk for morbidity according to the Bureau of Census. The table shown here includes the code used for the particular occupation.

2002 BOC Code	2002 Bureau of Census Industry/Occupation Title
2720	Athletes, coaches, umpires, and related workers
3400	Emergency medical technicians and paramedics
3600	Nursing, psychiatric, and home health aides
3700	First-line supervisors/managers of correctional officers
3850	Police and sheriff patrol officers
3860	Transit and railroad police
3900	Animal control workers
4120	Food servers, non-restaurant
4210	First-line supervisors/managers of landscaping, lawn service, and grounds keeping
4220	Janitors and building cleaners
4230	Maids and housekeeping cleaners
4350	Nonfarm animal caretakers
4550	Transportation attendants
5410	Reservation and transportation ticket agents and travel clerks
5530	Meter readers, utilities
6120	Forest and conservation workers
6210	Boilermakers
6220	Brick masons, block masons, and stonemasons
6230	Carpenters
6260	Construction laborers
6310	Pile-driver operators
6360	Glaziers
6440	Pipe layers, plumbers, pipefitters, and steamfitters
6500	Reinforcing iron and rebar workers
6510	Roofers
6530	Structural iron and steel workers
6730	Highway maintenance workers
6760	Miscellaneous construction and related workers
6840	Mining machine operators
6910	Roof bolters, mining
7140	Aircraft mechanics and service technicians
7160	Automotive glass installers and repairers
7200	Automotive service technicians and mechanics
7210	Bus and truck mechanics and diesel engine specialists

Indicator #15 Percentage of workers employed in industries/ occupations at high risk for occupational morbidity

Figure 15.2 continued

2002 BOC Code	2002 Bureau of Census Industry/Occupation Title
7310	Heating, air conditioning, and refrigeration mechanics and installers
7330	Industrial and refractory machinery mechanics
7420	Telecommunications line installers and repairers
7510	Coin, vending, and amusement machine servicers and repairers
8140	Welding, soldering, and brazing workers
8160	Lay-out workers, metal and plastic
8520	Model makers and patternmakers, wood
8530	Sawing machine setters, operators, and tenders, wood
8610	Stationary engineers and boiler operators
8850	Cementing and gluing machine operators and tenders
8860	Cleaning, washing, and metal pickling equipment operators and tenders
8900	Cooling and freezing equipment operators and tenders
8910	Etchers and engravers
8920	Molders, shapers, and casters, except metal and plastic
8930	Paper goods machine setters, operators, and tenders
8940	Tire builders
8950	Helpers--production workers
8960	Production workers, all other
9120	Bus drivers
9130	Driver/sales workers and truck drivers
9140	Taxi drivers and chauffeurs
9240	Railroad conductors and yardmasters
9260	Subway, streetcar, and other rail transportation workers
9300	Sailors and marine oilers
9560	Hoist and winch operators
9620	Laborers and freight, stock, and material movers, hand
9730	Shuttle car operators

Industries and occupations that are high risk for morbidity had injury and illness rates higher than the national rates reported by the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (Annual Survey). The data source for occupation-specific employment is the Current Population Survey (CPS).

Indicator #16 Percentage of workers employed in industries and occupations at high risk for occupational mortality

Not all industries and occupations expose workers to the same types and levels of risk, and workers in some industries and occupations are at much higher risk for fatalities than others. Work-related fatalities can be prevented, and concentrating on those at highest risk may be important in prioritizing prevention efforts, identifying new hazards and clusters, and developing interventions and policies.

Figure 16.1 illustrates a fairly stable percent of workers employed in industries and occupations at high risk for occupational mortality in Illinois over the period between 2003 and 2011, with lows in 2005-2007.

Limitations:

Regional specifics may make the ranking of dangerous industries and occupations different from the national rankings. The Census of Fatal Occupational Injuries counts suicides at work as occupational fatalities, even though they may not always be work-related. This indicator is limited to private sector workers but includes the self-employed.

Figure 16.1



Data source: BLS Current Population Survey

Indicator #16 Percentage of workers employed in industries and occupations at high risk for occupational mortality

Figure 16.2 lists the industries and occupations considered to be high risk for mortality according to the Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI).

2007 Census Industry/ Occupation Code	2007 Census Industry/Occupation Title
0170	Crop Production
0180	Animal Production
0190	Forestry, Except Logging
0270	Logging
0280	Fishing, Hunting, Trapping
0290	Support Activities for Agriculture and Forestry
0370	Oil and Gas Extraction
0380	Coal Mining
0390	Metal Ore Mining
0470	Nonmetallic Mineral Mining and Quarrying
0490	Support Activities for Mining
0770	Construction
1070	Animal Food, Grain, and Oilseed milling
1080	Sugar and Confectionery Products
2090	Miscellaneous Petroleum and Coal Products
2570	Cement, Concrete, Lime, and Gypsum Product Mfg.
2670	Iron and Steel Mills and Steel Product Mfg.
2690	Nonferrous Metal Production and Processing (Except Aluminum)
2770	Foundries
3680	Ship and Boat Building
3770	Sawmills and Wood Preservation
3780	Veneer, Plywood, and Engineered Wood Product Mfg.
4280	Recyclable Material Wholesalers
4480	Farm Product Raw Materials Wholesalers

Indicator #16 Percentage of workers employed in industries and occupations at high risk for occupational mortality

Figure 16.2 continued.

2007 Census Industry/ Occupation Code	2007 Census Industry/Occupation Title
4570	Farm supplies wholesalers
4585	Wholesale Electronic Markets, Agents, and Brokers
6080	Rail Transportation
6090	Water Transportation
6170	Truck Transportation
6190	Taxi and Limousine Service
6270	Pipeline Transportation
6280	Scenic and Sightseeing Transportation
6290	Services Incidental to Transportation
6590	Sound Recording Industries
7180	Other Consumer Goods Rental
7190	Commercial, Industrial, and Other Intangible Assets Rental and Leasing
7770	Landscaping Services
7790	Waste Management and Remediation Services
8690	Drinking Places, Alcoholic Beverages
8870	Commercial and Industrial Machinery and Equipment Repair and Maintenance

Industries and occupations that are high risk for morbidity had injury and illness rates higher than the national rates reported by the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries. The data source for occupation-specific employment is the Current Population Survey (CPS). 27 industries and 24 occupations comprised the "high-risk" groups for this occupational health indicator.

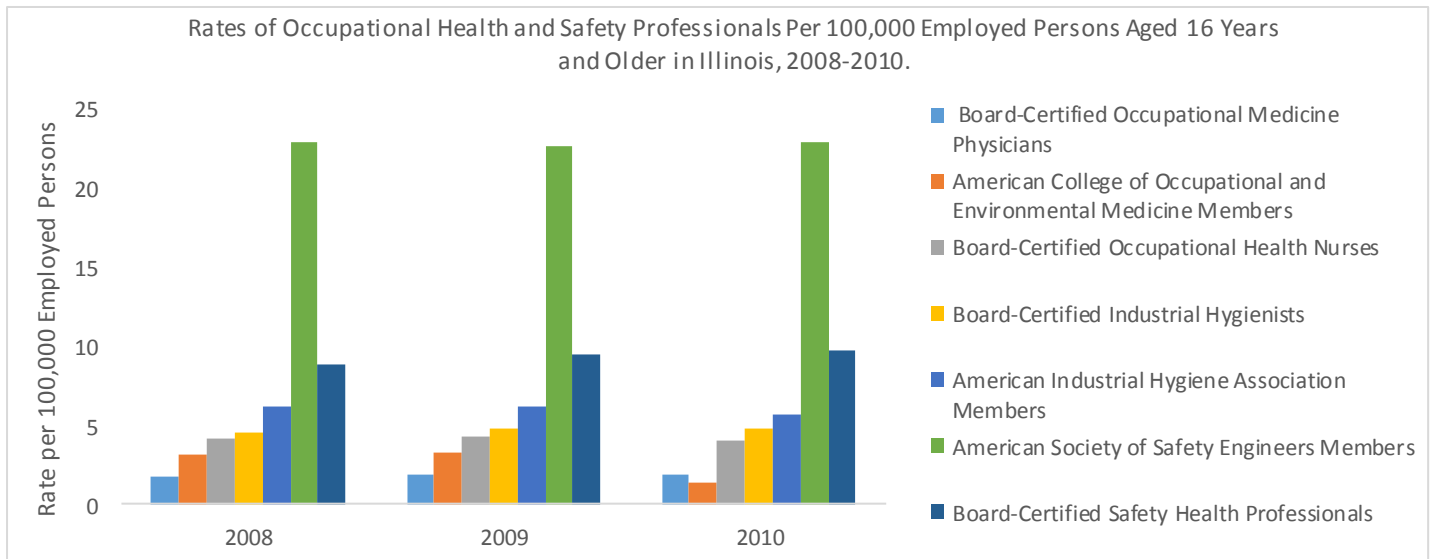
Indicator #17 Occupational safety and health professionals

Occupational injuries and illnesses are preventable, and occupational safety and health professionals are an important part of that prevention. Aggregate data has not been obtained since 2005.

Figure 17.1 shows little change in occupational safety and health professionals in Illinois from 2008-2010.

Table 17.1 shows current number of occupational safety and health professionals, in specific categories.

Figure 17.1



Limitations:

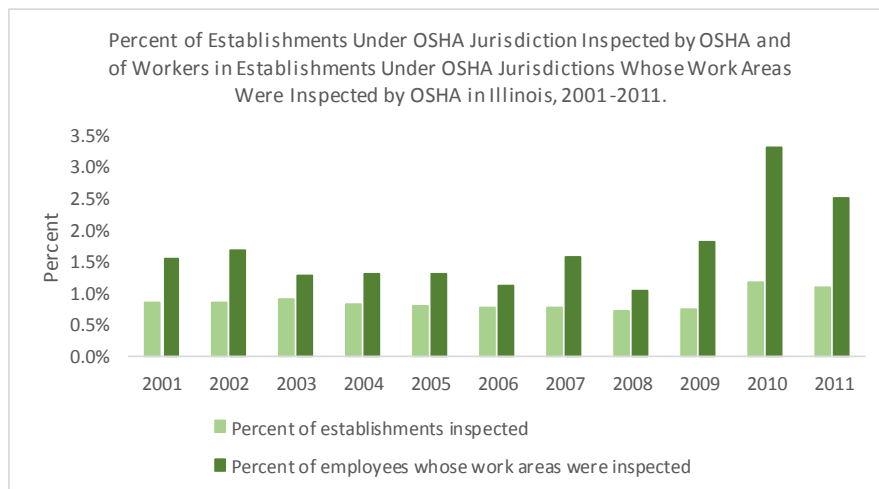
Not all occupational health specialties are included. Individuals included may not devote the majority of their time to prevention, may not work full-time in occupational safety and health, may not be board-certified or professionally affiliated, and addresses may not be up-to-date. Board certified members may no longer live in Illinois; those board certified elsewhere may live in Illinois and not be listed as such.

Indicator #18 OSHA enforcement activities

The Occupational Safety and Health Administration (OSHA) is charged with assuring safe and healthy working conditions for American workers. One way they do this is by performing inspections to enforce workplace health and safety standards. Keeping track of the frequencies of inspections provides an estimate of the proportions of workers and worksites benefiting from OSHA activities.

Figure 18.1 shows that the percentage of establishments inspected by OSHA were basically unchanged between 2001-2009. There is a spike in the percent of establishments and employees who were inspected in 2010, which coincides with the introduction of a new Severe Violator Enforcement Program and changes in OSHA penalty structure. This change, amongst others, was detailed in the following enforcement summary: https://www.osha.gov/dep/2010_enforcement_summary.html)

Figure 18.1



Data source: Council of State and Territorial Epidemiologists

Limitations:

This indicator measures only enforcement, which is just one of OSHA's activities. The numbers of inspections are approximations, and some types of worksites are excluded from enforcement activity.

Figure 18.2

Figure 18.2 shows the number of inspections covered by Federal OSHA from 2008-2011.

Federal OSHA Inspections in Illinois, 2008-2011

	2008	2009	2010	2011
Annual number of employer establishments inspected by OSHA	2,648	2,835	4,472	4,165
Number of OSHA-covered establishments that are eligible for OSHA inspection (excludes mines, farms)	366,791	372,627	376,830	383,630
Annual number of employees whose work areas were inspected by OSHA	60,834	Not available	181,665	138,545
Number of OSHA-covered employees (excludes miners, farmers)	5,819,877	5,530,706	5,480,607	5,544,834

Data source: Provided by Council of State and Territorial Epidemiologists, originates with OSHA.

Limitations:

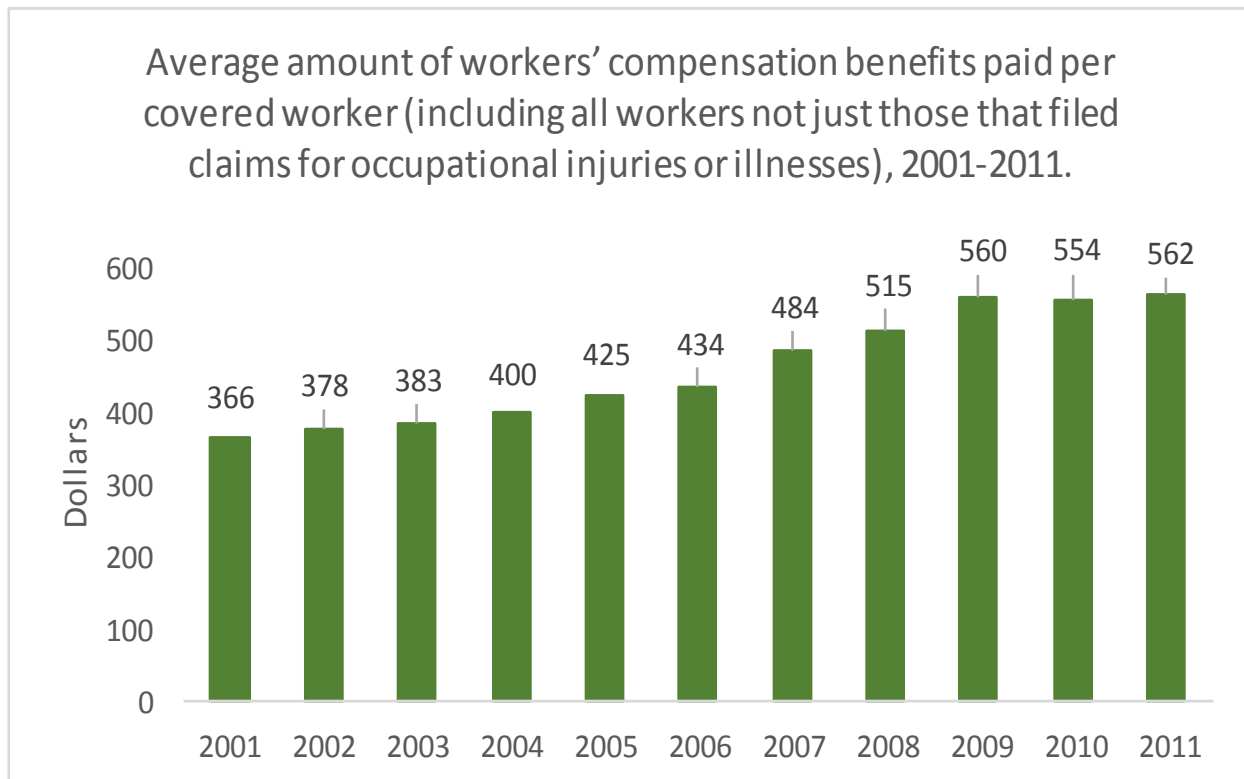
The Illinois Department of Labor conducts inspections of workplaces of public sector employees. Data from IDOL is not included in this table.

Indicator #19 Workers' Compensation awards

The National Academy of Social Insurance aggregates national data on total payments for workers' compensation benefits on an annual basis. NASI receives its data from insurance companies, self insured companies and state governments. This section includes data for medical only and indemnity (lost work time) claims. In 2013, the total amount of benefits paid for workers' compensation benefits was 2.7 billion dollars. A common approach for generalizing this data is to calculate the average amount paid per covered worker in a given calendar year. This includes all workers not just those that filed claims for occupational injuries or illnesses. The rationale for using all workers in the denominator is to estimate the average cost to employers to cover all their employees. Increases in average costs per covered employee across time can result from increasing injuries, increases in severity, and increasing claim costs driven by rising health care costs, salaries, or formulations estimating disability and time lost

Figure 19.1 shows that the average amount of money per covered worker paid by Illinois Workers' Compensation increased steadily from 2001-2011.

Figure 19.1



Data source: National Academy of Social Insurance

Limitations:

Workers' compensation claims in Illinois are filed if the worker is dissatisfied with the allocation for medical costs, lost-time, and/or permanent partial impairment; criteria for filing of claims are different among the states. Dollar amounts are incomplete indicators of the real burden of work-related injury and illness: they do not put into evidence the social costs of injury and illness, nor do they completely estimate the economic costs, since medical costs may be absent. These data are useful for evaluating trends within states. Workers' Compensation data are not complete, because of eligible workers who do not file and workers who are excluded from coverage by the program.

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