Occupational Health in Kentucky: Annual Report 2010
PREFACE

About this Report

This is the fifth annual report produced by the Kentucky Occupational Safety and Health Surveillance (KOSHS) program at the Kentucky Injury Prevention and Research Center. This report is intended to provide trend data on occupational injury and illness indicators including health, exposure, hazard, intervention, and socio-economic indicators. It also includes comparisons between Kentucky occupational injury and illness rates, and US rates.

The Kentucky Injury Prevention and Research Center, as the bona fide agent for the Kentucky Department for Public Health, has been funded by the National Institute for Occupational Safety and Health (NIOSH) to collect data on 19 indicators of worker injuries and illnesses using guidelines established by the Council of State and Territorial Epidemiologists (CSTE). Kentucky also collects data for four state-specific indicators.

Indicator data was collected using standardized methodology from a variety of different state data sources including emergency department billing data, inpatient hospitalization billing data, motor vehicle crash data, mortality data, poison control center data, workers’ compensation data, state personnel cabinet data, Kentucky Adult Blood Lead Epidemiology and Surveillance data, and Kentucky Cancer Registry data among others.

Our Objectives

The objectives of the KOSHS program are to identify worker populations and work environments with elevated risk for nonfatal and fatal worker injuries and illnesses, to identify risk factors for an occupational injury, and to develop strategies for dissemination of state occupational health data, with the ultimate goal of reducing the burden of occupational injuries in Kentucky.

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Cover Images


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May 2010

The Kentucky Injury Prevention and Research Center (KIPRC) at the University of Kentucky and the Kentucky Department for Public Health are proud to present our fifth annual report on the surveillance of occupational injuries and illnesses in Kentucky. This surveillance report provides a snap-shot of the status of Kentucky compared to the US for a number of standardized indicators for occupational injuries and illnesses that were developed collaboratively between the Council of State and Territorial Epidemiologists and the National Institute for Occupational Safety and Health.

The Kentucky Occupational Safety and Health Surveillance program at KIPRC contributes to the Healthy Kentuckians initiative and the Kentucky State Injury Prevention Plan by:

- Tracking occupational injuries, illnesses, and fatalities in Kentucky;
- Establishing and maintaining partnerships and collaborations with state partners, agencies, companies, organizations and other stakeholders;
- Maintaining an advisory committee to target major occupational injury and illness issues specific to Kentucky;
- Enhancing occupational injury and illness surveillance through response to emerging issues;
- Analyzing occupational injury and illness surveillance data to identify new and emerging risk factors for an occupational injury or illness;
- Providing worker and employer groups with a sound evidence basis for improving worker safety and health.

The Occupational Health in Kentucky annual report is intended to inform worker safety and health in Kentucky. It is hoped that the report will serve the needs of employers, employees, and other stakeholders by raising awareness of the state of the commonwealth on occupational injuries and illnesses, so that they can respond effectively.

Sincerely,

Kraig E. Humbaugh, MD, MPH
Director, Division of Epidemiology and Health Planning
Kentucky Department for Public Health

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EXECUTIVE SUMMARY

Work-related injuries and illnesses impact both Kentucky workers and their families which were estimated to be 1.7 million employees and 4.3 million persons in 2009. Worker injuries result in not only economic costs but also social and emotional costs. Information on the incidence and prevalence of work-related injuries and illnesses is used to target prevention programs and reduce workplace exposures.

Key findings:

- Kentucky’s 2008 nonfatal work-related injury and illness rate has decreased 44% since 1998 but is still 21% above the national rate. The highest injury incidence rate was in the forging and stamping industry.

- Kentucky’s fatal work-related injury rate decreased in 2008, but was 33% higher than the national occupational fatality rate. The primary cause of death was due to motor vehicle collisions.

- Kentucky’s work-related amputation rate increased in the year 2008 to 13 cases/100,000 workers, 87% higher than the national amputation rate.

- From 2007 to 2008, Kentucky’s overall MSD incidence rate decreased 18%.

- The acute work-related pesticide-associated injury and illness rate for Kentucky remained the same for years 2008 and 2009. Occupational pesticide exposures were due primarily to hypochlorite disinfectants.

- Kentucky’s 2008 malignant mesothelioma incidence rate increased 50% from the year 2007.

- The Kentucky occupational motor vehicle nonfatal and fatality rate increased slightly in the year 2008. Workers’ Compensation claims were most frequently filed for the Services industry.

- The Kentucky adult blood lead level (>25μg/dL) prevalence rate was 6.3 cases per 100,000 workers in 2008, and was 4% lower than the average state rate in the year 2007, the most recent year available for US data.

- The Kentucky industries at greatest risk for occupational injury were nursing and residential care facilities, wood products manufacturing, and couriers and messengers industries in 2008. The occupation at highest risk for work-related injuries and illnesses in Kentucky for 2008 was the laborers, and freight, stock, and material movers occupation.

- Kentucky public sector employee injuries increased 7% from 2,350 injuries recorded in the year 2008 to 2,511 injuries recorded in the year 2009.

- The occupational fall injury incidence rate decreased 3% in 2008, and occurred primarily in the services industry and in the laborers except construction occupation.

- The industries at highest risk for occupational mortality in 2009 were the construction, and truck transportation industries.
Indicator #1: Non-Fatal Work Related Injuries and Illnesses Reported By Employers

In 2008, there were 59,800 nonfatal work-related injuries and illnesses in Kentucky, with an incidence rate of 4,700/100,000 employees, down 44% from 1998 (Figure 1). Kentucky is still 21% above the national incidence rate of 3,900/100,000 FTEs. Forging and stamping (14.3 cases/100 FTEs), residential care facilities (11.3 cases/100 FTEs), and motor vehicle steering and suspension component manufacturing industries had the highest nonfatal injury incidence rates in 2008.

Figure 1. Total Work-Related Injury and Illness Incidence Rates In Kentucky (1998-2008).

Data Source: Annual BLS Survey of Occupational Injuries and Illnesses (SOII)
Indicator #2: Work-Related Hospitalizations

In 2007, there were 3,455 work-related hospitalizations with an annual crude rate of 179/100,000 employed persons age 16 years and older, up 20% from the year 2006 (Figure 2).

Figure 2. Work-Related Hospitalization Rates In Kentucky Compared To U.S. Rates, 2000-2007.

Data Source: Numerator data was obtained from the KY Department for Public Health hospital discharge data set and National Hospital Discharge Survey. Denominator data was obtained from BLS Current Population Survey data.

*US data was not available for year 2007.
Indicator #3: Fatal Work-Related Injuries

The fatality rate for Kentucky occupational injuries decreased from 8.1 deaths/100,000 employed persons in the year 2000 to 4.8/100,000 in 2008 (National Census of Fatal Occupational Injuries [CFOI] data) (Figure 3). Kentucky had an occupational fatality rate 33% higher than the national occupational fatality rate in 2008. The industry with the highest work-related fatality rate was the agriculture industry. The primary cause of death was due to motor vehicle collisions.

Figure 3. Rate of Fatal Work-Related Injuries in Kentucky and U.S., 2000-2008.

Source: BLS Census of Fatal Occupational Injuries (CFOI).
Indicator #4: Work-Related Amputations with Days Away From Work Reported By Employers

There were 170 amputation cases with days away from work in 2008, up 30 cases from year 2007. The annual incidence rate of 13 cases per 100,000 FTEs increased from 2007, and was higher than the national amputation incidence rate of 7/100,000 (BLS SOII) in 2008 (Figure 4).

Figure 4. Rate of Work-Related Amputations Involving Days Away From Work, 2000-2008.

Data Source: Annual BLS Survey of Occupational Injuries and Illnesses (SOII).
**Indicator #5: Amputation Claims Filed With the State Workers’ Compensation System by Injury Year**

The number of amputation injury claims filed with the Kentucky Department of Workers’ Claims in the year 2007 was 181 compared to 165 claims filed in 2006 and the annual incidence rate for amputation claims was 10 cases per 100,000 employees (Figure 5). Using 2007 data, the majority of the amputations occurred among miscellaneous machine operators (n=26), and laborers except construction (laborers) (n=19).

**Figure 5. Rate of Workers’ Claims for Amputations, 2000-2007.**

![Graph showing rate of workers' claims for amputations, 2000-2007.](image)

Data Source: Work-related amputation surveillance data was provided by the Kentucky Department of Workers’ Claims, Frankfort, KY.
**Indicator #6: Work-Related Burn Hospitalizations**

There were 36 work-related burn hospitalization cases in 2007 (most recent year available), down from 50 in 2006. The annual crude rate for work-related burn hospitalizations was 1.9 per 100,000 employed persons in 2007. Kentucky work-related burn hospitalization rates have been decreasing (Figure 6).

**Figure 6. Rate of Hospitalizations for Work-Related Burns for Kentucky, 2000-2007.**

![Graph showing the rate of hospitalizations for work-related burns in Kentucky from 2000 to 2007.](image)

**Data Source:** Kentucky Department for Public Health hospital discharge data.

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**Kentucky Injury Prevention and Research Center**

**Burn Awareness Week is February 4-10, 2001**

**How to use this data.**

Our data show that inappropriate first aid treatments are often used for thermal burn injuries, such as vinegar, milk, cold pickles, butter, toothpaste, hot water and soap, and butter for frying food. Even though injury prevention is the priority goal, it is important for both supervisors and workers to know how to properly treat burn injuries when they do occur. In recognition of Burn Awareness Week, we would like to increase awareness of burn prevention as well as first aid.

**First Aid for Minor Thermal Burn Injuries**

- The best first aid treatment for a thermal burn injury is to flush the burned area with low pressure running cool water.
- Don’t apply ice for prolonged periods; it can be too harsh for burned skin and cause tissue damage.
- Cool water alone or a very mild soap can be used to gently clean the area.
- “Folk remedies” such as applying butter do not help the healing process and may increase the risk of infection if the burn is severe.
- Keep the burned area clean and dry as it heals. The area can be covered with a light bandage if needed and a small amount of an over-the-counter ointment can be applied to keep the bandage from sticking to the skin.
- Seek medical treatment when a burn covers a large area or there is extreme pain or loss of sensation.
Indicator #7: Work-Related Musculoskeletal Disorders (MSDs) with Days Away From Work

Kentucky had a total annual MSD incidence rate of 409 cases/100,000 FTEs in 2008 (Figure 7) and have decreased significantly since the year 2000. The Kentucky MSD incidence rate was 17% above the national rate (350 per 100,000 employees) in 2008.

Figure 7. Incidence Rates for Musculoskeletal Disorders in Kentucky Involving Days Away From Work, 2000-2008.


Indicator #8: Carpal Tunnel Syndrome Cases Filed with the State Workers’ Compensation System by Injury Year

Carpal tunnel syndrome (CTS) case claim rates have declined 68% since the year 2000 (Figure 8). CTS claims occurred primarily among laborers except construction (n=26), and assemblers (n= 25).

Figure 8. Rate of Lost Work-Time Claims for Carpal Tunnel Syndrome Cases Identified in State Workers’ Compensation Systems for Kentucky, 2000-2007.

Data Source: Carpal tunnel syndrome claims data was provided by the Kentucky Department of Workers’ Claims, Frankfort, KY.

How is carpal tunnel syndrome treated?

Treatments for carpal tunnel syndrome should begin as soon as possible, under a doctor’s direction. Underlying causes such as diabetes or arthritis should be treated first. Initial treatment generally involves resting the affected hand and wrist for at least 2 weeks, avoiding activities that may worsen symptoms, and minimizing the wrist in a straight to wrist-traction bandage or splint. If there is inflammation, applying cold packs can help reduce swelling.

Non-surgical treatments

Medications include nonsteroidal anti-inflammatory drugs (NSAIDs) to reduce local swelling. Other medications may help relieve symptoms. Over-the-counter pain relievers may also help. Rarely, surgery may be necessary to release the pressure on the median nerve. If more conservative treatments fail, surgery may be necessary. Surgery is done under local anesthesia and does not require an overnight hospital stay. With this procedure, the surgeon make an incision in the wrist to release the ligament (cartilage in the wrist). This corrected pain and numbness in the hand.

Surgical treatment

Carpal tunnel release is a common surgical procedure. In the United States, the majority of carpal tunnel cases result from the median nerve, which can be injured due to repetitive use or compression of the nerve at the wrist. The incision is made in the affected hand, usually at the base of the thumb. The incision is made in the wrist, and the ligament is released. The procedure is usually done under local anesthesia, and the patient usually returns to work within 2 to 3 weeks.

Although symptoms may be relieved in the first couple of weeks, recovery may take several months. Some patients may have limited range of motion, sensitivity, and pain at the scar. Occasionally, the wrist swelling may persist. The key is to avoid activities that cause pain and to keep the wrist flexed to reduce swelling and pain. Patients should wear a wrist brace or splint to reduce swelling and pain. Some patients may need to adjust job duties or even change jobs after recovery from surgery.
Indicator #9: Hospitalization From or With Pneumoconiosis

The annual rate of pneumoconiosis hospitalizations per million residents in Kentucky decreased from an age-standardized rate of 578/million residents in 2000 to a rate of 449/million residents in 2008 (Figure 9).

Figure 9. Age-Standardized Rates of Hospitalizations from or With Total Pneumoconiosis for Kentucky and the U.S., 2000-2008ab.

![Graph showing hospitalization rates from or with pneumoconiosis for Kentucky and the U.S. from 2000 to 2008.]

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<td>2005</td>
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a The above rates are based on the number of hospitalizations.
b U.S. rates are not yet available for years 2007 and 2008.

Data Source: Kentucky Department for Public Health UB92 hospital discharge data.

Advanced Pneumoconiosis Among Working Underground Coal Miners — Eastern Kentucky and Southwestern Virginia, 2006

Current regulations for U.S. underground coal miners, mandated by federal legislation in 1969 and amended in 1977, include provisions to prevent the occurrence of pneumoconiosis (1). However, in 2005 and 2006, clusters of rapidly progressing and potentially disabling pneumoconiosis were reported in certain geographic areas (2,3). In response to these reports, CDC’s National Institute for Occupational Safety and Health (NIOSH) conducted field surveys under the Enhanced Coal Workers’ Health Surveillance Program (ECWSP). This report describes the results of these surveys, which were conducted in three counties in eastern Kentucky (Kent, Letcher, and Pike) and one county in southwestern Virginia (Bland, Dickenson, Tazewell, and Wise). A total of 37 miners with advanced pneumoconiosis (including five miners reported previously) were identified. Measures are needed to prevent further occurrence of this disease among underground coal miners.

The ECWSP teams visited 26 sites in the seven counties. All 4,897 miners listed on the roster of active underground coal miners were notified of the field survey program by mail and staff visits and where the ECWSP mobile examination unit would be in operation. During the mobile surveys, standardized questionnaires, spirometry (lung capacity testing), and chest radiography were administered according to NIOSH-specific procedures. Radiographs were classified by NIOSH-certified B Readers according to international standards (5,6). A total of 975 (20%) of the 4,897 miners were tested; 37 (4%) of those tested had advanced pneumoconiosis.

The chest radiograph program recommends that all miners receive an initial radiograph upon hire, a second radiograph after 3 years, and additional radiographs at 5-year intervals for the remainder of their careers. However, medical record data indicated that all 37 miners had worked underground for at least one interval of ≥10 years without a chest radiograph. Twenty-four (65%) of the miners had worked for at least a 20-year interval without a chest radiograph, and two had worked for >30 years without a radiograph. The following descriptions of four of the 37 cases exemplify the different patterns of exposure to coal dust that are sources of advanced pneumoconiosis observed among the miners surveyed.

Case Descriptions

Case 1. A man from Wise County, Virginia, began work as an underground coal miner in 1970, at age 22 years. He worked underground for 31 years, all but 2 years in coal-face jobs. In 1991, he began work in other areas underground, and his chest radiograph indicated category 2,1 small opacities (6). In 2006, at age 58 years, his ECWSP radiograph indicated progression to 2,3. His exposure history (i.e., limited exposure to silica dust) and slow disease progression were consistent with coal workers’ pneumoconiosis (CWP).

Case 2. A man from Pike County, Kentucky, began work as an underground coal miner in 1976, at age 18 years. After 21 years in coal-face jobs, in 1999, his chest radiograph indicated no evidence of pneumoconiosis. Seven years later, at age 46 years, he participated in a health survey through ECWSP, and his radiograph revealed category 2,2 small opacities and stage B progressive massive fibrosis (PMF). This rapid disease development is typical of the usual clinical progression of CWP, which can take 20–40 years to develop, and is more consistent with silicosis. However, the miner’s disease developed without apparent exposure to silica dust.

Case 3. A man from Letcher County, Kentucky, began work as an underground coal miner in 1972, at age 18 years. By 2003, at age 49 years, he had spent 6 years at the coal face and 25 years as a roofer.** His chest radiograph indicated category 1,2 small opacities, suggesting simple pneumoconiosis. During 2003–2006, the miner continued to work at the coal face. In 2006, he participated in ECWSP, and his chest radiograph indicated progression to category 2,2 small opacities. Although he had spent much of his mining years as a roofer, a job generally associated with silica dust exposure, his disease development pattern was more consistent with CWP than silicosis.

Case 4. A man from Bland County, Virginia, began work as an underground coal miner in 1971, at age 20 years. In 2001, after 30 years working in jobs at the coal face and roofbolting, he had category 0,1 small opacities. After 5 more years of similar work, at age 55 years, he participated in ECWSP, and his disease had progressed to category 1,2 simple small opacities and stage B PMF. This exposure pattern and accelerated clinical course are more consistent with silicosis development than CWP.

Field Survey Findings

Silica dust is more toxic to humans than coal dust and, by extension to those two types of dust, can be a useful way to differentiate lung disease and identify causative factors. The 37 miners with advanced pneumoconiosis were categorized into two groups according to their occupational exposure: those who had worked in jobs with known exposure to silica dust (roofer or others) and those who had worked in jobs not typically associated with silica dust exposure (coal-face jobs only).** Job information was summarized from self-reported work histories collected at each medical examination. Eleven miners (more likely at risk for CWP) reported working only in coal-face jobs and other mining jobs not historically associated with the high silica dust levels that might result in silicosis. Twenty-six miners (more likely at risk for silicosis) included 25 who had worked as roofers and one who had not been a roofer but had worked for 6 years as a miner at a surface coal mine; both jobs are historically associated with exposure to higher levels of silica dust.
Indicator #10: Mortality From or With Pneumoconiosis

Deaths from pneumoconiosis numbered 62 in 2007, down from 74 in the year 2006. The age-adjusted total death rate for pneumoconiosis was 18 per million residents in 2007. Kentucky’s total pneumoconiosis mortality rate has decreased overall since the year 2000 (Figure 10); coal workers’ pneumoconiosis mortality rates have decreased since the year 2000. In 2007, coal workers’ pneumoconiosis accounted for 42 occupational deaths (age-adjusted rate of 12/million residents). This rate is significantly decreased from the 73 deaths reported in 2000 (age-adjusted death rate of 23 per million residents).

Figure 10. Age-Standardized Mortality Rate From or With Total Pneumoconiosis for Kentucky and U.S., 2000-2007.

Data Source: State pneumoconiosis mortality data was obtained from the Kentucky Department for Public Health Office of Vital Statistics.

U.S. rates are not yet available for years 2006-2007.
Indicator #11: Acute Work-Related Pesticide-Associated Illness and Injury Reported to Poison Control Centers

In 2009, 47 pesticide poisoning cases were reported to the Kentucky Regional Poison Control Center, equal to the 47 cases reported in 2008. The annual incidence rate of reported work-related pesticide poisonings in 2009 was 2.5/100,000 FTEs. The pesticide exposures were primarily due to hypochlorite disinfectants (n=14, 30%), and disinfectant industrial cleaners (n=9, 19%) (Figure 11).

Figure 11. Rate of Work-Related Pesticide-Associated Poisonings for Kentucky and U.S., 2000-2009.

Data Source: Kentucky Regional Poison Control Center, Louisville, KY.

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NIOSH FACT SHEET

Reducing Pesticide Exposure at Schools

Summary

Pesticides play an important role in food supply protection and disease control. They also have the potential to harm health. The Centers for Disease Control and Prevention (CDC) and the Occupational Safety and Health Administration (OSHA) recommend that people follow safe work practices and use personal protective equipment to control pests. Pesticides are often applied at schools to help maintain sanitary conditions and improve student and employee health and safety. In addition, pests can cause damage to plants and equipment, and their presence can affect the academic environment. Brooks et al. (1999) reported that school-age children are more likely to be accidentally exposed to pesticides than adults. Therefore, education and communication are important to reduce the number of accidental exposures on school campuses.

Pesticide Exposure at Schools

Exposures to pesticides at school have been reported with varying frequency and severity, although there is little information on the number of cases reported to poison control centers. The Kentucky Regional Poison Control Center (KRPPCC) receives calls from schools and teachers about pesticide exposures at school, another appropriate option. However, the school-related pesticide exposure data are typically not available to public health because of privacy concerns of unlicensed pesticide applicators through the Integrated Pest Management program.

IPM is a decision-making approach that manages pest problems by prioritizing their occurrence and effect. Proper training can be effective at reducing pest control activities. Using IPM at schools can reduce pesticide exposure of students and staff.

IPM can be useful to promote a safe learning environment.

A Multifaceted Approach Needed to Manage and Supersede Pests

Although pesticides temporarily control pest populations, other strategies must be used. Integrated Pest Management (IPM) is a multidisciplinary approach to pest control that addresses pest problems comprehensively. The use of pesticides is only one component of IPM. The multifaceted approach includes educational programs, pest and environmental monitoring, pestiest management treatments, and education programs to assist in pest management.

Recommendations for Reducing Pesticide Exposure at Schools

- Implement an educational program to raise awareness among teachers, students, and staff about the dangers of pesticide exposure and the importance of proper management.
- Provide appropriate training for pest control personnel on the proper use of pesticides and personal protective equipment.
- Use non-chemical pest control methods, such as mechanical controls, cultural practices, and biological control agents.
- Develop and implement an emergency response plan to be followed in the event of a pesticide exposure.
- Provide appropriate signage and labeling of pesticide containers and equipment to prevent misuse.
- Ensure that all pest control activities are conducted in a manner that minimizes exposure to students, staff, and the general public.
- Regularly review and update the pesticide management plan to ensure its effectiveness.

Sources:


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**Indicator #12: Incidence of Malignant Mesothelioma**

Malignant mesothelioma is a rare cancer of the lining of the chest or abdomen and has been associated with exposure to airborne asbestos particles. Malignant mesothelioma annual incidence rates were determined for 2008. The age-adjusted rate was 11.7 cases per million residents (37 cases) in 2008, compared to 7.8 cases per million in 2007 (Figure 12).

**Figure 12. Age-Standardized Incidence Rate of Malignant Mesothelioma, 2000-2008a.**

[U.S. rate data is not yet available for years 2007-2008. Data Source: Kentucky Cancer Registry.](#)
**Indicator # 13: Elevated Blood Lead Levels among Adults**

Lead exposure is considered elevated in an adult when it reaches 25 µg/dL. In 2008, Kentucky’s prevalence rate of persons with blood lead levels > 25µg/dL was 6.3 cases per 100,000 workers; there were 0.9 cases per 100,000 workers with 40µg/dL blood lead levels (Figure 13).

**Figure 13. Prevalence Rate of Persons with Blood Lead Levels > 25µg/dl Aged 16 Years or Older, 2003-2008.**

Data Source: Kentucky Lead Poisoning Prevention Program, Division of Adult and Child Health, Frankfort, KY. US rates were obtained from the NIOSH ABLES program.

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**OSHA Fact Sheet**

**Protecting Workers from Lead Hazards**

Cleaning up after a flood requires hundreds of workers to renovate and repair, or tear down and dispose of, damaged or destroyed structures and materials. Repair, restoration, and demolition operations often generate dangerous airborne concentrations of lead, a metal that can cause damage to the nervous system, kidneys, blood forming organs, and reproduction system if inhaled or ingested in dangerous quantities. The Occupational Safety and Health Administration (OSHA) has developed regulations designed to protect workers involved in construction activities from the hazards of lead exposure.

- **How You Can Become Exposed to Lead**
  - Lead is an ingredient in thousands of products widely used throughout industry, including lead-based paints, lead solder, electrical fittings and conduit, tank linings, plumbing fixtures, and many metal alloys. Although many uses of lead have been banned, lead-based paints continue to be used on bridges, railcars, ships, and other metal structures.
  - Reuse and recycling activities may also involve lead-containing materials. Significant lead exposure can also occur from lead paint that is removed from surfaces previously coated with lead-based paint.

- **Operations that can generate lead dust and fumes include:**
  - Demolition of structures;
  - Frame and sheathing;
  - Walling;
  - Use of heat guns, sanders, scrapers, or grinders to remove lead paint; and
  - Abrasive blasting of steel structures

OSHA has regulations governing construction worker exposure to lead. Employers of construction workers engaged in the repair, renovation, removal, demolition, and salvage of lead-damaged structures and materials, are responsible for the development and implementation of a worker protection program in accordance with Title 29 Code of Federal Regulations (CFR), Part 1926.62. This program is essential to minimize worker risk of lead exposure. Construction projects vary in their scope and potential for exposing workers to lead and other hazards. Many occupational and industrial lead exposure situations involving workers who are exposed as the result of construction activities can be controlled by following safe work practices, which often involve engineering controls and administrative controls.

**Major Elements of OSHA’s Lead Standard**

- **Permissible Exposure Limit (PEL):** Permissible exposure limit of lead per cubic meter of air as averaged over an 8-hour period.
- **Actions to Reduce Lead Exposure:**
  - Requirements that employers engage in pollution control and work practices, where feasible, to reduce worker exposure.
  - Requirements that employers observe good personal hygiene practices, such as washing hands before eating and taking a shower before leaving the workplace.
  - Requirements that employers provide personal protective clothing and equipment where necessary.
  - Requirements that employers provide medical surveillance or testing for lead.
  - Requirements that employers provide written program and medical surveillance records.

**Additional Information**

For more information on this, and other health-related issues impacting workers, visit OSHA’s Web site at www.osha.gov.
Indicator #14: Percentage of Workers Employed in Industries at High Risk for Occupational Morbidity

The percentage of Kentucky workers employed in high-risk industries for the year 2007 was 67% higher than the percentage of US workers employed in high risk industries (Figure 14) in the year 2007. The industries at greatest risk for occupational injury were nursing and residential care facilities, wood products manufacturing, and couriers and messengers.

Figure 14. Percentage of Workers in Industries with High Risk for Occupational Morbidity, 2000-2007.

Data Source: Bureau of the Census County Business Patterns (CBP)
Indicator #15: Percentage of Workers Employed in Occupations at High Risk for Occupational Morbidity

The proportion of Kentucky workers employed in occupations at increased risk for occupational injury and/or illness in 2009 was 12.2%, 16% above the national percentage in high risk occupations (Figure 15). The occupation at highest risk for occupational injuries and illnesses in 2009 was the laborers, and freight, stock and material movers occupation (2.09% in KY compared to 1.22% in the US).

Figure 15. Percentage of Workers in Occupations with High Risk for Occupational Morbidity by State and U.S., 2000-2009a.

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

The percentage of Kentucky workers employed in industries and occupations at high risk for occupational mortality was higher than for the US (13.2%) in 2009 (Figure 16). The industries at highest risk for occupational mortality were the construction (7.1%), and truck transportation (1.6%) industries, and the driver/sales workers and truck drivers (2.3%), and farmers and ranchers (1.3%) occupations.

Figure 16. Percentage of Workers Employed in Industries with High Risk for Occupational Mortality, 2000-2009.


To prevent injuries while working with granite:

- A job hazard analysis should be conducted each day before work commences.
- Employees should be trained in proper material handling procedures that include handling and transport of granite slabs.
- Use slab carts or slab racks to transport granite slabs and use non-slip devices to secure the granite slabs to the forklift.
- Work should only be performed when the general contractor has a competent person on the job site.

A job hazard analysis should be conducted each day before work commences.

Employees should be trained in proper material handling procedures that include the handling and transport of granite slabs.

Use slab carts or slab racks to transport granite slabs and use non-slip devices to secure the granite slabs to the forklift.

 always perform a work site hazard assessment before commencing any new job activity.
Indicator #17: Occupational Safety and Health Professionals

In 2006, the rates of occupational safety and health professionals in Kentucky declined (Figure 17) and the total number of occupational professionals in Kentucky only numbered 1,115. The majority of health professionals are members of the American Society of Safety Engineers (n=509).

Figure 17. Rates of Occupational Safety and Health Professionals in Kentucky, 2003-2006.

Data Sources: American Board of Preventive Medicine (ABPM) diplomats database, ACOEM annual roster, American Board of Occupational Health Nurses Directory, AAOHN annual roster, American Board of Industrial Hygiene, AIHA member directory, BCSP member directory, ASSE member directory, BLS Current Population Survey.
Indicator #18: OSHA Enforcement Activities in the Private Sector

In 2008, there were 1,500 establishments inspected by KY OSHA, a slight decrease from 1,546 in 2007. The percentage of establishments under OSHA jurisdiction inspected by KY OSHA in 2008 was the same as in 2007 (1.36% in 2007 and 2008).

Data Sources: OSHA annual reports of total inspections conducted and the number or workers covered by these inspections, BLS statistics on Covered Employers and Wages.
Indicator #19: Workers' Compensation Awards

The total amount of workers’ compensation benefits paid in Kentucky in 2000 was $575,292,000; in 2007, the total amount of workers’ compensation benefits paid was $647,706,000. The average amount of workers’ compensation benefits paid per covered worker in KY decreased to $368 in 2007 compared to $377 in 2006 (Figure 18). When comparing US and Kentucky average amount of workers’ compensation benefits paid, Kentucky’s average amount was lower ($368) than for the US ($421) in the year 2007.

Figure 18. Average Amount of Workers’ Compensation Benefits Paid Per Worker in Kentucky, 2000-2007.

Data Source: National Academy of Social Insurance
Indicator #20 (Kentucky-Specific): Fatal and Non-Fatal Occupational Motor Vehicle Collision Injuries

In 2008, there were 11,898 occupational motor vehicle collisions (MVCs) in Kentucky, decreased from 12,673 in the year 2007. There were 126 drivers and/or occupants killed and 2,676 people injured in work-related MVCs in 2008. The occupational driver motor vehicle fatality rate was 0.66/1,000,000 employed persons in 2008, a slight increase from the year 2007 (Figure 19).


Data Source: Motor vehicle collision surveillance data was obtained from the Collision Report Analysis for Safer Highways (CRASH) database established and maintained by the Kentucky State Police.
Indicator #21 (Kentucky-Specific): Occupational Motor Vehicle Collisions- First Reports of Injury and Claims Filed With Workers’ Claims by Injury Year

There were 2,089 occupational motor vehicle collision claims, and the occupational motor vehicle collision driver injury rate decreased in the year 2008 (Figure 20). The cause of injury in occupational motor vehicle collision reports and claims was primarily due to a collision or sideswipe with another vehicle. Claims were most frequently reported in the services (n=490), transportation (n=472), and public administration (n=217) industries.

Figure 20. Occupational Motor Vehicle Collision Driver Injury Rates, 2000-2008.

Data Source: Kentucky Department of Workers’ Claims
Indicator #22 (Kentucky-Specific): Occupational Falls - First Reports of Injury and Claims Filed With Workers’ Claims by Injury Year

In the year 2008, there were 5,764 occupational fall claims and first reports filed. The occupational fall injury incidence rate was 304/100,000 employed workers in the year 2008, a slight decrease from 2007 (Figure 21). Most occupational falls occurred in the services (n=1962) and retail trade (n=1097) industries and in the laborers except construction (N=378), truck drivers (N=322), and retail and personal services sales workers (n=315) occupations.

Figure 21. Occupational Fall Injury Incidence Rates, 2000-2008.

Data Source: Kentucky Department of Workers’ Claims

![Graph showing occupational fall injury incidence rates from 2000 to 2008.]
Indicator #23: Public Sector Employee injuries (Kentucky- Specific)

Public sector employee injuries increased 7% from 2,350 injuries recorded in the year 2008 to 2,511 injuries recorded in the year 2009 (Figure 22). Kentucky public sector worker injuries were primarily due to: 1) lifting; 2) falls, slips, and trips on the same level; 3) combative patients; and 4) falls, slips, trips on ice or snow.

Figure 22. Number of Kentucky Public Sector Worker\(^a\) Injuries, 2006-2009.

\(^a\) All state government cabinets were included in the analysis except for Transportation Cabinet injuries.

Data source: Kentucky Personnel Cabinet, Office of Employee Relations