



## PREFACE

### About this Report

This is the sixth 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 20 indicators of worker injuries and illnesses using guidelines established by the Council of State and Territorial Epidemiologists (CSTE). Kentucky also collects data for three 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

Worker and industry images courtesy of Microsoft Office Online Clipart at <http://office.microsoft.com/en-us/clipart/default.aspx>

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## EXECUTIVE SUMMARY

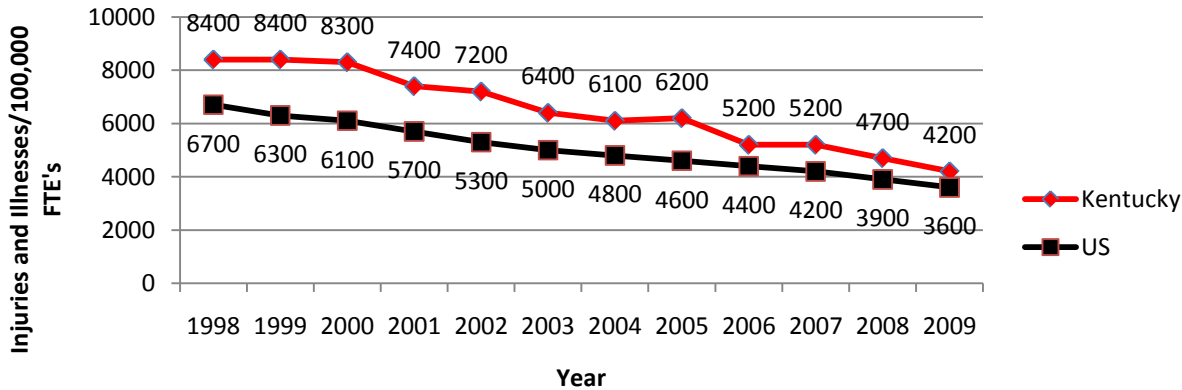
### Key findings:

- ❑ Kentucky's 2008 *nonfatal* work-related injury and illness rate has decreased 50% since 1998 but is still 14% above the national rate.
- ❑ The highest number of work-related fatalities was in the transportation industry (n=21) in the year 2009.
- ❑ Kentucky's amputation workers' claim rate decreased to 8 claims/100,000 workers in 2008.
- ❑ From 2000 to 2009, Kentucky's overall musculoskeletal disorder incidence rate decreased 59%.
- ❑ The acute work-related pesticide-associated injury and illness rate for Kentucky decreased 16% from 2009 to 2010.
- ❑ Kentucky's 2008 malignant mesothelioma incidence rate increased 44% from 2006 to 2008.
- ❑ The Kentucky occupational motor vehicle nonfatal and fatality rate has remained the same since the year 2006. Workers' Compensation claims were most frequently filed for the Services industry.
- ❑ The Kentucky industries at greatest risk for occupational injury were nursing and residential care facilities, air transportation, and couriers and messengers industries in 2008. The occupation at highest risk for work-related injuries and illnesses in Kentucky was the laborers, and freight, stock, and the material movers occupation in 2008.
- ❑ The occupational fall injury incidence rate increased 10% in 2009, and occurred primarily in the services industry and in the laborers except construction occupation.
- ❑ The industries at highest risk for occupational mortality in 2008 were the construction, and truck transportation industries.

**Indicator #1: Non-Fatal Work Related Injuries and Illnesses Reported By Employers**

In 2009, there were 51,200 nonfatal work-related injuries and illnesses in Kentucky, with an incidence rate of 4,200/100,000 employees, down 44% from 1998 (Figure 1). Kentucky is still 21% above the national incidence rate of 3,600 /100,000 FTEs.

**Figure 1. Total Work-Related Injury and Illness Incidence Rates In Kentucky (1998-2009).**

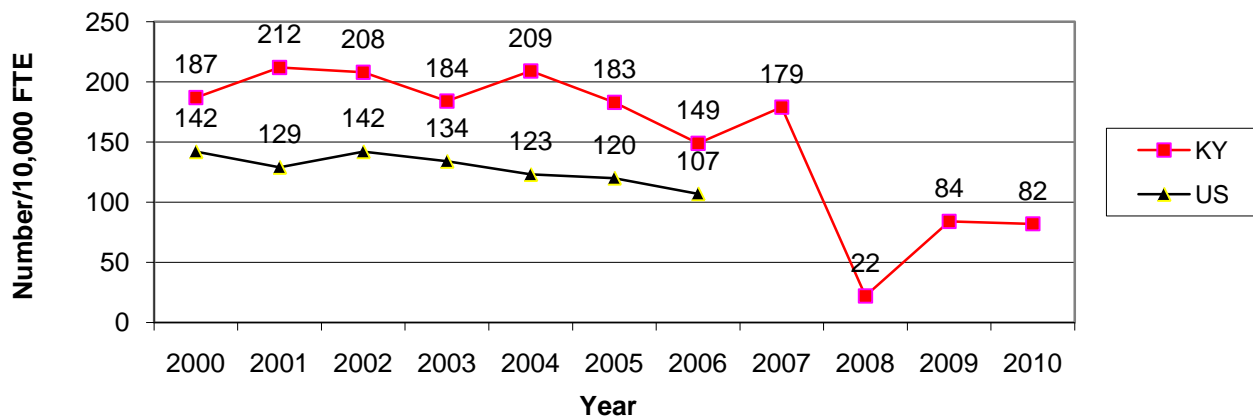


Data Source: Annual BLS Survey of Occupational Injuries and Illnesses (SOII)

**Indicator #2: Work-Related Hospitalizations**

In 2010, there were 1,513 work-related hospitalizations with an annual crude rate of 82/100,000 employed persons age 16 years and older, down 56% from the year 2000 (Figure 2).

**Figure 2. Work-Related Hospitalization Rates In Kentucky Compared To U.S. Rates, 2000-2010.**



Data Source: Numerator data was obtained from the KY Dept. for Public Health hospital discharge data set and National Hospital Discharge Survey. Denominator data was obtained from BLS Current Population Survey data. Note: 2008 and 2009 hospitalization data may not be complete by expected payer source.

\*US data was not available for years 2007- 2010.

**Indicator #3: Fatal Work-Related Injuries by Industry Sector- 2009.**

Industry	# of KY Deaths In 2009	2009 KY Fatality Rate <sup>a</sup>	2009 US Fatality Rate <sup>b</sup>
Transportation, Warehousing & Utilities	21	23.7	12.5
Wholesale/Retail Trade	11	4.0	2.4
Healthcare and Social Assistance	3	1.4	0.7
Services	20	2.4	2.0
Agriculture, Forestry, Fishing, and Hunting	9	112.5	230
Construction	12	16.4	13.7
Manufacturing	8	3.8	2.6
Mining	8	33.5	15.8
<b>Total</b>	<b>92</b>	<b>5.4</b>	<b>3.4</b>

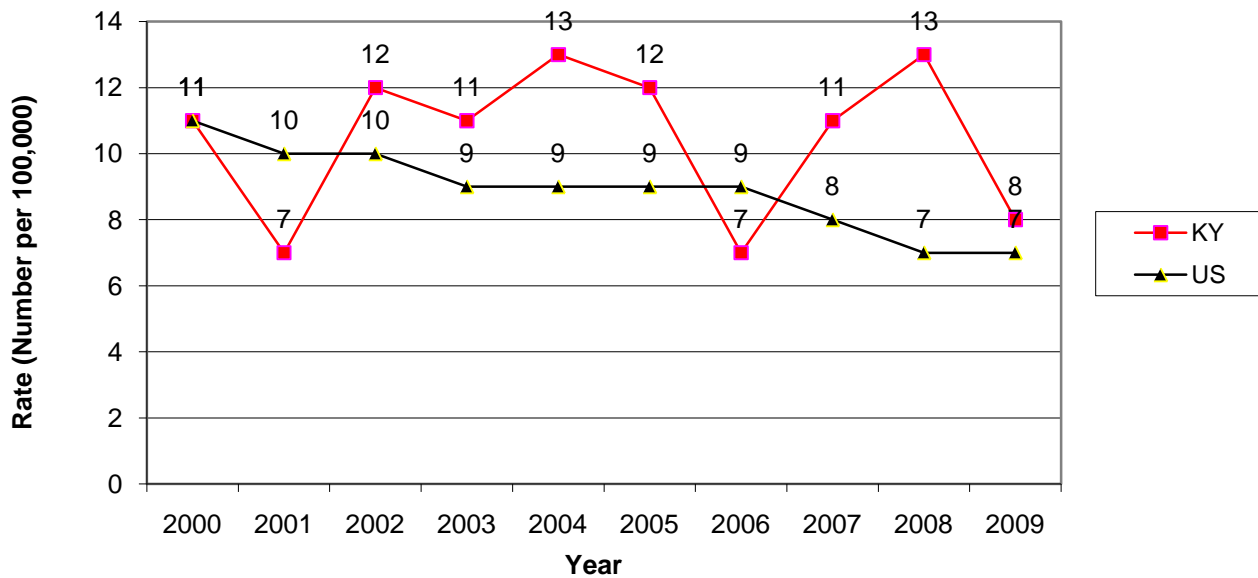
<sup>a</sup>Kentucky Cabinet for Workforce Development

<sup>b</sup>Number of employed persons obtained from the Bureau of Labor Statistics. Rates calculated per 100,000 workers.

**Indicator #4: Work-Related Amputations with Days Away From Work Reported By Employers**

There were 100 amputation cases with days away from work in 2009, down 70 cases from the year 2008. The annual incidence rate of 8 cases per 100,000 FTEs was higher than the national amputation incidence rate of 7/100,000 (BLS SOII) in 2009 (Figure 4).

**Figure 4. Rate of Work-Related Amputations Involving Days Away From Work, 2000-2009.**

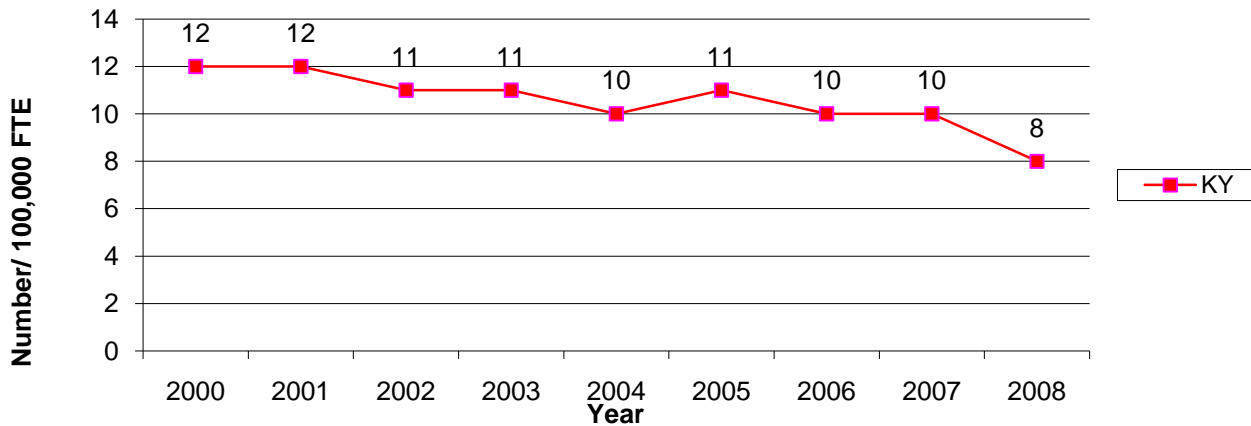


Data Source: Annual BLS Survey of Occupational Injuries and Illnesses (SOII).

### 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 2008 was 134 compared to 181 claims filed in 2007 and the annual incidence rate for amputation claims was 7.7 cases per 100,000 employees (Figure 5). Most of the amputations occurred in the manufacturing industry (n=70).

**Figure 5. Rate of Workers' Claims for Amputations, 2000-2008.**

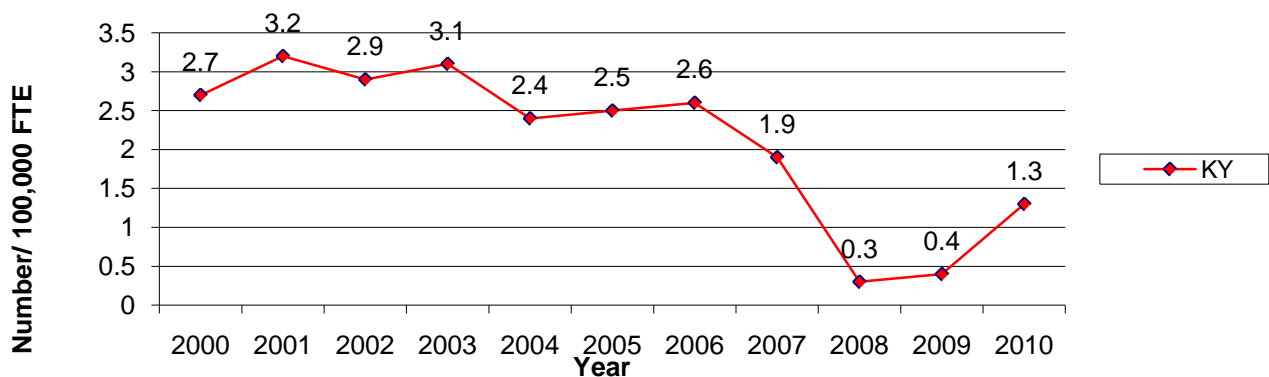


Data Source: Work-related amputation surveillance data was provided by the Kentucky Department of Workers' Claims, Frankfort, KY.

### Indicator #6: Work-Related Burn Hospitalizations

There were 24 work-related burn hospitalizations in 2010 (most recent year available). The annual crude rate for work-related burn hospitalizations was 1.3 per 100,000 employed persons in 2010. Kentucky work-related burn hospitalization rates have been decreasing since the year 2000 (Figure 6).

**Figure 6. Rate of Hospitalizations for Work-Related Burns for Kentucky, 2000-2010.**



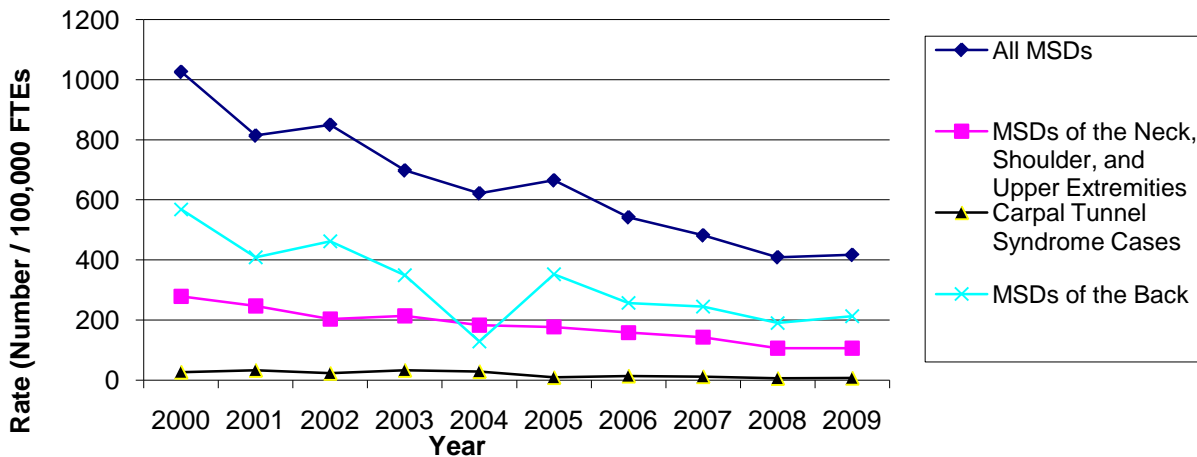
Data Source: Kentucky Department for Public Health hospital discharge data.

Note: Hospital discharge data may be incomplete for years 2008 and 2009.

**Indicator #7: Work-Related Musculoskeletal Disorders (MSDs) with Days Away From Work**

Kentucky had a total annual MSD incidence rate of 417 cases/100,000 FTEs in 2009 (Figure 7) and the MSD rate has decreased significantly since the year 2000.

**Figure 7. Incidence Rates for Musculoskeletal Disorders in Kentucky Involving Days Away From Work, 2000-2009.**

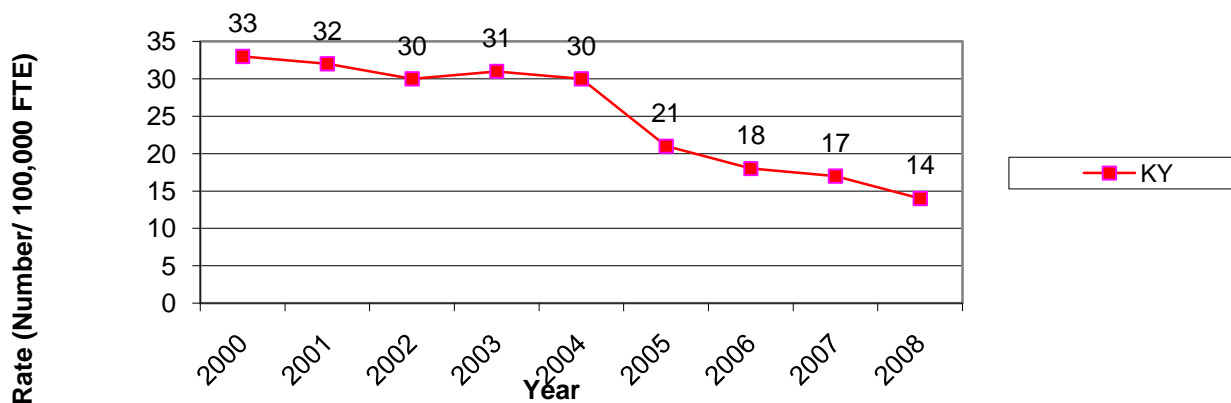


Data Source: Annual Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII).

**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 58% since the year 2000 (Figure 8). CTS claims occurred primarily in the manufacturing (n=101), and services (n= 72) industries.

**Figure 8. Rate of Lost Work-Time Claims for Carpal Tunnel Syndrome Cases Identified in State Workers' Compensation Systems for Kentucky, 2000-2008.**

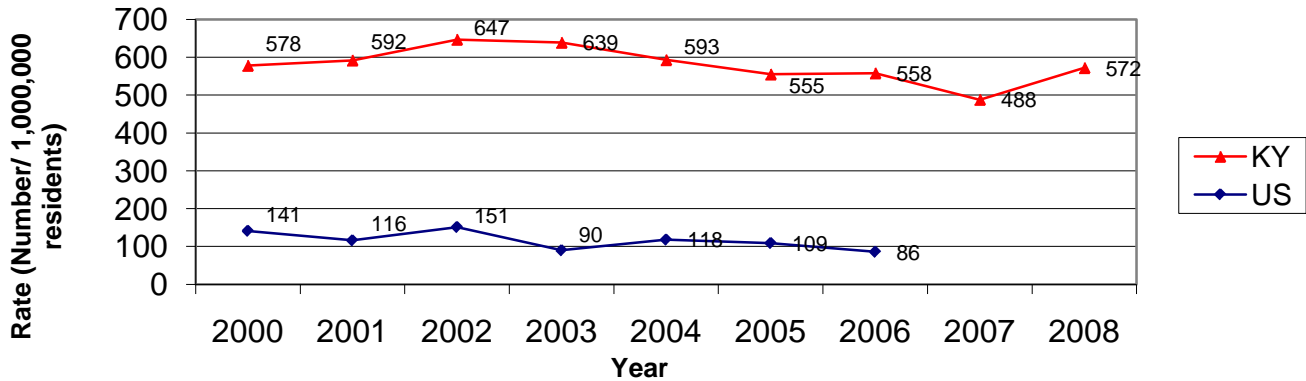


Data Source: Carpal tunnel syndrome claims data was provided by the Kentucky Department of Workers' Claims, Frankfort, KY.

**Indicator #9: Hospitalization From or With Pneumoconiosis**

The annual age-standardized rate of pneumoconiosis hospitalizations per million residents in Kentucky has remained fairly steady at 572/million in 2008 (Figure 9).

**Figure 9. Age-Standardized Rates of Hospitalizations From or With Total Pneumoconiosis for Kentucky and the U.S., 2000-2008<sup>ab</sup>.**



<sup>a</sup> The above rates are based on the number of hospitalizations.

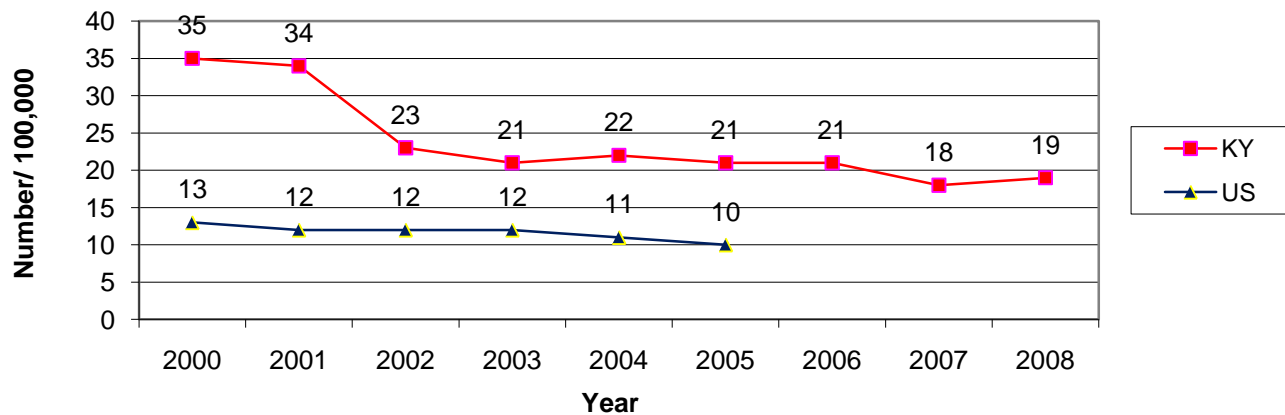
<sup>b</sup>U.S. rates are not yet available for years 2007 and 2008.

Data Source: Kentucky Department for Public Health 837 hospital discharge data.

**Indicator #10: Mortality From or With Pneumoconiosis**

The age-adjusted total death rate for pneumoconiosis was 19 per million residents in 2008 (Figure 10).

**Figure 10. Age-Standardized Mortality Rate From or With Total Pneumoconiosis for Kentucky and U.S., 2000-2007<sup>a</sup>.**



<sup>a</sup>U.S. rates are not yet available for years 2006- 2008.

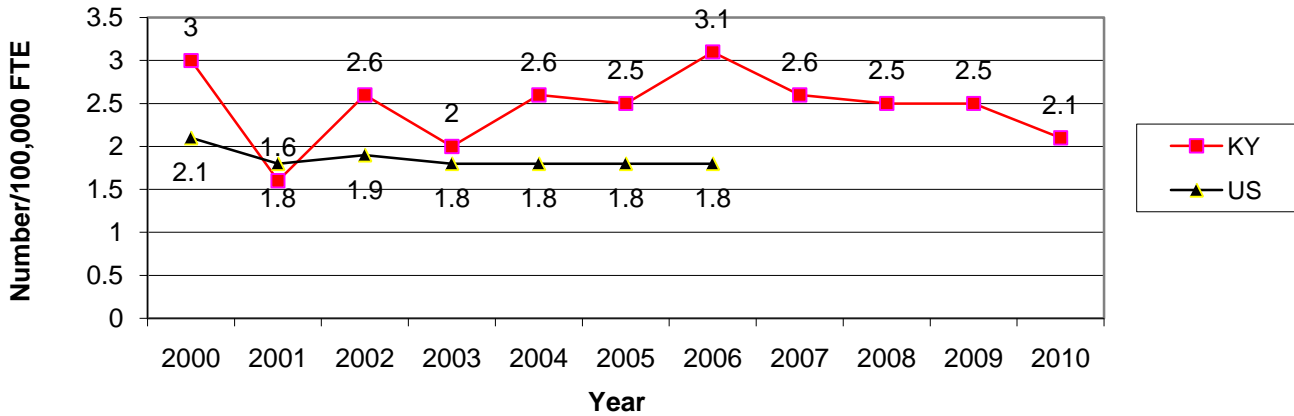
Data Source: State pneumoconiosis mortality data was obtained from the Kentucky Department for Public Health Office of Vital Statistics.



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

In 2010, 40 pesticide poisoning cases were reported to the Kentucky Regional Poison Control Center, down from 47 reported in 2009. The annual incidence rate of reported work-related pesticide poisonings in 2010 was 2.1/100,000 FTEs (Figure 11).

**Figure 11. Rate of Work-Related Pesticide-Associated Poisonings for Kentucky and U.S., 2000-2010<sup>a</sup>.**



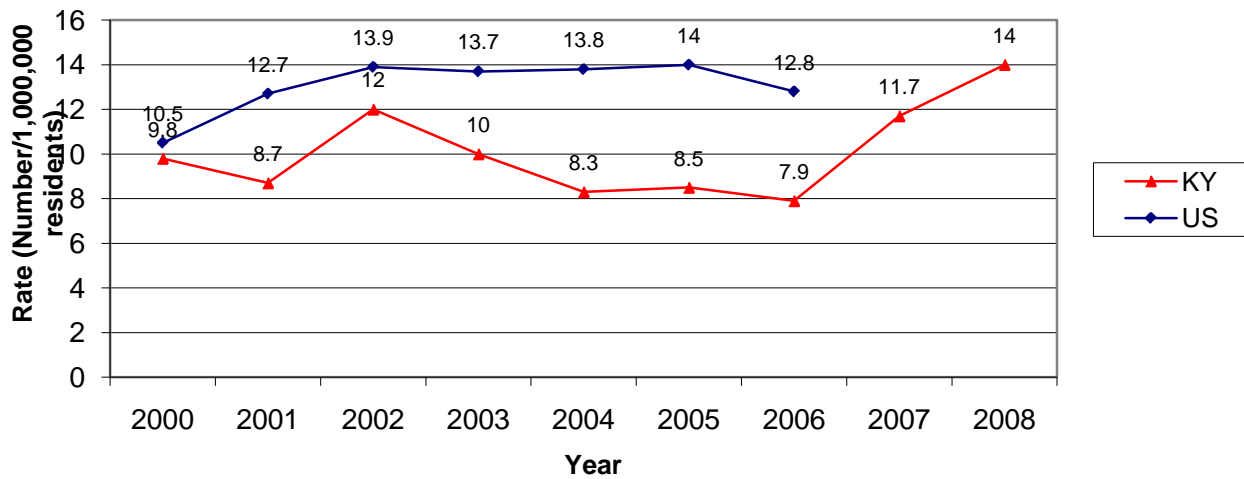
<sup>a</sup>U.S. rates are not yet available for years 2007-2010.

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

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

The age-adjusted rate of malignant mesothelioma was 14 cases per million residents (37 cases) in 2008, compared to 12 cases per million in 2007 (Figure 12).

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



<sup>a</sup>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. The Kentucky prevalence rate of persons with blood lead levels  $\geq 25\mu\text{g/dL}$  could not be determined for the year 2009 due to laboratory reporting inconsistencies.

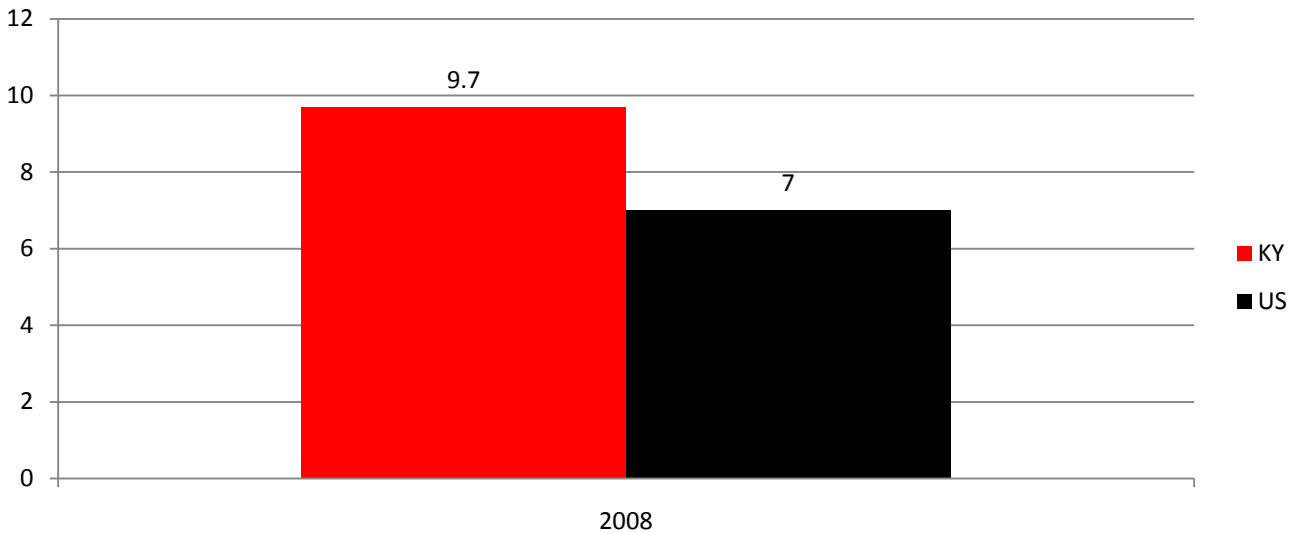
Data Source: Kentucky Lead Poisoning Prevention Program, Division of Adult and Child Health, Frankfort, KY. US rates were obtained from the NIOSH ABLES program.

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### 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 2008 was 28% higher than the percentage of US workers employed in high risk industries (Figure 13) in the year 2008. The industries at greatest risk for occupational injury were the nursing and residential care facilities, air transportation, and couriers and messengers industries.

**Figure 13. Percentage of Workers in Industries with High Risk for Occupational Morbidity, 2008.**



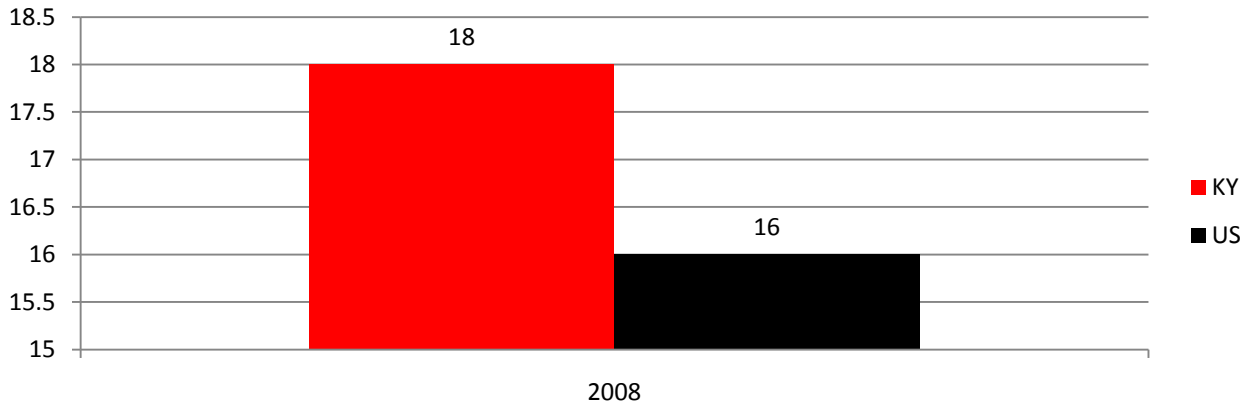
Data Source: Bureau of the Census County Business Patterns (CBP)

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### 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 2008 was 18%, 28% above the national percentage in high risk occupations (Figure 14). The occupations at highest risk for occupational injuries and illnesses in 2008 were the laborers, and freight, stock and material movers occupation, and the driver/sales workers and truck drivers occupations.

**Figure 14. Percentage of Workers in Occupations with High Risk for Occupational Morbidity, 2008<sup>a</sup>.**



<sup>a</sup> Selected high-risk occupations changed in 2008.

Data Source: Bureau of Labor Statistics (BLS) Current Population Survey (CPS)

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

The percentage of Kentucky workers employed in industries at high risk for occupational mortality was 18.7% in 2008, and 16.5% in high-risk occupations. The industries at highest risk for occupational mortality were the construction (7.5%), and truck transportation (2.0%) industries, and the driver/sales workers and truck drivers (2.8%), and farmers and ranchers (1.5%) occupations.

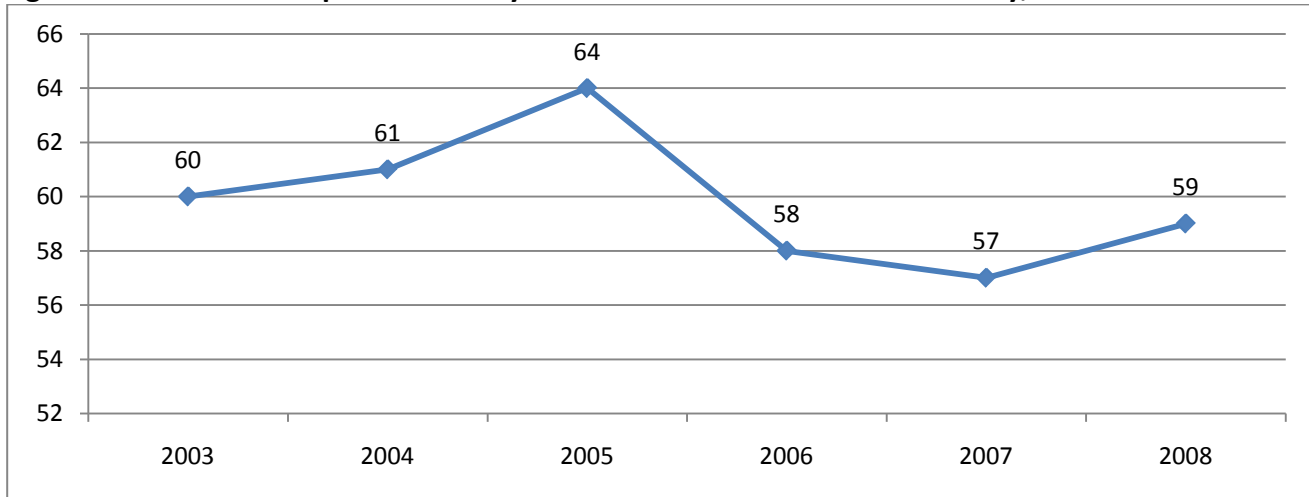
Data Source: Bureau of Labor Statistics (BLS) Current Population Survey (CPS)

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### Indicator #17: Occupational Safety and Health Professionals

In 2008, the rate of occupational safety and health professionals in Kentucky was 59 professionals per 100,000 workers (Figure 15), up from 57 in 2007.

**Figure 15. Rates of Occupational Safety and Health Professionals in Kentucky, 2003-2008.**



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.

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### 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).

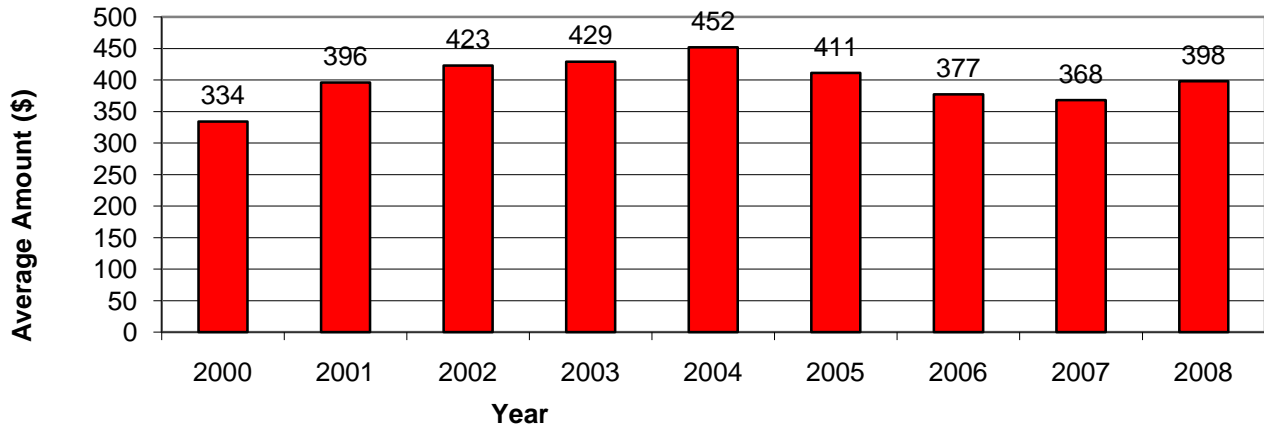
Data Sources: OSHA annual reports of total inspections conducted and the number of workers covered by these inspections, BLS statistics on Covered Employers and Wages.

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### Indicator #19: Workers' Compensation Awards

The total amount of workers' compensation benefits paid in Kentucky in 2008, was \$696,185,000. The average amount of workers' compensation benefits paid per covered worker in KY increased to \$398 in 2008 compared to \$368 in 2007 (Figure 16).

**Figure 16. Average Amount of Workers' Compensation Benefits Paid Per Worker in Kentucky, 2000-2008.**



Data Source: National Academy of Social Insurance

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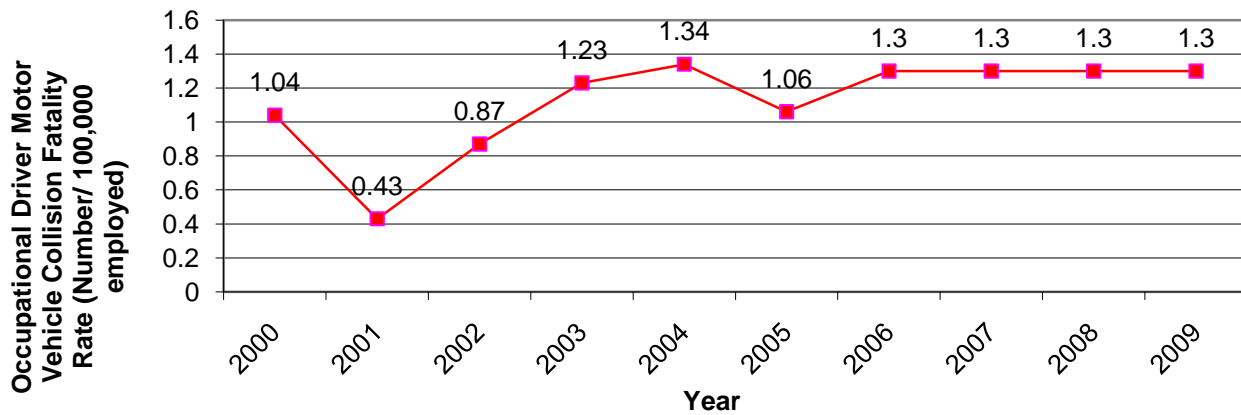
### Indicator #20: Low Back Disorders

In 2008, the number of work-related surgical low back disorder hospitalizations for persons 16 years or older was 53 with an annual rate of 2.8/100,000 employees. The annual number of work-related low back disorder hospitalizations for persons 16 years older and above was 76 with an annual rate of 4 hospitalizations per 100,000 employees.

### Indicator #21 (Kentucky-Specific): Fatal and Non-Fatal Occupational Motor Vehicle Collision Injuries

In 2009, there were 10,841 occupational motor vehicle collisions (MVCs) in Kentucky, decreased from 11,898 in the year 2008; 124 drivers and/or occupants were killed and 2,531 people were injured. The occupational driver motor vehicle fatality rate was 1.3/1,000,000 employed persons in 2009 (Figure 17).

Figure 17. Occupational Motor Vehicle Fatality Rates, 2000-2009.

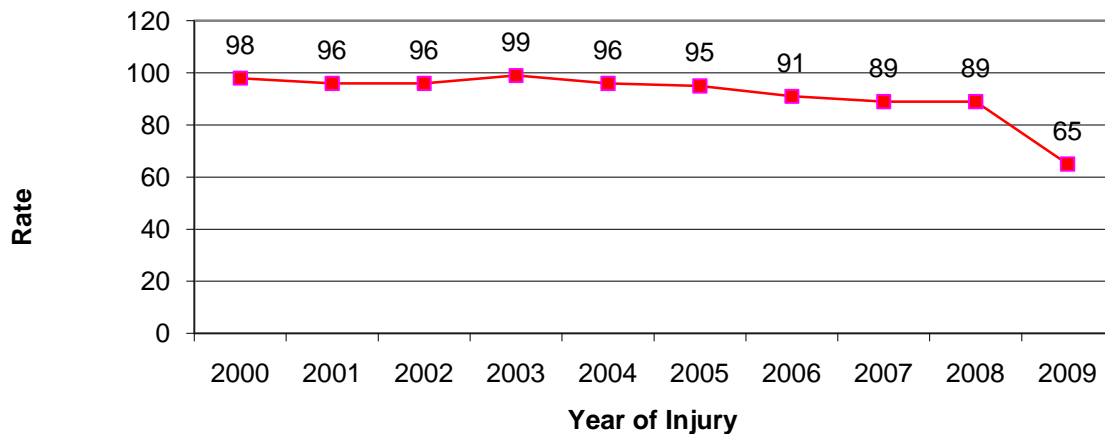


Data Source: Motor vehicle collision surveillance data was obtained from the Collision Report Analysis for Safer Highways (CRASH) database established and maintained by the Kentucky State Police.

### Indicator #22 (Kentucky- Specific): Occupational Motor Vehicle Collisions- First Reports of Injury and Claims Filed With Workers' Claims by Injury Year

There were 1,208 occupational motor vehicle collision claims in the year 2009, with an associated driver injury rate of 65 injuries per 100,000 workers (Figure 18).

Figure 18. Occupational Motor Vehicle Collision Driver Injury Rates, 2000-2009.

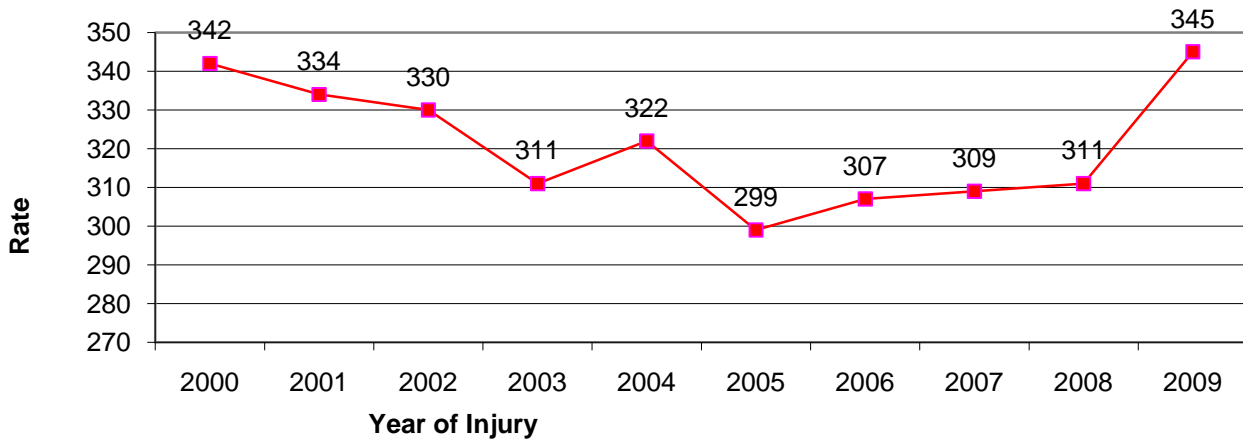


Data Source: Kentucky Department of Workers' Claims

**Indicator #23 (Kentucky- Specific): Occupational Falls- First Reports of Injury and Claims Filed With Workers' Claims by Injury Year**

In the year 2009, there were 6,412 occupational fall claims and first reports filed with an associated occupational fall injury incidence rate of 345/100,000 employed workers, increased from 2008 (Figure 19). Most occupational falls occurred in the services (n=2,402) and retail trade (n=1,044) industries and in the laborers except construction (n=398), nursing aides, orderlies, and attendants (n=321), and the truck drivers (N=324) occupations.

**Figure 21. Occupational Fall Injury Incidence Rates, 2000-2009.**



Data Source: Kentucky Department of Workers' Claims

<sup>a</sup> All state government cabinets were included in the analysis except for Transportation Cabinet injuries. Data source: Kentucky Personnel Cabinet, Office of Employee Relations