IN Review

Indiana Occupational Safety and Health 2008

HOW TO SURVIVE
an IOSHA inspection

WORKPLACE SAFETY
Who is responsible?

TOP STANDARDS
Cited in 2007

VIOLENCE
in the Workplace

Advancing the safety, health and prosperity of Hoosiers in the workplace

INDIANA OCCUPATIONAL SAFETY & HEALTH—2008 IN REVIEW CONTENTS

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On the Cover: Christopher Bryant, IOSHA Industrial Hygiene Compliance Officer and Mick Kidwell, IOSHA Industrial Compliance Supervisor.

Mitchell E. Daniels, Jr.
Governor

"With more than three million Hoosiers working in Indiana today, the focus on workplace safety and health remains a top priority. The Indiana Department of Labor works each day to ensure a better and safer future for all Hoosiers. Together, we've made many measurable strides in workplace safety and health, but there is still work to be done. We'll always be working to provide a better and safer future for all Hoosiers."

Mitchell E. Daniels, Jr.
Governor

Lori A. Torres
Commissioner

Advancing the safety, health and prosperity of Hoosiers in the workplace is the mission that employees of the Indiana Department of Labor strive to meet each day. It is through our partnerships with Hoosier businesses and organizations, Indiana Occupational Health Administration (IOSHA) compliance inspections and INSafe consultation services that we are able to put this mission into motion.

Although investigating workplace catastrophes and fatalities is only a small part of what the Indiana Department of Labor does, it is still one of the most difficult tasks that we undertake. As safety and health professionals, we take workplace safety and health seriously.

In 2007, we focused our efforts on both regulatory and voluntary OSHA compliance. More than 1,100 IOSHA inspections and nearly 400 safety and health consultations were conducted in 2007. Employer participation in the Indiana Voluntary Protection Program (VPP) has continued to increase, and in early January 2008, Indiana VPP welcomed its 46th employer into the program. Also in 2007 an increased emphasis was placed on participation in the Indiana Safety and Health Achievement Recognition Program (INSHARP). INSHARP grew from two participating Hoosier employers in 2006 to 19 by 2008.

By sharing our findings from the analysis of occupational injury, illness and fatality data we continue to strive for worker safety and health excellence. ***IN Review*** is shared with lawmakers, agency heads, and leaders in industry and labor. By doing this, we are able to provide relevant information to those who have the ability to make and affect change. In our publication, you can expect to find articles written by our *real* experts, IOSHA Compliance Officers and INSafe Consultants. We've continued to include *real* instances and cases of occupational hazards, risks and fatalities in Indiana. Through our *Indiana Fast Stats*, we've also provided information pertaining to employment, injury and illness rates, historical trends and hazardous occupations in Indiana. It is our expectation that ***IN Review*** is a useful tool in raising awareness, assessing and addressing workplace safety and health in Indiana.

By advancing the safety, health and prosperity of Hoosiers in the workplace, we make it our priority to return each one of our Hoosier workers home at night to their respective families. You have our commitment that, as an agency, we are focused on making Indiana workplaces safer and healthier places.

Sincerely,

Lori A. Torres
Commissioner

Flashback Facts:
Safety by the Numbers

In 1976 the Occupational Safety and Health Act (OSH Act) had only been in existence for six years. The OSH Act encouraged states to develop and implement their own worker safety and health programs. On March 6, 1974, the United States Department of Labor (U.S. DOL) granted approval to the State of Indiana to operate independently. Altogether 25 other states and U.S. territories have received this designation.

A lot has changed in 30 years, and occupational safety and health in Indiana is no exception. The rate of injuries and illnesses in Indiana has significantly declined from 9.8 in 1976 to 5.4 in 2006. This means that a worker is 45 percent less likely to be injured than they were 34 years ago. While the Hoosier workforce increased by more than 31 percent, the number of workplace injuries and illnesses decreased by more than 10 percent.

A work-related injury resulted in an average of 16 days away from work in 1976. By 2006, this average dropped dramatically to seven days. In 2006 **manufacturing** is the industry in which the non-fatal occupational injury and illness rate is the highest. In 1976 in Indiana, **construction** was the industry in which the rate of non-fatal injuries and illnesses was the highest.

Further analysis of the historical data shows that while some things have changed, some have remained consistent in the 30-year period. The Hoosier **manufacturing** industry has resulted in the majority of injuries and illnesses. In 1976, the majority of all injuries and illnesses were attributed to this industry and the same is consistent in 2006. In 1976, the most often occurring event/exposure was **overexertion in lifting objects** and in 2006, **overexertion** was the event that caused the majority of injuries resulting in days away from work.

Although the accomplishment of where we were and where we are now is a commendable achievement, greater progress in keeping Indiana's workplaces safe and healthy is still needed. Indiana has proven that we can make work and jobsites safe, and we'll continue to do so, because, even one Hoosier injured, made ill or killed is one too many.

Hoosier Fast Stats: A 30-year Industry Comparison

1976	2006
Private Sector Employees……1,710,300	Private Sector Employees……2,485,500
Injury & Illness Rate……..9.8	Injury & Illness Rate……..5.4
Number of Injuries & Illnesses.....144,300	Number of Injuries & Illnesses.....131,000
Average Days of Work Lost Due to Injury/Illness……16	Average Days of Work Lost Due to Injury/Illness……...7
Workplace Fatalities……166	Workplace Fatalities……148
Manufacturing Injury & Illness Rate……13.4	Manufacturing Injury & Illness Rate……..7.3
Construction Injury & Illness Rate…....14.7	Construction Injury & Illness Rate…….5.6

How Safe is it to Work in Indiana?

An Overview of Occupational Injury and Illness Statistics in Indiana

A review of historical trends indicates progress in many areas related to occupational safety and health in Indiana. Information used in ***IN Review*** was provided by the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI), BLS Survey of Occupational Injuries and Illnesses (SOII) and data from IOSHA. This is the most recent data available.*

- In 2006, Indiana reported 148 work-related fatalities **(Figure 1)**. Indiana's 2005 workplace fatality rate is 5.1 **(Figure 2)** per 100,000 Hoosier employees.

  Indiana's top three industries in 2006 with workplace fatalities are:

Transportation	34
Construction	27
Manufacturing	13

- The number of non-fatal occupational injuries and illnesses in 2006 was 131,000 **(Figure 3)**. This represents a decrease of 4,000 injuries and illnesses as compared to 2005.

  Indiana's top three employment groups reporting injuries and illness in 2006 in raw numbers are:

Manufacturing	41,900
State & Local Government	19,700
Healthcare	16,500

- Indiana's corresponding non-fatal occupational injury and illness rate is 5.5 per 100 employees **(Figure 4)**. The rate for only private industry is 5.4, however, it is above the U.S. private industry rate of 4.4.

  The top three employment groups reporting injuries and illnesses by rate in 2006 are the same as for raw numbers:

Manufacturing	7.3
State & Local Government	6.6
Healthcare	6.6

**2007 BLS data will be available for CFOI in August 2008 and for SOII in October 2008.*

Figure 1: Indiana's Fatal Occupational Injuries

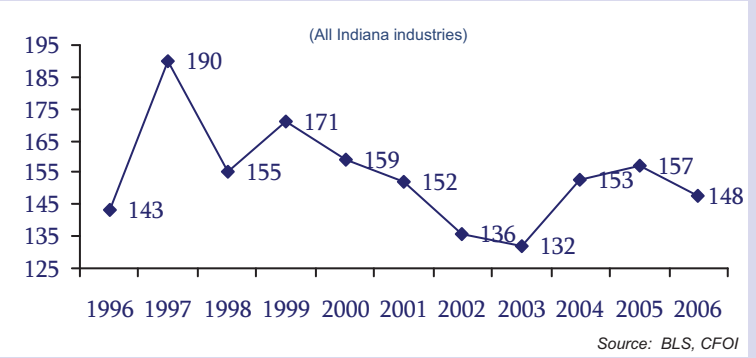


Figure 2: Indiana's Occupational Fatality Rate (2005)**

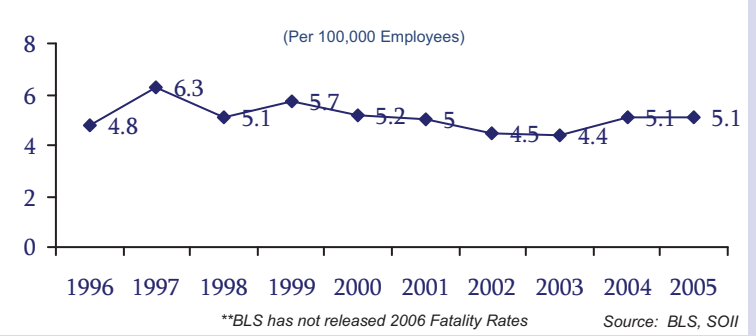


Figure 3: Indiana's Non-fatal Occupational Injuries & Illnesses

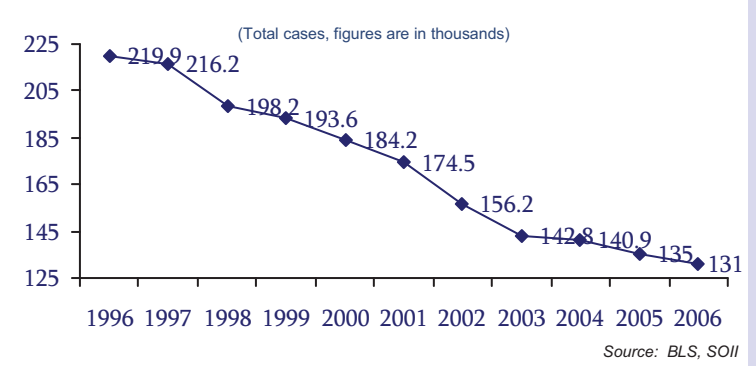
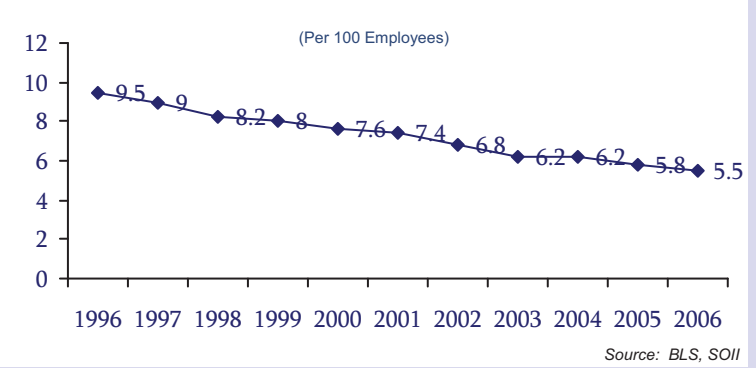


Figure 4: Indiana's Non-fatal Occupational Injuries & Illnesses



Injuries, Illnesses and Fatalities:
Who, What, Why and How Hoosier Employees Are Injured

Occupational safety and health hazards are a risk to all workers. Statistical analysis shows that there are predominant characteristics of occupational injuries and illnesses in Indiana.

Fatal Injuries

In Indiana, a fatal work-related injury typically occurs among **Caucasian** (86%) **men** (91%), **over 45** years-old (60%). Forty-five percent of fatalities occur on a street or highway. **Vehicles** (e.g. automobiles, trucks, forklifts and tractors) were the number one source causing workplace fatalities (56%).

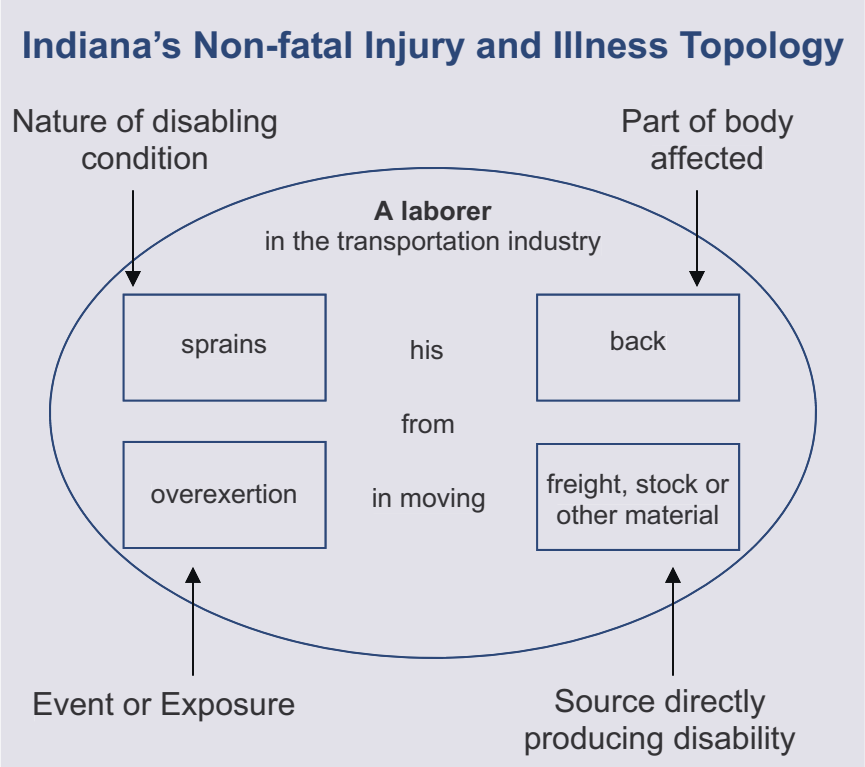
The industry with the highest rate of worker fatalities is **agriculture** with 58.1 fatalities per 100,000 workers. This rate is three times the second highest industry rate. The second highest is **transportation** (18.9), followed by **construction** (12.9). Transportation and construction are also in the top three for total number of fatalities. In 2006 agriculture was replaced by manufacturing in highest number of fatalities.

For non-fatal injuries and illnesses in Indiana, the worker characteristics remain the same, but the frequency changes slightly to **Caucasian** (67%) **men** (65%) between the ages of **35-44 years-old** (27%).

Non-fatal Injuries & Illnesses

In Indiana in 2006, the event causing the majority of the injuries resulting in days away from work to workers was **overexertion** (6,660). **Sprains, strains and tears** was the predominant nature of the disabling condition most often occurring in Indiana (10,990). The source of injury varies.

In Indiana, the **manufacturing** industry has the greatest number (41,900) and the highest rate (7.3) of recordable injuries and illnesses among all Hoosier industries. With a number of steel mills in northwest Indiana, the **primary metal manufacturing** industry receives much media attention. For 2006 the industry injury and illness rate was 7.4, down from 8.4 and 9.1 in 2005 and 2004 respectively and below the U.S. rate of 8.6.



Of the 131,000 injuries and illnesses in 2006, 7,700 (5.9%) are categorized as illnesses. The top three illnesses are **skin disorders** (1,700), **respiratory conditions** (700) and **hearing loss** (700). The corresponding illness rate for Indiana is 30.1 illnesses per 10,000 Hoosier workers. The Indiana illness rate is above the U.S. average of 24.6.

While physical workplace hazards, such as machine guarding or not properly following Lockout/Tagout procedures, pose an immediate threat to worker safety and wellbeing, health hazards can take years to develop or affect a worker. In 2007, 28.5% of all the citations issued by IOSHA were health-related. More than half of the citations issued by IOSHA in 2007 were of a serious nature. *See page eight for additional information on the most commonly cited standards in industrial hygiene, construction and industrial safety.*

Who's Responsible for Your Safety at Work?

Contributed by Robert Kattau, Director of IOSHA Industrial Compliance
Email: bkattau@dol.in.gov

More than three million Hoosiers go to work day after day and year after year without thinking that one day they may become a statistic on their company's occupational injury and illness log. No one plans to get injured, or to die, from a work-related incident. But a review of the newspaper and other media indicates that it happens somewhere, everyday.

When work related incidents occur, investigators try to determine the cause in order to prevent similar events in the future. Too often, the investigators determine that the incident resulted from an unsafe act on someone's part. Was the incident the result of the victim not being properly trained, or not having and using the proper protective equipment, or having improperly marked equipment? Whether the answer is "yes" or "no," the likelihood of an incident is strongly influenced by the attitude and awareness of the workers and employers involved.

As humans, we seem to find some sense of security in knowing that we can blame someone else if we should get injured. It is too often the case that we take our own safety for granted. This does not diminish the responsibility for employers to provide a safe workplace and to adequately train and equip employees for the jobs assigned to them. It does indicate, however, that workers need to always be aware that they are the most important person to assure that they return home, at the end of each workday, with all their parts intact.

An excellent example of this was an incident which occurred in August 2005 when welders were disconnecting piping from a large metal storage tank. The tank was labeled "EMPTY" and someone from the business told the welders that the tank was empty. The welders did not check the tank, nor did they completely close an inlet valve on the top of the tank, before cutting the piping. Following the ensuing explosion, the tank was found to have contained several hundred gallons of flammable liquid. One welder was killed. It was an incident which would not have occurred if the welders had taken a few seconds to verify either the state of the tank or the position of the inlet valve.

So to answer the question, who's responsible for your safety at work, ultimately the responsibility is yours. You should be involved in your company's safety programs to make the place safer for yourself and your co-workers.

PPE Payment Standard Revised

OSHA requires the use of personal protective equipment (PPE) to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective in reducing the exposure to acceptable levels. Employers are required to determine the appropriate PPE to protect their workers. The action clarifies who is responsible for paying for PPE. It is expected to lead to a reduction of thousands of workplace injuries and illnesses each year.

Federal OSHA announced a new rule clarifying the employer/employee responsibilities for payment of PPE in mid-November 2007. The final rule requires employers to pay for nearly all personal protective equipment that is required by OSHA's general industry, construction and maritime standards. Indiana adopted the rule by action of the Indiana Occupational Safety Standards Commission on March 5, 2008.

Above: Some of the PPE that is required to be provided by the employer (Hard hat, safety glasses, gloves, earplugs, etc.).

When employees are required to pay for their own PPE, many are likely to avoid PPE costs and thus fail to provide themselves with the appropriate level of protection. A rule requiring employers to pay for required PPE will likely encourage employees to participate whole-heartedly in an employer's safety and health program and employer payment for the PPE will improve the safety culture at the worksite.

Visit http://www.osha.gov/SLTC/personalprotectiveequipment/ for additional information.

How Do I Survive an IOSHA Inspection?

What to Do and Expect, During and After

Contributed by Robert Kattau, Director of IOSHA Industrial Compliance
Email: bkattau@dol.in.gov

Inspections conducted by IOSHA compliance officers fall into one of four categories (accidents, referrals, complaints, or planned) and are divided into three parts: opening, walk around, and closing.

During the opening, the inspector will verify that they are at the correct facility, provide information to the employer as to the reason and the scope of the inspection, provide information on employer and employee rights and obligations, and ask a lot of questions about the establishment. Generally, the employer's heart rate, which probably rose when the presence of the IOSHA officer was announced, has an opportunity to return to normal during the opening conference. The compliance officer will also present a Document Request to the employer for information which they may need to adequately conduct the inspection.

Following the opening, the officer, generally accompanied by at least one employer representative, will go to the area of the inspection. (If it is a planned inspection, the area will be the entire facility.) During this "walk around", the facility or complaint items will be checked, measurements or other tests may be conducted, and employees will be interviewed. This part of the inspection may take from a few minutes to several days depending on the circumstances. It will also, unfortunately, be the most disruptive part of the inspection. Compliance inspections tie up at least one officer of the company and if applicable, involve a union representative. Employees are subject to private interviews and can be taken away from their regular duties and typical sampling conducted by a compliance officer takes eight hours. It is also disruptive in that by this time, word of the compliance officer's presence at the facility has spread throughout the workforce in the immediate area. This generally brings about a lot of correspondence between workers, further interrupting the daily work schedule. During the "walk around" the compliance officer uses their training and health/safety experience to assure that the workplace is compliant with existing codes and provides the employer with a "second set of eyes" that are not normally in the facility.

After the "inspecting" is complete, the compliance officer will conduct a closing conference during which any alleged violations, found during the inspection, are presented to the employer. The average time from the walk around to citation issuance is 45 days for safety and 60 days for health. Time frames required for abatement of any violations are established during this meeting.

So, if any one asks you what to expect from an IOSHA inspection, you can tell them to expect anxiety and disruption of your daily routine, but ultimately, a safer work place for you and your employees.

Fast Stats: IOSHA

2007

Total Inspections	Safety	Health
Manufacturing	349	176
Construction	606	22
Other	10	4
Total	*965*	*202*

Number of Inspections with Citations……..…...604

Number of Citations Issued……..2,234

Amount of Penalties Assessed…..……..$961,937

"If we thought working with IOSHA could and would have been this easy and understanding of our business, we would have contacted you a long time ago," president of a Hoosier business.

What Are the Top Hazards?

The Five Most Frequently Violated OSHA Standards in Indiana in 2007

Top Five Safety Violations (1910)

#1 1910 303(g)(2)(i) - **Electrical: 600 Volts, Nominal or Less Guarding of Live Parts**—Except as required or permitted elsewhere in this subpart, live parts of electrical equipment operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures.
#2 1910 212(a)(1) - **Machine Guarding—**Types of guarding. One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of guarding methods are- barrier guards, two-hand tripping devices, electronic safety devices, etc.
#3 1910 215(b)(9) - **Guarding of Abrasive Wheel Machinery: Exposure Adjustment**
#4 1910 1200(e)(1) - **Toxic & Hazardous Substances: Written Hazard Communication Program**
#5 1910 23(c)(1) - **Guarding Floor, Wall Openings and Holes: Protection of Open-sided Floors, Platforms and Runways**

Top Five Construction Violations (1926)

#1 1926 100(a) - **Head Protection**—Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects or from electrical shocks and burns, shall be protected by helmets.
#2 1926 451(g)(0)(1)(vii) - **Scaffolds: Fall Protection**—For all scaffolds not otherwise specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section, each employee shall be protected by the use of personal fall arrest systems or guardrail systems meeting the requirements of paragraph (g)(4) of this section.
#3 1926 453(b)(0)(2)(v) - **Scaffolds: Aerial Lifts**
#4 1926 454(a) - **Scaffold Training Requirements**
#5 1926 451(b)(0)(1) - **Scaffold Platform Construction**

Top Five Industrial Health Violations (1910)

#1 1910 1200(h)(1) - **Toxic & Hazardous Substances: Employee Information & Training—**Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not been previously trained about is introduced into their work area.
#2 1910 1200(e)(1) - **Toxic & Hazardous Substances: Written Hazard Communication Program—**Employers shall develop, implement and maintain at each workplace, a written hazard communication program which at least describes how the criteria specified in paragraphs (f), (g) and (h) of this section for labels and other forms of warning, material safety data sheets and employee information and training will be met.
#3 1910 1200(f)(5)(ii) - **Toxic & Hazardous Substances: Appropriate Hazard Warnings**
#4 1910 1200(f)(5)(i) - **Toxic & Hazardous Substances: Identity of Hazardous Chemicals**
#5 1910 134(c)(2)(ii) - **Respiratory Protection**

To read the OSHA Standards in their entirety, please visit http://www.osha.gov. Using the navigation pane on the right, select 'Standards.'

Most Often Cited by IOSHA:
Hazard Communication

Contributed b y Jay D. King, INSafe Health Consultant
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One of the most often cited standards by the Indiana Occupational Safety and Health Administration (IOSHA) is the **Hazard Communication** standard (1910.1200). Four fatalities in 2006 in Indiana were attributed to chemical products. *See page 11 for an IOSHA case example.*

Under the provisions of the Hazard Communication standard, employers are responsible for informing employees of the hazards and the identities of workplace chemicals to which they are exposed. Nearly 32 million workers work with and may potentially be exposed to one or more chemical hazards. Exposure to caustic or noxious substances resulted in **320 cases** with days away from work in Indiana in 2006.

It is estimated that there are more than 650,000 chemical products and hundreds of new ones are introduced annually. This poses a serious issue for exposed employees and their employers. Chemical exposures may cause or contribute to many serious health effects such as heart ailments, central nervous system damage, kidney and lung damage, sterility, cancer, burns and rashes. Some chemicals may also be safety hazards and have the potential to cause fires, explosions or other serious accidents.

Ultimately, the goal of the Hazard Communication standard is to ensure employees know about workplace hazards and how to protect themselves. Uniform requirements for chemicals imported into, produced or used in the U.S. are established by the standard. In general, the process includes chemical manufacturers identifying the hazards of the product and providing protective measure information to the customer. Employers are responsible for implementing a hazard communication program, including labeling and providing Material Safety Data Sheet(s) (MSDSs).

A written hazard communication program ensures that all employers receive the information they need to inform and train their employees properly and to design and put in place employee protection programs. It also provides necessary hazard information to employees, so they can participate in, and support the protective measures at their workplaces. Therefore, employers must develop, implement and maintain at the workplace a written, comprehensive hazard communication program that includes provisions for container labeling, collection and availability of MSDSs and an employee training program. It also must contain a list of the hazardous chemicals, the means the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels) and the hazards associated with chemicals in unlabeled pipes. If the workplace has multiple employers onsite (for example, a construction site), the rule requires these employers to ensure that information regarding hazards and protective measures is made available to the other employers onsite, where appropriate. The written program must be available to employees, their designated representatives, the Commissioner of Labor and the Director of the National Institute for Occupational Safety and Health (NIOSH).

Above: Unidentified chemical(s) inside container. Per the Hazard Communication standard, chemicals shall be labeled with the identity and appropriate hazard warnings. *(2007 Photo taken by IOSHA Industrial Compliance Officer, Michael Hom).*

Indiana's Largest Employer:
Manufacturing

The manufacturing industry represents almost 32% of all the occupational injuries and illnesses in the state. This is consistent with the national data for the manufacturing industry. As a nation, the largest share of injuries were in the manufacturing industry (20.1 %).

Hoosier manufacturing has the greatest number of injuries and illnesses (41,900) and the highest injury and illness rate (7.3) than any other industry in the state. While the rate of total recordable injury and illness cases declined to the state's historic low in 2006, this industry accounts for nearly one of every three injuries in Indiana.

The national injury and illness rate is 6.0. Forty-two states have published manufacturing industry injury and illness rates. Louisiana has the lowest (3.7) and Montana has the highest (10.1). Among all reporting states, Indiana ranks as 32.

In 2006, Hoosier manufacturers with the highest worker injury and illness rate (per 100 workers) included **wood products** (11.7), **beverage and tobacco** (9.0) and **transportation equipment** (8.7). Transportation equipment manufacturing is the largest employment segment in the state, employing more than 138,000 Hoosier workers.

The most frequent injury event is **bodily reaction & exertion** (3,110), specifically **overexertion in lifting** (850). This is followed by **contact with objects & equipment** (2,610) and **falls** (1,130).

Figure 5: Indiana Manufacturing Fatal Occupational Injuries

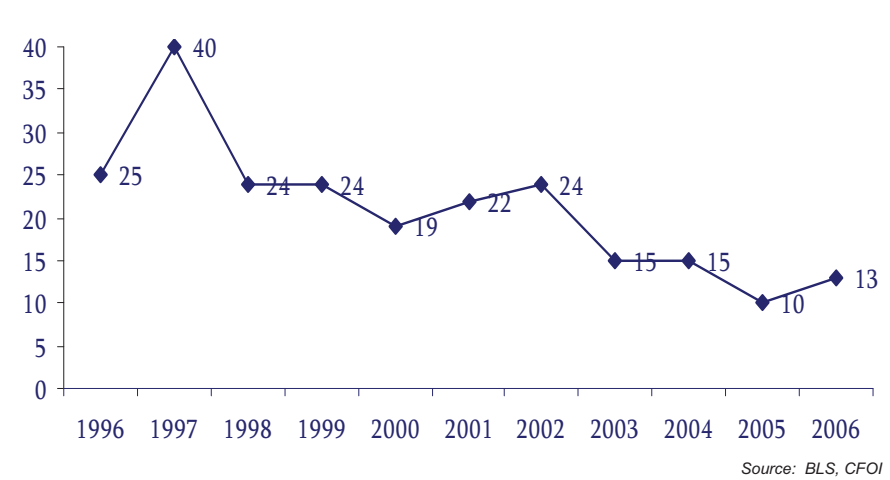


Figure 6: Indiana Manufacturing Non-fatal Occupational Injuries & Illnesses

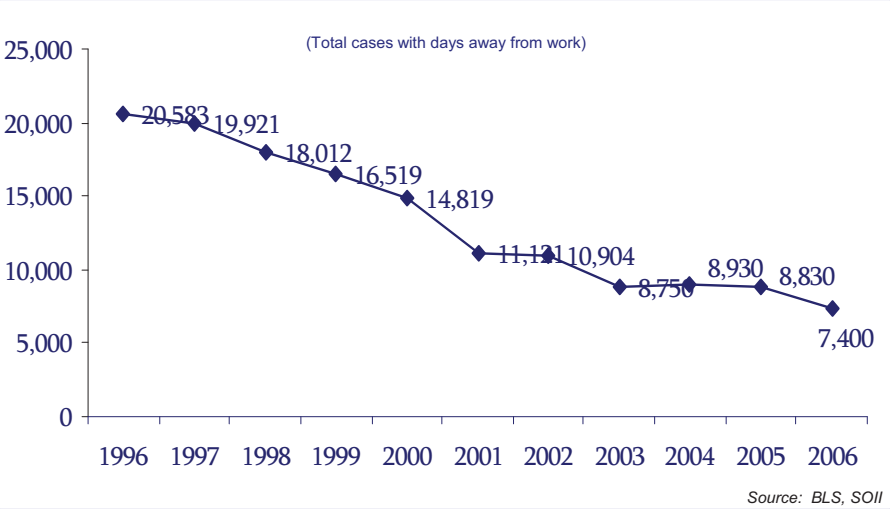
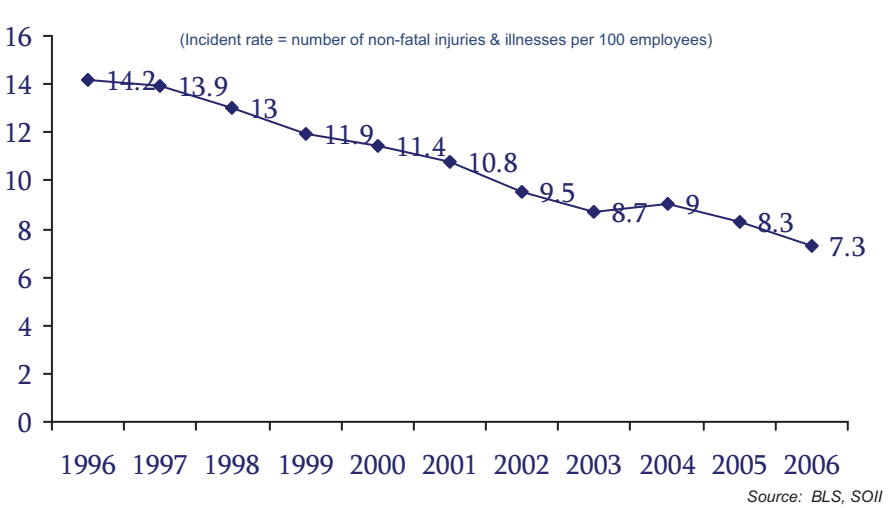


Figure 7: Indiana Manufacturing Non-fatal Occupational Injury & Illness Rate



Manufacturing Trends

Employing the greatest number of Hoosier workers (568,400) in 2006, ensures that Indiana's manufacturing industry receives greater attention. More than 700 Hoosier manufacturers were inspected by the IOSHA Industrial Compliance Division in federal year 2007 for both health and safety violations.

The top three segments inspected by IOSHA in the manufacturing industry during this time frame included **transportation equipment** (266), **fabricated metal products** (210) and the **primary metals industry** (145). Industries most frequented by IOSHA compliance officers typically have characteristics that include them among the division's high-hazard list. A segment within an industry may be deemed high-hazard because of equipment or processes used to manufacture goods or simply due to the number of OSHA recordable injuries and illnesses.

IOSHA's purpose is to reduce workplace fatalities, injuries and illnesses by actively promoting workplace safety and health through enforcement inspections. Although IOSHA must continually respond to new challenges from a variety of sources, the mission remains the same. Strategic mechanisms such as Site Specific Targeting (SST), Local Emphasis Programs (LEPs), and National Emphasis Programs (NEPs) have been put into place to assist IOSHA in meeting its mission.

The continued decline in the total recordable and lost workday case rates indicate that fewer Hoosiers are involved in workplace incidents resulting in injury and illness.

By proactively targeting the industries and employers that experience the greatest number of workplace injuries and illnesses, IOSHA will continue to strive towards meeting the mission of ensuring a safe and healthy workplace.

Fast Stats: Indiana Manufacturing

Average Employment	568,400
2006 Workplace Fatalities	13
Workplace Fatality Rate (2005)	1.3
Workplace Injuries & Illnesses	41,900
Workplace Injury & Illness Rate	7.3
Median Number of Days Away from Work	7

2007 Case File

It Happened Here
Porter County

Background: In steel plants, a number of manufacturing accidents and fatalities occur under unusual circumstances such as process upsets, equipment failures and non-routine maintenance and repair operations. Blast furnace operations are linked to the steel plant by a railroad network. To transform the iron into steel, the excess carbon and other impurities must be removed.

Catastrophic Event: In Porter County, on August 28, 2007, a fireball from a furnace injured seven men ranging in age from 30 to 57. The facility was experimenting with a new briquette alloy. In attempts to cool the overheated vessel, workers were in the process of adding lime and briquettes. In reaction, the furnace 'burped'-a chemical reaction that caused a bubble-like release of gases. Outfitted with an enclosure to contain the gas, the enclosure trapped the fireball from the 'burp,' forcing it through a small doorway—engulfing the workers. At the time of the explosion, the workers were wearing flame retardant suits.

Recommendations: Minimize exposure to metal fumes, dust and heat during handling operations. Provide exhaust inhalation systems to minimize airborne concentrations. Follow OSHA respirator regulations (29 CFR 1910.134). Use protective clothing (flame retardant-molten), gloves (aluminized-molten) and safety glasses to prevent skin and eye contact as required. Contact lenses should not be worn where exposure is likely.

Indiana Transportation Injury and Illness Trends

For decades, the transportation industry has led all industries with the greatest number of workplace fatalities in Indiana and nationwide. In 2006, transportation industry fatalities reached 34, tying the 1999 figure **(Figure 8)**. However, this is an industry in which IOSHA has limited jurisdiction. While statewide the transportation industry had the highest count of worker fatalities, it had a below average injury and illness rate (5.3) among all Indiana industries.

Injuries, illnesses and fatalities that are attributed to the transportation industry can include air, rail, truck, transit & ground passenger transportation, and couriers & messengers. Workplace fatalities in the Indiana transportation industry account for almost 23% of all occupational-related deaths, but workers account for only 3% of the Hoosier workforce. Research also indicates that 64% of all fatal highway accidents are collisions in which two vehicles are involved.

Even though workers in the transportation industry suffered only 23% of all occupational deaths, highway motor vehicle accidents caused one-third of all occupational fatalities. While the injury and illness rate decreased in 2006 **(Figure 9)**, the number of non-fatal incidents resulting in days away from work went up **(Figure 10)**. The transportation industry accounts for 8.9% of injuries resulting in days away from work. The subcategory where the majority of the injuries in the transportation industry occur is **truck transportation** (1,360), followed by **couriers and messengers** (280).

Figure 8: Indiana Transportation Fatal Occupational Injuries

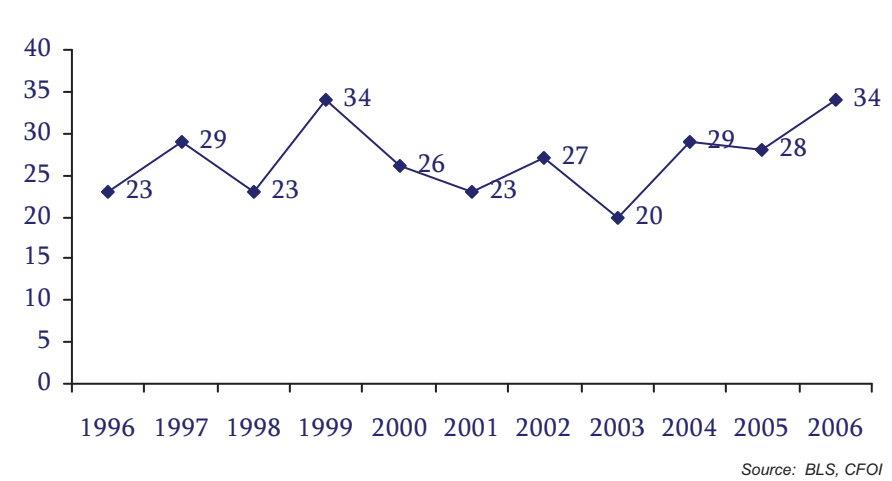


Figure 9: Indiana Transportation Non-fatal Occupational Injury & Illness Rate

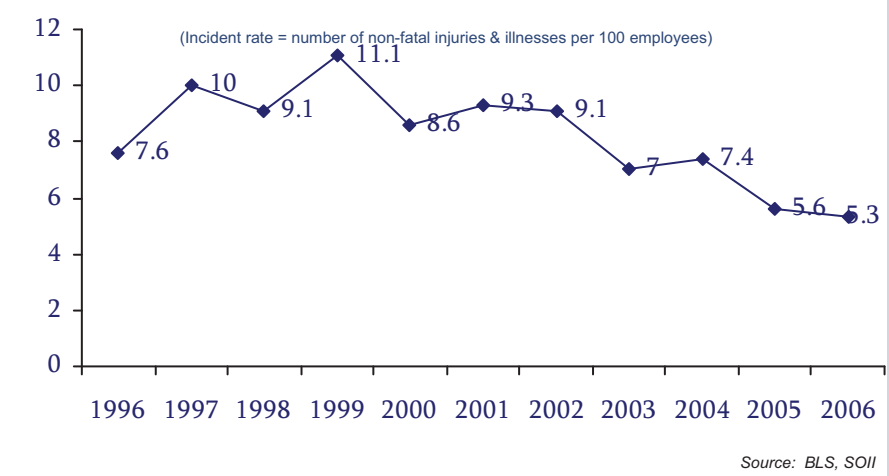
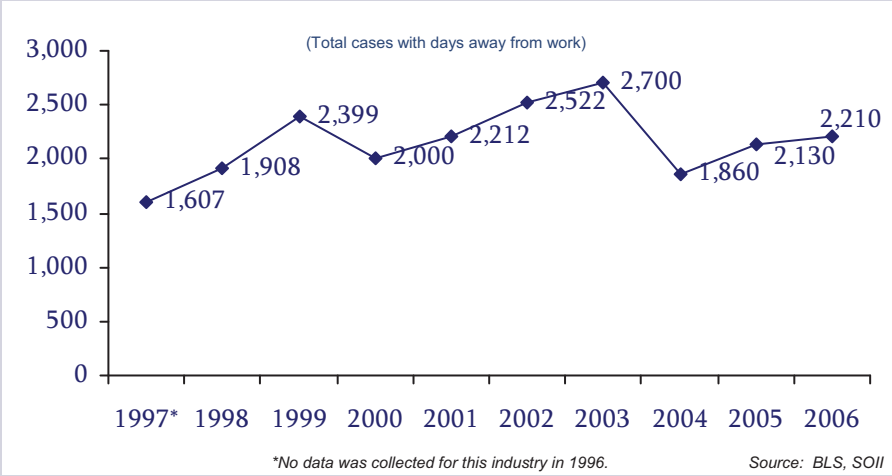


Figure 10: Indiana Trucking & Warehousing Non-fatal Occupational Injuries & Illnesses



Safe Driving Tips to Use

Work-related roadway crashes are the leading cause of death in U.S. workplaces. This includes truck and van drivers as well as employees traveling by car or bus on work-related business, but does not include commuting. A study conducted by the National Institute of Occupational Safety and Health (NIOSH) shows nearly 12,000 deaths between 1992 and 2000 from roadway crashes. Injuries and fatalities from these roadway crashes result in an increased cost to employers and lost worker productivity. In Indiana in 2006, 48% of worker activities when a fatal event occurred involved some form of vehicular and transportation operation.

Prevention of work-related roadway crashes poses one of the greatest challenges in occupational safety and health. Compared with other work settings, the employers' ability to control working conditions and exert direct supervisory controls is limited. As traffic volume and road construction continues to increase, workers feel pressured to drive faster and for longer periods of time.

Despite challenges, progress can be made in the reduction of work-related roadway crashes. When driving, use the tips below to stay safe, stay focused and stay alive.

Stay Safe

- Use a seatbelt at all times—driver and passenger(s).
- Be well-rested before driving.
- Avoid taking medications that make you drowsy.
- Set a realistic goal for the number of miles that you can drive safely each day.
- Do not drive impaired.

Stay Focused

- Driving requires your full attention. Avoid distractions such as adjusting the radio, using a cell phone, eating or drinking.
- Continually search the roadway to be alert to situations that require quick action.
- Stop about every two hours for a break. Get out of the vehicle to stretch, take a walk and get refreshed.

For more information, please visit Federal OSHA at http://www.osha.gov/SLTC/motorvehiclesafety .

Fast Stats: Indiana Transportation

Average Employment	108,800
2006 Workplace Fatalities	34
Workplace Fatality Rate (2005)	18.9
Workplace Injuries & Illnesses	5,900
Workplace Injury & Illness Rate	5.3
Median Number of Days Away from Work	8

2007 Case File

It Happened Here
Daviess County

Background: Transportation industry workers routinely face hazards during vehicle maintenance and loading activities. In 2006, 23% of fatal industries to truck drivers were not caused by highway vehicle accidents, but from other activities.

Fatal Event: On January 12, 2007 a truck driver, age 57, received chemical burns while unloading Sodium Hydroxide in Daviess county, Indiana. The victim was unloading Caustic Soda (Sodium Hydroxide) at a grain processing plant. During the unloading process the victim was sprayed with the chemical and drenched from the waist down. At the time of the incident, the victim was not wearing any personal protective equipment (PPE). As a result, the victim received chemicals burns to his lower extremities and thighs. The victim phoned his supervisor and was taken to the hospital. He died 13 days later.

Discussion: Sodium Hydroxide has the potential to cause severe chemical burns or blindness. When handling, eye, face and bodily protection should be worn. PPE should be provided by the employer and used by the employee when there is a likelihood of contact with Sodium Hydroxide. When contact is made with the skin, there is not necessarily an immediate sensation or reaction. In case of contact with skin or eyes, it is necessary to flush with water immediately for at least 15 minutes.

2006, A Surprising Year in Hoosier Agriculture

While the number of agriculture-related fatalities decreased from 26 in 2005 to 12 in 2006 **(Figure 11)**, agriculture continues to remain as one of the most dangerous industries in Indiana. Preliminary data for 2007 suggests that the number of fatalities mirrors pre 2006 levels. In terms of being killed on the job, farming is the riskiest occupation in Indiana. The majority of worker fatalities in Hoosier agriculture in 2006 were **vehicle-related** (five), and three of the five incidents involved a **tractor**.

State fatality rates in 2005* rank the state of Oklahoma with the lowest fatality rate of 9.8 for the agriculture industry. Indiana ranks as one of the highest worker fatality rate of 58.1, nearly six-times the rate of Oklahoma. Only three states have higher fatality rates than Indiana; Tennessee (93.5), Missouri (79.6) and Montana (75.0) In 2005, the Hoosier agriculture fatality rate was more than triple that of transportation (18.9).

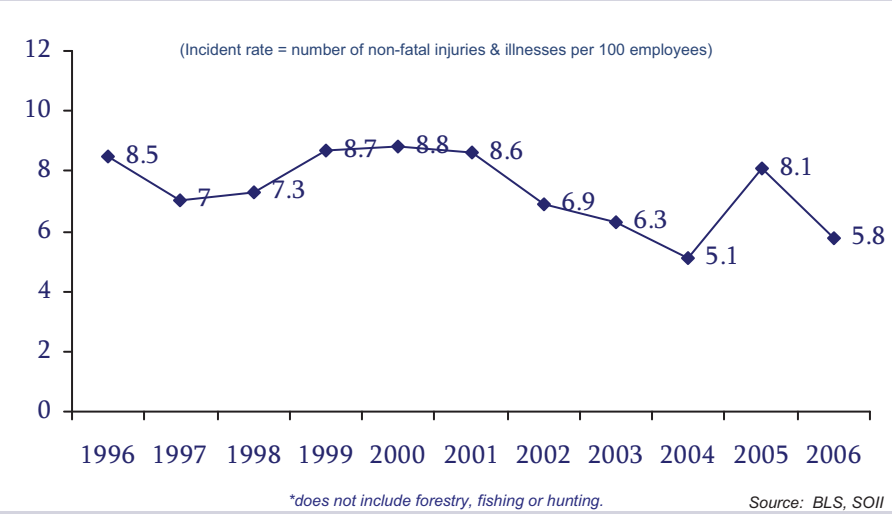
While the number of non-fatal occupational injuries and illnesses resulting in days away from work went down 29% in 2006 **(Figure 12)**, Indiana is still above the national average of 3.2. Injured agriculture worker statistics conclude that the typical injured worker in Indiana's agriculture industry is **male** (88%), age **25-34** (41%) and working in the **animal production** segment (300 cases).

Working to ensure that Hoosier agriculture is a safer and healthier industry to work, the Indiana Department of Labor, Indiana State Department of Agriculture, Purdue University and Indiana Farm Bureau have begun collaborations. While in the early stages of the cooperative effort, the organizations involved seek to provide occupational safety and health training, resources and support to Hoosier farmers.

**2006 fatality rates were not available from BLS at the time of printing.*

Figure 11: Indiana Agriculture's Fatal Occupational Injuries

Figure 12: Indiana Agriculture's * Non-fatal Occupational Injury and Illness Rate



***Fast Stats:* Indiana Agriculture**

Average Employment	**8,800**
2006 Workplace Fatalities	**12**
Workplace Fatality Rate (2005)	**58.1**
Workplace Injuries & Illnesses	**500**
Workplace Injury & Illness Rate	**5.8**
Median Number of Days Away from Work	**3**

Every Accident is Personal

Andy Miller
Director, ISDA

I will never forget September 28, 2007. It was the day my father was killed in a farming accident.* I can recall the events as though they just happened. I was just sitting down to eat dinner when my brother-in-law called. I knew immediately that something bad had happened because he could not speak. Once he regained his composure, he told me that my dad had been crushed by the head of the combine.

Nothing prepares you for a call like this and nothing can explain the range of emotions; but in our case we had the added emotion of déjà vu. You see, my father was involved in another near-tragic accident a few months earlier. He had just finished recouping from that accident and was happy to be back to work.

It is very hard to reflect and recount this horrific tragedy, but in doing so I have found that there are several lessons that are good for all involved in agriculture. I hope in sharing these, we might reduce the chance of another family receiving a phone call like the one I did last fall. I'll share with you what I have learned as a result of this accident.

Workplace accidents are personal. In my job, I have seen a lot of data about workplace accidents, especially in the agriculture industry. Until my dad died, I, like many, would be happy to see the number of farm fatalities drop. But with my dad's death I realized that every accident is personal. Every accident rips a family apart. Every accident destroys a part of the family farming operation. While we are very glad to hear that there are fewer accidents, we cannot forget that one accident is one too many.

Workers become too comfortable with equipment and machinery. Using machinery day in and day out all too often makes workers become too lax, too comfortable with the equipment they use. Equipment used on farms is no exception; it is as much a part of who farmers are as their very soul. In many cases, farmers spend as much time on tractors as they do with their spouses. Because of this, it is easy to forget that these machines can be very, very dangerous. Every time farmers step onto a tractor, into a combine or on any farm equipment, it is important to remember this. It's much like they taught us in driving school – be comfortable but be a defensive driver.

Safety precautions and programs are not suggestions-they are mandates. From Lockout/Tagout to emergency stop features, we've come light years in making equipment safer and educating employees on safety procedures, but so often we ignore these. In my dad's case, he should not have climbed under the combine while it was still running nor should he have attempted to fix the machine alone. Too often, we know the things we are supposed to do but too often look at them as suggestions not mandates.

My family and I miss my dad a lot. I know he would be stewing in anticipation of the upcoming planting season. He likely would be lamenting $5 corn but secretly stashing the extra cash. He surely would still love what he always loved – farming. But all that is gone, and we trust that he is in a much better place with God.

I hope that by sharing my story, you will take a few moments each day to remember to be safe. Take it from someone who has experienced losing a loved-one from a work-related injury first-hand. Believe me, your family will appreciate it.

Sincerely,

Andy Miller
Director
Indiana State Department of Agriculture

**See page 16 for this case study.*

Tractor Upsets, a Hazard to Hoosier Farmers

Contributed b y William E. Field, Purdue University
Email: field@purdue.edu

The year, 2006, was a very good year for Hoosier farmers. Prices were good for most crops and livestock, yields were excellent in most areas of the state and fewer farmers and farm workers were killed as the result of farm-related work than in any year since 1970. In fact, it could be argued that fewer farm-related fatalities occurred in 2006 than in any year since Indiana received statehood in 1816.

Even though some celebration may be in order, the need for farm safety efforts has not been extinguished, especially with respect to fatalities that occur during operation of farm tractors. Of the 686 documented, non-motor vehicle-related farm fatalities that have occurred since 1980, approximately half or over 340 have involved tractors. Of these incidents, the single most significant cause has been tractor upsets in which the tractor overturns crushing the operator beneath the machine. In other words, from a big picture, tractor upsets are the leading cause of farm-related fatalities in the state not counting farmers who die while performing work-related activities while operating a motor vehicle. There are several factors that contribute to the high risk of overturn while operating a tractor. These include the following elements:

- use of tractors on rough and hilly terrain not suitable for most other motorized vehicles;
- use of tractors to tow or pull heavy loads that increase the risk of rear overturn;
- design of older tractors that provides for high clearance but also raises the center of gravity making them more unstable and;
- wide range of training and diversity of tractor operators that lead to a disproportionate number of youth and those over 60 being involved in tractor upsets.

The near universal adoption of Roll-Over Protective Structure (ROPS) by U.S. tractor manufacturers in 1985 has been the most important contributor to initiating a reduction in the number of tractor roll-over-related fatalities. This engineered roll-over frame provides a zone of protection for the operator in the event of a tractor overturn and is found on all newer larger horsepower tractors and is designed into the environmentally controlled cabs of all new tractors. Small tractors come equipped with a two-post foldable frame that provides for lower overhead clearance. In

Continued on Page 25, *see Tractor Upsets*

2007 Case File

It Happened Here*
DeKalb County

Background: Modern farm machinery contributes immeasurably to productivity. However, nearly two-thirds of Agriculture related fatalities involve a large piece of machinery.

Fatal Event: On September 28, 2007 in DeKalb County, Indiana a 64 year-old farmer was fatally injured by a combine. The victim was harvesting soybeans when the head of the combine struck a ditch and became stuck. Without turning the machine off, the victim crawled underneath in an attempt to release the head of the combine. Later, the victim was found trapped underneath the combine's one-ton head. It is unclear why the header dropped down as all the machine's safety devices were intact. The victim suffocated under the weight of the combine head.

Discussion: For safe operation of farm equipment, it is essential that the operator be aware of hazards and remain alert to situations that are potentially or have the likelihood of being dangerous. Conducting pre-operational checks of all machinery and equipment prior to use is critical. All maintenance/repair should be conducted only when the machine is off. Prior to harvesting, the operator must check the field carefully for ditches, fences and other obstacles. It is essential that the operator remain in control of the equipment at all times.

*Note: The victim in this case is John F. Miller, father of Indiana State Department of Agriculture Director, Andy Miller.

Modern Mining in the Hoosier State

Since the early 1830's, coal mining has been a rich part of Indiana history. Coal mining provides a great benefit to this state as it provides Hoosiers with jobs and serves as an energy resource used for local and national consumption. The six active coal mines in located in Gibson, Knox, Pike and Sullivan counties are responsible for producing more than 10.8 million tons of clean coal each year.

The Indiana Department of Labor, the Bureau of Mines and the Mining Safety and Health Administration (MSHA) work together to ensure Hoosier mine safety and health. The Bureau is staffed by the Deputy Commissioner, the Chief Mine Inspector and the Indiana Mining Board.

From 2003 to 2006, the Indiana injury and illness rate for mining decreased by 42%. In 2003, the non-fatal injury and illness rate went from 5.9 to a record low of 3.4 in 2006 **(Figure 13)**.

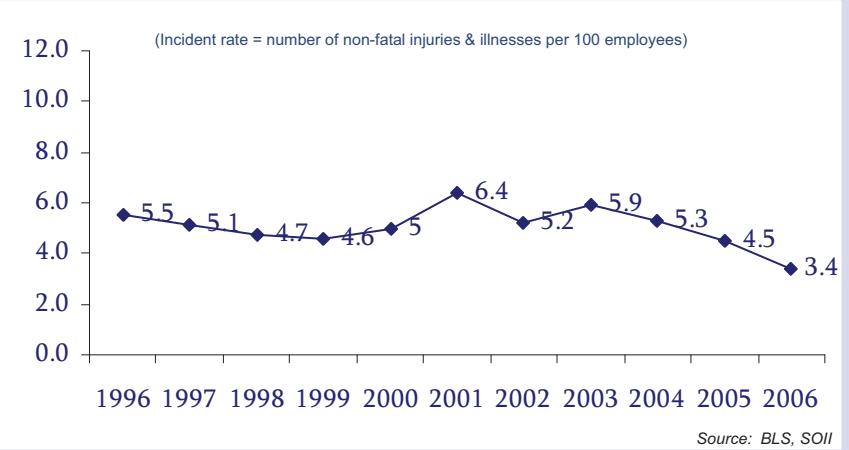
The Bureau of Mines maintains a mine rescue station that is housed not more than one-hour from each southwest Indiana mine. In case of a mine disaster or a mine emergency, the Bureau also has an equipped mobile rescue unit readily available.

The State of Indiana has two fully-trained mine rescue teams who not only train to meet, but exceed the recommended training requirements. The teams compete in at least three competitive mine rescue contests and drills annually. Contests present teams with scenarios challenging their ability to think quickly, and use their training and knowledge of mine rescue operations to work through mine disasters. Mock disasters range from mine fires, explosions, floods, roof falls, and other serious mining events.

Members of the Indiana Mining Board are appointed to a four-year term and are responsible for administering certification examinations quarterly for certain miner classifications. Classifications that require a certification evaluation include Mine Foreman, Mine Examiner, Belt Examiner, Hoisting Engineer and Shot Firer. The board is also responsible for imposing discipline, the revocation of mining licenses and collecting and distributing information concerning the nature, causes and extent of mine accidents and the improvement of methods, conditions and equipment in Hoosier mines.

Visit the Bureau of Mines online at http://www.in.gov/dol/mines.

Figure 13: Indiana Mining Non-fatal Occupational Injury & Illness Rate



2007 Case File

It Happened Here
Gibson County

Background: Between 1993 and 2007 less than two percent of U.S. coal mine fatalities occurred in Indiana mines (11 of 581). Only five of the total 11 Hoosier mining fatalities occurred underground.

Fatal Event: On August 10, 2007 in Gibson County, two company officials (ages 23 & 38) of a shaft and slope sinking contractor and a visiting retiree (age 66) of the contractor were fatally injured while being lowered in a sinking bucket into a shaft which was under construction. A nylon sling and shackle attached to the bottom of the bucket lodged into a shaft collar door, thereby tipping the bucket. This resulted in the men falling from the bucket to the bottom of the shaft, a distance of approximately 550 feet.

Discussion: Always wear, and use, suitable fall protection when positioned or working where fall hazards exist. Inspect hoisting equipment and identify potential hazards before persons are allowed to board, exit, or ride on moving equipment.

Hoosier Construction Injuries and Illnesses Remain Stable

Despite an increase of more than 3,000 additional construction workers in 2006 in Indiana, the non-fatal worker injury and illness rate remained the same as reported in 2005 **(Figure 14)**. The boom in construction work is expected to last for several years to come, as in 2006, Governor Daniels announced his *Major Moves* initiative, investing nearly $12 billion on new road construction.

The construction industry includes specialty trade contractors such as plumbers and electricians. The number of injuries and illnesses that resulted in days away from work increased by nearly 300 cases in 2006 from 2005 **(Figure 15)**. The construction industry was responsible for more than 13,000 of the total 131,000 occupational injuries and illnesses in Indiana in 2006.

For seven consistent years, Indiana construction injury and illness rates have remained below the national average (5.9). Construction segments with the highest injury and illness rates in Indiana are **Poured Concrete Foundation & Structure Contractors** (10.3), **Utility System Construction** (8.9) and **Electrical Contractors** (7.0). Indiana's construction industry surpasses all other industries in this state with the median number of days from work (13).

The most common event causing an injury with days away from work is **contact with objects & equipment** (1,090), specifically being **struck by an object** (520). This is closely followed by **bodily reaction & exertion** (1,050) and **falls** (720).

Figure 14: Indiana Construction Fatal Occupational Injuries

Figure 15: Indiana Construction Non-fatal Occupational Injuries and Illnesses

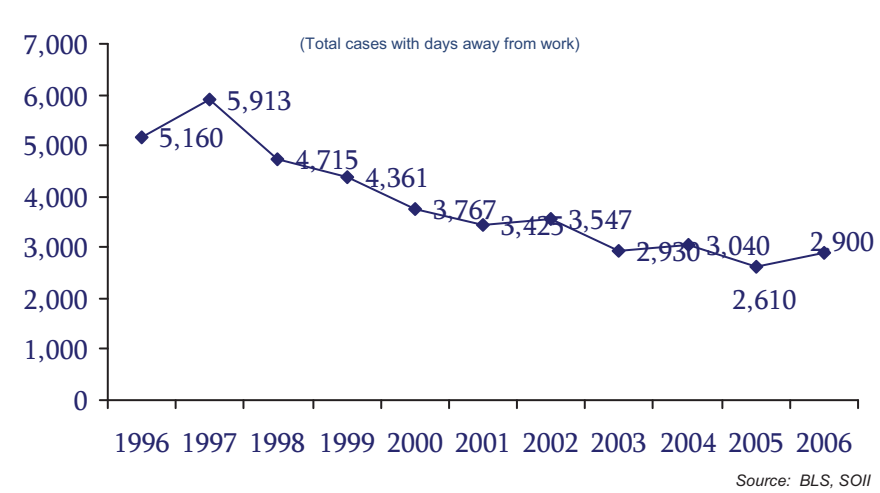
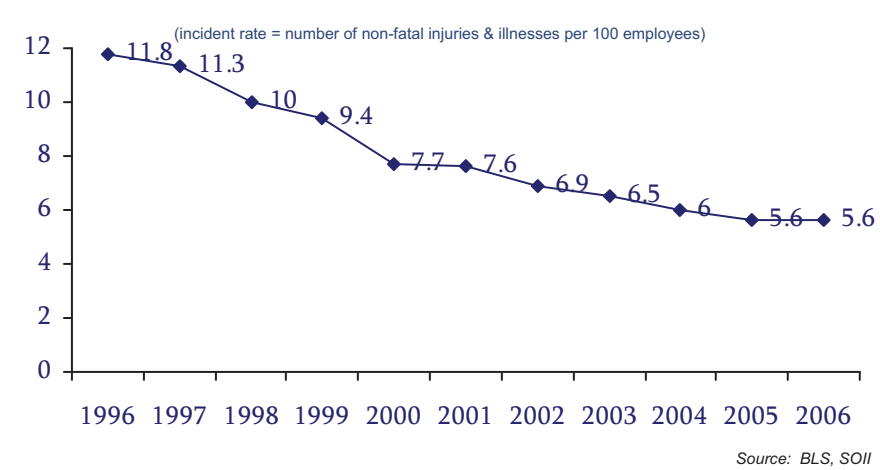


Figure 16: Indiana Construction Non-fatal Injury & Illness Rate



The Aches and Pains of Work:
A Look at Ergonomic Issues in the Construction Industry

Construction work is a physically demanding occupation, but a vital part of the Hoosier economy. In 2006, the number of construction workers in Indiana rose by more than 3,000 to an average employment of 150,500. This larger workforce handled tasks that ranged from carrying heavy loads to performing repetitive tasks, placing them at risk of serious injury. The physically demanding nature of this work helps to explain why injuries, such as sprains, strains and work-related musculoskeletal disorders (WMSD) are so prevalent and are the most common injury resulting in days away from work in the construction industry.

The U.S. construction industry has the highest rate of **bodily reaction and exertion** with 76.7 per 10,000 workers. A corresponding rate for Indiana indicates that for ever 10,000 workers, 51.4 suffer from a bodily reaction and exertion injury event. On average, injuries from overexertion result in seven days away from work.

While ergonomic related injuries are frequent and often severe, OSHA doesn't have a defined ergonomics standard for any industry. Instead, industry and task-targeted guidelines are developed more quickly to provide specific and helpful guidance for abatement to assist employers and employees in minimizing these types of injuries. Implementing the guidelines are the most effective method available for reducing injuries quickly.

WMSDs are caused by activities and conditions like lifting, repetitive motions and working in confined areas. An employee has an increased risk of a WMSD if he or she often carries heavy loads, works on his or her knees, twists or turns his or her hands or wrists, stretches to work overhead or uses certain types of tools or vibrating equipment.

Continued on Page 25, *see Aches and Pains*

Fast Stats: Indiana Construction

Average Employment	150,500
2006 Workplace Fatalities	27
Workplace Fatality Rate (2005)	12.9
Workplace Injuries & Illnesses	7,600
Workplace Injury & Illness Rate	5.6
Median Number of Days Away from Work	13

2007 Case File

It Happened Here
St. Joseph County

Background: Electrical current exposes workers to a serious, widespread occupational hazard. From outlets to power lines practically all employees are exposed to source of electrical energy during the performance of their daily work duties. Electrocutions occur to workers in various job categories. Many workers are unaware of the potential electrical hazards present in their work environment, which makes them more vulnerable to the danger of electrocution.

Fatal Event: On July 31, 2007, in St. Joseph County a 50 year-old county utility employee was electrocuted while installing residential electric service. The victim was found by co-workers at the site. The victim's head made contact with the two top loads of the electrical box, which had between 100 and 900 amps of electricity running through them. It is unknown what caused the man to trip or fall into the transformer. The resuscitation attempts made by the victim's co-workers were unsuccessful.

Discussion: Lockout/Tagout policies and procedures must be established by companies and communicated to employees. The procedures should be used to ensure that equipment is de-energized and isolated from an unexpected release of stored energy before any service or maintenance work is performed. When energy enclosures are unlocked and opened, they should be directly attended by an authorized employee and locked out at all other times.

Healthcare & Social Assistance:
A High Injury Rate Industry

Indiana's healthcare industry represents a large portion of the Hoosier workforce. Nationwide, it is estimated that eight of the 20 projected fastest growing occupations are in the healthcare and social assistance industry. The industry is comprised of establishments that provide health care and social assistance for individuals such as hospitals, nursing homes, doctor's offices and many others. The industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing healthcare and social assistance and finally finishing with those providing only social assistance.

Workers in the health care and social assistance industry are exposed to a wide range of health and safety stressors, including infectious, chemical, and physical agents; ergonomic hazards associated with lifting and repetitive tasks, psychological hazards (stress); and workplace violence. Acts of violence or assaults committed by patients, clients and or family members represent serious safety and health hazards in this industry. In 2006, 150 injuries resulting in days away from work in Indiana's healthcare industry were the result of a **violent act** committed by another person. Of all the work-related injuries in Indiana resulting from an assault by another person 67 percent were in the healthcare industry.

While the rate at which workers in this industry went down **(Figure 17)**, the number of workplace injuries and illnesses resulting in days away from work went up **(Figure 18)**.

Figure 17: Indiana Healthcare's Non-Fatal Occupational Injury & Illness Rate

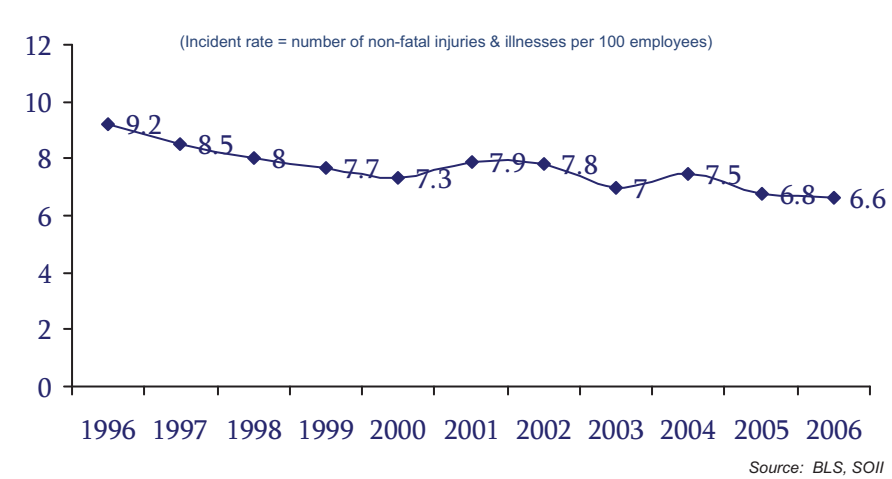
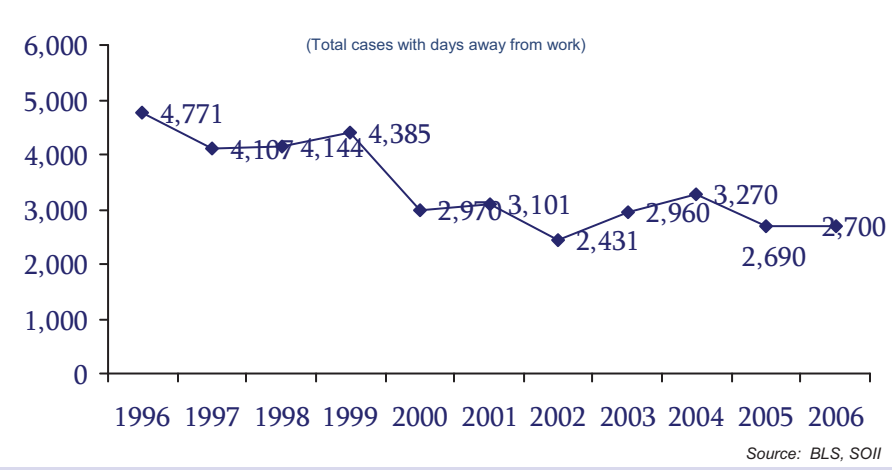


Figure 18: Indiana Healthcare's Number of Injuries & Illnesses Involving Days Away from Work



***Fast Stats:* Indiana Healthcare & Social Assistance**

Average Employment……316,000

2006 Workplace Fatalities……1

Workplace Fatality Rate (2005)……No Value

Workplace Injuries & Illnesses……16,500

Workplace Injury & Illness Rate……6.6

Median Number of Days Away from Work……4

Safe Patient Lifting in the Healthcare Industry:
IDOL, Region V Collaborates with the APTA

Providing "hands-on" care for patients is an important responsibility of professionals working in the healthcare industry. For decades, musculoskeletal injuries have been among the most frequent injuries experienced by healthcare workers. In 2006 in Indiana, the leading source of injuries to healthcare workers were the patients they cared for (37%). The number one nature of injury resulting in days away from work was **sprains and strains** (1,540). The majority of injuries to healthcare workers happened in a **hospital** (6,900), followed closely by **nursing & residential care facilities** (5,400).

Recognizing the value of establishing a mutually beneficial relationship, OSHA Region V and the American Physical Therapy Association (APTA) have developed a collaborative agreement. The agreement seeks to reduce and prevent exposure to risk factors for musculoskeletal disorders and address ergonomic issues in the healthcare industry. States included in the Region V Alliance with the APTA include Indiana, Illinois, Michigan, Minnesota, Ohio and Wisconsin.

Through the agreement, OSHA and APTA will work together to achieve both training and education goals. Working together, OSHA and APTA will address training and education programs on the epidemiology, recognition, care and prevention of work-related musculoskeletal disorders in rehabilitation services healthcare providers. OSHA will also work hand-in-hand with the APTA to provide expertise to develop tools for physical therapists and other healthcare professionals that work with patients to reduce the severity and number of work-related musculoskeletal disorders and promote safe patient handling.

One of the major issues in the healthcare industry is the frequent and heavy lifting and repositioning of patients that exceed the lifting capacity of most caregivers. Fortunately, equipment and devices made available today to assist with patient handling and movement are much better today than a few years ago. Modern equipment is more maneuverable, adjustable and provides a smooth motion to assist with patient lifting and movement.

While additional details about the alliance are forthcoming, more information and research about musculoskeletal disorders or ergonomics may be found on the National Institute of Occupational Safety and Health (NIOSH) website at http://www.cdc.gov/niosh/topics/ergonomics/.

Preparing Healthcare Workers for the Pandemic Influenza

Contributed by Tony Kuritz, INSafe Health Consultant
Email: tkuritz@dol.in.gov

Healthcare workers are at risk of exposure to airborne infectious agents, including influenza. For some types of airborne infectious agents (such as SARS), healthcare workers are not only as risk for illness but may become a potential source of infection to patients and others. Selection of appropriate respiratory PPE requires an understanding of the airborne infectious agents, their infectious and aerodynamic properties, the operating characteristics of the PPE and the behaviors and characteristics of the healthcare workers using the PPE. Many different types of respiratory PPE are available to protect healthcare workers, each with a different set of advantages and disadvantages.

While droplet transmission is likely to be the major route of exposure for pandemic influenza, as is the case with seasonal influenza, it may not be the only route. Given the potential severity of health consequences (illness and death) associated with pandemic influenza, a comprehensive preparedness plan should also address airborne transmission to ensure that healthcare workers are protected against all potential routes of exposure.

Establishment of a comprehensive respiratory protection program with all of the elements specified in OSHA's Respiratory Protection standard (29 CFR 1910.134) is needed to achieve the highest levels of protection. Additional information on the elements of a comprehensive respiratory protection program and the use of respirators can be found at http://www.osha.gov/SLTC/respiratoryprotection/index.html.

Retail: Top Employer of Hoosier Teens

Because more than 77% of working Hoosier teens work in retail trade, which includes fast food restaurants, department stores and boutiques among many others, most work-related injuries to teens in Indiana occur in the retail industry.

As new workers, teens are likely to be inexperienced and unfamiliar with many of the tasks required of them. Yet despite high teen worker injury rates, safety at work is usually one of the last things they worry about. Health and safety education is an important component of injury prevention for working teens.

In the retail industry, teens are most often exposed to **lifting heavy or awkward objects**, **falling from platforms and other surfaces**, **cutting and burn hazards, chemical exposure** and **violent crimes**. In the U.S., the second highest number of workplace fatalities happen among young workers in the retail trades industry. Indiana teen labor laws restrict teens from performing some hazardous jobs or duties. For instance, in Indiana, teens are prohibited from working too long, early or late. Teens under the age of 18 in Indiana, must be accompanied by a co-worker who is at least 18 years of age when working before 6 a.m. and after 10 p.m. in establishments that are open to the public. In the U.S., **homicide** associated with robbery is the probable cause for one-fourth to one-half of all young worker fatalities. Indiana law prohibits teens that are 14 and 15 years of age to work more than three hours per school day and eight hours per non-school day.

National teen worker statistics shows that teens are most often **struck by objects** and the nature of the injury most often results in a **sprain or strain**, followed closely by **cuts and lacerations**.

The Bureau of Child Labor, a division of the Indiana Department of Labor, works to ensure that Hoosier teens are working in safe work environments. In 2007, the Bureau inspected 1,357 businesses. Of the workplaces inspected, 9,244 violations were issued. The most often violated teen labor law in Indiana is the **30-minute break** rule. The rule requires teens working more than six hours to receive either one 30-minute or two 15-minute breaks during the shift.

For working teens, parents, educators and employers, the most important thing to remember is that workplace safety and health rules exist to protect our children. For additional information on the Indiana Child Labor Laws or the Bureau, please visit http://www.in.gov/dol/2761.htm, or email at childlabor@dol.in.gov. Additional information pertaining to teen worker safety, please visit http://www.youthrules.dol.gov/index.htm.

Under 18?

It is not okay to do just any type of work. Laws that prevent minors from doing certain kinds of jobs or types of work are in existence.

No worker under 18 may:

- Drive a motor vehicle as a regular part of the job (includes forklift operation);
- Operate many types of powered equipment like a circular saw, box crusher/bailer, meat slicer or bakery machine;
- Work in wrecking, demolition, excavation or roofing;
- Work in mining, logging or a saw mill;
- Work in meat packing or slaughtering;
- Work where there is an exposure to radiation or
- Work where explosives are manufactured or stored.

Fast Stats: Indiana Retail

Average Employment.....330,700

2006 Workplace Fatalities.....5

Workplace Fatality Rate (2005).....5.1

Workplace Injuries & Illnesses.....13,700

Workplace Injury & Illness Rate.....5.4

Median Number of Days Away from Work.....6

State and Local Government:
Second Among Indiana's Top Three Hazardous Industries

Providing services for over six million Hoosiers, state and local government employees face many occupational-related risks. Professionals that work in this industry provide such services that include public safety, transportation, utility and court services.

The State and Local Government industry is the second largest employer in the state, employing 360,300 Hoosiers and also ranks second with respect to the number of occupational injuries and illnesses.

Employees that work in state and local government occupations are subjected to many occupational hazards that include fatigue from working irregular and long shifts, working in dangerous and hostile situations and responding to emergency situations such as traffic accidents and medical emergencies.

There were seven workplace fatalities in 2006, which were two less than in 2005. In Indiana in 2006, jobs within the State & Local Government industry with the highest injury and illness rates include **state hospitals** (16.2), **professional and business services** (13.2) and **public administration** (11.1). The public administration sector includes **local police officers** and **firefighters**. In 2006 a total of more than 5,000 **(Figure 20)** injuries and illnesses with days away from work were reported in this industry and the median number of days away was eight.

Fifty-one percent of all the cases resulting in days away from work in the state and local government industry were from **sprains and strains**. The most common part of the body affected was the **back** (720), followed closely by the **knee** (660).

Figure 19: Indiana State & Local Government Non-Fatal Injury & Illness Rate

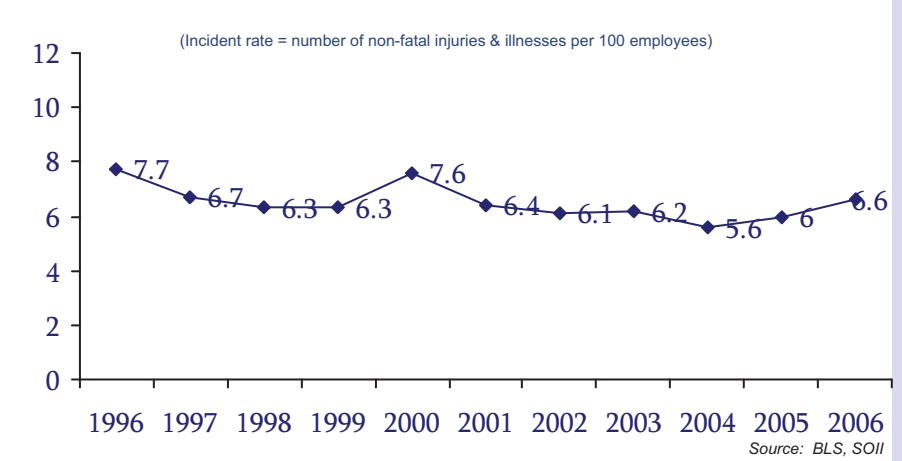
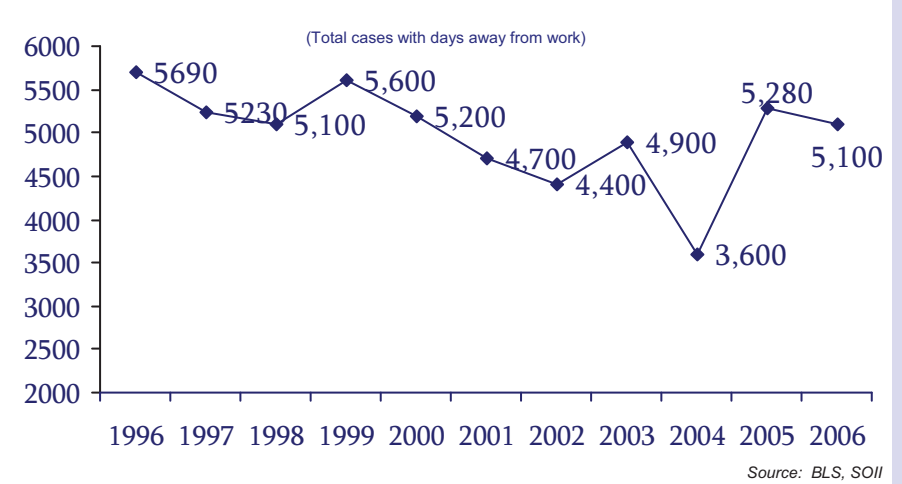


Figure 20: Indiana State & Local Government Non-fatal Occupational Injuries & Illnesses



Fast Stats: Indiana State & Local Government

Average Employment.....360,300

2006 Workplace Fatalities.....7

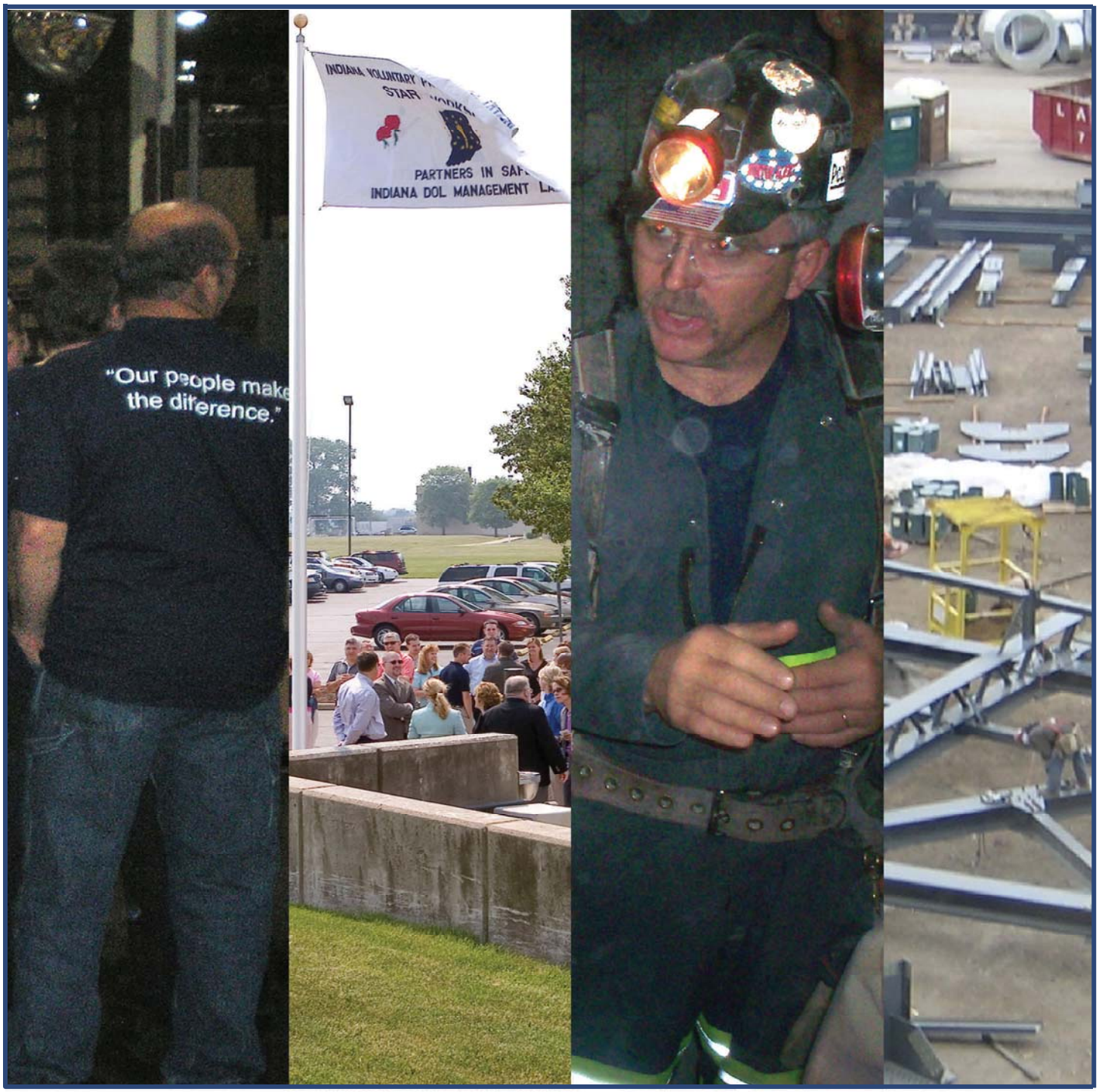
Workplace Fatality Rate (2005).....4.6

Workplace Injuries & Illnesses.....19,700

Workplace Injury & Illness Rate.....6.6

Median Number of Days Away from Work.....8

IN Pictures



Picture 1: "*Our people make the difference*," was the motto displayed on the back of the shirts given to the employees of INSHARP Certified Cerro Wire, Inc. (Crothersville, IN) on March 18, 2008.
Picture 2: "*Partners in safety*," as the Indiana VPP Flag is raised outside of Bristol-Myers Squibb on May 25, 2007 (Evansville, IN). The company's Mt. Vernon, Indiana site was also certified during this time.
Picture 3: The *Indiana Mine Rescue Teams* work through a mine rescue scenario during training on January 26, 2007 (Gibson County, IN) . The Mine Rescue Teams train and compete in at least three competitive events each year.
Picture 4: Transverse truss work being completed at the *Lucas Oil Stadium* on October 11, 2007 (Indianapolis, IN). Completion is scheduled in time for the start of 2008 Colts football season.

Tractor Upsets, *continued from page 16*

the past 30 years there has been only a few reported incidents in which a ROPS equipped tractor was involved in an overturn resulting in a fatality.

The problem of overturn-related fatalities will not go away any time soon because there are still tens of thousands of older tractors in use that are not equipped with ROPS or cannot be retrofitted with ROPS due to design and liability restraints. These older tractors are often used to complete tasks such as road side mowing that present a high risk of upset. Younger, older, and part-time workers are often assigned to operate those tractors because both the tractor (and the worker) are possibly viewed as more expendable than the newer and more expensive units.

Employers have a specific responsibility under the OSHA standards to provide employees with a safe and healthy workplace. It is clear that one of the most important steps a farm owner or farm manager can make to reducing farm-related fatalities is to ensure that all employees operate ROPS equipped tractors. In addition, with the potential for even great returns on his or her investment, employees need to be provided adequate instruction and supervision to reduce the potential of an employee operating a tractor in a situation that could lead to an upset. This would include instructions to avoid steep hillsides and ditch banks, never hitch a towed load to any other point than the drawbar, keep front-end loaders and other loads low to the ground to lower the center of gravity of the tractor, slow down on curves or when entering driveways and never pull a load that exceeds the stopping capacity of the tractor.

By preventing the number of tractor upsets that occur each year through better operator training and supervision and greater utilization of ROPS to reduce the severity of injuries due to tractor overturns the single largest source of farm-related fatalities in the state could be nearly eliminated. This would make it a good year for the families and friends of those who did not become a tractor-related fatality statistic.

Aches and Pains, *continued from page 19*

Types of WMSDs included chronic back pain, carpal tunnel syndrome, tendonitis, rotator cuff syndrome, sprains and strains. While many people in construction believe that sprains and strains are just the nature of business, WMSDs can become long-term, disabling health problems that prevent you from working and enjoying life.

The goal of the science of ergonomics is to find a "best fit" between worker and job conditions. Typically this involves changing tools, equipment, materials, work methods, or even sometimes the workplace itself.

It is important to remember that simple changes can make a big difference. Using ergonomic ideas to improve tools, equipment and processes reduces workers' contact with those factors that can result in injury. When ergonomic changes are introduced into the workplace or job site, they should always be accompanied by worker training on how to use the new methods and equipment and how to work safely.

Top Bodily Reaction & Overexertion Events in Indiana

Event	Number of Times	Percentage
Overexertion in lifting	3,360	32%
Overexertion in holding, carrying, turning or wielding objects	1,460	14%
Overexertion in pulling or pushing objects	1,100	10%
Slip, trip, loss of balance without falling	1,020	10%
Bending, climbing, crawling, reach and twisting	950	9%

Safe and Healthy Workplaces Make Good $ense

Knowledge of your workplace's hazards and ways to eliminate them can improve the operations and management of your company. Businesses that proactively manage workplace safety and health have the potential to be more competitive.

With heightened emphasis on worker safety and health, a reduction of worker injury and illness has the potential to decrease premiums for workers' compensation insurance, minimize lost workdays and limit damage to expensive equipment and machinery. Working safe simply makes sense.

INSafe, a division of the Indiana Department of Labor works to ensure that Hoosier employers have the necessary resources to make their workplaces safe and healthier places to work. **INSafe** will honor all requests for assistance, but primarily focuses on small and high-hazard employers.

Consultation is provided at the employer's worksite and is confidential and free. In 2007, **INSafe** conducted nearly 400 on-site safety and health consultations in both Construction and General Industry Safety.

INSafe Consultants are professional experts in worker safety and health. Combine, **INSafe** Consultants have more than 75 years of occupational safety and health experience, many of which have previous experience with IOSHA enforcement.

In an effort to provide training services, **INSafe** collaborated with Hoosier organizations to establish Small Business Training Scholarships. The scholarship program seeks to provide additional opportunities for employers to prepare and educate their workforce in critical occupational safety and health training topics. Training scholarships are available in both Construction and General Industry Safety. By partnering with Hoosier organizations like, the Indiana Chamber of Commerce, Indiana Manufacturers Association, Risk Management Services and Safety Management Group, information and additional resources related to worker safety and health is made more readily available to working Hoosiers across the state.

> "This program is wonderfully helpful and we appreciate it with all aspects of our safety program. We look forward to keeping a healthy relationship with INSafe."

For additional information about **INSafe** or the scholarship program or opportunities, please visit http://www.in.gov/dol/INSafe.htm.

Rewarding Occupational Safety and Health Excellence in Indiana

The best of the best is what the Indiana Voluntary Protection Program (VPP) and the Indiana Safety and Health Achievement Recognition Program (INSHARP) acknowledge. Both programs seek to recognize and reward Hoosier employers and employees for their commitment to occupational safety and health excellence.

Workplace safety and health management programs add significant value to employers' and employees' work by reducing the number of, severity and consequences of work-related injuries and illnesses. The U.S. Department of Labor estimates that for each dollar invested into worker safety and health, employers experience a net return of $4. Also shown by the U.S. DOL, employers that establish effective safety and health management systems reduce their injury and illness costs by 20 to 40 percent or more.

Certification into VPP or INSHARP is recognition of outstanding measures and efforts taken by Hoosier employers to keep their workplaces safe. VPP and INSHARP represent a cooperative relationship between company management, the workforce and Indiana government. Statistical evidence establishes that the average VPP worksite has a *Days Away Restricted and Transferred* (DART) Rate 52 percent below the national average.

To learn more about Indiana VPP or INSHARP, please visit our website at http://www.in.gov/dol.

Measuring the Success of Indiana VPP & INSHARP

South Bend, Indiana's **Eaton Corporation** has seen results of being a participant in Indiana VPP. The Eaton Corporation received Star approval into Indiana VPP in November 2006. Steve Smith, Environmental Safety and Health Manager for the Eaton plant stated, "We have an aggressive safety and health program that involves everyone here. That has resulted in our cutting our accident rate in half and our Workers' Compensation claims by 90 percent. All of us are pleased to have received the OSHA recognition."

Operating with 116 employees in a facility larger than 100,000 square feet, the South Bend plant produces steel forgings that are used in the manufacturing of Eaton transmissions, Dana axels and other truck components for the Eaton Heavy Duty Transmission Division.

In 1990, the General Electric Company (GE) had one VPP worksite in the U.S. By 2006 the company had more than 100 locations in VPP nation-wide. Two of the company's sites are located in Indiana, **GE Engine Services** (Terre Haute) and **GE C&I** (Batesville).

The corporate–wide OSHA recordable injury rate was 5.6 (13,384 injuries) in 1996. By 2005 the OSHA recordable injury rate had dramatically dropped to 1.45, and the lost time case rate was 0.31. GE management states that if the OSHA recordable rate had remained the same in 2005 as it was in 1996, there would have been 14,000 additional injuries and approximately 3,500 more lost time cases as compared to the actual performance in 2005. GE states that it has realized a corporation-wide savings of approximately $61.5 million.

Since inducting its first participant in 2004, INSHARP has experienced rapid growth. In November 2006, there were two participating worksites. By January 2008, 19 Hoosier employers belonged to the program.

The **City of Jasper** joined the program as the first participant in April 2004. Since the city's original certification in 2004, the city has been recertified twice. Through top management commitment, equipment upgrades and active employee involvement, including unannounced safety audits conducted by the employee safety committee, the City of Jasper has made many great strides in ensuring the health and safety of its employees.

Management commitment and employee involvement are key ingredients in ensuring that the employee safety and health programs are and remain effective. To reiterate safety, the City of Jasper participated in a workplace safety and health violation scavenger hunt. Safety violations, including a half-eaten sandwich left on a workbench in an area where toxic chemicals were being stored and used were planted to assist the city's safety committee in hazard recognition. Charlie Schneider, the City's Personnel & Safety Director stated, "The main thing is for everyone to go home at the end of the day and not to the hospital with broken arms or missing fingers."

Governor's Workplace Safety Awards

The Governor's Workplace Safety Awards for exceptional occupational safety and health were awarded in February 2008 at the Indiana Safety and Health Conference & Exposition.

Awards were presented by Indiana Department of Labor Deputy Commissioner of IOSHA, Jeffry S. Carter and Deputy Commissioner of INSafe, Sean M. Keefer on behalf of Governor Mitch Daniels Jr.

BioConvergence LLC, Small Company Safety Award (*Bloomington, Indiana*)

Purdue University Physical Facilities/Liberty Mutual, Partnership Safety Award (*West Lafayette, Indiana*)

Gartland Foundry, Medium Company Innovation Award (*Terre Haute, Indiana*)

Toyota Motor Manufacturing Indiana, Inc., Large Company Innovation Award (*Princeton, Indiana*)

HomeCrest Cabinetry, Education & Outreach Award, (*Goshen, Indiana*)

Steinberger Construction, Construction Safety Award (*Logansport, Indiana*)

Can You Identify the Hazard in the Pictures Below?

Contributed b y Johnny M. Trammell, INSafe Safety Consultant
Email: jtrammell@dol.in.gov

Photographs seen on this page are *real* pictures taken of *real* hazards at Hoosier worksites throughout the state. Answers for each of the pictures can be found at the bottom of the page.

1

2

3

4

5

6

Picture 1: Blocked Exit 1910 37(a)(3), **Picture 2**: Guarding of Live Parts (Outlet Box) 1910 305(b)(2)(ii), **Picture 3**: Unlabeled Container 1910 1200(f)(5), **Picture 4**: Anchoring Fixed Machine 1910 212(b) & Keeping Floors Clean & in Dry Condition 1910 22(a)(2), **Picture 5**: Missing Ground Prong 1910 334(a)(3)(ii) and **Picture 6**: Machine Guarding—Chuck Guard 1910 212(a)(1) *(2007 Photos taken by INSafe Safety Consultant, Joseph Moorhouse).*

IN the Know: Workplace Violence

A great deal of emphasis has been placed on violence in the workplace since the events of September 11, 2001. While the threats to national security captured a lot of media attention, another form of terrorism takes place both nationally and in Indiana workplaces every day—*workplace violence*.

Workplace violence ranges from offensive or threatening language to homicide. The National Institute of Occupational Safety and Health (NIOSH) defines workplace violence as acts (including physical assaults and threats of assaults) directed toward persons at work or on duty.

Many employers have responded by increasing the level of security in their workplaces. However, despite the measures and efforts taken by employers and employees, it is often impossible to predict when or where an incident in the workplace might escalate to an act of violence. In 2006, there were eight **(Figure 21)** work-related fatalities as a result of **assaults and violent acts** in Hoosier workplaces. The lowest count for this type of event on record. However for non-fatal assaults and violent acts resulting in days away from work there was a nearly three-fold increase from 2005 to 2006 **(Figure 22)**. This is mirrored in the **healthcare** industry where cases jumped from 60 to 150 between 2005 and 2006. The source of the violent act/assault was most often a **healthcare patient**.

Figure 21: Indiana Occupational Fatalities from Assaults and Violent Acts

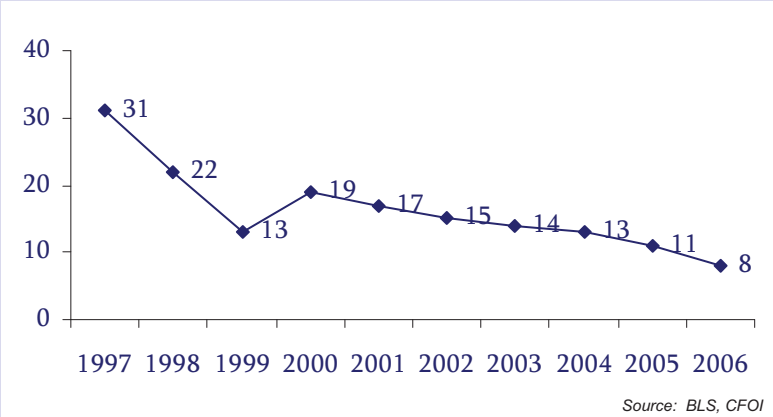


Figure 22: Indiana Non-fatal Workplace Assaults and Violent Acts

We often hear in the media about seemingly "normal" employees using extreme levels of violence to vent their anger while at work. Stress in everyday life coupled with workplace stress, if left unchecked, can escalate to a level where an employee or other individual may "snap" and act out in a violent manner. This can have far reaching implications for both the employee along with his or her coworkers and employer, as well as the employee's family.

A number of environmental, administrative, and behavioral strategies have the potential for reducing the risk of workplace violence. Examples of prevention strategies include (but are not limited to) good visibility within and outside the workplace, cashhandling policies, physical separation of workers from customers or clients, good lighting, security devices, escort services, and employee training. No single strategy is appropriate for all workplaces, but all workers and employers should assess the risk of violence in their workplaces and take appropriate action to reduce those risks. A **workplace violence prevention program** should include a system for documenting incidents, procedures to be taken in the event of incidents and open communication between employers and workers.

Data Used in this Review

Data analyzed for the 2008 *IN Review* was collected throughout the 2007 calendar year by the Indiana Department of Labor Quality, Metrics, and Statistics Division (QMS) staff. Specific sources include:

Survey of Occupational Injuries and Illnesses

The Bureau of Labor Statistics (BLS) Annual Survey of Occupational Injuries and Illnesses (SOII) provides estimates of the number and rates of work-related injuries and illnesses. Employers are asked questions concerning work-related injuries and illnesses. Over 5,000 surveys are processed and coded by the QMS staff annually. Survey of Occupation Injuries and Illnesses http://www.bls.gov/iif/home.htm. Data for 2007 will be released in October 2008.

Census of Fatal Occupational Injuries

The BLS Census of Fatal Occupational Injuries (CFOI) includes work-related fatalities resulting from unintentional and intentional injuries. CFOI uses multiple data sources to identify, document, and verify work-related injury deaths. On annual basis thousands of documents including death certificates are reviewed annually by the QMS Division staff. Census of Fatal Occupational Injuries http://www.bls.gov/iif/home.htm. Data for 2007 will be released in August 2008.

OSHA Data Initiative

The OSHA Data Initiative (ODI) is an OSHA survey that compiles occupational injury and illness information from establishments in high-hazard industries. Over 2,500 surveys are processed by the QMS Division staff each year. Data from the ODI is used to target the outreach of IOSHA and INSafe in their efforts to work towards a safe Indiana.

IOSHA Integrated Management Information System

The Indiana Department of Labor's IOSHA Division conducts worksite inspections to determine compliance with health and safety standards. Inspection data is maintained in the Integrated Management Information System (IMIS). Data that is collected includes: type of inspection, reason for inspection, and inspection date. IMIS stores data for over 1,200 inspections performed annually by IOSHA. IMIS http://www.osha.gov/oshstats/index.html .

About this Study

IN Review is an annual publication of the Indiana Department of Labor's Quality Metrics & Statistics Division. This publication was prepared by Elizabeth Friend, Deputy Commissioner of Quality Metrics & Statistics. Michelle L. Ellison, INSafe Marketing Manager provided assistance in editing, researching and layout design services. Data used in this review is collected by the Quality, Metrics & Statistics Division staff.

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