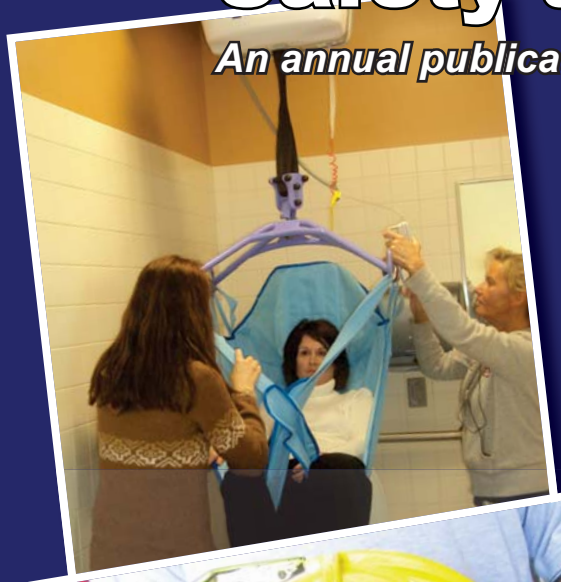
IN Review

Indiana Occupational Safety and Health 2012

An annual publication of the Indiana Department of Labor



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

Thank you to the countless employers, employees, labor organizations, professional groups and other associations that labor tirelessly for safer and healthier workplaces for Hoosier workers. Together we will continue to ***advance the safety, health and prosperity of Hoosiers in the workplace.***

The 2011 calendar year was filled with many accomplishments. Indiana Occupational Safety and Health Administration (IOSHA) Compliance Safety and Health Officers conducted more than 1,300 enforcement inspections. Indiana Bureau of Child Labor inspectors conducted nearly 1,200 child labor investigations. In addition to a mine emergency response drill, the Indiana Bureau of Mines and Mine Safety conducted quarterly inspections of each underground Hoosier coal mine. The agency's education and outreach division, branded INSafe, completed over 400 onsite OSHA consultation visits, assisting in the identification and elimination of more than 1,000 occupational safety and health hazards.

While there is no doubt we still need to accomplish more, because of the dedication of many, Hoosier workplaces are much safer and healthier places to work today than they were just a few years ago. The staff of the Indiana Department of Labor never loses sight of our number one priority—our Hoosier workers' safety.

To learn more about the Indiana Department of Labor's outreach and training programs as well as our many other services, visit www.in.gov/dol. The Indiana Department of Labor team looks forward to working with *you.*

IN Review

Indiana Occupational Safety and Health - 2012

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IN Review *is an annual publication of the Indiana Department of Labor's INSafe division. INSafe provides free onsite OSHA consultation to Hoosier employers upon request. To learn more about free services provided by INSafe, please visit* www.in.gov/dol/insafe, *email* insafe@dol.in.gov *or phone (317) 232-2688.*

The Indiana Department of Labor wishes to express its extreme gratitude to Megan Wade of the Indiana Department of Revenue for her assistance in reviewing this publication.

More information about ***IN Review*** *2012 contributors may be found on page 33 of this publication.*

On the cover of ***IN Review****: Photos used on the cover are various scenes that depict Hoosier occupational safety and health. These photos were taken and submitted by IOSHA Compliance Safety and Health Officers, INSafe Safety and Health Consultants as well as other industry professionals.*

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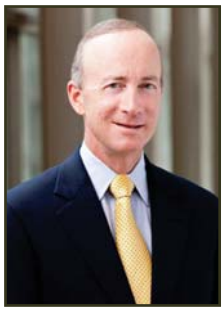


"The Indiana Department of Labor allocates time, resources, education and training opportunities as well as enforcement oversight to ensure workers return home safely to their families. Protecting Hoosier workers always remains one of our top priorities."

Mitchell E. Daniels, Jr.
Governor of Indiana

The best occupational safety and health outcomes for our stakeholders are achieved by administering a good balance of outreach, education, training and enforcement. We look to our partners in the voluntary compliance programs—VPP and INSHARP, our trade and association-based alliances and partnerships and the countless others who labor tirelessly for worker safety and health to help ensure Indiana workplaces are safe and healthy places for Hoosiers to work.

While the 2010 non-fatal occupational injury and illness rate remained unchanged from 2009, it is the 13th consecutive year the worker injury and illness rates have not increased. The number of occupational deaths decreased to a historic low in 2010. While a historic low is good statistically speaking, for 115 families, the loss of a loved one defies any statistic. We must continue to address Hoosier workplace safety and health in an effective and tangible way.

The Indiana Department of Labor is pleased to present you with this edition of ***IN Review***. This publication provides a detailed look into each major Hoosier industry as well as many technical articles and industry best practices. We are certain that you will find something to help make your programs and processes safer for the workers who perform them. The Indiana Department of Labor is dedicated to ***advancing the safety, health and prosperity of Hoosiers in the workplace***, but we can make more progress with your assistance.

Please feel confident reaching out to us to provide us with your thoughts, feedback, comments or concerns by emailing customerservice@dol.in.gov or phoning (317) 232-2688. The employees and staff of the Indiana Department of Labor are committed to helping you achieve your occupational safety and health goals.

Lori Torres
Commissioner of Labor

The Indiana State House at dusk.

The latest worker safety and health injury, illness and fatality trends indicate progress is being made in Hoosier workplaces. Information used in ***IN Review*** was provided by the federal Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI), Survey of Occupational Injuries and Illnesses (SOII) and data from the Indiana Occupational Health and Safety Administration (IOSHA).

• In 2010, Indiana reported 115 fatal worker injuries (Figure 1), the fewest on record. The workplace fatality rate was 4.7 per 100,000 Hoosier workers (Figure 2), which was released for 2009. *The 2010 occupational fatality rate will be available in the second quarter of 2012.

Indiana industries with the highest number of occupational deaths in 2010 are:

Agriculture	**24**
Construction	**16**
Transportation and Warehousing	**16**

• The number of non-fatal occupational injuries and illnesses in 2009 was 93,200 (Figure 3). This is the lowest number of non-fatal injuries and illnesses recorded for the State of Indiana and represents a decrease of 1,600 as compared to the 2009 non-fatal occupational injury and illness rate.

Indiana industries with the highest non-fatal injuries and illnesses (in raw numbers) in 2010 are:

Manufacturing	**22,800**
Healthcare and Social Assistance	**16,200**
State and Local Government	**14,500**

• Indiana's non-fatal occupational injury and illness rate is 4.3 per 100 employees (Figure 4). The 2010 rate remained unchanged from 2009.

Indiana industries reporting the highest injuries and illnesses by rate in 2010 are:

Arts, Entertainment and Recreation	**7.6**
Agriculture	**7.2**
Healthcare and Social Assistance	**5.9**

Figure 1: Indiana's Fatal Occupational Injuries

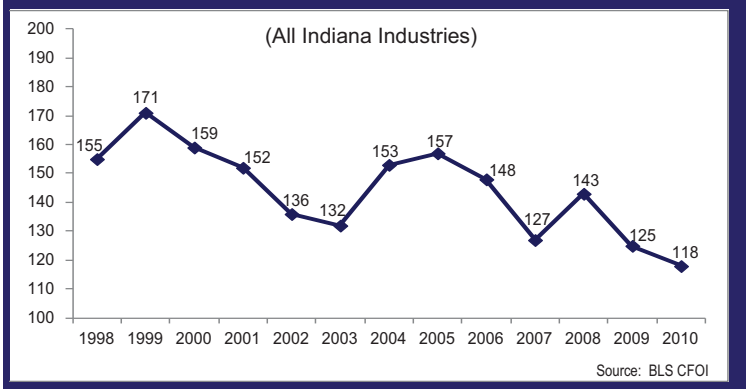


Figure 2: Indiana's Occupational Fatality Rate

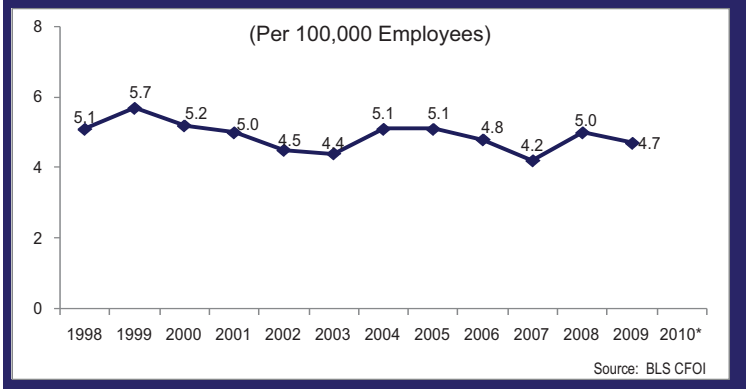


Figure 3: Indiana's Non-fatal Occupational Injuries & Illnesses

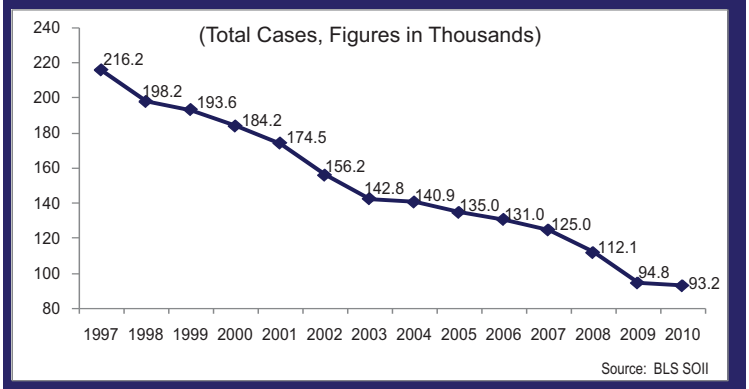
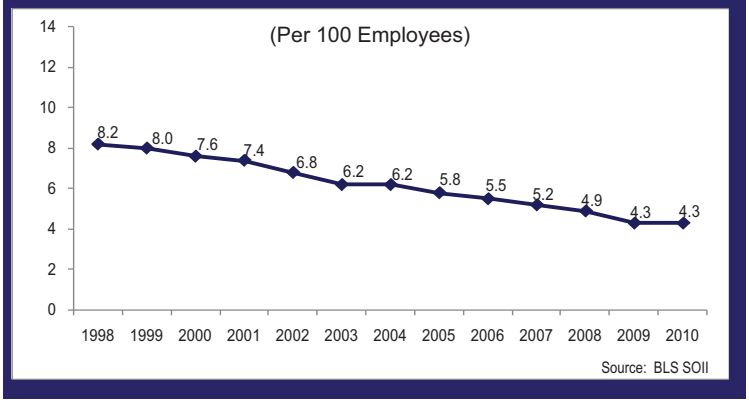


Figure 4: Indiana's Non-fatal Occupational Injury & Illness Rate



Indiana

Occupational Safety and Health (IOSHA) general industry and construction safety and health officers conducted more than 1,300 inspections in 2011. Inspections were a result of formal complaints, referrals made by media and other agencies, worker fatalities, workplace catastrophes and general schedule compliance inspections. IOSHA general schedule inspections are generally based on OSHA injury and illness information and records.

Below is a list of the ten most frequently cited workplace safety and health standards following inspections of workplaces as cited by IOSHA. Inspections resulting in these citations were conducted in many different workplaces in 2011. Those workplaces included factories and foundries, doctor's offices, grocery and convenience stores and construction jobsites.

1. 1926.20(b)(2): Accident Prevention Responsibilities

Employer-developed safety and health programs must provide for frequent and regular inspections of jobsites, materials and equipment to be made by a competent person, designated by the employer. Learn more about OSHA's requirements of a competent person online at www.osha.gov/SLTC/competentperson/index.html.

Citations: 77
Initial Penalties: $76,850

2. 1926.021(b)(2): Safety Training and Education

Employers are responsible for instructing employees in the recognition and avoidance of unsafe conditions. In addition, employers must instruct employees of the regulations applicable to their work environment to control or eliminate any hazards or other exposure to illness or injury. Review OSHA's publication, ***Training Requirements in OSHA Standards and Training Guidelines***, for construction, general industry and maritime occupations for more information and assistance www.osha.gov/Publications/osha2254.pdf.

Citations: 63
Initial Penalties: $56,800

3. 1910.212(a)(1): Machine Guarding

Machine safe guards must be used to prevent hands, arms, fingers or any other part of a worker's body or clothing from making contact with dangerous moving parts. Hazards created include those by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of appropriate guarding methods include barrier guards, two-hand tripping devices, electronic safety devices, etc. Please visit www.osha.gov/SLTC/machineguarding/index.html for more information.

Citations: 53
Initial Penalties: $145,859

4. 1910.1200(e)(1): Hazard Communication

Employers are required to have a written Hazard Communication (HazCom) program and Material Safety Data Sheets, provide training and label containers that contain chemicals. Visit www.osha.gov/dsg/hazcom/index.html to learn more about hazard communication.

Citations: 46
Initial Penalties: $20,473

5. IC 22-8-1.1-2: General Duty Clause

The OSHA general duty clause requires all employers to furnish their employees a place of employment that is free from recognized hazards that are causing or are likely to cause death or serious physical harm. Employers are required to comply with the occupational safety and health standards promulgated under the Indiana Occupational Safety and Health Act (IOSH Act). Please visit www.in.gov/legislative/iac/T06100/A00090.PDF for more information.

Citations: 43
Initial Penalties: $140,106

6. 1926.20(b)(1): Accident Prevention Responsibilities

Employers must provide all employees with a safe and healthful working environment, free of recognized hazards. This includes the development and implementation of the appropriate occupational safety and health program. Learn more about occupational injury and illness prevention programs at www.osha.gov/dsg/topics/safetyhealth/index.html.

Citations: 41
Initial Penalties: $34,950

7. 1910.1200(h)(1): Hazard Communication

Employers are required to 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 on which the employees have not previously been trained is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must be readily available through labels and Material Safety Data Sheets. Additional information about hazard communication may be found by visiting www.osha.gov/dsg/hazcom/index.html.

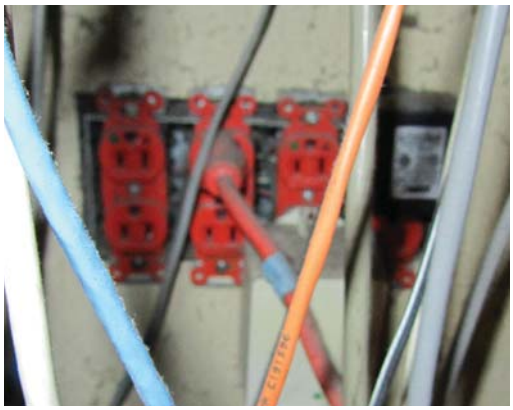
Citations: 41
Initial Penalties: $26,300

A soda bottle contains machine coolant. The container is not appropriately labeled. (Photo taken by IOSHA Compliance Safety and Health Officer Jeanne Hedge)

8. 1910.303(g)(2): Guarding of Live Electrical Parts

Electric or electrical equipment must be free from recognized hazards likely to cause death or serious physical harm to employees. Employers must provide workers with the appropriate training on safe work practices and proper procedures for working with electrical equipment. More information about electrical safety is available online at www.osha.gov/SLTC/electrical/index.html.

Citations: 32
Initial Penalties: $37,068



The picture above was taken on a compliance inspection. The employer was cited for a missing electrical cover. (Photo taken by IOSHA Compliance Safety and Health Officer Jeanne Hedge)

9. 1926.150(c)(1): Portable Fire Extinguishers

Employers are held responsible for developing a fire protection program throughout all phases of construction and demolition work. The employer must also provide appropriate firefighting equipment.

Citations: 30
Initial Penalties: $7,375

10. 1926.503(a)(2): Fall Protection Training

Employers are responsible for the development and implementation of fall protection training for any employee who is exposed to fall hazards. The employer must ensure that each employee has been trained, as necessary, by a competent person qualified in fall protection.

Citations: 29
Initial Penalties: $10,850

IOSHA and Compliance Standards

IOSHA's jurisdiction includes both public and private sector workplaces. For more information about IOSHA, please visit the division's homepage online at www.in.gov/dol/iosha.htm. Standards for general industry, hygiene and construction safety may be found on OSHA's website at www.osha.gov, and by clicking on the letter "S" for "standards" on the A-Z index. OSHA standards for general industry are covered in 29 CFR 1910. Construction safety standards are covered in 29 CFR 1926.

Employer Compliance Assistance

Questions about the IOSHA top ten or other inquires about Hoosier occupational safety and health may be directed to INSafe, the Indiana Department of Labor's free OSHA consultation division, by email at insafe@dol.in.gov or by phoning (317) 232-2688. More information about INSafe is available online at www.in.gov/dol/insafe. To request a free INSafe onsite OSHA consultation, please complete the form found online at www.in.gov/dol/insafeconsultation.

From electrical safety and hazard communication to fall protection and trenching, INSafe has you covered. Largely funded by federal grant dollars, INSafe is the Indiana Department of Labor's free, onsite OSHA consultation division. INSafe's mission is to work with Hoosier employers to develop and implement an effective occupational safety and health management system.

A Team of Dedicated Professionals

The team consists of state occupational safety and health consultants—many have served as compliance officers within IOSHA. Combined, INSafe consultants have more than 100 years of worker safety and health experience.

Each year INSafe provides occupational safety and health assistance to more than 400 Hoosier employers. Employers who seek assistance from INSafe do not receive citations or violations, nor are they penalized monetarily for occupational safety and health violations. Employer information is kept confidential and not shared with IOSHA enforcement personnel or staff. However, employers are required to correct worker safety and health hazards identified by the consultant.

Employers who do not correct occupational safety and health hazards may be referred to IOSHA enforcement for further follow-up. Referral to IOSHA is an extremely rare practice.

How an INSafe Consultation Works

The consultant will conduct an opening conference, communicating the role of the consultant and employer. INSafe does not certify, nor guarantee, that a workplace will "pass" an IOSHA inspection. Also during the opening conference, the consultant will conduct a review of the employer's applicable written occupational safety and health programs. These programs may include emergency action plan, lockout/tagout, hazard communication, fall protection, etc. The consultant will also review the site's OSHA injury and illness records for the last three years. Once this review is completed, the consultant will conduct an employer-led hazard survey.

During the hazard survey, the consultant will interview employees as well as note occupational safety and health hazards to the employer. Upon completion of the survey, the consultant will conduct a closing conference with the employer. At this time, the consultant will again discuss hazards noted during the survey. He or she will work with the employer to set correction due dates for hazards noted if applicable.

A written report documenting these hazards and correction dates is also issued to the employer, typically within two weeks of the onsite visit. The employer is required to submit documentation of hazard correction by the correction due date. If additional time is needed to correct a hazard, the employer must submit an extension request to INSafe. In the extension request, the employer must also document the interim protection being provided to employees to safeguard them against the hazard.

Rewarding Commitment

Employers may also be eligible for participation in the **Indiana Safety and Health Achievement Recognition Program** (INSHARP). INSHARP participation is reserved for employers that demonstrate commitment to worker safety and health, with the goal of continuous improvement. The site's occupational injury and illness rates must also be below the national average for its respective industry as well.

Workplaces that achieve INSHARP certification are recognized by the Indiana Department of Labor. These sites also receive an exemption from programmed IOSHA inspections for the period in which their certification is valid. More information about INSHARP is available online at www.in.gov/dol/2382.htm.

Additional Information and Getting Started

To learn more about INSafe, please visit the division's website at www.in.gov/dol/insafe, email insafe@dol.in.gov or phone (317) 232-2688 to speak with an INSafe consultant. Onsite consultation visits may be requested using the online form available at www.in.gov/dol/insafe.

INSafe Health Consultant Rebecca Jacobs performs personal air monitoring for an employer to quantify employee exposure to phenol. Phenol is a component of the mounting resin that employee Paul McMurray was using. (Submitted photo)

Minors in Transportation Occupations

Director of Child Labor, Training and Education, **Kenneth Boucher II**, provides a look into the employment of minors in transportation-related occupations.

More workers are killed in transportation-related incidents than from any other cause. While it may not seem that this would be a statistic that affects workers under age 18, a recent trend has indicated otherwise. Employing minors in transportation-related duties can lead to serious work-related injuries and stiff penalties for employers who put these minors at risk.

State and federal laws prohibit minors from working in certain Hazardous and Prohibited Occupations defined under the Fair Labor Standards Act (FLSA). These occupations cover a number of different industries—everything from kitchen work to coal mining. Rules are also in place regarding the operation of a motor vehicle or working as an "outside vehicle helper."

In short, it is unlawful for a minors under 16 years of age to load goods on or off of trucks, railcars or conveyor belts. This includes items such as trash, promotional items, items for sale, lawn mowers, power driven lawn maintenance equipment and safety equipment such as barriers, cones or signage. Minors under 16 may not operate motor vehicles on the roadway. They may ride inside of motor vehicles, but not if they are peddling goods or assisting in the transport of goods or property.

Minors 16 and 17 years of age also have a number of restrictions when it comes to transportation-related occupations. Although 16-year-olds may hold a driver's license and can drive to and from work, they may not operate a motor vehicle on any public roadway as part of their job duties. Any work riding on the exterior of a vehicle also is prohibited.

Seventeen-year-olds may drive, but have very specific restrictions including possessing a valid driver's license and having had no moving violations. They may not make route deliveries or sales, may not be asked to make time-sensitive deliveries and may not transport more than three passengers at any one time. They may not operate a motor vehicle after dark, must have a seatbelt in place in the vehicle and may only operate vehicles with a gross weight under 6,000 pounds. These and other restrictions on distance and time spent behind the wheel make it unlikely that a minor could lawfully drive as part of his or her job duties. Some examples of duties that 17-year-old drivers may not perform include, but are not limited to, delivering pizzas, dropping off bank deposits after dark and shuttling passengers.

It is unlawful for anyone under age 18 to work as an "outside vehicle helper." Duties included in this occupation include riding on the exterior of a vehicle to assist in transporting or delivering goods. The landscaping, construction and trash collection industries often require such tasks in the regular scope of their duties. This type of work is forbidden.

The Indiana Bureau of Child Labor and the United States Department of Labor (U.S. DOL) have concurrent jurisdiction of violations under this section. In the event a minor is seriously injured or killed as a result of performing a hazardous occupation, penalties may exceed $100,000.

More information about Indiana's child labor laws is available at www.in.gov/dol/childlabor.htm. A brief listing of Prohibited and Hazardous Occupations for minors defined in the FLSA may be found at www.in.gov/dol/2741.htm. For further clarification about Prohibited and Hazardous Occupations for minors, please contact the U.S. DOL at (317) 226-6801.

It Happened Here: Randolph County, Indiana

Background: Nationally in 2010, 35 workers under the age of 18 were killed in the workplace.

Fatal Event: In Randolph County on September 5, 2011, a 17-year-old sanitation worker was riding on the outside of a sanitation truck on a three inch-wide piece of metal that had been welded onto the outside of the truck. The sanitation truck was a front-load truck with a metal dumpster attached to the truck's container-lifting mechanism. When the truck drove over a culvert in the road, the worker fell off of the truck and was crushed by the truck's back tires. The worker was killed instantly.

Discussion: To reduce the likelihood of and prevent similar incidents from occurring in the future, employers and employees must understand and follow Indiana Child Labor laws. Minors are restricted by federal law from working in certain Prohibited and Hazardous Occupations. Workers should be restricted from riding on the outside of mobile equipment. In addition, modifications to vehicles, equipment and machinery should be approved by the manufacturer. Operation manuals should be maintained with the equipment as well.

To quote Benjamin Franklin, ***"A place for everything, everything in its place."*** One may gather that the meaning of this quote is that everything should have a place to be stored, and it should be returned when it is not in use. When interpreted in this manner, the quotation may be applicable to many situations; including the management of workplace safety and health.

An employer's workers, facility visitors and compliance safety and health officers may gather a tremendous amount of insight about employee workplace safety and health by merely looking at the cleanliness of a workplace. Workplaces and jobsites should be as neat as the work will allow.

Several occupational safety and health standards cover housekeeping, including **materials handling and storage** (29 CFR 1910.176 (c)), **sanitation** (29 CFR 1910.141 (a)(3)), **walking and working surfaces** (29 CFR 1910.22(a)) and **means of egress** (29 CFR1910.37(a)(3)), to name a few. Case-in-point, in January 2012, the federal Occupational Safety and Health Administration (OSHA) cited a Georgia employer more than $55,000 for failing to keep employees safe. Among the alleged violations, the employer was cited for poor housekeeping for allowing powder-coating material to accumulate on the floor and equipment.

In addition to potential IOSHA violations and citations, negative perceptions, lower productivity and employee morale, poor housekeeping habits can be the root of a whole host of occupational safety and health concerns that can potentially lead to employee injury or illness. These concerns include worker injuries when: employees **trip**, **fall** or **strike** or are **struck by objects** that are out of place or **use improper tools** because the correct tool cannot be located.

The floor area was not clear of water accumulation. Cleaning ups spills as they occur will help prevent workers from suffering an injury from a slip, trip or fall. (Photo taken by INSafe Safety Consultant Debbie Rauen)

When specific tools that should be used to do a job correctly cannot be located, workers may spend time either looking for the appropriate equipment or may improvise and use equipment that is not the right fit for the job. Productivity is also lost as it requires the employees to spend time scouting for the appropriate tool or equipment. When workers resort to using improper or inadequate tools, equipment or machinery, an occupational injury may result.

Additionally, housekeeping practices can also restrict a worker's ability to safely evacuate a facility in the event of an emergency such as a fire. When aisles and passageways are blocked or not clearly marked, the employee may have a difficult time following the proper exit route.

When work areas are clean and properly maintained, trip and fall hazards are greatly reduced. In 2010, **falls on the same level** were the second leading injury event in Indiana, resulting in an employee missing one or more days away from work. These falls may be a result of spills and misplaced objects such as equipment and materials. In 2010, there were more than 18,000 injuries that resulted in workers missing one or more days away from work in Indiana. The average number of days an injured worker spent away from work for private industry in 2010 in Indiana was seven. Approximately 11% (2,120) of those injuries were attributed to falls on the same level. While the exact number is unknown, it is likely that a number of these events are attributed to poor housekeeping habits in workplaces and on jobsites.

Tidying the Workplace

Poor housekeeping habits can contribute to low worker morale, less productivity and overall inadequate work. Most safety action programs start with an intensive clean-up campaign in all areas of the workplace. Some simple, but highly effective actions that can be done to organize and clean the workplace include the following: disposing of unnecessary items, providing proper waste containers, storing flammable materials and liquids properly, ensuring exits are not blocked, clearly marking all aisles and passageways and providing proper lighting. Once an initial assessment and clean-up have been performed, housekeeping should be addressed in an employer's regular self-inspection program.

Conducting Self-Inspections

The most widely accepted way to identify and remedy occupational hazards of all sorts is to conduct regular safety and health inspections of the worksite

Housekeeping Checklist

The Housekeeping Checklist presented below is not an all-inclusive list. To be effective, employers must customize their respective list to ensure all areas are adequately addressed. More information may be found in OSHA's Small Business Handbook publication, available online at www.osha.gov/Publications/smallbusiness/small-business.html.

- ☐ Keep worksites and areas clean, sanitary and in good general order throughout the day. This will minimize the time needed to clean up a "larger mess."
- ☐ Keep work surfaces dry and take the appropriate means to ensure the surfaces are slip-resistant.
- ☐ Cover wet work surfaces with non-slip materials.
- ☐ Place all trash and scrap materials in the appropriate receptacle.
- ☐ Clean up spills promptly according to procedures, using the appropriate personal protective equipment (PPE) when required.
- ☐ Put tools and unused materials away after finishing a job or before leaving the job site.
- ☐ Ensure that boxes, drums and piles are located on a firm foundation and properly stacked to reduce the likelihood of falling.
- ☐ Maintain a safe clearance for walking in aisles where motorized or mechanical handling equipment is operating.
- ☐ Make sure aisles and passageways are kept clear and marked as appropriate.
- ☐ Ensure aisles or walkways that pass near moving or operating machinery, welding operations, or similar operations are arranged so employees will not be subjected to potential hazards.
- ☐ Keep stairways and other elevated working surfaces free from obstacles and debris.
- ☐ Place empty pallets and containers in designated locations only.
- ☐ Bundle hoses and cables when they are not being used.
- ☐ Stack materials and supplies orderly and secure them so they will not topple over.
- ☐ Dispose of regulated waste, as defined in the OSHA Bloodborne Pathogens standard (29 CFR 1910.1030), according to regulations.
- ☐ Do not pile material around or near fire extinguishers, sprinklers or emergency exits.

or facility. The only way to be certain of an actual situation is to review it on a routine basis.

Involving employees in your self-inspection efforts on an ongoing basis is key. It impresses upon them that you value their input and well-being and want to make the workplace safer, healthier and more efficient. Ongoing and open communication with employees is crucial to the success of the employer's efforts. Employee cooperation depends on them understanding what the safety and health program is all about, why it is important to them and how it affects their work. The more an employer does to involve employees in the changes that are being made, the smoother the transition will be. Employers may also find success in asking for employee input. When employees are a part of policies and procedures that are developed, they become extensions of the occupational safety and health program.

To ensure worker safety, employers must keep aislesways clear of obstructions. (Photo taken by INSafe Safety Consultant Debbie Rauen)

Employers must also be certain to "walk the walk." This simply means leading by example and following all prescribed safety and health regulations as well as employer-developed policies and procedures.

The housekeeping self-inspection scope should thoroughly cover key areas such as waste disposal, tools, objects, materials, leakage and spillage, cleaning methods and schedules and work and storage areas. Employers must remember, a safety and health program is a plan put into practice. Keeping the program on track requires periodically reviewing its progress. Employers must take a careful look at each component of the program to determine what is working well and what changes are needed. Developing new action plans to implement these improvements will continue progress toward an effective safety and health program, reduce workplace safety and health risks and increase efficiency and profit.

Worker Safety and Health Resources

Some common housekeeping items may be found in the "Housekeeping Checklist" at the top of this page. For more information, please review OSHA's ***Small Business Handbook*** publication, which is available online by visiting www.osha.gov and clicking "P" on the A-Z index for a listing of all available publications.

Avoiding Unintended Consequences of Incentive Programs

Rebecca Jacobs, INSafe Health Consultant, provides insight into avoiding unintended consequences of occupational safety and health incentive programs.

It's hard to imagine, but sometimes a well-meaning employee incentive program could actually work against the health and safety of your employees. Some incentive programs may have the unintended effect of discouraging employees to report near-misses or unsafe working conditions to management. Even worse, some incentive programs where rewards for having no serious injuries or illnesses are offered for an entire work group or project could discourage employees from reporting a work-related injury or illness.

A workplace free from injuries and illness is certainly a logical goal. The problem with this scenario is not the goal, but the metric used to measure the success of continuous improvement toward the goal. Taking the focus off of the rates and placing it on diligently reporting hazards, near-miss incidents and unsafe acts can create a much more effective safety culture within an organization.

Unreported incidents often do not get investigated and can put employees at risk for suffering future injuries. Further risk can mean more accidents resulting in an increase in the injury and illness rate. Increases in the injury and illness rate can raise workers' compensation insurance premiums, medical costs and a myriad of other indirect costs. Injuries and illnesses can also take a toll on employee morale and result in high employee turnover.

Many types of reporting-based safety and health programs exist, but the most successful ones typically include the widespread participation of the workforce. This will not happen overnight if you are starting a reporting culture from scratch. It takes time to build the relationship between company management and front-line employees.

Usually, for an incident to occur, there has to be an unsafe condition in addition to an unsafe behavior. And it's hard to correct unsafe conditions if your workforce is not empowered to speak up freely to alert those with the authority to correct the conditions. Some very successful worker safety and health programs have provided workers the discretion to "stop the line," "halt production" or "stop the work activity altogether," in the event an unsafe work condition develops.

OSHA has developed a tool for employers, $afety Pays, which can help estimate the direct and indirect costs of workplace incidents. More information about $afety Pays is available online at www.osha.gov/dcsp/smallbusiness/safetypays/index.html.

Developing Checklists, Policies and Procedures

Companies can reach their goal of preventing injuries or illnesses by investing in the development of a system of checklists, written policies and procedures and implementing them to help prevent workplace incidents. In fact, regular housekeeping inspections (refer to pages 9-10) and safety audits can help discover unsafe conditions and less-than-ideal behaviors. These routine inspections and safety audits can help provide the opportunity to take corrective actions before someone is injured. Behavior-based performance programs that use peer-to-peer intervention to help co-workers identify hazardous conditions before accidents happen have proven successful in many companies. These programs put the responsibility for workplace safety in the control of each worker and not just the safety professionals who cannot be everywhere at any given time.

Companies provide for their employees' safety and health when they act timely to correct the occupational safety and health hazards and near-misses that are reported. The correction of any unsafe conditions becomes the incentive for workers to stay involved in workplace safety and health. It helps sustain the reporting culture and build the relationship between management, supervisors and front-line employees. Well-

developed incentive programs also include recognition of workers by management as well as peers.

Celebrations for complete employee participation in training by an entire workgroup tend to be more effective at reducing worker injury and illness rates than rewarding groups when they do not have an injury for a set period of time. Defining safety responsibilities in job descriptions and setting safety goals for annual work appraisals for all employees including training and reporting of hazards is effective in establishing a practice safety culture as well.

Investigation of Near-Miss Incidents

The investigation of a near-miss incident or of a potentially serious accident is crucial to preventing future hazardous conditions, injuries, illnesses or worse and should be part of an effective health and safety program. Employers that have diversified root cause analysis (RCA) teams that include the injured worker and his or her supervisor are better able to determine the incident's root causes including safety and health management system failures. These well-balanced teams are typically successful in developing sustainable solutions that are within the means and control of the company in order to prevent reoccurrence. Also, explaining the process as the meeting begins, stating the goal of preventing reoccurrence and not laying blame, is reassuring to all who are participating and especially to the injured person. In a successful analysis, after the cause and effects of an incident are determined, a well-balanced set of corrective actions are delegated. Due dates are set for the corrective actions and the information needs to be tracked to ensure follow-up and ultimately the prevention of reoccurrence of similar incidents.

Employees of Charlestown, Indiana's D.A., Inc., proudly display their "Take 5" shirts. "Take 5" is the company's branded safety program that reminds employees to take five seconds out for safety—cleaning spills on the floor up as they occur, inspecting tools prior to use, etc. To further promote safety in the workplace, employees were treated with a Hershey's Take 5® candy bar during Halloween to ensure safety remained at the forefront of employees' minds. (Submitted photo)

Incentive Programs that Might Not Produce Sustainable Results

There are many examples of incentive programs that may lead to a short-term reduction in injuries but that may be detrimental to the working environment. Simply stated, incentives linked to injury rates can translate into more injured employees as unreported hazards go uncorrected since they are only known to the few who quietly endure the consequences. These disincentives could include rewarding leaders and employees with bonuses, paid vacations or performance pay specifically tied to an injury and illness rate. Incentive programs like these may be detrimental to the working environment because leaders may pressure the chain of command to meet their short-term or annual "safety" goals in order to realize their annual monetary rewards. In the long run, looking good on paper for an annual year-end review or performance appraisal does little to continue the incident reduction trend consistently downward.

Employee Involvement

In the end, employee involvement at all levels is crucial to an effective health and safety program. Incentive programs need employee participation to be successful. For example, Charlestown, Indiana's **D.A., Inc.**, uses relatively inexpensive items such as t-shirts and chocolates as incentives to promote employee awareness of and involvement in worker safety and health-related activities.

With the focus on reporting and correcting unsafe conditions and behaviors instead of rewards for the absence of any reported incidents, everyone benefits in both the short-term and long run. Since 2006, when D.A., Inc., incorporated the "Take 5" program and mindset, the company has experienced an 86% reduction in OSHA recordable injuries. The company also realized a 55% reduction in its workers compensation experience modification rate (EMR).

Rewards employers gain from fostering employee involvement can include early intervention and correction of workplace safety and health hazards. However, the ultimate reward is that employees gain ownership in the workplace safety and health management system as a result of partnering with management. This provides sustainability of a safe and healthful work environment for everyone.

OSHA Compliance Assistance Resources

The Indiana Department of Labor's OSHA consultation program, INSafe, provides free onsite services to Hoosier employers. To request an onsite evaluation of the workplace safety and health management system, employers may complete the online request form found at www.in.gov/dol/insafeconsultation. Services provided by INSafe at no charge to Indiana employers may include a safety hazard survey, industrial hygiene, noise monitoring and air sampling for both general industry and construction. For more information, please visit www.in.gov/dol/insafe, email insafe@dol.in.gov or phone (317) 232-2688.

Manufacturing

From mills and plants to foundries and other factories, Indiana's manufacturing industry is the largest employment sector of Hoosiers workers. The Bureau of Labor Statistics (BLS) estimated that Indiana's manufacturing industry employed more than 430,000 workers, comprising about 17% of the state's workforce in 2010. Also, during this same year, the Hoosier manufacturing industry had the highest raw number of recordable injuries and illnesses of any other industry in the state, accounting for more than 24% (22,800) of all work-related injuries and illnesses.

While the manufacturing industry had the highest number of injured and ill workers, its rate of non-fatal work-related injuries and illnesses (5.2 per 100 workers) was lower than the rates for the **arts, entertainment and recreation** (7.6) and **healthcare and social assistance** (5.9). The 2010 non-fatal occupational injury and illness rate for manufacturing increased by more than 9% over the 2009 rate. However, the 2010 rate is the second lowest rate that has been reported for this industry since the BLS began data collection in 1991. Manufacturing sub-industries with high non-fatal worker injury and illness rates in 2010 included **other rubber product manufacturing** (14.9), **foundries** (12.6) and **motor vehicle and trailer manufacturing** (10.8).

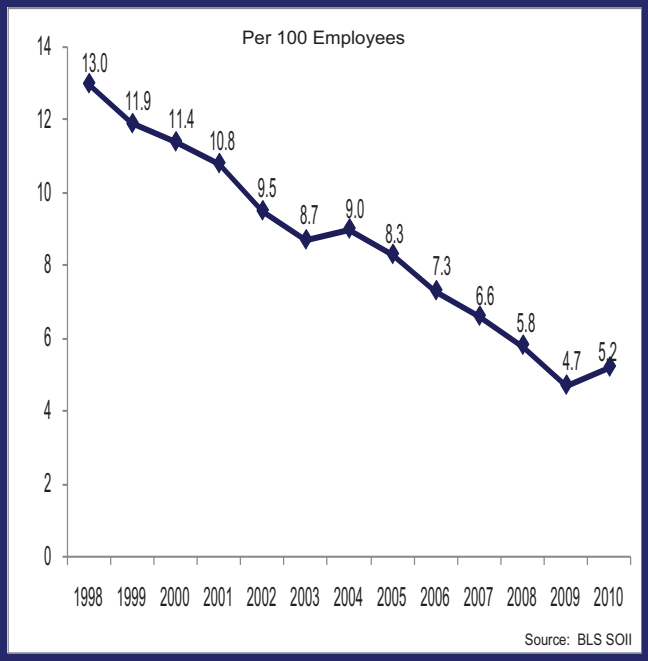
There were 4,160 non-fatal injuries that necessitated the injured employee spending at least one day away from work in 2010 in the Hoosier manufacturing industry. The average number of days away from work in the manufacturing industry in 2010 was eight—one day longer than in 2009. Employees who suffered these injuries were predominantly **male** (73%), **Caucasian** (70%) and between the **ages of 45 and 54** (30%). The most common events resulting in an injury with days away from work were **struck by object** (12%), a two-way tie for **overexertion in lifting** and **caught in object**, **equipment or machinery** (11%) and **fall on the same level** (8%).

While the manufacturing industry experienced the highest number of non-fatal injuries and illnesses in 2010, the industry experienced fewer worker deaths than other Indiana industries such as **agriculture, forestry, fishing and hunting** (19%), **transportation and warehousing** (16%) and **construction** (11%). In 2010, 13 manufacturing industry workers were killed on-the-job. The predominant source of fatal injury to workers in the manufacturing industry was **contact with objects and equipment** (5) and **falls** (4).

Manufacturing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	684,000	9.7	13.0	88,900	24
1999	690,000	9.2	11.9	82,900	24
2000	686,000	9.0	11.4	78,300	19
2001	639,000	8.1	10.8	68,100	22
2002	588,000	7.2	9.5	87,800	24
2003	573,000	6.8	8.7	49,200	15
2004	572,000	6.6	9.0	51,400	15
2005	571,000	6.3	8.3	48,600	10
2006	570,000	6.0	7.3	41,900	13
2007	568,000	5.6	6.6	36,600	7
2008	538,500	5.0	5.8	30,800	18
2009	470,800	4.3	4.7	21,500	12
2010	437,600	4.4	5.2	22,800	14

Indiana Manufacturing Injury and Illness Rate



Working with **energy is very hazardous**. Employees are at risk of suffering serious injury, and even death, when energy control procedures are not properly designed and implemented.

Keeping employees safe from hazardous energy requires employers to develop and implement an energy control program. Core components of the energy control program include energy control procedures, employee training and periodic inspections. Energy control procedures detail and document specific information that an authorized employee must understand to effectively conduct lockout/tagout; namely the scope, purpose, authorization rules and techniques to be utilized for the control of hazardous energy.

Lockout/Tagout is a machine-specific practice that incorporates procedures for employees to follow for safeguarding themselves and others from sudden machinery and equipment startups. It covers the machine and equipment servicing and maintenance where the unexpected energization, startup or release of stored energy could cause injury.

In production operations, lockout applies when an employee is required to remove or bypass a guard or other safety devices. It also applies when a worker places any part of his or her body into an area on a machine or piece of equipment where work is actually performed—the point of operation.

Lockout vs. Tagout

Generally speaking, lockout is the surer method of ensuring deenergization and control of hazardous energy sources than tagout because a lockout device physically restrains energy-isolating devices. A tagout device merely acts as a prominent warning device.

Group Lockout/Tagout

Group lockout/tagout is required when more than one worker is engaged in the performance of servicing or maintenance activities. The hazardous energy control procedures used in group lockout/tagout situations must provide each authorized employee with the same level of control that he or she would be afforded in an individual scenario. Each worker must affix his or her personal lockout/tagout device as part of the group process. Personal control of the equipment's energy sources through the application and removal of the devices is the core concept.

Training, Communication and Resources

Employees must receive specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control the hazardous energy. Additionally, employers must also document the specific procedures for the placement, removal and transfer of lockout or tagout devices and responsibility for them. This must also include testing machines and equipment to ensure the effectiveness of lockout/tagout devices as well as other energy control measures. Employers must ascertain that employees have the appropriate knowledge, skills and training for safe energy control application and removal. Training must be performed annually, when new equipment is introduced or when procedures change. Annual evaluations are required to ensure the use of proper lockout procedures and to correct any deviations or inadequacies observed.

Additional information is available at www.osha.gov. Specific worker safety or health questions may be addressed to INSafe at insafe@dol.in.gov or phone (317) 232-2688.

It Happened Here: Shelby County, Indiana

Background: In 2010 and 2011, the Indiana Occupational Safety and Health Administration (IOSHA) issued 77 citations for violations of OSHA's lockout/tagout standard.

Fatal Event: On September 29, 2010, in Shelby County, a 56-year-old journeyman electrician was working alone and performing repair work on a conveyor. The electrician had shut off the electrical power to the conveyor; however, he did not de-energize the air pressure to the cylinder. With the cylinder in a relaxed position (down), the electrician squeezed his body between the conveyor's chute frame and over the 830 air cylinder lever. The air cylinder was triggered, and the electrician became trapped between the upper shuttle conveyor frame and the activated lever. The electrician was later found, trapped in the machine. The journeyman electrician was extricated and transported to the hospital. The electrician died from crushing injuries to the thorax region.

Discussion: To reduce the likelihood of and prevent similar incidents from occurring in the future, employers and employees must establish an energy control program. The program should provide specific procedural steps for employees to take that include shutting down and restarting machinery and equipment. Employees must receive the appropriate training on proper lockout/tagout procedures. Any near-miss and any other workplace incidents should be investigated to determine root cause and prevent reoccurrence.

Public

employees, at both the state and local levels perform a variety of activities. Among others, professionals working in this sector include elected officials, law enforcement personnel, firefighters—both career and volunteer, utility and healthcare workers and educators. In some cases, public sector workers overlap some private sector occupations such as teaching, performing construction work and providing healthcare and transportation services. State and local government is the second largest employment sector in the state, employing more than 365,000 Hoosier workers. Because Indiana is an OSHA-approved state plan state, the state's public sector workers are protected by the same occupational safety and health standards as their private industry counterparts.

In 2010, more than 14,000 workers in the Indiana state and local government sector suffered a workplace injury or illness—approximately 17% of all occupational injuries in the state. This is 800 fewer injuries and illnesses than those reported in the previous year. However, in 2010, there was a slight increase in the sector's non-fatal injury and illness rate from 2009.

Work groups in state and local governments with high worker injury and illness rates include **healthcare and social assistance** (12.8), **water, sewage and other systems** (7.0) and **hospitals** (6.4).

Over 3,000 of the 14,500 reported injuries in this sector required one or more days away from work for the affected worker. In 2010, the average number of days away from work for state and local government employees was six days, one day less than the private industry's average of seven.

By a small margin, occupational injuries and illnesses requiring days away from work in this sector most often affected **men** (53%). The most frequent injuries suffered by workers in the state and local government sector were **sprains, strains and tears**, which occurred 1,190 times (39%). The second most common nature of injury was **fractures** (12%). The third leading nature of injury was **bruises and contusions** (8%).

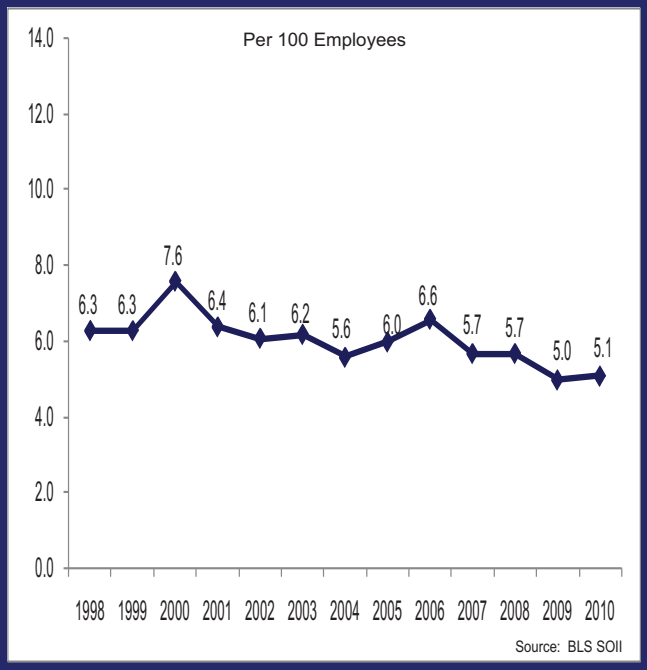
Falls were the most common injury-causing event among state and local government workers. **Falls on the same level** led (16%) were followed by **falls to a lower level** (10%).

Nine workers in the state and local government sector were killed while working in 2010. This represents an increase of three fatal injuries from 2009.

State and Local Government Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	256,500	Data not available	6.3	17,100	13
1999	339,500		6.3	17,800	14
2000	338,400		7.6	21,800	13
2001	346,400		6.4	17,900	16
2002	355,600		6.1	17,300	9
2003	357,500		6.2	18,900	7
2004	360,900		5.6	16,900	6
2005	362,200		6.0	17,500	9
2006	360,300		6.6	19,700	7
2007	361,200		5.7	17,100	9
2008	368,800	6.3	5.7	15,500	10
2009	371,100	5.8	5.0	15,300	6
2010	368,600	5.7	5.1	14,500	9

Indiana State and Local Government Injury and Illness Rate



INSafe Safety Consultant Debbie Rauen provides insight for fire departments to develop and implement Standard Operating Procedures or Guidelines to reduce ambiguity in their capabilities.

Fighting fires is a life-threatening job, but a firefighter's responsibilities often extend beyond simply, ***"putting the wet stuff on the hot stuff."*** Career and volunteer firefighters respond to a wide range of emergency situations including traffic incidents, weather-related catastrophes and full-scale county and state emergency situations.

With that in mind, it is critical for fire departments and the personnel who operate in them to know the hazards within their responding jurisdictions. Important aspects to consider include the proper approach to emergencies, protection of the firefighters and public, training requirements, limitations of the department and who to contact if the incident goes beyond those limitations.

Developing, implementing and enforcing Standard Operating Procedures (SOPs) or Standard Operating Guidelines (SOGs) can help address the abovementioned scenarios. When carefully developed, these documents will detail all steps and activities of a process or procedure for personnel to follow. As a former IOSHA compliance officer, and now INSafe Safety Consultant, I have discovered both full-time and voluntary fire departments often fall short in their responsibilities to develop these written plans and subsequent procedures. While the basics are typically addressed in the plan—fire response, mutual aid, water supply/water shuttle, vehicle response and vehicle response order, other likely incidents within the department's respective jurisdiction often lack enough information to eliminate confusion among personnel and the public. Generally speaking, the toughest part of writing SOPs or SOGs is getting started. Some suggestions for beginning and drafting the plan follow below.

Firefighters from northeastern Indiana participate in a grain rescue training at a local grain handling facility. Fire departments are often called upon for emergency support in the event of a grain engulfment. (Submitted photo)

First Things First

Begin by conducting meetings with employees; be sure to include those who have training, education and knowledge of the site environments. Evaluate response jurisdictions, including the hazards associated with those areas. For example, in an industrial setting, it is important to ask about and understand the chemicals used within the facility as well as the machinery or equipment and potential hazards where employees may become injured or trapped.

Protecting the Public and Department Staff

It is important that SOPs or SOGs also document how the department will protect its employees from those hazards, which may include the use of personal protective equipment (PPE) and associated training. There may also be additional specific training required, including information on how the public will be protected from danger. Protection provided to the public may include traffic control at a vehicle fire, hazardous material (HAZMAT) management or other emergency personnel at the scene of the incident.

Mutual Aid Response

In the event that the rescue response is beyond the department's limitations, knowing who can provide mutual aid—other fire departments or state or local agencies—and what assistance can they provide—personnel, equipment or training—is important and should be documented in the plan. Examples of events in which mutual aid may be necessary can include confined space rescue, methamphetamine lab emergencies, grain bin entrapments or water rescue services.

Putting the Plan in Writing

After completing the ground work, the plan should be expressed in writing. The most effective plans consider new department employees and how to make the information concise, but very clear as to what the department's responsibilities will include. Departments may consider using a chart-type system or place all the information in a document form. Conducting post-emergency response meetings will also help assist the department with modifications to its SOPs or SOGs.

Additional Resources

More occupational safety and health-related resources for firefighters are available online through the **National Institute for Occupational Safety and Health** (NIOSH) at www.cdc.gov/niosh/fire/. To speak to an INSafe Consultant, please email insafe@dol.in.gov or phone (317) 232-2688.

Retail

establishments are very diverse by nature of their respective offerings to the public. These establishments consist of facilities including grocery stores, shopping malls, florists, filling stations, convenience stores and home supply centers. The industry is one of Indiana's major employment sectors, employing more than 300,000 Hoosier workers in 2010.

Since 2006, the Indiana non-fatal occupational injury and illness rate for the retail industry has experienced a steady decline. With a rate of 3.9 per 100 workers, the 2010 Indiana retail industry worker injury and illness rate is the lowest it has ever been.

Retail industry workers are subjected to many occupational health and safety hazards, including contact with the public, working long or irregular hours and ergonomic hazards from repetitive motions like lifting, bending and reaching.

In 2010, retail industry workers experienced more than 2,000 injuries requiring days away from work to recuperate. The predominant injury suffered by workers in this industry was **sprains, strains and tears** (41%). Other frequent injuries reported by workers in the retail trade industry included **bruises and contusions** (14%) and **fractures** (10%).

Most non-fatal worker injuries and illnesses occurred among **Caucasian** (48%) **men** (54%). A slight majority (22%) of these injuries occurred among workers **45-54 years of age**. This was followed closely by workers between the **ages of 55 and 64** (20%).

Nationally, more than 300 retail industry workers were killed while working in 2010. More than half (160) of these work-related fatalities were attributed to **assaults and violent acts**. The majority (62) occurred in food and beverage stores, most often **convenience stores** (29).

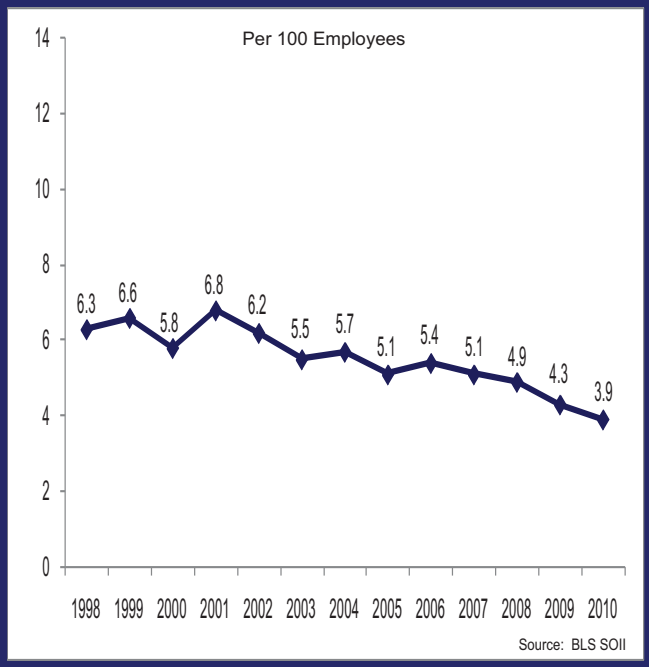
In Indiana, seven workers in the retail industry were fatally injured while working in 2010. Consistent with national data, **assaults and violent acts** were the most common cause of worker deaths (4).

Aimed at reducing occupational injuries and fatalities in 24-hour convenience store outlets, the Indiana Department of Labor established a convenience store working group in early 2012. Together with industry representatives, the group will facilitate the adoption and use of industry best practices for promoting worker safety and workplace violence prevention in late night retail establishments. A detailed report will be issued by this working group by early May 2012.

Retail Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	379,300	6.5	6.3	25,200	23
1999	387,200	6.1	6.6	26,400	10
2000	354,100	5.9	5.8	23,800	13
2001	342,200	5.7	6.8	26,300	12
2002	338,400	5.3	6.2	23,200	15
2003	333,300	5.3	5.5	14,100	10
2004	332,900	5.3	5.7	13,700	17
2005	332,100	5.0	5.1	13,000	13
2006	330,700	4.9	5.4	13,700	5
2007	330,900	4.8	5.1	12,500	4
2008	328,400	4.4	4.9	12,100	13
2009	316,000	4.2	4.3	10,200	9
2010	306,200	4.1	3.9	8,700	7

Indiana Retail Injury and Illness Rate



Business and Professional Services

A very broad sector, the professional and business services industry, includes occupations in legal, accounting, engineering, computer, notary, janitorial, veterinary and photographic services. It also includes call center workers, travel agents, security guards and waste management and remediation services. According to the federal Bureau of Labor Statistics (BLS), this industry employed 268,200 Hoosier workers in 2010.

While the non-fatal occupational injury and illness rate for this industry increased by more than 12% in 2010, the rate remains the second lowest since 2003. The BLS redefined the industry characteristics for this industry in 2003; therefore, trending data is not available prior to that time.

The Hoosier professional and business services industry also experienced an increase in the number of occupational injuries and illnesses in 2010. A little more than 30% of non-fatal injuries and illnesses suffered by workers required at least one day away from work. The average amount of time spent away from work due to an occupational injury or illness for a worker in this industry was 14 days. This was seven days greater than the Indiana private industry average. These injuries were most often **sprains, strains and tears** (36%), followed by **fractures** (21%). The leading injury events were caused by **overexertion** (25%), **contact with objects and equipment** (21%) and **falls to a lower level** (19%).

Sub-industries within the business and professional services industry that experienced high non-fatal occupational injury and illness rates in the United States included **veterinary services** (9.5), **armored car services** (7.2) and **solid waste landfill** (5.8). Indiana-specific data for these sub-industries were not available.

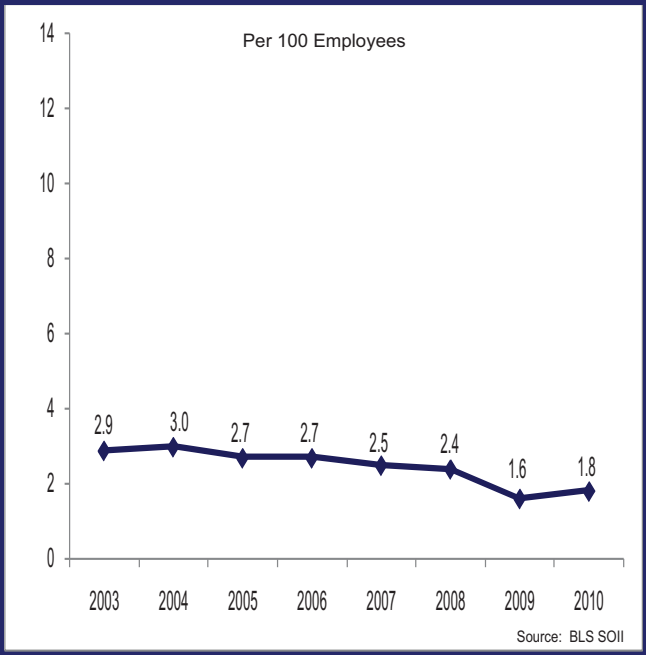
More than 350 U.S. workers in the professional and business services industry were killed in 2010. Nearly 40% (138) of these worker deaths were attributed to **transportation-related incidents**. An overwhelming majority of the worker deaths experienced at the national level in the professional and business services industry occurred in the **remediation services** (280) sub-industry.

In Indiana in 2010, a series low of four occupational fatalities was experienced in this industry. Because of confidentiality concerns, additional information, including nature, event and source, for these fatalities is considered non-publishable by the BLS.

Professional and Business Services Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1999					
2000					
2001					
2002					
2003	258,700	2.5	2.9	4,600	11
2004	266,300	2.4	3.0	4,300	7
2005	272,400	2.4	2.7	4,400	12
2006	279,300	2.1	2.7	4,900	13
2007	288,700	2.1	2.5	6,100	11
2008	292,400	1.9	2.4	4,700	8
2009	272,500	1.8	1.6	2,900	6
2010	268,200	1.7	1.8	4,000	4

Indiana Professional and Business Services Injury and Illness Rate



Serving

fellow Hoosiers and state tourists with services that include lodging, meal preparation or beverages for immediate consumption, the Indiana hospitality industry employed about 233,000 workers in 2010. This industry also played an integral role in the state's hosting of the 2012 "big game."

Sub-industries in this industry include recreation and vacation camps, hotels and motels and restaurants. Industry workers are subject to a variety of occupational safety and health hazards that include working long or irregular and late-night hours, working with the public and exposure to chemicals such as cleaning supplies.

The 2010 Indiana non-fatal occupational injury and illness rate for the accommodation and food service industry was 3.4 per 100 workers. In a five-year span, between 2006 and 2010, the industry experienced a 19% reduction in the rate of work-related injuries and illnesses. The 2010 injury and illness rate is the lowest rate for this industry on record.

Non-fatal occupational injuries and illnesses resulting in days away from work in the accommodation and food services industry most often occurred among **Caucasian** (47%) **women** (62%) and among workers **25-34 years of age** (26%). The average number of days away from work for employees who suffered a work-related injury or illness in this industry requiring missed work was five days in 2010—two days longer than the industry's average for 2009.

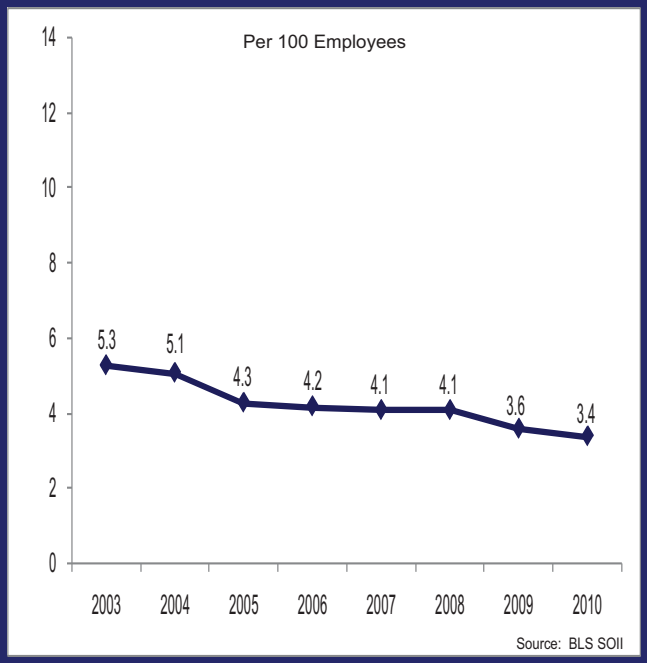
The most common nature of injury in 2010 resulting in missed work was **sprains, strains and tears** (39%). This was followed by **cuts and lacerations** (12%) and **heat burns** (10%), likely because of exposure to food preparation equipment, such as ovens. Industry workers were most often afflicted by injuries resulting from **falls on the same level** (17%), followed by a two-way tie between **struck by objects** (16%) and **exposure to harmful substances**. Common sources of occupational injury in 2010 included **floors and ground surfaces** (29%), **worker motion or position** (13%) and **containers** (10%).

Sub-industries of the accommodation and food services industry in 2010 that reported high non-fatal injury and illness rates at the national level included **other travel accommodations** (7.8), **hotels and motels** (excluding casino hotels) (5.5) and **special food services** (5.5).

Accommodation and Food Services Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending data before that time.				
1999					
2000					
2001					
2002					
2003	228,700	5.0	5.3	7,400	5
2004	230,000	4.5	5.1	7,400	-
2005	232,900	4.5	4.3	6,100	5
2006	236,100	4.5	4.2	6,300	3
2007	242,100	4.4	4.1	6,100	3
2008	244,300	4.1	4.1	5,800	3
2009	240,200	3.7	3.6	5,100	4
2010	233,700	3.7	3.4	4,800	-

Indiana Accommodation and Food Services Injury and Illness Rate



Mining

The state's mining industry has maintained steady employment for the last three years, according to the federal Bureau of Labor Statistics. While steady employment and production are essential in any industry, it pales in comparison to the occupational safety and health of their employees.

The 2010 non-fatal occupational injury and illness rate for Indiana's mining industry remained unchanged from the 2009 rate of 3.3 per 100 workers. This includes all mining in the state—surface and underground. Indiana's mining industry injury and illness rate is 30% above the national mining industry rate of 2.3.

In 2010, 55% of all work-related injuries and illnesses in the mining industry in Indiana required at least one day away from work for the affected worker. The average number of days away from work for a worker in this industry in 2010 was 16. An overwhelming majority of injured workers in this industry suffered from **sprains and strains** (45%). The next most common injury suffered by workers in the mining industry in 2010 was **fractures** (27%).

All occupational injuries and illnesses requiring days away from work in 2010 were experienced by **men** (100%). The most common ages of an injured worker in the mining industry was **25-54** (30%). Frequent injury-causing events in 2010 were tied among **contact with objects** (22%) and **repetitive motion** (22%). Sources of occupational injury were also tied. The most often sources were **machinery** (20%) or **floors or ground surfaces** (20%).

Southwest Indiana is currently home to eight active coal mines. Three additional mines are likely to begin production sometime in 2012. Management, staff and employees of these eight coal mines work very closely with the **Indiana Bureau of Mines**, located at **Vincennes University**.

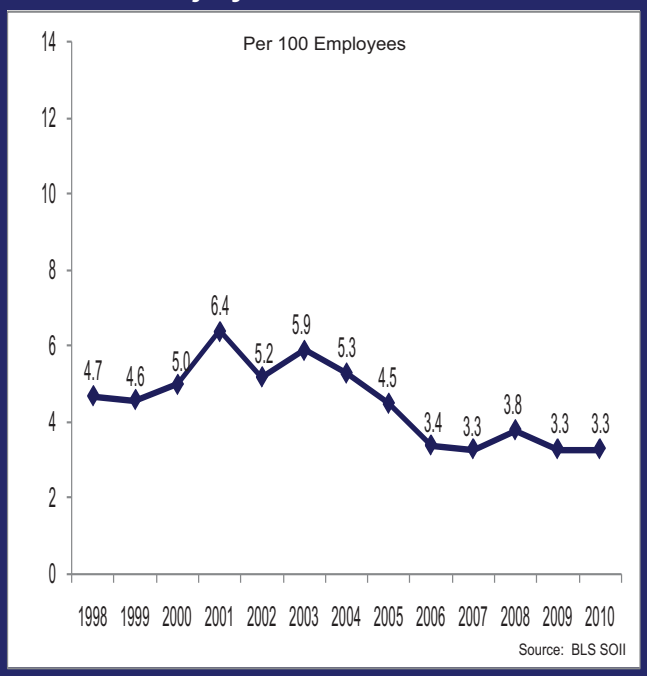
Indiana law requires the Bureau of Mines to conduct an inspection of each underground mine at least once per quarter. The Director of the Bureau of Mines, who is a certified mine examiner, or the Chief Mine Inspector conducts these inspections. Violations must be corrected immediately. Federal inspectors of the Mine Safety and Health Association (MSHA) conduct much more frequent enforcement inspections of each mine as well.

While the data above reflects the mining industry as a whole, the 2010 coal mining injury and illness rate in Indiana was 3.3 per 100 workers—the same as the 2009 rate. In addition, Indiana underground coal mines remained fatality-free in 2010.

Mining Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	7,800	4.7	4.7	400	-
1999	7,100	4.1	4.6	300	3
2000	7,100	4.6	5.0	300	-
2001	6,900	3.9	6.4	500	-
2002	6,800	4.0	5.2	400	-
2003	6,700	3.3	5.9	400	6 between 2003 and 2008
2004	6,700	3.8	5.3	400	
2005	6,500	3.6	4.5	300	
2006	6,500	3.5	3.4	200	
2007	6,600	3.1	3.3	200	
2008	6,400	2.9	3.8	300	
2009	6,400	2.4	3.3	200	-
2010	6,400	2.3	3.3	200	-

Indiana Mining Injury and Illness Rate



Construction

In the construction industry, workers are engaged in activities and job duties exposing them to serious hazards such as falling from structures, equipment and ladders; working with unguarded machinery and tools; being struck by heavy equipment; electrocution and exposure to many dangerous chemicals. According to the federal Bureau of Labor Statistics (BLS), this industry employed more than 117,000 Hoosier workers in 2010.

Hoosier construction industry workers suffered 4,000 occupational injuries and illnesses in 2010. This is the fewest on record for the industry. The corresponding non-fatal occupational injury and illness rate for the construction industry in 2010 was 3.8 per 100 workers. This is the lowest rate on record for this Hoosier industry. It also is 5% lower than the 2010 national construction industry average.

Construction industry workers often experience injuries that are severe enough to require them to spend time away from work. In 2010, more than 35% of the non-fatal injuries in this industry required at least one day away from work for the worker to recuperate from his or her injury. On average, construction workers who were more seriously injured spent **20 days away from work** in 2010—nine days longer than the 2009 average. Most often, these injuries were experienced by **Caucasian** (76%) **men** (88%) **between the ages of 45 and 54** (44%).

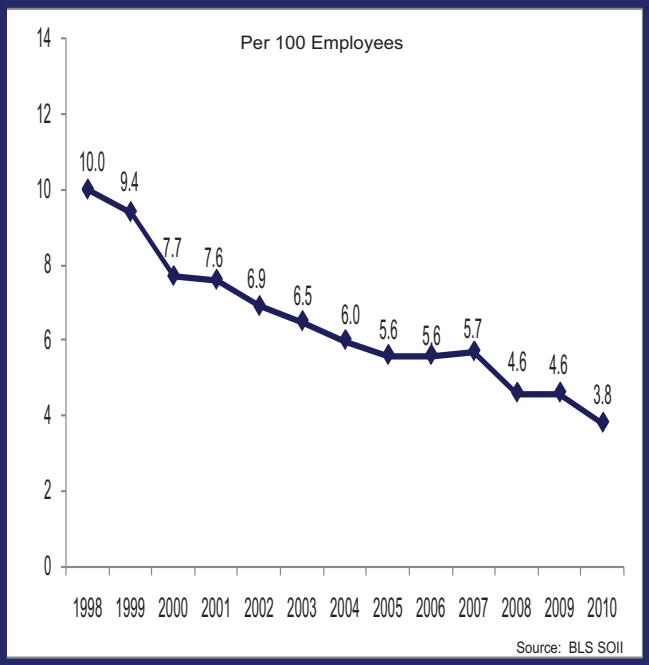
The most common injury suffered by workers in the Indiana construction industry was **carpal tunnel syndrome** (20%), which may be attributed to repetitive motion. **Sprains, strains and tears** (18%) were next most common natures of injury, followed by **fractures** (17%).

Between 2006 and 2010, 103 Indiana construction workers have been fatally injured while working. Of the 103 killed during this time frame, 18 worker fatalities occurred in 2010 alone. The leading fatal event in the Hoosier construction industry in 2010 was **falls** (6). **Transportation-related** events followed (5) in worker deaths in the construction industry. Fatal transportation events that occurred in 2010 included **vehicles striking construction workers** while the worker is in a work-zone on the highway. Four construction worker deaths in 2010 were attributed to **exposure to substances—caustic, noxious or allergenic**. Nearly half (8) of the 18 fatal occupational injuries occurred in the specialty trades contractor sector. Specialty trades contractors include **building finishers** and **painters** or **wall coverers** among others.

Construction Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	142,900	8.8	10.0	13,500	24
1999	146,300	8.6	9.4	12,800	30
2000	144,100	8.3	7.7	10,700	32
2001	144,600	7.9	7.6	10,200	22
2002	141,400	7.1	6.9	9,000	25
2003	139,300	6.8	6.5	8,500	15
2004	143,300	6.4	6.0	7,900	21
2005	144,600	6.3	5.6	7,500	27
2006	146,600	5.9	5.6	7,600	27
2007	153,100	5.4	5.7	7,700	21
2008	151,600	4.7	4.6	6,300	20
2009	135,300	4.3	4.6	5,600	17
2010	117,600	4.0	3.8	4,000	16

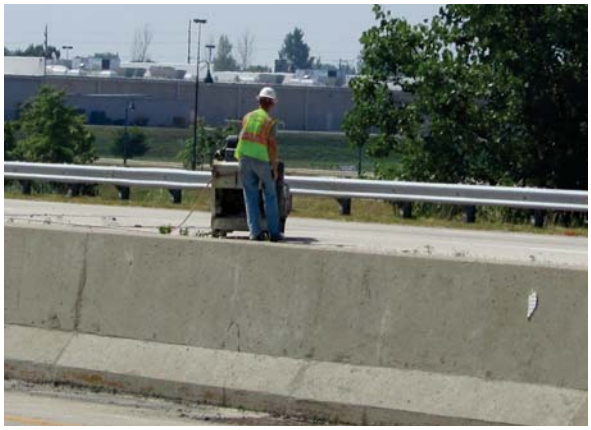
Indiana Construction Injury and Illness Rate



Revision to **Indiana's Work Zone Safety law** helps create a safer work environment for workers in these zones.

Revised

in the 2011 legislative session, **Indiana's Work Zone Safety law** now requires a worksite speed limit to be at least ten miles per hour below the maximum established speed limit for the location on the road or highway where a work zone is located. First-time citations for speeding in a work zone result in a minimum fine of $300. The fine increases for subsequent infractions within a three-year period.



Motorists who drive recklessly or aggressively through a work zone face a fine of up to $5,000. Drivers who injure or kill a highway worker can be subjected to a $10,000 fine or serve up to eight years in prison. The revision to the law also allows for the use of fines generated from the Work Zone Safety law to fund additional police patrols in and around these work zones. These revisions became effective on July 1, 2011.

In addition to the Work Zone Safety law, the Indiana General Assembly also passed a law making it **unlawful to type, transmit or read text or email messages from a communications device while driving**. Violators may face a fine of up to $500. This law also became effective July 1, 2011.

The reason for the revision to Indiana's Work Zone Safety law and the law prohibiting texting and emailing while driving is quite simple. Workers in construction work zones are at an increased risk of suffering disabling and fatal injuries from being struck by motor vehicles. Between 2006 and 2010, 18 Hoosier construction workers were struck and killed by a motor vehicle while performing work in construction work zones in the state.

Work zone safety management presents many challenges to employers and employees. Unlike traditional workplaces, the roadway is not a closed environment. Protecting workers requires safety precautions including the appropriate signage, personal protective equipment (such as high-visibility clothing), training and educating motorists on safe work zone practices.

For both employees and motorists passing through construction work zones, avoiding complacency is key. Workers should exercise the utmost caution while working in roadways, and remain aware of passing traffic at all times. Motorists must heed warning signs and drive with extreme caution when encountering a work zone. This includes maintaining a safe traveling distance and speed. Merging early to ensure last-minute reactions is practical advice. To further educate Hoosier employers, employees and motorists about the dangers of distracted driving, work zone safety tips and other resources may be found on the Indiana Department of Transportation's (INDOT) website at www.in.gov/indot/2356.htm.

It Happened Here: Marion County, Indiana

Background: Between 2006 and 2010, 18 Hoosier workers were struck-by a motor vehicle and killed while working in a construction work zone.

Fatal Event: In Marion County, on October 6, 2011, a 43-year-old traffic control flagger and a co-worker were directing traffic in a construction work zone on the east and west sides of the street, respectively. Traveling east at a high rate of speed, a motorist disregarded the stop sign positioned by the west traffic control flagger. The motorist struck several objects in the work zone including a traffic barrel, a propane truck, the east traffic control flagger and six additional vehicles. The vehicle flipped several times before coming to rest on its roof. The east traffic control flagger died from blunt force trauma to the chest and abdomen.

Discussion: Employees working in this construction work zone took many precautionary measures to advise motorists of workers in the roadway. Additional efforts that can be taken by employers and employees include exercising caution while working in roadways, remaining aware of passing traffic at all times and avoiding complacency in the workplace. Employers must ensure all safety precautions are taken including setting up proper barriers and warning signs in accordance with the Manual on Uniform Traffic Control Devices. Workers must be provided the appropriate personal protective equipment (PPE) and provided with the appropriate level of supervision. Motorists should heed warning signs and drive with extreme caution when encountering a work zone—always remaining alert and maintaining a safe traveling speed and distance.

Tending

to large farm animals such as cows, sheep and pigs and using machinery to cultivate crops for consumption is some of the work done by agriculture workers. Farming is very strenuous and can be dangerous work.

According to the federal Bureau of Labor Statistics (BLS), employment in the farming industry in Indiana has remained relatively stable over the last four years. Approximately 9,300 Hoosiers work in this industry. While this industry plays a key role in Indiana's economy, it employs the fewest number of working Hoosiers of any major industry sector.

The non-fatal rate of occupational injuries and illnesses for the agriculture industry in Indiana was 7.2 per 100 workers. The rate is significantly higher than the series low of 2.8 per 100 workers that was reported for this industry in 2009. The 2010 injury and illness rate for agriculture was also 33% above the national rate of 4.8 per 100 workers for this industry.

The actual number of injuries and illnesses reported by Hoosier agriculture industry workers in 2010 was comparatively low (600); however, it was double the number of injuries and illnesses reported in 2009. More than 38% of these occupational injuries and illnesses were severe enough to require the affected worker to miss at least one day away from work. The average number of lost work days for a worker in this industry in 2010 was three.

Injuries requiring workers to miss one or more days away from work most often were attributed to **sprains and strains** (43%) and **cuts and lacerations** (22%). Workers suffering such injuries were predominantly **men** (87%) and most often **35-44 years of age** (39%).

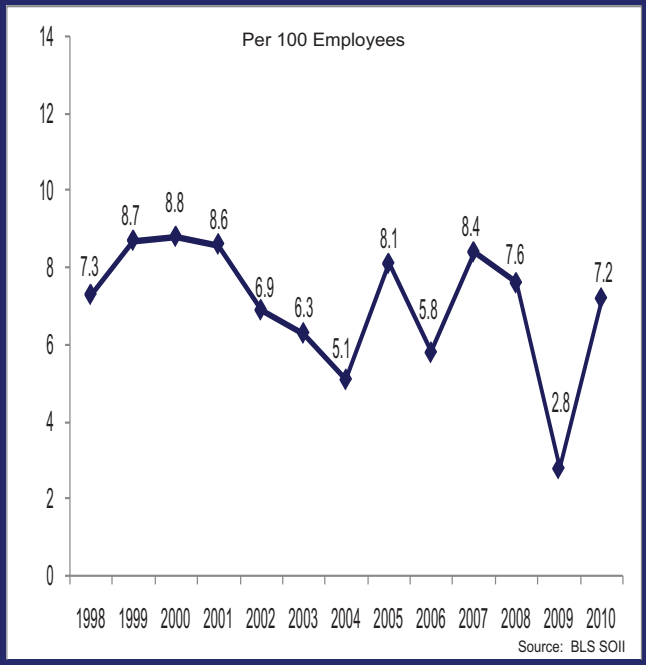
Common events resulting in injuries requiring days away from work for affected workers included **struck by object** (22%), **overexertion in lifting** (17%) and **falls to a lower level** (13%). Sources of injury were most often **containers** (26%) and **parts and materials** (9%).

In addition to its high non-fatal injury and illness rate, the agriculture industry has also led among all major Indiana industries in worker fatalities. This has been the case for the last three consecutive years. In Indiana, between 2006 and 2010, 104 workers were fatally injured while working in this industry. In 2010, the industry experienced 22 worker fatalities. More than half (13) of these fatalities were **transportation-related** and included **overturned equipment** and **workers struck by vehicles or other mobile equipment**. Over the last ten years, there's been no significant improvement in either worker fatalities or injury rates in the agriculture industry.

Agriculture, Foresty and Fishing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	9,000	7.6	7.3	Data not available	20
1999	11,400	7.0	8.7		35
2000	11,500	6.8	8.8		29
2001	11,500	7.0	8.6		27
2002	11,400	6.4	6.9		24
2003	11,200	6.2	6.3	500	22
2004	9,000	6.4	5.1	400	30
2005	8,800	6.1	8.1	600	26
2006	8,800	6.0	5.8	500	12
2007	9,200	5.4	8.4	700	22
2008	9,300	5.3	7.6	600	25
2009	9,300	5.3	2.8	300	23
2010	9,300	4.8	7.2	600	24

Indiana Agriculture, Forestry and Fishing Injury and Illness Rate



Indiana's

arts, entertainment and recreation sub-industry is actually a part of the much larger leisure and hospitality industry. The sub-industry includes a wide range of establishments that operate facilities or provide services to meet the varied cultural, entertainment and recreation interests of their customers. It also houses spectator sports, like the Indianapolis Colts or Indiana Fever, amusement parks, gambling, live performances/events, exhibits (cultural or educational) and recreation or leisure time activities.

According to the federal Bureau of Labor Statistics' (BLSs') report, more than 40,000 Hoosiers worked in this industry in 2010. Workers in this sub-industry are often exposed to occupational safety and health hazards including noise, engine exhaust, cleaning agents, falls, contact with objects and equipment and workplace violence.

The non-fatal occupational injury and illness rate for this sub-industry increased from 7.2 per 100 workers in 2009 to 7.6 in 2010—an increase of more than 5%. The 2010 national non-fatal occupational injury and illness rate for the arts, entertainment and recreation sub-industry was 4.8. The Indiana rate was almost 37% higher than the national rate. National sub-industries with high non-fatal occupational injury and illness rates include **skiing facilities** (11.8), **performing arts companies** (7.3) and **amusement and theme parks** (6.7).

Over 20% of the 2,000 occupational injuries and illnesses suffered by workers in this industry resulted in at least one day away from work for the injured or ill worker. On average, injured or ill workers spent two days away from work to recover from their respective injury.

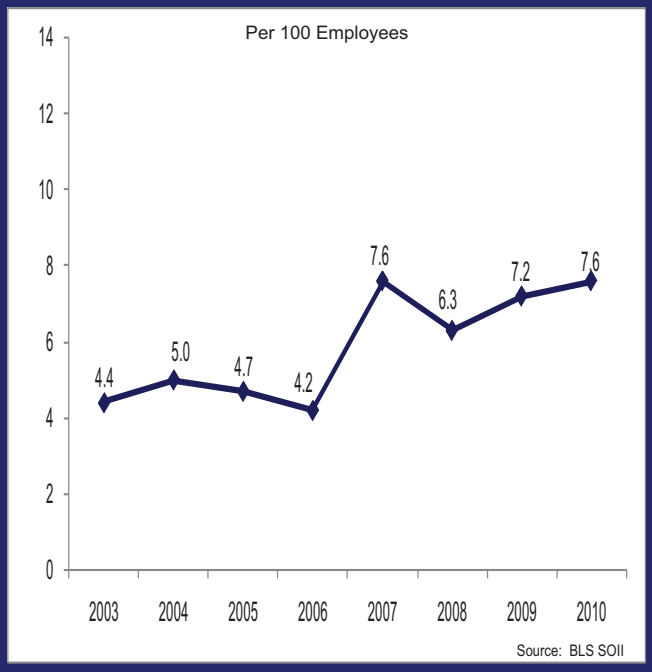
Most often in Indiana, work-related injuries that required the worker to spend days away from work were experienced by **Caucasian** (74%) **males** (67%), **20-24 years of age** (37%). These injured workers were away from work an average of two days in 2010, which was 11 days shorter than the 2009 average. Injuries occurred most often as a result of a **fall on the same level** (26%), **struck by object** (16%) and **overexertion** (12%). The most common nature of injury suffered by workers in this sub-industry in 2010 was **sprains, strains and tears** (21%). **Bruises and contusions** (16%) was the second most frequent injury, followed by **fractures** (14%).

Between 2006 and 2010, there were 15 fatal occupational injuries in this industry. Eight of these incidents in this time frame were **transportation-related**. Three fatal injuries occurred in 2006 and 2007 alone.

Arts, Entertainment and Recreation Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending data before that time.				
1999					
2000					
2001					
2002					
2003	43,200	5.9	4.4	1,300	-
2004	44,300	5.9	5.0	1,300	4
2005	43,800	6.1	4.7	1,400	-
2006	43,300	5.3	4.2	1,200	-
2007	43,700	5.3	7.6	2,400	-
2008	43,300	5.1	6.3	1,800	6
2009	44,800	4.9	7.2	1,800	3
2010	42,300	4.8	7.6	2,000	4

Indiana Arts, Entertainment and Recreation Injury and Illness Rate



Activities

in the transportation and warehousing industry include transporting passengers, moving cargo, providing transportation support activities and the storage of goods. According to the federal Bureau of Labor Statistics, more than 107,000 Hoosier workers were employed in this industry in 2010.

This industry makes up only about 4% of the Hoosier workforce; however, it has the third highest worker fatal injury count of all major industries in the state (14). Nearly 86% of the fatal occupational incidents in 2010 were transportation-related. This included nine **highway incidents**. A series high of 34 occupational fatalities occurred in 1999 and again in 2006.

In addition, workers in this industry also suffered 5,100 non-fatal workplace injuries and illnesses. The non-fatal occupational injury and illness rate in the transportation and warehousing industry was 4.9 per 100 workers in 2010. This is an 8% increase from the previous year.

Approximately 36% of the non-fatal occupational injuries and illnesses reported in the transportation and warehousing industry required a minimum of one day away from work for the injured worker to recuperate. The average number of days away from work for an injury requiring missed time was 16 days—seven fewer days than the 2009 report.

Injured worker characteristics from 2010 indicated **Caucasian** (43%) **men** (72%), **ages 35-44** (32%) experienced the majority of the non-fatal injuries in this industry. **Contact with objects** (19%) was the predominant non-fatal injury-causing event experienced by workers in this industry. **Transportation incidents** (13%) and **falls to a lower level** and **overexertion in lifting** (12%) were tied for the third most common injury.

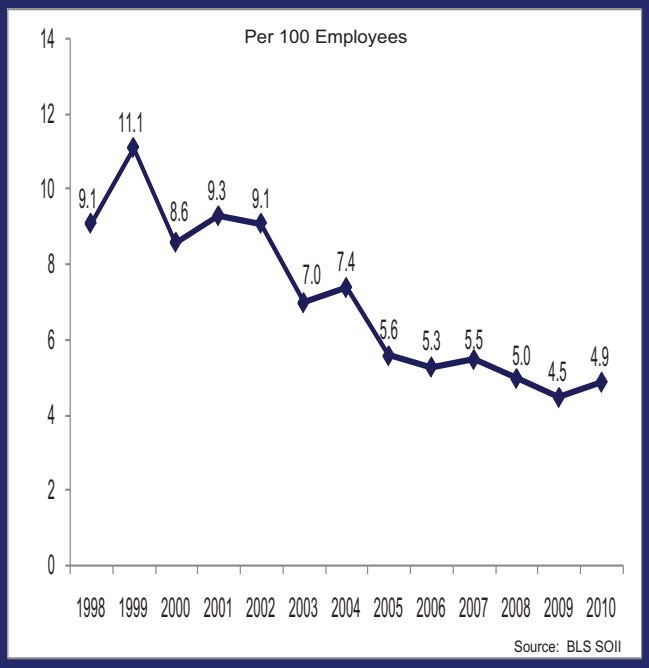
The most frequent injury suffered by workers was **sprains and strains** (41%). Other frequent natures of injury experienced by transportation and warehousing industry workers in 2010 included **fractures** (11%) and **bruises and contusions** (10%). Sub-industries in the Hoosier transportation and warehousing industry with high worker injury and illness rates in 2010 included **air transportation** (10.8), **couriers and messengers** (7.6) and **warehousing and storage** (5.3).

Common sources of injury in the transportation and warehousing industry in 2010 were most often **floors and ground surfaces** (26%). The next most frequent sources included **vehicles** (19%) and **containers** (18%).

Transportation and Warehousing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	99,100	9.0	9.1	5,300	23
1999	100,500	9.0	11.1	6,400	34
2000	110,400	8.7	8.6	4,800	26
2001	105,600	8.7	9.3	6,000	23
2002	104,700	7.5	9.1	5,700	27
2003	107,700	7.8	7.0	6,700	29
2004	101,800	7.3	7.4	7,000	29
2005	105,200	7.0	5.6	6,300	28
2006	108,800	6.5	5.3	5,900	34
2007	110,900	6.4	5.5	6,200	31
2008	108,800	5.7	5.0	5,800	16
2009	107,200	5.2	4.5	5,200	17
2010	103,000	5.2	4.9	5,100	16

Indiana Transportation and Warehousing Injury and Illness Rate



Healthcare and Social Assistance

With a rate of 5.9 per 100 workers, the Hoosier healthcare and social assistance industry had the third highest non-fatal occupational injury and illness rate among all major industries in the state in 2010. While the 2010 worker injury and illness rate for the healthcare and social assistance industry declined by almost 10% from the 2009 rate, it is still nearly 12% greater than the Indiana manufacturing industry, and it is almost 36% higher than the injury and illness rate for the Hoosier construction industry. The Indiana rate for this industry is also nearly 12% higher than the national rate of 5.2 per 100 workers.

Workers in this industry face a wide range of occupational safety and health hazards including injuries related to patient handling, needlestick injuries from administering medications, working long and irregular hours, workplace violence and stress. In 2010, workers reported more than 16,000 occupational injuries and illnesses in this industry alone.

Approximately 20% of all injuries experienced by healthcare and social assistance workers required the affected worker to spend one or more days away from work. The average number of days spent away from work by these workers in 2010 was five—one day longer than the 2009 industry's average. The overwhelming majority of non-fatal injuries and illnesses occurred among **Caucasian** (68%) **females** (82%). Common injuries suffered by healthcare and social assistance workers resulting in days away from work included **sprains, strains and tears** (53%), **soreness and pain** (9%) and **bruises and contusions** (7%). Leading injury events were **falls on the same level** (16%), **overexertion in lifting** (14%) and **transportation incidents** (10%). Common sources of injuries among workers in this industry included **healthcare patients** (29%), **floor and ground surfaces** (26%) and **vehicles** (12%). *(refer to pages 27-28 of **IN Review** for an employer's approach safe patient handling.)*

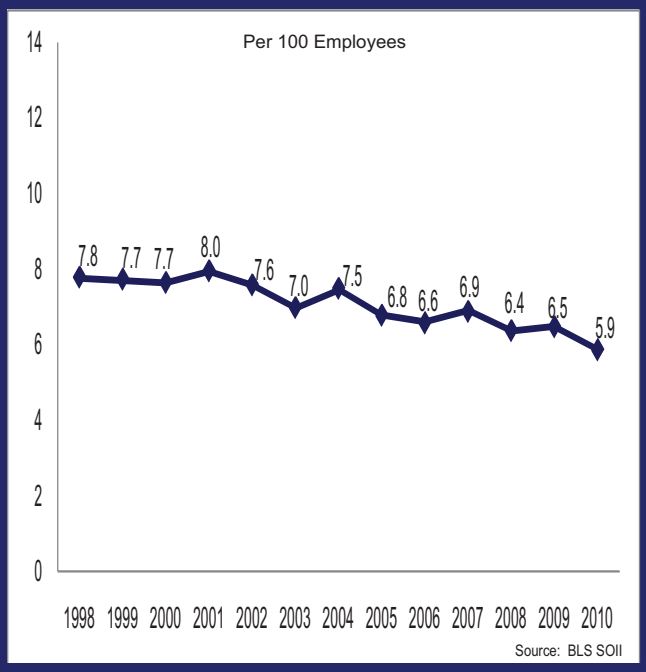
Specific sub-industries in healthcare and social assistance with high non-fatal worker injury and illness rates in 2010 were consistent with 2009. These sub-industries include **nursing and residential care facilities** (9.8), **hospitals** (7.2) and **social assistance** (4.9).

While they are somewhat rare, occupational-related fatalities do occur in the healthcare and social assistance industry. There were four fatal worker injuries in this industry in 2010. Three of the four worker fatalities were a result of some type of **transportation-related incident**.

Healthcare Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1998	296,600	7.4	7.8	16,500	3
1999	307,200	7.1	7.7	16,600	-
2000	313,200	7.1	7.7	17,500	-
2001	313,800	6.9	8.0	18,100	-
2002	328,200	7.0	7.6	17,300	-
2003	329,600	6.5	7.0	16,500	-
2004	303,200	6.2	7.5	18,600	3
2005	308,400	5.9	6.8	16,100	4
2006	316,000	5.8	6.6	16,500	-
2007	325,600	5.6	6.9	17,100	-
2008	332,600	5.4	6.4	16,000	5
2009	341,000	5.4	6.5	16,600	6
2010	348,100	5.2	5.9	16,200	4

Indiana Healthcare Injury and Illness Rate



Enhancing Employee Safety with Safe Patient Handling

Experts from **Union Hospital, Inc.,** of Terre Haute and Clinton, Indiana, weigh in on healthcare industry employee safety and health through the development and implementation of a Safe Patient Handling Program.

Contributed by Teresa Everett, *RN, MSN/Ed - Medical Surgical Clinical Educator*
Leah Salvador, *PT, DPT, MBA - Manager, Outpatient Therapy Services*
Sally Zuel, *RN, MS, SPHR - V.P. of Human Resources*

Union Hospital, Inc., is comprised of two acute care hospitals and a network of other practice locations in Terre Haute and Clinton, Indiana. With 2,300 employees, Union Hospital is the area's largest medical center with 380 staffed beds.

At Union Hospital, there is an increased employee awareness of a culture that focuses on the safety of employees and patients. The organization launched several initiatives to decrease employee injuries. As data was reviewed, it became clear that an emphasis should be placed on reducing lifting injuries for employees.

The caregiver injury phenomenon has been documented by extensive evidence-based research, with most caregiver injuries caused during the process of lifting or repositioning patients. Nationally, more than one million work days are lost each year from lifting injuries in the healthcare industry.

Current evidence indicates rising obesity rates in the patient population. According to the **Centers for Disease Control and Prevention** (CDC), 29.6% of Hoosier adults are obese. Sadly, we are no different and face the same trend here at Union Hospital. A one-day sampling study showed that 80% of patients in the Intensive Care Unit (ICU) fell in the overweight, obese and extremely obese category. Also, a one-year sampling study of hospital inpatient data from August 2007 to July 2008 provided that 71% of inpatients were in the same category.

Traditional ergonomic approaches were designed for industry and do not easily apply to healthcare. With the baby boomers coming of age, coupled with the aging nursing workforce, our organization needed to act in a proactive manner to modify our current safe lifting process.

As staff education was a priority, **phase one** of our journey began in January 2007 with the creation of the Safe Patient Handling Committee (SPHC). The SPHC completed a data analysis that was used to identify and solicit feedback from staff. Near the end of this phase, a clear recommendation was in place—our organization needed to move towards developing and implementing a comprehensive SPH Program. This included investing in overhead ceiling lifts for the new hospital expansion.

Phase two began in the fall of 2008, with the installation and purchase of overhead ceiling tracks for the ICU and select patient rooms in the medical-surgical units. Nine bariatric rooms were also fully equipped with bariatric-grade toilets, overhead H-type track and overhead ceiling lifts. We purchased 14 portable ceiling lifts as well. This is in addition to the floor-based lifts we already have in our various units.

Extensive hospital-wide staff education and training was performed. Multiple logistical issues and processes were identified and addressed, including storage, tracking, cleaning, maintenance and reallocation

Union Hospital staff participate in one of the many offered training sessions on using the lift device to properly and safely transfer a "patient" from the chair back to his respective bed. (Photo submitted by Union Hospital, Inc.)

of existing floor-base lifts to better meet the needs of patients and staff. An assessment tool was also developed and the hospital's lifting policies were updated.

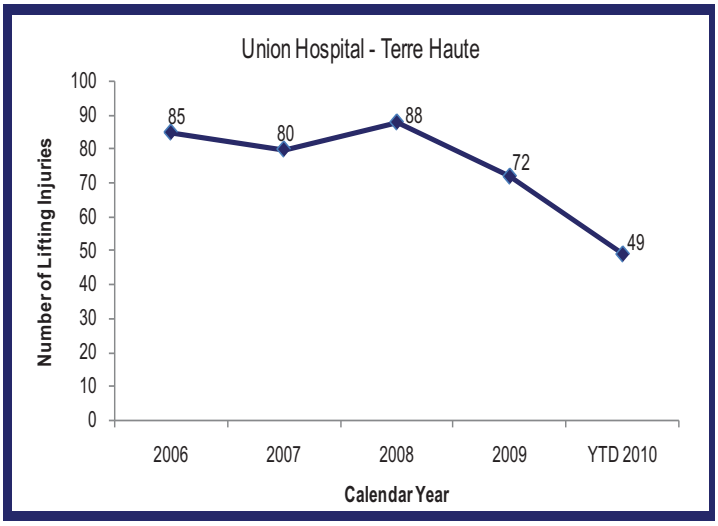
Since the start of our SPH Program in 2007, the organization has experienced a decline in lifting injuries. The most significant decline that has been noted occurred between 2008 and 2010. This is the period in which the SPH Program was implemented. With the implementation of the ceiling lifts, the lifting injuries at Union Hospital decreased from 72 incidents in 2009 to 49 in 2010 year-to-date. The average cost per lifting injury claim also declined considerably from $1,337 in 2007 to $634 in 2009.

Like any other process or program an employer implements, SPH must be sustained, evaluated and improved to best meet the ever-changing needs of the healthcare industry. The **third and current phase** of our SPH journey began in March 2010, after the move into the new hospital facility was completed. Activities included process checks, problem-solving, continuous staff education and ensuring the SPH Program sustainability through working with unit-specific peer leaders. This includes changing the leadership to a nurse peer leader, who would be onsite to champion the program.

Continuous process improvement is an essential element in sustaining and improving upon a successful SPH Program. Process improvement efforts included surveys to determine staff perception of the importance of SPH, equipment availability and ease of use. Because of survey recommendations, changes continue to be made in an effort to make utilization of the SPH equipment more easily accessible to all staff.

Other SPH improvement strategies incorporate improved staff education through formal educational opportunities and availability of knowledgeable front line staff as SPH champions. In 2010, a comprehensive SPH training component was added to the staff orientation curriculum. In addition, annual SPH retraining is required of all clinical staff. Utilization of staff-level SPH champions also provides employees a SPH resource at all times on all shifts.

Union Hospital staff train on the proper use of a ceiling-mounted lifting device, designed to help transfer a patient from his or her bed to the shower. (Photo submitted by Union Hospital, Inc.)



Union Hospital, Inc., lifting injuries between 2006 and year-to-date 2010. (Submitted graph)

Sustaining a successful SPH Program is in large part dependent upon maintaining lift equipment in good working order. Regular surveillance by the facilities maintenance department and prompt reporting of defective equipment by staff ensures that lift equipment is always available when needed.

In 2011, we continued to make progress with a 19% reduction in SPH injuries. Sustaining and further improving upon our success is an ongoing, ever-evolving process, with the ultimate goal of keeping our employees safe and healthy and having zero patient handling injuries.

Editor's Note: Union Hospital, Inc., was a recipient of a 2011 Governor's Workplace Safety Award for their efforts to eliminate and reduce employee exposure to occupational injuries and illnesses. To learn more about Union Hospital, Inc., please visit the organization's website at www.myunionhospital.org/unionhospital/.

Unfavorable Weather Conditions Put Employees at Risk

In 2010, **14 workers were killed in the United States** from incidents involving high wind speeds and gusts of wind.

High and sudden gusts of wind can create a dangerous work environment for employees working outdoors. These and other adverse weather conditions put roofers at risk for falling from rooftops, and can cause temporary structures, semi-trailers or tractors to overturn.

According to the federal Bureau of Labor Statistics, nationally in 2010, **high winds and gusts** contributed to 14 occupational-related deaths. Of these worker deaths, six workers were engaged in **transportation-related** activities and five were performing **construction-related** duties—constructing, repairing and cleaning.

It Happened Here

In October 2010, a student employee was killed while filming an athletic practice from a scissor lift. The scissor lift used by the student employee was raised more than 39 feet and toppled in excessive winds. The National Weather Service (NWS) reported wind gusts that day in excess of 50 miles per hour.

Also, in 2011 during the Indiana State Fair, two employees—a stagehand and security guard—were killed when gusts of wind in excess of 40 miles per hour caused the load-bearing roof of a concert venue to collapse. Five concert-goers were also killed in this incident.

Daily Inspections

Any personal protective equipment (PPE), machinery or outdoor structures must be inspected prior to their use. These inspections must be made by a competent person. A competent person is defined as an individual who has knowledge, training and expertise in a given area. The development of a daily safety inspection checklist may prove to be beneficial for employers to conduct these inspections. Unsafe equipment, machinery and structures should be taken out of service immediately and not used until repair. Employees should immediately report any damage to the equipment, structures and machinery to their supervisor.

Hazard Recognition Training

An important aspect of the safety and health of employees is addressing hazard recognition training needs. Through this training, employees must be able to recognize safety and health hazards associated with each job, task and worksite. Employees should be instructed to whom to report workplace safety and health hazards.

For outdoor workplaces, workers should be trained to identify potential and adverse weather conditions that are likely to affect the safety of employees. Employers must address the adverse impact that inclement weather conditions may have on job performance and identify procedures that can be used to minimize hazards resulting from these conditions. Employees should be permitted to perform work outdoors only when weather permits.

Monitoring Weather Conditions

Weather conditions must be reviewed prior to conducting work outdoors. Conditions must be reviewed while work is taking place outdoors and at regular intervals thereafter. In addition to wind, other adverse weather conditions that should be monitored include snow, sleet, lightening, hail, ice, rain and temperature for heat and cold stress.

Emergency Action Plans (EAPs)

Regardless of where work is performed—inside or outdoors, employers should develop and implement an emergency response plan. Some employers must have an Emergency Action Plan (EAP) that meets the strict criteria of OSHA standard 29 CFR 1910.38(a). The purpose of an EAP is to facilitate and organize employer and employee actions during workplace emergencies. Well-developed emergency plans and proper employee training (such that employees understand their roles and responsibilities within the plan) will result in fewer and less severe employee injuries and less structural damage to the facility during emergencies. A poorly prepared plan likely will lead to a disorganized evacuation or emergency response, resulting in confusion, injury, property damage, and, in some extreme cases, death.

EAPs should be tailored to fit the workplace. This involves taking what the employer learned from their workplace evaluation and describing how employees will respond to different types of emergencies, taking into account the facility or site's specific layout, structural features and emergency systems. Most employers find it beneficial to include a diverse group of representatives (management and employees) in this planning process.

More information about EAPs is available online by visiting www.osha.gov. An OSHA electronic training tool (eTool) for EAPs is available at www.osha.gov/SLTC/etools/evacuation/eap.html.

In 2010, the leading event of construction workplace fatalities was **falls (6)**. Most prominent among these were **falls from one story to another below**.

Falls are the leading cause of worker death in the Hoosier construction industry. Between 2006 and 2010, 31 construction industry workers in Indiana died from some type of fall—from a ladder, roof, etc. During this same time period, nearly 3,000 Hoosier construction workers suffered non-fatal injuries from falls.

Unprotected sides, wall openings, floor holes, improper scaffold construction and misuse of portable ladders are cited as the most common cause of fall-related injuries and worker fatalities in the construction industry. Identifying and correcting fall hazards is critical.

Unprotected Sides, Wall Openings and Floor Holes

In the construction industry, employers must provide adequate protection when employees are exposed to a fall hazard six feet or more above a lower level. This protection should include covering or guarding of floor holes as they are created. For existing structures, the site must be surveyed in advance of working and continually surveyed thereafter. Generally, it is preferred that employers use **fall prevention systems**, such as **guardrails**, rather than **fall protection systems** such as, **safety nets** or **fall arrest devices**.

The open-sided ends of this scaffold are not apporpriately guarded. There is no top rail to prevent workers from falling. (Photo taken by IOSHA Compliance Safety and Health Officer)

Scaffolds

Working with heavy equipment and building materials on the limited space that a **scaffold** provides can prove to be very cumbersome. Without adequate fall protection or safe access, it becomes even more hazardous for the employee. Falls from improperly constructed scaffolds can result in significant injuries and even death. Scaffolding used onsite should be erected according to the manufacturer's instructions by a competent person. To further protect the employee, guardrails should be installed along all open sides and the ends of platforms. Employees must be prohibited from climbing the scaffold's cross-bracing as a means of accessing the platform. For more information on the safe use of scaffolding, please review the OSHA eTool available online at www.osha.gov/SLTC/etools/scaffolding/index.html.

Ladders

Workers are at risk for falling when **ladders** are used improperly or in poor position. Ladders may move or slip from their supports while in use. Workers also run the risk of losing their balance while using ladders. Workers should always maintain three points of contact when using ladders—two hands and one foot or two feet and one hand. Prior to using any ladder, the worker should familiarize him or herself with the manufacturer's labels and markings. Ladders should always be inspected prior to use to ensure they are in good working order. For additional ladder safety tips, please review the OSHA Ladder Safety QuickCard available at www.osha.gov/OshDoc/data_Hurricane_Facts/portable_ladder_qc.pdf.

Occupational hazards commonly associated with falls may be reduced by providing hazard awareness training. Regular communication with employees is key. Employees must also be encouraged to report all workplace accidents and near-miss incidents for further follow-up and investigation.

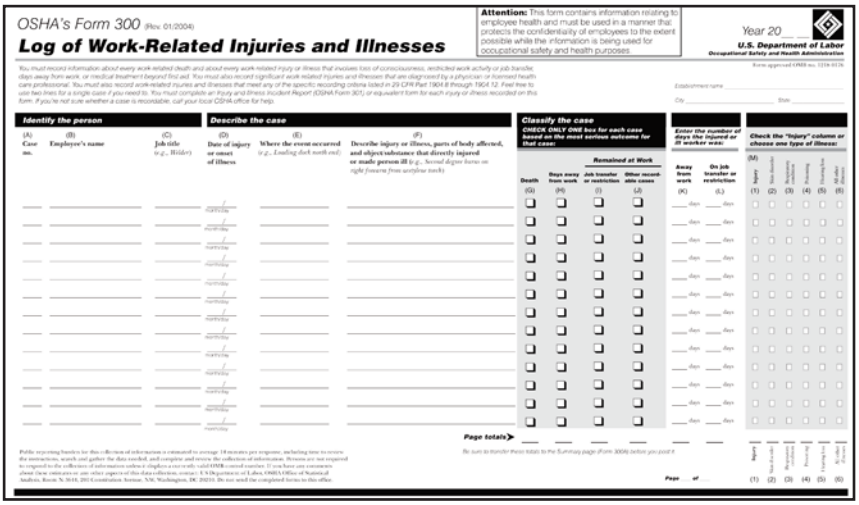
Worker Safety and Health Resources

In response to occupational hazards associated with the construction industry, federal OSHA developed v-Tools. These video tools are brief and designed to educate employers and workers on hazards. A variety of topics are available, including falls, stuck by incidents and excavation. These videos should not be considered a substitute for worker safety and health training; however, they may be used to help further educate workers on the hazards associated with particular jobs and tasks. To view these resources, visit www.osha.gov/dts/vtools/construction.html.

Nationally, **OSHA Recordkeeping** is required in more than one million establishments. Employers should use OSHA Recordkeeping as a tool to identify trends for the prevention of occupational injuries and illnesses.

I only have six employees at my company. Am I required to maintain OSHA injury and illness logs?

Employers with ten or fewer employees are exempt from maintaining OSHA injury and illness logs. The size exemption is based on the employer's peak employment during the last calendar year. If at any time during the last year, the company had 11 or more employees (including part-time and temporary workers), the company is no longer size exempt and must maintain the written logs.


OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20__

U.S. Department of Labor
Occupational Safety and Health Administration

Identify the person | Describe the case | Classify the case | Enter the number of days the injured or ill worker was: | Check the "Injury" column or choose one type of illness:

If I have no recordable OSHA injuries for the year, do I still need to post the OSHA 300-A?

Yes. After the end of the year, employers must review the log to verify its accuracy, summarize the 300 Log information on the 300-A summary form, and certify the summary (a company executive must sign the certification). This information must then be posted for three months, from February 1 to April 30.

If an employee is injured in a car incident while working, is the injury recordable?

If an employee is injured in a motor vehicle accident going to or leaving work at the beginning or end of his or her shift or while running a personal errand, the incident is not work-related. However, if the employee is involved in a car incident while doing work, the case is work-related and recordable.

Am I required to post my company's OSHA 300 Log at the end of the calendar year?

OSHA 300 Logs are not required to be posted; however, employers are required to post the OSHA injury and illness summaries (OSHA 300A) for the preceding year from February 1 to April 30.

Is the day of the worker injury counted when calculating lost work time cases?

Employers should not count the day the injury occurs as a day away, job restriction or transfer.

I am a safety officer for a company that manufacturers automotive components. From time to time, we utilize temporary employees to ensure timely customer order fulfillment. If a temporary employee is injured, who is responsible for recording the injury—my company or the temporary service?

Generally speaking, the host employer must record the recordable injuries and illnesses of employees not on its payroll if it supervises them on a day-to-day basis. Day-to-day supervision occurs when "in addition to specifying the output, product or result to be accomplished by the person's work, the employer supervises the details, means, methods and processes by which the work is to be accomplished." When calculating total work hours by employees, temporary worker time should also be included. The temporary service would record the injury if the service also provided an onsite temporary service supervisor.

Employer OSHA Recordkeeping Resources

An OSHA Recordkeeping Fact Sheet is available online by visiting www.osha.gov/recordkeeping/index.html and clicking the appropriate link. Employers may also participate in a self-paced online training tutorial to better familiarize themselves with the OSHA Recordkeeping requirements. The online training tutorial is available at www.osha.gov/recordkeeping/tutorial.html.

Editor's Note: *Ask Our Expert* is a regular feature of the Indiana Department of Labor's bi-monthly electronic newsletter service, *INdiana Labor Insider*. To receive this newsletter, please email INSafe at insafe@dol.in.gov.

Real Hazards, Real Workplaces: Identify the Hazard(s)

Can you identify the **hazard(s) in the pictures below**? Photos used on this page are of real hazards found in real Indiana workplaces.

Picture 1: This table saw, used in the woodworking industry, does not have the upper portion of the saw blade guarded. 1910.213(c). **Picture 2:** The electrical junction box pictured, observed near the bottom of a conveyor belt, and has the junction box bushing missing, allowing contact with the electrical wires. 1910.305(b)(1). **Picture 3:** The plastic wrapping machine does not have the feed rollers guarded to prevent the employee's hand from being caught in the in-going nip point. 29 CFR 1910.212(a)(1). **Picture 4:** The sheer is not adequately guarded to prevent worker injury. 29 CFR 1910.212(a)(3)(ii). **Picture 5:** This sink does not meet the requirements of an eye wash station. 1910.151(c). **Picture 6:** This saw used to cut limestone is not properly guarded, and the slings are in bad repair. 29 CFR 1910.212(a)(1) and 1910.1847(d).

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Integrity, Responsibility and Transparency
Reduce Occupational Injuries and Fatalities
Prepare the Agency's Workforce
Customer Driven Service
Indiana Department of Labor

IN Review is an annual publication of the Indiana Department of Labor's INSafe onsite OSHA consultation division. For this report, the Indiana Department of Labor used the Census of Fatal Occupational Injuries (CFOI) and Survey of Occupational Injuries and Illnesses (SOII) research files provided by the Bureau of Labor Statistics (BLS) for calendar year 2010. BLS 2011 CFOI data will be released in August 2012. BLS 2011 SOII data will be released in October 2012. Because of confidentiality restrictions, individual case information from the CFOI data cannot be reported. Information for the cases described in this report was obtained solely from the Indiana Department of Labor field investigations.

Indiana Non-fatal Occupational Injury and Illness Rates

Incidence rates[1] of non-fatal occupational injuries and illnesses by sector and selected case types, 2008 - 2010

Industry Sector	Total Recordable Cases			Cases with Days Away from Work, Job Transfer or Restriction									Other Recordable Cases		
				Total			Cases with Days Away from Work[6]			Cases with Job Transfer or Restriction					
	2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010
All Industries including State and Local Government	4.9	4.3	4.3	2.3	2.0	2.0	1.1	1.0	1.0	1.2	1.0	1.1	2.6	2.3	2.2
Private Industry[3]	4.7	4.2	4.1	2.3	2.0	2.1	1.1	0.9	1.0	1.2	1.1	1.1	2.4	2.2	2.1
Goods Producing[3]	5.6	4.7	5.0	2.7	2.2	2.4	1.2	1.0	1.1	1.6	1.3	1.4	2.8	2.4	2.5
Natural Resources and Mining[3, 4]	5.8	3.0	5.5	3.2	1.9	3.0	1.6	1.3	2.1	1.6	0.6	0.9	2.6	1.1	2.5
Agriculture, Forestry, Fishing and Hunting[3]	7.6	2.8	7.2	3.9	1.5	3.7	1.4	0.7	2.6	2.5	0.8	--	3.7	1.3	3.6
Mining	3.8	3.3	3.3	2.4	2.4	2.1	1.9	2.0	1.6	0.6	0.4	0.6	1.3	0.9	1.2
Construction	4.6	4.6	3.8	2.6	2.1	1.9	1.8	1.5	1.4	0.8	0.7	0.5	2.1	2.5	1.9
Manufacturing	5.8	4.7	5.2	2.8	2.3	2.6	1.0	0.9	1.0	1.8	1.4	1.6	3.0	2.4	2.7
Service Providing	4.3	3.9	3.8	2.1	1.9	1.9	1.0	0.9	0.9	1.1	1.0	1.0	2.2	2.1	1.9
Trade, Transportation and Utilities[5]	4.8	4.1	4.0	2.7	2.3	2.4	1.3	1.1	1.2	1.3	1.2	1.3	2.1	1.8	1.6
Wholesale Trade	4.6	3.5	3.7	2.4	2.0	2.2	1.2	1.0	1.1	1.2	1.0	1.1	2.2	1.5	1.5
Retail Trade	4.9	4.3	3.9	2.4	2.1	2.1	1.0	1.0	0.9	1.4	1.1	1.2	2.5	2.1	1.8
Transportation and Warehousing	5.0	4.5	4.9	3.6	3.2	3.6	2.2	1.7	1.8	1.4	1.5	1.8	1.4	1.3	1.3
Utilities	3.3	2.6	3.3	1.8	1.5	2.0	0.7	0.8	1.1	1.0	0.7	0.8	1.5	1.1	1.3
Information	3.3	2.9	3.6	1.5	1.2	1.7	0.8	0.5	0.7	0.8	0.7	0.9	1.8	1.7	1.9
Financial Activities	1.5	1.9	1.6	0.7	0.6	0.7	0.5	0.3	0.3	--	0.2	0.4	0.8	1.3	0.8
Professional and Business Services	2.4	1.6	1.8	1.2	0.8	0.9	0.7	0.5	0.6	0.5	0.3	0.3	1.2	0.8	1.0
Educational and Health Services	6.0	6.1	5.5	2.7	2.6	2.7	1.1	1.0	1.2	1.6	1.6	1.5	3.2	3.4	2.8
Educational Services	2.4	2.8	2.3	0.9	1.1	1.0	0.6	0.6	0.5	0.3	0.4	0.5	1.5	1.7	1.4
Healthcare and Social Assistance	6.4	6.5	5.9	2.9	2.8	2.9	1.2	1.1	1.2	1.8	1.8	1.7	3.5	3.6	3.0
Leisure and Hospitality	4.5	4.2	4.1	1.5	1.5	1.7	0.7	0.8	0.9	0.7	0.7	0.8	3.0	2.7	2.4
Other Services Except Public Administration	4.6	3.3	3.5	2.1	1.8	1.2	1.3	1.5	0.8	0.8	0.3	0.4	2.5	1.5	2.3
State and Local Government	5.7	5.0	5.1	2.1	2.0	1.8	1.2	1.2	1.1	0.9	0.8	0.8	3.7	3.1	3.3
State Government	3.6	3.0	3.1	1.6	1.2	1.4	1.1	0.9	0.7	0.5	0.4	0.6	2.0	1.7	1.7
Local Government	6.5	5.9	5.8	2.2	2.3	2.0	1.2	1.4	1.2	1.0	0.9	0.8	4.2	3.6	3.8

[1]Incidence rates represent the number of injuries and illnesses per 100 full-time workers and were calculated as: (N/EH) X 200,000 where

N = number of injuries and illnesses

EH = total hours worked by all employees during the calendar year

200,000 = base for 100 equivalent full-time workers (working 40 hours per week, 50 weeks per year)

[2]North American Industry Classification System, 2007 Edition.

[3]Excludes farms with fewer than 11 employees.

[4]Data for mining (Sector 21 in the North American Industry Classification System 2007 Edition) includes establishments not governed by the Mine Safety and Health Administration (MSHA) rule and reporting, such as those in oil and gas extraction and related support activities. Data for mining operators in coal, metal and non-metal mining are provided to the Bureau of Labor Statistics (BLS) by MSHA, United States Department of Labor. Independent mining contractors are excluded from the coal, metal and non-metal mining industries. These data do not reflect the changes the Occupational Safety and Health Administration (OSHA) made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable to estimates in other industries.

[5]Data for employers in railroad transportation are provided to the BLS by the Federal Railroad Administration, United States Department of Transportation.

[6]Days away from work cases include those that result in days away from work with or without restricted work activity.

[7]Data too small to be displayed.

NOTE: Because of rounding, components may not add to totals. Dash indicates data do not meet publication guidelines.

SOURCE: Bureau of Labor Statistics, United States Department of Labor, Survey of Occupational Injuries and Illnesses (SOII), in cooperation with participating State agencies.

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