IN Review
INDIANA OCCUPATIONAL SAFETY AND HEALTH
AN ANNUAL PUBLICATION OF THE INDIANA DEPARTMENT OF LABOR
2020
Fresh Perspective on Safety & Health
Commissioner’s Welcome

The Indiana Department of Labor (IDOL) is proud to present the 2020 edition of its annual publication, IN Review.

Per the theme for the 2020 edition of our publication, we encourage all Hoosiers, including those making big workplace decisions and the frontline employees living the job everyday, to take a step back this year and look at your workplace differently. A new perspective provides the perfect opportunity to reassess and improve safety and health systems. A fresh set of eyes, or someone looking from the outside-in, may be just what you need to find new and innovative ways to reduce workplace injuries and accidents.

The IDOL continues to emphasize the importance of communication as a necessary element to a successful safety and health program. An open dialog between employees and management fosters a culture of safety by demonstrating that safety and health are everyone’s concern. This helps employers achieve buy-in for safety and health programs at all levels. When everyone is focused on safety, companies can make huge strides in the quick identification and elimination of potential hazards.

Please use the information and articles in this edition of IN Review to help guide and enhance your own worker safety and health programs.

The IDOL is pleased to announce that the 2018 nonfatal occupational injury and illness rate dropped to a new historic low of 3.3 per 100 full-time workers. Since 1992, this rate has declined by an impressive 71 percent. However, even just one injury is too many, and there is still a great deal of work to be done.

If you have any questions concerning this publication or its data, we encourage you to contact our free workplace safety and health consultation program, INSafe, by email at insafe@dol.in.gov or by calling (317) 232-2688.

Thank you for your focus on the safety and health of Hoosier workers,

Rick J. Ruble
Commissioner of the Indiana Department of Labor

Hoosier Occupational Safety and Health

The data used to compile this edition of IN Review were provided by the federal Bureau of Labor Statistics’ Survey of Occupational Injuries and Illnesses (SOII) and the Census of Fatal Occupational Injuries (CFOI). Case-specific information and other data were obtained from the Indiana Occupational Safety and Health Administration’s (IOSHA) case files and OSHA Express data reports.

The overall Indiana nonfatal occupational injury and illness rate for 2018 was 3.3 per 100 workers. This means that an estimated 3.3 of every 100 full-time workers in Indiana experienced a work-related injury severe enough to require medical treatment beyond first aid in 2018.

The 2018 rate marks the lowest rate in Indiana since the inception of the SOII program in 1992, and 71% reduction from a high of 11.3 in 1994. In 2018, 12 of the 21 major industries in Indiana experienced a decrease in work-related injuries and illnesses.
Some of Indiana’s industries experienced reductions in their respective injury and illness rates for 2018, including:

**32% DROP** in Agriculture, Forestry, Fishing, and Hunting

**24% DROP** in Accommodation and Food Services

While the state’s overall nonfatal occupational injury and illness rate fell to a historic low of 3.3 nonfatal injuries and illnesses per 100 full-time workers in 2018, some Hoosier industries experienced a higher rate.

Indiana industries reporting the highest nonfatal injury and illness rates in 2018 included:
- Arts, Entertainment, and Recreation 5.7
- Healthcare and Social Assistance 4.7
- Transportation and Warehousing 4.4

The Bureau of Labor Statistics estimates that Hoosiers suffered approximately 81,100 nonfatal occupational injuries and illnesses in 2018. 18,200 (22%) of these injuries resulted in one or more days away from work, and an additional 23,600 (29%) cases resulted in days with job transfer or restriction.

Indiana industries with the highest number of nonfatal injuries and illnesses in 2018 included:
- Manufacturing 21,800
- Healthcare and Social Assistance 14,500
- State and Local Government 11,200

In 2018, Hoosier workplaces reported 173 worker fatalities. This represents a twenty-one-year high for the State of Indiana. Indiana industries with the highest number of work-related fatalities in 2018 included:
- Construction 31
- Agriculture, Forestry, Fishing, and Hunting 30
- Transportation and Warehousing 27

In Indiana in 2018, the leading causes of Hoosier workplace fatalities included:
- Transportation-related incidents 78
- Contact with objects and equipment 32
- Falls, slips, and trips 23

Some of Indiana’s industries experienced reductions in their respective injury and illness rates for 2018, including:
Manufacturing

The 2018 nonfatal workplace injury and illness rate for the Hoosier manufacturing industry again decreased to match the 2016 historic low of 4.1 injuries and illnesses per 100 workers. This is a slight decrease from the 2017 rate of 4.2, but it represents a 68% reduction over 20 years from the 1998 rate of 13.0.

Indiana’s manufacturing industry is comprised of a variety of industrial facilities including steel mills; automobile, food, chemical, and wood product manufacturers; foundries, and many others. The industry employs more Hoosier workers than any other industry in the state.

In 2018, approximately 20 percent (4,400) of the estimated 21,800 nonfatal injuries and illnesses suffered by Hoosier workers in manufacturing were severe enough to require at least one day away from work to recover. The median number of days away from work in 2017 were most often male (73%), white of eight. Employees who suffered from injuries resulting in work to recover. The median number of missed workdays required the injured or ill worker to miss at least one day of work in 2017 were suffered by men (57%). More than half of the sector’s injuries and illnesses requiring days away from work in 2017 were suffered by men (57%).

The most common events or exposures resulting in a work-related injury with days away from work in the manufacturing industry in 2018 included overexertion and bodily reaction (35%); contact with objects or equipment (32%); and falls, slips, and trips (25%). Common nature injuries included sprains, strains, and, and, tears (28%); fractures (15%); and cuts, lacerations, and punctures (11%).

Transportation equipment manufacturing (5.5), wood product manufacturing (5.4), and food manufacturing (4.4) were the top three manufacturing sub-industries in Indiana with high nonfatal workplace injury and illness rates.

According to the Bureau of Labor Statistics’ (BLS) Census of Fatal Occupational Injuries (CFOI), there were 15 Hoosier manufacturing industry worker fatalities in 2018. This represents an increase of six worker deaths from the 2017 manufacturing industry worker fatalities in 2018. This continues a gradual decrease that began in 2015. For the second consecutive year, the state and local government rate has set a state historic low for the industry.

Public sector workers suffered an estimated 11,200 occupational injuries or illnesses in 2018, 7% fewer than in 2017. Work groups in the state and local government sector were sprains, strains, and tears (34%) and soreness and pain (22%).

In 2018, falls, slips, and trips (29%) accounted for the most nonfatal injuries and illnesses for state and local government workers. Overexertion and bodily reaction (27%) and violence and other injuries by persons or animals (22%) were second and third respectively.

There were five occupational fatalities in this sector in 2018. Two of the five fatalities were attributed to transportation-related events. Two fatal injuries were due to violence and other injuries by persons or animals; falls, slips and trips; and one was due to exposure to harmful substances or environments.

State and Local Government

The State and Local Government industry is a very broad category comprised of sub-industries that include police officers; firefighters; teachers, city, county, and municipal workers; and elected officials. Some public sector occupations, such as healthcare workers at state-run hospitals, overlap private industry duties. In Indiana, the Indiana Occupational Safety and Health Administration (IOSHA) maintains jurisdiction over both private and public sector workplaces. Because of this, state and local government employees are protected by the same occupational safety and health standards, rules, and directives as private sector workers.

In 2018, the nonfatal injury and illness rate for state and local government workers decreased from 4.2 injuries or illnesses per 100 workers in 2017 to 3.9. This continues a gradual decrease that began in 2015. For the second consecutive year, the state and local government rate has set a state historic low for the industry.

Public sector workers suffered an estimated 11,200 occupational injuries or illnesses in 2018, 7% fewer than in 2017. Work groups in the state and local government sector with high worker injury and illness rates in 2017 included overexertion and bodily reaction (35%); and soreness and pain (22%).

In 2018, falls, slips, and trips (29%) accounted for the most nonfatal injuries and illnesses for state and local government workers. Overexertion and bodily reaction (27%) and violence and other injuries by persons or animals (22%) were second and third respectively.

There were five occupational fatalities in this sector in 2018. Two of the five fatalities were attributed to transportation-related events. Two fatal injuries were due to violence and other injuries by persons or animals; falls, slips and trips; and one was due to exposure to harmful substances or environments.
The Bureau of Labor Statistics estimates that nearly four (3.4) of every 100 workers in the Hoosier agriculture, forestry, fishing, and hunting industry experienced an estimated 14,500 work-related injuries in the Hoosier agriculture, forestry, fishing, and hunting industry in 2018. This represents a 32% decrease from the 2017 rate of 5.3 nonfatal injuries or illnesses per 100 workers.

The animal production and aquaculture subindustry rate was 4.3, a 25% reduction from the 2018 rate of 5.7. Approximately 300 injuries were incurred in animal production and aquaculture, with 11 fatalities occurring in animal production and aquaculture.

Across the entire agriculture, forestry, fishing and hunting industry, approximately half of the 400 nonfatal work-related injuries resulted in days away from work and 100 resulting in days of job transfer or restriction. The median number of days away from work for work-related injury or illness in 2018 was 28 in 2017 to 30 in 2018. Transportation incidents alone accounted for 50% (15) of these fatalities. Sixteen (16) of the 30 total fatalities in agriculture, forestry, fishing, and hunting were attributed to the crop production segment, with 11 fatalities occurring in animal production and aquaculture.

The most common event or exposure resulting in an injury with days away from work in the agriculture, forestry, fishing, and hunting industry in 2018 was falls, slips, and trips (33%). Soreness and pain was the most common nature of injuries with 60 injuries. The second most common nature was sprains, strains and tears with 40 injuries.

Despite the decrease in the nonfatal injury and illness rate for agriculture, forestry, fishing, and hunting workers, the number of workplace fatalities increased by 7% from 28 in 2017 to 30 in 2018. Transportation incidents alone accounted for 50% (15) of these fatalities. Sixteen (16) of the 30 total fatalities in agriculture, forestry, fishing, and hunting were attributed to the crop production segment, with 11 fatalities occurring in animal production and aquaculture.

The median number of days away from work for an injured worker in the industry in 2018 was 14—twelve days longer than the 2017 median of two (2).

The most common natures of injuries suffered by Hoosier agriculture and social assistance workers in 2018 included sprains, strains, and tears (34%); soreness and pain (24%); bruises and contusions (10%). The most frequent sources of injuries were most often identified as the following: persons other than the injured worker (42%); floors, walkways, and ground surfaces (19%); and persons, injured or ill worker (10%).

According to the Bureau of Labor Statistics (BLS) CFOI report, there were three (3) work-related fatalities in 2018 in the Hoosier healthcare and social assistance industry. Two of these fatalities were attributed to transportation incidents. Additional information about the third fatality in this industry is unavailable.
The 2018 nonfatal occupational injury and illness rate for the Indiana transportation and warehousing industry was 4.4 per 100 workers. This represents a 5% increase from 2017 and a 29% increase from the historic low of 3.4 in 2016. Sub-industries within the transportation and warehousing industry with high nonfatal worker injury and illness rates in 2018 included couriers and messengers (7.0), warehousing and storage (4.5), and truck transportation (4.3).

In 2018, workers in the transportation and warehousing industry suffered an estimated 6,000 nonfatal injuries and illnesses; 2,100 of these injuries were severe enough to require at least one day away from work for the worker to recover, while 2,200 resulted in job transfer or working restrictions. The median number of days away from work to recover, while 2,200 resulted in job transfer or working restrictions (36%); overexertion and bodily reaction (29%); and contact with objects and equipment (19%).

Injuries resulting in days away from work suffered by workers in the transportation and warehousing industry in Indiana in 2018 were most often sprains, strains, and tears (36%) and fractures (14%). With 27 fatalities, Indiana’s transportation and warehousing industry experienced the third-highest number of fatal occupational injuries in 2018. The truck transportation subindustry experienced 20 of these fatal injuries, with 13 falling under the general freight trucking, long distance.

Employees who suffered injuries resulting in days away from work in the transportation and warehousing industry were most often men (74%), white (29%), and between the ages of 45-54 (29%). The most common events or exposures resulting in injuries in the transportation and warehousing industry in 2018 were falls, slips, and trips (36%); overexertion and bodily reaction (29%); and contact with objects and equipment (19%).

Injuries resulting in days away from work suffered by workers in the transportation and warehousing industry experienced the third-highest number of fatal occupational injuries in 2018. The truck transportation subindustry experienced 20 of these fatal injuries, with 13 falling under the general freight trucking, long distance.

The retail trade industry is a major provider of goods and services, as well as large source of employment for Hoosiers. Establishments in this industry include clothing, grocery, and convenience stores; automobile dealerships; home supply centers; and many others.

The 2018 nonfatal injury and illness rate for the retail industry is 3.0 injuries or illnesses per 100 full-time workers, the lowest in state history. The Indiana retail trade industry rate was 1% lower than the U.S. industry rate of 3.1.

Sub-industries within the Hoosier retail trade industry with workplace injury and illness rates above the overall industry average included building material and garden equipment and supplies dealers (5.1); nonstore retailers (3.4) and furniture and home furnishings stores (2.6).

Workers in the retail trade industry are subject to a wide variety of workplace safety and health hazards including contact with the public, working long or irregular hours, and ergonomic-related stressors from repetitive motion injuries which may be caused by excessive lifting and bending, extended reaching, and working on stepstools and ladders. Large scale retail sales events such as “Back-to-School” and “Black Friday,” as well as new or exclusive product launches, can also contribute worker injuries with increased shopper volumes. The sources for the majority of the injuries were most often floors, walkways, and ground surfaces (18%), containers (16%) and vehicles (12%). The retail trade industry experienced 14 workplace fatalities in 2018, an increase from 10 in 2017. Violence and other injuries by persons and animals (3) was the leading cause of fatal occupational injury for workers in the retail trade industry. Transportation-related incidents (3); falls, slips and trips (3) and contact with objects and equipment (3) caused the other recorded fatalities.

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Accommodation and Food Services

Accommodation and food services is a subindustry of the much larger leisure and hospitality industry. Hoosiers in this industry work in places such as hotels, restaurants, and vacation camps. These workers provide visitors with lodging and food and beverage services and are critical to providing the “Hoosier hospitality” that Indiana is known for delivering. In 2018, accommodation and food service industry workers suffered an estimated 2,700 work-related injuries and illnesses that required treatment beyond first aid, and an additional 1,300 that resulted in days away from work, working restrictions, or job transfers. The 2018 nonfatal occupational injury and illness rate for the Hoosier accommodation and food services industry was 2.5 and represents a 24% decrease from the 2017 rate of 3.3.

The median number of days away from work was six (6) in 2018—one day higher than the median of five (5) in 2017. Injured or ill workers in this industry most often suffered from sprains, strains, and tears (22%); and heat (thermal) burns (16%). These injuries were most often attributed to falls, slips, and trips (34%); contact with objects and equipment (24%); and exposure to harmful substances or environments (17%).

Accommodation and food service workers who suffered injuries and illnesses resulting in days away from work were most often female (61%), white (47%), and between the ages of 45 and 54 (28%).

In 2018, eight workers were killed in the Hoosier accommodation and food services subindustry. According to the Bureau of Labor Statistics (BLS) CFOI, five (63%) of the eight work-related deaths were attributed to violence and other injuries by persons or animals. Other fatal events included a transportation incident and an exposure to harmful substances or environments.

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment</th>
<th>U.S.</th>
<th>IN</th>
<th>Number of Injuries and Illnesses</th>
<th>Number of Fatalities</th>
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<tr>
<td>2011</td>
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Arts, Entertainment, and Recreation

The arts, entertainment, and recreation subindustry is a part of the much larger leisure and hospitality industry. This subindustry includes a wide range of establishments that operate facilities or provide services to meet the varied interests of their respective customers. The subindustry also includes spectator sports, amusement parks, gambling venues, live performances and events, exhibits (cultural or educational), and recreation or leisure time activities.

The 2018 nonfatal occupational injury and illness rate for the Indiana arts, entertainment, and recreation subindustry was 5.7 per 100 workers. This reflects an increase from 5.0 in 2017 (14%). Workplace safety and health hazards in this subindustry include noise, player-to-player contact during sporting events, cleaning agents, falls from heights as well as slips and trips from ground-level placed objects, contact with objects and equipment, and workplace violence.

In raw numbers, workers in the arts, entertainment, and recreation subindustry suffered approximately 1,600 nonfatal workplace injuries and illnesses. Two hundred (200) of these injuries were severe enough to require at least one day away from work for the worker to recover.

The median number of days away from work the subindustry in 2018 was three (3)—two days less than the 2017 median of five (5) days. Workers in this industry who suffered from nonfatal occupational injuries were most often male (58%) and white (58%), with workers over 65 experiencing the highest percentage of the injuries (32%).

In 2018, the most common event or exposure resulting in an injury with days away from work for workers in the industry was falls, slips and trips (58%), followed by contact with objects and equipment (16%). These injuries were most often sprains, strains, and tears (21%), fractures (21%) or soreness and pain (21%).

According to the Bureau of Labor Statistics (BLS) 2018 CFOI report, there were three work-related deaths suffered by workers in the arts, entertainment, and recreation subindustry in 2018. This is a 200% increase from three industry fatalities in 2017.

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<thead>
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<th>Year</th>
<th>Employment</th>
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<th>Number of Fatalities</th>
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There are currently five active underground coal mines and 26 surface mines in Indiana. While the data for the mining, quarrying, and oil and gas extraction industry includes all Hoosier mining activities—surface and underground, the Indiana Department of Labor’s Bureau of Mines and Mine Safety only has jurisdiction over the underground coal mining operations and activities in the state. The coal mining subindustry nonfatal injury and illness rate was 2.5 injuries or illnesses per 100 full-time workers—four percent above the overall state mining, quarrying, and oil and gas extraction industry rate. The Indiana Bureau of Mines and Mine Safety, located in Vincennes, Indiana, works very closely with mine management, labor, and the federal Mine Safety and Health Administration (MSHA). The Indiana Bureau of Mines conducts an inspection of each underground coal mine at least once per quarter. These inspections are conducted by the assistant commissioner of the Bureau of Mines or the chief mine inspector, both individuals are certified mine foremen. All safety and health violations identified are required to be corrected immediately. In addition to this inspection, MSHA inspectors conduct frequent enforcement inspections of the mines as well. The mining industry experienced two work-related fatalities in 2018, one of which resulted from a transportation incident. The second fatality is not available.

Workers in the construction industry perform a number of varied duties and, therefore, are exposed to many occupational hazards including falls from elevated workplaces, working with machinery and chemicals, electrical shock, and motor vehicle traffic on the roadways. Carpenters, painters, pipe layers, masons, heavy equipment operators, estimators, and engineers are a few of the job categories found within the construction industry. The 2018 nonfatal occupational injury and illness rate for the construction industry remained unchanged from the 2017 rate of 2.6 per 100 full-time workers. The subindustry within the construction industry with the highest nonfatal worker injury and illness rate in 2018 was construction of buildings (4.0). The rate for heavy and civil highway construction was 3.1 and the rate for specialty trade contractors was 2.1. In 2018, Hoosier construction workers experienced approximately 1,300 injuries severe enough to require at least one day away from work for the worker to rehabilitate. The median number of days away from work in the construction industry in 2018 was three (3)—a twenty-six day decrease from the 2017 median of 29 days. The construction of buildings subindustry experienced the highest number of injuries resulting in days away from work (8,000). Employees who suffered injuries resulting in days away from work were mostly male (99%), white (62%), and between the ages of 45 and 54 (27%). Common events or exposures resulting in an injury with days away from work in the construction industry in 2018 included falls, slips, and trips (35%), contact with objects or equipment (31%) and overexertion and bodily reaction (29%). Frequent natures of injuries in the industry in 2018 were sprains strains and tears (39%), soreness and pain (27%) and fractures (13%). In 2018, there were 31 workplace deaths in the Hoosier construction industry, the highest of any industry. According to the Bureau of Labor Statistics (BLS) CFOI, 11 (35%) of the 2018 fatalities in the Hoosier construction industry were due to falls, slips or trips, nine (29%) were due to transportation incidents and six (19%) were caused by contact with objects or equipment.
thousands of years, human society has mined and used the mineral of lead. Lead is a heavy metal used in many products in industry and construction such as paints, solders, electrical fittings, and metal alloys. One unfortunate effect of the use of this versatile metal is lead toxicity. High lead levels have been discovered in the bones of ancient people. Lead toxicity was very common in shipbuilding and from daily exposures during cooking, as many eating utensils and water pipes were originally contained lead. Lead based paints, while banned in residential applications, are still used to coat bridges, railways, and ships because of their rust and corrosion-resistant properties. Operations such as welding, demolition and repair of structures, battery manufacturing, primary and secondary lead smelting can generate lead dust and fumes.

Health Effects
Lead exposure in both general industry and construction continues to pose serious adverse health risks to employees. Lead most often enters the body through inhalation or ingestion by breathing, eating, or drinking in contaminated areas. Once an individual is exposed to lead, it is stored in the bones, blood, and organs. It affects the brain and nervous systems, reproductive capabilities, kidneys, digestive system, and the ability to produce blood.

Symptoms of lead toxicity include:
- Fatigue
- Headache
- Irritability
- Metallic taste in mouth
- Poor appetite
- Reproductive problems
- Sleeplessness
- Upset stomach

Evaluating Exposure
The Occupational Safety and Health Administration (OSHA) developed regulations 1910.1025 for general industry and 1926.62 for construction which address lead detection methods, safe handling procedures, medical evaluation, and training requirements. The OSHA standards enact an action level for lead of 30 micrograms per cubic meter (µg/m3), above which the employer is required to fulfill certain requirements of the standard such as exposure monitoring, medical surveillance and training. The permissible exposure limit (PEL) for lead is 50 µg/m3. An employer that has an occupational exposure to lead is required to conduct air monitoring to determine the employee’s 8-hour time-weighted average (TWA). If initial monitoring reveals lead levels above the action level but below the PEL, the employer would be required to repeat monitoring every six months, if lead is detected above the PEL, the employer would be required to repeat monitoring every three months. A personal air sampling pump is used to conduct full shift air monitoring. An employer may also use lead wipes to collect samples of surface lead. Additionally, employees exposed to lead may need to have their blood lead levels evaluated. OSHA’s exposure level for lead in blood is 50 micrograms per deciliter (µg/dl), above which the employee must be removed from tasks which have a lead exposure.

Exposure Control
The OSHA hierarchy of controls are:
- Elimination - Removal of hazard
- Substitution - Alternative to hazard
- Engineering controls - Separating individuals from hazard
- Administrative controls - Changing workflow and/or procedure
- Personal protective equipment (PPE) - Protection of the worker with PPE

Elimination or substitution is the most protective method although it is not always practical. Engineering controls include isolating the exposure source or using other engineering methods, such as local exhaust ventilation, to minimize exposure to lead. Administrative controls involve actions such as limiting the amount of time a worker performs work involving exposure to lead. When exposure to lead hazards cannot be engineered completely out of operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient protection, personal protective equipment is used. PPE includes wearing the proper respiratory protection and clothing. When respirators are used, the employer would be required to develop and implement an effective respiratory protection program meeting the requirements of 1910.134, respiratory protection.

Good housekeeping practices to prevent surface contamination and hygiene facilities to protect workers from ingesting and taking home lead are also necessary to prevent exposure to lead. Break rooms where employees may bring lead dust into the area may need more attention to ensure that surface lead is being removed. Good personal hygiene practices, such as washing one’s hands before eating and taking a shower before leaving the worksite, are essential in keeping employee exposure to a minimum.
American National Standards Institute (ANSI) standards saw an important update in late 2018, specifically regarding ANSI A92 and aerial lifts. Aerial lifts are defined as “vehicle-mounted rotating and elevating work platforms, elevating aerial platforms, boom supported elevated aerial platforms, and a series of equipment related to the aerial platform and access industry.” The new standards, designed to enhance workplace safety wherever aerial lifts are used, aim to migrate North American equipment standards closer to international standards. The ANSI update affects employers, owners, supervisors, and operators, and went into effect in December 2019. Below is a brief overview of the changes. The updated standards place a greater responsibility on the equipment owner/user, regardless of whether they’re a large maintenance operation or a small business renting a scissor lift.

**Classifications of Equipment**

Aerial work platforms (AWPs) are now called mobile elevating work platforms (MEWPs.) Equipment classifications have been updated for scissor lifts, boom lifts, stock pickers, etc., under the new classification: Occupants.

**ANSI A92.22: Safe Use**

All MEWP users, including both full-time owners and companies who occasionally rent aerial equipment, must develop a risk assessment and site safety plan. The plan must be documented and shared with everyone on the worksite and/or industrial setting.

**ANSI A92.24: Training**

Documented training remains mandatory for aerial equipment operators, and the new standards require training for occupants and supervisors. Rescue planning has been emphasized under the new ANSI standards. The rescue plan must be written, added to the company's training manual, and shared with all workers on the job site. It should be integrated into training for all new and existing employees. Anyone working in or around the MEWP must receive training on how to respond if someone falls from the equipment.

**Aerial Lift Safety Reminders**

It is the employer’s responsibility to ensure that all workers on and off the equipment have had proper training for their roles in using or working around aerial lifts. This training must be documented for the company’s records. Always follow manufacturer's operation and maintenance instructions. Never adapt or change the equipment unless approved by the manufacturer. Never move the equipment with workers in an elevated platform unless permitted by the manufacturer.

Safety devices are in place for an important reason. Never override hydraulic, mechanical, or electrical safety devices. Set the brakes and use wheel chocks when on an incline. Outriggers should be used if they are provided.

Use a body harness or restraining belt with a lanyard attached to the boom or basket to prevent workers from being ejected or pulled from the basket. Do not exceed load limits of the equipment; always allow for the combined weight of the worker(s), tools, and materials.

Do not allow workers to position themselves between overhead hazards, such as joists and beams, and the rails of the basket as movement of the lift could crush the workers. Always maintain a minimum clearance of at least 10 feet (3 meters) away from energized overhead lines. Treat any and all powerlines, wires, and other conductors as energized, even if they appear to be insulated.

For more information about the ANSI standards, please visit www.ansi.org.

**Need More Help?**

While this article provides some technical insight to safety and health hazards surrounding aerial lift ANSI updates and some basics regarding safety, readers may have many questions about specifics. If you have questions and would like additional assistance in the subject of aerial lifts and ANSI standards, please contact the INSafe division, a consultation and education program within the state of Indiana. INSafe's consultants can provide on-site audits of your safety program as needed, at no cost to the employer. You may contact insafe by phone at (317) 232-2688 or by email at insafe@dol.in.gov. To request an on-site consultation, please go to www.in.gov/dol/insafeconsultation.

CONTRIBUTOR
Harold Davidson
INSafe Safety Consultant
The #2 most common general industry citation issued by the Indiana Occupational Safety and Health Administration (IOSHA) was 1910.147, control of hazardous energy, with 119 citations and $493,300 in initial penalties. Hazardous energy control, more commonly known as lockout/tagout, is perpetually one of the most frequently cited standard at Hoosier worksites who fail to utilize machine guarding, red-tag systems, and other programs to prevent accidents and injuries. While energy sources such as electricity or gas are easily identified, some energy sources are not always so evident.

Hazardous Energy
Hazardous energy is any electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, gravitational, or other energy that can harm employees working with equipment.

Lock It Out
In general, equipment will have barriers or machine guards in place to maintain employee protection during normal operation but, if repairs are needed, these guards may need to be removed to make repairs. If so, lock it out. It’s important to assess what equipment needs to be locked out after and before the workday begins.

There are a few exceptions to the lockout rule. If you can manually unplug any fixed equipment, you have secured the power source; therefore, an energy control program is not required. If the operator can shut down the equipment and safely make the adjustment without an inadvertent start up, then no lockout is required. If you are working on a machine that will not be shut down and you can guard the employee from moving parts safely, then you do not need a full lockout.

Tag It Out
In some cases, only tagout is used. When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

The Other Standards
Other OSHA standards include energy control as a part of their rule, such as 29 CFR 1910.146 which addresses energy control when entering some permit required confined spaces. Do your homework here and if needed contact INSafe to help interpret the standards.

Employee Training
The Standard requires written procedures specific to each piece of equipment under lockout tagout. Not having procedures will increase risk of injury. Employees working with or around hazardous energy sources must be trained in these procedures.

There are two types of employee training identified in the energy control standards. Specific training is required for the authorized employee conducting the lockout. A second training is required for employees that are affected by the lockout in the production areas. Your lockout kit may have multiple devices to complete the steps to lockout a machine. Include this review as a part of your training program.

Complete lockout is generally viewed as the most reliable way to protect workers. In some cases, using lockout is not practical because of its impact on operations and various other functions. Perform a thorough assessment of your operation. Obtain input from employees, write your program to include procedures, train, and enforce the program. If you need help with your program, just give INSafe a call!

Perfecting Your Program
A division of the Indiana Department of Labor, the INSafe Consultation and Education division provides services to Hoosier employers at no cost – these include onsite audits of safety and health programs, air sampling, noise sampling, training, sample programs, and much more. INSafe’s team of occupational safety and health experts will be happy to assist employers in fine-tuning and enhancing a worksite’s lockout/tagout hazardous energy control programs to a job’s needs. To contact INSafe, you may visit www.in.gov/dol/insafe, email insafe@dol.in.gov, or call (317) 232-2688.
The estimated 4 million adults in the United States who are partially or completely blind, the American Federation of the Blind reports that the current unemployment rate is as high as 75 percent.

**The Blind Work Force**
Visual impairment does not completely isolate working citizens from their career range. Many common professions performed by the visually impaired include but are not limited to teaching, secondary education, guidance counseling, social work, psychologists, doctors, nurses, social work, psychology, rehabilitation, customer service, retail, factory work, freelance creative work, workplace managers and directors, coaches, athletes, architects, engineers, artists, and much more.

To many, a dynamic, fulfilling career sounds difficult or impossible for a person with very limited vision capabilities, but these workers exist and they function just as well as others. Modern technology and a variety of workplace strategies have opened up an entire world of opportunities for the working blind citizen.

**Division of Disability and Rehabilitative Services**
Part of the Family and Social Services Administration, the Division of Disability and Rehabilitative Services (DDRS) is part of Indiana’s state government services and provides educational and professional development resources to blind Hoosiers. They also provide employment resources. The Randolph-Sheppard Business Enterprise Program is an initiative by the DDRS that provides entrepreneurial opportunities for legally blind clients of Vocational Rehabilitation Services. Participants manage food service operations including cafeterias, coffee shops, vending locations and highway area vending sites. For more information about this professional skill-building program, please visit www.in.gov/fssa/ddrs/2638.htm.

**Bosma Enterprises**
Indiana’s largest employer of workers with vision loss, Bosma Enterprises is a leader in services and assistance for blind or visually impaired Hoosiers. Their Local Employment Services offer career coaching, job search and matching, interviewing skills, networking, assistive technology consulting, wage and benefits planning and on-site job coaching. These services are available at little-to-no cost to most adult Indiana residents who are blind or visually impaired. The services are customized to the individual’s needs.

The Bosma Rehabilitation Center provides short-term or comprehensive training programs that are customized to individual needs. This service is provided to Indiana residents over age 18 and experiencing vision loss. The trainings are provided by experience instructors, and includes management, assistive technology, keyboarding and computer training, low vision aids, Braille instruction, GED and college prep courses, functional vision assessments, orientation and mobility and job readiness.

To learn more about Bosma Enterprises and their programs available in Indiana, visit www.bosma.org.

**The Student Training and Employment Program (STEP)**
The Student Training and Employment Program (STEP) works with the Indiana School for the Blind and Visually Impaired to prepare high school students who are blind or visually impaired for the workplace. The students explore various career paths, learn essential job skills and develop a portfolio. Training involves a mix of classroom learning, hands-on work experience and recreational activities.

Their Ticket to Work Program is for adults who have a disability and receive social security benefits. They provide career guidance, skills assessments, interview preparation and job searches and leads. These services are provided at little-to-no cost to adult Indiana residents with valid identification. Certain eligibility requirements may apply.

**Easterseals Crossroads**
Easterseals Crossroads aids in drafting employment plans for the visually impaired, including vocational and career exploration. They offer individual support for job seekers and transition services for high school students. They offer opportunities through Crossroads Industrial Services, Employment Services, Veterans Services and Project Search.

Interns start with traditional classroom instruction, and then begin rotations inside hospitals. The beginning of each day is aimed at gaining valuable knowledge and employability skills. Their professional abilities are sharpened and they are equipped with job search and interview skills. For more information, visit www.easterseals.org.

**OF**

- The estimated 4 million adults in the United States who are partially or completely blind, the American Federation of the Blind reports that the current unemployment rate is as high as 75 percent.

**Contributor**
LeAnn Havener
INSafe Administrative Coordinator

For audio access, scan the following QR code:
If you are sick or injured, chances are that you will need to receive the care they provide every day. They are nursing professionals and they are responsible for providing much of the direct care you will receive in your encounter with the U.S. healthcare system.

In Numbers
According to data from the 2018 Current Population Survey, there are nearly 6,000,000 workers in nursing related occupations nationwide. Indiana alone has almost 126,000 workers in nursing and related fields. The four primary categories surveyed for the nursing industry include registered nurses, licensed practical nurses, home health aides, and nursing assistants.

Employment figures as of May 2018 in nursing occupations:

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>INDIANA</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurses</td>
<td>67,200</td>
<td>2,951,960</td>
</tr>
<tr>
<td>Licensed Practical Nurses</td>
<td>15,220</td>
<td>701,690</td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>13,580</td>
<td>797,670</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>29,990</td>
<td>1,450,960</td>
</tr>
</tbody>
</table>

The need for healthcare and nurses in general shows no signs of slowing down. The “Baby Boomer” generation, born in the years following World War II (1946-1964) account for one of the largest single periods of population growth in American history. According to data from the U.S. Census Bureau and the Bureau of Labor Statistics from their Current Population Survey 15.8% of the U.S. population or 51,079,000 people were 65 years of age or older in 2018. Census Bureau data also show that in Indiana as of July 1, 2018, the same 15.8% of the population or approximately 1,057,316 of us were 65 or older. In addition, the youngest members of the Baby Boomer population celebrated their 55th birthday in 2019, with the oldest reaching 73. As our population ages, we begin to rely more heavily on healthcare for both advanced care and general wellness.

Workplace Hazards
As the need for services provided by these healthcare professionals increases, so does the urgency to address the occupational injuries and illnesses suffered by employees working in these professions. In 2018 alone, the national nonfatal injury and illness rate for registered nurses, licensed practical nurses and home health aides neared 100 injuries per 10,000 full-time workers. For nursing assistants, the rate was much higher, with 272.4 injuries or illnesses per 10,000 full-time workers.

Although the 2018 injury and illness numbers are high, these represent a steep decrease in injuries and illnesses over the last five years. While it is difficult to pinpoint any one factor that resulted in the decrease of injuries and illnesses over the last five years, one large factor is an increased focus on worker safety and a deeper scrutiny of processes and procedures to find safer alternatives.

Occupational injury and illness incidence rates for nursing occupations, All U.S., 2014-2018 (per 10,000 full time workers)

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurses</td>
<td>129.9</td>
<td>118.6</td>
<td>110.1</td>
<td>110.0</td>
<td>93.6</td>
</tr>
<tr>
<td>Licensed Practical Nurses</td>
<td>120.9</td>
<td>126.5</td>
<td>119.9</td>
<td>108.3</td>
<td>97.8</td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>138.5</td>
<td>119.4</td>
<td>116.4</td>
<td>110.1</td>
<td>98.7</td>
</tr>
<tr>
<td>Nursing Assistants</td>
<td>372.5</td>
<td>348.5</td>
<td>336.5</td>
<td>314.5</td>
<td>272.4</td>
</tr>
</tbody>
</table>

Hidden Hazards in Nursing
While it may seem strange to think, the healthcare industry, and nursing in particular, is home to many inherent hazards. Some of the more obvious areas of injury, such as needlesticks and exposures to illness, have some of the lowest injury and illness totals. The single most dangerous event that nurses of all designations experience is patient handling. The amount of force used to transfer a patient to or from a bed, lift a fallen patient or catch a patient mid-fall can take a toll on the body. Sometimes, just one wrong twist or bend while performing this necessary operation can cause an injury.

In 2018, there were over 30,000 sprains, strains and tears in the nursing industry nationwide. The majority of these can be attributed to patient handling. Technology is advancing in the area of patient handling, with patient lifts becoming more portable and affordable. While lifts may not be ideal in every situation, simple changes to routine practices, such as having patient transfer teams or not allowing fall-risk patients to walk about unattended can help prevent some of these injuries.
Citations and penalty calculations for Occupational Safety and Health Administration (OSHA) standards, as cited by Indiana OSHA, were current at the time the data report was generated. For more information about OSHA standards, visit www.osha.gov.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>CITATIONS</th>
<th>INITIAL PENALTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926.20 General safety and health provisions</td>
<td>278</td>
<td>$215,925</td>
</tr>
<tr>
<td>1926.501 Duty to have fall protection</td>
<td>153</td>
<td>$317,275</td>
</tr>
<tr>
<td>1926.451 General requirements for scaffolds</td>
<td>110</td>
<td>$111,850</td>
</tr>
<tr>
<td>1926.503 Training requirements for fall protection</td>
<td>104</td>
<td>$47,875</td>
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<tr>
<td>1926.95 Criteria for personal protective equipment</td>
<td>60</td>
<td>$45,675</td>
</tr>
<tr>
<td>1926.454 Training requirements for scaffolds</td>
<td>57</td>
<td>$24,050</td>
</tr>
<tr>
<td>1926.21 Safety training and education</td>
<td>57</td>
<td>$38,125</td>
</tr>
<tr>
<td>1926.100 Head protection and personal protective equipment</td>
<td>55</td>
<td>$27,825</td>
</tr>
<tr>
<td>1926.453 Aerial lifts</td>
<td>53</td>
<td>$89,450</td>
</tr>
<tr>
<td>1926.1053 Ladders</td>
<td>52</td>
<td>$70,850</td>
</tr>
</tbody>
</table>
Citations and penalty calculations for Occupational Safety and Health Administration (OSHA) standards, as cited by Indiana OSHA, were current at the time the data report was generated. For more information about OSHA standards, visit www.osha.gov.

### General Industry Top Ten Most Cited Standards of 2019

<table>
<thead>
<tr>
<th>Standard</th>
<th>Citations</th>
<th>Initial Penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910.212 General</td>
<td>125</td>
<td>$554,900</td>
</tr>
<tr>
<td>1910.147 Control</td>
<td>119</td>
<td>$493,100</td>
</tr>
<tr>
<td>1910.1200 Hazard</td>
<td>75</td>
<td>$91,525</td>
</tr>
<tr>
<td>22.8 Employer’s overall</td>
<td>71</td>
<td>$272,875</td>
</tr>
<tr>
<td>1910.178 Powered</td>
<td>67</td>
<td>$273,573</td>
</tr>
<tr>
<td>1910.132 General</td>
<td>43</td>
<td>$93,600</td>
</tr>
<tr>
<td>1910.134 Respiratory</td>
<td>40</td>
<td>$231,000</td>
</tr>
<tr>
<td>1910.303 Electrical</td>
<td>37</td>
<td>$78,450</td>
</tr>
<tr>
<td>1910.219 Mechanical</td>
<td>29</td>
<td>$79,125</td>
</tr>
<tr>
<td>1910.305 Wiring</td>
<td>29</td>
<td>$45,150</td>
</tr>
</tbody>
</table>
NATIONAL SAFETY STAND-DOWN
TO PREVENT FALLS IN CONSTRUCTION

MAY 4 - 8, 2020

Stop Falls Stand-Down

- Plan a toolbox talk or other safety activity
- Take a break to talk about how to prevent falls
- Provide training for all workers

For more information:
www.osha.gov/StopFallsStandDown
#StandDown4Safety • (800) 321-OSHA (6742)
STOP HAZARDS IN THEIR TRACKS

Contact INSafe to enhance your accident prevention programs!

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Please take a five-minute survey and help us improve IN Review!
https://goo.gl/forms/X1MB3UWbuViZoTyi1