Introduction

A safe and healthy workforce supports Nebraska’s economy and helps Nebraskans live healthier lives. Each year thousands of workers are injured or become ill due to an exposure to a health or safety hazard in the workplace. These events have significant impacts on workers and their families, employers, and the state of Nebraska.

In 2010, the Nebraska Occupational Safety and Health Surveillance Program was established with funding from the National Institute for Occupational Safety and Health (NIOSH), an institute in the Centers for Disease Control and Prevention (CDC). The primary goal of the program is to conduct occupational health surveillance, which is defined as the systematic collection, analysis, and interpretation of data related to occupational health.

To enhance assessment and comparison of injury and illness data, NIOSH and the Council of State and Territorial Epidemiologists (CSTE) developed a standardized set of occupational health indicators in 1999 (1). An occupational health indicator is a specific measure of a work-related injury or disease, or a factor associated with occupational health, such as workplace exposures, hazards, or interventions in a specified population. Indicators allow a state to determine the health and risk status of workers, compare data with other states, and evaluate trends over time.

Nebraska Occupational Health Indicator Report 2014 presents a snapshot of 21 occupational health indicators using the most recent available data. A comparison of Nebraska occupational health indicators with U.S. data is also included for some indicators.

Methods

Indicators were calculated using CSTE guidelines (2). Data used to calculate these indicators are drawn from several sources, such as national surveys, census counts, and state-based health records. At the national level, the Bureau of Labor Statistics (BLS) Geographic Profile of Employment, Survey of Occupational Injuries and Illnesses (SOII), and Census of Fatal Occupational Injuries (CFOI) were used. State-based data sources include Nebraska hospital discharge data, workers’ compensation records, cancer registry, and death certificates.

Data in this report do not necessarily capture the full spectrum of occupational illnesses and injuries—many such events are not reported by employees. Discussions on methodology and limitations of data sources used for indicator calculation are described in detail in the CSTE occupational health indicator guidance document (2). Limitations exist when comparing indicators between years and when comparing Nebraska and national data, as data collection methods can vary between states and U.S. averages might not include data from all 50 states (3). Indicators presented here represent data known at the time of publication, and this document might not reflect future revisions in the data.
Nebraska Workforce Summary

Demographic and employment characteristics of workers aged 16 years and older, Nebraska and the U.S., 2013.

<table>
<thead>
<tr>
<th>Total number of employed</th>
<th>Nebraska</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>988,000</td>
<td>143,929,000</td>
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<table>
<thead>
<tr>
<th>Employee status</th>
<th>Nebraska</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>4.1</td>
<td>7.4</td>
</tr>
<tr>
<td>Self-employed</td>
<td>8.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Part-time</td>
<td>17.9</td>
<td>19.2</td>
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<table>
<thead>
<tr>
<th>Hours worked per week</th>
<th>Nebraska</th>
<th>U.S.</th>
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<tbody>
<tr>
<td>&lt;40 hours</td>
<td>33.1</td>
<td>33.7</td>
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<tr>
<td>40 hours</td>
<td>35.2</td>
<td>42.3</td>
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<tr>
<td>41+ hours</td>
<td>31.7</td>
<td>24.0</td>
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<th>Sex</th>
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<th>U.S.</th>
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<tbody>
<tr>
<td>Males</td>
<td>53.4</td>
<td>53.0</td>
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<tr>
<td>Females</td>
<td>46.6</td>
<td>47.0</td>
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<th>Age group</th>
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<tr>
<td>16 to 17</td>
<td>1.7</td>
<td>1.0</td>
</tr>
<tr>
<td>18 to 64</td>
<td>46.6</td>
<td>93.6</td>
</tr>
<tr>
<td>65+</td>
<td>7.2</td>
<td>5.3</td>
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</table>

<table>
<thead>
<tr>
<th>Race and Ethnicity</th>
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<th>U.S.</th>
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</thead>
<tbody>
<tr>
<td>White</td>
<td>91.2</td>
<td>80.2</td>
</tr>
<tr>
<td>Black</td>
<td>4.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Other**</td>
<td>4.8</td>
<td>8.6</td>
</tr>
<tr>
<td>Hispanic origin†</td>
<td>9.8</td>
<td>15.6</td>
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</table>


<table>
<thead>
<tr>
<th>Employment by industry</th>
<th>Nebraska</th>
<th>U.S.</th>
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</thead>
<tbody>
<tr>
<td>Mining</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Construction</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Manufacturing - Durable goods</td>
<td>5.2</td>
<td>6.5</td>
</tr>
<tr>
<td>Manufacturing - Non-durable goods</td>
<td>7.6</td>
<td>3.8</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>14.6</td>
<td>13.7</td>
</tr>
<tr>
<td>Transportation and Utilities</td>
<td>5.1</td>
<td>5.2</td>
</tr>
<tr>
<td>Information</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>7.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Professional and Business Services</td>
<td>8.5</td>
<td>11.7</td>
</tr>
<tr>
<td>Education and Health Services</td>
<td>22.7</td>
<td>22.6</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>7.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Other Services</td>
<td>4.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Public Administration</td>
<td>3.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Agriculture and Related</td>
<td>5.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Indicator 1: Non-Fatal Work-Related Injuries and Illnesses

Work-related injuries result from isolated events such as falls, amputations, burns, or assaults. Work-related illnesses are typically the result of long-term exposures to workplace chemicals, physical hazards, or repeated strain or stress.

- In 2013, there were an estimated 24,700 total work-related injuries and illnesses among private sector employees in Nebraska, and 6,700 of these cases involved days away from work.

- Nebraska’s work-related injury and illness rate was 3,800 per 100,000 full-time equivalent workers (FTEs) workers in 2013.

- The rate of total work-related injuries and illnesses in Nebraska is higher than the national average.

Indicator 2: Work-Related Hospitalizations

A work-related hospitalization can result from a worker experiencing a severe injury or illness on the job. Inpatient hospital discharge data are used to determine the number of work-related inpatient hospitalizations that occurred among Nebraska residents age 16 years or older.

- According to Nebraska hospital discharge data, 694 work-related inpatient hospitalizations occurred in 2013.

- The rate of work-related hospitalizations in 2013 was 70.2 per 100,000 employed persons.
Indicator 3: Fatal Work-Related Injuries

A fatal work-related injury is an injury occurring at work that results in death. The number of fatal work injuries is collected by the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI).

- In 2013, 39 work-related fatal injuries occurred in Nebraska, a decrease from 48 fatalities that occurred in 2012.
- The 2013 fatal work-related injury rate per 100,000 full-time equivalent workers (FTEs) was 4.1.
- Nebraska’s fatal work-related injury rate was higher than the U.S. average rate from 2009 to 2012.

Fatal work-related injury rate per 100,000 FTEs age 16 years or older, Nebraska and the U.S., 2009-2013

Source: Census of Fatal Occupational Injuries (CFOI) (numerator); Bureau of Labor Statistics Current Population Survey (denominator)

Indicator 4: Work-Related Amputations with Days Away from Work

An amputation occurs when an individual experiences a full or partial loss of a protruding body part, such as an arm, hand, finger, leg, foot, or toe. Indicator 4 examines work-related amputations reported by employers through the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII).

- An estimated 40 work-related amputations occurred in 2013 in Nebraska.
- The estimated incidence rate in Nebraska of work-related amputations was 6.0 per 100,000 full-time equivalent workers (FTEs).
- Except for 2010, Nebraska’s rate of work-related amputations reported by employers is similar to the U.S. average rate.

Estimated annual incidence rate of work-related amputations involving days away from work per 100,000 FTEs, Nebraska and U.S., 2009-2013

Indicator 5: Amputations Identified in the Workers’ Compensation System

An amputation is defined as full or partial loss of a protruding body part. Indicator 5 reports amputations with lost work time identified by claims to the Nebraska Workers’ Compensation Court.

- A total of 40 workers’ compensation claims for amputation injuries with lost work time in 2012 were filed in Nebraska.
- The incidence rate of amputations filed with workers’ compensation per 100,000 covered workers was 4.5 in 2012.

Indicator 6: Hospitalizations for Work-Related Burns

Work-related burns include injuries to tissues caused by contact with heat, chemicals, electricity, friction, or radiation. Hospital discharge data were used to examine hospitalizations for work-related burns among Nebraska residents age 16 years or older.

- According to hospital discharge data, 21 work-related burn hospitalizations occurred in 2013.
- The rate of work-related burn hospitalizations was 2.1 per 100,000 workers in 2013.

Source: Nebraska Workers’ Compensation Court (numerator); National Academy of Social Insurance (NASI) (denominator)
Indicator 7: Work-Related Musculoskeletal Disorders Reported by Employers

Musculoskeletal disorders (MSDs) are injuries or disorders of muscles, tendons, nerves, ligaments, joints, or spinal discs. Work-related MSDs can arise from repetitive motions, awkward postures, use of vibrating tools or equipment, and manual handling of heavy loads. Data are collected by the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII).

- According to the Survey of Occupational Injuries and Illnesses (SOII), an estimated 2,330 MSD injuries with days away from work occurred in 2013.
- The 2013 incidence rate of all work-related musculoskeletal disorders involving days away from work in Nebraska was 364 per 100,000 full-time equivalent workers (FTEs).
- Nebraska’s work-related MSD rate was higher than the national average rate in 2012.

Estimated incidence rate of all work-related musculoskeletal disorders involving days away from work per 100,000 FTEs, Nebraska and the U.S., 2009-2013.


Indicator 8: Carpal Tunnel Syndrome Cases Identified in Workers’ Compensation System

Carpal tunnel syndrome is a musculoskeletal disorder (MSD) caused or aggravated by direct trauma, repetitive forceful motions or awkward postures of the hands, and the use of vibrating tools or equipment.

- A total of 61 carpal tunnel syndrome injuries with lost work time occurring in 2012 were filed with workers’ compensation in Nebraska.
- The rate of carpal tunnel syndrome filed with workers’ compensation workers was 6.8 per 100,000 covered workers in 2012.

Incidence rate of carpal tunnel syndrome cases filed with workers’ compensation per 100,000 covered workers, Nebraska, 2008-2012.

Source: Nebraska Workers’ Compensation Court (numerator); National Academy of Social Insurance (NASI) (denominator)
Indicator 9: Hospitalizations from or with Pneumoconiosis

Pneumoconiosis is a category of restrictive lung diseases caused by the inhalation of mineral dusts, such as asbestos, silica, and coal. Most cases of pneumoconiosis are the result of occupational exposures. Inpatient hospital discharge data were used to determine the number of pneumoconiosis hospitalizations among Nebraska residents age 15 years or older.

- According to hospital data, 51 pneumoconiosis hospital discharges occurred in 2012. Asbestosis cases accounted for the majority of pneumoconiosis hospitalizations (75%, n=38).

- The age-standardized rate of pneumoconiosis hospitalizations was 32.1 per million Nebraska residents age 15 years or older in 2012.

Indicator 10: Pneumoconiosis Mortality

Indicator 10 examines deaths with pneumoconiosis as an underlying or contributing cause. Death certificate data from DHHS were used to identify pneumoconiosis records among Nebraska residents age 15 years of age or older.

- According to hospital discharge data, 7 pneumoconiosis deaths occurred in 2012.

- The age-standardized rate of pneumoconiosis hospitalizations was 4.5 per million Nebraska residents age 15 years or older in 2012.
Indicator 11: Acute Work-related Pesticide Poisonings Reported to Poison Control Centers

A pesticide is a substance or mixture of substances used to prevent or control undesired insects, plants, animals, or fungi. Adverse health effects can occur from human exposures to certain pesticides. Agricultural workers and other workers who handle pesticides are at higher risk for pesticide poisonings.

- In 2011, 34 work-related pesticide poisoning cases were reported to the Nebraska Regional Poison Center.
- The Nebraska 2011 rate of pesticide poisonings was 3.7 cases per 100,000 employed persons.
- Nebraska’s pesticide poisoning rate is higher than the U.S. average rate.

Indicator 12: Incidence of Malignant Mesothelioma

Asbestos exposure is one of the only known causes of malignant mesothelioma, which is a rare but highly fatal cancer of the thin membranes surrounding the chest or abdominal cavity. Malignant mesothelioma typically results from occupational exposure to asbestos.

- According to the data from the Nebraska Cancer Registry, 21 new malignant mesotheliomas were diagnosed in 2012.
- The 2012 age-standardized malignant mesothelioma incidence rate was 12.9 per million Nebraska residents.
- In 2011, the mesothelioma rate in Nebraska was lower than the U.S. average rate.
Indicator 13: Elevated Blood Lead Levels Among Adults

Lead poisoning among adults is primarily due to occupational exposures. Lead poisoning adversely affects multiple organ systems and can cause permanent damage to the human body. The U.S. Department of Health and Human Services recommends that blood lead levels among adults be less than 10 µg/dL.

- 189 adults had a prevalent (existing) blood lead level ≥ 10 µg/dL in 2012. The number of incidence (new) cases in 2012 was 87.
- The prevalence rate of adults with a blood lead level ≥ 10 µg/dL was 17.1 per 100,000 employed persons in 2012.

Indicator 14: Workers Employed in Industries with High Risk for Occupational Morbidity

Workers in certain industries are at a greater risk for sustaining non-fatal injuries and illnesses compared to the overall workforce. Fifty-five high morbidity risk industries were identified and were based on the Bureau of Labor Statistics total reportable cases incidence rates for private sector workers. Examples of high morbidity risk industries include animal slaughtering (except poultry), foundries, and nursing and residential care facilities (2). The proportion of workers employed in these high risk industries is an important indicator for occupational health in Nebraska.

- In 2010, 90,486 workers in Nebraska were employed in high morbidity risk industries.
- The percent of workers employed in high morbidity risk industries in 2011 was 11.2%.
- Nebraska’s percent of workers in high morbidity risk industries is higher than the U.S. average percent.
Indicator 15: Workers Employed in Occupations with High Risk for Occupational Morbidity

Nebraskans working certain occupations are at a greater risk for sustaining a non-fatal injury or illness. Sixty-one high morbidity risk occupations were identified and based on Bureau of Labor Statistics days away from work cases and employment estimates for private sector workers. Examples of high morbidity risk occupations include construction laborers, nursing, psychiatric, and home health aides, and highway maintenance workers (2).

- In 2011, 102,817 workers in Nebraska were employed in high morbidity risk occupations.
- The percent of workers employed in high morbidity risk occupations in 2011 was 15.2%.
- In 2011, Nebraska had a slightly lower percent of workers in high morbidity risk occupations than the U.S. average.

Source: BLS Current Population Survey

Indicator 16: Workers Employed in Industries and Occupations with High Risk for Occupational Mortality

Workers in certain industries and occupations experience fatal injuries at higher rates than the overall workforce. Indicator 16 examines both industries and occupations in which workers are at high risk for occupational mortality. The Bureau of Labor Statistics’ Census of Fatal Occupational Injuries (CFOI) was used to identify 40 high mortality risk industries and 62 high mortality risk occupations (2).

- In 2011, 20.5% of Nebraska workers were employed in high mortality risk industries.
- In 2011, 15.7% of workers in Nebraska were employed in high mortality risk occupations.
- The percent of workers employed in high mortality risk industries and occupations was higher than the U.S. average in 2011.

Source: BLS Current Population Survey
Indicator 17: Occupational Health and Safety Professionals

Occupational safety and health professionals play a vital role in the prevention and treatment of work-related injuries and illnesses. Determining the occupational health capacity in Nebraska is important in assessing the availability of such professionals to deliver occupational health preventative services.

- In Nebraska, the 2010 rates of occupational safety and health professionals per 100,000 employed persons were lower than the U.S. rate among most organizations.

Key

- ACOEM: American College of Occupational and Environmental Medicine
- AAOHN: American Association of Occupational Health Nurses
- AIHA: American Industrial Hygiene Association
- ASSE: American Society of Safety Engineers

### Occupational Health and Safety Professionals per 100,000 employed persons, Nebraska and the U.S., 2010.

<table>
<thead>
<tr>
<th>Professional Type</th>
<th>Number (NE)*</th>
<th>Rate (NE)*</th>
<th>Rate (U.S.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board certified occupational physicians</td>
<td>9</td>
<td>1.0</td>
<td>2.1</td>
</tr>
<tr>
<td>ACOEM members</td>
<td>11</td>
<td>1.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Board certified occupational health nurses</td>
<td>49</td>
<td>5.3</td>
<td>3.9</td>
</tr>
<tr>
<td>AAOHN members**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Board certified industrial hygienists</td>
<td>22</td>
<td>2.4</td>
<td>5.2</td>
</tr>
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<td>AIHA members</td>
<td>28</td>
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<tr>
<td>Board certified safety professionals</td>
<td>51</td>
<td>5.5</td>
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</tr>
<tr>
<td>ASSE members</td>
<td>151</td>
<td>16.3</td>
<td>22.5</td>
</tr>
</tbody>
</table>

*NE=Nebraska  **2010 data not available

Source: Occupational Safety and Health Organizations

Indicator 18: OSHA Enforcement Activities

The Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration (OSHA) under the U.S. Department of Labor. In addition to health and safety standard development, education, and compliance assistance, OSHA conducts worksite inspections and investigations to determine whether employers are complying with standards issued by the agency.

- In 2013, 3.7% of employees in Nebraska had their work areas inspected by OSHA.
- In 2013, 0.8% of OSHA-covered establishments in Nebraska were inspected by OSHA.
- The percent of employees whose work area was inspected was higher than the U.S average, while the percentage of inspected establishments was lower than the U.S. average.

### Percent of OSHA-covered establishments and employees inspected by OSHA, Nebraska and the U.S., 2013.

Source: OSHA annual reports of total inspections conducted by OSHA; BLS, CEW (denominator)
Indicator 19: Workers’ Compensation Benefits

Workers’ compensation is an insurance program that provides benefits to partially replace lost wages and pay for medical expenses associated with a work-related injury, illness, or death.

- In 2012, $312 million in total workers’ compensation benefits were paid to Nebraska workers.
- The average amount of workers’ compensation benefits paid per covered worker in Nebraska was $350 in 2012.
- The average amount of benefits paid per covered worker in Nebraska was less than the U.S. average in 2012.

Indicator 20: Work-Related Low Back Disorder Hospitalizations

Every year 15 to 20% of Americans report back pain, resulting in over 100 million workdays lost and more than 10 million physician visits. National Health Interview survey data estimates that two-thirds of all low back pain cases are attributable to occupational activities. Hospitalizations for work-related back disorders have serious and costly effects, including high medical costs, lost work time and productivity, and functional impairment and disability.

- In 2012, there were 50 surgical work-related low back disorder hospitalizations and 72 total work-related low back disorder hospitalizations among Nebraska workers.
- The rate of work-related surgical low back disorder hospitalizations per 100,000 workers was 5.1 in 2012. The rate of work-related all low back disorder hospitalizations per 100,000 workers was 7.3 in 2012.
Indicator 21: Work-Related Asthma

Asthma is a chronic inflammatory disease of the airways that affects millions of adults in the United States. Work-related asthma is a term used to describe asthma that has a temporal association between asthma symptoms and the work environment.

- In 2012, the weighted estimated number of ever-employed adults in Nebraska with current asthma who report that their asthma was caused or made worse by exposures at work was 51,729.

- In 2012, an estimated 52% of ever-employed adults with current asthma reported that their asthma was caused or made worse by exposures at work.

Annual estimated proportion of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work, Nebraska and the U.S., 2008-2012.

Source: Nebraska/CDC Asthma Call-Back Survey.
Conclusion

Work-related injuries and illnesses have significant impacts on a population. In Nebraska, more than 980,000 Nebraskans work, and each year thousands of these workers are injured or become ill due to an exposure to a health hazard in the workplace. Occupational injuries and illnesses have financial impacts workers and their families, employers, and the state of Nebraska.

Recent occupational health indicator data show that when compared to the U.S., Nebraska had a higher:

- Work-related injuries and illnesses rate
- Fatal work-related injury rate
- Rate of work-related musculoskeletal disorders reported by employers
- Rate of acute work-related pesticide poisonings reported to Poison Control Centers
- Percent of workers employed in industries with high risk for occupational morbidity
- Percent of workers employed in industries and occupations with high risk for occupational mortality

While comparing Nebraska data with U.S. data has some limitations (3), occupational indicator data suggest Nebraska workers are at an increased risk for experiencing many types of injuries and illnesses. Ongoing collection, monitoring, and analysis of occupational health data helps the Nebraska Occupational Safety and Health Surveillance Program establish trends, prioritize resources, and identify emerging issues. Occupational health surveillance data can also guide the occupational health community in developing prevention and intervention strategies with the ultimate goal of improving the health and safety of Nebraska workers.

References


Acknowledgements

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