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How safe are the workers who process our food?

Workers in the animal slaughtering and processing industry have higher incidence rates of injury or illness than the overall average for private industry workers. This article compares the injury and illness case types among the industries that make up animal slaughtering and processing. Case characteristics for cases involving days away from work are compared with similar characteristics for cases involving job transfer or restriction. From 2011 to 2015, 73 fatal occupational injuries were recorded in this industry; this article looks at the circumstances of these injuries and characteristics of the workers.

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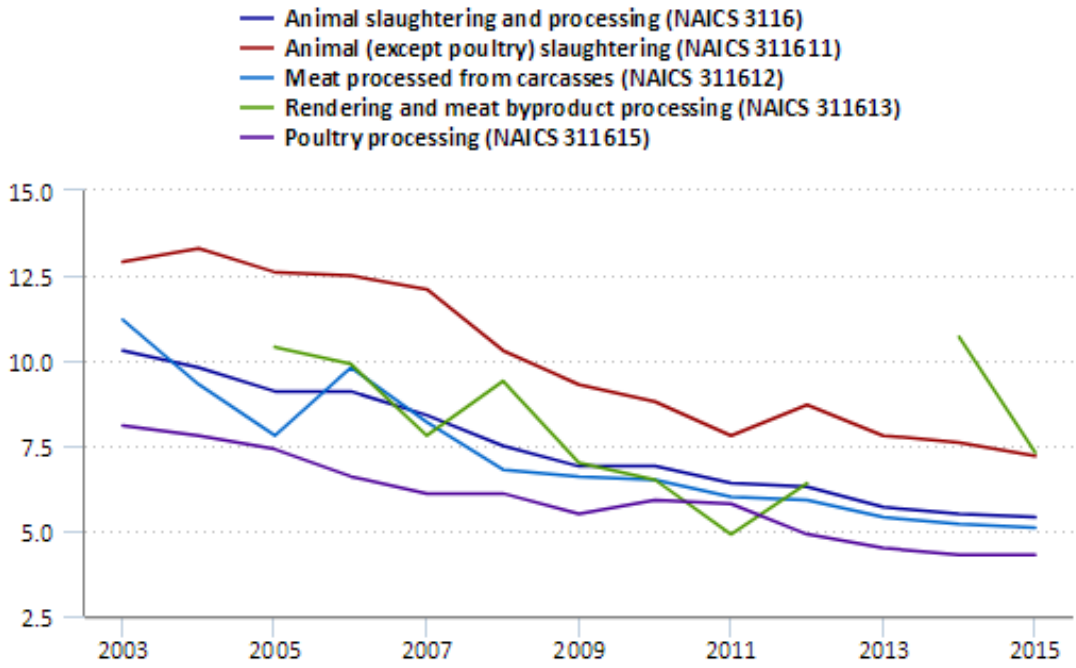
In 2015, the animal slaughtering and processing industry reported 26,600 nonfatal occupational injuries and illnesses.[1] In 4,910 of the cases, the worker missed 1 or more days away from work.[2] Thirty-seven percent of these cases involved overexertion and bodily reaction. Another 13,300 cases involved job transfer or worker restriction.[3] In 2013, 54 percent of the job transfer or restriction cases involved overexertion and bodily reaction. The rate of total recordable cases per 100 full-time workers was 5.4, higher than the rate for all private industry (3.0) and manufacturing (3.8). In addition, from 2011 to 2015, 73 workers were fatally injured in this industry; 34 percent of these fatal injuries were transportation incidents.[4]

Since 2003, the incidence rate for total recordable cases in the animal slaughtering and processing industry has declined (see figure 1), falling from 10.3 in 2003 to 5.4 in 2015, the most recent year for which data have been published.

Figure 1. Incidence rates for total recordable cases of occupational injuries and illnesses in the animal slaughtering and processing industry, 2003−15



Click legend items to change data display. Hover over chart to view data.
Note: NAICS = North American Industry Classification System.
Source: U.S. Bureau of Labor Statistics.

Nonfatal injuries and illnesses by industry

In 2015, the incidence rate for injury and illness cases involving days away from work in animal slaughtering and processing was 1.0 per 100 full-time workers (see table 1), a rate that was essentially the same as the rate for manufacturing and private industry as a whole. The rate for cases with job transfer or restriction was 2.7, which was higher than the rate for manufacturing (1.2) and private industry (0.7). Typically, the Survey of Occupational Injuries and Illnesses only collects details on case sand worker characteristics for the cases involving days away from work. Since 2011, however, the U.S. Bureau of Labor Statistics (BLS) has conducted a study to collect these details for cases with job transfer or restriction for a limited group of industries. For the 2011−13 study, this group included food manufacturing. While the study is ongoing, BLS did not collect details of cases with job transfer or restriction for food manufacturing after 2013. Instead, BLS has been focusing on a different group of industries.

Table 1. Incidence rates of injuries and illnesses by industry, North American Industry Classification System (NAICS) code and case type, 2015

Industry	NAICS	Total recordable cases	Cases with days away from work[1]	Cases involving job transfer or restriction	Other recordable cases	Illnesses (per 10,000 workers)

See footnotes at end of table.

Table 1. Incidence rates of injuries and illnesses by industry, North American Industry Classification System (NAICS) code and case type, 2015

Industry	NAICS	Total recordable cases	Cases with days away from work[(1)]	Cases involving job transfer or restriction	Other recordable cases	Illnesses (per 10,000 workers)
Animal slaughtering and processing	3116	5.4	1.0	2.7	1.7	160.3
Animal (except poultry) slaughtering	311611	7.2	1.0	3.9	2.3	307.3
Meat processed from carcasses	311612	5.1	1.3	2.4	1.4	107.3
Rendering and meat byproduct processing	311613	7.3	2.5	1.6	3.2	32.3
Poultry processing	311615	4.3	.8	2.1	1.4	106.4

Notes:

[(1)] Days-away-from-work cases include those which result in days away from work with or without job transfer or restriction.

Note: Incidence rates represent the number of injuries and illnesses per 100 full-time workers (10,000 full-time workers for illness rates).

Sources: U.S. Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses, in cooperation with participating state agencies.

The 2015 rate for recordable illness cases was 160.3 per 10,000 full-time workers for animal slaughtering and processing, approximately 10 times as high as the rate for private industry. The illness rate was especially high (307.3) in animal (except poultry) slaughtering. In animal slaughtering and processing, the rates for skin disease and respiratory illnesses were similar to the rates for all private industry and for all manufacturing. The illness rate for hearing loss in animal slaughtering and processing was 43.0 per 10,000 workers, compared with a rate of 10.9 for manufacturing and 1.8 for all private industry. The hearing loss illness rate in animal (except poultry) slaughtering was 81.5.

In 2015, the animal (except poultry) slaughtering (North American Industry Classification System [NAICS] 311611) industry reported 9,800 recordable injury and illness cases. The total recordable case rate per 100 full-time workers was 7.2. There were 6,700 lost-workday cases (involving days away from work, job transfer, or restriction), of which 5,400 (81 percent) were cases involving job transfer or restriction. This industry includes establishments that slaughter animals such as cows, pigs, and lambs.[5] Establishments in this industry may also prepare products such as sausages or lunch meats.

The meat processed from carcasses industry (NAICS 311612) had 6,200 recordable cases, with an incidence rate of 5.1. In this industry, about two-thirds of the lost-workday cases involved job transfer or restriction. This industry contains firms that purchase slaughtered meats and then process meats or preserve meats. Examples of these meats include curing, drying, salting, smoking, or pickling meats, in addition to sausages and lunch meats made from purchased meat.[6]

Rendering and meat byproduct processing (NAICS 311613) had 700 recordable cases in 2015, of which 200 were days-away-from-work cases. The total recordable case rate was 7.3. This industry renders animal fat, bones, and meat scraps.

Poultry processing (NAICS 311615) includes establishments that slaughter poultry and prepare poultry products. This industry includes establishments that slaughter and process small game such as rabbits, in addition to chickens, turkeys, ducks, and geese.[7] The total recordable injury and illness case rate was 4.3. Most (73 percent) of the lost-workday cases were cases of job transfer or restriction. The total illness rate (106.4) was well above the rate for private industry (14.6) and all manufacturing (32.9). The rate for hearing loss (28.9) was also higher than private industry (1.8) and manufacturing (10.9).

Cases with days away from work

In 2015, 4,910 cases of injury and illness involving days away from work occurred in the animal slaughtering and processing industry. In most of these cases (69 percent), the workers were men. In poultry processing, 41 percent of the injured or ill workers were women. Hispanic or Latino workers accounted for 24 percent of the cases in the animal slaughtering and processing industry, while another 21 percent were Black or African American. In private industry overall, 14 percent of the workers with days-away-from-work cases were Hispanic or Latino, and 8 percent were Black or African American. In 27 percent of the animal slaughtering and processing cases and 37 percent of private industry cases, race was not reported.

Three occupations that accounted for approximately 41 percent of days-away-from-work cases in this industry were meat, poultry, and fish cutters and trimmers (18 percent); laborers and freight, stock, and material movers, hand (14 percent); and slaughterers and meat packers (9 percent).

- In 39 percent of the cases among meat, poultry, and fish cutters and trimmers, the event or exposure was repetitive motions involving microtasks.[8] The nature of injury was sprains, strains, and tears in 27 percent of the cases and carpal tunnel syndrome in 14 percent.
- For laborers and freight, stock, and material movers, hand, in 21 percent of the cases, the event or exposure was overexertion involving outside sources, including overexertion in lifting and lowering in 11 percent. In 24 percent of the cases, the nature of injury was sprains, strains, or tears.
- For slaughterers and meat packers, the nature of injury was sprains, strains, or tears in 23 percent of the cases. Cuts, lacerations made up 14 percent of the cases, as did fractures.

Across all private industry, injuries to the upper extremities (hand, arm, wrist, and shoulder) accounted for 33 percent of days-away-from-work cases. For animal slaughtering and processing, upper-extremity injuries were 49 percent of the cases, including 55 percent in poultry processing. Hand injuries, 14 percent of private industry cases, made up 25 percent of the cases in meat processed from carcasses, 23 percent in poultry processing, and 20 percent in animal (except poultry) slaughtering.

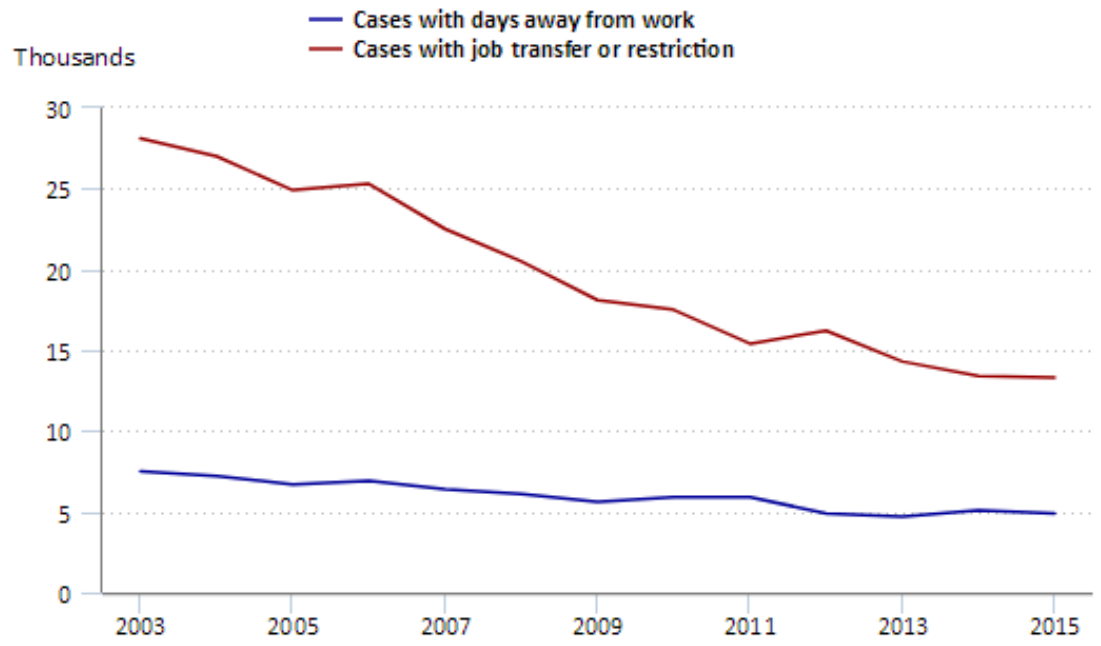
Across all private industry, 3 percent of cases occurred from 12 a.m. to 4 a.m. Of the cases in animal slaughtering and processing, 8 percent occurred during this time, including 11 percent in poultry processing.

Cases with job transfer or restriction

BLS has published data by industry for each year since 1972. In 1992, an expansion of the program provided detailed data for cases involving days away from work. The detailed data include information on worker characteristics and case circumstances. BLS began a study to collect similar data for cases with job transfer or restriction with data for 2011. This study focused on a small number of industries, including animal slaughtering and processing. Data were collected for this industry through 2013. Beginning with 2014 data, the study focused on a different set of industries, so a comparison of details on cases of job transfer or restriction focuses on 2013 data.

Figure 2 shows counts of days-away-from-work cases and job-transfer or -restriction cases in the animal slaughtering and processing industry (NAICS 31161) from 2003 to 2015.

Figure 2. Number of nonfatal occupational injuries and illnesses involving days away from work and days of job transfer or restriction in the private animal slaughtering and processing industry, in thousands, 2003–15



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Some highlights of data for the 2013 cases with job transfer or restriction are as follows:

- The animal slaughtering and processing industry recorded 14,290 cases, much higher than the number of cases with days away from work (4,700).
- Of the job transfer or restriction cases, 35 percent involved female workers.

- Hispanic or Latino workers accounted for 36 percent of the cases with job transfer or restriction, whereas White workers accounted for only 21 percent. For cases involving days away from work, the percentages of White (28 percent) and Hispanic or Latino (30 percent) were about the same.
- These workers had a median of 20 days of job transfer or restricted work. Workers who had cases with days away from work missed a median of 8 days.
- Musculoskeletal disorders account for 52 percent of the cases with job transfer or restriction and 41 percent of the cases with days away from work.[9]
- Fifty-four percent of the cases involved overexertion and bodily reaction, which includes repetitive motion involving microtasks (31 percent).
- In about half the cases, the nature of injury was sprains, strains, or tears (25 percent) or soreness and pain (25 percent).
- The parts of the body affected in 65 percent of the cases were upper extremities, including 30 percent hand injuries. For cases involving days away from work, 18 percent were hand injuries.
- Of the cases involving job transfer or restriction, 41 percent were among the workers between ages 20 to 34. This age cohort made up 32 percent of the cases with days away from work.
- Workers between ages 45 and 64 accounted for 41 percent of the days-away-from-work cases and 34 percent of the job transfer or restriction cases.

Table 2 shows the characteristics for cases involving days of job transfer or restriction and cases involving days away from work as a percentage of the total.

Table 2. Percent distribution of nonfatal occupational injuries and illnesses involving days away from work or job transfer or restriction by selected worker and case characteristics, private industry, 2013

Characteristic	Cases involving days of job transfer or restriction	Cases involving days away from work
Total (case count)	14,290	4,680
Median days away from work[(1)]	20	8
Percent distribution		
Gender		
Male	64.4	71.4
Female	35.3	28.4
Age		
20 to 24	13.9	10.5
25 to 34	27.1	21.8
35 to 44	21.0	23.1
45 to 54	22.3	26.1
55 to 64	11.5	14.5
Race or ethnic origin[(2)]		
White	21.3	27.8
Black or African American	16.9	17.3

See footnotes at end of table.

Table 2. Percent distribution of nonfatal occupational injuries and illnesses involving days away from work or job transfer or restriction by selected worker and case characteristics, private industry, 2013

Characteristic	Cases involving days of job transfer or restriction	Cases involving days away from work
Hispanic or Latino	35.8	29.9
Asian	5.0	2.6
Not reported	19.9	21.6
Musculoskeletal disorders[3]	52.0	41.0
Event or exposure[4]		
Violence and other injuries by persons or animal	.6	1.3
Transportation incidents	.8	2.6
Falls, slips, trips	14.1	17.3
Exposure to harmful substances or environments	2.1	6.6
Contact with object, equipment	28.1	29.5
Overexertion and bodily reaction	54.0	41.9
Repetitive motion involving microtasks	30.7	16.5
Overexertion in lifting or lowering	8.5	9.4
Nature of injury or illness[5]		
Fractures	4.5	9.0
Sprains, strains, tears	25.1	26.7
Amputations	.9	2.4
Cuts, lacerations, punctures	12.5	11.8
Bruise, contusions	9.2	7.1
Chemical burns and corrosions	.3	1.7
Heat (thermal) burns	.6	2.1
Multiple traumatic injuries	1.7	2.8
Soreness, pain	25.4	12.4
Carpal tunnel syndrome	2.6	4.3
Part of body affected[6]		
Head	1.8	7.5
Eye	.5	3.2
Trunk	14.7	21.4
Back	10.8	12.8
Upper extremities	64.8	47.2
Hand	30.0	18.4
Lower extremities	11.3	16.2
Knee	3.5	5.1
Foot	3.4	5.6
Primary source of injury or illness[7]		
Chemical, chemical products	.5	2.6
Containers	11.1	12.0
Furniture, fixtures	2.4	3.2
Machinery	7.9	10.5
Parts and materials	4.4	5.6
Person, injured or ill worker	38.2	25.2
Worker motion or position	37.9	24.8

See footnotes at end of table.

Table 2. Percent distribution of nonfatal occupational injuries and illnesses involving days away from work or job transfer or restriction by selected worker and case characteristics, private industry, 2013

Characteristic	Cases involving days of job transfer or restriction	Cases involving days away from work
Floors, walkways, ground surfaces	10.0	12.0
Vehicles	3.9	6.6

Notes:

(1) Median days away from work is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median. Median days away from work are represented in actual values.

(2) Race and ethnicity data do not add to total. Some cases may be counted as both “multirace” and “Hispanic and other” race.

(3) Musculoskeletal disorders include cases in which the nature of the injury or illness is pinched nerve; herniated disc; meniscus tear; sprains, strains, tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud’s syndrome or phenomenon; musculoskeletal system and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration.

(4) Occupational Injury and Illness Classification System 2.01.

(5) Ibid.

(6) Ibid.

(7) Ibid.

Note: Dashes indicate data that are not available. Because of rounding and data exclusion of nonclassifiable responses, data may not sum to the totals.

Sources: U.S. Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses, in cooperation with participating state agencies.

The following characteristics and case circumstances show a higher percentage of total days-away-from work cases than cases with job transfer or restriction in this industry:

- Workers older than 45
- White workers
- Male workers
- Falls, slips, and trips
- Fractures
- Carpal tunnel syndrome
- Injuries to the head, trunk, or lower extremities
- Injuries involving vehicles or machinery

The characteristics and case circumstances that show a higher percentage of total cases with job transfer or restriction than cases involving days away from work in this industry include the following:

- Workers under age 35
- Hispanic or Latino workers

- Asian workers
- Female workers
- Musculoskeletal disorders
- Injuries due to overexertion or repetitive motion
- Bruises and contusions or soreness and pain
- Injuries to the upper extremities, including hands
- Incidents due to worker motion or position

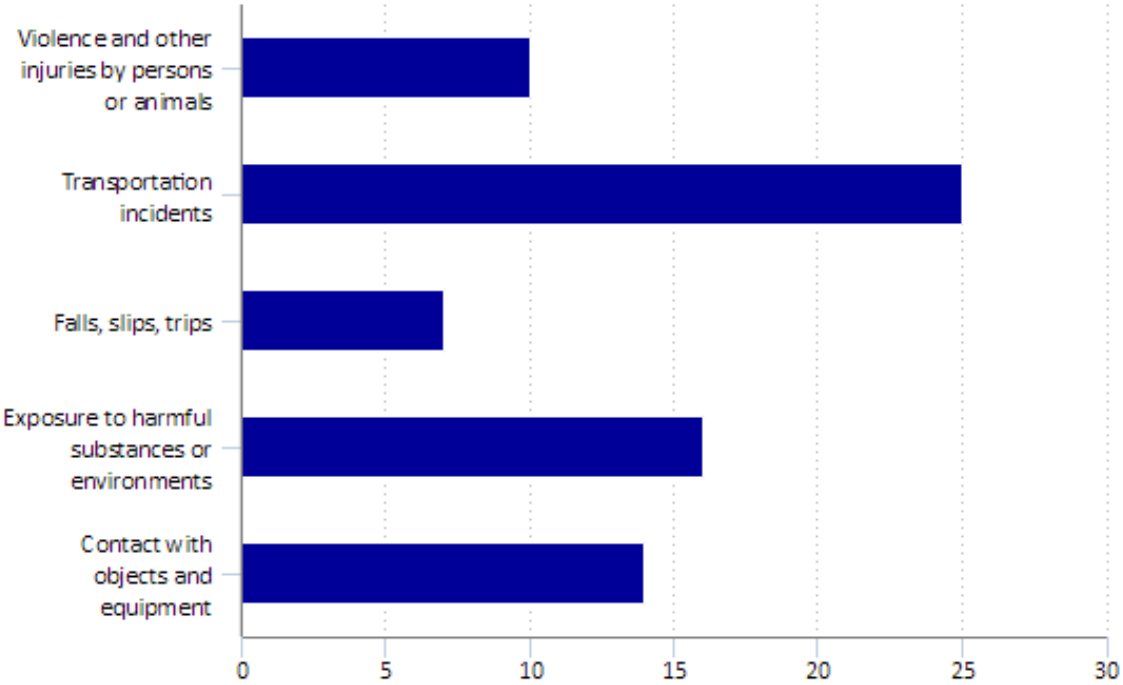
Fatal injuries

From 2011 to 2015, 73 fatal injuries occurred in the animal slaughtering and processing industry, including 8 in 2015, the lowest count in the 5-year period. For the 5-year period, 96 percent of the fatal injuries were among wage and salary workers and 93 percent were among men. Most of the fatally injured workers were White, non-Hispanic (55 percent), while 29 percent were Hispanic or Latino and 12 percent were Black or African American, non-Hispanic.

Of the fatally injured workers, 23 percent were employed as heavy and tractor-trailer truck drivers. Another 14 percent were slaughterers and meat packers, and 19 percent were laborers and material movers, hand, which includes cleaners of vehicles and equipment and laborers and freight, stock, and material movers, hand (each with 8 percent).

Transportation incidents accounted for 34 percent of the fatal injuries (see figure 3), with roadway incident involving motorized land vehicle the most common with 22 percent. Other fatal transportation incidents include pedestrian vehicular incident with 7 percent and nonroadway incident involving motorized land vehicle with 4 percent. Fourteen percent of the cases involved violence and other injuries by persons or animals, including one case in which a worker was trampled by or stepped on by an animal (cattle and other bovines). In another 14 percent of the cases, a worker was caught in or compressed by equipment or objects; many (11 percent) of these cases occurred during maintenance or cleaning. Falls to lower level and exposure to electricity each accounted for 10 percent of the cases.

Figure 3. Fatal occupational injuries in the private animal slaughtering and processing industry by event or exposure, 2011–15



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

In 37 percent of the cases, the source of fatal injury was a vehicle, including semi-, tractor-trailer, or tanker truck (22 percent). In 19 percent of the cases, the source was machinery, and in another 16 percent of the cases, the source was either persons, plants, animals, or minerals, with half of these attributable to a coworker or former coworker.

The Census of Fatal Occupational Injuries tracks worker activity, or what the employee was doing at the time of the injury.[10] Thirty-six percent of the decedents were involved in vehicular and transportation operations, including driving or operating a truck (19 percent). Five percent were walking behind a vehicle. Twenty-two percent were involved in constructing, repairing, or cleaning activities, including cleaning machines (10 percent). Another 11 percent were using or operating tools or machinery. Most of the fatal injuries occurred in a factory or plant (53 percent), whereas another 27 percent occurred on a street or highway.

Summary

The frequency of injuries and illnesses in the animal slaughtering and processing industry declined from 2003 to 2015; however, the rate for 2015, 5.4 cases per 100 full-time workers, is still higher than for all manufacturing and for all private industry. Nearly three-quarters of the injuries and illnesses that resulted in lost workdays are cases with job transfer or restriction. Details of these cases were collected for this industry from 2011 to 2013. Cases involving overexertion and bodily reaction made up a higher percentage of the job transfer or restriction cases than that of days-away-from-work cases, whereas transportation incidents were more prevalent among the days-away-

from-work cases. Over a 5-year period from 2011 to 2015, 73 workers suffered fatal injuries in this industry, with 34 percent of these resulting from transportation incidents.

SUGGESTED CITATION

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NOTES

1 The animal slaughtering and processing industry is defined using the North American Industrial Classification System (NAICS); see "North American Industry Classification System (NAICS) at BLS" (U.S. Bureau of Labor Statistics), https://www.bls.gov/bls/naics.htm. All data in this article are for private industry and exclude state and local government. Data on nonfatal injuries and illnesses are from the Survey of Occupational Injuries and Illnesses program, which collects data from a sample of business establishments in the United States; see "Injuries, illnesses, and fatalities" (U.S. Bureau of Labor Statistics), https://www.bls.gov/iif/home.htm.

2 Days away from work are a type of nonfatal occupational injury or illness in which the worker is out of work a minimum of 1 full day after the event or exposure occurs. These cases include workers who return to their regular job duties or are put on restricted work once they return.

3 Cases with days of job transfer or restriction are injuries and illnesses that lead to days of job transfer or restriction only, without days away from work. See "Days of job transfer or restriction study" (U.S. Bureau of Labor Statistics), https://www.bls.gov/iif/days-of-job-transfer-or-restriction.htm.

4 Data on fatal injuries are from the "Census of fatal occupational injuries (CFOI)—current and revised data" (U.S. Bureau of Labor Statistics), https://www.bls.gov/iif/oshcfoi1.htm. Fatal injuries in this article are based on counts for years 2011−15.

5 See "Introduction to NAICS—North American Industry Classification System" (United States Census Bureau), https://www.census.gov/eos/www/naics/.

6 Occupation is defined using the Standard Occupational Classification system; see "Standard Occupational Classification" (U.S. Bureau of Labor Statistics), https://www.bls.gov/soc/home.htm.

7 Ibid.

8 The Injuries, Illnesses, and Fatalities (IIF) program uses the Occupational Injury and Illness Classification System to define event or exposure, nature, part of body, and source; see "Injuries, illnesses, and fatalities," *Occupational Injury and Illness Classification Manual* (U.S. Bureau of Labor Statistics), https://www.bls.gov/iif/oshoiics.htm.

9 Musculoskeletal disorders include cases in which the nature of the injury or illness is a pinched nerve; herniated disc; meniscus tear; sprains, strains, and tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system; and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration.

10 The worker activity data element describes what the worker was doing at the time of the fatal injury or exposure. For a detailed list of worker activity codes used by the Census of Fatal Occupational Injuries program, see https://www.bls.gov/iif/oshcfdef.htm.

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