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Meatpacking – Here's the Beef

Part 2: Perspectives From The Beef State

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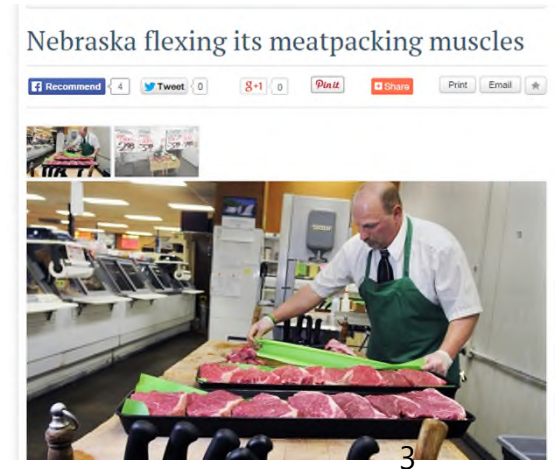
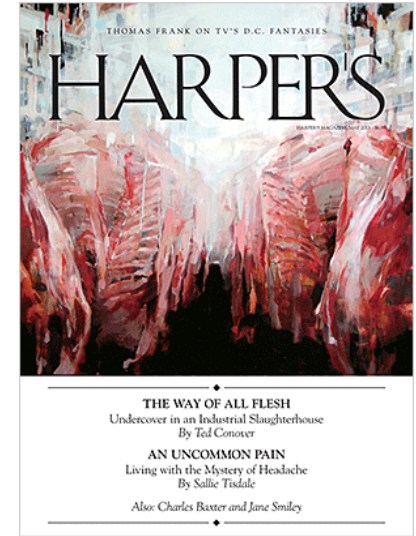
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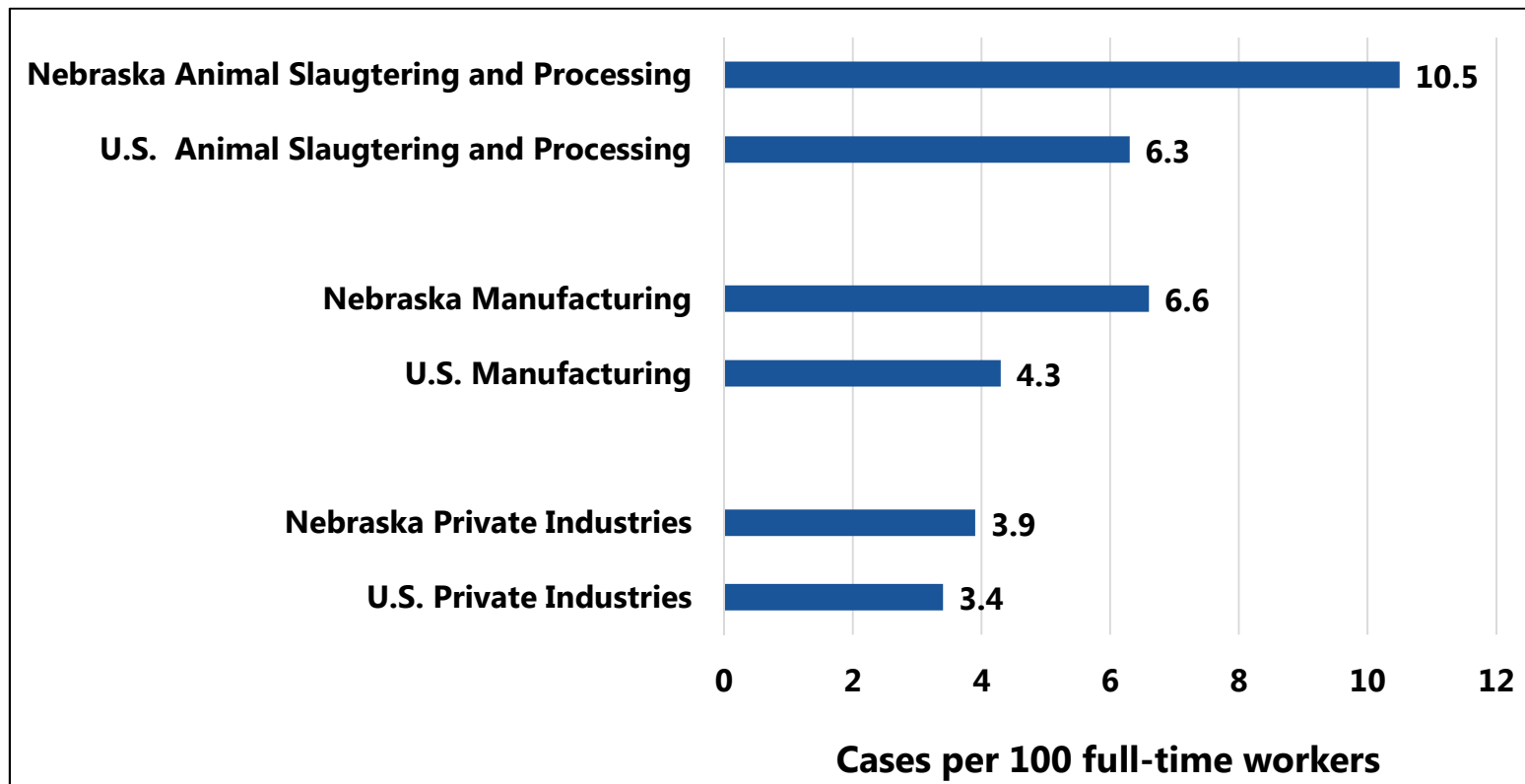


Where's the Beef?



What's the Beef?

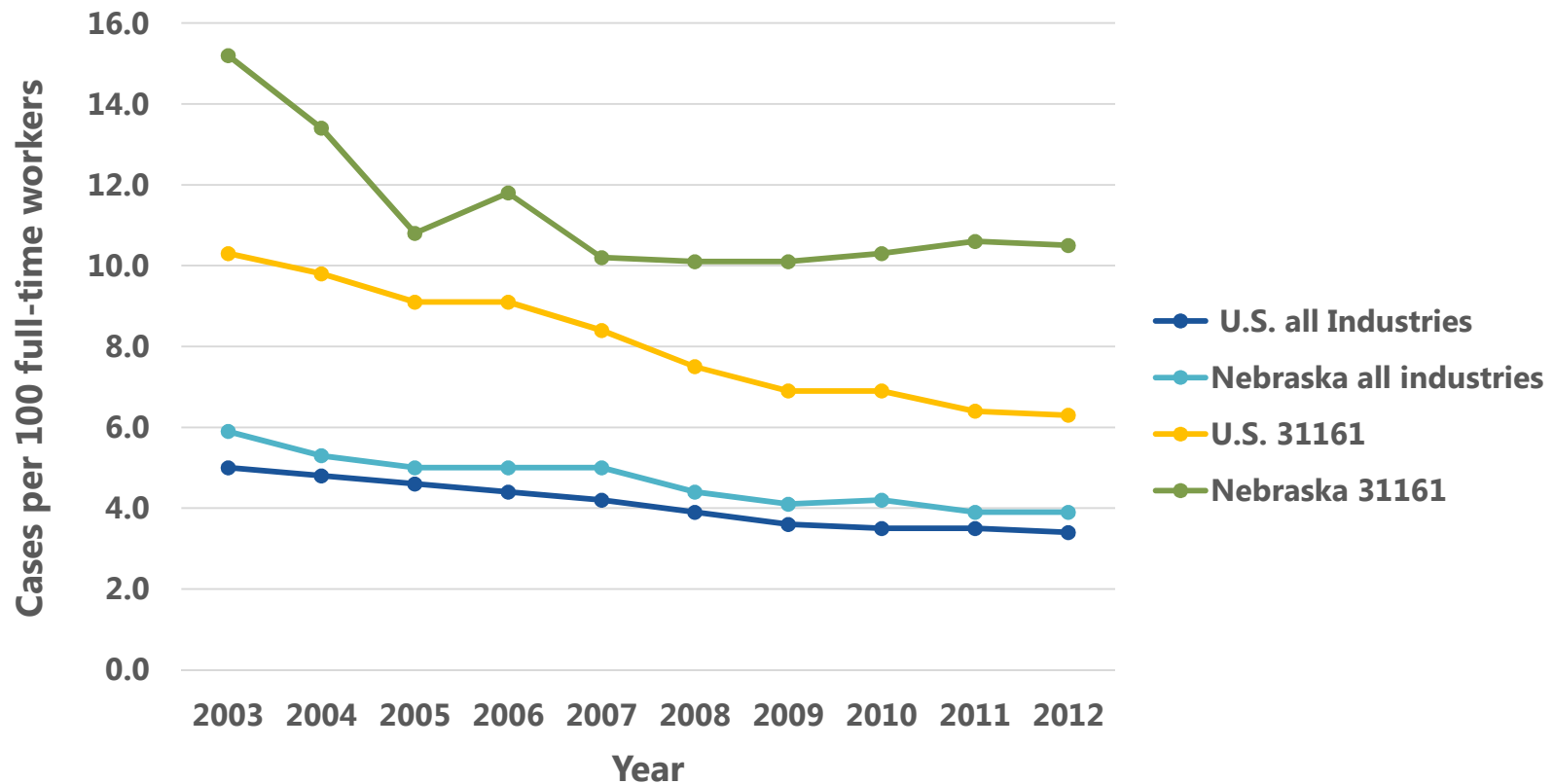
Estimated Nonfatal Injury/Illness Rates per 100 full-time workers, Nebraska & U.S., 2012



Source: BLS, Survey of Occupational Injuries and Illnesses (SOII)

What's the Beef?

Estimated Nonfatal Injury/Illness Incidence Rates per 100 full-time workers, 2003-2012



Source: BLS, Survey of Occupational Injuries and Illnesses (SOII)

The Meatpacking Worker

- Performs relatively simple and specific tasks
 - Makes up to 20,000 cuts each day¹
- Uses of sharp cutting tools that dull quickly
- Faces very fast line speeds²
 - Meatpacking plants: up to 325 cattle per hour
 - Line speeds associated with injuries³
- Is exposed to chemicals and hazardous environments



Credit: Joe Amon, Denver Post

¹ Nebraska Appleseed. "The Speed Kills You: The Voice of Nebraska's Meatpacking Workers, 2009"

² Lincoln Journal Star, 2009: http://journalstar.com/why-line-speed-is-non-negotiable/article_4af83d30-b2bc-11de-9b21-001cc4c03286.html

³ Dalla, Rochelle, Christensen, 2005.

Injuries and Illnesses

- Repetitive motions injuries and cumulative trauma disorders
 - Estimated 2012 injury rates due to “repetitive motions involving microtasks”
 - Meatpacking: 24.9 cases per 10,000 workers vs. all industries: 2.9 cases per 10,000 workers (BLS SOII)
- Carpal Tunnel Syndrome
 - CTS prevalence estimated at 15-24% among meatpacking workers ⁴
- Lacerations injuries
 - Knives, scissors, saws, share edges and hooks ⁵
- Slips, trips, and falls
 - Slippery floors: blood, grease, degreasers, cleaning solutions

⁴ Gorsche, G., et al., 1999

⁵ Lander, L., et al, 2010

Exposures

- Chemicals
 - Sodium hypochlorite & ammonia
- Cold temperatures & cold stress
- Blood, infected tissues, pathogens
 - Exposures to antimicrobial resistance pathogens ^{6,7}
 - Zoonotic transmissible agents:
Hypothesized cause of excess mortality from septicemia, subarachnoid hemorrhage, chronic nephritis, endocarditis, heart disease ⁸

⁶ Kyeremateng-Amoah, E., et al, 2014

⁷ Castillo Neyra, R. et al, 2012.

⁸ Johnson, ES., 2007

May 2012: 40 workers in a Nebraska beef plant sent to hospital after ammonia leak – 10 were treated for chemical inhalation



April 2013: Five workers at a beef processing plant in Nebraska hospitalized after bleach was pumped into a lactic acid tank

Credit: 10/11 News



Feb 2014: Fire, ammonia leak close Nebraska beef plant

Credit: TYLER ELLYSON / Columbus Telegram

Nebraska Recognizes a Problem

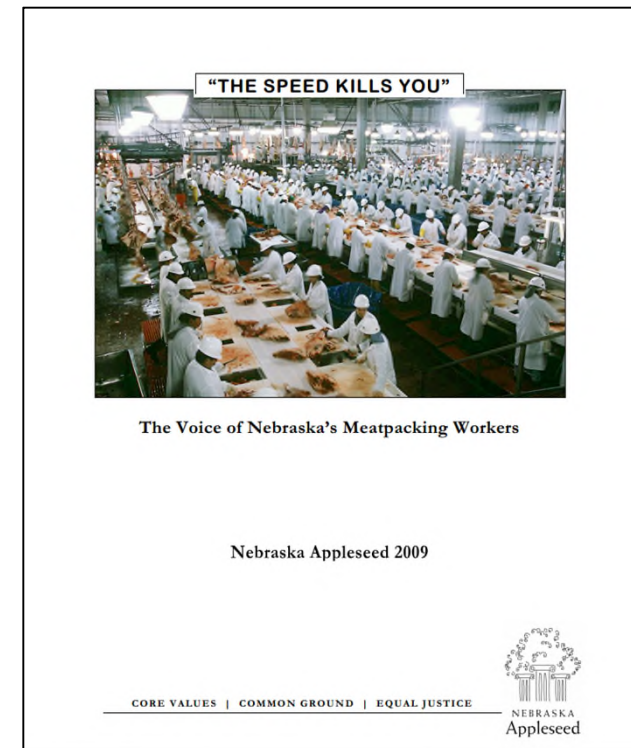
- Late 1990s: Lincoln Journal Star featured series of reports on meatpacking working conditions
- 2000: Governor Johanns drafted and signed “Meatpacking Workers Bill of Rights”
- 2001: Nebraska Legislature passed the Non-English-Speaking Workers Protection Act
 - Employers must translate information
 - Created a “meatpacking industry worker rights coordinator” within Nebraska DOL

Meatpacking Workers Bill of Rights **Workers have a right to:**

- Organize with union representation.
- A safe workplace.
- Adequate workplace facilities and the opportunity to use them.
- Adequate equipment.
- Information about their workplace.
- Information provided in a form they can understand.
- State and federal benefits and rights.
- Freedom from discrimination.
- Continuing training, including supervisor training.
- Compensation for work performed.
- Seek state help when needed.

Where Are We Now?

- Nebraska Appleseed
 - Non-profit public interest legal organization
 - OSHA Susan Harwood Grantee
- “The Speed Kills You: The Voice of Nebraska’s Meatpacking Workers, 2009”
 - Survey of 455 meatpacking workers in Nebraska
 - 5 plants represented



Where Are We Now?

- 62% of workers said they had been injured in the past year.
- 73% of workers surveyed stated that the speed of the line had increased in the past year
- 47% were aware of Meatpacking Workers Bill of Rights Law
- Only 10% had heard of the Meatpacking Worker Rights Coordinator
- 44% remember receiving information about workers' compensation
- One third of workers knew they have the right to choose their own doctor.

Where Does Public Health Fit In?

- Working with Appleseed
 - Developing educational materials related to repetitive motion injuries & carpal tunnel syndrome
 - Translations to languages other than Spanish
 - Nebraska Appleseed can disseminated via existing community outreach
- Improve our understanding of causes and risk factors
 - Partnering with UNMC to study workers' compensation claims
- On to Dr. Patel....

Non-fatal injuries in animal slaughtering and processing: Analysis of Nebraska workers' compensation claims, 2008-2012

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Data source

- Nebraska Workers' Compensation Claims, 2008-2012
 - Information from the First Report of Occupational Injury
- Selection criteria:
 1. North American Industry Classification System (NAICS) code
 - 311611 Animal slaughter and processing
 - 311612 Meat processed from carcasses
 - 311613 Rendering and meat byproduct processing
 - 311615 Poultry processing
 2. Injuries only

Information from U.S. Census Bureau's County Business Patterns (CBP) series

- Number of establishments
- Number of employees during the week of March 12 for each year

Variables created

- Severity of injury (mild, moderate, severe)
 - based on initial treatment of injury
- Job experience (<2 years, 2-10 years, and >10 years)
 - subtract date of injury from date of employment
- Employer size (categories)
 - 1-49, 50-99, 100-249, 250-499, 500-999, ≥ 1000 employees

Statistical analysis

- Summary measures
- To examine the distribution of three levels of injuries, cross-tabulations and chi-square tests were used.
- To evaluate the effect of gender, age, employer size, job experience, day of the week of injury, county of work, and body part affected on the severity of injury ordinal logistic regressions were used at level of significance 0.05.

Figure 1: Injury rates in animal slaughter and processing industry, Nebraska, 2008-2012

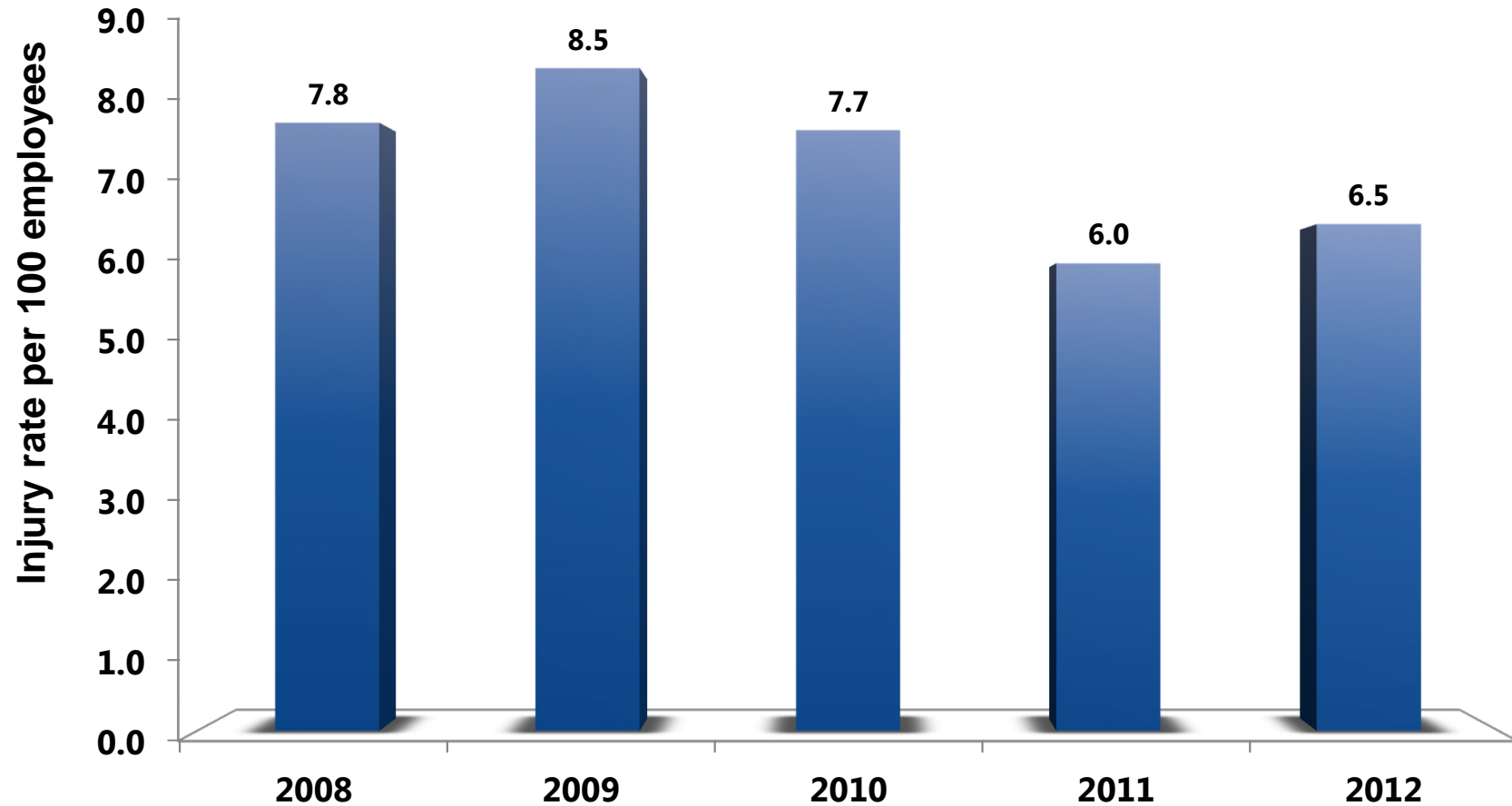


Table 1: Demographic and injury characteristics- Nebraska workers' compensation data, 2008-2012

	Minor Injury (N=648)	Moderate Injury (N=7112)	Serious Injury (N=796)	Overall (N=9338)	P-value
	N (%)	N (%)	N (%)	N (%)	
Year of Injury					<0.001
2008	140 (7.7)	1567 (86.1)	112 (6.2)	1949 (20.9)	
2009	193 (9.6)	1640 (81.5)	179 (8.9)	2181 (23.4)	
2010	192 (10.7)	1423 (79.1)	184 (10.2)	1963 (21)	
2011	42 (3)	1213 (86.4)	149 (10.6)	1570 (16.8)	
2012	81 (5.3)	1269 (83.4)	172 (11.3)	1675 (17.9)	
Age					0.26
<25	81 (6)	1140 (83.7)	141 (10.3)	1429 (15.3)	
25-34	176 (8.2)	1775 (82.4)	202 (9.4)	2352 (25.2)	
35-44	168 (7.7)	1825 (83.5)	192 (8.8)	2355 (25.2)	
45-54	153 (8.3)	1520 (82.7)	165 (9)	2041 (21.7)	
55-64	62 (7.2)	727 (83.8)	78 (9)	1002 (10.7)	
65+	8 (5.3)	125 (82.8)	18 (11.9)	159 (1.7)	
Gender					<0.001
Male	434 (7.6)	4639 (81.2)	641 (11.2)	6238 (67.2)	
Female	210 (7.4)	2464 (87.1)	154 (5.5)	3014 (32.5)	
Unknown				30 (0.3)	

Table 1 contd.

	Minor Injury (N=648)	Moderate Injury (N=7112)	Serious Injury (N=796)	Overall (N=9338)	P-value
	N (%)	N (%)	N (%)	N (%)	
Job experience					0.20
<2 years	364 (8.2)	3665 (82.4)	421 (9.4)	4652 (49.8)	
2 -10 years	186 (7.0)	2237 (83.8)	247 (9.2)	2886 (31.3)	
> 10 years	93 (6.7)	1172 (84.4)	123 (8.9)	1672 (18.2)	
Missing				128 (1.4)	
Work shift at injury					<0.001
7:00 AM – 2:59 PM	339 (9.6)	2951 (83.8)	231(6.6)	3716 (39.8)	
3:00 PM – 10:59 PM	178 (7.7)	1792 (77.5)	341 (14.8)	2404 (25.7)	
1100 PM – 6:59 AM	118 (4.5)	2277 (87.2)	217 (8.3)	2802 (30.0)	
Missing				416 (4.5)	
Part of body injured					0.003
Upper extremities	354 (7.3)	4062 (84.2)	407 (8.4)	5238 (56.1)	
Head	44 (7.1)	492 (79.6)	82 (13.3)	678 (7.3)	
Neck	8 (10.0)	63 (78.8)	9 (11.2)	89 (1.0)	
Trunk	123 (8.5)	1185 (82.0)	138 (9.5)	1566 (16.8)	
Lower extremities	85 (8.8)	780 (81.0)	98 (10.2)	1089 (11.7)	
Multiple body parts	34 (5.4)	530 (84.7)	62 (9.9)	678 (7.3)	

Results summary

- The average annual claim incidence rate for animal slaughter and processing industry in Nebraska was 7.3/100 FTE workers
- The proportion of injury claims filed were higher for
 - Males
 - age groups 25-34 and 35-44 years
 - animal slaughter (except poultry)
 - establishments with ≥ 1000 employees
 - injuries that occurred during weekdays
 - injuries that occurred during 7:00 am- 2:59 pm
 - injuries affecting upper extremity/s (esp. fingers 21.8%)

Figure 2: Nature of specific injury- Nebraska workers' compensation data, 2008-2012

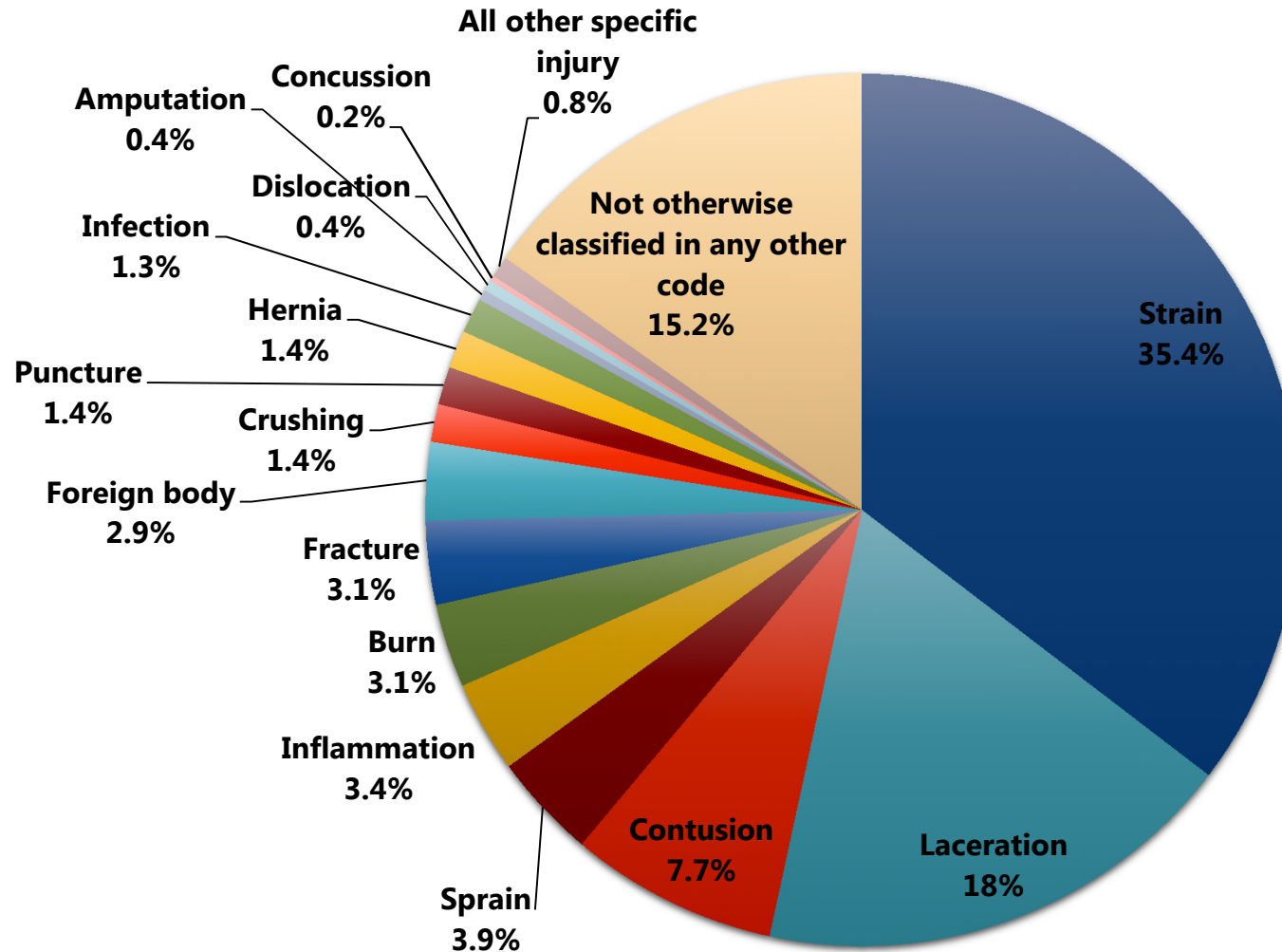
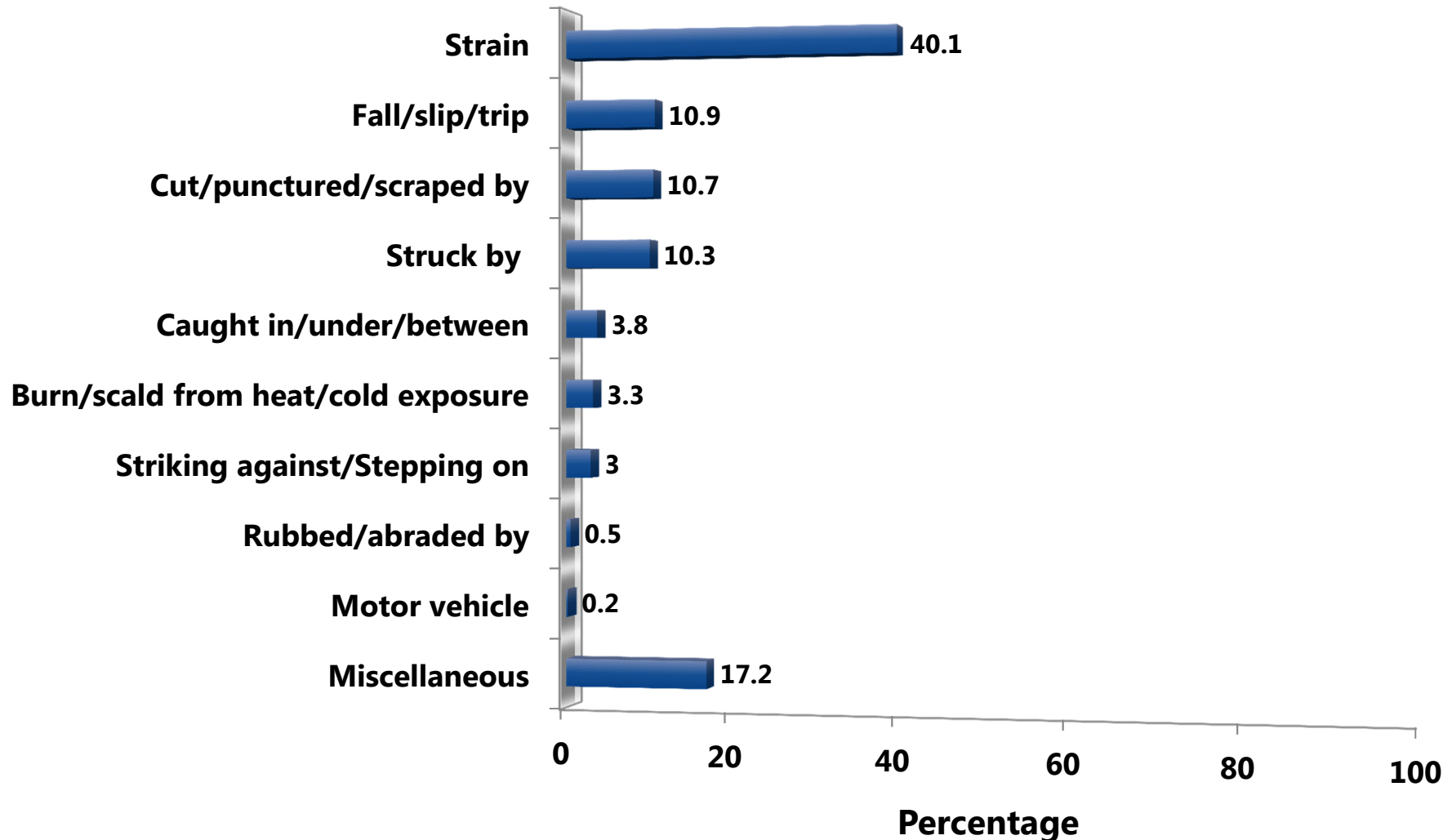


Figure 3: Cause of injury- Nebraska workers' compensation data, 2008-2012



Results summary

- Majority of injuries (40.1%) were caused by strain including repetitive motion, pushing or pulling, lifting, twisting using a tool or machinery, reaching, holding or carrying, welding or throwing, jumping, and continual noise.
- Strain (35.4%), laceration (18.0%), and contusion (15.2) were the most common injury types.

Table 2: Association between injury severity and independent predictors

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Gender		
Female	1	1
Male	1.44 (1.28 - 1.63)	1.32 (1.16 - 1.49)
Age group		
<25	1	1
25-34	0.82 (0.69 - 0.98)	0.82 (0.68 - 0.99)
35-44	0.81 (0.68 - 0.97)	0.83 (0.69 - 1.00)
45-54	0.78 (0.65 - 0.94)	0.78 (0.64 - 0.96)
55-64	0.85 (0.68-1.06)	0.75 (0.58 - 0.95)
65+	1.15 (0.74-1.78)	0.97 (0.62-1.54)
Employer size		
<1,000 employees	1	1
≥1,000 employees	1.45 (1.26 - 1.65)	1.60 (1.38 - 1.86)

Table 2 contd.

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Job experience		
< 2 years	1	1
2-10 years	1.07 (0.94 - 1.21)	1.19 (1.04 - 1.36)
> 10 years	1.05 (0.90 - 1.24)	1.14 (0.95 - 1.37)
Day of week at injury		
Monday	1	1
Tuesday	0.93 (0.78 - 1.12)	0.90 (0.75 - 1.09)
Wednesday	1.03 (0.86 - 1.25)	0.99 (0.82 - 1.19)
Thursday	1.29 (1.07 - 1.55)	1.24 (1.03 - 1.49)
Friday	1.18 (0.97 - 1.42)	1.13 (0.93 - 1.37)
Saturday	2.15 (1.66 - 2.79)	2.01 (1.57 - 2.62)
Sunday	3.66 (2.47 - 5.43)	3.15 (2.09 - 4.73)

Table 2 contd.

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
County of work		
Same county of residence	1	1
Out of county of residence	1.77 (1.56 - 2.01)	1.73 (1.51 - 1.97)
Body part injured		
Lower extremity	1	1
Head	1.37 (1.05 - 1.79)	1.28 (0.98 - 1.67)
Neck	0.99 (0.54 - 1.83)	1.09 (0.58 - 2.03)
Upper extremity	0.99 (0.82 - 1.19)	1.18 (0.97 - 1.42)
Trunk	0.98 (0.79 - 1.22)	1.05 (0.84 - 1.31)
Multiple body parts	1.22 (0.93 - 1.59)	1.44 (1.09 - 1.90)

Results summary

- Risk of injury of higher severity was -
 - 1.3 times for males than females
 - 1.6 times for establishments with ≥ 1000 employees than with < 1000 employees
 - 1.2 times for workers with 2-10 years than those with < 2 years of job experience
 - 1.2 times on Thursdays, 2 times on Saturdays, and 3.2 times on Sundays than on Mondays
 - 1.7 times for those worked outside the county of residence than those who lived and worked in the same county
 - 1.4 times for those with multiple body parts affected than just lower extremity injuries

Conclusions

- Workers' Compensation Claim Rates are lower than other injuries estimates
 - Expected due to under reporting
- Most frequently injured body parts – upper extremities (56.1%)
- Repetitive strain injuries associated with 40% of injury claims
- Injury severity was associated with working at large facilities, in first shift, being employed at outside the county of residence, and injuries affecting multiple body parts

Next steps

- Working with the OSHA 300 log data

It also includes information on race/ethnicity, language spoken, and narrative text on task performed pre-injury, and tools/equipment involved in injury

- Further workers' compensation studies will focus on evaluating-cost of injury, return to work after injury, and effect of social, economic and psychosocial factors on injuries in animal slaughter and processing

- Finding ways to improve awareness of workers' compensation

- Develop safety education materials

Per information obtained from data, and need of the workers

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- Meatpacking Worker Bill of Rights: <https://dol.nebraska.gov/center.cfm?PRICAT=2&SUBCAT=5K>

Questions?



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