

# Utilization of the NH Behavioral Risk Factor Surveillance System (BRFSS) to Better Understand Under-Reporting of Work-Related Injuries



## INTRODUCTION

Work is a social determinant of health. Adults spend more time working in a day than they do any other singular activity.<sup>1</sup> Sustaining an injury because of conditions at work affects an individual's health and ability to thrive.

Work-related injuries in the United States continue to be under-reported and an economic burden on our society. Under-reporting of these injuries leads to misdirected claims to other health insurance systems including private insurance, Medicaid and Medicare, and to workers themselves via out-of-pocket payments.<sup>2</sup>

Work-related injuries are a major cause of morbidity in the United States. The Bureau of Labor Statistics (BLS) reported the rate of nonfatal workplace injuries and illnesses among private industry employers at 3.4 cases per 100 full-time equivalent (FTE) workers in 2012 (close to 3 million cases). Of the estimated 3 million cases, approximately 2.8 million (94.8 percent) were injuries.

A number of studies have documented that the current system to derive accurate estimates for work-related injuries and illnesses undercount both chronic conditions and acute injuries.<sup>3,4,5</sup> This report follows a previous study in New Hampshire estimating work-related injuries for employed adults and associated payer in 2008. The study found that only half of all self-reported work-related injuries severe enough to require medical attention were reported to the workers' compensation system.<sup>6</sup> These results were commensurate with a 2007 study of 10 states where the proportion of self-reported work-injured persons for whom medical treatment was paid by workers' compensation insurance ranged from 47% in Texas to 77% in Kentucky (median: 61%).<sup>7</sup>

## METHODS

### *Data Source*

We utilized the 2012-2013 New Hampshire Behavioral Risk Factor Surveillance System (BRFSS) survey data. The BRFSS is an annual telephone health survey of New Hampshire adults focused on the behaviors and conditions that are linked to the leading causes of injury, illness, and death. First implemented in 1984, with support from the Centers for Disease Control and Prevention (CDC), the BRFSS reaches individuals in all fifty states, three US Territories, and the District of Columbia.<sup>9</sup> The annual BRFSS survey is comprised of a set of core questions established by the CDC Division of Behavioral Surveillance, Public Health Surveillance and Informatics Program Office; however, individual states have the option of funding state-added questions in order to explore specific topics of interest or concern.

New Hampshire added questions regarding injury at work "serious enough while performing your job that you sought medical advice or treatment" and payer source in 2008. These questions were again added in 2012 and 2013. New Hampshire also added questions about the respondents' industry (What kind of business or industry are you in?) and occupation (What is your job title/what kind of work do you do?) to the survey beginning in 2011. Our intent was to explore the industry and occupation of those employed respondents reporting "injured at work with associated payer."

An employed respondent was defined as an adult who was currently employed, self-employed, or had been out of work for less than one year at the time of the BRFSS interview.

### *Data Analysis:*

Descriptive statistics on these state-added questions were generated using Statistical Analysis System (SAS). Data reported in this brief meet the BRFSS rule of 50 and have relative standard errors of less than or equal to 30%. Standard analysis methods were used to

account for the complex sample designs and weighting of the BRFSS.

Text responses for occupation and industry reported by New Hampshire BRFSS respondents were coded into the most recent U.S. Census North American Industry Classification System (NAICS) and Standard Occupational Classification (SOC) codes by a combination of expert coders in the National Institute for Occupational Safety and Health (NIOSH) and the NIOSH Industry & Occupation Computerized Coding System (NIOCCS). Some industry and occupation categories were combined to simplify BRFSS analysis.

## RESULTS

During 2012 and 2013, 13,993 individuals at or above the age of 18 were interviewed. The total number of respondents who were currently working or had been out of work for less than a year was 7,641. Of those,

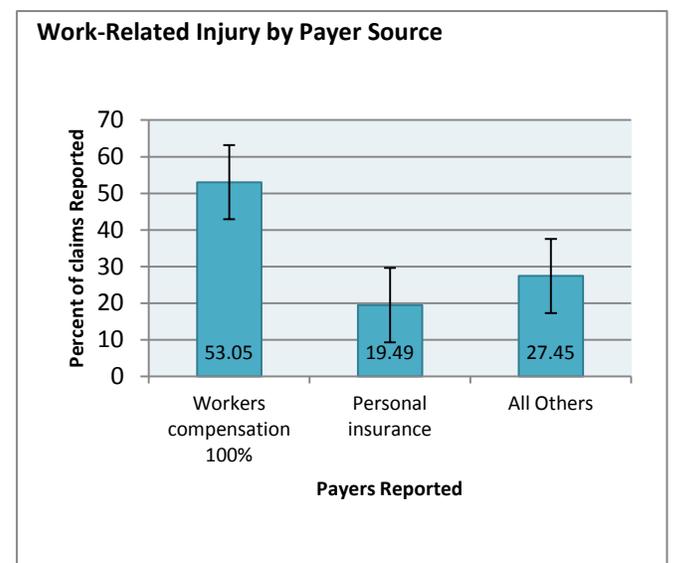
**Table 1 – Demographics - BRFSS Respondents answering “yes” to injury**

Demographics	Percentages	95% Confidence Interval	
NH Adults	4.7	4	5.5
<b>Age</b>			
Age 18 to 24	4.1	1.5	6.8
Age 25 to 34	6.5	3.9	9.1
Age 35 to 44	3.8	2.4	5.2
Age 45 to 54	5.1	3.9	6.4
Age 55 to 64	4.6	3.2	5.9
Age 65 or older	3.1	1.8	4.4
<b>Education</b>			
Did not graduate High School	13.9	6.4	21.3
Graduated High School	5.4	4.1	6.8
Attended College or Technical School	4.9	3.6	6.1
College or Technical School	2.7	2.0	3.4
<b>Income</b>			
<\$15,000-<\$35,000	6.4	4.4	8.4
\$35,000-<\$50,000	7.6	5.1	10.1
\$50,000 +	3.7	2.9	4.6
<b>Healthcare Coverage</b>			
Yes	79.0	71.5	87.0
No	21.0	13.0	28.5
<b>Gender</b>			
Male	5.1	3.9	6.2
Female	4.4	3.5	5.3

280 respondents (4.7% or 24,585 weighted frequency) reported they had been injured at work seriously enough to seek medical advice or treatment.

Of the 280 injured respondents, workers’ compensation paid for 53.4% (12,837 weighted frequency) of all reported injury events, and 46.6% (11,463 weighted frequency) were paid for by other payer sources, including personal insurance plans, Medicare and Medicaid combined, and including those partially paid by workers’ compensation (see Figure 1).

**Figure 1 – Reported work-related injury by payer**

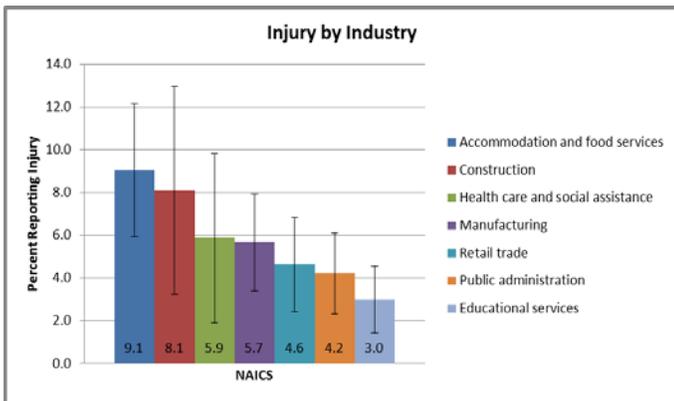


Of all respondents reporting injury, nearly 21% did not have any health insurance coverage. Women reported fairly equal injury events compared with men, 4.4% and 5.1%, respectively (see Table 1).

Prevalence was lower among those with a college or technical degree compared with those with less than a high school diploma; and those with incomes of \$50,000 or more compared with those with incomes of \$15,000 to less than \$50,000. Work-related injury was more prevalent among individuals between the ages of 25-34 years and 45-54 years (6.5% and 5.1%, respectively).

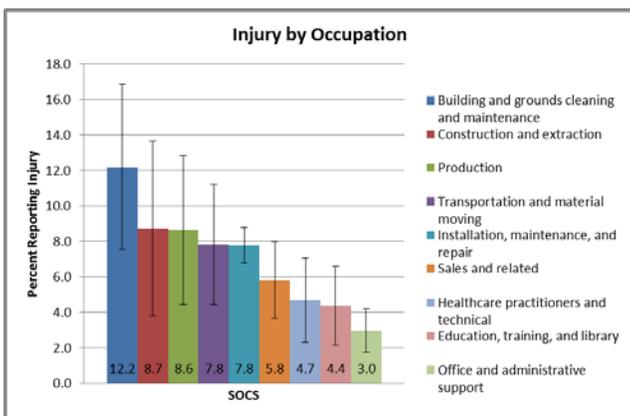
Injuries by industry (NAICS) were highest in *accommodation and food services* (9.1%, 2,227 weighted frequency), followed closely by those working in *construction* (8.1%, 2,967 weighted frequency), *health care and social assistance* (5.9%, 4,514 weighted frequency), and *manufacturing* (5.7%, 1,507 weighted frequency).

Figure 1- Reported injury by industry (highest to lowest percentage of injury)



The highest rates of injury by occupation (SOC) were reported by those working in *building, grounds cleaning and maintenance* (12.2%, 1,946 weighted frequency; see Figure 3).

Figure 2- Reported injury by occupation (highest to lowest percentage of injury)



## DISCUSSION

New Hampshire law requires employers to provide workers' compensation insurance. Any worker employed for wages (not including contractors and self-employed) is entitled to workers' compensation insurance, regardless of work status (full or part time) or immigration status.

A majority of respondents in the BRFSS survey with an injury were likely eligible for workers' compensation benefits. Only about half, however, reported their treatment was paid in full by workers' compensation. This results in a substantial financial burden falling on private and government insurers as well as on individual families paying for treatment costs out of pocket.

The industries and occupations represented as having the highest prevalence of injuries at work tend to represent low-income, part-time, and more hazardous kinds of work, as well as those types of jobs that are less likely to be covered under an employer's workers' compensation insurance (e.g., contractors and self-employed). In addition, many of these workers may not have any health insurance at all.

There are many reasons to explain under-reporting of work-related injuries. These include individuals' perceptions of what a work related injury is, concerns over repercussions at work, confusion over what is reportable; employees preferring paid sick time over workers' compensation/lost work time; fear of job loss; language barriers; misdiagnosis; or in some instances a work environment where incentives are given for *not* reporting an injury.

## LIMITATIONS

The results of our study are based on self-reported injury and may be subject to under- or over-reporting by respondents. For example, some respondents may not be aware that their injury was work-related (for example, back pain). Second, the questions did not ask about illnesses, only about injuries serious enough to

require medical care. These issues likely result in an underestimate of workplace-related health conditions.

Third, the study was limited by small numbers of employed respondents reporting an injury. It was not possible to analyze for those employed for wages (employee status) compared with those who were self-employed, for example. This information is important because a person who is self-employed is potentially less likely to carry workers' compensation insurance on themselves.

## CONCLUSIONS

Utilizing existing surveillance systems to capture information such as industry, occupation, and work-related injury events is critical to better target public health prevention efforts. Gaps exist in traditional labor and employment data collection systems. The BRFSS is an ideal surveillance system to collect industry and

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occupation (I/O) information, which should be integrated into the core survey (and not offered as an optional module only). This would allow for a more robust system for occupational health surveillance nationwide.

The industry and occupation questions can serve the interests of not only professionals in the occupational health and safety field but also potentially chronic disease, infectious disease, environmental health and other areas of public health, especially when interventions are designed to be integrated with worksite wellness strategies. In addition, these data contribute to policy discussions around workers' rights, regulations on eligibility and coverage of workers' compensation insurance, collection of industry and occupation within the medical record, and cost containment and cost shifting among various insurance carriers.

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*This project was supported by grant number 5U60OH009853 from CDC, NIOSH. The contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC.*

## ACKNOWLEDGEMENTS

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