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Fatal and Nonfatal Injuries among Hispanic Construction Workers, 1992-2008

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Current economic and workforce changes have made construction safety and health more complicated and unpredictable than ever before. The economic downturn had a significant impact on Hispanic employment in construction, especially on foreign-born Hispanics (*see* page 19 for link). Recent BLS news reports have touted declines in construction fatalities but lacked detailed information on Hispanic construction workers.

To shed light for interested stakeholders on safety and health of Hispanic workers, this data brief provides updated data on fatal and nonfatal injuries among Hispanic construction workers, focusing on changes in recent years. Injury data on the construction industry as a whole and detailed data on construction occupations can be found in our recent report "Work-Related Fatal and Nonfatal Injuries among U.S. Construction Workers, 1992-2008."

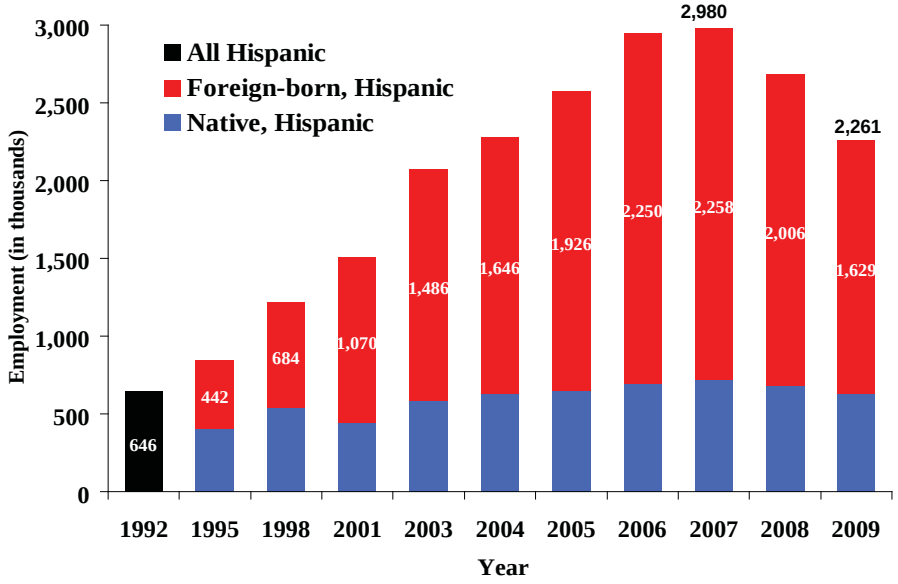
KEY FINDINGS

- The rate of fatal injuries for Hispanic construction workers was about 41% higher than white, non-Hispanic construction workers until 2006, but the rates appear to have converged in 2007 and 2008.
- 74% of Hispanic construction workers killed on the job between 2001-2008 were foreign-born.
- Nearly 47% of work-related deaths among Hispanic workers occurred in small establishments with 1-10 employees.
- Falls caused nearly 40% of work-related deaths among Hispanic workers between 2003 and 2008. Nearly 80% of those workers were foreign-born.

Hispanic employment in construction

Hispanic employment in construction experienced considerable growth from 1992 to 2007 (increasing from 646,000 to nearly 3 million workers), then shrank dramatically in 2008-2009 by 719,000. Foreign-born Hispanic workers accounted for almost all of the growth and subsequent decline in the Hispanic construction workforce. The number of Hispanic construction workers born outside the U.S. increased almost five times from 0.4 million in 1995 to 2.3 million in 2007, then declined by about 30% to 1.6 million during the economic downturn. By contrast, native Hispanic employment in construction was relatively stable over time (Chart 1).

1. Number of Hispanic employees in construction, selected years, 1992 – 2009 (All types of employment)

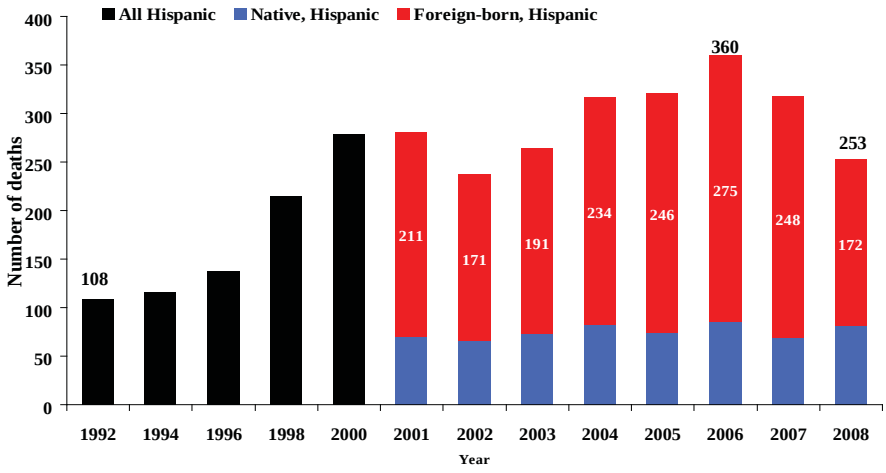


Note: No foreign-born information was available in 1992 data.
Source: Bureau of Labor Statistics: Current Population Survey.

Number of fatal injuries

Work-related deaths among Hispanic construction workers fluctuated over 1992-2008, but increased in general before the current economic downturn. The changes in number of fatalities mirrored overall employment trends in Hispanic workers, and, like the employment trends, were driven by immigration. Fatalities among foreign-born workers accounted for 74% of the fatalities among all Hispanic construction workers since BLS began collecting foreign-born information in the CFOI data in 2001. The number of work-related deaths among foreign-born workers steadily increased since 2002 to 275 in 2006, before dropping back to 172 in 2008 (Chart 2).

2. Number of work-related deaths from injuries, foreign-born versus native Hispanic workers in construction, 1992 – 2008

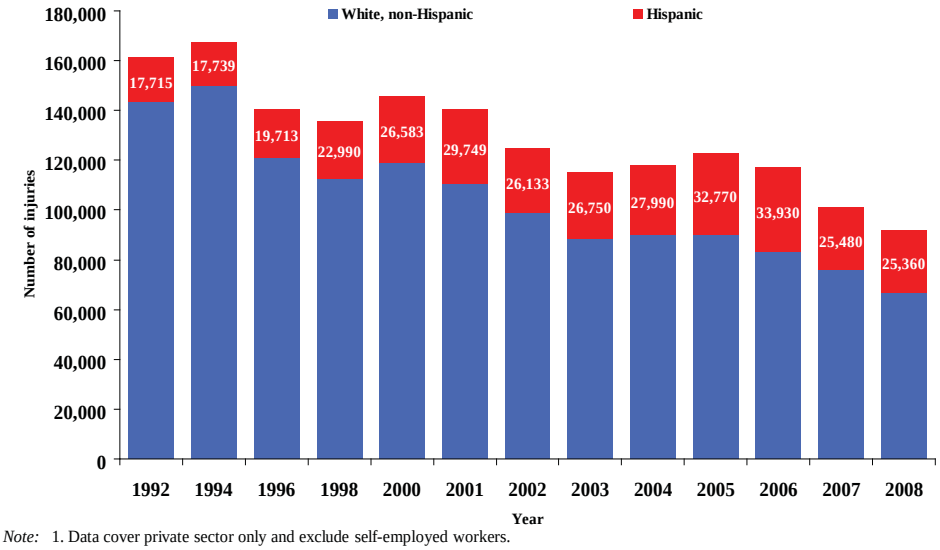


Note: No foreign-born information was available before 2001.
Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries.

Number of non fatal injuries and illnesses

Although nonfatal injuries and illnesses in construction declined in the aggregate, the number of nonfatal injuries and illness among Hispanic construction workers nearly doubled from 17,715 to 33,930 in 1992-2006 (Chart 3). However, the increase in the reported nonfatal injuries among Hispanic workers is not proportional to the simultaneous and dramatic growth in Hispanic employment in construction (Chart 1). The numbers of nonfatal injuries and illnesses declined for both Hispanic and white, non-Hispanic construction workers in 2007 and 2008 (Chart 3).

3. Number of nonfatal injuries and illnesses with days away from work, Hispanic versus white, non-Hispanic workers in construction, 1992 – 2008

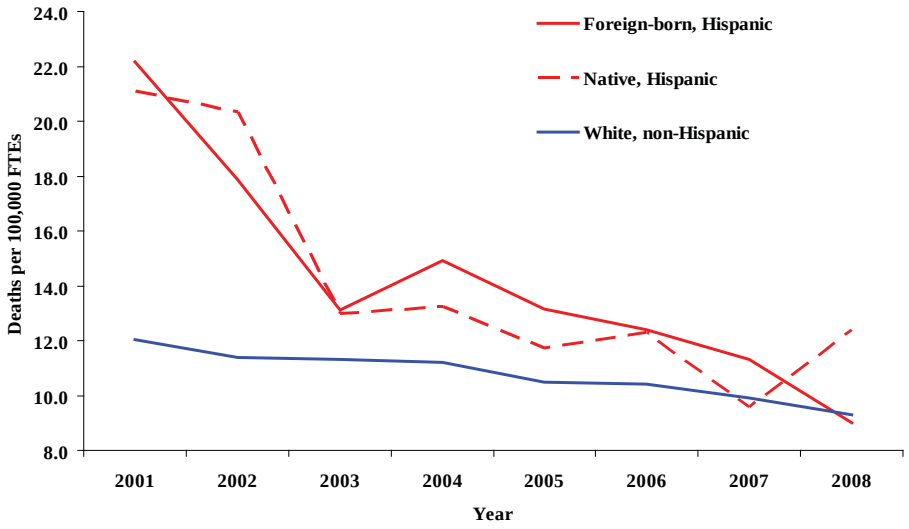


Note: 1. Data cover private sector only and exclude self-employed workers.
2. On average, about 20% of cases had no information on Hispanic ethnicity during this period.
Source: Bureau of Labor Statistics: Annual Survey of Occupational Injuries and Illnesses.

Rates of fatal injuries

Death rates declined gradually for all worker groups in construction. Although Hispanic construction workers had higher death rates than their white, non-Hispanic counterparts from 2001-2006, the rates appear to have converged in 2007 and 2008 at around 9 deaths per 100,000 FTEs (Chart 4). During these last two years, however, the rates in the foreign-born and native Hispanic worker populations appear somewhat unstable, so it is difficult to draw conclusions about the direction of these rates. While the death rate for white, non-Hispanic construction workers showed a steady but modest decline during this period, the death rates for both foreign-born and native Hispanic workers showed a sharper decline until 2007-2008 (Chart 4).

4. Rate of work-related deaths from injuries, Hispanic foreign-born, native, and white, non-Hispanic workers in construction, 2001 – 2008

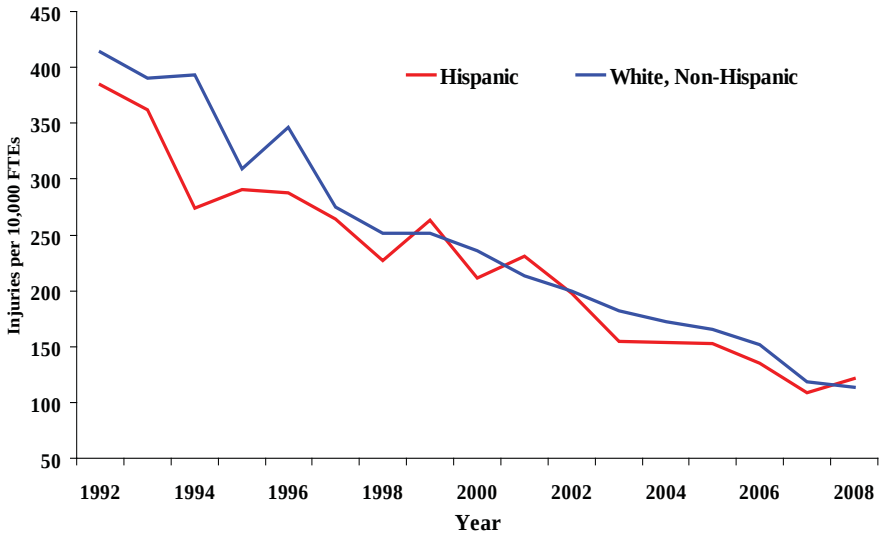


FTE = Full-time equivalent, defined as 2,000 hours worked per year.
Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries, Current Population Survey.

Rates of non fatal injuries and illnesses

In contrast to fatality rates shown in Chart 4, the nonfatal injury and illness rates for Hispanic workers was consistently close to the rates for white, non-Hispanic construction workers over this same period (Chart 5). Overall, the rate of nonfatal injuries and illnesses in construction dropped continuously since 1992. (The data for nonfatal injuries cannot be broken out by foreign-born and native workers).

5. Rate of nonfatal injuries and illnesses resulting in days away from work in construction, Hispanic vs. white, non-Hispanic, 1992-2008

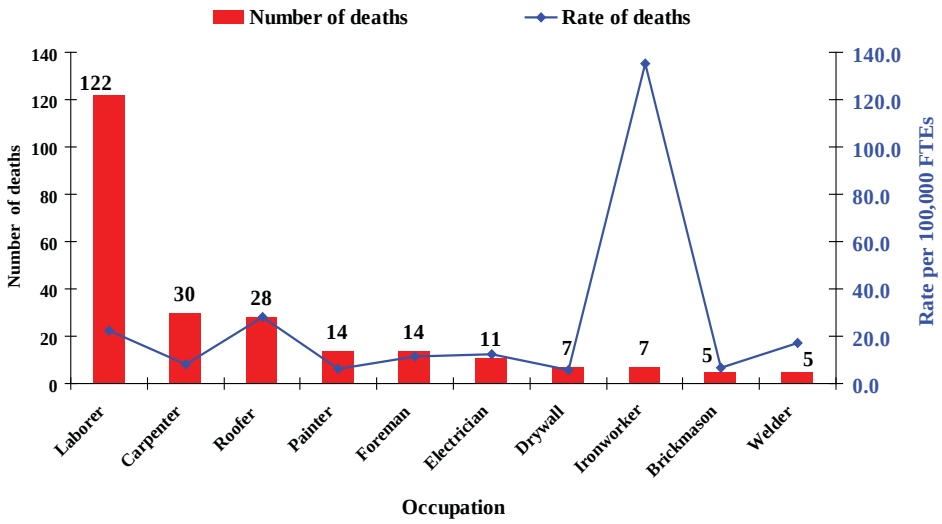


FTE = Full-time equivalent, defined as 2,000 hours worked per year.
Note: Data cover private sector only and exclude self-employed workers,
Source: Bureau of Labor Statistics: Annual Survey of Occupational Injuries and Illnesses, Current Population Survey.

Work-related deaths by occupation

From 2003 (when the 2000 Standard Occupational Classification system was adopted) to 2008, construction laborer, the largest trade that employed more than 23% of Hispanic construction workers, ranked the highest in the number of work-related deaths among all construction occupations. The number of fatalities among Hispanic construction laborers was, on average, about 122 deaths per year. When it comes to death rates, ironworkers, roofers, and laborers are the three most dangerous occupations among Hispanic construction workers, at 135, 28, and 22 fatalities per 100,000 FTEs, respectively, over this period (Chart 6).

6. Number and rate of work-related deaths from injuries among Hispanic construction workers, selected occupations, average of 2003-2008

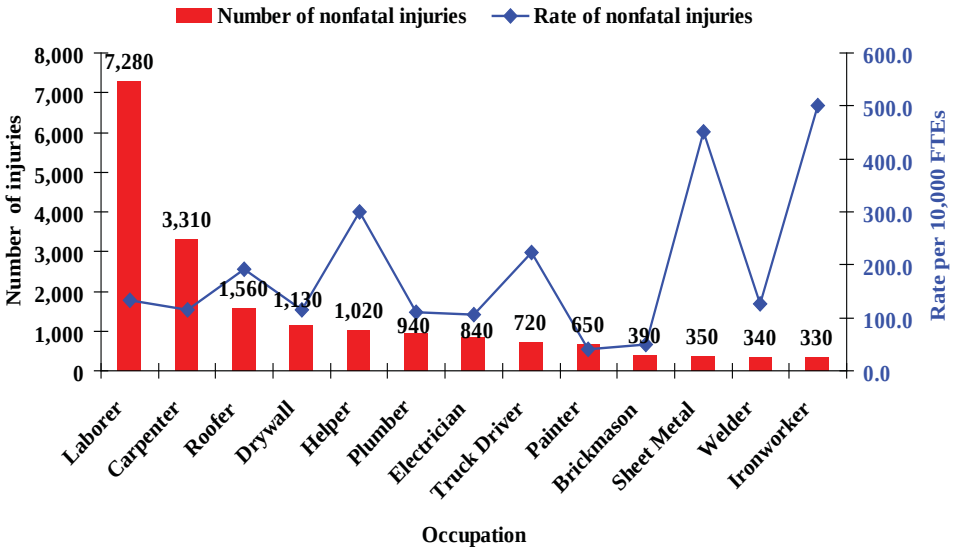


FTEs = Full-time equivalents, defined as 2,000 hours worked per year.
Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries, Current Population Survey.

Nonfatal injuries and illnesses by occupation

Rates of nonfatal injuries varied across occupations for Hispanic construction workers. In 2008, Hispanic ironworkers had the highest rate of injuries and illnesses involving days away from work, at 501 per 10,000 FTEs (Chart 7). Also, Hispanics who were employed as sheet metal workers, construction helpers, truck drivers, roofers, laborers, and welders had higher injury rates than Hispanic construction workers as a whole (121 per 10,000 FTEs).

7. Number and rate of nonfatal injuries and illnesses involving days away from work among Hispanic workers, selected occupations, 2008

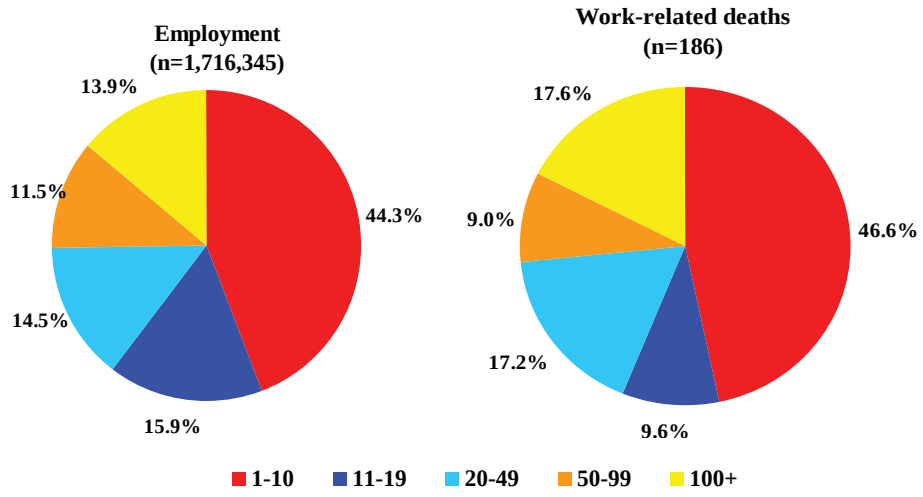


FTE = Full-time equivalent, defined as 2,000 hours worked per year.
Note: Data cover private sector only and exclude self-employed workers.
Sources: Bureau of Labor Statistics: 2008 Survey of Occupational Injuries and Illnesses, Current Population Survey.

Fatal injuries by establishment size

Hispanic workers are more likely to be employed in small establishments, but small establishments have a higher risk of fatal injuries (Chart 8). On average, from 2003 to 2008, small establishments with 1-10 employees reported 47% of work-related deaths among Hispanic workers, while employing 44% of the Hispanic wage-and-salary workforce in construction.

8. Distribution of employment and fatal injuries among Hispanic construction workers, by establishment size, average of 2003-2008

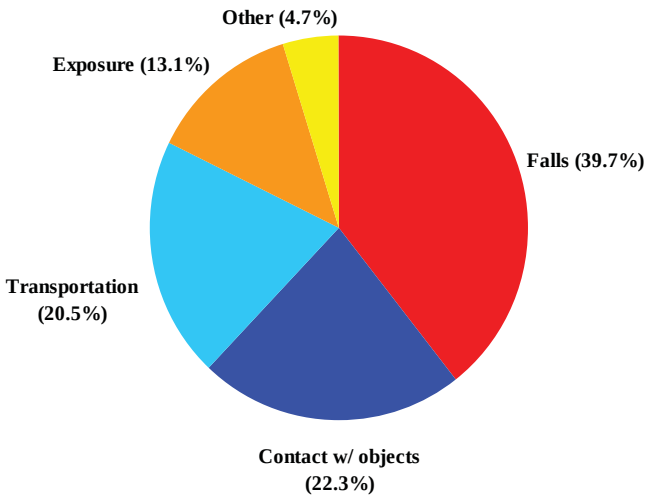


Note: Distribution of employment reported by the Medical Expenditure Panel Survey.
Reported without establishment size information and self-employed workers were excluded from this calculation.
Sources: Medical Expenditure Panel Survey; Bureau of Labor Statistics: Census of Fatal Occupational Injuries.

Leading causes of fatal injuries

Falls are the leading cause of fatal injuries among Hispanic workers. During the period of 2003 to 2008, falls caused 39.7% (728 out of 1,832) of work-related deaths from injuries among Hispanic workers (Chart 9). The second and third leading causes of fatalities for Hispanic workers were contact with objects or equipment, and transportation-related accidents, respectively.

9. Causes of work-related deaths from injuries among Hispanic construction workers, 2003 – 2008

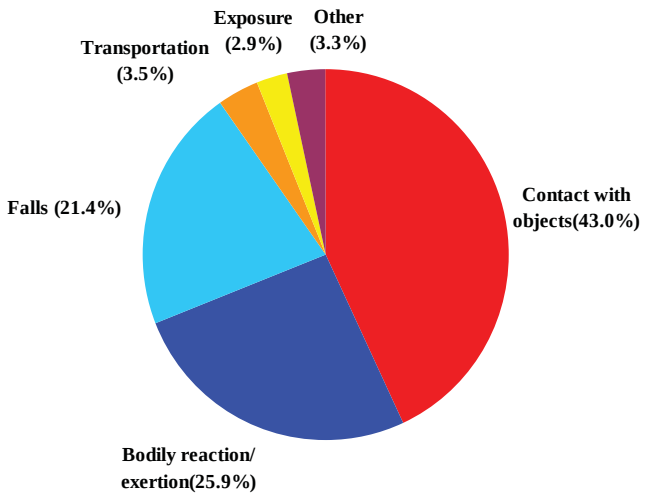


Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries.

Leading causes of nonfatal injuries

The distribution of nonfatal injuries and illnesses differs from fatal injuries. In 2008, contact with the objects, accounting for 43% of nonfatal injuries among Hispanic workers, was the leading cause of nonfatal injuries involving days away from work, followed by bodily reaction/exertion and falls (Chart 10).

10. Causes of nonfatal cases with days away from work among Hispanic construction workers, 2008

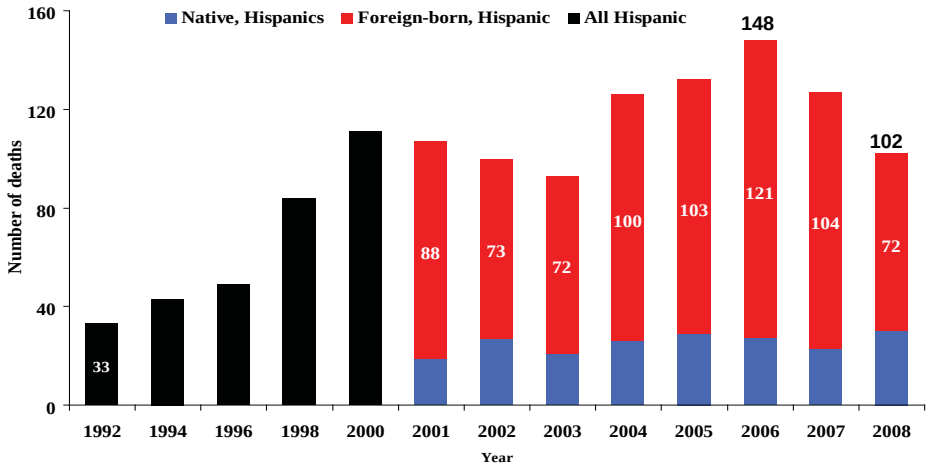


Note: Data cover private sector only and exclude self-employed workers.
Source: Bureau of Labor Statistics: 2008 Survey of Occupational Injuries and Illnesses.

Fatal injuries from falls

Between 1992 and 2008, 1,465 Hispanic construction workers died from falls. This number may be underestimated due to missing information on Hispanic ethnicity for some deaths. Among Hispanic fall decedents, almost 80% (733 of 935) were foreign-born or immigrants in 2001-2008 (when such information was available). The number of fatal falls among foreign-born Hispanic workers also reflected the fluctuation of this population employed in construction. Deaths from falls among foreign-born workers peaked in 2006 then dropped 40% in 2008 from 121 to 72 (Chart 11).

11. Number of fatal falls among Hispanic construction workers, foreign-born versus native, 1992-2008

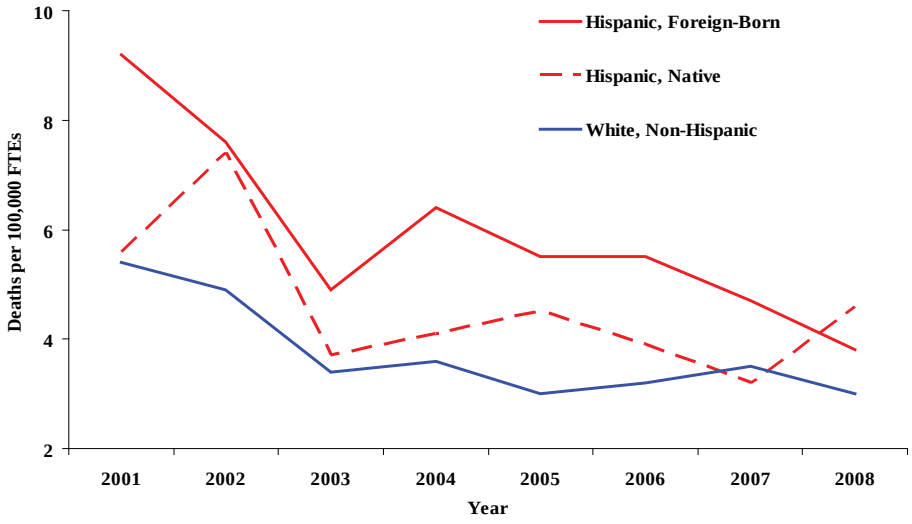


Note: No foreign-born information was available before 2001.
Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries.

Rate of fatal falls

Over time, foreign-born Hispanic workers were more likely to experience fatal falls than their native Hispanic counterparts, except in 2008 (Chart 12). From 2001 to 2008, the death rate by falls for foreign-born Hispanic workers was, on average, 6.0 per 100,000 FTEs, which was 30% higher than that for native Hispanic workers (4.6 per 100,000 FTEs) and 58% higher than white, non-Hispanic workers (3.8 per 100,000 FTEs), respectively.

12. Rate of fatal falls among Hispanic foreign-born, native, and white, non-Hispanic workers in construction, 2001-2008

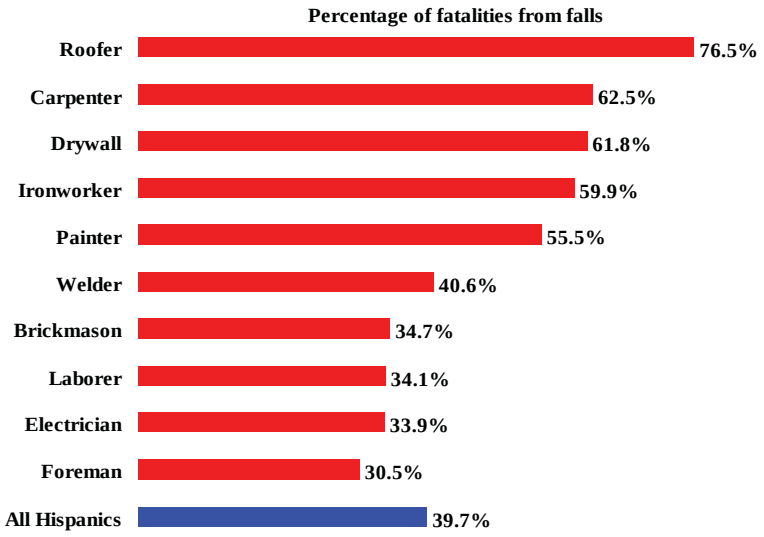


FTE = Full-time equivalent, defined as 2,000 hours worked per year.
Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries, Current Population Survey.

Fatal falls by occupation

On average from 2003 to 2008, fatal falls accounted for almost 80% of all fatalities among Hispanic roofers. In addition, the percentages of fatal falls among Hispanic workers employed as carpenters, drywall installers, ironworkers, painters, and welders were higher than that for Hispanic construction workers as a whole (Chart 13).

13. Proportion of fatalities from falls, among Hispanic construction workers, selected occupations, 2003-2008



Source: Bureau of Labor Statistics: Census of Fatal Occupational Injuries.

Conclusion

The injury data mirrored employment changes: the number of fatal injuries significantly increased from 1992 to 2006 then dropped in 2007 and 2008. Hispanic construction workers had a higher rate of fatalities than non-Hispanic workers, particularly vulnerable were foreign-born workers, who accounted for 74% of deaths (including 80% of fatal falls) in Hispanic construction workers during this study period. However, the death rates in the most recent years appear somewhat unstable, so it is difficult to draw conclusions about the direction. Following the trend for the construction industry as a whole, the rate of nonfatal injuries for Hispanic construction workers steadily declined, while the number of nonfatal injuries is not proportional to the simultaneous, dramatic growth in Hispanic employment and fatalities in this industry. This suggests that nonfatal injuries among this group could be underreported. This report demonstrates a need for targeted safety interventions and trainings, and improved surveillance data.

Definitions

Hispanic construction workers are defined as survey respondents who reported themselves of Hispanic origin and were employed in the construction industry. *Hispanic* refers to any person or individual whose origin is Mexican, Puerto Rican, Cuban, South or Central American, Chicano, or other Latin American, regardless of racial background.

White, non-Hispanic workers were used as the comparison group in this brief. Non-Hispanic black and other racial or ethnic groups were included in computations for the entire construction workforce, but were not included in the comparisons with Hispanic workers.

Foreign-born is defined as persons who reside in the United States but who were born outside the country, or one of its outlying areas, to parents who were not U.S. citizens. The foreign-born population includes legally admitted immigrants, refugees, temporary residents such as students and temporary workers, and undocumented immigrants.

Cases of days away from work (DAFW) involve at least one full day away from work, with or without job transfer or restriction, as a result of work-related injury or illness.

Full-time equivalents (FTEs) are defined as 2,000 hours worked per year (50 weeks x 40 hours per week).

Establishment - According to the U.S. Census Bureau, a private sector economic unit producing goods and services at one permanent physical location, not the same as a construction project or construction site. If a company has more than one fixed place of operation and maintains separate offices, each location is considered a separate establishment and is classified according to its major activity. Establishments are either payroll or nonemployer (without payroll). A nonemployer establishment is a partnership, sole proprietorship, or corporation without employees.

Data Sources

Numbers of deaths were obtained from the Census of Fatal Occupational Injuries (CFOI) conducted by the U.S. Bureau of Labor Statistics (BLS). Deaths occurring during a commute to or from work are not considered work-related, but vehicle-related deaths during the course of work are included. Except where noted, the calculations of death rates in this report include the public and private sectors and self-employed workers. Thus, the numbers presented here may differ from those in some BLS publications, which include only deaths in the private sector.

The Survey of Occupational Injuries and Illnesses (SOII) provided cases of nonfatal injuries and illnesses. Unlike the CFOI, the SOII measures nonfatal injuries and illnesses for private industries and excludes the self-employed, farms with fewer than 11 employees, private households, and employees in federal government agencies.

Employment and number of hours worked were obtained from the Current Population Survey (CPS). The CPS is a monthly survey of households conducted by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics. Each month, basic demographic information is obtained from about 60,000 households across the United States, including age, gender, race, and Hispanic or Latino ethnicity. For those aged 16 years or older, the survey collects employment information, such as occupation, industry, and number of hours worked. The hours worked are self-reported by individual workers rather than by employers.

Information on *establishments* (*see* definition) was obtained from the Medical Expenditure Panel Survey (MEPS) conducted by the Agency for Healthcare Research and Quality (AHRQ).

Risk in construction is measured by rates of fatal and nonfatal injuries (and/or illnesses). Since some construction workers do not work full-time, rates are expressed as *full-time equivalents* or FTEs. This measure facilitates comparisons with workers in different population groups and industries. Death rates are measured per 100,000 FTEs. Nonfatal rates are measured per 10,000 FTEs and, in this brief, include only cases with *days away from work* (DAFW) (*see* definition).

Data Sources (con't)

Study timeframes and limitations

This data brief covers fatal and nonfatal injuries among Hispanic construction workers in 1992-2008. There were several substantial changes across the study period, including different industrial and occupational classification systems beginning in 2003. Thus, statistics for a specific occupation may not be directly comparable prior to and after 2002. Also, numbers of some construction occupations among Hispanic workers in an individual year were relatively small. To obtain reliable estimates, data from 2003 to 2008 were pooled together for stratified analyses by occupation. In addition, comparison between foreign-born and native Hispanic workers was only available for fatal injuries and for the period of 2001-2008, since the BLS started to include information on foreign-born in the CFOI in 2001 and does not collect such information for the SOII.

Acknowledgments

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About the CPWR Data Center

The CPWR Data Center is part of CPWR—The Center for Construction Research and Training. CPWR is a 501(c)(3) nonprofit research and training institution created by the Building and Construction Trades Department, AFL-CIO, and serves as the research arm of the BCTD. CPWR has focused on construction safety and health research since 1990. This study on Hispanic employment in construction is part of our ongoing surveillance activities on vulnerable populations in the construction industry, and the data analysis updates and expands on information found in CPWR's *The Construction Chart Book*.

This data brief is the third in a series of publications that analyzes data on Hispanic construction workers. The first, Hispanic Employment in Construction, and the second, Health Insurance Coverage and Health Care Utilization among Hispanic Construction Workers can be found on the CPWR website under WHAT'S NEW http://www.cpwr.com/whatsnew.html.

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