

## Fatal and Nonfatal Injuries in Construction by Employment, Establishment, and Geographic Trends

From 1992 to 2010, a total of 21,301 construction workers died from work-related injuries, an annual average of about 1,120 deaths. Among the fatally injured construction workers, 15.6% (or 3,333) were self-employed<sup>1</sup> (chart 40a). The number of fatal injuries in construction decreased in recent years, in particular among *wage-and-salary* (see Glossary) workers. This decrease was mainly due to the decline in construction employment during the economic downturn. Although the self-employed are a large part of the construction workforce (see page 23), nonfatal injuries and illnesses<sup>2</sup> among these workers remain unidentified because the U.S. Bureau of Labor Statistics (BLS) does not collect nonfatal injury data on self-employed workers.

Small establishments, which form the largest segment of the construction industry (see page 2), suffer a disproportionate share of fatal work injuries. From 1992 to 2010, 5,893 construction deaths (44% of deaths among wage-and-salary workers) occurred in establishments with 10 or fewer employees.<sup>3</sup> In 2010 alone, 56.3% of construction deaths occurred in establishments with fewer than 20 employees, yet such establishments employed just 41.4% of the wage-and-salary workforce in construction (chart 40b).

Prior to 2009, rates of injuries resulting in days away from work (DAFW) for small establishments (1-10 employees) were consistently lower than medium-sized establishments

(11-249 employees; chart 40c). Injury rates for the largest establishments (1,000 or more employees) remained the lowest in construction, reaching 0.2 per 100 *full-time equivalent workers* (FTEs; see Glossary) in 2010. The contradictory patterns for deaths and nonfatal injuries suggest that nonfatal injuries may be underestimated for small establishments. Research has found that underreporting is probable, particularly for Hispanic workers employed in small establishments.<sup>4</sup>

Both fatal and nonfatal injury rates vary geographically. Between 2008 and 2010, the central states had the highest fatality rates, with the exception of Washington, D.C. (chart 40d). The states with the highest fatality rates (per 100,000 FTEs) include Wyoming (23.1), Arkansas (20.2), and Louisiana (19.6). For nonfatal injuries, the following five states reported the highest rates (per 10,000 FTEs) over the same period: Vermont (307.9), Montana (290.7), Washington (268.0), Hawaii (255.1), and Iowa (237.8; chart 40e). In general, states with higher fatality rates had lower nonfatal rates, whereas states with lower fatality rates had higher nonfatal rates. This finding is consistent with recent research conducted by RAND for different time periods.<sup>5</sup> Although fatal and nonfatal injury rates may not necessarily be positively correlated, the negative correlation suggests that nonfatal injuries could be underreported in some states.

**40a. Number of fatalities in construction, by class of worker, 1992-2010 (All employment)**



1. Includes owners of unincorporated and incorporated businesses or members of partnerships, and paid or unpaid family workers.

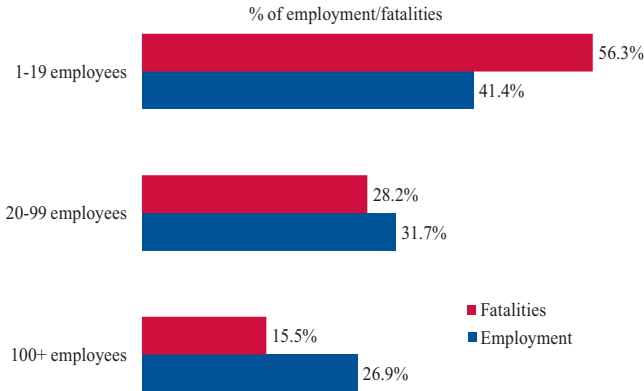
2. Illnesses comprise about 3% of all nonfatal injuries and illnesses in construction; therefore, numbers for construction largely represent injuries and will be referred to as such in this chart book.

3. The numbers of employees by establishment size were obtained from the County Business Patterns (CBP), an annual survey conducted by the U.S. Census Bureau. The CBP provides information for establishments with payrolls only. Thus, deaths among the self-employed were excluded from this analysis. Deaths not reported by type of employment and establishment sizes were also excluded.

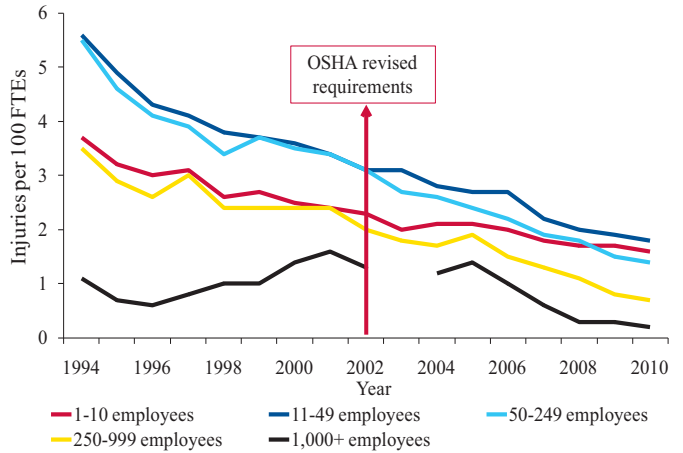
4. Dong XS, Fujimoto A, Ringen K, Stafford E, Platner JW, Gittleman JL, & Wang X. 2011. Injury underreporting among small establishments in the construction industry. *American Journal of Industrial Medicine*, 54:339-349.

5. Mendeloff J & Burns R. 2012. States with low non-fatal injury rates have high fatality rates and vice versa. *American Journal of Industrial Medicine*, doi: 10.1002/ajim.22047. The RAND Corporation is a nonprofit institution that helps improve policy and decision-making through research and analysis.

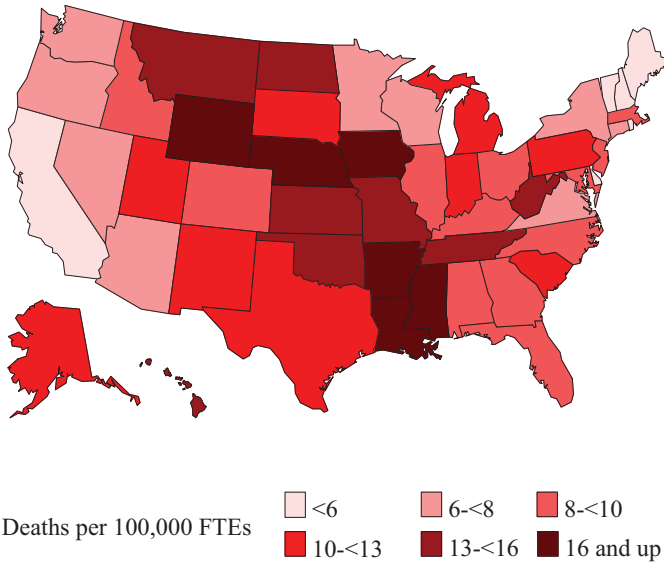
**40b. Distribution of construction employment and fatalities, by establishment size, 2010 (Wage-and-salary workers)**



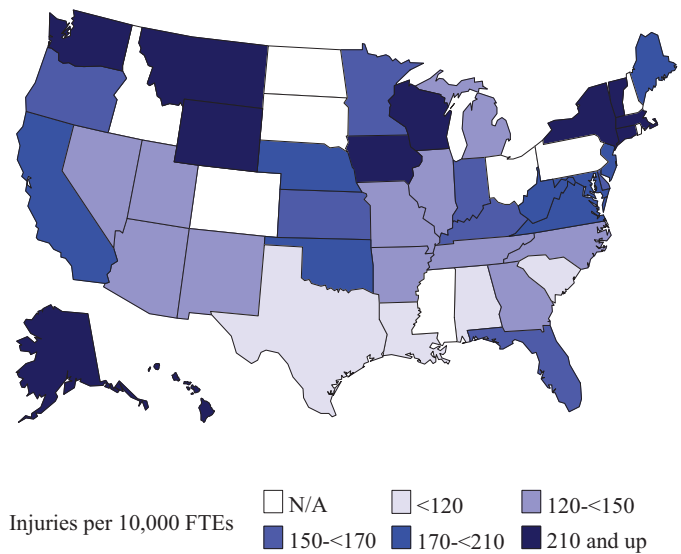
**40c. Rate of nonfatal injuries resulting in days away from work in construction, by establishment size, 1994-2010 (Private wage-and-salary workers)**



**40d. Rate of fatalities in construction, by state, 2008-2010 average (All employment)**



**40e. Rate of nonfatal injuries resulting in days away from work in construction, by state, 2008-2010 average (Private wage-and-salary workers)**



**Note:** Chart 40a - A total of 802 deaths occurred in construction in 2010, of which 643 deaths were wage-and-salary workers. Deaths not reported by establishment size were excluded. Totals may not add to 100% due to rounding.

Chart 40c - Injury data by establishment size are available since 1994; no data for establishments with 1,000+ employees in 2003.

**Source:** Chart 40a - U.S. Bureau of Labor Statistics. 1992-2010 Census of Fatal Occupational Injuries. <http://www.bls.gov/data/#injuries> (Accessed May 2012).  
 Chart 40b - Fatality numbers were estimated from the Census of Fatal Occupational Injuries. This research was conducted with restricted access to Bureau of Labor Statistics (BLS) data. The views expressed here do not necessarily reflect the views of the BLS. Establishment data were from the U.S. Census Bureau. *2010 County Business Patterns*. <http://www.census.gov/econ/cbp/index.html> (Accessed June 2012). Calculations by CPWR Data Center.  
 Chart 40c - U.S. Bureau of Labor Statistics. 1994-2010 Survey of Occupational Injuries and Illnesses. <http://www.bls.gov/iif/home.htm> (Accessed December 2011).  
 Chart 40d - Fatality data were obtained from the U.S. Bureau of Labor Statistics through a special request; FTEs were estimated from 2008-2010 Current Population Survey. Calculations by CPWR Data Center.  
 Chart 40e - U.S. Bureau of Labor Statistics. 2008-2010 Survey of Occupational Injuries and Illnesses. <http://www.bls.gov/data/#injuries> (Accessed May 2012).