New Trends of Fatal Falls in the Construction Industry

Samantha Brown, MPH, Raina D. Brooks, MPH, Xiuwen Sue Dong, DrPH*

OVERVIEW

The seventh annual National Safety Stand-Down is taking place this month despite the COVID-19 pandemic. This event is part of the National Campaign to Prevent Falls in Construction that was launched in 2012 by the National Occupational Research Agenda (NORA) Construction Sector Council, CPWR – The Center for Construction Research and Training, the National Institute for Occupational Safety and Health (NIOSH), and the Occupational Safety and Health Administration (OSHA). The campaign aims to raise public awareness of fall hazards and to reinforce the importance of fall prevention. To support the campaign, this special issue of the Data Bulletin reports trends of fatal falls in the construction industry, highlighting changes in fatal falls to a lower level in recent years based on the most recent data. The fatality numbers were obtained from the U.S. Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI). Construction employment was estimated from the Current Population Survey (CPS). To calculate injury rates, employment was adjusted for the number of hours worked (full-time equivalent or FTE), assuming that full-time employees work 2,000 hours per year.

KEY FINDINGS

In 2018, the number of fatal falls in construction decreased to 340 from 389 in 2017 despite an increase in overall fatalities.

The rate of fatal falls to a lower level in construction dropped to 2.8 per 100,000 full-time equivalent (FTE) workers in 2018, its lowest point since 2003.1

Both the rate and number of fatal falls to a lower level in construction decreased consecutively in 2017 and 2018, dropping a total of 20.6% and 13.7%, respectively.

The number of fatal injuries associated with the three primary sources of fall hazards (roofs, ladders, and scaffolds) all decreased from 2016 to 2018.

From 2016 to 2018, fatal falls to a lower level dropped 15.4% in the Roofing subsector, but increased 6.6% in Residential Building Construction.

Next Data Bulletin

Value Produced by the Construction Industry During the COVID-19 Pandemic
Construction employment has increased steadily since 2011, reaching 11.2 million in 2018 and nearing its peak pre-recession level of 11.8 million in 2007 (chart 1).

Following the growth in employment, the total number of construction fatalities in 2018 climbed to 1,038, the highest level since 2011 (chart 2). However, the number of fall fatalities decreased by 12.6% between 2017 and 2018, from 389 to 340.

1. Construction employment in the United States, 2003-2018 (selected years)

2. Number of fatalities in construction, falls and other fatalities, 2007-2018*

Most fatal falls in construction were to a lower level. In 2018, 321 of the 340 fatal falls were to a lower level, more than any other major industry sector (chart 3).

3. Number of fatal falls to a lower level, by major industry, 2018

Nevertheless, both the rate and number of fatal falls to a lower level in construction decreased since 2016. In 2018, the rate dropped to 2.8 per 100,000 full-time equivalent (FTE) workers, its lowest point since 2003 (chart 4). Compared to 2016, the rate and number of fatal falls to a lower level in construction decreased by 20.6% and 13.7% in 2018, respectively (chart 5).

4. Number and rate of fatal falls to a lower level in construction, 2003-2018

*In 2011, the CFOI switched to version 2.01 of the Occupational Injury and Illness Classification System (OIICS), which categorizes slips, trips, and falls together.
5. Changes in fatal falls to a lower level in construction, 2016-2018

Roofs, ladders, and scaffolds are the three major sources of fatal falls in construction. Similar to the trend of fatal falls, the number of fatalities associated with these three sources all decreased in recent years (chart 6a). Between 2016 and 2018, the largest reduction was among fatalities involving scaffolds (-23.3%), followed by ladders (-15.4%), and then roofs (-8.1%; chart 6b).

6a. Number of fatalities in construction, by selected primary source, 2011-2018

Most fatal injuries due to falls to a lower level in construction occurred in Specialty Trade Contractors (NAICS 238)—one of the three major subsectors in the industry. In 2018, Specialty Trade Contractors reported 218 deaths from falls to a lower level, accounting for the largest proportion of such fatal falls in the construction industry (chart 7a). On the other hand, such fatalities were lowest in Heavy/Civil Engineering Construction (chart 7b).

6b. Primary sources of fatal falls in construction, changes from 2016 to 2018

7a. Number of fatal falls to a lower level, by major construction subsector, 2011-2018 (selected years)
Roofing Contractors (NAICS 23816) typically have the highest number of fatal falls. The number of fatal falls to a lower level jumped to 91 in 2016 for Roofing (chart 8a), and then decreased in both 2017 and 2018, dropping 15.4% overall in two years (chart 8b). In contrast, such fatalities in Residential Building Construction (NAICS 23611) increased to 65 in 2018, 6.6% higher than 2016 (61 deaths), and approximately 2.5 times higher than 2011 (26 deaths).

The number of such fatal falls has fluctuated in Nonresidential Building Construction (NAICS 2362) since 2011, and increased from 14 deaths in 2016 to 18 deaths in 2018.

While construction employment has continued to increase, both the number and rate of fatalities from falls to a lower level—the leading cause of construction fatalities—dropped in 2017 and again in 2018. The rate of fatal falls to a lower level decreased more than 20% over these two years, reaching its lowest point since at least 2003. In particular, the number of fatal falls to a lower level fell 15% in Roofing Contractors, the construction subsector with the highest risk of fatal falls. Reductions from 2016 to 2018 were also observed in fatalities associated with all three primary sources of fall injuries, and the drop in scaffolding fatalities was significant. These findings suggest that falls are preventable, and ongoing fall prevention efforts, including the National Campaign to Prevent Falls in Construction, are effective.

Although the findings are encouraging, the data show that construction remained the industry with the largest number of fatal falls to a lower level among all major industry sectors, and the number of fatal falls in Residential Construction continued to grow. To protect workers from fall injuries, construction contractors should PLAN ahead, PROVIDE the right equipment to workers, and TRAIN workers to use the equipment safely not just during the Stand-Down week of September 14-18, but all year long as part of the ongoing national campaign. To assist construction employers in fall prevention, CPWR and its partners have developed numerous free materials and resources that can be found on the Falls Campaign website: https://stopconstructionfalls.com/about-the-campaign/.
REFERENCES

View the charts (including supplement charts) in PowerPoint and the data underlying the charts in Excel. Downloading will start when you click on each link.

DATA SOURCE


Peer-Reviewed Journal Articles


NEW TRENDS OF FATAL FALLS IN THE CONSTRUCTION INDUSTRY

SEPTEMBER 2020
WWW.CPWR.COM

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 NABTU, and serves as its research arm. CPWR has focused on construction safety and health research since 1990. The Data Bulletin, a series of publications analyzing construction-related data, is part of our ongoing surveillance project funded by the National Institute for Occupational Safety and Health (NIOSH).

Besides cpwr.com, visit CPWR’s other online resources to help reduce construction safety and health hazards:
- Choose Hand Safety http://choosehandsafety.org/
- Construction Safety and Health Network https://safeconstructionnetwork.org/
- Construction Solutions http://www.cpwrconstructionsolutions.org/
- Construction Solutions ROI Calculator http://www.safecalc.org/
- Exposure Control Database http://ecd.cpwrconstructionsolutions.org/
- Stop Construction Falls http://stopconstructionfalls.com/
- Work Safely with Silica http://www.silica-safe.org/

©2020, CPWR–The Center for Construction Research and Training. All rights reserved.
CPWR is the research and training arm of NABTU. Production of this document was supported by cooperative agreement OH 009762 from the National Institute for Occupational Safety and Health (NIOSH). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.