

FALL INJURIES & PREVENTION IN CONSTRUCTION

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THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING

CPWR
Webinar

July 24, 2019



Overview

- I.** Introduction/background
- II.** Trends and patterns of fatal and nonfatal falls
- III.** Social network analysis of the reach of the Falls Campaign
- IV.** Q&A

Introduction

National Campaign to Prevent Falls in Construction

stopconstructionfalls.com



Safety Pays. Falls Cost.

[About »](#)

[Fatality Map »](#)

[Training & Resources »](#)

[What's New](#)

Training & Other Resources



About the Campaign

Interested in joining the Campaign?

Learn how to [Get Involved!](#)

The Campaign to Prevent Falls in Construction began in 2012 with construction industry stakeholders seeking a way to raise awareness. Falls from heights

Keep Your Fall Prevention Program Alive All Year Long

The 2019 Stand-Down may be over, but fall prevention should be highlighted on jobsites all year long! For ways to build off the momentum of the annual Stand-Down, check out [these ideas](#).

A Social Network Analysis of the Falls Campaign

The reach of this Campaign and the National Safety Stand-Down has been extensive – with millions of workers pausing work to learn more about fall prevention and staying safe on the job. But what exactly has made it so successful? How has

Construction Fatality Maps

<https://stopconstructionfalls.com/fatality-map/>

Construction Fall Fatalities in the USA, Jan 1 - June 30, 2018



[Previous Fatality Maps](#)

CPWR Quarterly Data Reports:

Fall Injuries and Intervention in Construction

<https://www.cpwr.com/publications/research-findings-articles/cpwr-quarterly-data-reports-data-briefs>

New Contents

■ Fatal falls by:

✓ Establishment size

✓ Occupation

✓ Age group

■ Reach of the Falls Campaign

CPWR Quarterly DATA REPORT
WWW.CPWR.COM FIRST QUARTER 2017
Fall Injuries and Prevention in the Construction Industry

CPWR Quarterly DATA REPORT
WWW.CPWR.COM SECOND QUARTER 2019
Trends of Fall Injuries and Prevention in the Construction Industry
Xiuwen Sue Dong, DrPH¹, Rebecca Jackson, MPH¹, Danielle Varde, PhD¹, Eileen Betit², Jessica Bunting, MPH¹

Falls are a common cause of fatal and nonfatal injuries in the construction industry. To prevent these injuries, 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) launched the National Campaign to Prevent Falls in Construction (hereafter referred to as the Campaign) on Workers' Memorial Day in 2012. This ongoing Campaign has reached more and more organizations and individuals. To continue to support this national effort, this Quarterly Data Report provides updated data on the characteristics of fatal and nonfatal falls among construction workers using data from the U.S. Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI) and the Survey of Occupational Injuries and Illnesses (SOI). While the report covers data back to year 2003, the main analysis focuses on the data between 2011 and 2017. For some estimates, several years of data were pooled together to increase data reliability. In addition, selected findings from a social network analysis of the Campaign are also included in this report.

KEY FINDINGS

- In 2017, 367 construction workers died from falls to a lower level, accounting for over half of the total occupational fall fatalities to a lower level in all industries.
- Small employers with fewer than 20 employees accounted for 75% of fatal falls between 2015 and 2017, despite making up only 39% of construction payroll employment.
- Roofers had the highest risk of fatal falls, with 25.9 deaths per 100,000 FTEs, more than 10 times the rate of all construction occupations combined. However, both the number and rate dropped in 2017.
- The rate of fatal falls among construction laborers decreased by 25% from 5.0 per 100,000 FTEs in 2011 to 4.2 per 100,000 FTEs in 2017.
- Partners in the Campaign to Prevent Falls in Construction from diverse organizations reported reaching between 28 and 2.5 million individuals annually since they began participating.

KEY FINDINGS

- Between 2011 and 2015, the annual number of fall fatalities in construction increased by 30%, exceeding the growth in employment and total fatalities in this industry.
- More than half (55%) of fall fatalities in construction occurred at a height of 20 feet or less.
- Falls from roofs comprised one-third of fall deaths, followed by falls from ladders (24%).
- Fall fatalities in residential construction increased from 26 deaths in 2011 to 61 deaths in 2015, more than double.
- Roofers had the highest rate of fall fatalities in construction; however, the number and rate of fatal falls in this occupation decreased in 2015.
- Hispanic workers, foreign-born workers, and workers aged 55 or older had an elevated risk of fatal falls.
- From 2014 to 2016, the National Safety Stand-Down events reached more than 5 million workers across the nation.

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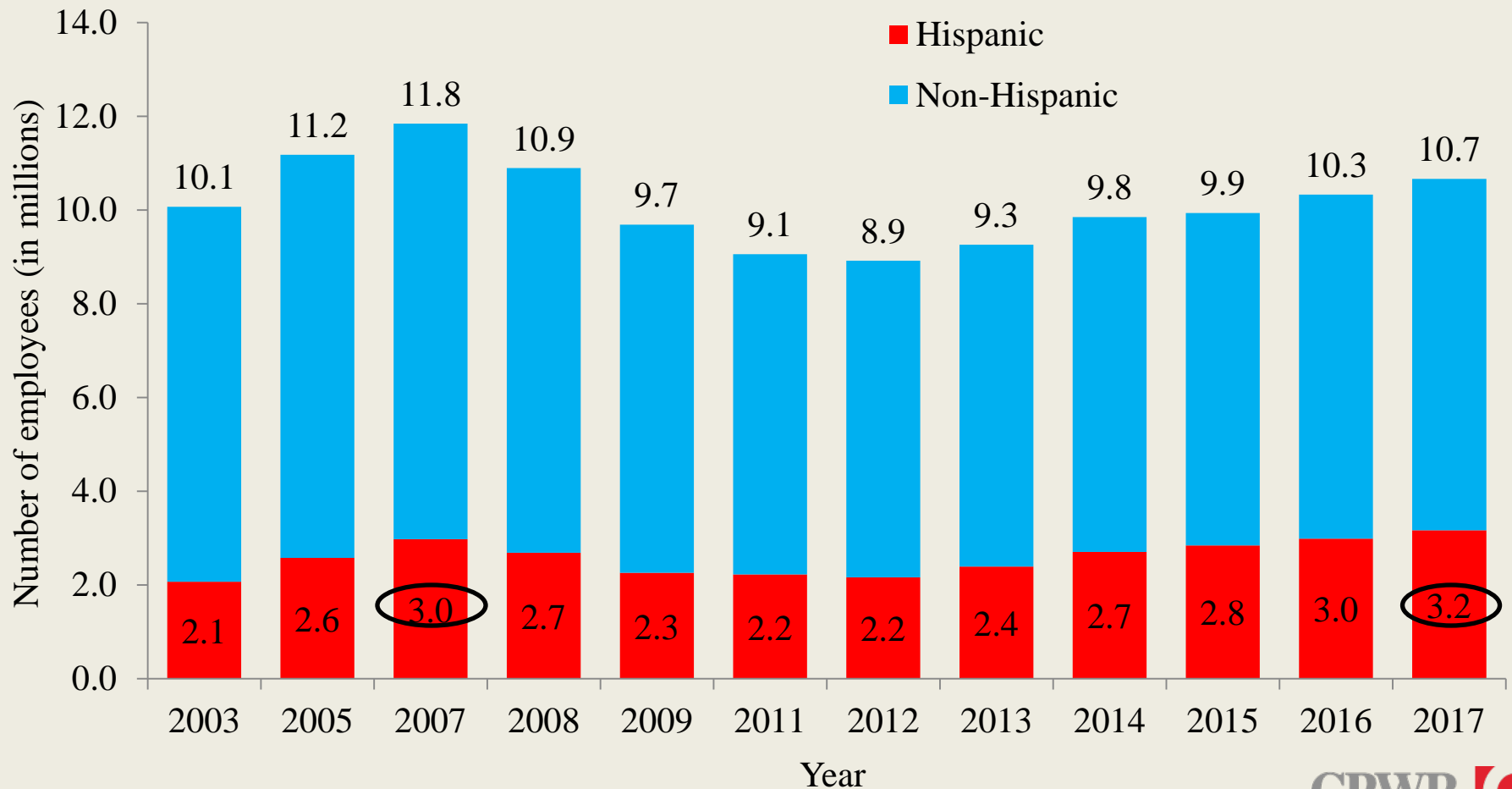
MPH, Gavin West, MPH, Jessica Bunting, MPH

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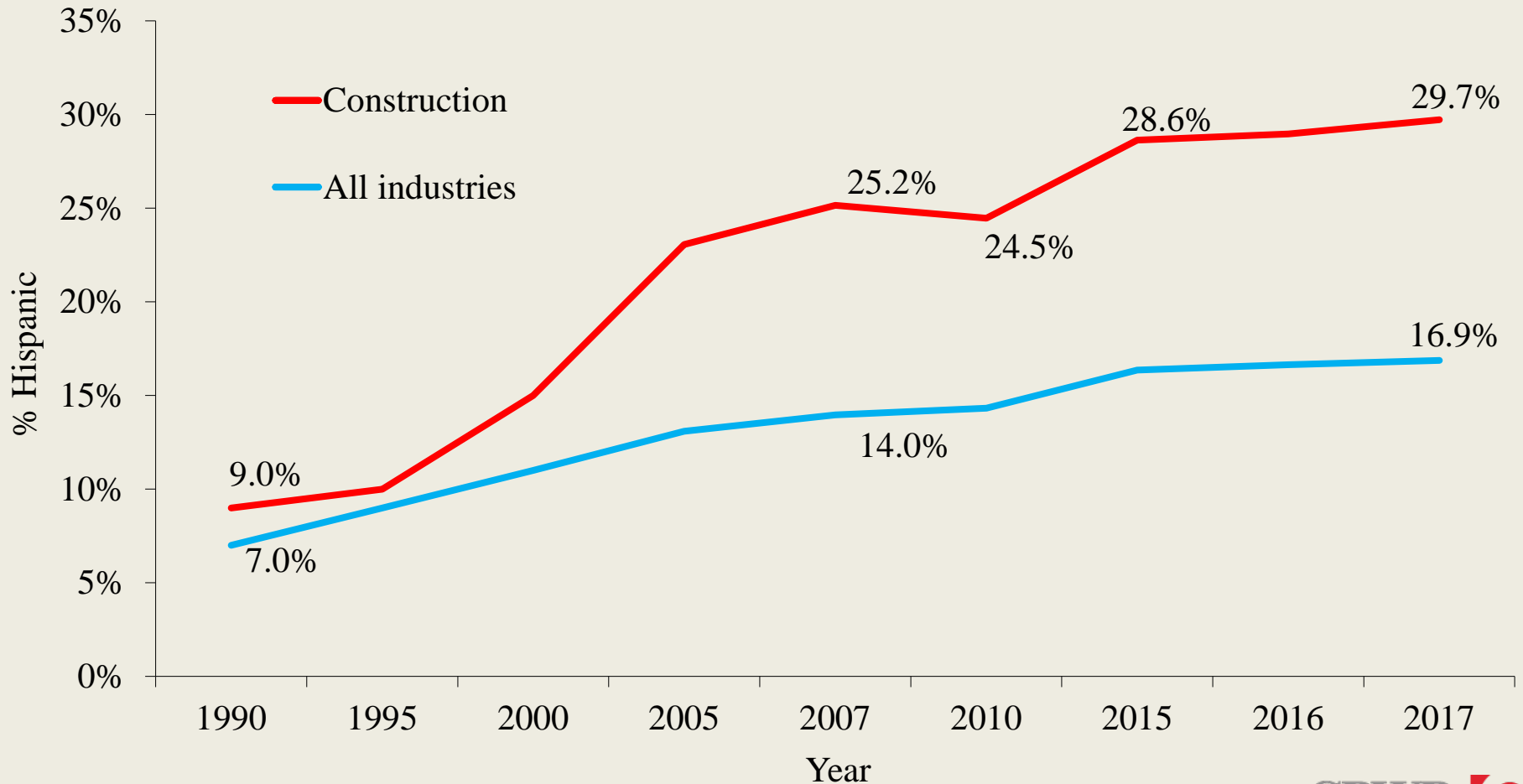
* Correspondence to: Xiuwen Sue Dong, XSDong@cpwr.com.
1. CPWR/The Center for Construction Research and Training.
2. The School of Public Affairs at the University of Colorado Denver.

Hispanic employment reached 3.2 million in 2017, exceeding its level in 2007



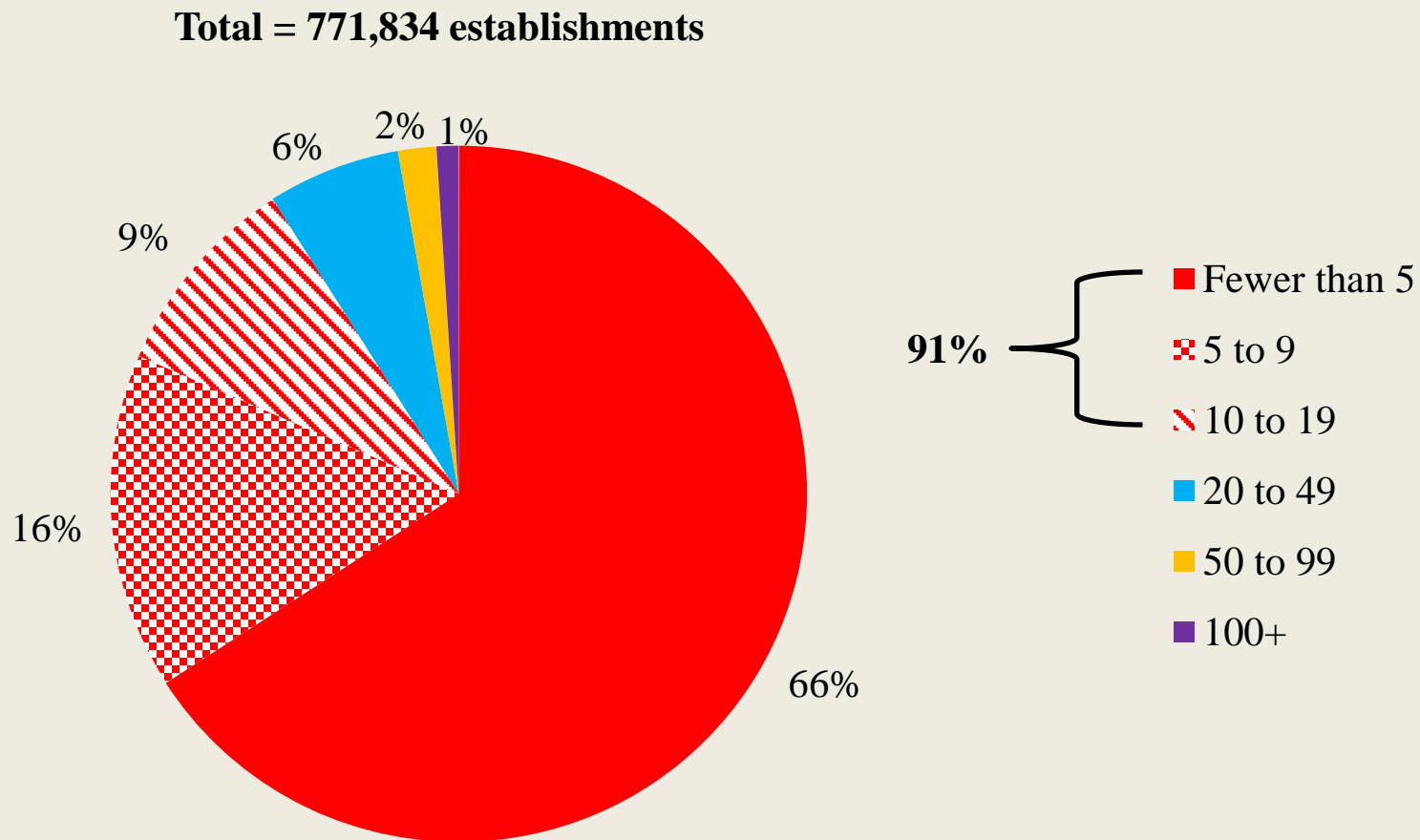
Source: U.S. Bureau of Labor Statistics. 2017 and previous years Current Population Survey. The numbers before 2005 were adjusted by the parameters provided by the U.S. Bureau of Labor Statistics. Calculations by the CPWR Data Center.

Hispanic workers accounted for 30% of construction employment, the highest level since 1990

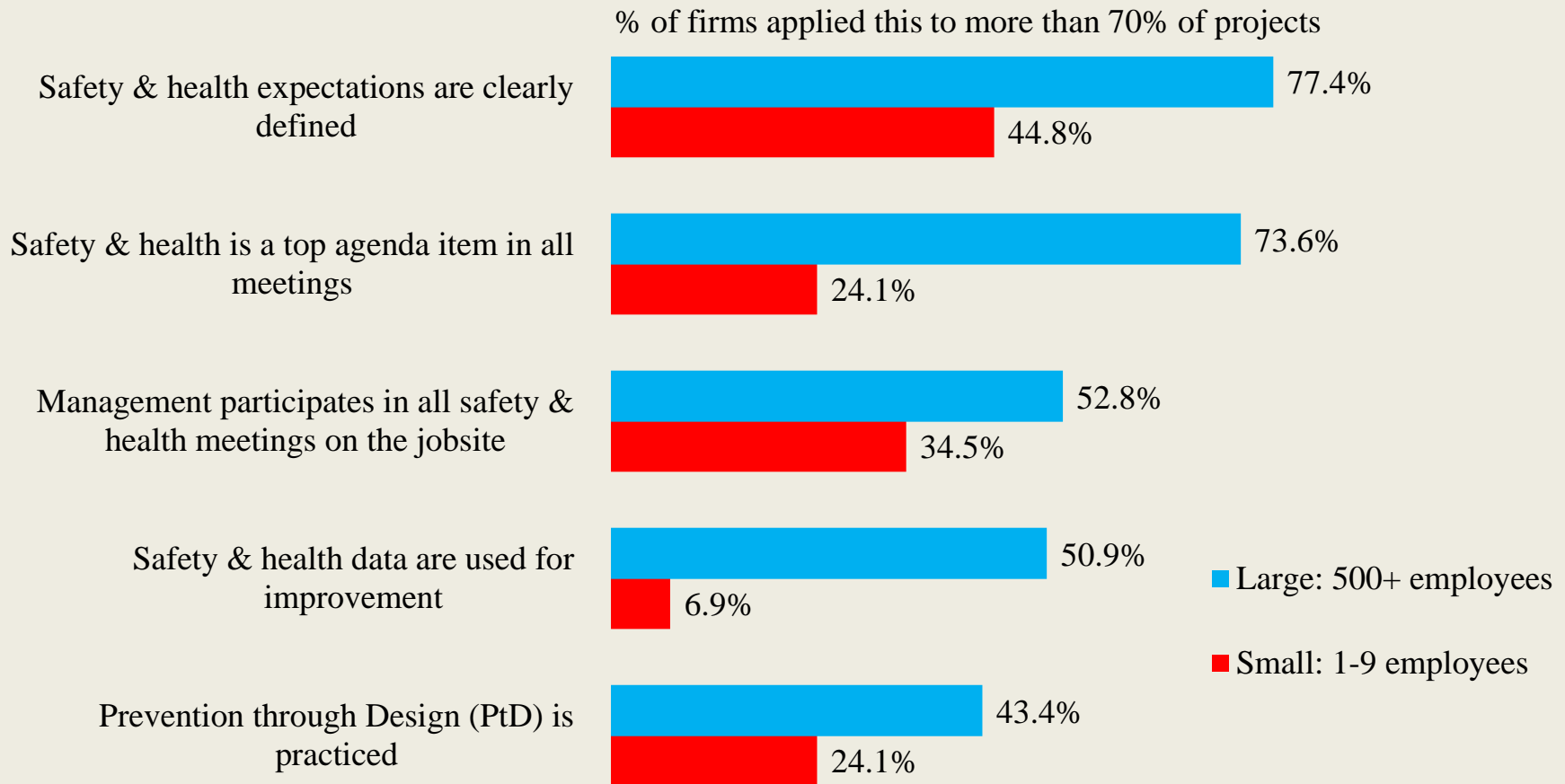


Source: U.S. Bureau of Labor Statistics. 2017 and previous years Current Population Survey. The numbers of Hispanics before 2005 were adjusted by the parameters provided by the U.S. Bureau of Labor Statistics. Calculations by the CPWR Data Center.

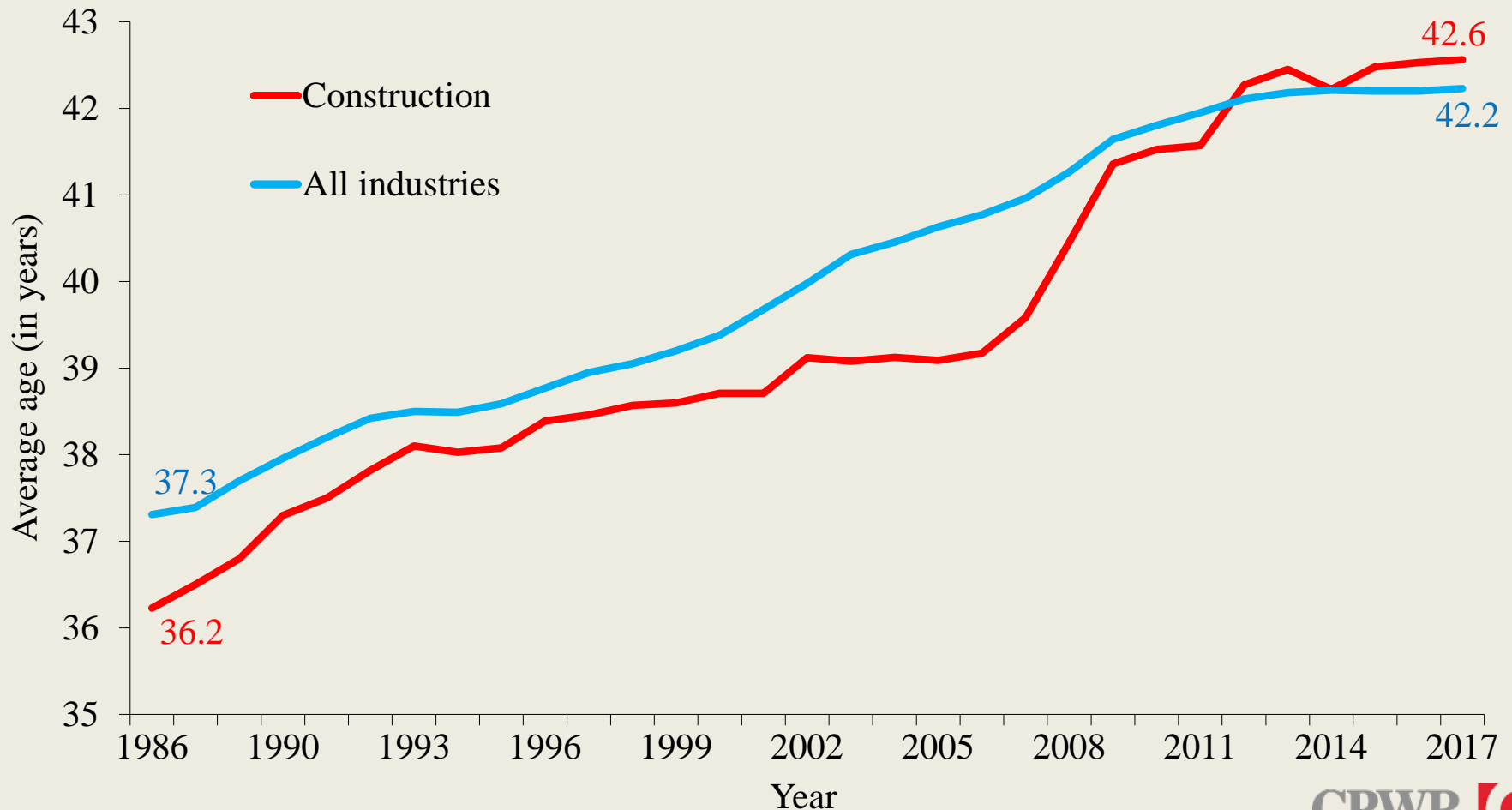
More than 90% of construction payroll establishments have fewer than 20 employees



Small employers lag behind large employers in safety and health performance

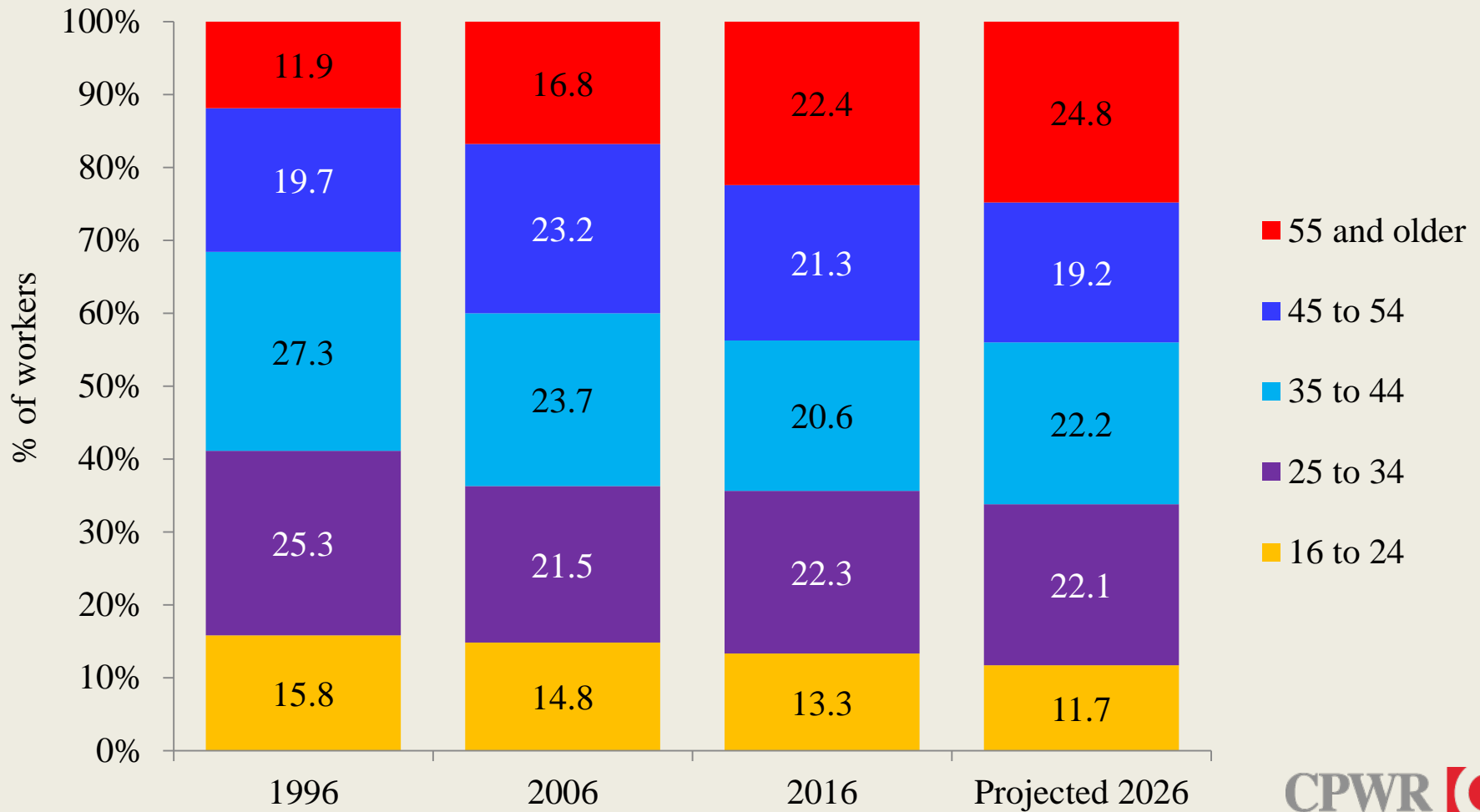


The average age of construction workers jumped 6.4 years in three decades



Source: U.S. Bureau of Labor Statistics. 1986-2017 Current Population Survey. Calculations by the CPWR Data Center.

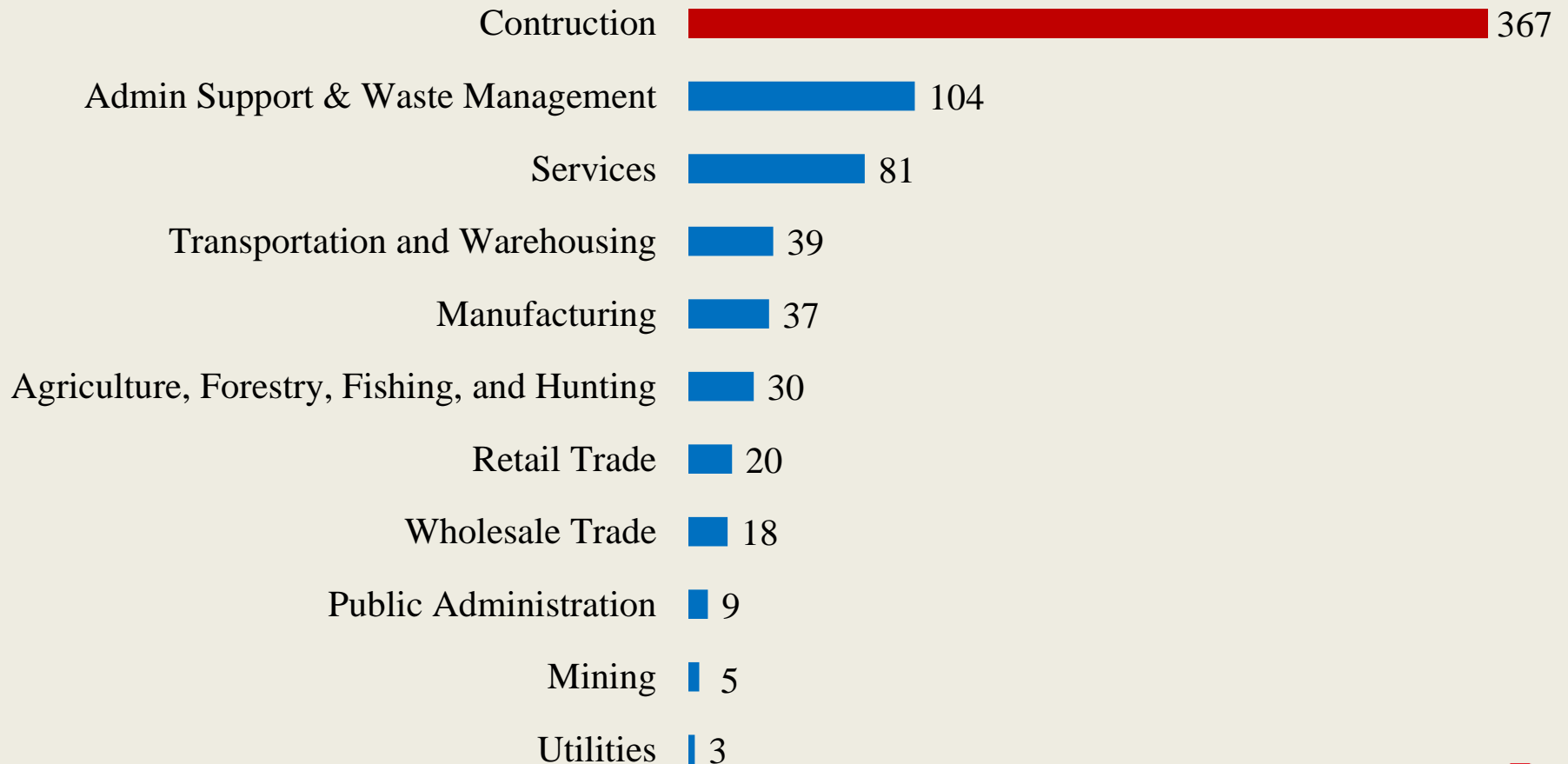
The trend of the aging workforce will continue...



Source: U.S. Bureau Labor Statistics. Projections of the labor force, 2016-26. <https://www.bls.gov/news.release/pdf/ecopro.pdf>

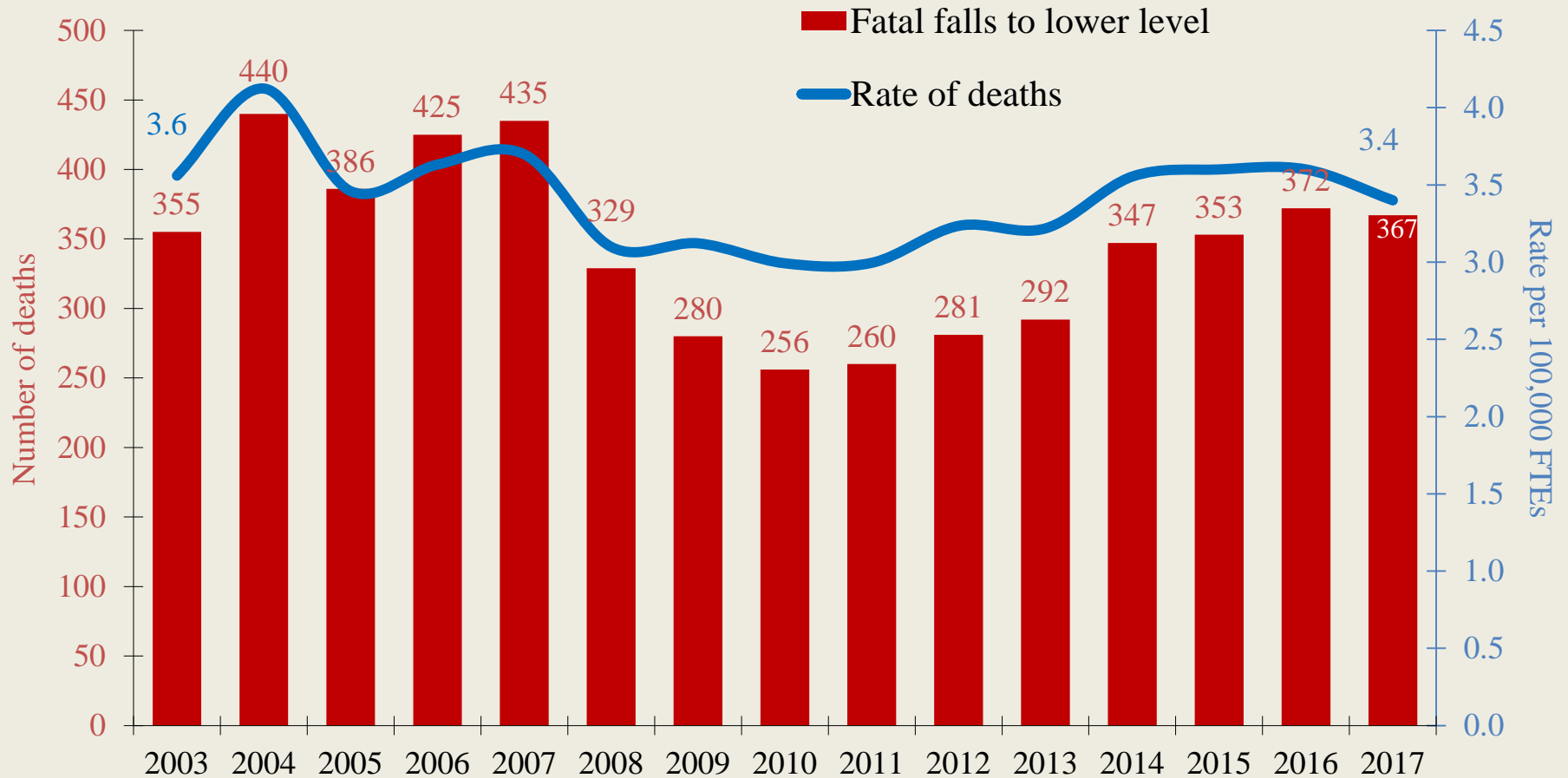
Trends of Fatal and Nonfatal Falls

In 2017, more than half of fatal falls to a lower level occurred in construction



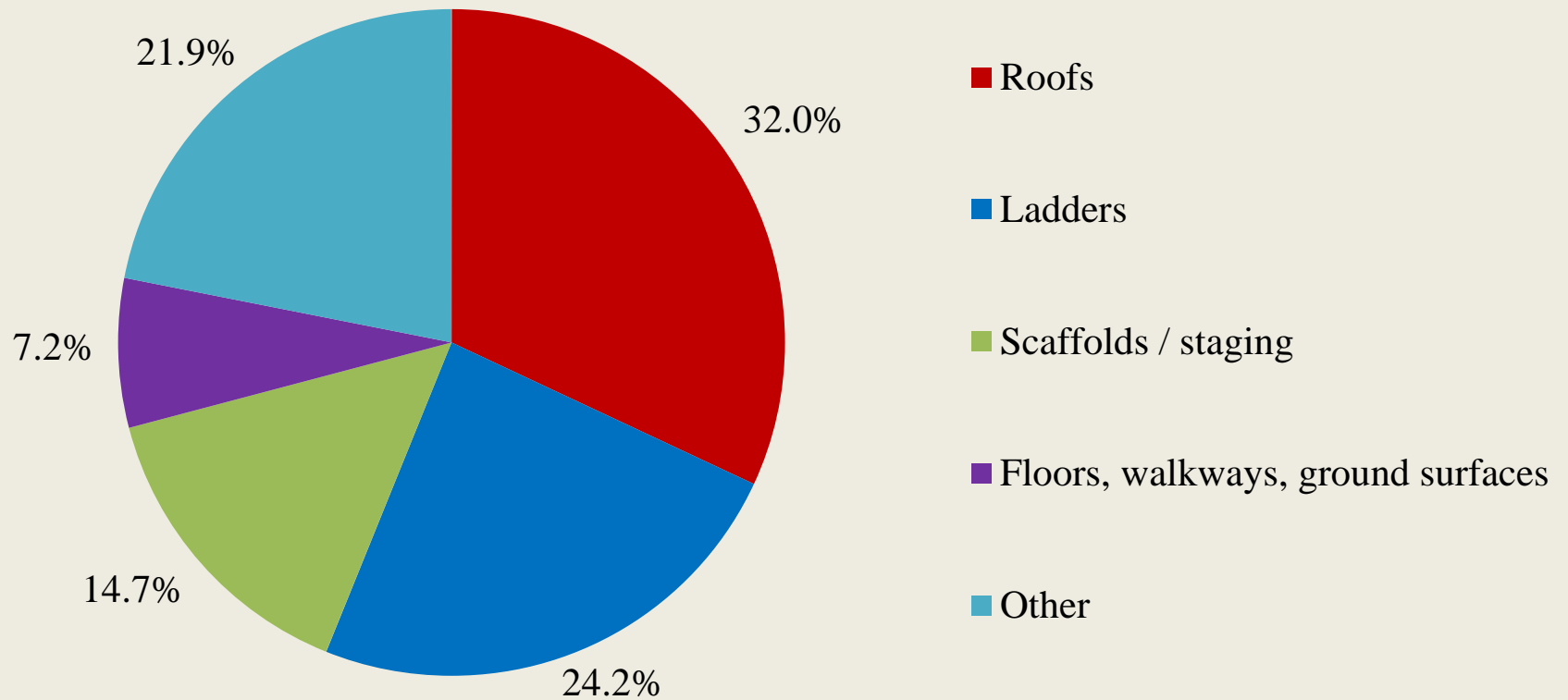
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

The number of fatal falls increased but the rate was stable



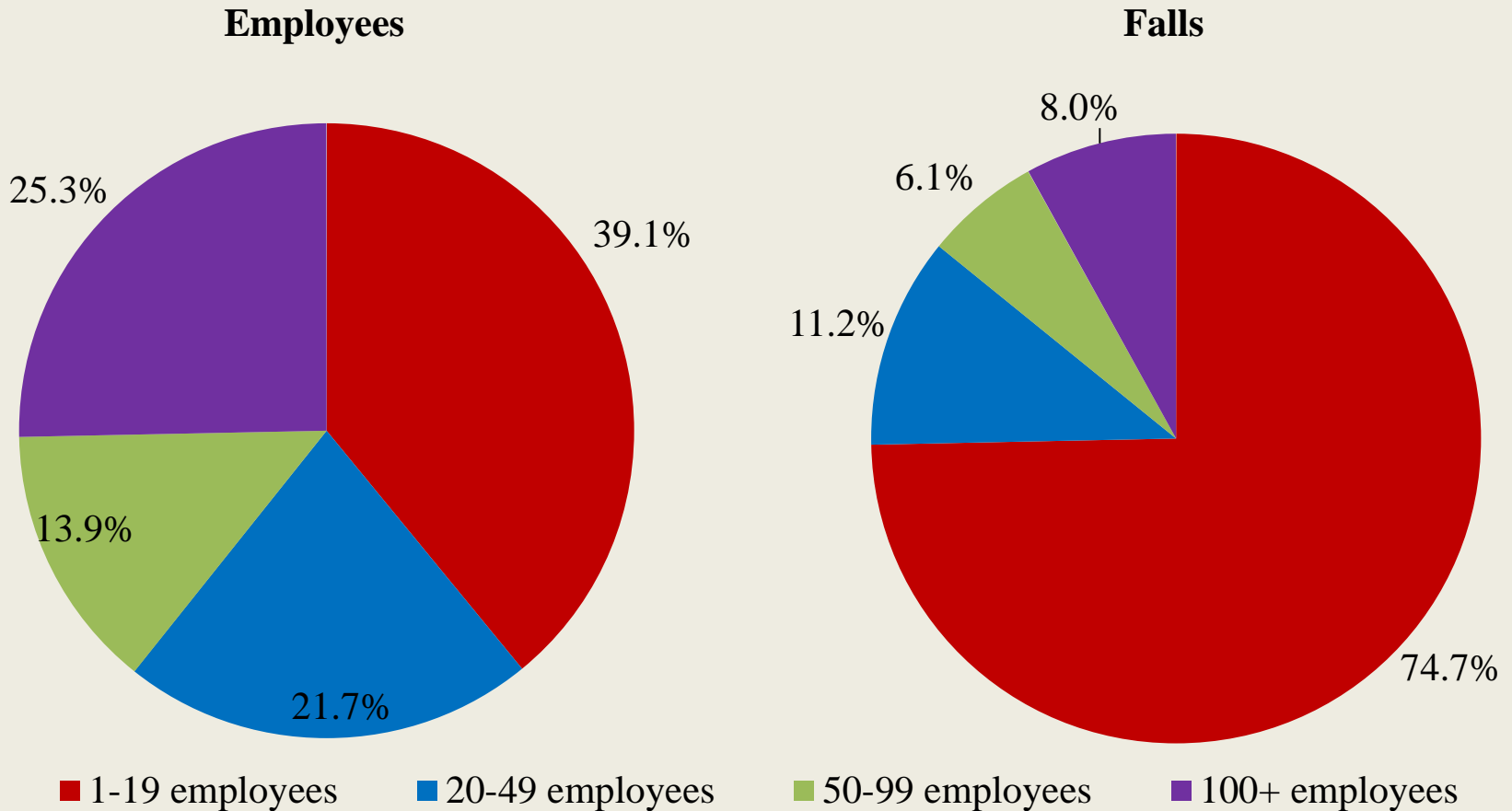
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

Falls from roofs accounted for one-third of fatal falls to a lower level



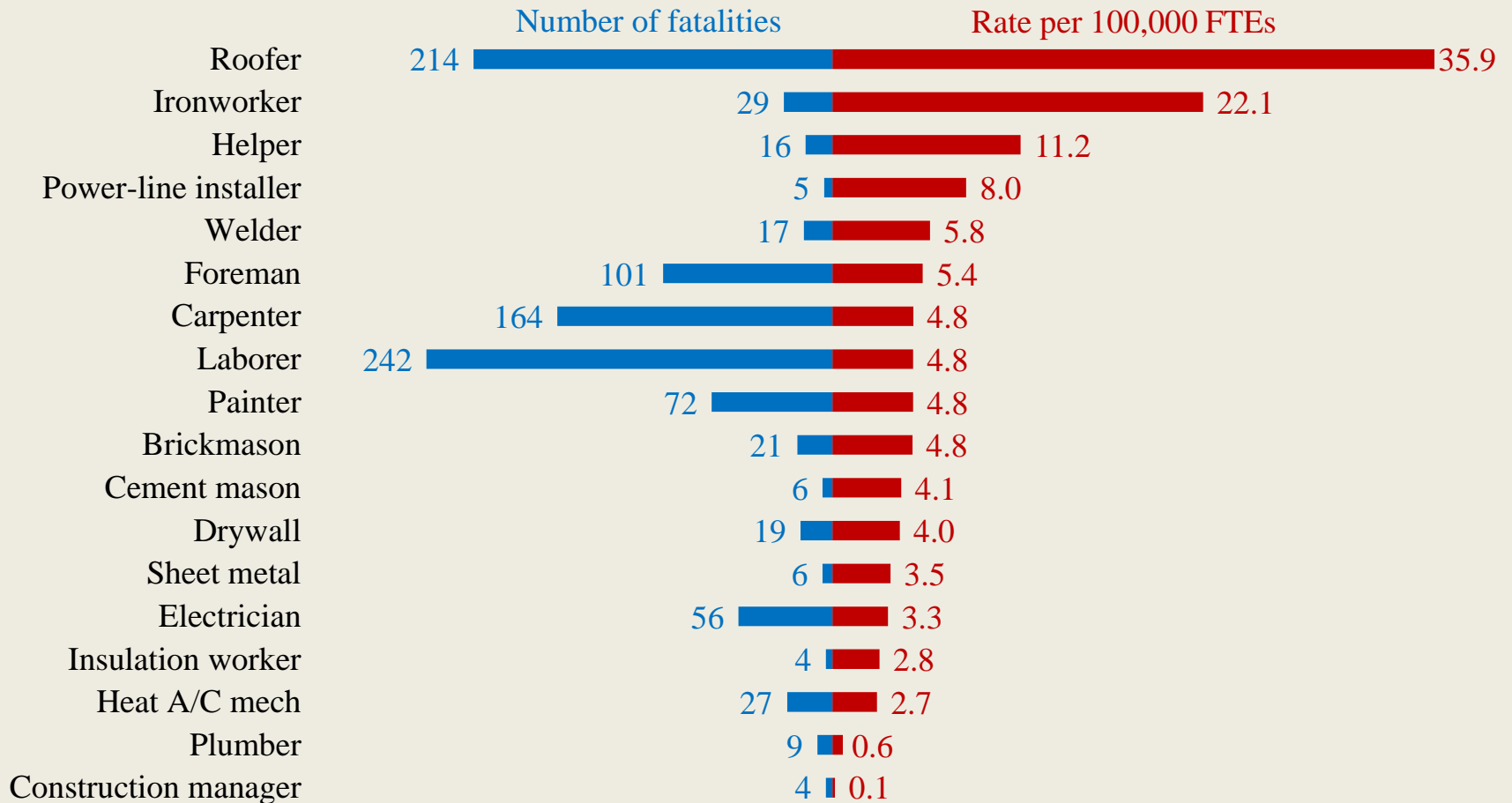
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

Small employers (1-19 employees) accounted for 75% of fatal falls



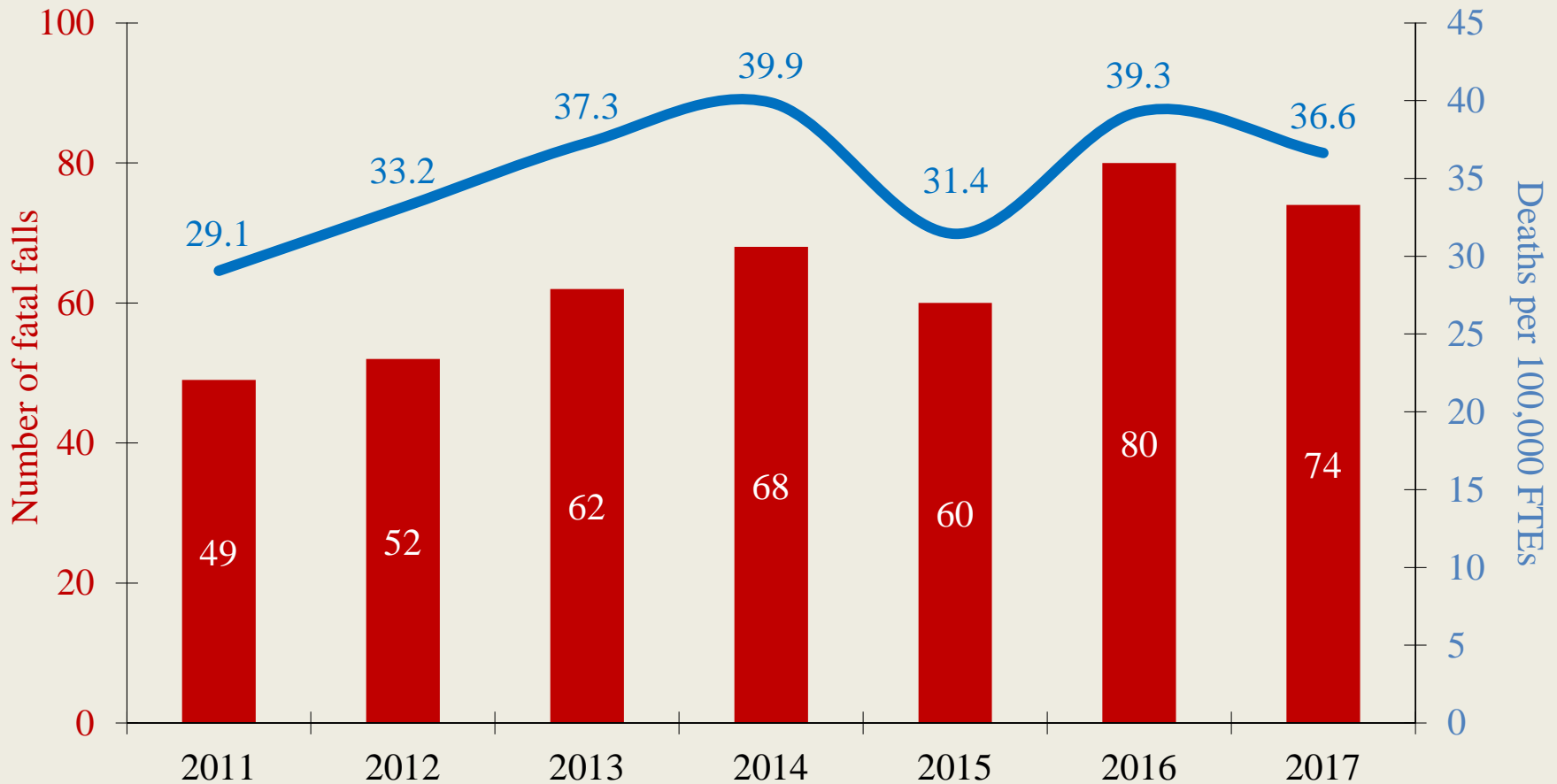
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Data on employees by establishment size from the QCEW. Calculations by the CPWR Data Center.

Roofers had the highest rate of fatal falls, while laborers had the largest number of fatal falls



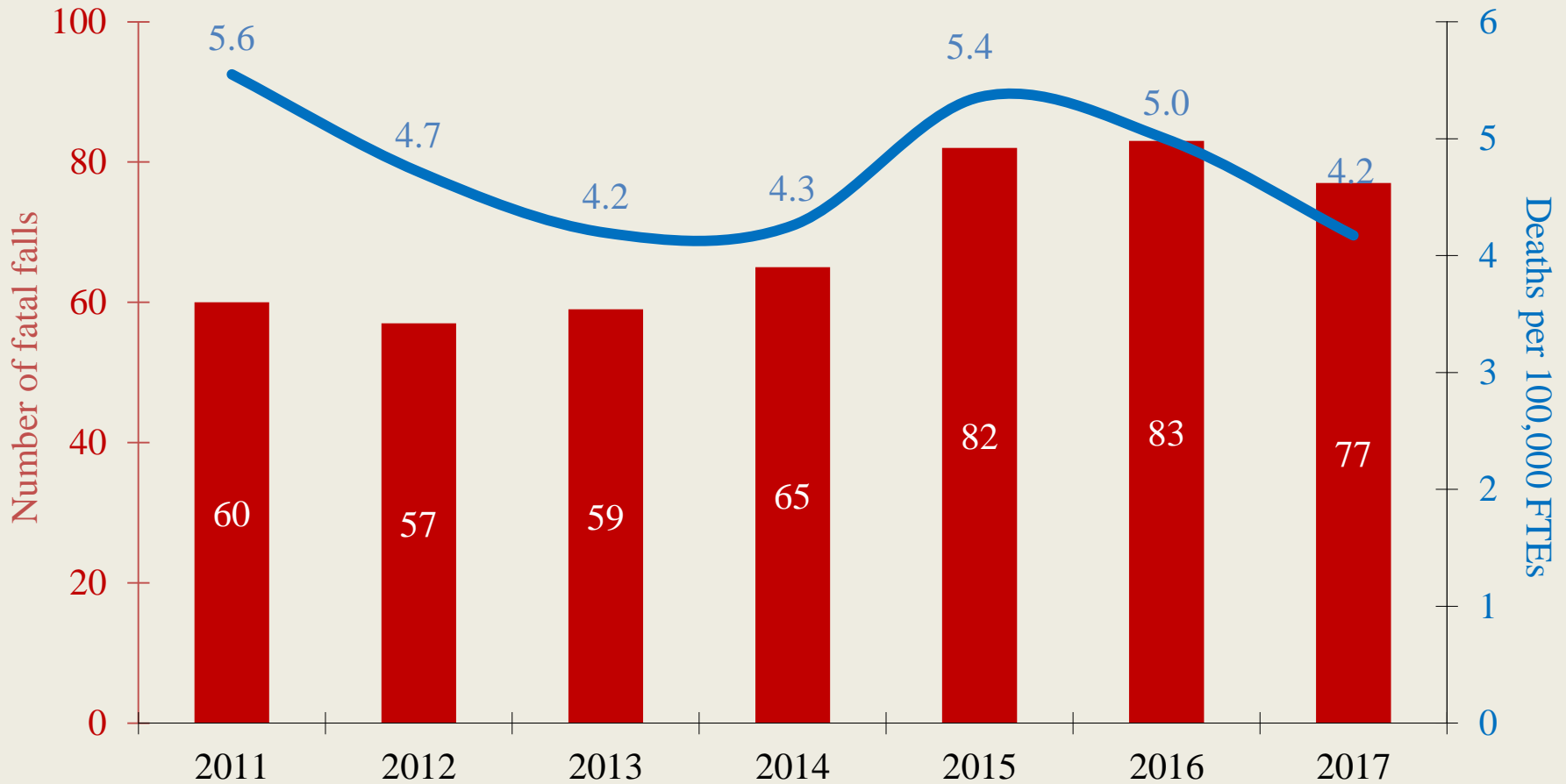
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

Both number and rate of fatal falls among roofers dropped in 2017



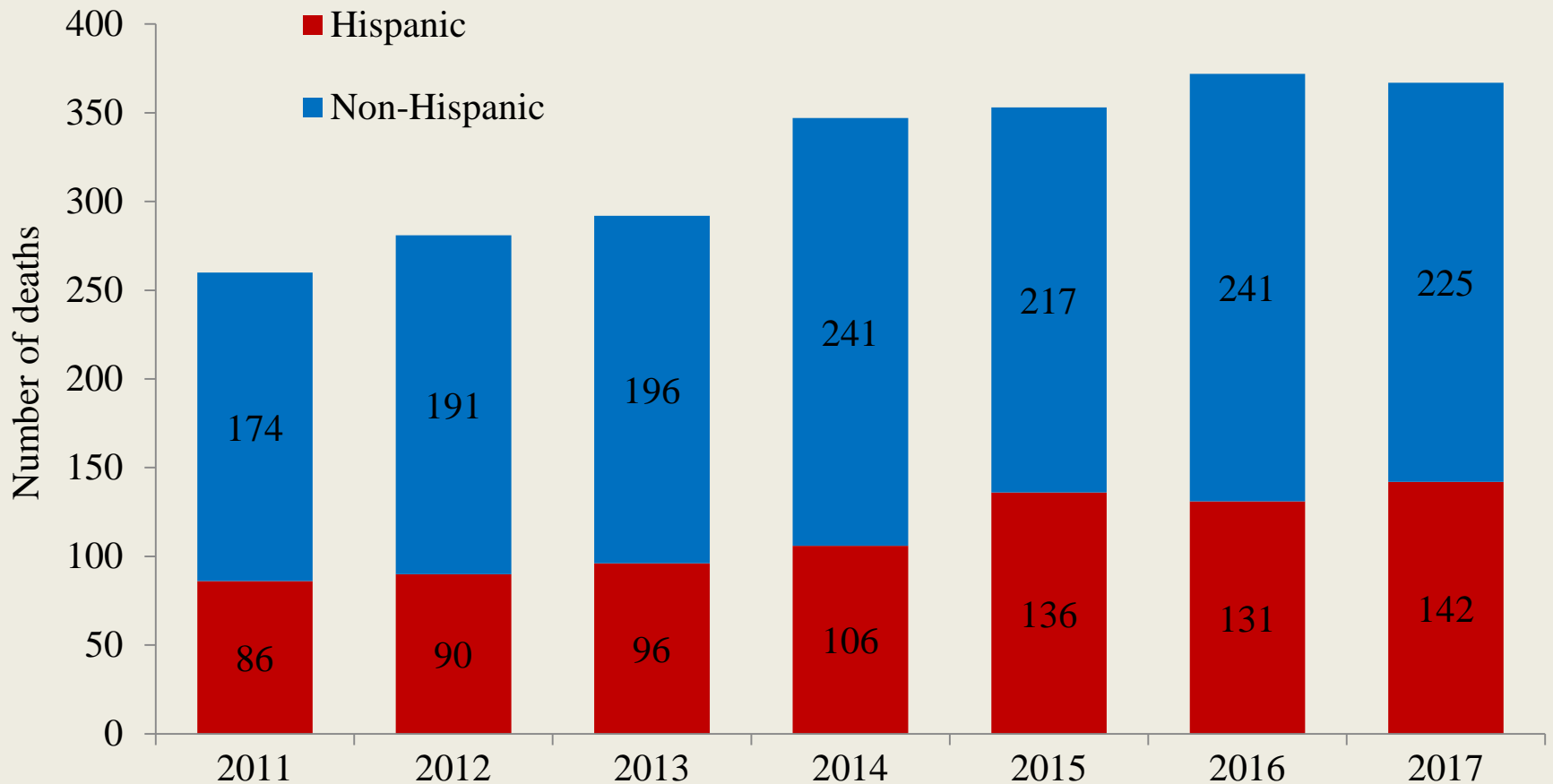
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

The rate of fatal falls decreased 25% among laborers from 2011 to 2017



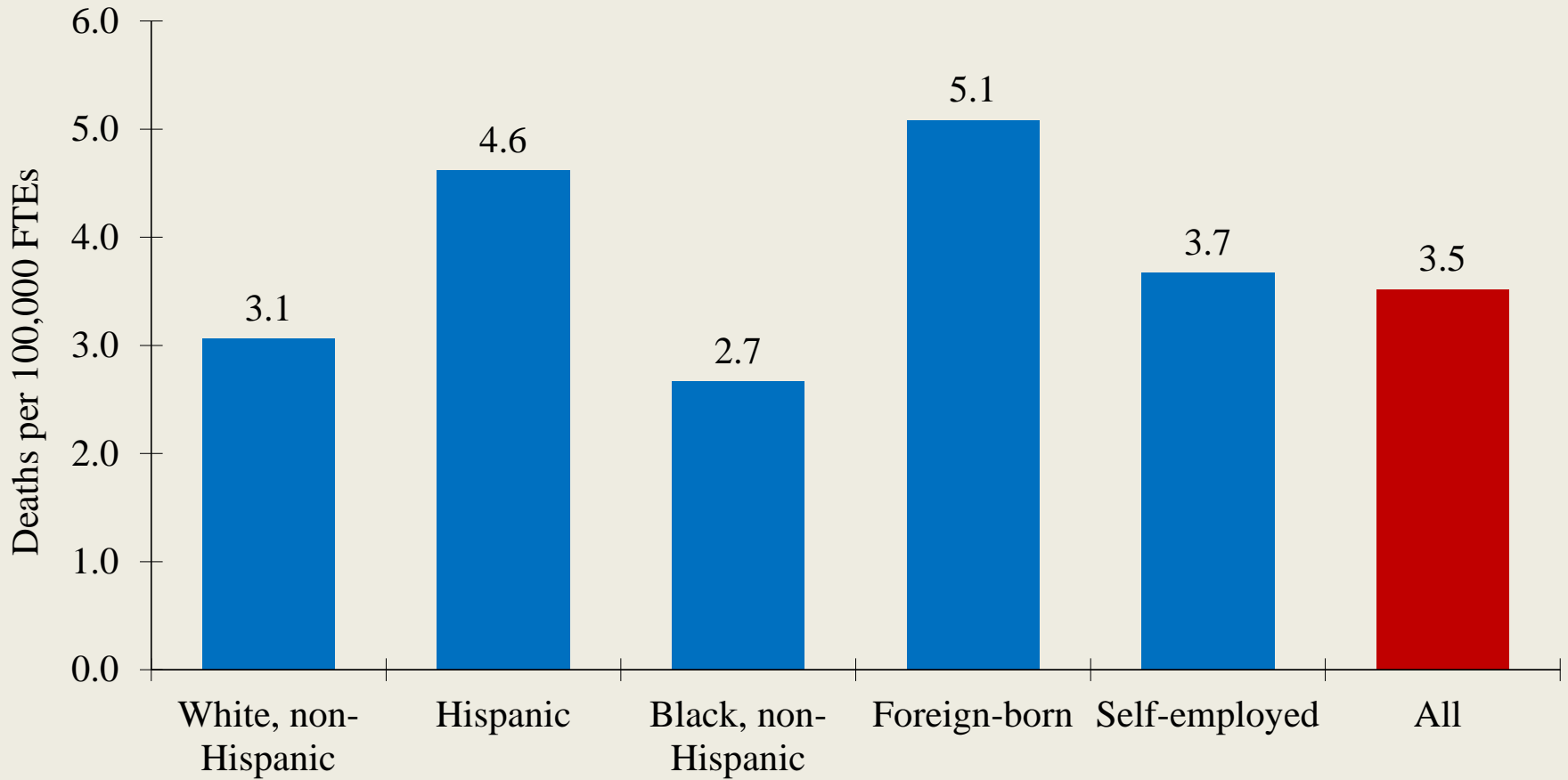
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

Between 2011-2017, the number of fatal falls increased 65% among Hispanic workers and 29% among non-Hispanic workers



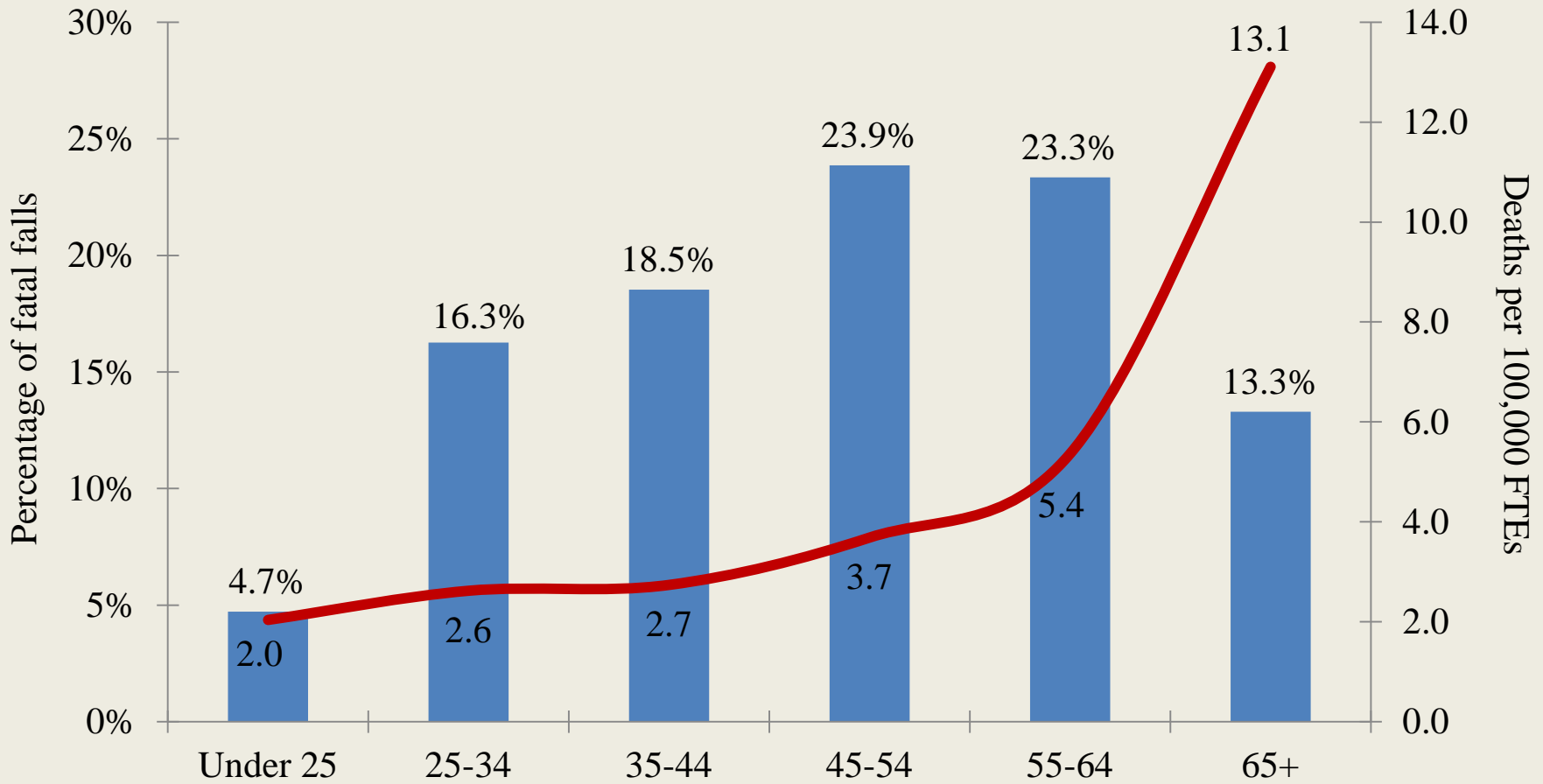
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

Foreign-born workers, Hispanic workers, and self-employed workers had a higher risk of fatal falls



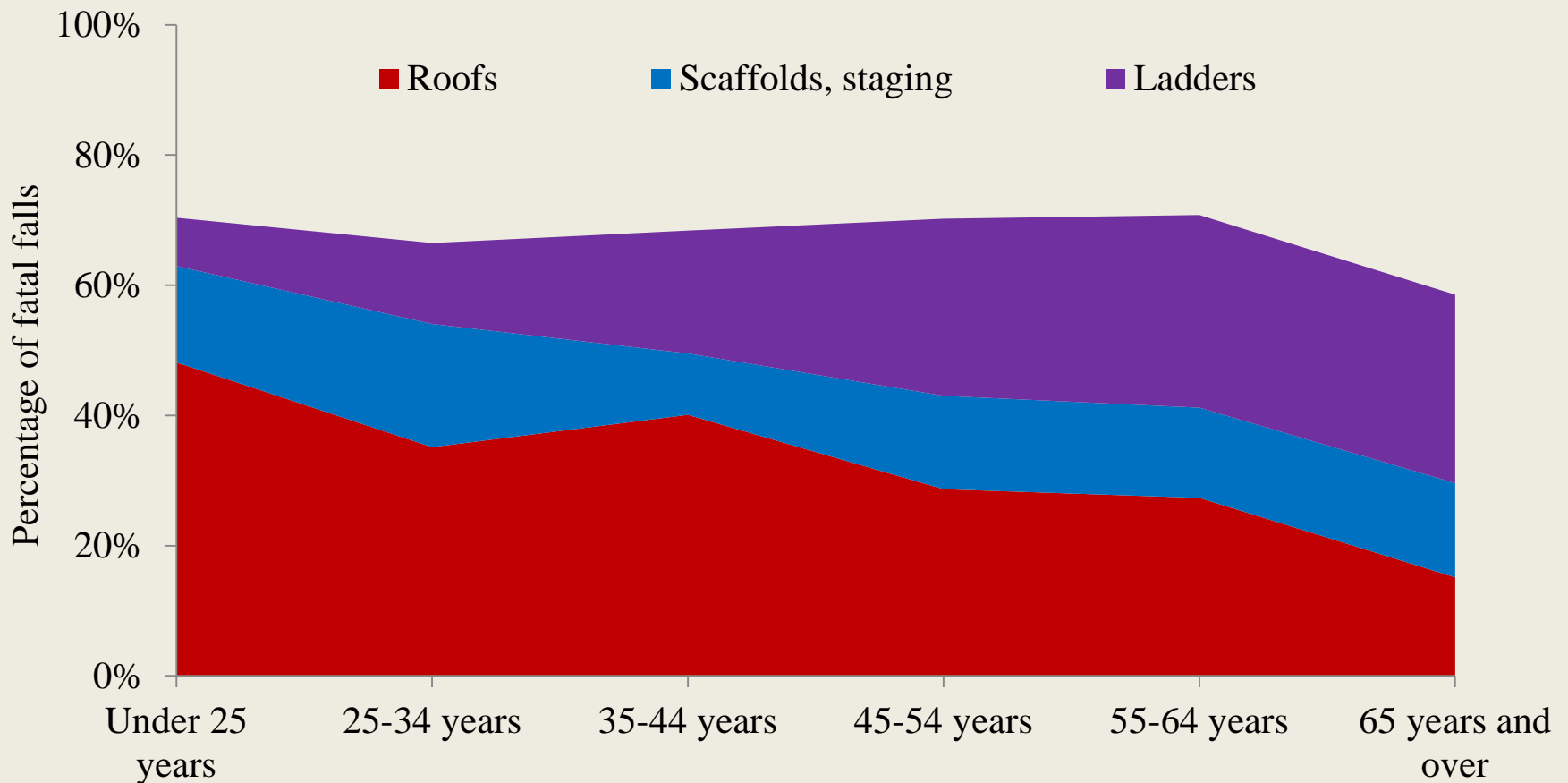
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

Rate of fatal falls increased with age



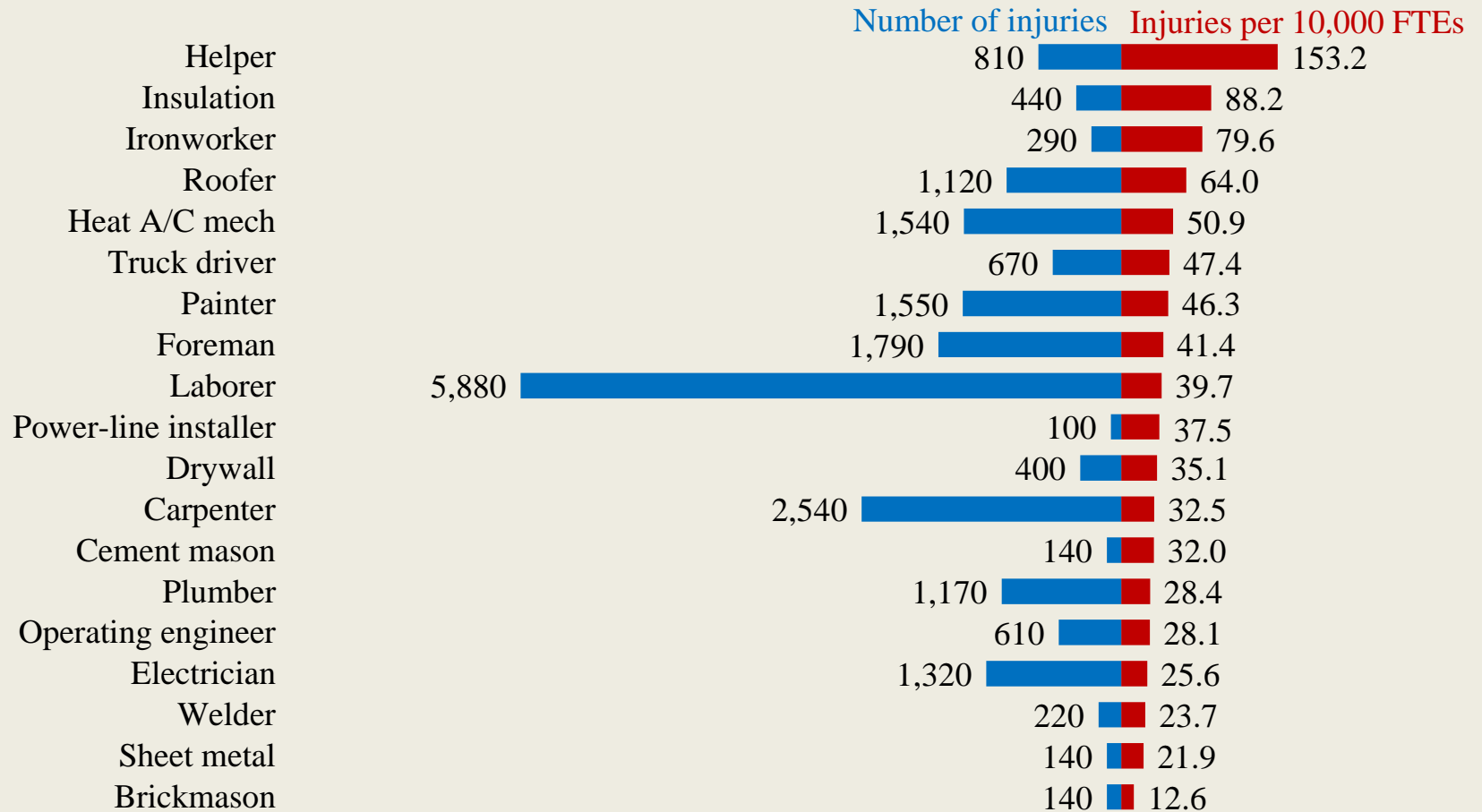
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the CPWR Data Center.

Older construction workers had a higher risk of fatal falls from ladders than younger workers



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to the BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

Helpers had the highest rate and laborers had the largest number of nonfatal falls



Source: Number of nonfatal injuries are unpublished estimates from the U.S. Bureau of Labor Statistics (BLS), Survey of Occupational Injuries and Illnesses, and were obtained from the BLS through special requests. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the CPWR Data Center.

Highlights

- Workers at small employers (1-19 employees) accounted for 75% of fatal falls in construction payroll employment
- The risk of fatal falls for roofers was 10 times that of all construction combined, but both the number and rate dropped in 2017
- The rate of fatal falls among construction laborers decreased by 25% between 2011 and 2017
- 75% of fatal falls involved roofs, scaffolds, and ladders
- Older construction workers had a higher risk of fatal falls from ladders than younger workers

Evaluating the Reach of the National Campaign to Prevent Falls in Construction

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Social Network Analysis

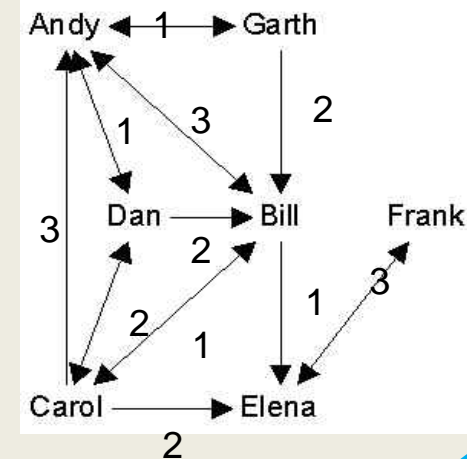
Using Social Network Analysis, we set out to determine:

- 1.** What organizations are part of the Campaign network and how are they working together?
- 2.** What are the benefits and challenges of participating?
- 3.** Who are the audiences that the Campaign is reaching?
- 4.** Who are the potential audiences that the Campaign could reach through its partners?
- 5.** What encourages partners to become involved and remain involved?

What is a Social Network Analysis?

Social Network Analysis...

- Collects data on who is connected to whom
- How those connections vary and change
- Focus on patterns of relations
- Nodes (people, orgs, etc.)
- Lines (relationships)



What is the Partner Tool?

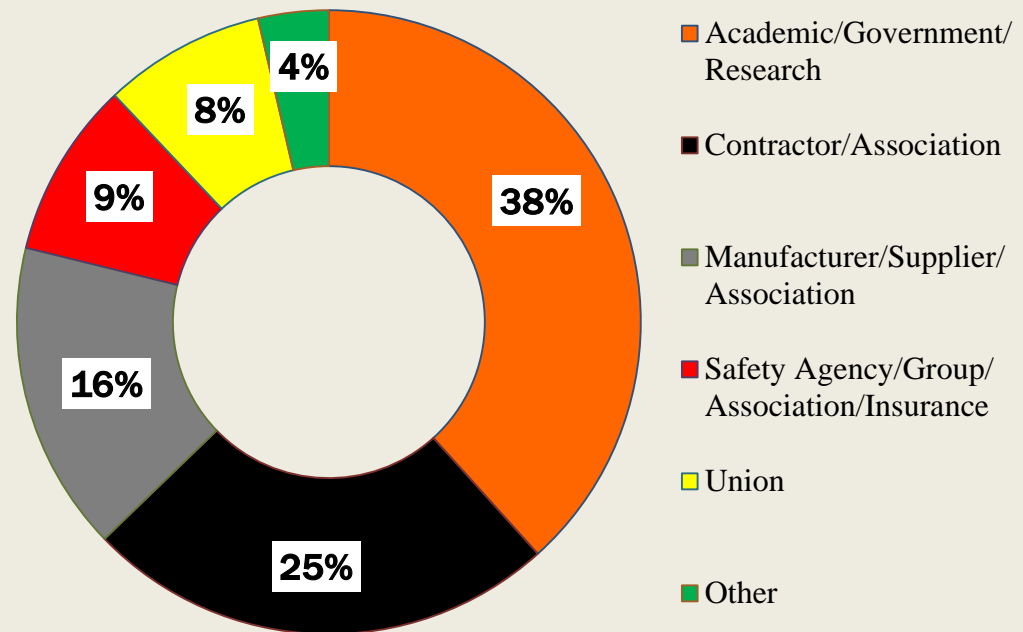
- Funded by the Robert Wood Johnson Foundation
- Tool to collect, analyze, & interpret data to improve collaboration within networks
- 750+ groups world-wide have used the Tool



Who is part of the Falls Campaign network?

- Distributed survey to 157 organizations identified as Falls Campaign Partners
- 77 (49%) responded
 - Listed 117 new partners that they work with around the Falls Campaign
- 274 organizations recognized as being part of the Falls Campaign network

Total Falls Campaign Partners (N = 274)



Who are partners reaching with the Falls Campaign?

Academic, Government & Research



2,626,526 individuals

Contractors & Associations



222,300 individuals

Unions



208,500 individuals

Manufacturers



112,000 individuals

Safety Agencies & Insurance



33,500 individuals

Note: Counts exclude the lead organizations

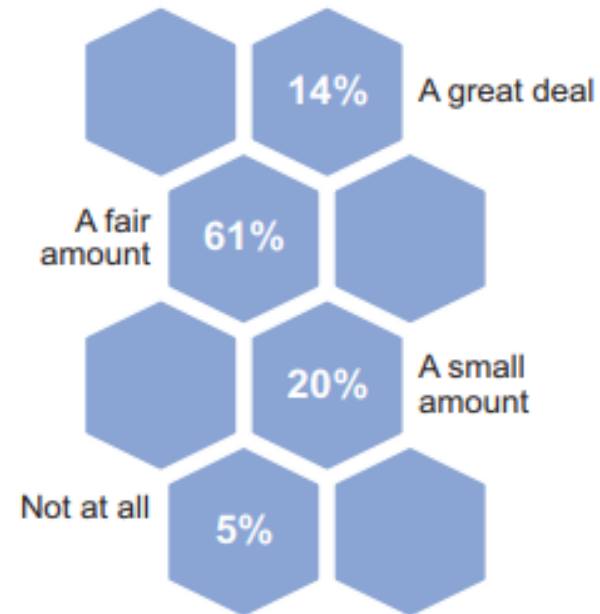
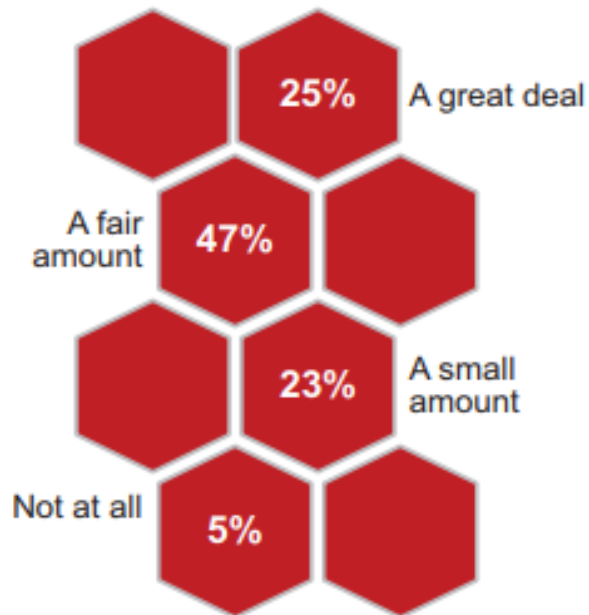
What is the impact of the Falls Campaign network?

➤ Falls Campaign partners reported a number of outcomes since participating in the network, detailed in the graph below:



What is the impact of the Falls Campaign network?

75% noticed an **increase in fall prevention activities** at their organization or in the industry (n=59)



72% noticed **improvements in overall safety and health initiatives with topics other than falls** at their organization or in the industry (n=60)

CPWR Stand-Down Order Form



	2014	2015	2016	2017	2018	2019
Total Orders	N/A	N/A	N/A	445	764	1,243
Hardhat Stickers	--	50,000	50,000	173,000	259,987*	336,755*
Hazard Alert Cards	1,800	9,168	14,100	70,125	142,213	277,891

Summary

The Campaign:

- Includes diverse organizations
- Large reach in terms of size and types of audiences
- High levels of engagement and activity
- Effective information sharing network

Take-home Message

- The Falls Prevention Campaign has seen improvements in fall protections, and the rate of fatal falls showed signs of decreasing
- Hispanic, foreign-born, and older workers; workers in small companies; and roofers still have a high risk of fatal falls
- Enhanced fall protection efforts should be targeted and available for small employers
- Falls are preventable; we must continue our efforts

THANKS!



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