CPWR-NIOSH COVID-19 Webinar Series:

Impact of COVID-19 on the Industry and New Research Initiatives

Thursday, October 8th, 2020

Welcome: G. Scott Earnest, Ph.D., P.E., C.S.P., Associate Director for Construction,
Office of Construction Safety and Health, National Institute for Occupational Safety and Health

Moderator: Chris Trahan Cain, Executive Director, CPWR — The Center for Construction Research and Training

Presenters:
Samantha Brown, MPH, Research Analyst, CPWR Data Center
Appavoo (Samy) Rengasamy, Ph.D., Research Physical Scientist, NPPTL/NIOSH/CDC

National Institute for Occupational Safety and Health NIOSH

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IMPACT OF COVID-19 ON CONSTRUCTION WORKERS AND BUSINESSES

CPWR-NIOSH COVID-19 Webinar Series

10/8/20

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Data Bulletins addressing COVID-19

1. Health Insurance Coverage in the Construction Industry
2. Coronavirus and Health Disparities in Construction
3. Impact of COVID-19 on Construction Workers and Businesses

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APRIL 2020

Health Insurance Coverage in the Construction Industry

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

OVERVIEW

Most Americans rely on health insurance coverage to finance their health care services. Without health insurance, people may face multiple barriers to necessary care, and difficulty paying for medical costs with their own resources. Insurance is particularly important for construction workers because numerous workplace hazards can cause adverse health effects, in addition to fatal and nonfatal injuries.

This Data Bulletin examines the latest trends in health insurance coverage among construction workers, using data from the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS), a nationally representative survey administered by the U.S. Census Bureau to American households each March. The ASEC collects health insurance information on the prior calendar year, as well as current coverage at the time of the interview. In this report, insurance data for 2003 to 2018 represents coverage during those calendar years, while data for 2019 refers to coverage at only the time of the survey.

THIS ISSUE

This bulletin provides updated information on health insurance coverage among construction workers by analyzing data from a large national survey.

KEY FINDINGS

Nearly 24% of construction workers did not have any health insurance in 2018, more than double the uninsured rate among all U.S. workers. *Chart 1*

Nearly half (48%) of Hispanic construction workers were uninsured, more than triple that of their white, non-Hispanic counterparts (13%). *Chart 5*

Less than 30% of Hispanic construction workers had employment-based insurance coverage in 2018. *Chart 6*

Key findings:

- **Uninsured** rates higher among:
  - Workers in construction industry
  - Hispanic construction workers
- **Employment-based coverage** in construction more common among:
  - White, non-Hispanic workers
  - Workers in large establishments
  - Union members

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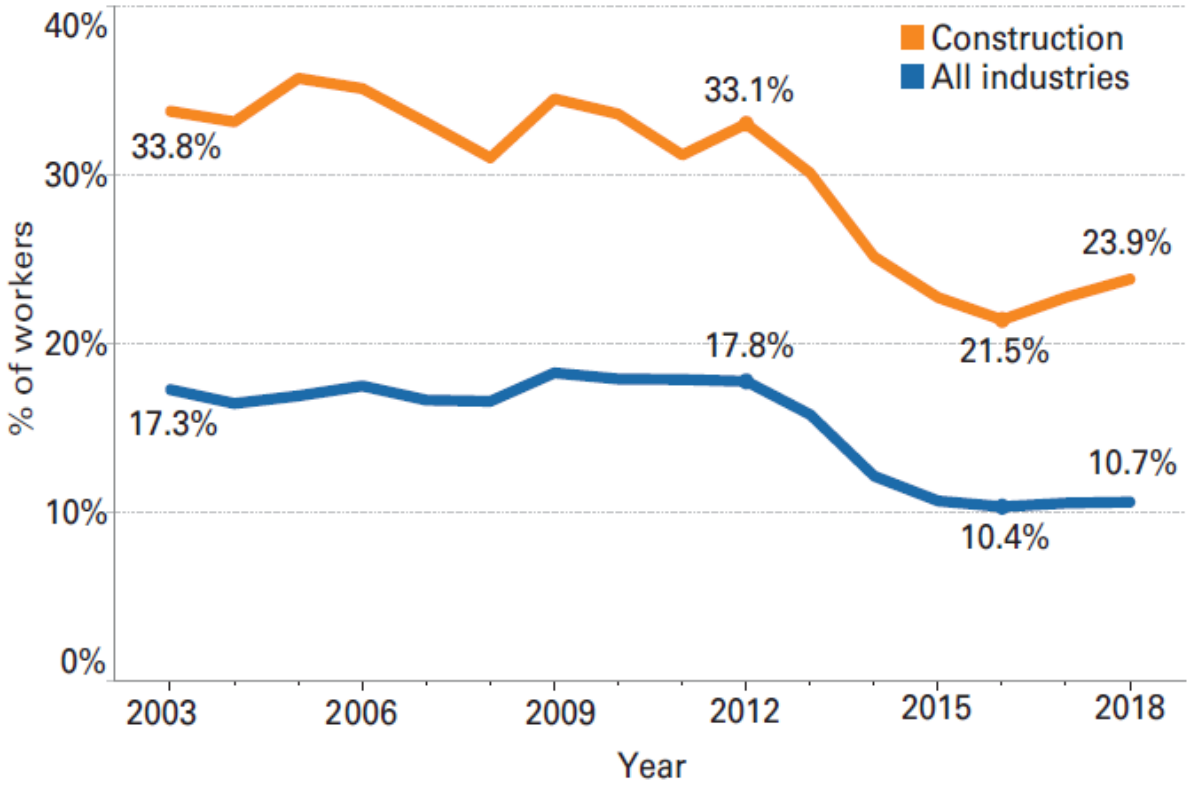
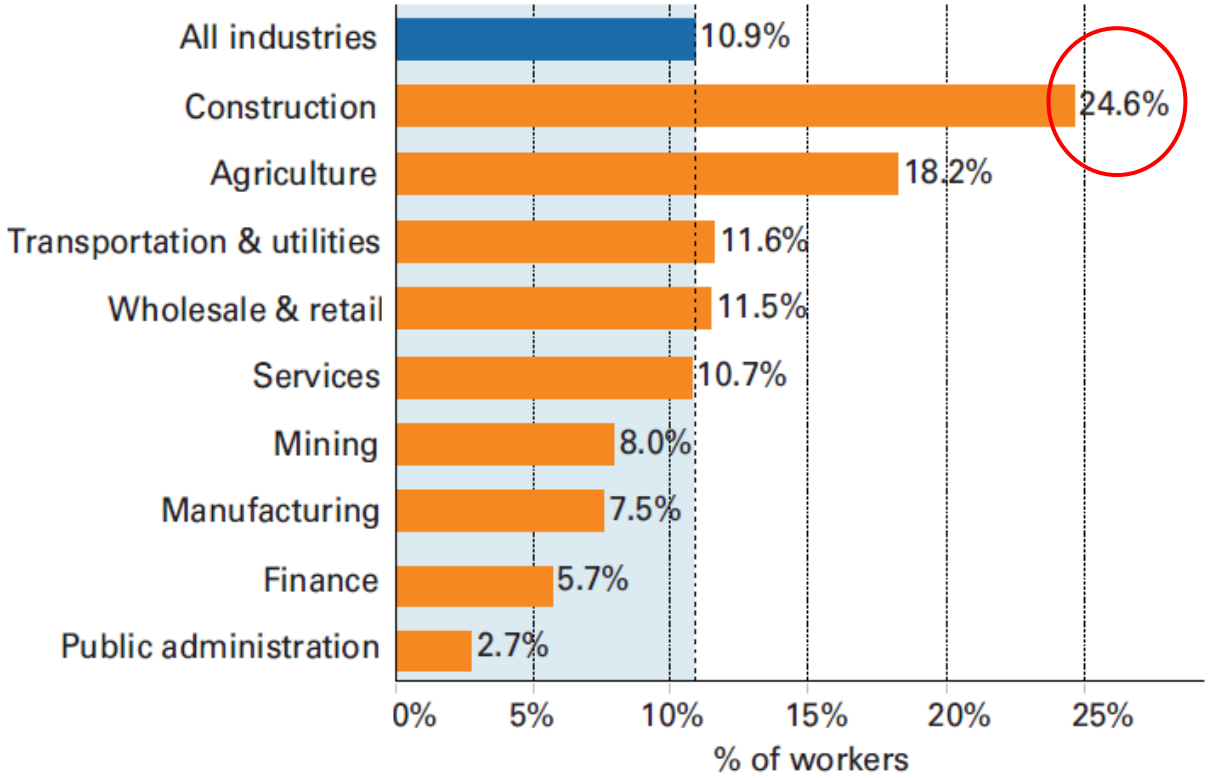
Construction workers were twice as likely to lack health insurance as workers in all industries combined

% uninsured, 2003-2018



% uninsured at time of survey, 2019



Source: 2014-2019 supplement to the Current Population Survey. Calculations by the CPWR Data Center.

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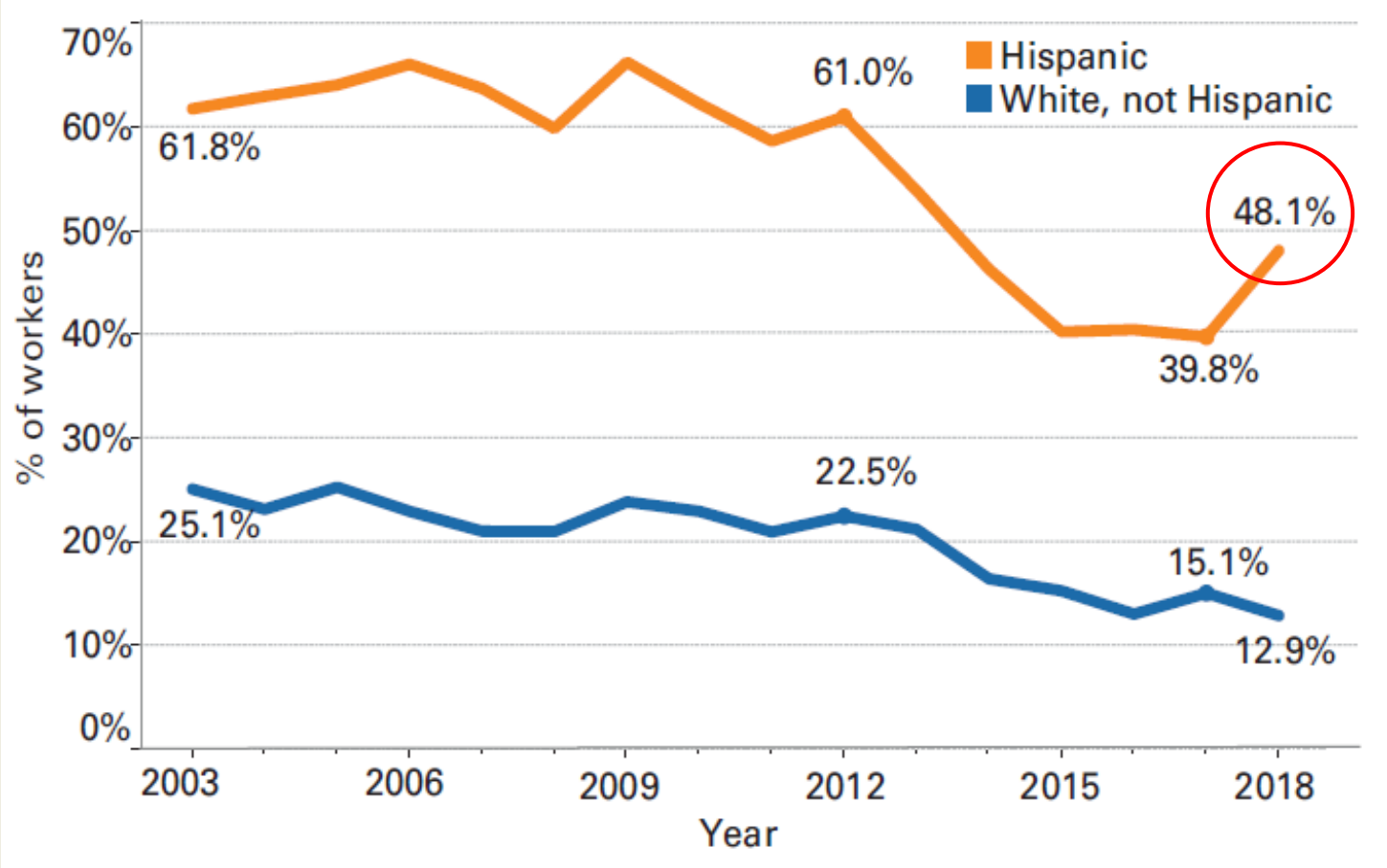
Hispanic construction workers were more than 3x as likely to lack health insurance as non-Hispanic, white construction workers

% uninsured, construction, 2003-2018



Source: 2014-2019 March supplement to the Current Population Survey. Calculations by the CPWR Data Center.

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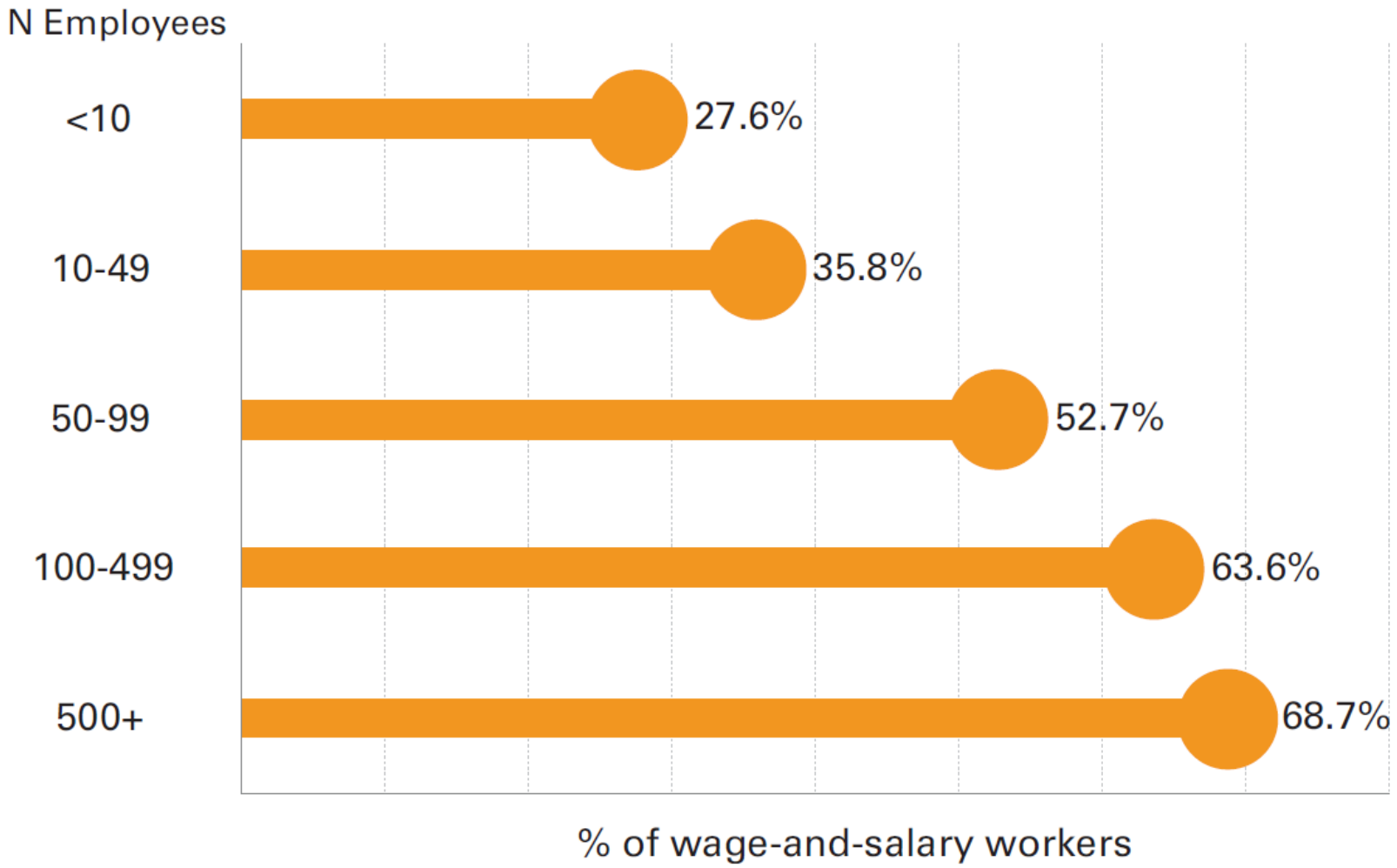
% with employment-based insurance by establishment size, construction, 2018



Source: 2019 March supplement to the Current Population Survey. Calculations by the CPWR Data Center.

Employment-based coverage increases with establishment size.

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MAY 2020

Coronavirus and Health Disparities in Construction

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

OVERVIEW

Coronavirus Disease 2019 (COVID-19) has spread around the world, including the United States. While this pandemic has affected each of us, some groups may be disproportionately impacted by the virus. Currently available information and clinical expertise indicate that older workers and workers of any age who have certain underlying medical conditions (e.g., heart or lung disease, diabetes), and other factors (e.g., smoking, obesity) might be at higher risk for severe illness from COVID-19.

At this point, it is unknown how many construction workers have become sick or lost their lives due to the COVID-19 outbreak. To assess the potential risk of severe illness from COVID-19 in the construction industry, this Data Bulletin provides updated employment and health information among construction workers by analyzing available national survey data. The employment numbers were estimated from the Current Population Survey, while medical conditions and other risk factors were obtained from the National Health Interview Survey. This Bulletin focuses on older workers, Hispanic workers, black workers, and workers with underlying medical conditions or other risk factors defined by the CDC. Term definitions are included at the end of this report.

THIS ISSUE

This issue provides updated employment and health information on construction workers at higher risk in the COVID-19 pandemic, including older workers, Hispanics, blacks, and those with underlying medical conditions or other risk factors.

KEY FINDINGS

About 1.4 million construction workers (12.3% of the total 11.4 million) were age 60 or older in 2019, of whom 628,000 were 65 years or older. *Chart 2*

In 2019, 30.4% of construction workers were Hispanic, compared to 17.7% of workers in all industries. *Chart 4*

Nearly one in five (19.7%) construction workers had a respiratory disease, and one in four (25.8%) had cancer, diabetes,

Risk factors assessed:

- Demographic characteristics
- Medical risk conditions
- Other risk factors

Key finding: Nearly 60% of the construction labor force had at least one risk factor (age 65+, medical condition, or others) for severe illness from COVID-19.

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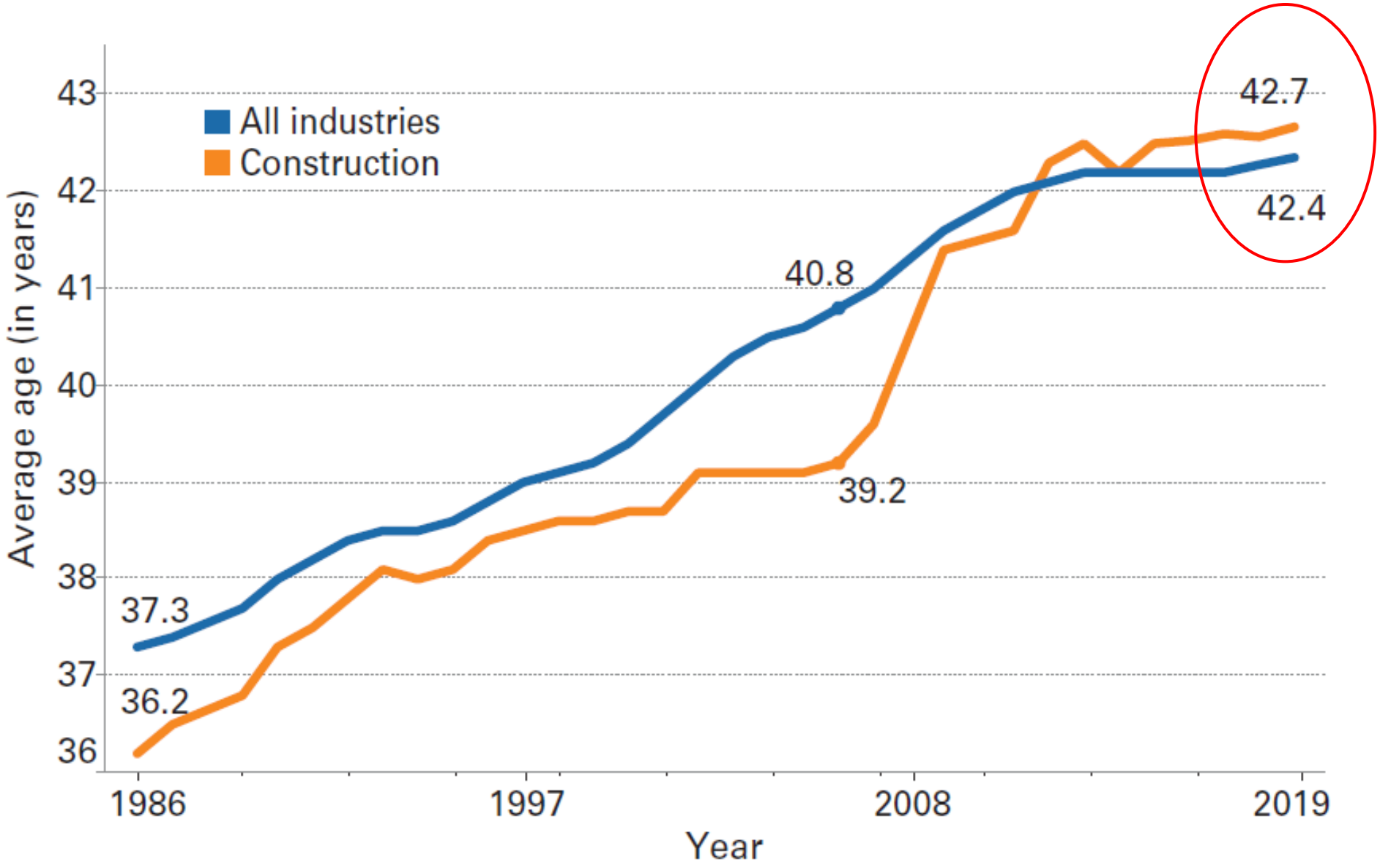
Average age of workers, construction vs. all industries 1986-2019

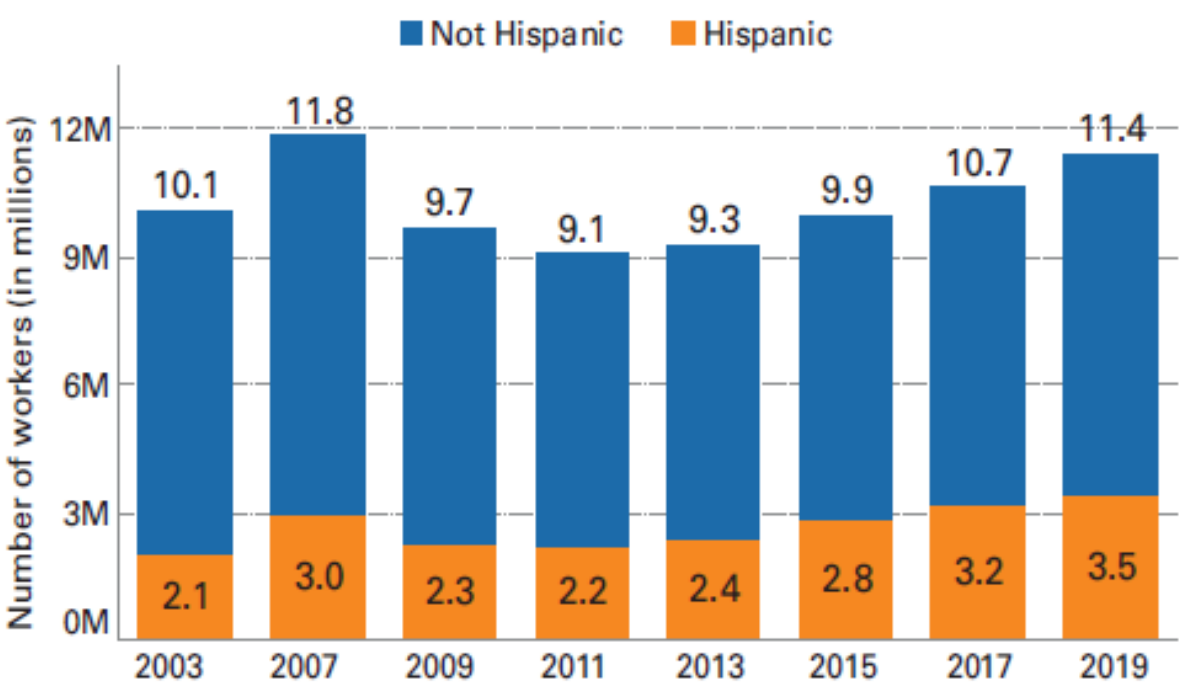


Source: U.S. Bureau of Labor Statistics. 1986-2019 Current Population Survey. Calculations by the CPWR Data Center.

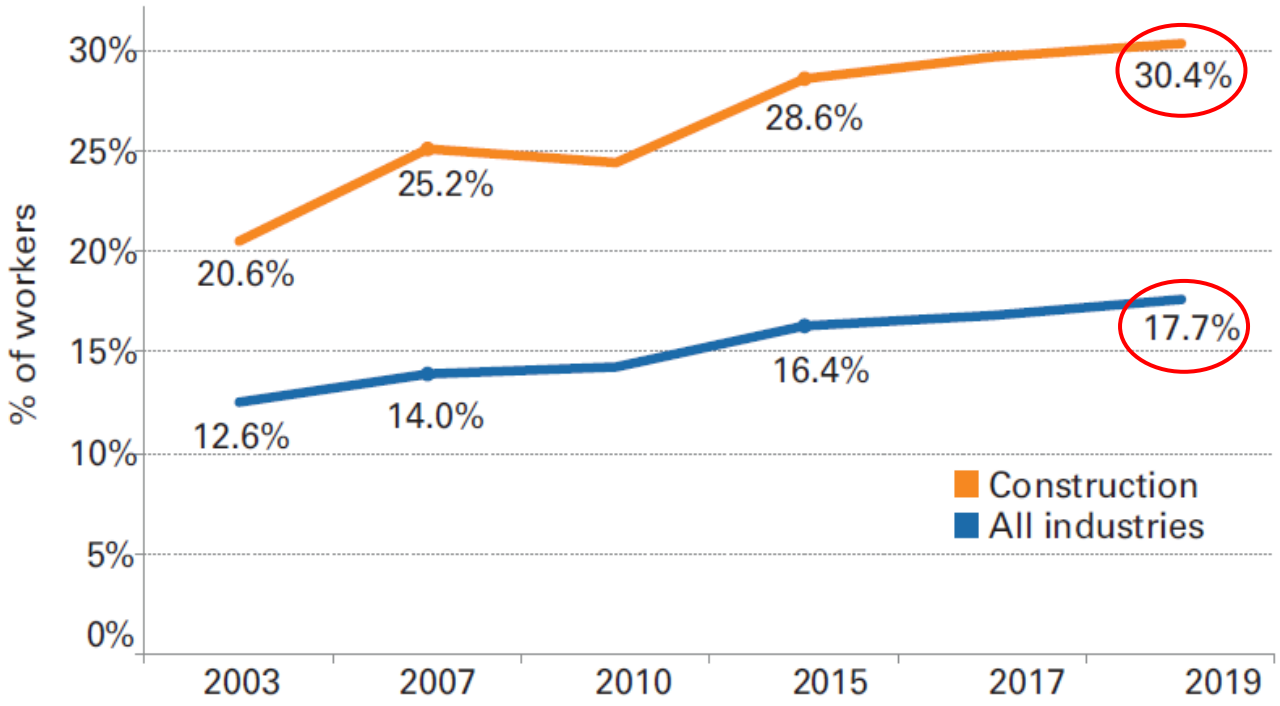
Construction workers were, on average, older than workers in all industries combined.

In 2019, 30.4% of construction workers were Hispanic, compared to 17.7% of workers in all industries

Construction employment, 2003-2019



% Hispanic workers, construction vs. all industries, 2003-2019



Source: U.S. Bureau of Labor Statistics. 2003-2019 Current Population Survey. Calculations by the CPWR Data Center.

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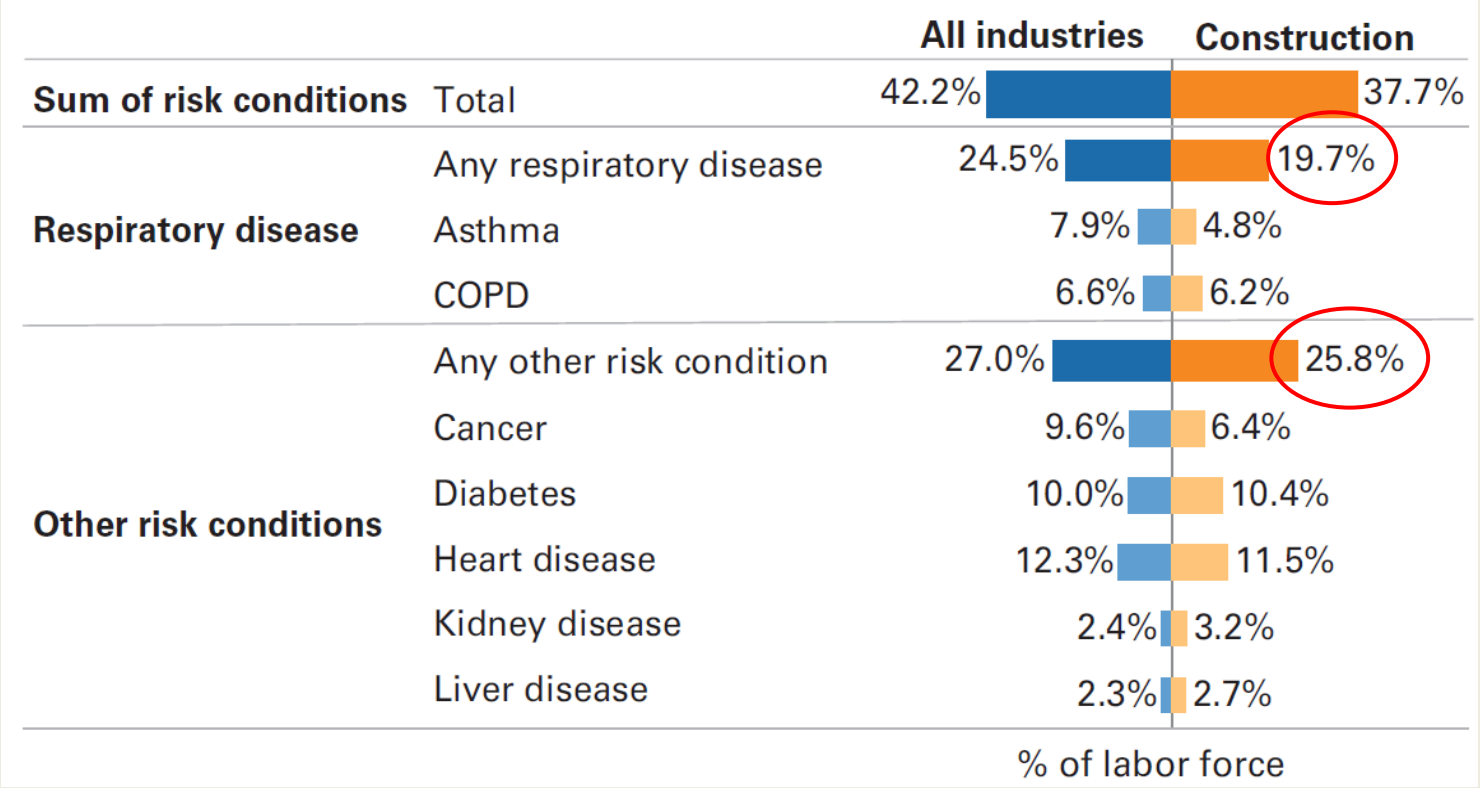
Nearly 1 in 5 construction workers had a respiratory disease, and 1 in 4 had another medical risk condition.

% of labor force with risk conditions for COVID-19, construction vs. all industries, 2018



Source: National Center for Health Statistics. 2018 National Health Interview Survey. Calculations by the CPWR Data Center.
*Risk conditions are not mutually exclusive.

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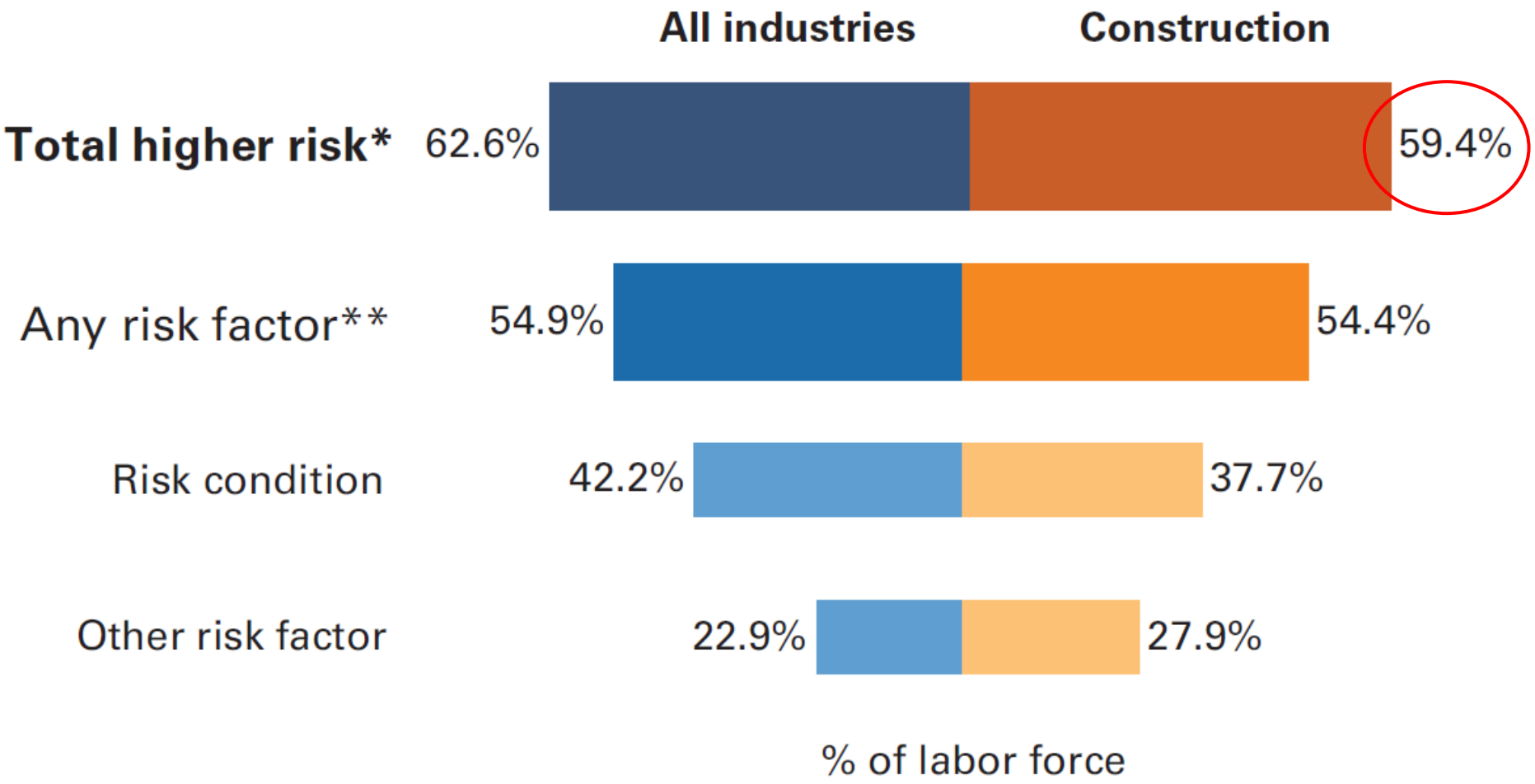
COVID-19 risk factors: Total higher risk



Source: National Center for Health Statistics. 2018 National Health Interview Survey. Calculations by the CPWR Data Center.

*Category includes persons age 65 or older, or with any risk factor.

**Category includes persons with a risk condition or other risk factor.

Nearly 60% of the construction labor force had at least one risk factor (age 65+, medical condition, or others) for severe illness from COVID-19.

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JULY 2020

Impact of COVID-19 on Construction Workers and Businesses

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

OVERVIEW

The COVID-19 pandemic has caused considerable economic uncertainty in the U.S., leading to business closures, mass job loss, and the deterioration of living conditions for many. Low-income workers, racial/ethnic minorities, and small businesses are particularly affected. To shed light on the impact of these challenges in the construction industry, this Data Bulletin combines findings from three large national surveys.

Construction employment by demographic and work-related characteristics was estimated using data from the Current Population Survey (CPS). Employment numbers among construction subsectors were obtained from the Current Employment Statistics (CES). Both CPS and CES are conducted by the U.S. Bureau of Labor Statistics (BLS). The effects of COVID-19 on construction businesses were assessed using the U.S. Census Bureau's new weekly Small Business Pulse Survey (SBPS), which measures the changes in business conditions during the pandemic. The trends of monthly employment and weekly business performance were traced and compared between construction and all industries on average. Differences between construction subgroups were analyzed to identify which groups were hit harder. Definitions for italicized terms are included as the reader's references.

THIS ISSUE

This issue focuses on COVID-19's economic impact on the construction industry from March through June 2020, including job losses, medical absences, and business closures.

KEY FINDINGS

From March to April 2020, nearly one million construction workers lost their jobs, of whom 55.1% were temporarily laid off.

Chart 2

About 673,000 Hispanic construction workers lost their jobs in April 2020; the percentage of job loss was higher than that of non-Hispanic workers (-19.8% vs. -12.7%).

Chart 4

From March to April 2020, construction employment fell 22.5% among self-unincorporated workers.

Key findings:

- Over 1 million construction workers **lost their job** from March to April. **Minorities** were especially affected.
- **Work absences** for medical reasons increased.
- COVID-19 moderately affected **small construction businesses.**

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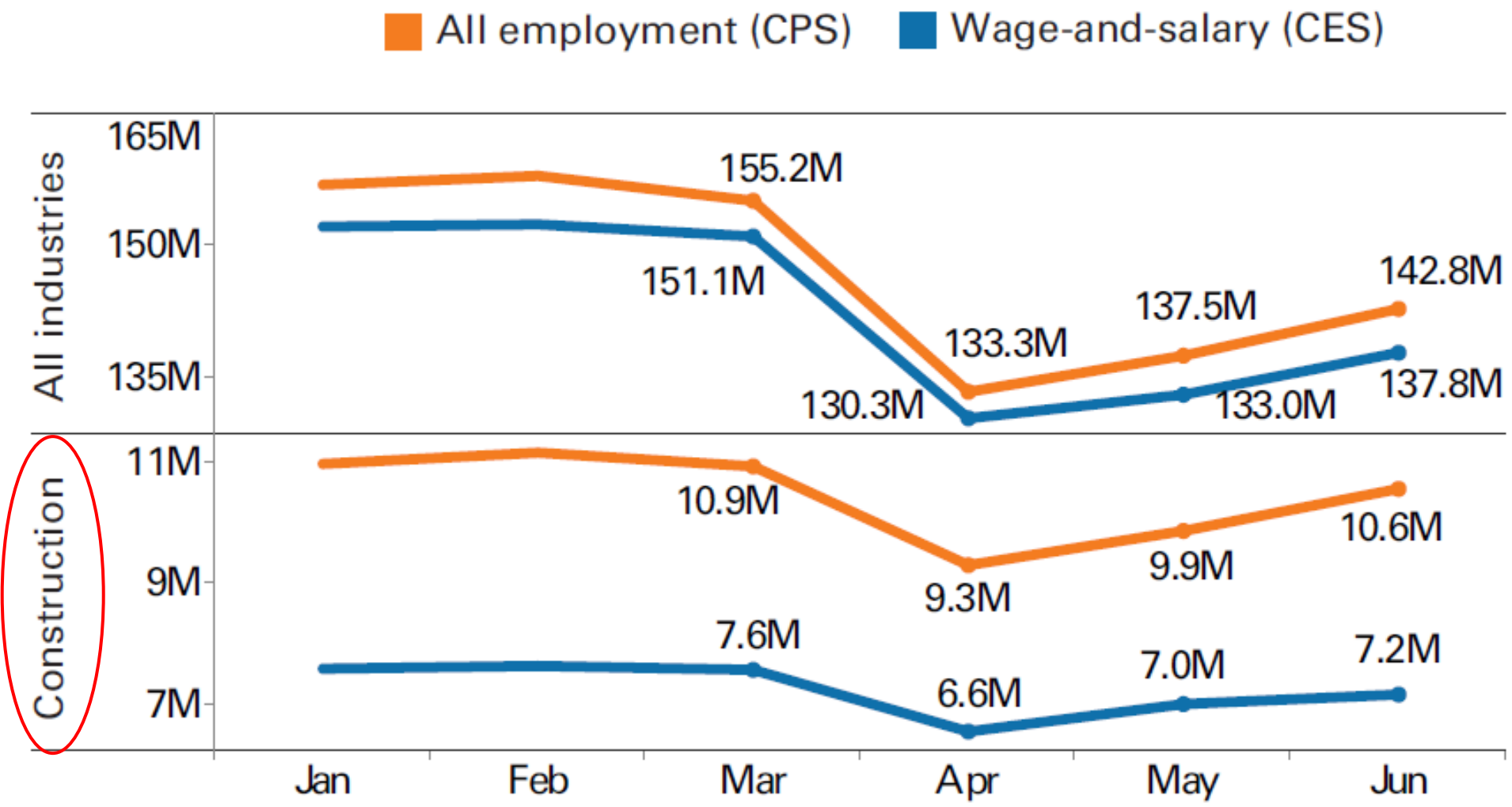
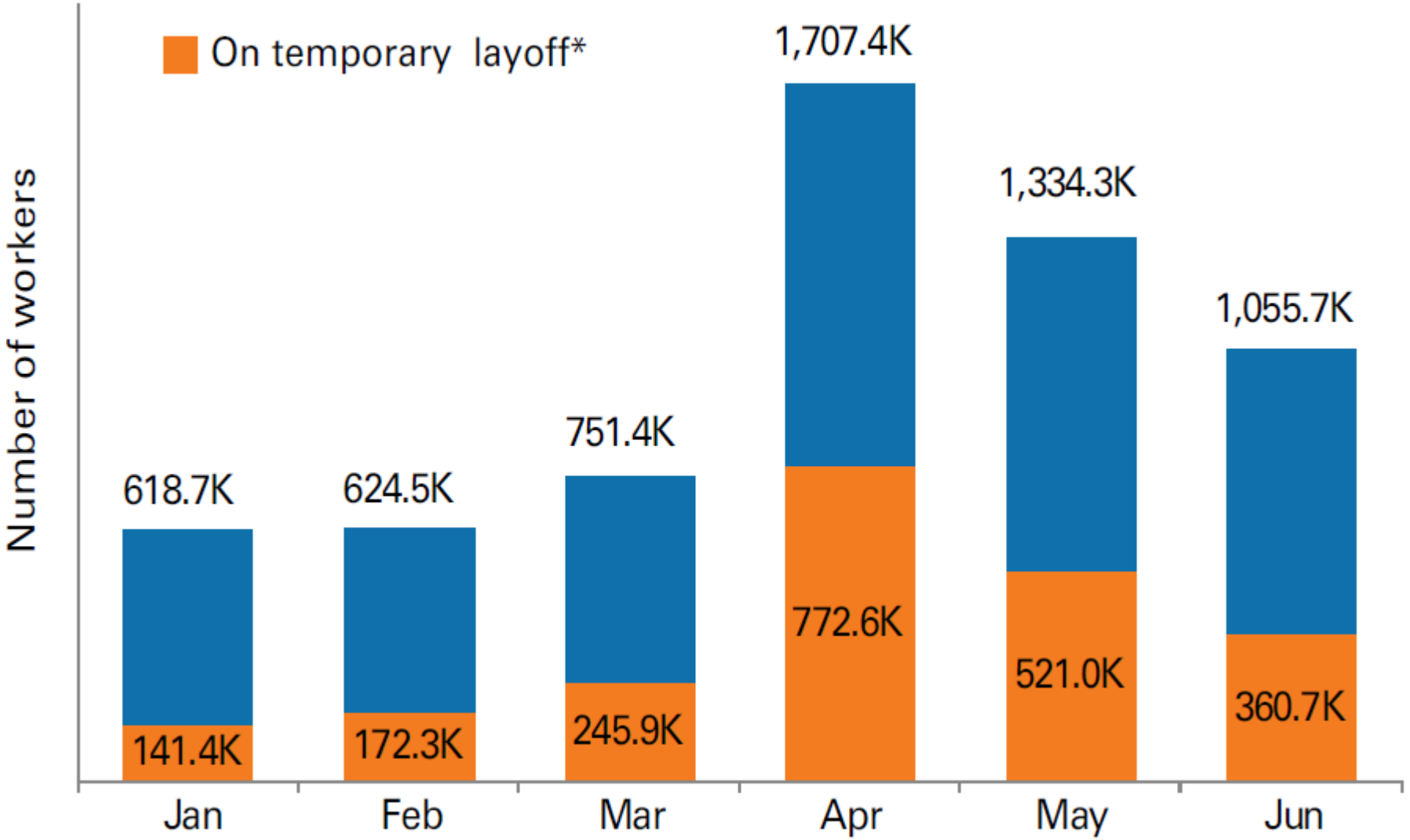
Employment, January – June 2020, construction versus all industries



Source: U.S. Bureau of Labor Statistics, 2020 Current Population Survey, and 2020 Current Employment Statistics.
*May and June CES data are preliminary.
**Wage-and-salary: nonfarm industries, seasonally adjusted

Employment **decreased** from March to April and **increased** from April to June.

Construction unemployment, January – June 2020



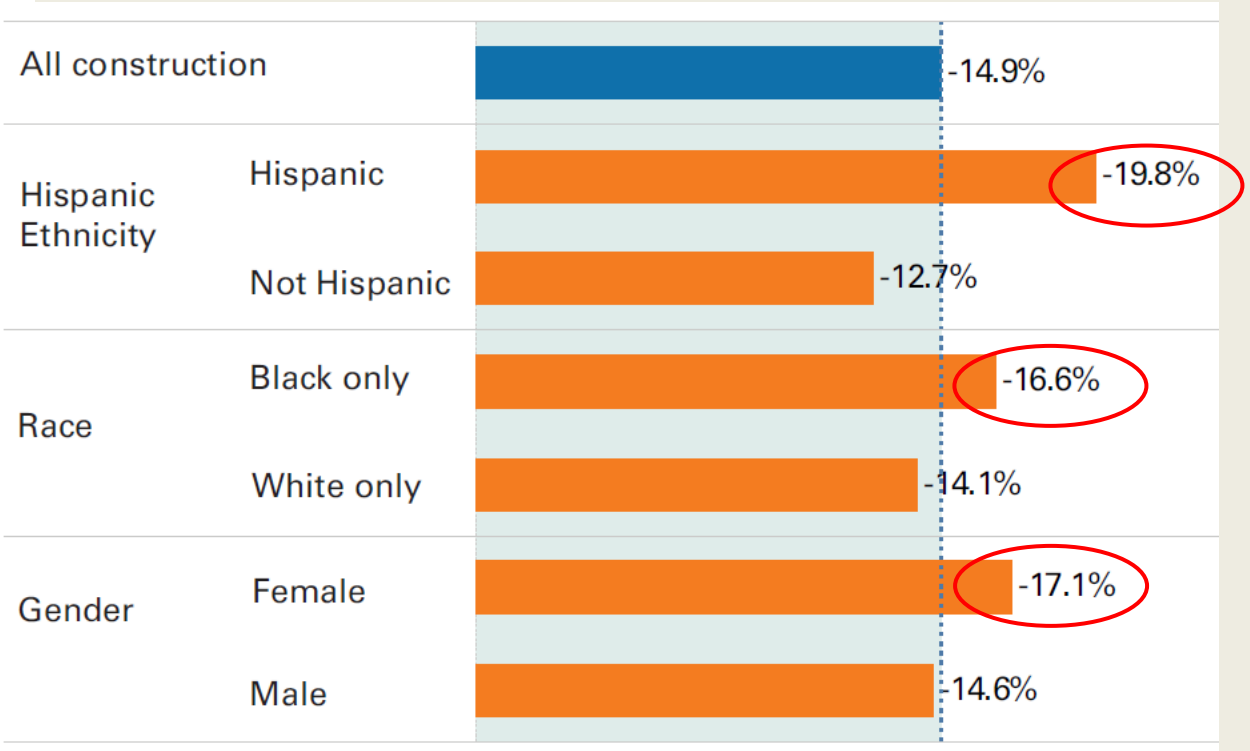
Source: U.S. Bureau of Labor Statistics, 2020 Current Population Survey. Calculations by the CPWR Data Center

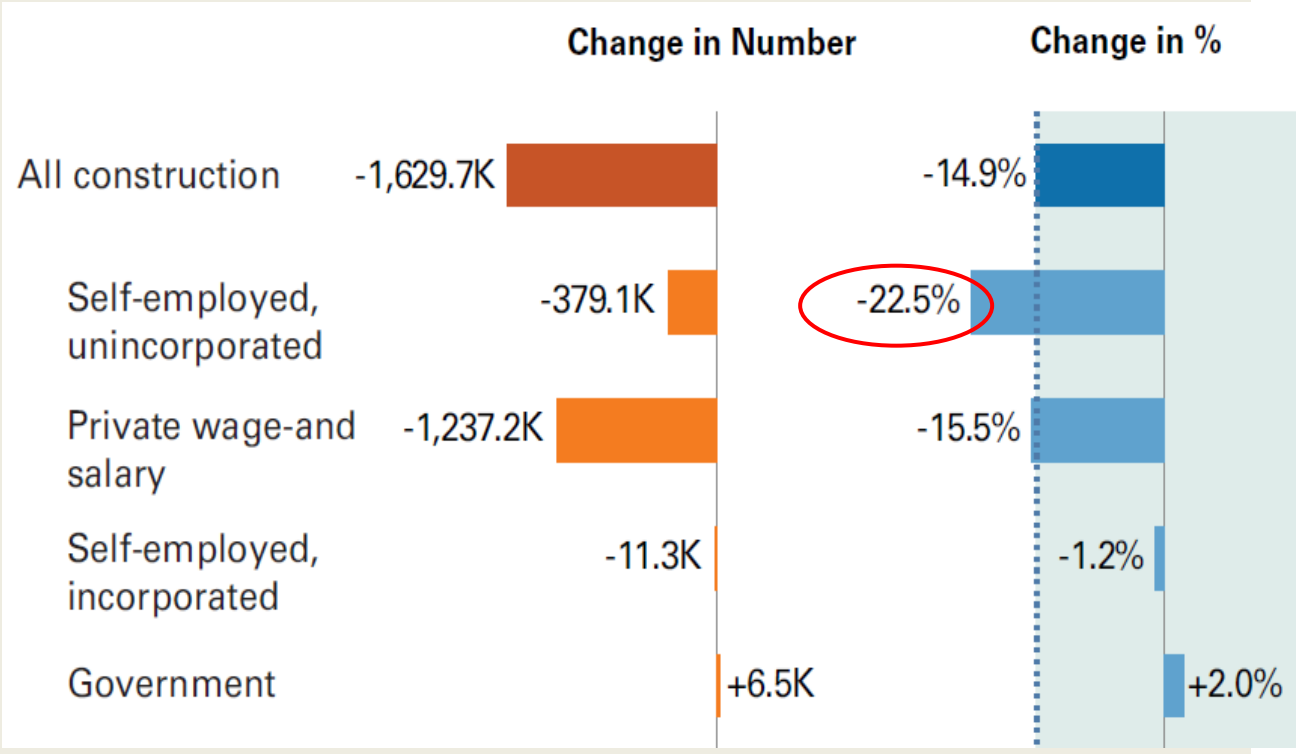
Nearly 1 million construction workers became **unemployed** from March to April.

Of these, 55% were temporarily **laid off**.

Construction employment loss was higher among Hispanic, female, black, and self-unincorporated workers.

Change in construction employment, April vs. March 2020





Source: U.S. Bureau of Labor Statistics, 2020 Current Population Survey. Calculations by the CPWR Data Center.

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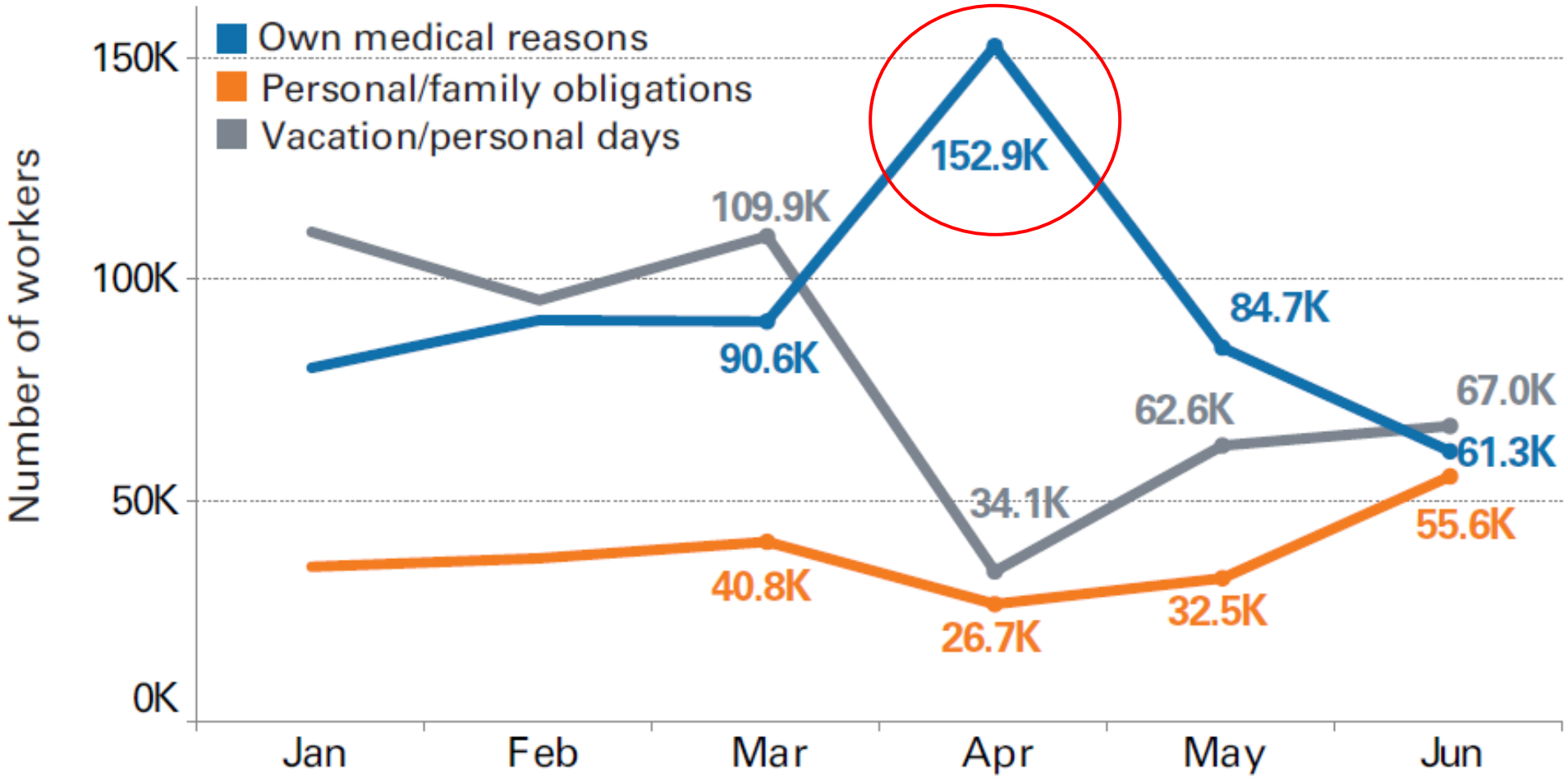
Major reasons for construction work absences, January – June 2020

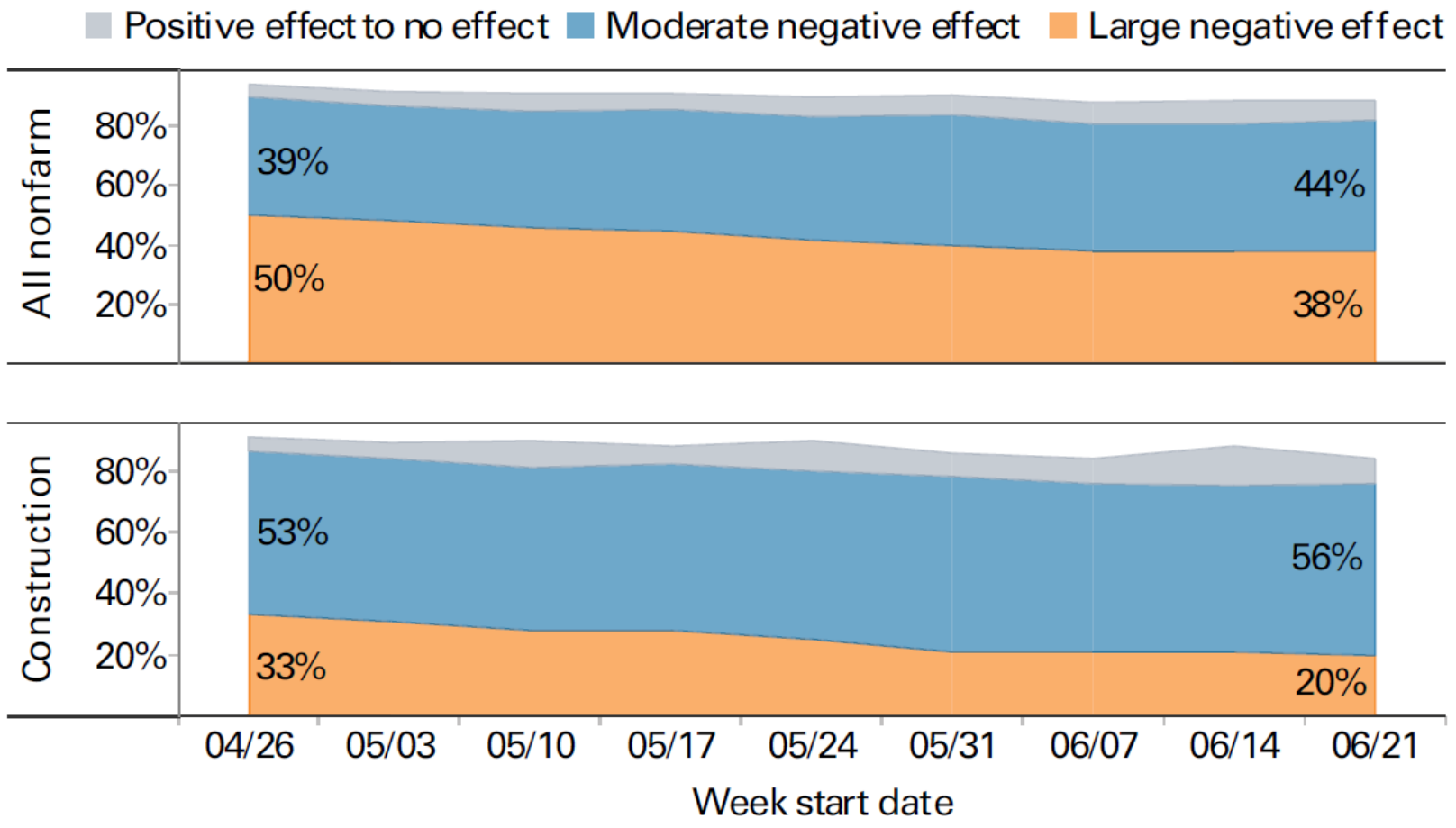


Work absences due to personal **medical reasons** rose by 70% from March to April.

Source: U.S. Bureau of Labor Statistics, 2020 Current Population Survey. Calculations by the CPWR Data Center

Compared to all nonfarm industries, small businesses in construction were **less likely** to report that COVID-19 had a **large negative effect** and **more likely** to report that it had a **moderate negative effect.**

Impact of COVID-19 on small businesses since April 26, 2020, construction vs. all industries



Source: U.S. Census Bureau, Small Business Pulse Survey. Calculations by the CPWR Data Center.

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- CPWR Data Bulletins:
  - CPWR [2020]. Impact of COVID-19 on Construction Workers and Businesses. https://www.cpwr.com/wp-content/uploads/DataBulletin-July2020.pdf
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  - U.S. Centers for Disease Control and Prevention [2020]. Special Populations Data in the U.S. https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/special-populations/index.html

Thank you!

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Respirator Fit Capability (RFC) of Non-NIOSH Approved Respirators

Samy Rengasamy

National Institute for Occupational Safety and Health
National Personal Protective Technology Laboratory

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

October 8, 2020

Respirator Shortages and FDA Emergency Use Authorizations (EUAs)

- N95 respirator shortages experienced during pandemics
- FDA issued EUAs authorizing use of non-NIOSH approved respirators
- These respirators may be designed to fit the worker population in their regions or countries. These respirators may not give a good face fit for US healthcare workers because the facial sizes and shapes are different.
- No study on non-NIOSH approved respiratory protection to US healthcare workers.

Respirator Fit Capability (RFC)

ASTM

An assessment of a respirator model's ability to achieve passing face seal performance on either the complete NIOSH Bivariate Panel or a specified set of the panel representing the population of respirator wearers when the wearers are properly trained and fit tested in compliance with Clause 8 (Training) and Clause 9 (Respirator Fit Test) of the ANSI Z88.2-2015 standard.

Objective

The objective of this study is to assess the Respirator Fit Capability of non-NIOSH approved respirators using the ASTM standard (publication expected in October 2020).

Respirator Fit Capability (RFC)

Non-NIOSH approved respirators

- Fit testing
- Fit capability assessment

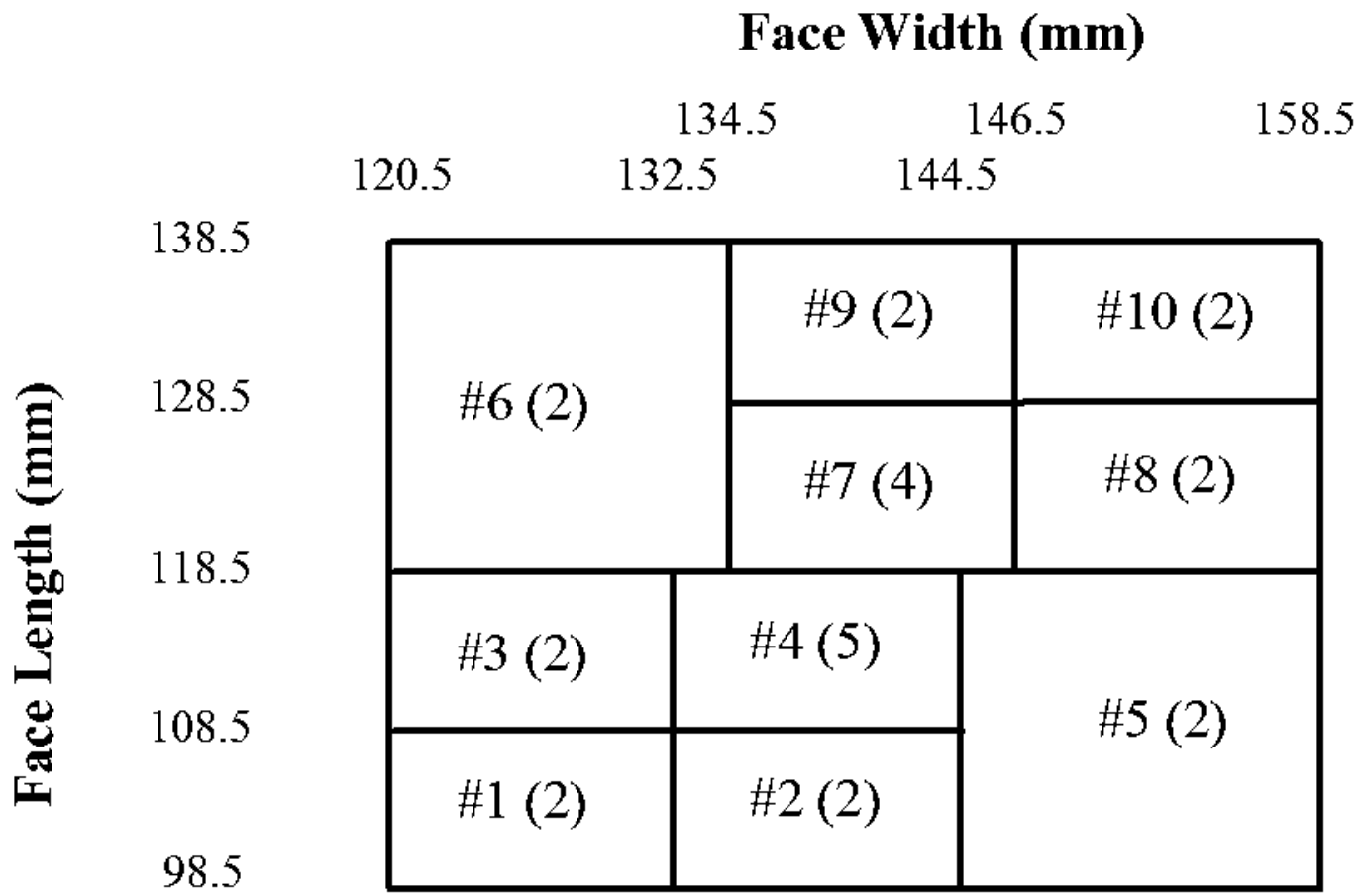
Fit Testing

- The purpose of a fit test is to make sure the respirator fits well on the subject's face with minimum or no leaks
- A PortaCount® and N95 Companion™ measures the concentrations of aerosols outside (C_{out}) and inside (C_{in}) of the respirator to produce a fit factor (C_{out}/C_{in}) when the subject is doing the OSHA fit testing exercises. It is a pass/fail test.
- A fit factor of ≥100 is a pass

Courtesy of NIOSH

Courtesy of TSI, Inc.

Bivariate Panel (25 subjects)



RFC Background – NIOSH Research Testing

Fit Capability Assessment

- 101 models of filtering facepieces and elastomeric half-facepieces
- Fit tested each model using a 25-member Bivariate panel
- A PortaCount® and N95 Companion™ was used to measure the fit factors
- Analyzed the data for all models to define the fit capability of NIOSH approved half-facepiece respirators

%Subjects Passed (RFC)	Models
13/25 (50%)	75%

Ref: Zhuang et al. J Occup Environ Hyg 14: 473-481(2017)

ASTM - Respirator Fit Capability Test Method

- NaCl aerosol (Test Chamber)
- PortaCount® and N95 Companion™
- Fit test
- Bivariate Panel (25 subjects)
- Measure Fit factor ≥ 100 = Pass
- 13/25 subjects passing the fit test

RFC = 50%

Current Study – RFC Assessment of non-NIOSH approved Respirators

- KN95 respirators (95% Efficiency GB2626, China)
- Bivariate panel - 25 subjects
- Fit test - NaCl aerosol chamber
- Determine RFC
- Report results to concerned users

Next Steps

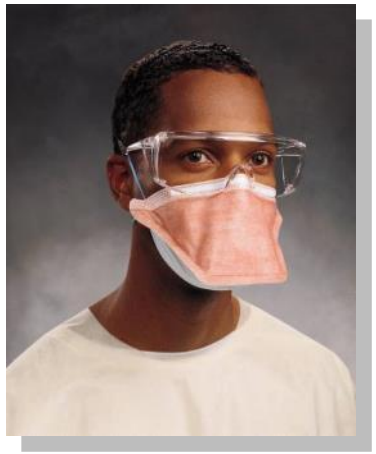
Development of the study protocol

Peer review of proposed study

IRB approval

Data collection in 6 to 9 months

Quality Partnerships Enhance Worker Safety & Health

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Thank you

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