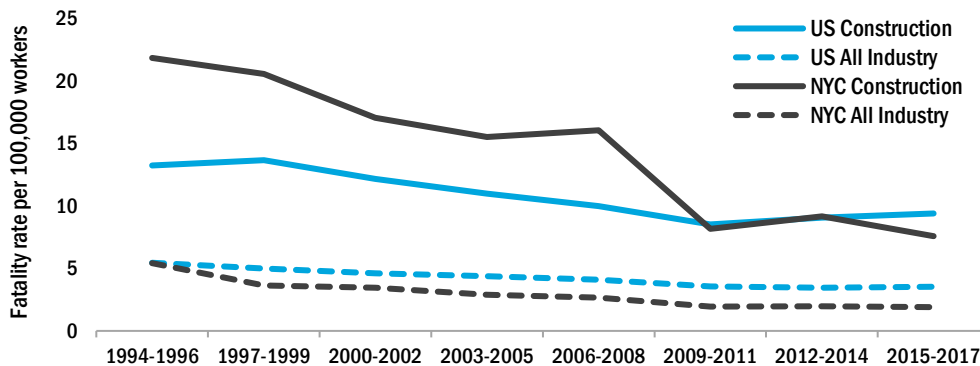


Construction Deaths in New York City, 2007-2016

Construction is the most deadly industry in New York City (NYC), although most construction deaths are preventable. Federal Bureau of Labor Statistics data show that construction workers make up 7% of NYC’s total workforce, but account for 29% of work-related fatalities.^A The NYC construction fatality rate declined from 21.8 fatalities per 100,000 workers in 1994-1996 to 7.6 fatalities per 100,000 workers in 2015-2017, which is lower than the national construction fatality rate (9.39) for that period. However, the NYC construction fatality rate is still more than three times higher than the rate for all NYC industries. From 2007 to 2016, 184 unintentional construction injury deaths occurred in NYC. This report summarizes NYC construction deaths by worker characteristics and circumstances of injury.

The fatality rate among New York City construction workers has declined, but preventable deaths still occur

Three-year average rate of death per 100,000 workers, 1994-2017



Sources: Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries, 1994-2017 and BLS Current Population Survey, 1994-2017

Definitions:

Construction fatality: An injury which happens to a construction worker during work and results in loss of life.

Unintentional injury: An injury that occurs without intent to cause harm. Does not include homicides or suicides.

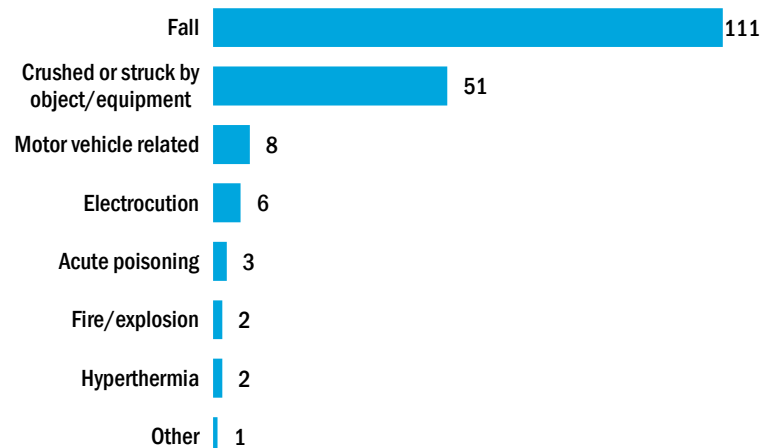
Race/ethnicity: For the purpose of this publication, Latino/a includes persons of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, Asian, and Other race categories do not include persons of Latino/a origin.

Falls were the most common cause of fatal unintentional construction injuries^{B,C}

- Falls accounted for 111 (60%) fatal construction injuries from 2007-2016.
- Falls from scaffolding were the most common, followed by falls from ladders, then falls from roofs.
- More than half (56%) of fatal falls occurred from heights of three stories (30 feet) or less and 75% occurred from heights of five stories or less.
- Contact with objects, including having been struck by objects, crushed by objects, and caught in equipment, was the next most frequent cause of fatal injury (n=51, 28%).

Falls were the leading cause of fatal injuries among New York City construction workers

Number of deaths by cause of fatal injury, 2007-2016



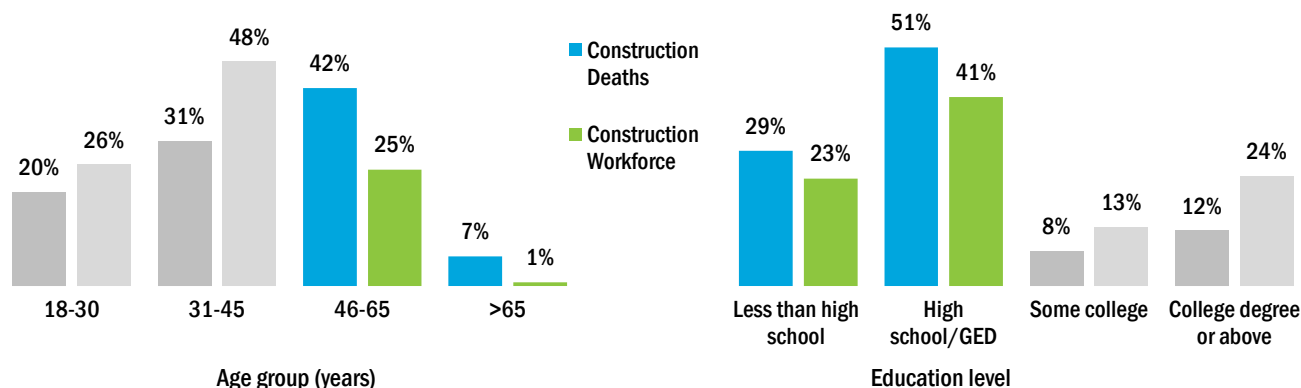
Sources: NYC Office of Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2007-2016

Older workers and workers with lower education levels are at highest risk of fatal injury^{B,D}

- In 2007-2016, the average age of fatally injured workers was 45 years. Half of the construction workers who died were 46 years old or older, an age group that represented just 31% of New York City construction workers.
- Approximately 80% of construction workers who died in 2007-2016 had a high school education or less, although this group made up 64% of the workforce. In comparison, 12% of fatally injured workers had a college degree or higher although they comprised 24% of the workforce.¹
- Education disparities among fatally injured construction workers might reflect job duties, with more educated workers such as managers, engineers, and inspectors performing less hazardous tasks.

Older construction workers and those with lower education levels are **fatally injured** at rates disproportionately higher than their representation in the New York City **construction workforce overall**

Percentage of deaths and workforce overall by age group, 2007-2016



Sources: NYC DOHMH Bureau of Vital Statistics and Integrated Public Use Microdata Series, 2007-2016

Country of birth of fatally injured workers reflects the construction workforce^{B,D}

- Approximately two-thirds of construction workers who died in 2007-2016 were born outside of the U.S., corresponding to the proportion of the NYC construction workforce born outside of the U.S. (64%).
- The proportion of fatal injuries among Latino/a workers reflected their representation in the workforce for all age groups. However, fatal injuries among White workers older than 45 (25%) were more than double their workforce representation (11%).

Characteristics of fatally injured New York City construction workers, 2007-2016

Age group	18-30	37 (20%)
	31-45	57 (31%)
	46-65	78 (42%)
	>65	12 (7%)
Education level*	Some college or above	36 (20%)
	High school/GED	91 (51%)
	9-12th grade	24 (13%)
	8th grade or less	29 (16%)
Sex	Female	1 (<1%)
	Male	183 (99%)
Race/ethnicity	Asian	14 (8%)
	Black	17 (9%)
	Latino/a	69 (38%)
	White	81 (44%)
	Other	3 (2%)
Country of birth	US	63 (34%)
	Outside the US	121 (66%)

*Total count for education is 180 due to missing data

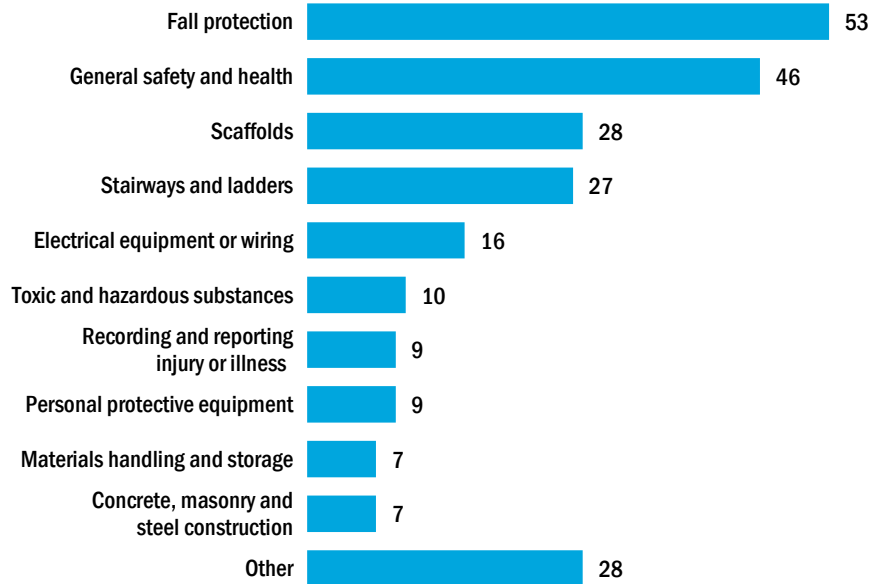
Sources: NYC Office of Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2007-2016

Absence of fall protection was the most commonly cited violation during Occupational Safety and Health Administration (OSHA) fatality investigations^E

- Of 122 OSHA fatality investigations conducted from 2007 to 2016, 107 (88%) were issued at least one citation.
- A majority (82%) of the 465 total citations issued were categorized as serious, meaning the hazard could result in death or serious physical harm.
- Most OSHA citations (23%) resulted from failure to meet fall protection standards, such as requirements for guardrails or a properly anchored harness. Also frequently cited were violations of OSHA general duty clause, scaffold, stairway and ladder safety standards.

Violations in fall protection and general safety and health standards were commonly cited among 122 OSHA construction fatality investigations in New York City

Count of violations cited, by category, 2007-2016



Source: Occupational Safety and Health Administration, 2007-2016

- Willful violations were cited in 15 (12%) of the 122 fatality investigations. These occur when an employer knowingly fails to correct a hazardous condition. For example, allowing workers to use faulty or damaged equipment or intentionally disabling safety features on hazardous equipment are willful violations.

Data Sources:

^A U.S. Department of Labor, Bureau of Labor Statistics (BLS):

Estimates of NYC and U.S. construction fatalities occurring from 1994 to 2017 were obtained from the BLS Census of Fatal Occupational Injuries. The size of the NYC and U.S. construction and total workforces from 1994 to 2017 were obtained from the BLS Current Population Survey. Fatality rates were calculated from these estimates.

^B NYC DOHMH Bureau of Vital Statistics 2007-2016:

Occupation data from death certificates were coded to the 2010 U.S. Census classification using the National Institute for Occupational Safety and Health (NIOSH) Industry and Occupation Computerized Coding System.

^C Office of Chief Medical Examiner 2007-2016: Medical Examiner investigation reports were reviewed for detailed information on the circumstances of each fatal injury.

^D Integrated Public Use Microdata Series, Current Population Survey (IPUMS-CPS) 2007-2016:

NYC construction workforce demographic data were obtained from the IPUMS-CPS. The CPS is conducted monthly by the U.S. Census Bureau and the Bureau of Labor Statistics, data are compiled by University of Minnesota and downloadable at <https://cps.ipums.org>.

Citation: Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 6.0 [2007-2016]. Minneapolis, MN: IPUMS, 2018. <https://doi.org/10.18128/D030.V6.0>

^E U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) 2007-2016:

OSHA fatality investigation reports were reviewed for detailed information on the circumstances of injury and OSHA enforcement actions. Approximately 20 additional inspections were not included in the analysis because investigations were ongoing at the time of data collection.

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Epi Data Tables

September 2019, No. 118

Construction Deaths in New York City, 2007-2016

Data Tables

Table 1. New York City construction deaths and construction workforce demographics by race/ethnicity, 2007-2016

Data Sources

NYC DOHMH Bureau of Vital Statistics 2007-2016: Occupation data from death certificates were coded to the 2010 U.S. Census classification using the National Institute for Occupational Safety and Health (NIOSH) Industry and Occupation Computerized Coding System.

Integrated Public Use Microdata Series, Current Population Survey (IPUMS-CPS) 2007-2016: NYC construction workforce demographic data were obtained from the IPUMS-CPS. The CPS is conducted monthly by the U.S. Census Bureau and the Bureau of Labor Statistics, data are compiled by University of Minnesota and downloadable at <https://cps.ipums.org>.

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<https://doi.org/10.18128/D030.V6.0>



Table 1. New York City construction deaths and construction workforce demographics by race/ethnicity,* 2007-2016

Sources: NYC DOHMH Bureau of Vital Statistics and Integrated Public Use Microdata Series, Current Population Survey (IPUMS-CPS), 2007-2016

	Age Group		Education Level	
	Construction Deaths	Construction Workforce	Construction Deaths	Construction Workforce
White				
18-30 years	8%	8%	12th grade or below	4% 3%
31-45 years	11%	14%	High school diploma/GED	24% 13%
>45 years	25%	11%	Some college or above	15% 16%
Black				
18-30 years	1%	4%	12th grade or below	1% 2%
31-45 years	3%	6%	High school diploma/GED	7% 8%
>45 years	5%	6%	Some college or above	1% 6%
Latino/a				
18-30 years	11%	11%	12th grade or below	21% 16%
31-45 years	15%	21%	High school diploma/GED	14% 16%
>45 years	12%	10%	Some college or above	2% 11%
Asian				
18-30 years	1%	1%	12th grade or below	3% 2%
31-45 years	2%	3%	High school diploma/GED	4% 4%
>45 years	5%	4%	Some college or above	1% 3%
All race/ethnicity				
18-30 years	20%	24%	12th grade or below	29% 23%
31-45 years	31%	44%	High school diploma/GED	51% 41%
>45 years	49%	31%	Some college or above	20% 36%

*Race/ethnicity: For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, Asian, and Other race categories do not include people of Latino/a origin.