

Learning from Workplace Fatality Investigations

December 14, 2021 by Jeff Funke, MS, CSP, and Nancy T. Romano, MS, CSHM

Each day, on average, 15 U.S. workers die as a result of a traumatic injury on the job. The National Institute for Occupational Safety and Health (NIOSH) [Fatality Assessment and Control Evaluation \(FACE\)](#) program is a research program designed to identify and study fatal occupational injuries. For nearly 40 years, the FACE program has worked to prevent occupational fatalities across the nation by identifying and investigating work situations at high risk for injury and then formulating and disseminating prevention strategies to protect workers. FACE investigations have been conducted in 46 States and the Commonwealth of Puerto Rico. To date, NIOSH FACE and its state partners have completed 3,435 FACE reports.

FACE investigations can also identify contributors to health inequities (e.g., issues with different languages and safety training) for Hispanic and Immigrant workers. Hispanic, Immigrant, temporary, and contingent workers play a critical role in our nation's workforce, but they are disproportionately impacted by injuries and illnesses while on the job.

The FACE program currently has two components: The Fatality Assessment and Control Evaluation project (NIOSH FACE) and the State-based Fatality Surveillance Using FACE Model project (State FACE).

- NIOSH FACE began in 1982. The FACE program is voluntarily notified of selected occupational fatalities by the Departments of Labor in the states of Maryland, North Carolina, South Carolina, Tennessee, and Virginia; the Federal Occupational Safety and Health Administration (OSHA) Area Offices in Colorado, West Virginia, Ohio, and Pennsylvania; and the Allegheny County Coroner's Office in Pittsburgh, Pennsylvania. Specific causes of traumatic occupational fatalities are prioritized and that list changes over time. The list has included confined space fatalities, electrocutions, machine-related fatalities, falls from elevation, fatalities involving working youth, and fatalities in the logging industry. NIOSH FACE is currently targeting investigations of deaths involving law enforcement officers and motor vehicles, tree care workers or arborists, tow truck drivers and drivers of powered industrial trucks, waste collection and sanitation workers, and workers who operate around robots.
- State FACE began in 1989. Currently, eight state health or labor departments (California, Louisiana, Massachusetts, Michigan, New York, Oregon, Tennessee, and Washington) have cooperative agreements with NIOSH for conducting surveillance, targeted investigations, and prevention activities at the state level using the FACE model. In addition to the NIOSH priorities, states conduct investigations of fatalities related to state-level priorities. State FACE investigations have included fatalities related to renewable energy, logging, agriculture, transportation, commercial aviation and fishing, tree trimming, suicides and homicides, semi-truck and dump truck fatalities, chemical-related fatalities, and asthma-related deaths. Investigations have also addressed fatalities among various types of workers, including young and older workers, temporary workers, and volunteers. Categories that differ from the NIOSH FACE targeted causes of death may only be available on individual state websites.

On-site FACE investigations are essential for observing sites where fatalities have occurred and for gathering facts and data from company officials, witnesses, and co-workers. Investigators collect facts and data on what was happening just before, at the time of, and right after the fatal injury. This becomes the factual basis for writing investigative reports. FACE is a research program; investigators do not enforce compliance with State or Federal occupational safety and health standards and do not determine fault or blame. NIOSH and State FACE reports are [searchable](#) by key word or NAICS code. NIOSH FACE reports are also [indexed](#) by industry or cause of death.

The FACE program has provided important data for protecting workers. Examples of how this data is applied follow.

- The FACE Program identified at least 14 worker deaths since 2000 related to bathtub refinishing with stripping agents containing methylene chloride. The [OSHA/NIOSH Hazard Alert: Methylene Chloride Hazards for Bathtub Refinishers](#) and a related NIOSH [Science Blog](#) were produced to spread the warning and provide control measures.
- Wood floor sanding and finishing can be hazardous to workers and building occupants. In Boston, Massachusetts more than 25 fires were directly attributed to wood floor installation and refinishing from 1995–2004. In 2004 and 2005 the

than 25 fires were directly attributed to wood floor installation and finishing from 1999-2000 to 2007 and 2009, the MA FACE program investigated two incidents in which a total of three Vietnamese floor finishing workers died when the flammable lacquer sealer they were using caught fire. The floor finishing industry in MA is largely dominated by the immigrant Vietnamese community. In response, several [prevention measures](#) were instituted including culturally-specific training and laws requiring permits and banning highly-flammable lacquer sealers.

- One of the ways we are learning more about injuries and worker deaths related to emerging robotics technologies is through FACE investigations. The Washington State FACE Program made prevention recommendations for two new types of robots based on reviewing circumstances associated with a worker death involving a driverless forklift and incidents resulting in severe injuries to two workers using demolition robots. Read more in this [blog](#).
- In 2014-2015 the California State FACE Program reported that workers were suffocated by palm fronds while trimming trees. The drought in the Western U.S. may have intensified the problem as lack of water has led to palm trees heavy with fronds, creating the potential to crush workers who are trimming the trees from underneath the palm fronds. CA/FACE put out a report, videos in English and Spanish and a NIOSH [blog post](#) to raise awareness and prevent further fatalities.
- FACE reports contain a wealth of information. NIOSH works to provide this information in various formats so that it can be used to prevent similar injuries and deaths. A full list of publications related to FACE can be found [here](#).
 - Monographs are summaries of surveillance data and investigation findings. A total of four monographs on topics of [Worker Deaths in Confined Space](#), [Worker Deaths by Electrocutation](#), [Fatal Falls From Elevation](#), and [Young Workers](#) were produced using FACE report information.
 - Data from FACE Investigations have contributed to NIOSH Alerts on such subjects as [skid-steer loaders](#), [grain augers](#), [suspension scaffolds](#), [skylights](#), [excavations](#), and [logging](#).
 - NIOSH and its partners have created a series of [videos and digital stories](#) based on the true story of a fatal incident and includes information on how similar incidents can be prevented in the future.
- CPWR created the [Construction FACE Database](#) to provide easy access to construction information from NIOSH FACE. A total of 768 construction fatalities reports were included in this database (including 325 fatalities from falls).
- Falls remain a leading cause of death in construction. As part of the National Campaign to Stop Falls in Construction, the Kentucky FACE Program described their efforts in a video [KY FACE Protecting Our Workers](#).
- NIOSH has compiled a list of [NIOSH Prevention through Design \(PtD\) NIOSH FACE Reports](#). Many NIOSH FACE reports make PtD recommendations or illustrate incident circumstances and events related to PtD issues.

As NIOSH celebrates its 50th anniversary, the FACE program remains committed to protecting workers through investigating fatalities and providing recommendations for the prevention of similar workplace injuries and deaths. Learn more about the FACE program on our [website](#).

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This blog is part of a [series](#) for the NIOSH 50th Anniversary. Stay up to date on how we're celebrating NIOSH's 50th Anniversary on our [website](#).

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