MASSACHUSETTS

FATAL INJURIES AT WORK

2001 UPDATE

Occupational Health Surveillance Program ○ Massachusetts Department of Public Health ○ January 2004

Every year, men and women in a wide variety of jobs and industries throughout Massachusetts die as a result of injuries at work. These deaths are all the more tragic because they are largely preventable. Information about when and how they occur is essential in order to target effective prevention programs. In Massachusetts, the Occupational Health Surveillance Program (OHSP) in the Massachusetts Department of Public Health (MDPH) collects information on fatal occupational injuries as part of the national Census of Fatal Occupational Injuries (CFOI), conducted in cooperation with the Bureau of Labor Statistics (BLS), U.S. Department of Labor.

OHSP also conducts in-depth work site investigations of targeted fatal occupational injuries as part of the national Fatality Assessment Control and Evaluation (FACE) project, sponsored by the National Institute for Occupational Safety and Health (NIOSH). The purpose of the FACE project is to develop a detailed understanding of how fatal injuries occur and to identify effective countermeasures to prevent similar incidents in the future. Excerpts from selected FACE investigations are highlighted in this report.

This update provides an overview of fatal injuries at work that occurred in Massachusetts during 2001. These include not only fatalities traditionally linked with physical or chemical factors in the work environment but also homicides and suicides at work and motor vehicle-related fatalities that occurred during travel on the job. Deaths caused by occupational illnesses are not included in this fatality update. The deaths of Massachusetts workers related to the events of September 11, 2001 are counted in the states where the plane crashes occurred and are not included in this report.

OVERVIEW OF FATAL INJURIES AT WORK IN 2001

In 2001, 54 men suffered fatal injuries at work in Massachusetts. There were no women who died as a result of injuries at work that year. The overall rate of fatal occupational injury for *all* workers was 1.6 per 100,000 workers. The rate for *male* workers was 3.1 deaths per 100,000 male workers.[1]

The average age at death was 44.3 years. Twenty-seven (50%) victims were younger than 45 years of age and five (9%) victims were older than 65 years. The 54 fatalities resulted in an average of 32.1 years of potential life lost (years before the victim reached age 75) for each death, for a total of 1,668 years of potential life lost.

Two victims were younger than 18 years of age. A 15 year-old was killed when he was struck by several heavy granite slabs while shoveling snow at a marble and granite supplier. A 17 year-old student died from medical complications of an injury he sustained while working in a cooperative placement program.[2]

Forty-seven (87%) victims were white, five (9%) were black, and two (4%) were of other races. The overall rate of fatal occupational injury for white workers was 1.6 per 100,000 workers and for black workers was 2.3 per 100,000 workers.

Six victims (11%) were Hispanic workers, who were employed in a variety of industries, including construction, agriculture, fishing, transportation, and retail. The overall rate of fatal occupational injury for all Hispanic workers was 3.1 per 100,000 workers. The rate for Hispanic men was 6.1 deaths per 100,000 male workers.

Of the 54 workers fatally injured, 41 (76%) were wage and salary workers and 11 (20%) were self-employed and two (4%) were working in family businesses.

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[1] Rate calculations exclude cases 15 years of age and younger.

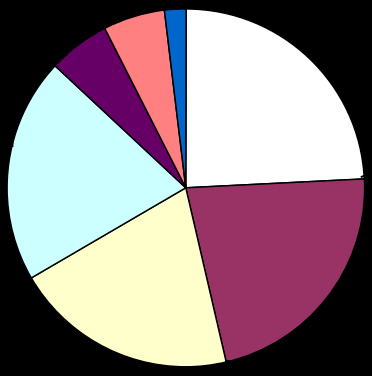
[2] Data provided by the Massachusetts FACE Program.

EVENTS RESULTING IN FATAL INJURIES

Assaults and other violent acts accounted for 13 (24%) deaths (Figure 1); seven were suicides, and six were homicides. Robbery was the motive for three of the four homicides for which information about motive was available. Four of the six homicides involved the use of firearms.

Twelve (22%) Massachusetts workers died in **transportation-related incidents.** Six workers were pedestrians struck by vehicles or other mobile equipment -- three on streets or highways and three in non-roadway areas including parking lots. Three victims were killed in motor vehicle collisions on highways while driving for their jobs. The transportation incidents occurred in a wide variety of industries including agriculture, government, services and construction. Two of the 12 workers who died in transportation-related incidents were employed in the transportation industry.[2]

Figure 1. Fatal Injuries at Work by Event/Exposure, Massachusetts, 2001



Falls to lower levels was the single leading fatal event, accounting for 10 of the 11 fall-related deaths. Nearly two-thirds (seven deaths) of these fatal falls occurred in the construction industry, including two falls each from scaffoldings, ladders and through floor openings.

Contact with objects or equipment claimed the lives of 11 workers. Five of the victims were struck by falling objects including a tree, granite slabs, concrete blocks, a car, and a boat. Three workers were killed when unoccupied vehicles moved, striking them. Two workers died when caught in running equipment or machinery. One worker died when caught in or crushed in collapsing materials.

Massachusetts Tractor Operator Killed while Wheel Harrowing a Tobacco Field

A 64-year-old Hispanic male seasonal tractor operator was decapitated while wheel harrowing a tobacco field. The tobacco plants were covered with a shade tent consisting of wood poles, a wire grid, and netting. The employer had modified the tractor that the victim was operating with a homemade wire guard designed to push any low hanging grid wires out of the operator's way. When the tractor exited the field, the victim's neck came in contact with a grid wire forcing him back against the rear of the tractor wire guard decapitating him. He had been employed seasonally with the company for over 8 years and the employer did not provide training on the safe use and operation of tractors. In order to prevent similar incidents Massachusetts FACE recommended that employers should: 1) ensure manufacturers review tractor modifications and make sure that the modifications do not create additional hazards; 2) select appropriate sized tractors that fit underneath shade tents; 3) conduct routine shade tent inspections ensuring there are no low hanging wires; and 4) ensure that tractor operators are trained on the safe use and operation of tractors (Massachusetts FACE Report, 01MA016).

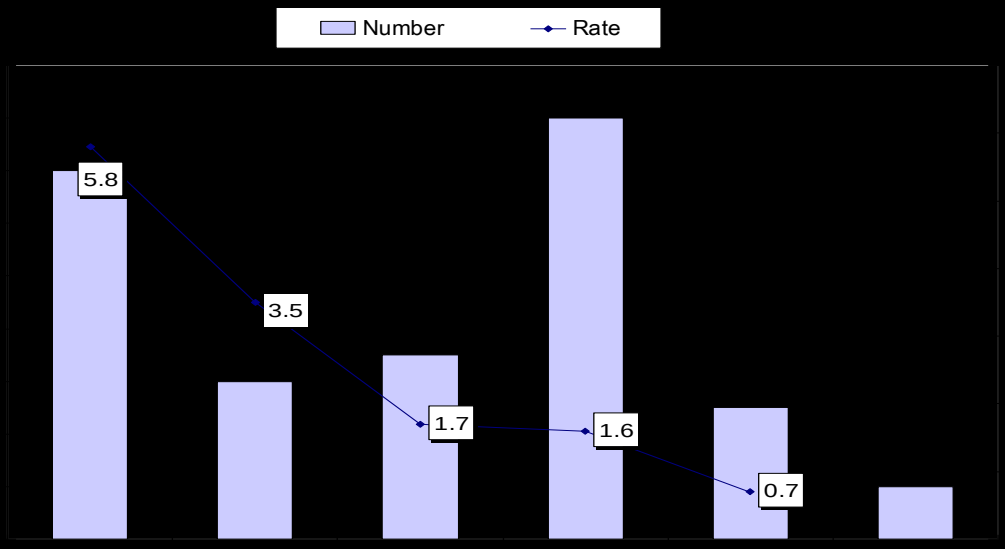
FINDINGS BY INDUSTRY

The **construction** industry division had 14 (26%) deaths and the highest fatal occupational injury rate (5.8 deaths per 100,000 workers), which was more than three times higher than the overall rate for the state. Falls to lower levels were the leading event in the construction industry, accounting for seven of the 14 deaths. Eight of the 14 construction workers killed were employed in establishments with 10 or fewer employees.

Transport and Public Utilities industry division had six fatalities and the second highest fatal injury rate (3.6 deaths per 100,000 workers). Five workers were killed when pinned or struck by vehicles.

Seven **government workers** died from work-related injuries; four were employed by local government, two at the state level, and one at the federal level. Three of these victims were municipal law enforcement officers.[2]

Figure 2. Number and Rate[3] of Fatal Injuries at Work by Industry Division[4,5], Massachusetts, 2001



The **Services** industry division, which includes the fishing industry, had more fatal injuries than any other industry division, with a total of 16 deaths (20%) (1.6 deaths per 100,000 workers). Deaths in this division were due to a variety of events, including three suicides, and three homicides by gunshots, two of which occurred at barbershops. There were two deaths in the fishing industry. One fisherman was exposed to toxic concentrations of hydrogen sulfide when he was loading the catch, and the other was tangled in his boat's winch.[2]

The **Trade** industry division had five fatal occupational injuries (0.7 deaths per 100,000 workers). Three of the five deaths were homicides committed during robberies in retail trade establishments, including a convenience store, a gas station, and a nightclub.[2]

The **Agricultural** industry division claimed four deaths. Three farmers were killed while operating tractors, and a landscaper was killed by a falling tree he was cutting. Two workers sustained fatal injuries in the **Manufacturing** industry division, which

[3]To maintain consistency with the denominator data, fatalities among self-employed workers were excluded in calculating rates.
[4] Standard Industrial Classification Manual, 1987 edition, Office of Management and Budget.
[5] To maintain consistency with the denominator data, fatalities in Forestry and Fishing industries were included in the Services industry Division.

had the lowest fatality rate.[2]

OSHA COVERAGE, INVESTIGATIONS AND PENALTIES

Of the 54 fatal injuries at work in 2001, 17 deaths occurred in industries or circumstances that are outside Occupational Safety and Health Administration (OSHA) jurisdiction. These included fatalities among commercial fishers, public sector employees (including fire fighters) and self-employed individuals. An additional 14 fatalities involved circumstances not routinely addressed by OSHA such as homicides, suicides, airplane crashes and motor vehicle-related deaths. In total, 31 (58%) of the fatal injuries at work in Massachusetts during 2001 occurred in industries, or from circumstances or causes that are not addressed by OSHA.

OSHA investigated 23 fatal occupational injuries that occurred during the same year.[6] Fines for violations of OSHA standards related to these fatalities were issued against 22 employers in separate incidents. The agency assessed a total of $360,750 in penalties as a result of its fatality investigations, with the lowest fine assessed at $1,500 and the highest at $71,250.

Massachusetts Boat Handler Fatally Crushed under a Partially Supported Boat

A 35-year-old male boat handler was fatally injured when he was crushed underneath a 33-foot boat at a marina after pulling the boat out of the water. The boat had been positioned incorrectly onto a hydraulic trailer, which led to subsequent problems during offloading. The boat's position on the trailer prohibited the use of wooden blocks that usually support the boat's weight, when offloaded. The offloaded boat was supported only by boat stands which are designed to stabilize but not support a boat's weight. The victim crawled under the boat to add wooden blocks. The boat fell off the boat stands and crushed him. He had been employed with the company for approximately 9 months and his training was primarily on-the-job. In order to prevent similar incidents, Massachusetts FACE recommended that employers should: 1) ensure employees inspect trailer-loaded boats before completely hauling them out of the water; 2) establish and enforce standard operating procedures (SOP) for hauling boats and storing them out of the water; 3) ensure boats are stored on stable ground; 4) establish and enforce a comprehensive health and safety program, including but not limited to providing training for boat handlers on hazard recognition and safe work practices for assigned tasks; and 5) develop a health and safety committee that includes worker participation and meets regularly (Massachusetts FACE Report, 01MA 037).

are intended to guide government, industry, labor and community organizations in developing strategies to prevent similar tragedies in the future.

The year 2001 marks the eleventh year that the Massachusetts Department of Public Health has been tracking fatal occupational injuries in Massachusetts. During this period, the numbers of fatal occupational injuries have fluctuated from a high of 86 deaths in 1994 and a low of 44 deaths in 1998 with no clear cut downward trend. Nationwide, a total of 5,900 workers died as a result of fatal occupational injuries in 2001, excluding 2,887 fatalities related to the September 11th terrorist attacks.[7] The national fatal occupational injury rate was 4.3 deaths per 100,000 workers . This rate is substantially higher than the rate of 1.6 deaths per 100,000 workers for Massachusetts. The lower fatal occupational injury rate in Massachusetts is, in part, explained by the low rates of fatal motor vehicle crashes and homicides in the Commonwealth compared to that of the nation. Where these two events contributed substantially to the occupational fatality burden. While the fatality rate is lower in Massachusetts, continued efforts are needed to reduce the human and economic toll of preventable deaths at work in the Commonwealth. Findings in this update highlight a number of specific issues to be addressed.

The high occupational fatality rate for Hispanic workers should be interpreted with caution because it is based on small numbers. However, the rate is consistent with previous findings for Massachusetts and with findings for the nation as a whole. Potential contributing factors include the disproportionate concentration of Hispanic workers in high risk jobs, language and communication barriers at work, inexperience and lack of information about health, safety and legal rights on the job among Hispanic workers, and limited job options that may make individuals hesitant to speak up. There is growing recognition of the need to identify and address the factors that place Hispanic workers at high risk. For example, both the Occupational Safely and Health Administration (http://www.osha.gov/as/opa/spanish/index.html) and the National Institute for Occupational Safety and Health (http://www.cdc.gov/spanish/niosh) now have Spanish language websites. The Occupational Health Surveillance Program at Massachusetts Department of Public Health is working to document the occupational health experience of immigrant workers and to collaborate with community organizations to disseminate educational materials on health and safety in multiple languages.

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[6] OSHA also conducted an investigation of an occupational death due to Legionnaire's disease in 2001.

[7] http://stats.bls.gov/news.release/cfoi.nr0.htm

[8] U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries, 2001. REF

For the 10th consecutive year, the construction industry in Massachusetts has both high numbers and high rates of fatal occupational injuries, and half of the deaths in this industry continue to be due to falls. Comprehensive work site fall prevention programs, including the use of fall protection systems CAN reduce the risk of fall injuries in construction. The Occupational Safety and Health Administration has established standards for fall prevention in construction workplaces (Subpart M, Fall Protection, 29 CRF 126.500 1926.503). Employers should develop and implement fall protection programs that meet these OSHA requirements. Innovative efforts are needed to reach both e

http://www.state.ma.us/dph/bhsre/ohsp/scaffold.htm

For information about OSHA Region 1 Fall Protection Local Emphasis Program, contact Robert Hooper or Geoffrey McKinstry at 617-565-9860

The two deaths of high school-aged workers in 2001 draw attention to a population of workers whose health and safety needs can be often overlooked. Each year in the US approximately 70 workers under age 18 are killed on the job. The occupational fatality rate for this age group is similar to that for adult workers, despite of the fact that child labor laws prohibit youth from employment in the most hazardous jobs. National data also indicate that the rate of non-fatal injuries among workers less than 18 years of age is 1.7 times the rate for adult workers. A number of activities are underway in Massachusetts and throughout the nation to improve the health and safety of young workers. Educational materials on health and safety and child labor laws for teens, parents, employers and health care providers can be obtained from the *Teens at Work* Program at the Massachusetts Department of Public Health (http://www.state.ma.us/dph/bhsre/ohsp/teens/teeninj.htm) OSHA also has a new Teen Workers web site (http://www.osha.gov).

Massachusetts Police Officer Killed after Being Backed Over by a Dump Truck

A 66-year-old male municipal police officer was fatally injured when he was backed over by an asphalt-loaded dump truck, with an operating backup alarm, inside a highway construction work zone. The victim, with his back to the dump truck and facing oncoming traffic, was walking in a closed northbound right-hand travel lane of a four lane divided highway. He was struck while the dump truck backed to an area to be paved. The municipality had employed him for approximately 16 years. In Massachusetts, municipal police officers typically do not receive specific highway / street construction work zone safety training. In order to prevent similar incidents, Massachusetts FACE recommended that employers should: 1) develop, implement, and enforce an internal traffic control plan (ITCP) specific to each construction site to reduce backing of construction vehicles; 2) ensure backing protocols are in place and that designated individuals are assigned as signalers to direct backing construction vehicles on construction sites; 3) ensure that communication exists among equipment operators and workers on foot. FACE also recommended that: local and state government agencies should consider offering work zone safety training for municipal officers who perform traffic details on highway / street construction sites; and manufacturers of heavy construction equipment, such as dump trucks, should explore the possibility of incorporating collision avoidance technology on their equipment to assist the operator while backing (Massachusetts FACE Report, 01MA039).

In September 2002, the Occupational Health Surveillance Program completed a study of fatal occupational injuries in Massachusetts from 1991 to 1999. For copies of this 9-year fatality report, more detailed tables of fatal occupational injuries in 2001, and copies of full-length FACE reports in Massachusetts, please contact the Massachusetts Department of Public Health, Occupational Health Surveillance Program, 2 Boylston Street, 6th Floor, Boston, MA 02116. These reports may also be obtained by calling (617) 988-3341.

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Please report work-related fatalities immediately to:

Toll-Free Occupational Fatality Hotline:

1-800-338-5223
or
Fax **(617) 624-5696**

When reporting a fatality, include the following information:

- Reporter's name, address, and phone number
- Victim's name, occupation and employer
- Brief description of the incident, including date and time

The Occupational Health Surveillance Program would like to thank all agencies and people that contributed to our effort of preventing work-related deaths by reporting fatalities and providing information during our fatality investigations.

PLEASE NOTE OUR NEW ADDRESS INFORMATION

Occupational Health Surveillance Program
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