

The NIOSH Fire Fighter Fatality Investigation and Prevention Program

The United States currently depends on approximately 1.1 million fire fighters to protect its citizens and property from losses caused by fire. Of these fire fighters, approximately 313,000 are career and 823,000 are volunteers. The National Fire Protection Association (NFPA) and the U.S. Fire Administration estimate that on average, 100 fire fighters die in the line-of duty each year.

In fiscal year 1998, Congress recognized the need for further efforts to address the continuing national problem of occupational fire fighter fatalities and funded NIOSH to implement a fire fighter safety initiative.



Fire Fighter Fatality Investigations

The NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) conducts investigations of fire fighter line-of-duty deaths to formulate recommendations for preventing future deaths and injuries. The program does not seek to determine fault or place blame on fire departments or individual fire fighters, but to learn from these tragic events and prevent future similar events.

Investigations are prioritized using a decision flow chart available on the FFFIPP website. Investigation priorities will change depending on fatality data.

Program Objectives

- Better define the characteristics of line-of-duty deaths among fire fighters
- Develop recommendations for the prevention of deaths and injuries
- Disseminate prevention strategies to the fire service.

Traumatic Injury Deaths

The program uses the Fatality Assessment and Control Evaluation (FACE) model to conduct investigations of fireground and non-fireground fatal injuries resulting from a variety of circumstances, such as motor vehicle incidents, burns, falls, structural collapse, diving incidents and electrocutions. NIOSH staff also conduct investigations of selected non-fatal injury events. Each investigation results in a report summarizing the incident, and includes recommendations for preventing future similar events.

NIOSH staff with respirator expertise also assist with investigations in which the function of respiratory protective equipment may have been a factor in the incident. They evaluate the performance of the self-contained breathing apparatus (SCBA) as a system and conduct evaluations of SCBA maintenance programs upon request.



Cardiovascular Disease (CVD) Deaths

NFPA data show that heart attacks are the most common type of line-of-duty deaths for fire fighters. NIOSH investigations of these fatalities include assessing the contribution of personal and workplace factors. Personal factors include identifying individual risk factors for coronary artery disease. The workplace evaluation includes the following assessments:

- Estimating the acute physical demands placed upon the fire fighter
- Estimating the fire fighter's acute exposure to hazardous chemicals
- Assessing efforts by the fire department to screen for coronary artery disease
- Assessing efforts by the fire department to develop fitness and wellness programs.



Information Dissemination

The Fire Fighter Fatality Investigation and Prevention Program posts all investigative reports onto the NIOSH Web site (<http://www.cdc.gov/niosh/fire/>) and notifies a list-serve membership of each posting. In addition to Web site postings, printed copies of related publications are also available.

What to Expect During a NIOSH Investigation

NIOSH is notified of a line-of-duty death in a number of ways, including notification by the United States Fire Administration (USFA), a fire department representative, the International Association of Fire Fighters (IAFF), or the State Fire Marshal's Office. NIOSH conducts investigations of both career and volunteer fire fighter line-of-duty deaths.

Once notified of a fatality, a NIOSH representative will contact the fire department. NIOSH investigators will review all applicable documents (e.g., department standard operating procedures, dispatch records, training records for the victim, Incident Commander and officers, the victim's medical records, (where applicable), coroner/medical examiner's reports, death certificates, blueprints of the structure, police reports, photographs, and video). Additionally, investigators will interview fire department personnel and fire fighters who were on the scene at the time of the incident.

NIOSH may work closely with other investigating agencies. When needed, NIOSH will enlist the assistance of other experts, such as experts in motor vehicle incident reconstruction or fire growth modeling.

Once the investigation is completed, NIOSH will summarize the sequence of events related to the incident and prepare a draft report. Each department, union (if present), or family (where applicable) will have the opportunity to review this portion of the report in draft form to ensure it is technically accurate. The report is then finalized with the addition of recommendations for preventing future deaths and injuries under similar circumstances. In selected cases, NIOSH will also enlist the assistance of subject matter experts to review complete draft reports. Once the fire department, union (if present), and family (where applicable) have received the final copy of the NIOSH incident report, it is made available to the public through the Fire Fighter Fatality Investigation and Prevention Program website.

Other Publications and Products

In addition to the incident reports developed by the program, NIOSH has produced other products related to fire fighter safety and health. Examples include:

- Preventing Fire Fighter Fatalities Due to Heart Attacks and Cardiovascular Events. NIOSH Alert, DHHS (NIOSH) Publication No. 2007-133.
- FDA AND NIOSH Public Health Notification: Oxygen Regulator Fires Resulting from Incorrect Use of CGA 870 Seals. June 19, 2006.
- Preventing Injuries and Deaths of Fire Fighters Due to Truss System Failures. NIOSH Alert, DHHS (NIOSH) Publication No. 2005-132
- Preventing Deaths and Injuries to Fire Fighters during Live-Fire Training in Acquired Structures. NIOSH Workplace Solutions, DHHS (NIOSH) Publication No. 2005-102
- Divers Beware: Training Dives Present Serious Hazards to Fire Fighters. NIOSH Workplace Solutions, DHHS (NIOSH) Publication No. 2004-152
- Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response. DHHS (NIOSH) Publication No. 2004-144
- A Summary of Health Hazard Evaluations: Issues Related to Occupational Exposure to Fire Fighters, 1990 to 2001. DHHS (NIOSH) Publication No. 2004-115
- Safety 1st - Railroad Crossing Safety for Emergency Responders. DHHS (NIOSH) Publication No. 2003-121.
- CD-Rom - Fire Fighter Fatality/Injury Reports and Other Related Publications. DHHS (NIOSH) Publication No. 2002-136 (*Updated August, 2006*)
- Fire Fighters Exposed to Electrical Hazards During Wildland Fire Operations. NIOSH Hazard ID 15, DHHS (NIOSH) Publication No. 2002-112
- Fire Fighter Deaths from Tanker Truck Rollovers. NIOSH Hazard ID 14, DHHS (NIOSH) Publication No. 2002-111
- Traffic Hazards to Fire Fighters While Working Along Roadways. NIOSH Hazard ID 12, DHHS (NIOSH) Publication No. 2001-143
- Preventing Injuries and Deaths of Fire Fighters Due to Structural Collapse. NIOSH Alert, DHHS (NIOSH) Publication No. 99-146

Who Do I Contact for Further Information?

If you have any questions regarding the NIOSH Fire Fighter Fatality Investigation and Prevention Program, please contact the NIOSH Division of Safety Research at:

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Division of Safety Research
Surveillance and Field Investigations Branch
1095 Willowdale Road, M/S H-1808
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You may access the incident reports and other related fire fighter publications through the Fire Fighter Fatality Investigation and Prevention Program Web site:

<http://www.cdc.gov/niosh/fire>

Visit the NIOSH website at:
<http://www.cdc.gov/niosh>

Copies of other NIOSH documents on occupational safety and health are available from:

National Institute for Occupational Safety and Health
Education and Information Division (EID)
4676 Columbia Parkway M/S C-13
Cincinnati, OH 45226-1998
Phone: (800) CDC-INFO [(800) 232-4636]
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