

NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) Progress Report and Proposed Future Directions – 2011

The National Institute for Occupational Safety and Health (NIOSH) is committed to ensuring that the NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) is meeting the needs and expectations of the U.S. fire service. NIOSH has sought public input to help plan and direct the goals and objectives of the FFFIPP since the program was initiated in 1998. NIOSH received public comments on the FFFIPP in January 1998, March 2006, and November 2008.

Most recently, in November 2008, nineteen fire service representatives attended a FFFIPP public stakeholder meeting held in Chicago. The organizations represented included the International Association of Fire Chiefs (IAFC), the International Association of Fire Fighters (IAFF), the National Fire Protection Association (NFPA), the United States Fire Administration (USFA), the National Institute of Standards and Technology (NIST), the ISO, the International Safety Equipment Association (ISEA), and the National Fallen Firefighters Foundation (NFFF). Several of these groups made presentations and all contributed comments to the docket <http://www.cdc.gov/niosh/docket/archive/docket063A.html>.

The primary modifications made to the FFFIPP following the November 2008 stakeholder meeting were to finalize the FFFIPP strategic plan (<http://www.cdc.gov/niosh/fire/strategicplan2009.html>), add information on pending investigations to the FFFIPP website (<http://www.cdc.gov/niosh/fire/PendingFire.html>), modify the fatality investigation reports to create an executive summary and clearly identify contributing factors, and to continue to increase the depth of the investigations through expert consultation and increased attention to the identification of contributing factors such as fire growth.

NIOSH is again seeking stakeholder input on the progress and future directions of the NIOSH FFFIPP to ensure that the program is meeting the needs and expectations of the U.S. fire service, and to identify ways in which the program can be improved to increase its impact on the safety and health of fire fighters across the United States (<http://www.cdc.gov/niosh/docket/review/docket063B/default.html>).

Background

During fiscal year 1998, Congress recognized the need to address the continuing national problem of occupational fire fighter fatalities and funded NIOSH to implement a fire fighter safety initiative. Based on stakeholder input received in 1998 and since, the FFFIPP conducts independent investigations of fire fighter line-of-duty deaths (LODD) to formulate recommendations for preventing deaths and injuries.

Since the FFFIPP was initiated in 1998, 1270 fire fighters have died in the line-of-duty through 2010 (not counting the 343 fire fighters who died on September 11, 2001). During this 13-year period, the FFFIPP has investigated 524 fire fighter LODDs or 41 percent of the total (296 trauma LODDs and 228 medical LODDs). The FFFIPP has also conducted a small number of near-miss incidents in which fire fighters were injured.

Investigation Priorities

Since NIOSH does not have the resources to conduct investigations of all fire fighter LODDs, each incident is prioritized using a decision logic that can be found on the NIOSH FFFIPP website at http://www.cdc.gov/niosh/fire/pdfs/FFFIP_DecisionChart.pdf. The current priorities for investigating traumatic LODDs include multiple fatality events, structure fires, motor vehicle incidents, and new or emerging hazards. The priorities for investigating medical LODDs include hyper/hypothermia; seizures, diabetes, and drug overdose; physical fitness training; emergency responder training; and sudden cardiac death on the fireground. NIOSH welcomes comments on these priorities along with suggestions for replacing or modifying them.

Program Accomplishments

Since the last Public Stakeholder Meeting in November 2008, the FFFIPP has recorded the following accomplishments:

- Completed – 30 medical and 50 traumatic investigations
- Published – NIOSH *ALERT: Preventing Deaths and Injuries of Fire Fighters using Risk Management Principles at Structure Fires*. Publication no. 2010-153
- Published – NIOSH *Workplace Solutions: Preventing Deaths and Injuries of Fire Fighters Operating Modified Excess/Surplus Vehicles*. Publication no. 2010-125
- Published – NIOSH Safety Advisory - *Manual Adjustment of Automatic Slack Adjusters May Contribute to Unexpected Brake Failure on Automotive Fire Apparatus*. Publication no. 2010-102
- Published – NIOSH *Workplace Solutions: Preventing Deaths and Injuries of Fire Fighters Working Above Fire-Damaged Floors*. Publication no. 2009-114
- Published – *Fire Fighter Fatality Investigation and Prevention Program: Leading Recommendations for Preventing Fire Fighter Fatalities, 1998-2005*. Publication no. 2009-100

- Provided information and data from several recent LODD investigations regarding the thermal degradation of SCBA facepiece lenses to the NFPA Technical Committee on Respiratory Protective Equipment
- Provided information and data from several recent CVD investigations associated with left ventricular hypertrophy to the NFPA Technical Committee on Fire Service Occupational Safety and Health
- Provided information and data from a recent training investigation involving an elevated aerial platform to the NFPA Technical Committee on Automotive Fire Apparatus.
- Disseminated findings from NIOSH investigations via presentations at fire service and medical conferences.

In addition, the FFFIPP continues to receive examples of others using program findings and recommendations to improve fire fighter safety. For example:

- During 2009 and 2010 there were approximately 453,600 visits to the FFFIPP webpage.
- Fire departments regularly report using FFFIPP investigation reports and publications to support fire fighter training.
- The 2012 International Residential Code will require the application of a drywall or structural wood membrane to the underside of floor systems in non-sprinklered residential dwellings. The IAFF proposed this code modification based in part on findings from NIOSH LODD investigations and recommendations that lightweight construction systems be protected with a fire-resistant barrier.
- Fire service articles and publications frequently reference and encourage the use of NIOSH fatality investigations and recommendations to improve fire fighter safety.

Strategic Plan

Since 2009 the Strategic Plan for the NIOSH Fire Fighter Fatality Investigation and Prevention Program has been used to guide the research and continued implementation of the FFFIPP, <http://www.cdc.gov/niosh/fire/strategicplan2009.html>. Developmental sources for the plan include fire service stakeholder comments submitted to the NIOSH docket and during public meetings; a 2007 report to NIOSH from the IAFC Fire Fighter Fatality Investigation and Prevention Program Task Force; results of a Fire Fighter Fatality Investigation and Prevention Program Evaluation conducted by RTI International; and recommendations from a 2007 program review by the Health and Human Services Office of Inspector General.

The Strategic Plan addresses the mission of the FFFIPP, strategic goals to improve fire fighter health and safety, program activity/output goals, and performance measures by which the NIOSH FFFIPP can be evaluated.

Progress Toward Goal Achievement

While FFFIPP activities since November 2008 have been closely linked with the activity/output goals and performance measures of the Strategic Plan, staffing and funding resources have hindered the program from achieving some of its goals. The FFFIPP budget has been stable since the program’s initiation in 1998; however, staffing and operating costs have increased. It is anticipated that this situation will not improve and may further deteriorate over the next few years. Given current efforts to reduce the federal deficit, there is the potential for FFFIPP funding to be reduced.

The following table summarizes the FFFIPP implementation progress since November 2008 related to individual activity/output goals and performance measures in the Strategic Plan and identifies areas which NIOSH proposes to scale back should staffing and funding resources be further constrained.

FFFIPP Progress		
Activity/Output Goals Performance Measures	Progress November 2008 to January 2011	Comments
Goal A: Conduct fatality investigations as the principal activity of the FFFIPP	80 fatality investigations completed, 30 medical and 50 traumatic injury	Budget reductions would negatively impact this activity; however, NIOSH proposes that LODD investigations remain the highest FFFIPP priority
A.1: Investigations will be finalized each year at a minimum of 3 investigations per fulltime investigator.	9 investigators, 8 fulltime and 1 half-time averaged over 4 completed investigations annually.	
A.2: 90% of investigations through 2010 will involve CVD, structure fires, and MVA incidents.	81% of all cases involved CVD, structure fires, and MVA incidents.	
A.3: Initial site visits will be conducted within 3 weeks of the fatality in 80% of fatal traumatic injury incidents.	Site visits were conducted for 79% of traumatic injury incidents within 3 weeks.	Site visits are often delayed in deference to funeral and memorial services

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A.4: Input will be obtained to improve the design and format of fatality investigation reports by Fiscal Year 2010.	Report format revisions were implemented during 2009 and 2010. Stakeholder input is being sought through the 2011 docket.	NIOSH health communication experts collected comments from fire fighters during fire service conferences
A.5: Investigation priorities will be revisited and input sought for proposed changes by 2010.	Stakeholder input is being sought through the 2011 docket.	
Goal B: Individual fatality reports will be generated for each investigation and investigation findings will be reported and summarized in additional publications.		
B.1: 50% of investigation reports will be completed within 6 months of the site visit, 95% will be within 12 months.	41% of the investigation reports were completed within 6 months and 48% were completed within 12 months. 55% of cases initiated in 2009 were completed in 6 mos. and 81% were completed within 12 mos.	The FFFIPP will continue its efforts to reduce the completion time for investigations.
B.2: One document (other than a fatality report) will be published annually	1 NIOSH Alert, 1 Safety Advisory, 2 Workplace Solutions and 1 Technical Report were published.	
Goal C: Seek peer and stakeholder input to improve the quality of products and the impact of the program.		
C.1: 75% of traumatic fatality reports will be reviewed by external experts and 100% of publications will be reviewed by peers and/or stakeholders	100% of traumatic LODD reports were reviewed by external experts. All publications were reviewed by peers and stakeholders.	

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C.2.: Expert consultation and/or testing will be sought on all investigations suggestive of personal protective technology malfunctions or failures.	Expert consultation was sought for 4 cases involving the possibility of equipment malfunctions.	If there are budget reductions, NIOSH proposes scaling back on expert consultations requiring funding.
C.3: Stakeholder input will be sought at least every two years through a public meeting and/or docket.	NIOSH is seeking input through the 2011 docket.	A public meeting is not being held because of budget uncertainties.
Goal D: Increase fire service expertise of FFFIPP personnel		
D.1: Each trauma investigator will take at least one fire-service training course or attend a fire service conference specifically for training annually.	Each investigator attended one or more fire service training sessions yearly.	If there are budget reductions, NIOSH proposes scaling back on training with vendor and /or travel costs.
D.2: Announcements for investigator positions will require fire service and occupational safety and health experience.	3 investigators with fire service experience have joined the FFFIPP team since January 2008	Under the current budget, no additional investigators will be hired.
Goal E: Ensure FFFIPP recommendations and products are used to improve fire fighter safety and health		
E.1: The program will be involved in at least 2 outreach activities annually.	The program actively supports the National Seat Belt Pledge and the June IAFC Safety, Health, and Survival Week	
E.2: FFFIPP investigators will meet annually with the National Personal Protective Technology Laboratory (NPPTL) staff to discuss investigation findings related to personal protective technology.	3 meetings were held to discuss findings related to personal protective equipment (PPE). FFFIPP and NPPTL routinely collaborate on PPE evaluations related to fire fighter LODDs.	

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E.3: Investigation findings will be communicated to the National Fire Protection Association (NFPA) and other standards setting agencies annually	FFFIPP and NIOSH staff members participate on 5 NFPA committees. NIOSH documented issues of SCBA face piece degradation to NFPA by letter in 2010.	NIOSH proposes continued participation on NFPA committees, but proposes limiting participation requiring travel if there are budget reductions
E.4: Relevant investigation findings will be communicated to manufacturer groups as needed, and at least every two years.	Findings related to thermal degradation of SCBA lenses was provided to NFPA.	Manufacturers of fire service equipment, including all SCBA manufacturers, are represented on NFPA committees.
E.5: Implement improved communications strategy to reach small and volunteer departments by 2011.	The FFFIPP will work with the NIOSH Office of Health Communications to improve communications strategy and is seeking stakeholder input through the 2011 docket.	FFFIPP team members and the National Volunteer Fire Council have recently discussed ideas for improving outreach to volunteer departments.
E.6: Implement input from a web publishing consultant to improve the FFFIPP Web site by 2011.	The FFFIPP will work with the NIOSH Office of Health Communications to improve the FFFIPP website and is seeking input through the 2011 docket.	Budget concerns will preclude acquisition of consultant services for this effort.
E.7: Develop a survey that would be provided to all departments following a NIOSH fatality investigation that would provide feedback on the investigation and departmental changes made as a result of the investigation will be developed by Fiscal Year 2011 and implemented by 2013.	A pilot survey was developed and is currently being pilot tested by the medical investigation team.	
E.8: Seek funding to conduct a study assessing the FFFIPP impact on fire department training, policies and practices by Fiscal Year 2012.		It is anticipated that budgetary restrictions may hinder this effort.

Proposed Future Directions

One key area in which NIOSH is seeking comment involves the uncertainties with the federal budget. In the event that the FFFIPP budget is reduced, the FFFIPP proposes to devote all available resources to the independent investigation of fire fighter line-of-duty deaths. The FFFIPP proposes to reduce or eliminate attendance at conferences, workshops, training and fire service stakeholder meetings. This will impact NIOSH participation on standard-setting committees such as NFPA technical committees. Reports and publications will continue to be available through the NIOSH and FFFIPP web pages. However, printed reports and publications may also be eliminated. NIOSH welcomes comments on proposed priorities for the FFFIPP in the event of reduced funding.

Specific Topics for Stakeholder Input

The NIOSH FFFIPP welcomes comments on any aspect of the FFFIPP. Specific comments are being solicited on the following key topics:

- FFFIPP priorities for conducting investigations
- changes to the format of FFFIPP investigation reports
- changes to the FFFIPP website
- suggestions for program improvements to increase the impact on fire fighter safety and health
- examples of how FFFIPP investigation reports and products are used by fire service organizations, fire departments and fire fighters, and fire service safety and health researchers
- ways in which the FFFIPP can document its impact on fire fighter safety and health.