



## Best Practices: Are You Protecting Your Firefighters?

Firefighting can be a hazardous job. Whether your firefighters volunteer a few hours a week, work per diem shifts, respond "on call" when their pager activates or have chosen firefighting as a career in your community, there is a silent killer in the fire service that we are just beginning to expose: cancer.

Nationally, amongst the general population, approximately 41% of Americans will be diagnosed with cancer during their lifetime, according to a report for the President's Cancer Panel. Although this is a significant number, members of the fire service face even more sobering statistics than the general population. According to the International Association of Firefighters (IAFF), of the line-of-duty deaths (LODD) that occurred between 2002 and 2016, 61% (1053) were cancer related. Cancer is now considered the leading cause of duty-related death for firefighters.

### The Research

Past and current research demonstrates with strong data, that today's firefighters are at increased risk for several types of cancer. With the fire environment today, filled with higher concentrations of extremely carcinogenic agents, firefighters are entering residential and commercial fires which are more like hazardous materials events.

This research and heightened awareness has led to the understanding that cancer is an occupational risk for firefighters and the push for workers compensation laws to reflect that understanding is well underway. The following best practices are the nationally recommended approach for the prevention of cancer.

### Prevention

With over 28,000 fire departments in the United States, cancer prevention efforts and protocols vary widely.

There are myriad factors which can influence if a particular cancer begins to develop in the body. Unhealthy lifestyle habits such as smoking, high alcohol consumption, poor

diet, lack of exercise and lack of sleep can increase a person's risk for developing cancers. If in addition to any of these factors, a firefighter is exposed to toxins, then the likelihood of cancer developing increases. Therefore, looking at lifestyle, health and reducing exposure will be critical to help reduce the cancer risk. Fire service organizations across this nation must put the wellbeing of their responders first by implementing so-called best practices as part of a cancer prevention initiative.

### Nationally Adopted Best Practices

- **Full personal protective equipment must be worn by firefighters throughout the entire incident, including a self-contained breathing apparatus.**

This includes salvage and overhaul operations that take place once a fire is simply smoldering. Because of changes in building materials, car parts and chemicals used in home furnishings, most fires create large volumes of hazardous gases and particulates, some of which are persistent and may remain in the environment for long periods of time.

- **A second protective hood should be provided to all personnel in the department.**

The second hood is needed to make sure that firefighters don't have to wear contaminated hoods after firefighting. Providing each firefighter with a second hood allows the fire fighters to wash their contaminated hood, while still having the second hood available to use for another emergency. It is also important to wash and inspect protective hoods after every fire/use and do not allow protective hoods to be taken home, to a laundromat, or to a dry cleaner for washing.

- **Prior to leaving the fire scene, firefighters should begin immediate rinsing and decontamination of gear (PPE) using soapy water and a brush if weather conditions allow.**

This PPE should then be placed into a sealed plastic bag and placed in an exterior compartment of the apparatus,

or, if responding in personally owned vehicles, placed in a large storage tote, thus keeping the PPE away from vehicle occupants. Personnel should have a personal "go bag" with them that has a clean change of clothes, clean footwear, and towel. A spare set of turnout gear (PPE) is important so firefighters can get back "in service" while their dirty PPE is washed/decontaminated back at the station.

- **After completion of the decontamination procedures discussed above and while still on scene, firefighters must wipe down exposed areas of the body (neck, face, arms and hands) using wipes, which must be carried on all apparatus.**

Disposable wipes are an effective tool for immediate decontamination and removal of toxins from the neck and other areas, but they cannot replace a shower.

- **All clothes and PPE must be washed after exposure to products of combustion or other contaminants.**

This should be done as soon as possible or isolate contaminated PPE in a trash bag until washing is available. Firefighting gear is heavy, so a commercial washing machine or gear extractor is needed for proper cleaning and decontamination. At no time should PPE be taken home, to a laundromat, or to a dry cleaner for washing. PPE should be hung to dry in a manner that allows for drying as well as good turnout times. Racks with hangers and fans can facilitate and speed up this drying process.

- **And don't forget the cabs of firetrucks. All personnel shall ensure their assigned unit has a clean apparatus cab.**

The potential for secondary exposures during routine apparatus use is high and must be limited. To aid in reducing secondary exposures, apparatus cabs shall be cleaned and decontaminated (at a minimum) on a monthly basis and more often if call volume deems it necessary.

- **Fire personnel should shower as soon as possible after being exposed to products of combustion or other contaminants.**

"Shower within the hour" is the industry best practice. Having showers at the fire station is essential now more than ever. If your station does not currently have a shower in addition to bathrooms, consider getting one. Allowing firefighters to get into their vehicles and return home to shower is not an acceptable practice any more.

This results in firefighters contaminating their vehicle as well as their home. These are places where family members, possibly children, can be exposed unnecessarily. Giving firefighters the opportunity to shower at the station allows them to keep their soiled duty uniform or clothes at the station and allows them to clean their bodies as soon as possible.

- **PPE, especially turnout pants, must be prohibited in areas outside the apparatus floor (i.e., kitchen, sleeping areas, etc.) and should never be in the living quarters.**

Turnout gear can become contaminated with carcinogens every time a firefighter enters an atmosphere that has fire, smoke and the byproducts of combustion. And to be 100 percent safe, even if the turnout gear has been decontaminated, keep it in gear storage and decontamination areas.

- **Wipes, or soap and water, should also be used to decontaminate and clean apparatus seats, SCBA's and interior crew areas regularly, especially after incidents where personnel were exposed to products of combustion.**

Each fire incident may be considered a toxic environment, and the apparatus and equipment need to be cleaned.

Ensure that fire apparatus and other emergency vehicle exhaust is properly vented with a code compliant vehicle exhaust capture and removal systems. So-called source capture of airborne particles, prior to their spreading in the fire station, is the most efficient method to achieve a safe and healthy working environment. Absent an exhaust system, do not operate vehicles indoors unless absolutely necessary and for as short a time as possible to limit exposure.

- **Provide annual training to firefighters on cancer prevention to include PPE best practices, hygiene and decontamination, tobacco and alcohol use awareness, fitness and nutrition.**

For cancer prevention to be effective in the fire service, it must include all aspects of modifiable risk factors on and off the fire ground. Tobacco products of any variety, including dip and e-cigarettes, should never be used at any time, on or off duty. If your firefighters use tobacco, help them to quit.

## Your Safety Checklist

- Provide a 2<sup>nd</sup> set of firefighting turn out gear, including a protective hood.
  - Provide for Firefighter Medical Evaluations (NFPA 1582)
  - Install showers in the fire station(s). Require showers after returning from a fire.
  - Install Personal Protective Equipment (gear) washing machines/extractors.
  - For firefighters - Exercise regularly, eat healthy, and refrain from using tobacco.
  - Install systems to remove vehicle exhaust from fire stations.
  - Train firefighters to formally document all fires on NFIRS reports.
- **Make available annual physicals for firefighters, as early detection is the key to survival.**
- The National Fire Protection Association's 1582 standard provides guidelines regarding medical programs for fire departments and recommends annual physicals for prevention of disease. The standard's purpose is to reduce the risk of fire service occupational morbidity and mortality while improving the safety and efficiency of firefighters.
- **Make sure your fire department is documenting all fire or chemical exposures on incident reports or on personal exposure reports.**

Through documentation, a clearer picture is painted that correlates exposures to the health risks associated with those exposures. Tracking exposures can help firefighters better understand their risks and more effectively communicate these risks to their healthcare provider.

## What Now?

Finally, it is not only the job of the fire service and its leaders to help educate responders of their risks, but it is incumbent upon elected officials and other community leaders to be educated to address the policies and the funding needed to help reduce the effects of deadly occupational cancers. Exposure solutions such as properly cleaning equipment, and

stations designed to eliminate diesel exhaust and contaminated PPE from the personnel and living areas, along with physicals and cancer screenings are important considerations for you. With this proactive approach, and cooperation between department leaders and city and town officials, chances of a cancer diagnosis can be reduced.

## Resources

National Volunteer Fire Council, International Association of Fire Chiefs: Lavender Ribbon Report, August 2018.

Department of Safety, Division of Fire Standards and Training, Advisory Notice Regarding New Cancer Law, August 2018.

Fire Service Cancer Alliance, Occupational Cancer in Firefighters, May 2015.

## Quick Links

Firefighter Cancer Support Network:  
[www.firefightercancersupport.org/](http://www.firefightercancersupport.org/)

International Association of Fire Chiefs:  
[www.iafc.org/](http://www.iafc.org/)

National Fire Protection Association:  
[www.nfpa.org/](http://www.nfpa.org/)

National Volunteer Fire Council:  
[www.nvfc.org/](http://www.nvfc.org/)

Safety, Health and Survival Section of the IAFC:  
[www.iafcsafety.org/](http://www.iafcsafety.org/)

NIOSH:  
[NIOSH](http://www.cdc.gov/niosh/)