FIREHOUSE SUPPLEMENT 2020 FIRE SERVICE EALTH & SAFETY REPORT

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Photo by Glen E. Ellman

Cover photos by Glen E. Ellman

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Here to Serve Those Who Serve



Chief (ret.) Ronald J. Siarnicki Executive Director National Fallen Firefighters Foundation



Troy Markel *Chairman of the Board* National Fallen Firefighters Foundation



Chief (ret.) Ernest Mitchell *Chairman of the Board* First Responder Center for Excellence

We elcome to the 2020 National Fallen Firefighters Foundation (NFFF)/First Responder Center for Excellence (FRCE) Health and Safety Report. The report is a collaboration between the NFFF, FRCE and *Firehouse Magazine*. This year's issue finds fire and emergency service providers dealing with an exceptional series of challenges, not experienced altogether in anyone's recent memory. We entered 2020 with our sights set on renewed efforts to reduce preventable line-of-duty deaths after 2019's encouraging hard work. Then, before we knew it, firefighters, EMTs, paramedics and health care workers were thrust to the forefront of the nation's struggle to deal with the coronavirus pandemic. Despite the fear, level of unknown, equipment shortages and conflicting information about the disease, the nation's first responders continued to serve their communities–and became victims themselves. We are monitoring reports of fallen first responders closely and standing by to serve their families, as we do all fallen firefighters.

In the wake of the pandemic, civil unrest also exposed firefighters to scenes of destruction and situations unknown for a generation. Again, firefighters and other first responders unhesitatingly responded to serve their communities. To date, no firefighter lost his/her life because of the unrest, but several suffered injuries.

The "usual" fire and rescue duties proceed unabated in the wake of the added strain of the pandemic and civil unrest. Wildland fires erupted in several states, which requires the mobilization of large forces to contain them before they reach populated areas. One early June fire in Arizona doubled in size overnight, exploding from 50 to 110 square miles, which is an area that's the size of Salt Lake City. Other brush fires occurred in Los Angeles and Los Angeles County. At the time the 2020 Fire Service Health and Safety Report was put together, the National Interagency Fire Center in Boise, ID, reported 43 large fires that involved more than 270,000 acres actively burning–harbingers of another busy wildland fire year.

The NFFF and the FRCE remain committed to supporting America's fire and emergency services. This year's report gives you some highlights on collaborations and efforts that we are engaging in to get every firefighter that we can home. You'll find exceptional contributions from writers from across the spectrum of our service. These authors speak to projects, programs and culture shifts that they embarked on to buttress the safety of the members in their charge and the NFFF's efforts to support them in their darkest hours.

We hope that you find this report a valuable tool to inspire change in your organization, redouble efforts you already have under way or serve as a reminder that we are here if you need us. The NFFF and the FRCE stand ready to assist you in any way possible. Be safe.

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FIREFIGHTER LIFE SAFETY INITIATIVES Guiding the NFFF's focus on health and safety

Photo by Keith Muratori



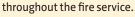
CULTURAL CHANGE

Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility.



ACCOUNTABILITY

Enhance the personal and organizational accountability for health and safety





RISK MANAGEMENT

Focus greater attention on the integration of risk management with incident

management at all levels, including strategic, tactical, and planning responsibilities.



EMPOWERMENT

All firefighters must be empowered to stop unsafe practices.



TRAINING & CERTIFICATION

Develop and implement national standards for train-

ing, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters based on the duties they are expected to perform.



FITNESS Develop and implement national medical and

MEDICAL & PHYSICAL

physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.



RESEARCH AGENDA

Create a national research agenda and data collection

system that relates to the

initiatives.



TECHNOLOGY Utilize available technology wherever it can produce

higher levels of health

and safety.



Thoroughly investigate all firefighter fatalities, injuries,

FATALITY, NEAR-MISS



GRANT SUPPORT Grant programs should support the implementation of safe practices and/or

mandate safe practices as an eligibility requirement.

RESPONSE POLICIES National standards for emergency response policies and procedures should be

developed and championed.



VIOLENT INCIDENT RESPONSE

National protocols for response to violent incidents should be developed and championed.



PSYCHOLOGICAL SUPPORT

Firefighters and their families must have access to counseling and psychological support.

PUBLIC EDUCATION

Public education must receive more resources and be championed as a critical

fire and life safety program.



CODE ENFORCEMENT & SPRINKLERS

Advocacy must be strengthened for the enforcement of codes and the

installation of home fire sprinklers.



APPARATUS DESIGN & SAFETY

Safety must be a primary consideration in the design of apparatus and equipment.

For more information on the 16 Firefighter Life Safety Initiatives, visit everyonegoeshome.com. For more information on FLSI 6 and 13, visit firstrespondercenter.org.



and near misses.



CREATE SAFETY CULTURE CHANGE

A fire service tool minimizes occupational injury and increases safety. By Jennifer Taylor

Photos courtesy of the Center for Firefighter Injury Research and Safety Trends (FIRST)

CULTURAL CHANGE

Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility.

M inimizing the adverse effect of occupational injury and death is a primary function in highrisk organizations. For almost four decades, the American fire service has migrated slowly from a culture where all death and injury were an accepted part of the business to a mindset of assessing and managing risk to minimize preventable injuries and deaths.

Although all risk can't be eliminated from firefighting, it now is a well-accepted conclusion that many calamities that firefighters suffer can be prevented. To assist with the prevention effort, the Center for Firefighter Injury Research and Safety Trends (FIRST) at Drexel University developed and



FOCUS' two dimensions are management commitment and supervisor support.

validated a tool that's called the Fire Service Organizational Culture of Safety (FOCUS) survey.

Dornsife

in Organizational & Safety Outcomes

afety Behavi

afety Culture

The tool was created via funds that were obtained through the FEMA Assistance to Firefighters Grant (AFG) Program. FOCUS was tested in more than 130 career and volunteer fire departments from a geographically stratified random sample of all 10 FEMA regions (approximately 800 stations and 10,000 firefighters).

FOCUS has two dimensions: management commitment and supervisor support, both of which reflect memberships' perceptions of their superiors' commitment to safety. Other scales include burnout, work engagement and job satisfaction.

As a department's FOCUS score increases, a negative relationship with injury rates and burnout should be observed, while a positive relationship with job satisfaction, work engagement and safety behaviors should be observed. The fire service now has a valid and reliable safety culture tool that allows fire departments to measure and manage FLSI #1. More than 800 departments and 70,000 firefighters have participated—the largest FEMAfunded assessment of firefighters in history.

6 Change is the hardest thing for people to accept. Trying to implement some change has to be well thought of and with this kind of data, it helps. This is scientific data we could use to try to identify some of those pitfalls and we can fix them. **9** Salem, OR, Fire Department



Culture Camp trainings include lectures and interactive formats.

Safety climate

Safety climate refers to firefighters' shared perceptions regarding their department's safety policies, procedures and practices, and the types of safety behavior that are rewarded and supported at the station. Safety climate is among the strongest predictors of work-related injury across industries and within the fire service, specifically, along with improvements, such as lowering turnover and burnout and increasing job satisfaction and employee engagement.

Occupational injuries are associated closely with workers' safety (or risk-taking) behaviors. In addition, a lack of engagement can lead to failure to comply with safety rules and policies. At the cognitive level, if workers are dissatisfied with their work, are stressed out and suffer burnout, the potential for making errors in the line of duty escalates, resulting in higher frequency and greater severity of occupational accidents and injuries. These costly organizational outcomes are very important to any organization but particularly in the fire service, where improved employee engagement and retention translates into more experienced responders and greater team cohesion.

A 2019 report provides evidence that management commitment to safety (the department-level climate factor) is related to increased safety compliance behaviors and job satisfaction and decreased burnout among individual firefighters and across members within fire stations. The absence of safe behaviors can lead to injuries and exposures. For example, high management commitment to safety scores on FOCUS were found to be negatively related to injury rates within fire stations.

Post-report action

After launching the survey in their departments, a 17-page report is sent. This is followed by an opportunity for a video- or phone-based conference call to go over the report and discuss next steps. With their FOCUS reports in hand, departments need to learn how to fully interpret their results, so they can create safety culture change. Departments that complete the FOCUS survey assessment ▲ The fire service needs to realize that they can take care of everybody else but now it's time to start taking care of ourselves in so many different ways—it's not just safer equipment, it's also safety procedures and that we have to deal with the stress. You've given us tools that can help us move forward in safety culture in the fire service.

are invited to a FOCUS Culture Camp training that includes lecture and interactive formats. Departments send two representatives—one from leadership and one from the labor union, if applicable. The two-day Culture Camps are held in geographically diverse locations. Each camp includes 10 departments and 20 participants.

Culture Camps are instructed in partnership with the Fire Department Safety Officers Association, FIRST Center staff and organizational psychologists. Participants introduce their safety culture successes and areas of concern. This creates dialogue, and departments realize that they are more similar than different.

A safety climate lecture describes the two components of FOCUS. Injury, burnout, engagement and job satisfaction are presented with clear definitions, fire service-specific examples,



Culture Camps are instructed in partnership with the Fire Department Safety Officers Association, FIRST Center staff and organizational psychologists.

6 In my heart, I believe that we promote a safe culture, but it was gratifying to see that others in our organization believe this to be true also. I like the fact that I can now put actual numbers to what has previously been a gut feeling. **9** –Fire Chief



The last component of Culture Camp includes a teach-back, where participants practice how they will present their data.

and ample time for questions and answers. Participants are taught how the FOCUS survey was developed and the importance of survey validation. The science of safety climate assessment provides members with important background information to enable them to answer questions about the FOCUS tool in their departments.

Several interactive exercises are conducted with the group to further solidify these new concepts. One of the last components of Culture Camp is a fire department teach-back. The team from each department works together to review their FOCUS report and complete a workbook. They then perform a teach-back of their FOCUS results. Participants practice how they will present their data, and Culture Camp

▲ I believe FOCUS has the potential to have a positive long-term effect within our organization. I believe it will provide the guidance needed to help prevent injuries and improve the work environment. ■ Fire Chief

faculty provide feedback to ensure that information is presented accurately. As each department presents, other participants ask questions, provide feedback and learn different approaches to present. This time also serves as a valuable opportunity for collaboration. Departments hear innovative approaches that other departments use that might positively influence a FOCUS metric if implemented. This teach-back is reflective of the real-world scenario that participants will experience when they teach others how to use FOCUS results for safety culture change.

The teach-back is rated highly consistently. Departments like the opportunity to practice before presenting at home and observing other presentation styles and tactics. One attendee noted, "I enjoyed analyzing my own department's data and being given the opportunity to do a soft presentation to a group prior to doing one for my own department. This was

6 I'm excited about this. I'm going to sit down with our management team and company officers to let them know where we are. I think this will make a difference and would cause a change in every department. **9 9** -Odessa, TX, Fire Department

extremely valuable so that I could fine tune my words and have multiple sets of eyes see other parts of my data."

Another firefighter said, "[The teach-back] greatly improved my understanding of the subject matter and helped guide my ideas on how I would deliver this information to my own members. Everyone had differing ideas and approaches, which allowed me to adjust my delivery by adding and subtracting my ideas."

FOCUS Culture Camp training results in comfort with data and competency with teaching it back to those who need to know. Participants also reflected on the utility of the entire Culture Camp experience. One attendee said, "This training takes you into the world of data and science. Learning to understand data and science allows departments to go deeper into the world of safety. In time, this will allow facts to be the rule in place of opinion or theory."

Another attendee commented, "This training validated much of what I already believed and couldn't prove, suspected but had no way to verify, or plainly educated me on what I need to know to grow a culture of safety in my organization."

FOCUS data for change

Fire departments that participated in FOCUS are beginning to use their data for change. Leaders are gathering their baseline FOCUS assessment, implementing new policies, procedures or practices to support safety in their departments, and then re-assessing with FOCUS to measure whether their strategies improved their safety culture. Rather than continue to work from anecdote and implement strategies for change that leaders think will improve their safety culture, FOCUS data now provide objective metrics to monitor these strategies to create positive safety culture change. Departments now have the data to support their need for additional resources to improve safety and wellness. The continued opportunities for utilizing FOCUS data to create positive culture change are ample and ever expanding. By partnering with the FIRST Center, fire departments that measure their safety culture with the FOCUS survey empower themselves to advocate for the resources that they need to keep first responders safe, healthy and mentally fit for response.

About the author

Jennifer A. Taylor, PhD, MPH, CPPS, is the director and principal investigator at the Center for Firefighter Injury Research and Safety Trends (FIRST) at Drexel University. She served as the consultant epidemiologist to the International Association of Fire Chiefs' (IAFC) National Near-Miss Reporting System from 2007-2011. She received her doctorate from Johns Hopkins Bloomberg School of Public Health.

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capacity, they impart the skills, ideas

and attitudes that enable responders

to perform their jobs efficiently, to

stay safe and to return home to their families after their shift. As such, it is

crucial that the individuals who are in

this program represent the absolute

Bv Rick Best

dvocacy is the commitment that you make to a cause, idea, policy or program that you actively support. As interested local, state and federal citizens, we advocate for our core beliefs and values when we support specific legislative policies, and every time that we vote. Advocacy is a complex choice that we make to participate in our community as informed citizens. We observe and question why things have to be the way that they are. We care about our families, friends, co-workers and ourselves. Conscious advocacy changes our mission. It recreates us as people who passionately believe in change for the better.

Advocacy in the fire service

The fire service in the United States is a hybrid of entities that's generally formed and that operates at the local level. Unlike many other countries whose fire service is structured on the national level, the fire service in the United States comprises volunteer, metro, suburban, county, wildland, industrial and military services. Each shares the same mission but achieves its goals through multiple, individualized ways. Today's firefighters are becoming a more diverse group, with a wide variety of backgrounds, education and cultural beliefs.

Where it once was true that the profession was handed down from father to son, this no longer is the case. Today's firefighter is just as likely to be a person who has an undergraduate- or graduate-level degree as one who is a high school graduate. The profession increasingly sees hand-downs from father to daughter and mother to daughter. However, the word "family" transcends bloodlines. It also applies to all groups of individuals that come together in service for the greater good.

Every family has a leader, and the fire service is no different. Fire service leaders, regardless of rank, pay status or department organization, owe their firefighters the highest quality training and equipment to protect the members as they serve the community. Safety in the fire service is becoming a unifying force. It inarguably is the one



Safety in the fire service is becoming a unifying force. It inarguably is the one cultural value that we all must share and promote to ensure an effective workforce.

cultural value that we all must share and promote to ensure an effective workforce. The National Fallen Firefighters Foundation (NFFF) has been, and continues to be, a witness to the devastating and long-term effects that preventable line-of-duty deaths and injuries have on departments. Advocacy for health and wellness, as well as for safer operations, quickly is becoming understood as our common mission-the thread that holds us all together as a united fire service and the most effective force to protect our communities.

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EGH Advocates promote, present and raise awareness of the 16 Firefighter Life Safety Initiatives in their respective state. They serve as ambassadors of the NFFF to fire departments with which they establish and maintain contact.

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best characteristics of highly effective instructors, coaches and mentors. The highest ethical standards and moral conduct are crucial to the credibility of the Advocate and of the EGH Program.

If you believe that you are up to the challenge and want to contribute to an effective and safe fire service, we would welcome you as a member of our team. You will enjoy the journey and take pride in what you accomplish. As an EGH Advocate, you help to create positive change in yourself, in firefighters who you meet and in the entire U.S. fire service.

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About the author

Rick Best is a nationally recognized leader in firefighter health and safety. He has more than 20 years of experience in fire service training, program development and public speaking. He currently serves as the Everyone Goes Home® Advocate Program Manager for the National Fallen Firefighters Foundation, and as the fire programs manager for Hocking College in Nelsonville, OH. Best began his career as a volunteer firefighter and worked his way into a full-time position for the Westerville, OH, Division of Fire. He holds a bachelor of science in public administration from Neumann University and is working on a master's degree in strategic and organizational leadership.

Combating CARDIOVASCULAR DISEASE in the Fire Service

Advocate for proper medical evaluations.

By Denise Smith



Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.



Illustration by Getty Images/fruttipics

itizens often are surprised to learn that sudden cardiac deaths account for more firefighter fatalities than burn injuries, asphyxiation or being lost/trapped inside of a burning structure. The fire service, on the other hand, long has been aware of these statistics, which are reported regularly by the United States Fire Administration and the NFPA. Leading fire service organizations have recognized that cardiovascular events take a great toll on firefighters and fire departments and have devoted considerable time and energy to ensure that firefighters receive proper medical evaluations as candidates and incumbents. These efforts certainly are to be applauded. Unfortunately, we don't know precisely how many firefighters receive medical evaluations. We should continue to advocate for medical evaluations until every firefighter who accepts and swears an oath to protect his/her community receives a proper medical evaluation to ensure that he/she is healthy enough to do this work without undue risk to the individual or his/her crew.

Combating cardiovascular disease aggressively is necessary, given cardiovascular disease results in nearly half of line-of-duty deaths (LODDs) that are reported by the NFPA and resulted in more than 7,100 nonfatal cardiac events in the past 10 years for which data is available. Ensuring that every firefighter gets a medical evaluation is essential, but it isn't sufficient if we really are serious about decreasing the burden of cardiovascular disease. We need to learn the lessons that are provided by the painful loss of firefighters.

The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention program investigates LODDs to learn lessons that will decrease the likelihood of future fatalities. The program publishes online reports to summarize lessons learned from these tragedies. A review of the cardiac-related reports reveals a pattern of four primary themes that are related to medical evaluations:

- The firefighter didn't receive a medical evaluation
- The firefighter was cleared inappropriately by a health care provider who didn't understand the strenuous nature of the job or the environment in which it is performed
- The medical evaluation identified medical conditions that didn't prevent the firefighter from being "cleared for duty" but required follow-up (and usually the firefighter was told to follow up with a primary care physician) but the firefighter didn't seek follow-up care
- The medical evaluation didn't identify evidence of cardiovascular disease

Thus, to decrease the burden of cardiovascular disease in the fire service, we need to:

- Ensure that all firefighters get medical evaluations
- Ensure that firefighters are evaluated by knowledgeable physicians who understand the physiological strain of firefighting and the environment in which it is performed
- Ensure that firefighters use the information from their medical evaluations to manage their risk
- Ensure that firefighters are evaluated with the best screening tools that are available

Medical evaluations

NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments identifies the components of a medical evaluation and identifies medical conditions that make a firefighter unable to perform essential tasks without undue risk of sudden incapacitation. The NFPA 1582 medical evaluation is considered by most to be the industry standard as a baseline examination to ensure that firefighters are tested adequately. Several organizations have advocated for medical evaluations or produced resources to help to ensure that firefighters receive medical evaluations that are consistent with NFPA 1582.

Finding a health care provider who is knowledgeable about the physiological strain of firefighting and the environment in which it is performed can be challenging, but resources are available to help fire departments (see a list of resources on page A13). It is critical that department leadership recognize the importance of this step and, if necessary, work with the occupational health care provider to develop this understanding. That might mean providing resources, research or statistical data, or it might mean inviting them to a training fire.

Getting a medical evaluation is only the first step. It is like completing the on-scene size-up. If you do the size-up but don't use the information, then there was little benefit to the size-up. One of the primary objectives of a medical evaluation is to identify issues early, so they can be managed and the risk of cardiovascular disease can be mitigated.

A medical evaluation is like a 360-medical size-up. It allows a firefighter to identify medical risks, so they can be managed. This often entails the occupational health care provider clearing a firefighter for duty but noting that the individual needs to follow up with his/her primary care provider to manage a risk factor, such as high cholesterol, hypertension, obesity or sleep apnea. The occupational health care provider might clear a firefighter for duty, because the risk of "imminent" threat is relatively low, but also refer the firefighter for follow-up, because the health care provider



knows that the condition will escalate and create increasing risk if it isn't managed. Sometimes, firefighters mistakenly believe that if the occupational health care provider didn't provide a prescription or suggest additional testing, none is needed. The fact is, the scope of practice for the occupational provider doesn't include managing risk factors; that is within the scope of practice of a primary care provider.

Cardiovascular disease screening

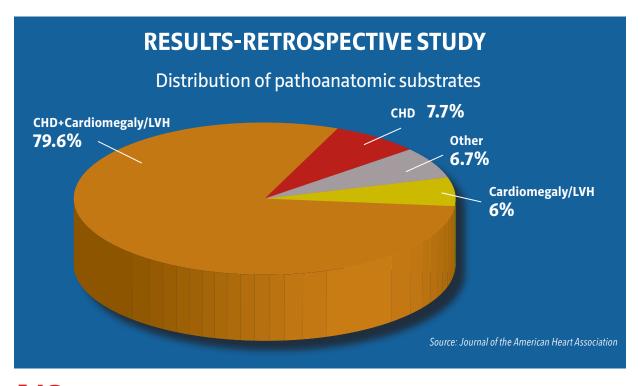
NFPA 1582 recommends that a risk score be calculated for firefighters who are 40 years of age and older based on standard cardiovascular disease risk factors that are shown to be predictive of cardiovascular disease mortality and morbidity. This approach has been the standard approach to screening in the general population for decades. However, some fire service leaders and researchers question whether there are better ways to screen firefighters, given the burden of cardiovascular disease in the fire service.

When considering what type of screening that firefighters should get, it is critical to know:

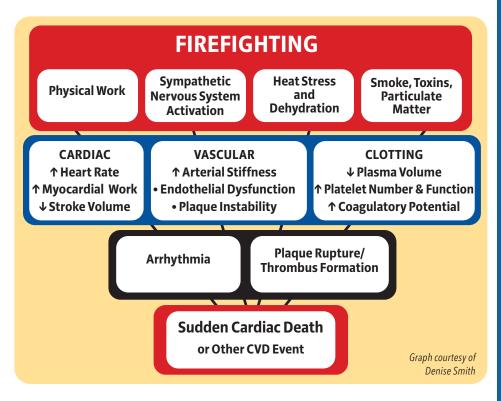
- What type of cardiovascular conditions are most prevalent in firefighters or are most related to cardiac events?
- What type of available testing could detect these conditions without undue risk or unreasonable expense?

Firefighting results in significant cardiovascular strain, affecting the heart, the vascular system and blood-clotting potential. Therefore, firefighting can trigger either a heart attack or a cardiac arrest in vulnerable firefighters. This is why it is critical that the occupational physician understand the stress of firefighting.

Although most firefighters consider sudden cardiac events to be synonymous with heart attacks, in reality, not all



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sudden cardiac events are caused by a heart attack. Sudden cardiac events also can occur because of arrhythmias. This distinction can be important, because different underlying cardiovascular abnormalities increase the risk for sudden cardiac events in these two conditions. Heart attacks occur most often when an atherosclerotic plaque ruptures and causes a blood clot (thrombus) that occludes a coronary artery, which leads to injury or death of the heart muscle. Cardiac arrest occurs when the electrical activity in the heart becomes so disrupted that the heart no longer can pump blood effectively. A cardiac arrest is more likely when the heart tissue is ischemic (not receiving enough blood supply) and or if the heart is enlarged structurally.

We recently worked with the National Fallen Firefighters Foundation to obtain all available autopsies for firefighters who died in the line of duty over a 20-year period. Those data showed that 80 percent of the cardiac fatalities had both atherosclerotic coronary heart disease (CHD) and cardiomegaly or left ventricular hypertrophy. Cardiomegaly means an enlarged heart; left ventricular hypertrophy means a thickened ventricle. These conditions increase risk of arrhythmias and sudden cardiac death.

The BETTER HEART (Building Evaluations That Translate Evidence and Research for Health Evaluations And Related Training) is an Assistance to Firefighters Grant project that seeks to synthesize:

- current medical understanding of cardiovascular disease (CVD) pathology and progression
- current screening and diagnostic guidelines for CVD
- evolving/novel screening and diagnostic tools for CVD
- scientific research about CVD in the fire service
- data from the NIOSH Fire Fighter Fatality Investigation and Prevention program and the Fire Service Joint Labor Management Wellness-Fitness Initiative of the International Association of Fire Fighters and the IAFC

The BETTER HEART research team has published papers on CVD risk factors in firefighters and how they change over time. They also have worked with a specially convened medical advisory team to consider recommendations that firefighters who are 40 years of age or older be screened for CHD using a coronary artery calcium score (which is relatively inexpensive, widely available and more accurate at detecting disease than risk factors alone) and for a structurally enlarged heart using echocardiography. The team plans to make recommendations to the fire service and occupational health provider community within a year.

Resources

International Association of Fire Chiefs (IAFC), "A Fire Department Guide to Implementing NFPA 1582" www.iafc.org

Firefighter Safety Through Advanced Research: A Healthcare Provider's Guide to Firefighter Physicals www.fstaresearch.org/ resource/?Fstarld=11591

Firefighter Safety Through Advanced Research: Emergency Services Road Map to Health & Wellness www.fstaresearch.org/ resource/?Fstarld=11624

The National Volunteer Fire Council position statement and website supporting annual medical evaluations www.nvfc.org www.nvfc.org/wp-content/ uploads/2017/04/NVFC-Position-on-Firefighter-Medical-Assessments.pdf

International Association of Fire Fighters/IAFC Fire Service Joint Labor Management Wellness-Fitness Initiative: www.iaff.org/wellnessfitness/

About the author

Dr. Denise Smith is a research scientist at the Illinois Fire Service Institute. She focuses on the relationship between heat stress and cardiovascular function. A significant portion of her research focuses on the cardiovascular strain that's associated with firefighting activity. Among Smith's work are several laboratory studies that were designed to identify specific components of firefighting activity (work performed, heat stress, sympathetic nervous stimulation) that are responsible for specific physiological responses to the combined stress of firefighting. She received her Ph.D. from the University of Illinois in 1990.

in the Fire Service

Understanding occupational risks for women firefighters is an evolving matter.

By Sara Jahnke

he past decade resulted in a large increase in the number of studies that were conducted regarding firefighter health. Some studies, such as in regard to what carcinogens are present on the fireground, are genderless. (The same chemicals are present whether you are a man or a woman.) However, studies that look at the effect of the job often need to take gender into account.

Given the low rate of women in the fire service, research on this population in particular is lacking. That said, there is increased interest in women firefighters, and studies are underway to understand how the risks of the job affect women in ways that are similar to and different from men who are in the fire service.

To better understand the current state of research on women firefighters and to map a future direction for research, the First Responder Center for Excellence, Women in Fire, and researchers from the Center for Fire, Rescue & EMS Health Research and the University of Arizona are organizing a virtual conference on the topic to share current research findings and future directions.

Cancer

Cancer is one of the most widely recognized risks of firefighting. Studies on men who are in the fire service find an increased risk 9-14 percent across all cancers, with the rate of some cancers being as much as double among firefighters (e.g., mesothelioma). Whether increased cancer risk is the same for women is less studied.

Although there has been some evidence that breast cancer is elevated among firefighters, the study that reported the most significant

Interested in attending the virtual conference? Visit https://bit.ly/2XQrUU1

Additional information will be provided closer to the date of the conference.



relationship looked at men. Given how rare breast cancer is among men in the general population, seeing a significant increase for men firefighters suggests rates for women firefighters likely are a concern.

Researchers in San Francisco are working on studies to specifically look at what carcinogens might lead to what is seen as a high rate of breast cancer in women firefighters.

Behavioral health

Behavioral health also is a concern for all firefighters and their organizations. Data from a national sample of women firefighters that were published in "BioMed Research International" in 2019 found that rates of behavioral health concerns, across the sample, were higher for women than they were for men, which naturally begs the question, is the job just too difficult for women to handle?

In looking at the data, however, it became clear that there were certain risk factors that women face that put them at higher risk–namely, experiences of discrimination and harassment.

When the researchers looked at who really suffers from behavioral health concerns, such as depression and posttraumatic stress symptoms, the incidence rate was vastly higher among those who experienced discrimination and harassment at work. Those who didn't were in the low category and had behavioral health profiles that looked remarkably similar to men in the fire service. The implications of discrimination and harassment also affected physical health; women who were in the medium and high categories also experienced higher rates of injury and more lost work days. (Read more about the research at https://www.hindawi. com/journals/bmri/2019/6740207/.)

The take-home message from the findings: When women are in the fire service and treated poorly, the treatment has very real and measurable negative effects on their mental and physical health. For women who are in the fire service who are treated fairly and with respect, they thrive just as well as men do.

Reproductive health

Reproductive health increasingly receives attention from researchers, departments, women and physicians who work to understand the risks that firefighting might play in women's reproductive health and the policy implications of the results. Fireground data suggest high levels of endocrine disrupting chemicals (EDC) that might have a negative effect on reproductive health. In a national study of women who were pregnant while they served as firefighters, it was found that firefighters have a higher rate of miscarriage and preterm labor across pregnancies than the general population. (Read the study at https://www.ncbi.nlm.nih.gov/pmc/ articles/PMC5918227/.)

Questions also exist around the safety of breastfeeding for women who are back to work postpartum. Initial data from the University of Arizona suggest that chemicals might persist in breast milk for 72 hours. A larger, more recent study by the team confirmed the results. Although data still are being analyzed, early recommendations that are based on the findings are that women who breastfeed might want to consider not responding to fires, to minimize exposure for their newborns.

Anecdotal data suggest that women firefighters also might experience early menopause at a higher rate because of chemical exposure and other occupational risk factors, such as shift work.

This work led to interesting questions about the effect of EDCs on the reproductive health among men, too. A Danish study that was published in the "American Journal of Epidemiology" in 2019 found that firefighters were nearly 50 percent more likely to seek fertility treatments than their nonfirefighter peers, which suggests that the negative effect of chemical exposure likely exists beyond just miscarriage. Whether these effects are because of epigenetic changes in sperm and whether the effect for both men and women extends to child health outcomes remain a question. (Read more about this study at https://pubmed.ncbi.nlm.nih. gov/30452532/.)

Physical injury

Injury among women firefighters has some similarities with injury among men firefighters in terms of types of injuries, with musculoskeletal injuries being the highest. However, early data suggest that one gender-specific risk factor that many women might face is ill-fitting gear.

Focused research efforts to understand gender specific risks are underway in two large cohorts. The National Firefighter Registry, a federally funded cohort of firefighters being directed by the National Institute for Occupational Safety and Health (NIOSH), will be specifically working to find a large sample of women to include in the cohort and track over time once they begin recruitment. The Assistance to Firefighters Grant (AFG) program, through its Research and Development mechanism, also funded a prospective cohort of firefighters that will be followed for the next several decades. The most recent grant to support the effort is designed to identify and enroll women in a large enough sample that statistical comparisons are able to be made.

The work on understanding the effect of occupational risks for women is in its infancy for the fire service, but similar to the work that has been done on men, it is growing at an exponential rate.

About the author

Dr. Sara Jahnke is the director of the Center for Fire, Rescue & EMS Health Research at the National Development and Research Institutes, Inc. She completed her doctorate in psychology with a health emphasis at the University of Missouri–Kansas City and was awarded the American Heart Association's Fellowship on the Epidemiology and Prevention of Cardiovascular Disease. Jahnke served as the principal investigator of several large-scale studies of the health and readiness of the U.S. fire service. She serves as a consultant to fire service organizations, including the National Volunteer Fire Council and the National Fallen Firefighters Foundation.

Better Sleep for Behavioral Health Design: Healthy sleep patterns can facilitate mental and emotional well-being of the crew. By Paul Erickson

or decades, firefighters have been all too familiar with the following scene: It's 1:42 a.m., and the alarm tone goes off overhead. Lights come on in a dazzling glare, and groggy comrades are startled awake and tumble out of their bunks. Everybody fumbles to get into their clothes and gear before stumbling down the hallway to the bay, trying to get oriented while listening for the details of the call. After 45 minutes or an hour (or two), the crew returns to the station and somehow attempts to get back to sleep. If the call involved trauma, that might be a hopeless cause. In any event, if the firefighter is able to return to sleep, another alarm might ring at any time and the process begins again.

The midnight call remains a daunting challenge to firefighter health and well-being in numerous ways. The anatomical shock to the system that's created by sudden loud tones and bright lights causes heart rates to race instantaneously to dangerous levels, raise blood pressure, and, over time, increase risks of a heart attack and life-threatening heart disease. Fortunately, such shocks have been ameliorated in recent years by the development of ramped alerting systems that reduce the audible and visual shocks to the human body.

However, disruption to natural sleep patterns and misalignment with regular circadian rhythms of day/ night cycles in recent years strongly were linked to mental and emotional health. Sleep deprivation, disruption and disorders variously were linked to impulsive behavior, anxiety, depression, paranoia and increased suicide ideation. Sleep deprivation also can compromise one's concentration, creativity, decision-making and problem-solving abilities. According to "Sleep and Mental Health" by Harvard Health Publishing, Harvard Medical School, "Although scientists are still trying to tease apart all the mechanisms, they've discovered that sleep disruption-which affects levels of neurotransmitters and stress hormones, among other thingswreaks havoc in the brain, impairing thinking and emotional regulation." Although historic fire station culture has evolved over time and gear no longer is stored at the bedside, much of the response scenario that's described above remains a reality for modern firefighters. Embedded in this group experience and narrative is the once ubiquitous and still common group bunkroom. In the last 10 years, architects and fire departments across the country have embraced evolving bunkroom design concepts to provide improved sleep, health and well-being for firefighters. A quick comparison of two fire stations in and near Washington, D.C., illustrates different approaches.

Group bunkroom

Scenario 1 involves Engine Company 16, which is a historic multistory station that was designed in 1932. It serves as firstdue to the White House. A recent modernization updated the entire facility and provided expanded sleeping, toilet and locker areas for the 14-person crew. Staying with the department's tradition, the District of Columbia Fire and Emergency Medical Services Department desired that the crew bunkroom be outfitted with low privacy walls for a pair of bunks in each sleeping bay and that separated toilet/shower/ locker rooms be provided for men and for women. The station is improved in many ways, but firefighters still are subjected to elevated levels of sleep disruption. When an alarm goes off, the entire crew is woken, whether they are needed to respond or not. Snoring and midnight trips to the restroom also disrupt sleep for others.

Private bunkroom suite

Scenario 2 involves Arlington Fire Station 8 in Arlington, VA. It is a replacement for a 60-year-old outdated and undersized station. The new station design features 12 private bunkroom suites. Each consists of a single-user bunkroom; a small, dedicated locker room; and a private, single-user restroom. The private bunkroom incorporates a ramped alerting system, so each member can set the tone to be activated in his/her room for only those calls that require response. This eliminates unnecessary sleep disruptions. Further, snoring and midnight restroom trips by others are eliminated. When the morning shift arrives, the separation between the bunkroom and locker/restroom allows the arriving member to store clothes for the day and use the restroom without disrupting the member who is asleep in the bunkroom. An additional benefit for behavioral health is the capability of the private bunkroom to serve as retreat or rehabilitation space, where meditation or private reflection can occur after a traumatic incident.

Although these two solutions reflect opposite ends of the design spectrum for bunkrooms, the importance of creating an environment at the station that facilitates healthy sleep patterns for mental and emotional well-being of the crew has become a central part of holistically healthy fire station design in service to those who serve others.

About the author

Paul Erickson, FAIA, is the president of LeMay Erickson Willcox Architects. Throughout his more than 40-year career, Erickson has been recognized consistently as one of the Commonwealth of Virginia's most acclaimed architects. He managed and designed award-winning projects and served the profession as: an active leader of the Virginia and Northern Virginia chapters of the American Institute of Architects (AIA); a juror for prominent design competitions; and a speaker at national conferences. In 2014, the AIA's Northern Virginia chapter presented him with the Award of Honor, which is the chapter's highest award. In 2017, Erickson was elevated by National AIA to Fellowship, which is the organization's highest membership honor.

5 TIPS for **BETTER SLEEP**

By Rachel Markwald

S leep is an important component to our overall health, and it affects how well we can think, reason and perform. The National Sleep Foundation and the American Academy of Sleep Medicine recommends adults over 18 years of age get between seven and nine hours of sleep each day. This sleep should be high quality, with minimal awakenings and disruptions. This can be challenging in today's 24/7 society, where work and family demands often compete with sleep as a priority, and stress easily can degrade sleep quality.

For those who work shift schedules, including firefighters and EMS personnel, sufficient sleep sometimes can feel like an impossible task. The good news is that there are strategies that you can implement that can help you to sleep better. For better sleep, try these five tips for shift workers.

Aim for consistency

Keep your sleep schedule (bed and wake time) as consistent as possiblethis includes your days off. Our brain is an association machine that constantly looks for and establishes new patterns around us. This is so it can be prepared and responsive to events in our environment. The more consistent that you are with your sleep schedule, the better that your brain will be at predicting when sleep will occur. This means that your brain will be more efficient at preparing your body for transitioning into and out of sleep. This might be trickier in a rotating shift work scenario. If your schedule rotates, try to get on a schedule immediately following the rotation and stick to it as best that you can until your schedule rotates again.

Avoid alcohol

Avoid alcohol consumption completely or at least minimize use and don't have any within three hours prior to bed time. Although alcohol might help you to fall asleep faster (it is a sedative), it robs you of the recuperative aspects of sleep by fragmenting your sleep and altering your sleep stages. This leaves you feeling less refreshed and with less energy the next day.

Optimal sleep environment

Set your bedroom up to be as ideal as possible for obtaining high-quality sleep. This means that you might need to replace old pillows or an old mattress. It is difficult to get high-quality sleep if you wake up frequently because of body discomfort.

Shift workers might need to sleep during the daytime hours. Blackout shades on windows, white noise apps or machines can help you to block out unpredictable environmental noises to create a more ideal environment for sleep to occur.

Finally, try to keep the bedroom as cool as possible by using air conditioning or a fan, if necessary. Although preferred sleeping temperature is individual, too much heat can be disruptive to sleep.

Relax before bed

Find a technique that helps you to slow down your heart rate and relax (e.g., breathing exercises, stretching, meditation) and practice often. One of the biggest reasons for difficulty sleeping is the inability to turn off the brain and relax. Mastering a technique, such as deep or slow-paced breathing, can help you to manage stress and worry before it affects your sleep. In shift work, the added challenge of needing to sleep during the daytime or at variable hours can make it even more difficult to transition into sleep. If you build this technique into a pre-bedtime routine that you do before sleep every day, this will help your brain to associate the technique with sleep.

Daily dose of activity

Find time to be physically active each day. Routine exercise can help you to get to sleep easier and sleep more soundly. If finding time to get to the gym or to attend a class is difficult, even just squeezing in a moderately paced 15–20-minute walk will help to support better sleep patterns. With shift work, find a time within your schedule that feels best for you and stick with it. Some people prefer to work out after they wake up and others prefer to squeeze it in over a work break. The timing of the exercise is less important as the regularity. The only caveat to this is that, for some people, exercise (particularly intense exercise) that occurs too close to bedtime can disrupt sleep. If you are one of these people, it is best to not exercise within two hours of your intended bed time.

When in doubt, remember these three things: habits, mindset and environment. Build healthy sleep habits and make them part of your routine. Prioritize sleep as though it's part of your training (it plays a critical role in your performance). Lastly, create an optimal sleep environment that will help you to get high-quality sleep.

About the author

Dr. Rachel Markwald is an expert in sleep science and provides education in sleep and circadian rhythms, with a focus on enhancing job performance and improving health outcomes. She studies how poor sleep raises the risk of accidents through effects on attention, learning, memory and decision-making. She has worked with military medical and line communities, competitive and recreational athletes and business executives. Currently, she directs a team of medical researchers that is engaged in addressing sleep and fatigue issues during the training and deployment of active-duty personnel.

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By Ralph Terrazas

After a near-miss roof collapse, the LAFD implemented new practices to improve firefighter safety.

> **Three LAFD firefighters** sustained injuries battling a major emergency fire on Sept, 19, 2018. It took 150 LAFD firefighters two hours to extinguish the flames. Photo by Mike Meadows



Editor's note: On Sept. 19, 2018, the Los Angeles City Fire Department (LAFD) responded to a fire in a commercial structure. Within minutes of arrival, the department experienced a significant near-miss event that involved serious injury to one of its newest members. Rather than take the incident in stride as "part of the job," LAFD Fire Chief Ralph Terrazas reviewed the incident and within 10 days ordered a top-tobottom cultural shift in the department's response to structural fires. The cultural shift preserved the LAFD tradition of aggressive fire attack while injecting new practices that are designed to improve firefighter safety and to avoid a repeat event that could lead to an irreversible tragedy. For more on this story, visit the NFFF's YouTube channel.

The Los Angeles City Fire Department (LAFD) responded to a reported structure fire at 2881 East Pico Boulevard at approximately 12:55 p.m. on Sept. 19, 2018. The occupancy, which was known as Passion Imports, was a business that stored apparel.

While assessing the need for ventilation, a partial roof collapse occurred; subsequently, two members of a ventilation team sustained burn injuries. One additional member from the ventilation team encountered a near-miss event that spurred our organization to change.

The first-arriving engine company reported a 100 x 80-foot commercial occupancy that had heavy smoke showing. The engine company deployed handlines to the A side of the building. The second company (first Light Force: one engine and one ladder truck) to arrive confirmed the size-up and ordered two additional Task Forces (each composed of two engines and one ladder truck).

The aerial ladder from the Light Force was thrown to the B exposure at the A/B corner of the building, and the four-member ventilation team (top member, tiller member, apparatus operator and inside member) ascended the aerial ladder and transitioned to the roof of the B exposure. The ventilation team walked parallel to the parapet, traveling along the Bravo side, toward the B/C corner of the exposure. Fire was seen coming from one vent, and heavy pressurized smoke was coming from all other roof orifices.

The top member and tiller member stopped, donned their facepieces and connected to supplied air while the apparatus operator (A/O) and inside member continued on their path along the parapet wall of the exposure building (along the division wall). When the A/O and inside member reached a point on the roof that was determined to be safe for an assessment for ventilation (second truss), the inside member sounded the roof from the exposure onto the involved structure. He continued to sound until the member was approximately 10 feet from the parapet. The inside member determined that the roof was unsafe, turned around and traveled back to communicate roof conditions to the A/O. When the inside member was approximately 2–5 feet from the division wall, the roof suddenly collapsed, falling away from the division wall and hinging on the A wall.

The inside member leaped for the parapet as the roof fell away and grabbed onto the bearing wall, where he held on until rescued by the A/O and tiller member. The A/O and



Within 10 days of the near-miss roof collapse, the LAFD implemented a top-to-bottom cultural shift in the department's response to structural fires. Photo by Mike Meadows

tiller member were able to pull the inside member to safety onto the exposure building roof.

Simultaneously, the top member, who was positioned on the involved structure, "rode" down with the surface of the roof as it collapsed. Under heavy smoke and fire conditions, the member attempted to self-extricate by walking up the partially collapsed roof to the A/B corner of the involved structure, eventually noticing blue sky and jumping up to grab onto the parapet. At some point between roof collapse and self-extrication, the member removed the glove from his left hand and depressed the emergency alert button on his handheld radio.

The tiller member-the only witness to the top member's location-assumed that the member fell through the roof to the inside of the structure. The tiller member informed the A/O, who initiated a mayday two separate times. The initial mayday was "covered" by other radio traffic. The second mayday was acknowledged by the Motorola Emergency Tones that were initiated by the incident commander (IC). The A/O communicated to the IC that, "... the top member has fallen through the roof into heavy fire ..."

After communicating the mayday, the A/O noticed the helmet of the top member appearing from the involved structure near the A/B corner. The ventilation team pulled the top member over the parapet onto the exposure. The A/O notified the IC that the member was found and requested assistance with getting the member down from the exposure. A paramedic rescue ambulance was assigned for treatment and transportation.

An additional Light Force was assigned and assisted the top member down the aerial and into the transporting RA. The top member was transported to the nearest trauma center that has a burn ward. The remaining ventilation team was transported to the same facility for evaluation and assessment of injuries.

The top member suffered second- and third-degree burns to multiple areas of his body, including his hands, fingers, ear, leg, ankle and arm. The A/O suffered seconddegree burns to the hand. The LAFD concluded that PPE and SCBA that was worn by the members prevented further injuries.

Responding to a near-miss

The trademark of the LAFD always has been aggressive interior fire attack with coordinated vertical ventilation. We realized from this incident that the firefighting landscape changed; therefore, our approach and tactics needed to change.

All-hazard incidents are more complex, building construction evolved, existing buildings are aging, and products of combustion burn more quickly and intensely because of the materials that are being manufactured.

This results in violent fires and firefighter near-miss incidents becoming more commonplace. These types of incidents require a more methodical approach to our job.

It is imperative to the success of our mission that we recognize the changing structure fire environment we are called to operate in. Although we might fight fire aggressively, we must do it intelligently. Whether we respond to a structure fire, brush fire or any all-hazard incident, we must be progressive in identifying and managing the risks that can hurt or even kill us.

Based on this incident and fulfilling a promise to protect our members, the LAFD introduced a three-step All Hazard Emergency Incident Decision Making Process, so there is a consistent template that every firefighter can utilize for all emergency incident responses. The three steps to the process are:

Step 1. Gain situational awareness

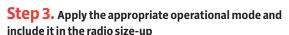
- Time, occupancy type, location
- · Conditions upon arrival

Step 2. Conduct risk assessment/risk profile

- · Rescue profile-Significant risk to save lives
- Property profile-Moderate risk to protect property
- · Exposure profile-No risk (lives or valuable property are not at risk)



The top member suffered second- and third- degree burns to multiple areas of his body. Photo courtesy of LAFD



- Offensive mode (may include transitional attack)
- Defensive mode
- Investigative mode

Upon arrival at a working incident, it is crucial that the operational mode is stated clearly by the first-arriving unit, so all resources that are on scene are in alignment with the stated mode. The operational mode wasn't clear on the Pico incident. While some of the firefighters were in a defensive mode, the ventilation team and others were in an offensive mode.

The operational risk management (ORM) process is cyclical. The IC shall continue the evaluation process throughout the incident to identify and communicate via radio any change in the operational mode. Conditions, resources and duration of the incident should be the primary factors when evaluating a change in the operational mode.

The LAFD supported this transformational change in policy by providing clear direction, education and training. Some of the tools that we used to develop our department's and members' abilities to effectively apply this ORM process included:

- Safety Stand Down on Oct. 1-3, 2018
- Updated departmental bulletins
- Updates to Book 30 command procedures
- Training programs
- LAFD Risk Management Policy (outlined below):

1. Activities that present a significant risk to the safety of the members shall be limited to situations where there is a potential to save endangered lives

2. Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of the members and actions shall be taken to reduce or avoid these risks 3. No risk to the safety of the members shall be acceptable when there is no possibility to save lives or property

Additionally, we provided safety issues for all members to review:

- Maintain radio discipline and clear the channel when a mayday is in progress
- Utilize the Divisional Tactical Channel when checking in (rather than the Incident Tactical Channel)
- Always maintain company unity when working in an immediately dangerous to life and health atmosphere
- Review mayday procedures

Our immediate change in policy provides a safer operating environment for our firefighters. The first-arriving officer announcing the mode of operation is a new normal standard operating procedure. We continue to review significant incidents, so we can provide enhanced situational awareness to our firefighters.

LAFD will continue to be known for aggressive interior fire attack with coordinated vertical ventilation but will be known equally for intelligent engagement of all-hazard incidents while employing effective, safe operational risk management principles, so "Everyone Goes Home."

About the author

Ralph M. Terrazas was confirmed fire chief of the Los Angeles City Fire Department (LAFD) on Aug. 8, 2014. Terrazas is a 36-year veteran of the department and is the 18th fire chief of the LAFD. Prior to his appointment, he served as a chief officer for 14 years in a variety of field and administrative assignments, including: Battalion 18, Battalion 7 and South Division. He holds a bachelor's degree in public administration and a certificate in fire protection administration from San Diego State University. In 1995, he received a master's degree in public administration with an emphasis on human resource management from California State University, Los Angeles.

Firefighter Life Safety Initiatives

engage in combating wildfires.

By Christopher Baker

When the call comes for an immediate-need strike team assignment, wildland firefighters respond within a moment's notice, sometimes only with their out-of-county bags. Also referred to as red bags, these bags are packed with essential survival items for a 14-day assignment. Depending on the operational assignment, these red bags are weighed and have flight limitations for helicopter crew shuttle operations.

Wildland firefighters must be very selective with what they can carry with them on an incident. Some of the essential items include their PPE; a portable Bendix-King radio; an incident response pocket guide (IRPG); meals-readyto-eat; a basic first-aid kit that includes moleskin for blisters; several pairs of high-quality cotton socks; and a web gear harness complete with fire shelter. In addition to these items, every wildland firefighter is issued a hand tool to suppress a wildland fire, and this hand tool is their particular tool order on the handline.

When wildland firefighters disembark their apparatus, they leave the pavement behind and enter the fray, sometimes miles away from civilization. The only barrier that's between the fire's edge and civilization is the constructed handline. Their faces are dirty from breathing in smoke, and their packs are heavy, as they cut one lick at a time. They keep their head on a swivel and maintain their situational awareness. The wildland environment can be exceptionally dynamic because of an insidious coupling of topography, fuels and weather, which gives rise to rapid, and sometimes overwhelming, fire behavior.

Wildland firefighters are trained to be heads-up with micro-changes in weather conditions. Another item that they carry in their web gear harness is a belt weather kit. This kit enables them to sling the weather and measure both temperature and relative humidity. There is a distinct philosophy that's molded into wildland firefighters: be informed on the correlation between fire behavior and weather conditions. While they take one lick at a time on their constructed handline, wildland firefighters are empowered to communicate increases in wind speed and/or changes in wind direction.

With one foot in the black, these elite and highly trained firefighters combat the smoke and battle the flames to protect life and property, the latter increasingly more because of society's desire to live as close to nature as possible. Wildland firefighters can recite by memory their 10 standard fire orders and the 18 situations that shout, "Watch out!" Wildland firefighters also must keep their LCES (Lookouts, Communication, Escape Routes and Safety Zones) intact. LCES is crucial to safety in the wildland environment.

An emerging key to safety in the wildland environment is the 16 Firefighter Life Safety Initiatives (FLSI), which were developed by the National Fallen Firefighters Foundation (NFFF) at the 2004 Firefighter Safety Summit. The initiatives were re-interpreted for the wildland community by respected The 16 FLSIs provide support to the wildland firefighter in nearly every aspect of the discipline, from supporting a culture of managed risks to encouraging homeowners who are in the interface to take a greater responsibility for their fire safety.



wildland firefighter and Wildland Firefighter Foundation Board President Steve Gage in 2018 to clarify their relevance to wildland firefighters and provide additional safety resources to support the 10/18/LCES.

Put to practice

Wildland firefighters can use elements of the various initiatives as they prepare for and engage in combating wildland fire. The 16 FLSIs provide support to the wildland firefighter in nearly every aspect of the discipline, from supporting a culture of managed risks to encouraging homeowners who are in the interface to take a greater responsibility for their fire safety.

The IRPG that's carried by wildland firefighters establishes standards for wildland fire incidents. The IRPG also provides critical information on operational engagement and risk management. It provides a collection of best practices that have evolved within the wildland fire service, many of which were developed after a line-of-duty death. This is where a direct correlation can be drawn between the best practices identified in the IRPG and the 16 FLSIs that are defined by the NFFF.

When we compare the 16 FLSIs with the 10/18/LCES, we find mutual support and possibly even some "new" material to generate the impactful discussions that emerge from the experience of the wildland firefighter. Each FLSI can be a vehicle to create an opportunity for new conversation with fellow crew members. FLSI #1 Cultural Change is one example. The initiative states, "Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility." Multiple elements from this initiative can be used to launch conversation during a "6-minutes for safety" discussion or a tailboard safety huddle. Deeper discussions can be introduced during community meals and other gatherings.

How has cultural change affected you and/or your career as a wildland firefighter? The answers are many if you have even a few years on the fire line. Answers could include everything from how you wear your PPE to the way that you pack your out-of-county bags. Other possible topics of discussion could range from the type of socks that you wear (blister management and foot comfort) to how you were taught to sling the weather.

These discussions ultimately allow the opportunity to pass on information and subtly create a more positive safety culture for your fellow firefighters. Do you remember when a senior firefighter shared the contents of his/her red bag and how that individual packed everything to survive out on the line? Seemingly innocent discussions such as these exemplify how one can influence others to look at the wildland fire discipline with a more critical eye to safe and effective operations.

Bridging the gap

The NFFF is creating positive improvements by strengthening relationships within the wildland community and facilitating dialogue with interagency partners. Over the past three years, the NFFF held listening sessions in several locations, invited interagency partners to share their unique perspectives, rewrote curriculum to make it more relatable for wildland firefighters and collaborated with the Wildland Firefighter Foundation to take care of the families of wildland firefighters who were killed in the line of duty.

The NFFF has gleaned a unique perspective of wildland firefighters and listened to their experiences from out on the line. Through these listening sessions and interactions, the NFFF has harnessed some of its energy to better serve the wildland firefighter. The NFFF is committed to continuing and strengthening partnerships with the wildland community as it searches for new approaches to mitigate risk and to address the critical health and safety issues that affect wildland firefighters.

For more information on the NFFF's Everyone Goes Home Program[®] in the Wildland, visit https://www. everyonegoeshome.com/resources/wildland/.

About the author

Christopher Baker is a volunteer advocate, Region IX advocate manager (Arizona, California, Hawaii, Nevada) for the Everyone Goes Home Program[®] through the National Fallen Firefighters Foundation. He serves as a volunteer member of the International Association of Fire Chiefs (IAFC) Safety, Health and Survival Section, serving in their staging area. Baker previously served as a member of the 2018 and 2019 Safety Stand Down committees. He is certified as a health and safety officer (HSO) through the Pro Board. Baker was a wildland firefighter with CAL FIRE. Personal stories remember those who fell in the line of duty.

The Power of

By Jon Nelson

Illustration by Getty/Faysal Ahamed

A s a newly designated move-up officer at my fire department, the last thing that I want to do is get a member of my crew (or myself) killed or badly injured on the fireground. My coursework in education drove me to find the best resources for enhancing my professional development, education and safety to protect all of us. I decided that studying the National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation Reports would be an excellent way to learn from the tragic, unintended outcomes of the fire service's past.

While reading one of the more recent line-of-duty death (LODD) reports from central Texas, I began to formulate more questions than answers. Why was the decision to make entry made? Did the fire look offensively winnable upon arrival? Which company forced entry into the structure? Why did two firefighters make entry while the officer stayed far away at the command post? Is that common practice for that fire department? I had other questions, too-about the direction of the search team, the tagline/hoseline, the cause of the roof collapse, the generation of the mayday call, the positions of other companies and their officers, the RIT response ... My head was spinning.

I read the report a second time, that time taking specific notes to ensure that I didn't miss any details that provide answers to my questions. I implored my crewmembers to read it. The ones who did came back scratching their heads as well. The NIOSH report does a great job of addressing the immediate information and details of the dispatch transcripts, but what about the people who were there? What were they experiencing? My crewmembers and I wanted more information, so we could process and apply real-world actions and make more informed decisions on future fire calls.

With this guiding need as well as a background in sound production and education, and given the popularity of podcasts, I decided to create a podcast series that's dedicated to remembering fallen firefighters and that seeks to answer the unanswered questions.

Beginning of a partnership

To pursue this endeavor, my wife and I believed that we needed a respected partner with a solid reputation of remembering the fallen. I scoured the internet and discovered the National Fallen Firefighters Foundation (NFFF).

In our initial communique to the NFFF, we outlined a proposal for "After the Fire" and explained the model behind our LLC, firefighterskills.com. We wanted to remember fallen firefighters and dig deeper into the circumstances that surrounded their tragedies through interviews of those who were the boots on the ground (wherever possible) and of subject matter experts who were connected to an incident. We humbly requested their partnership and hit "Send" on the NFFF contact page, hoping that someone on the other end would respond positively.

Our hopes were answered when we received an email from the NFFF's managing director, Victor Stagnaro, who connected us with the NFFF Fire Service Programs Director John Tippett. It turned out that the NFFF was kicking around the idea of creating a podcast for a couple of months prior to us contacting them.

The Fire Service Programs Division's dual mission of remembering the sacrifices of the fallen and developing programs to prevent LODDs provided the ideal platform for us to forge a partnership. Building on a concept of "learning from the past to preserve life in the future," we decided to start our development of content with historical LODDs that had relevant messaging for today's firefighters. This conclusion was based in part on observations that were made during brick sorting activities at the NFFF's Walk of Honor Memorial at the National Fallen Firefighters Memorial in Emmitsburg, MD. The convergence of all these factors truly was opportune.

Thirteen bricks that honor firefighters from Brockton, MA, had the same date: March 10, 1941. The date, location and incident were unfamiliar to everyone. This raised our curiosity and set us on a path for the first "After the Fire" podcast. An internet search revealed that the incident was the Strand Theatre Fire, and a local historian authored a book about the tragedy.

I called the Brockton Fire Department (BFD) and was put in touch with retired Brockton fire chief and local Brockton fire authority, Kenneth Galligan. Galligan was more than happy to be involved, having worked with some of the tragedy's survivors. He offered to connect us with historian Nicole Casper, who co-authored the book about The Strand Theatre tragedy with the late James Benson. Furthermore, Galligan suggested we invite retired BFD Capt. Joseph LaCouture. The captain experienced a near-miss in 1977 when knee wall/truss construction hid fire that caused a ceiling collapse, which nearly killed him. The value-added here is that the issue still is present in today's cities and was a contributing factor to the Strand Theatre tragedy. Casper arranged for access to a podcast studio and production assistant from Stonehill College.

We arrived in Brockton on the evening before recording and pre-gamed the podcast with Galligan and his son, Kevin, who serves with BFD as deputy chief. The following morning, the Galligans provided us with a tour of the Brockton Fire Museum, an introduction to Fire Chief Michael Williams, a visit to the solemn Strand Theatre Memorial and a bonechilling walk around the site where the Strand Theatre once stood. This value-added component gave rise to the idea of an "extras" page of materials to support the podcast (firefighterskills.com/afterthefirepodcast and on Instagram @firefighterskills). The following day, we met on the grounds of Stonehill College.

The discussion blew us away. We had so much great information that we decided to make two episodes: The 1941 Strand Theatre Fire and the 1977 Near Miss of Captain Joseph LaCouture.

Phoenix Fire LODD

The initial response to the first two episodes was outstanding, so we pressed onward with episode three: the sacrifice of Phoenix Fire Department (PFD) Hazmat Engineer Ricky Pearce in the 1984 Toluene Explosion. From a macroperspective, this LODD changed the fire service in several ways. The PFD's open-door approach to the tragedy set the stage for how the fire service reports tragedies and shares lessons. This was the first LODD to be televised/recorded on video and publicly shared.

The late Phoenix Fire Chief Alan Brunacini led an effort to get the word out about the tragedy, so other departments wouldn't suffer the same fate. PFD's response to this unfortunate event was groundbreaking. With the full support of Chief Kara Kalkbrenner and the PFD, this "After the Fire" podcast consisted of a discussion with co-workers and family members who were directly affected by the incident.

Retired Capt. Tom Bates was Ricky Pearce's captain on scene that day. Chris Pearce, who is a hazmat/rescue captain with PFD, and Ricky's son, was six years old at the time of his father's death. Retired PFD Special Operations Deputy Chief Ron Jamison and Surprise, AZ, Fire-Medical Department Chief Tom Abbott joined the panel. Both are well-respected hazmat/confined space rescue gurus, and both directly were affected by this LODD. They provided invaluable insight into what happened in the aftermath of the event.

The Phoenix discussion is arguably our most powerful to date. Bates and Chris Pearce recalled Ricky as a co-worker and a father, adding a uniquely human touch to the tragedy. Bates gave a heart-wrenching recollection of the events that unfolded on that day and their effect on him. Jamison and Abbott spoke of PFD's initial response to this event. Everyone weighed in on how much this event immediately affected the industry and the ripple effect that we still experience today via more open and forthright injury and LODD reporting.

Perhaps most powerful was Bates thanking us for inviting him. He said that sitting down and talking about this event in a constructive and honoring manner was great therapy for him. Our intent with the podcast was to honor, learn, teach and grow. However, Bates' words provided us with a humbling observation about the power of the project. We hope to continue the work for many years to come.

More to hear and discuss

The pride and history of the BFD and the PFD and their communities were like nothing I ever experienced. I walked away enlightened, having a heightened awareness of the dangers that are around me, and with a renewed sense of pride in being a firefighter. Most importantly, we were able to honor these fallen heroes and ensure that their sacrifice and the sacrifices of their families were remembered. "After the Fire" brings history to a new audience of firefighters while preserving the memory and contributions of ordinary men and women who gave their life in service to their communities.

There are so many more stories to hear, discussions to be had and tributes to pay. "After the Fire" plans to continue traveling our nation, uniting the fire service through diligent research, compassionate storytelling, and sharing stories of courage and sacrifice.

Future plans call for podcasts that remember: the 1987 LODD of Columbus, OH, Division of Fire Firefighter John Nance; the 1992 LODD of Denver Fire Department Engineer Mark Langvardt; and the 1998 Vandalia Avenue Fire LODDs of FDNY Lieutenant Joseph Cavalieri, Firefighter James Bohan and Firefighter Christopher Bopp.

You can access "After the Fire" wherever you get your podcasts or at everyonegoeshome.com, firefighterskills.com/ afterthefirepodcast or firehero.org. Help us continue to honor our heroes, grow and spread the message of safety and wellbeing, and lift up those who support and love the fallen.

About the author

Jon Nelson, M. Ed, is the president of firefighterskills.com, LLC, and the host of "After the Fire" podcast. He is a fire engineer in Austin, TX, and has served as a firefighter/AEMT for nearly a decade. Nelson is a Level III Master Fire Instructor in the state of Texas and has extensive experience as a fire and EMS educator of first responders, health care workers, cadets and civilians. He has a bachelor's degree in music from West Virginia University and a master's degree in education from Boston University.

NFFF Uniformed Outreach Programs The Chief-to-Chief Network is one of numerous programs that

support those who carry the burden of responsibility.

By lan Bennett

to by Glen F

hen a firefighter dies in the line of duty, fire departments customarily respond with an outpouring of support to ensure that the family is taken care of and that the firefighter is honored appropriately. Afterward, firefighters assist each other through the healing process and, at times, utilize available peer support and behavioral health resources. However, certain positions within the organization can become isolated through the grieving and recovery phases because of a wide range of unique emotional, personal, political, social, legal and relational aspects. Only someone who experienced such an event truly can relate to these situations.

To address the distinct need to support these individuals in their healing and recovery, and in an effort to ensure that no one has to "walk alone" after a line-of-duty death (LODD), the National Fallen Firefighters Foundation (NFFF) developed several uniformed outreach program initiatives. These programs are generously supported by a grant from the Public Safety Officers' Benefits (PSOB) National Law Enforcement Survivor Support and National Firefighter and First Responder Survivor Support Program.

Chief-to-Chief Network

Several years ago, the NFFF created the Chief-to-Chief Network in response to a need that was expressed by fire chiefs who lost a firefighter in the line of duty. (The chiefs shared that they felt very isolated after the death of a firefighter, and they had no one to turn to for advice and support.) This program consists of a network of fire chiefs who have one thing in common: They all experienced the death of a firefighter in the line of duty and understand what the fire chief and the department goes through. Fire chiefs who call for assistance are matched with a peer based on

criteria that includes department size, location, type and nature of incident.

In addition to the Chief-to-Chief Network, the NFFF hosts a small group session during its annual Memorial Weekend for fire chiefs who lost a firefighter in the line of duty during the previous year. These sessions provide an opportunity for these chiefs to discuss the incident and what they went through (and still are experiencing) with peers who also experienced an LODD. Facilitators and behavioral health personnel guide the discussion and offer perspectives and assistance as needed.

A program for ICs

The Co-Worker-to-Co-Worker group session during Memorial Weekend is for other fire service members who lost a firefighter. It came to light that this session, although helpful, didn't address some of the unique aspects of other fire department leaders/supervisors (i.e., incident commanders and company officers) who were involved in an LODD. The NFFF reacted to this feedback by recently initiating the development of the Incident Commander-to-Incident Commander Program. The goal of this program is to provide resources, support and guidance on how to navigate the aftermath of an event that forever changes the incident commander (IC) and the department.

In June 2019, the Denver Fire Department hosted 24 ICs who experienced an LODD, so they could share their journeys and create an outline of what this program should encompass. Key development elements identified by this group include:

- A peer network to connect ICs who recently experienced an LODD with a trained peer who lost a firefighter under his/her command
- An educational program to prepare ICs for an LODD
- An annual support group seminar that's held during





Memorial Weekend for ICs who experienced an LODD during the previous year

• Ongoing support programs for all ICs who have experienced an LODD

The Denver cohort examined their experiences to develop the criteria for the educational portion of this program. They identified the essential learning focus areas as: addressing the potential psychological and operational effects of the LODD; meeting the needs of surviving family and of department members; handling media scrutiny; participating in a review of the operation and the IC's role, including potential litigation; and accessing additional behavioral health support if needed.

A subgroup of the cohort worked with NFFF staff and Stonehouse Media to create a 60-minute educational module that's available on the Fire Hero Learning Network (FHLN) website at fireherolearningnetwork.com. Current and future ICs can view this presentation and develop a knowledge base of what to expect if they experience the unfortunate occurrence of losing a firefighter under their command.

Tampa, FL, Fire Rescue hosted the cohort in December 2019 to prepare these individuals for providing peer support. Presentations in the areas of behavioral health and stress first aid were delivered to ensure that participants were familiar with concepts of assisting others. Practical scenarios were conducted for each person to ensure that he/she was comfortable applying the learned concepts. The result of this initial training and continuing education is a very knowledgeable and committed network of individuals who are ready and willing to provide peer support to ICs who experience an LODD. The program officially launched in May 2020 and already provided several instances of peer support, which were very well-received.

The program isn't limited to current LODD events. ICs who lost a firefighter in the past also may contact the group through https://www.firehero.org/resources/department-resources/programs/ic-to-ic-network/ or by email at ibennett@firehero.org, to be put in touch with a peer.

The first IC small group session was held during the Memorial Weekend in October 2019. Several personnel from the IC cohort joined a group of ICs who experienced an LODD in 2018. Facilitators and behavioral health personnel guided the discussion and the result was an outstanding experience for individuals to share their stories and learn from others who went through similar circumstances. Contacts were made, and discussion and connections between participants extended well outside of the session.

The last piece to the IC program is ongoing support opportunities. The intent is to organize regional gatherings for ICs who experienced an LODD. These sessions give individuals an opportunity to network and to share their experiences and lessons learned. Educational sessions in the behavioral health arena also assist with the healing and recovery process. In addition, this is an opportunity to identify potential peer support personnel to further build the IC network and to ensure a robust cohort to assist others.

Company Officer-to-Company Officer program

As with a fire chief or an IC, the company officer of a firefighter who is killed in the line of duty can find him/ herself with a unique perspective, which results in an isolated and or shunned position. Keying off of the success of IC-to-IC, the NFFF organized a group of 21 company officers who experienced an LODD to help to develop the company officer program. The San Antonio, TX, Fire Department was set to host this meeting in May 2020. However, this meeting was postponed because of fallout from the COVID-19 pandemic. A virtual kick-off was held via Zoom in June 2020, and additional virtual sessions are in the works pending rescheduling of the in-person seminar to develop this critical fire service outreach program. We expect the elements of the program to be similar to those of the IC program.

Co-worker-to-Co-worker program

The NFFF will continue to host a small group session during Memorial Weekend for co-workers who lost a fellow firefighter. Like the chief and IC sessions, these discussions are guided by facilitators and behavioral health personnel for firefighters to share their experiences and network with one another.

Future plans

The rescheduling of the company officer program will be a priority once travel restrictions are lifted and the size of the group can be accommodated under health guidelines. This is a definite identified need in the fire service to assist with supporting personnel after an LODD.

In addition, we plan to re-examine the chief program to see whether the elements that were identified in the IC program are appropriate for development and implementation for chiefs. We have begun the process of identifying a cohort of fire chiefs who experienced an LODD to assist us in assessing the current program and developing elements to better assist other chiefs.

An LODD forever changes an organization. In addition to taking care of the Fire Hero Families, the NFFF is here to support the department and its members as well as to help them to navigate their difficult journey to a "new normal." For more information on LODD resources for departments, visit the Fire Service Programs page on the NFFF website at firehero.org/resources/department-resources/programs.

About the author

Ian Bennett is the National Local Assistance State Team (LAST) coordinator for the National Fallen Firefighters Foundation. He retired as the fire chief for the city of Harrisonburg, VA, after 33 years in the fire service, serving departments in Virginia, Colorado and Alabama. He holds a bachelor's degree from James Madison University and completed the Executive Fire Officer program through the National Fire Academy.

New FIRE CHIEF with a MISSIO It's our responsibility to ensure that Everyone Goes Home.

By Joanne Rund

oday's emergency response world is much different than when I arrived in 1986. Back then, it was OK to go into a burning building without a facepiece, breathe smoke, get all sooty and basically be what they used to call a "smoke eater." I never really thought it was smart to do those things then, but that is what we did, and I wasn't going to push the envelope to make the "wrong kind" of name for myself.

However, as I grew in my career and in self-assurance, and found others who have my mindset, I realized health and safety on the job was a very important part of being able to enjoy the longest career possible and to have a vibrant life outside of the emergency services profession. As I moved up in my career, I wanted to improve on what others had done before me and make a difference. I wanted to provide the best protection that I could for all our personnel and to get them the best training that I could, so they would know how to protect themselves. I promoted as far as I could in my first department and was very thankful for the opportunities that were afforded to me. However, I felt compelled to do more and was at the end of where I could go.

I decided to submit applications to other departments to see whether I could become a fire chief somewhere and have a big effect on another department. I was lucky enough to become the chief in a neighboring jurisdiction that I knew. We ran mutual aid with them, and they were the "big brother" department that we looked up to as I climbed the ranks. One of my goals as the new chief was to set high expectations of the team when it came to health and safety. I have been fortunate enough to work with health and safety programs my entire time as an officer. This being my passion, I made a choice that it would be a large part of everything that I do as I embrace the much larger task of being fire chief.

Photo by Gett Henrique NDR Martin

Education to advocacy

I worked very closely with the National Fallen Firefighters Foundation (NFFF) Advocate Program for the past 10 years as I moved through the ranks of my former department. I began working with the NFFF after attending "Courage to be Safe," "Leadership so Everyone Goes Home" and "Taking Care of Our Own" courses. Those three programs affected me in ways that had me ask one of the presenters how I could get more involved with NFFF's work. Their passion for firefighter safety and the sincerity of their deliveries inspired me to want to do more. The presenters were very quick to tell me how I could apply and become an advocate. Soon after, I was working across the state of Maryland educating people on the same programs that those instructors delivered with such earnestness. Each delivery inspired me even more, and the responses to the deliveries told me that I was having an effect outside of my department. My responsibilities with the



6 As a fire chief, I believe that it is important to convey to the members how much they mean to the organization. I can't think of a better way to send that message than to use the tools that were developed by and available through the NFFF. **9**

Advocate Program grew into state level advocate leader, then regional advocate coordinator.

My affiliation with the NFFF also exposed me to opportunities to work with the Fire Hero Families Program, where I've witnessed firsthand the effect of a firefighter's line-of-duty death (LODD). Interacting with these families has redoubled my commitment to laboring for every firefighter to return safely from every call. The NFFF, like few other organizations that I know, deals with the magnitude and effect of a firefighter fatality. I plan to continue my journey with the NFFF in an advocacy effort. As a fire chief, I believe that it is important to convey to the members how much they mean to the organization. I can't think of a better way to send that message than to use the tools that were developed by and available through the NFFF.

A training support system

One of the "threats" I identified after evaluating my new department was members weren't afforded many training opportunities unless they sought them on their own. We needed to build a training support system within. The department has a training academy, but staffing is so minimal that it is all that they can do to keep up with the academy programs and mandated recertification programs. So, I asked myself, "As chief, how do I do more with less?"

My thoughts immediately went to the NFFF's Fire Hero Learning Network (FHLN). The online platform offers 14 selfpaced, one-hour programs that include: communication and mentoring for company officers; a primer on automatic fire and sprinkler systems; responding to violent incidents; a roundtable on creating change in the fire service; and what incident commanders can expect if they suffer an LODD. The training is diverse, cost-free and available 24/7. It provides a certificate of attendance and can be used as a springboard to more in-depth, in-person classroom deliveries further solidifying the department as a cohesive unit.

With that, I put together a chief officer homework project. The goal of the project was to have the chiefs take specific programs on the FHLN that would introduce them to the various modules and to ease of system use and begin to stimulate the leaders' minds to focus in the direction of health and safety. I had my leadership team begin programs that I found to be particularly insightful, those with a keen focus toward reducing LODDs. I sent out my expectations to my new team and gave them a deadline for completion. The interesting thing that I found while on this journey with my officers is that they weren't aware of the wonderful programs that the NFFF offers and of just how much educational opportunities that were developed by the Foundation. I educated them on the training programs, the NFFF and the mission.

I have been getting great feedback from my team. They are very excited about the direction in which we are heading. As with many new chiefs and programs, this one needs continued nurturing for it to become more than just a passing fancy. I'm pleased to report that many members of my leadership team quickly completed their training requirements and are excited about the prospect of bringing in the more in-depth instruction. I have worked with the NFFF's advocacy leaders to set up a schedule for instructor-delivered programs. Unfortunately, the COVID-19 pandemic stalled plans, but my leadership team and I are undeterred. Once we can safely bring groups of people together, we will begin instructor-led deliveries of "Courage to Be Safe," "Leadership, Accountability, Culture, and Knowledge (LACK)," "Leadership so Everyone Goes Home (LEGH)" and other courses. I hope to light that same passion within my command staff that I have regarding the health and well-being of all our members, both career and volunteer. I will be working with our volunteer system to introduce them to the programs and to afford them the very same training opportunities.

Future plans call for using the NFFF's Vulnerability Assessment Program (VAP) to assess our strengths and weaknesses, to develop work plans that are based on the VAP results to solidify our strengths and to address the weaknesses. Finally, my vision includes adopting the 16 Firefighter Life Safety Initiatives as department doctrine, so the members of the Baltimore County Fire Department will have a vetted, comprehensive program that provides them with the freedom to do their job, the confidence that my leadership team and I are looking out for them, and the knowledge that their safety and well-being is paramount.

This is a never-ending but very fulfilling journey that I embarked on as a payback to those who mentored me and as a promise to do all that I can as fire chief as part of my responsibility to assure "Everyone Goes Home."

About the author

Joanne Rund, who began her career in 1987 in Howard County, MD, recently was appointed fire chief of Baltimore County, MD, Fire Department (BACOFD). The department's first permanently appointed female chief, Rund holds numerous certifications in the field of health and safety and is a level 4 certified command officer. She obtained the National Fire Academy's Advanced Safety Officer Program certification and serves as associate faculty at the University of Maryland's Maryland Fire and Rescue Institute. In 2019, Rund was selected to serve on the National Fallen Firefighters Foundation board of directors.



Working so Everyone Goes Home in the Department of Defense The U.S. Air Force Fire and Emergency Services leadership champions systematic safety efforts. By A.J. Kehl

he National Fallen Firefighters Foundation's (NFFF) 16 Firefighter Life Safety Initiatives (FLSIs) have been communicated to the fire service since their 2004 inception. Regional and state advocates inform and train thousands of firefighters on a variety of topics as we collectively do our part to reduce the number of preventable line-of-duty deaths and injuries in the fire service. However, the need for specialty advocates-those who are outside of the traditional FEMA regions-became apparent when firefighter Derek Kozorosky was killed while on duty at Kadena Air Base in Okinawa Prefecture, Japan, in 2011.

Prior to this tragic incident, advocacy for the 16 FLSIs was limited mainly to a few people who were involved with the American Military Heritage Foundation. Since then, it has evolved into a robust program in which military firefighters from more than 100 installations around the globe take part in programs, such as "Courage to Be Safe" and "Attributes of Leading in the Fire Service." This evolution is a true testament to the importance of keeping our men and women in the fire service-and in service to our country-safe.

After the tragic incident at Kadena Air Base, leadership from NFFF took the long flight to offer counseling services and go over the "Courage to Be Safe" program. Not long after that, SSgt. Rob Jarvis and I became the first official active-duty advocates.

Over the course of the next eight years, classes were taught at distant bases in Japan and elsewhere, such as Germany and Romania. Led by Mike Robertson, the Department of Defense (DOD) finally had a real place in the Everyone Goes Home (EGH) architecture.

Lead by example

Teaching courses is one thing, but being a true advocate in the DOD means leading others to align what they do in their organizations with the 16 FLSIs. It means permeating through the dense culture to which firefighters are accustomed and offering tangible examples of how we can do the job and be safer together. To assist in this ongoing effort, the U.S. Air Force published their latest version of the "Air Force Fire and Emergency Services Instruction," which included much discussion about the NFFF and its purpose.

This ultimately paved the way for more change as departments around the world began to have conversations about each initiative. Many aligned their flight management plans or standard operating procedures with the 16 FLSIs by annotating which of the 16 each plan addresses.

Another effort within the DOD is finding creative ways to incorporate EGH endeavors into local training plans and getting these messages to the youngest firefighter as soon as he/she arrives to the department. Some organizations inserted the initiatives as a cognitive skill within their rookie books or local firefighter tests.

This all is a far cry from just a few years ago and is a clear indication of sustained forward momentum. Adding to that momentum has been a 400 percent increase in military firefighters who are trained to deliver "Courage to Be Safe," "Attributes of Leading" and other courses as well as a surge in classes that were delivered. With the constant movement of firefighters within the DOD, these trainers can go to their next base armed with the tools to make their new department safer and more aware-a military uniqueness that we can all appreciate.

Moving forward

The DOD recently deliberately included many of the EGH programs, but safety always has been paramount. This is evidenced by:

- The inclusion of a health and safety officer into the core authorizations for each department
- · The military paving the way when it comes to organic PPE cleaning and inspection programs
- The advanced usage of vehicle safety technologies

The U.S. Air Force Fire and Emergency Services leadership champions systematic safety efforts. The tangible outcomes of this vision are seen daily in each of the many departments that are around the world. More than 6,000 DOD firefighters are slowly and steadily being exposed to the importance of doing their part every day to ensure that at the end of each day, "Everyone Goes Home."

About the author

SMSgt A.J. Kehl is the deputy fire chief at Nellis Air Force Base in Nevada. He is a Department of Defense advocate and Center for Public Safety Excellence chief fire officer who has 17 years of experience in the fire service. He holds a bachelor's degree in fire science and a master's degree in organizational leadership.





When an LODD Occurs: Incident Commanders Speak

This Fire Hero Learning Network course is the National Fallen Firefighters Foundation's latest resource for preparing incident commanders (IC) to cope with a firefighter line-of-duty (LODD). In addition to our recent launch of the IC to IC program, which provides support to incident commanders who have experienced a LODD on their watch, this new proactive one-hour training module will prepare officers for the unique challenges that occur in the aftermath.

SCAN THE QR CODE TO START TRAINING





Topics Covered in this Self-Paced Online Training include:

- Psychological impacts of an LODD
- Operational impacts of an LODD
- Meeting family & department needs
- Finding behavioral health resources
- Tips for handling media scrutiny
- Participating in an operational review
- Potential legal issues

Request information at firehouse.com/10823505

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