



U.S. Fire Administration
Working for a fire-safe America

Emerging Health and Safety Issues Among Women in the Fire Service

March 2019



FEMA

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Mission Statement

We provide national leadership to foster a solid foundation for our fire and emergency services stakeholders in prevention, preparedness and response.



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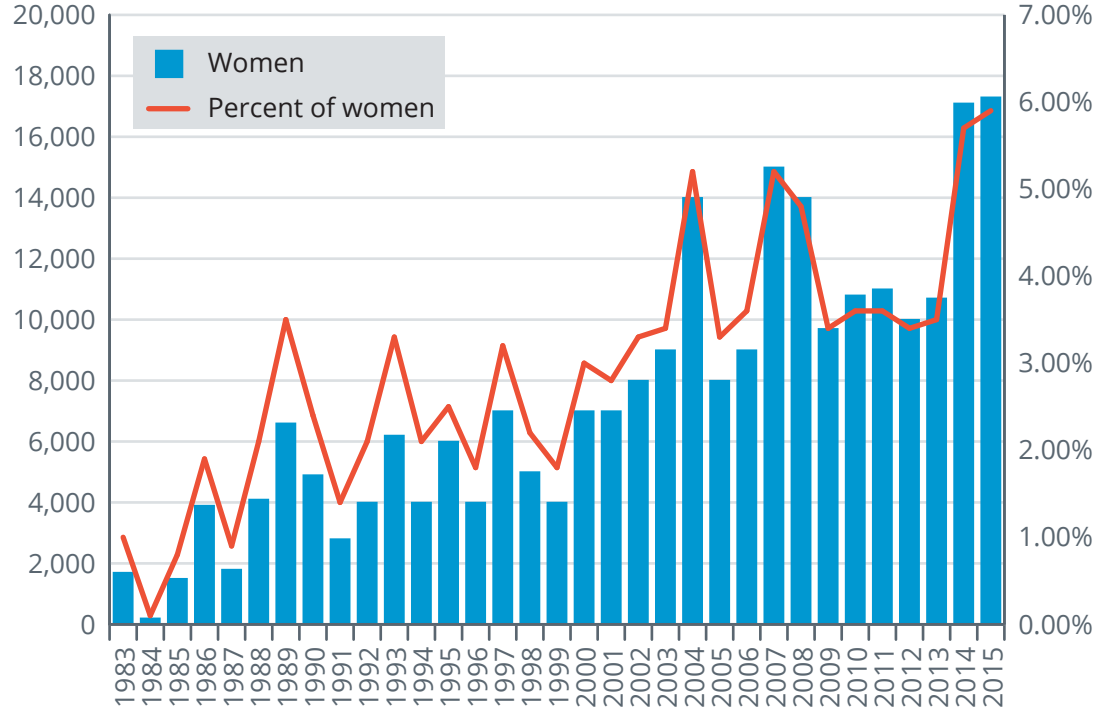
Chapter 1: Introduction

Increasing number of women in the fire service

For over 200 years, women have been firefighting in the United States. Stories of individual women serving in the 19th and early 20th centuries eventually grew to all-female volunteer fire companies in the 1910s. World War II led to an influx of women filling the needs of the volunteer fire service as existing male firefighters left to serve in the war. After the war, women began getting paid for their firefighting work, but it was not until the mid-1970s that women entered into career fire suppression roles. It was around this time that women began to integrate more into local fire departments and work alongside their male peers. African-American women also became career firefighters in the 1970s (Floren, 2007).

In 1999, the USFA worked jointly with Women in the Fire Service (WFS) to conduct a study of women firefighters. With just over 25 years of experience in career-level fire suppression positions, the number of women in career roles climbed to over 4,500 nationwide. The estimate of volunteer and paid-on-call women in the fire service was 10 times higher than those in career roles, and that did not account for emergency medical technicians (EMTs) and paramedics. The study also reported hundreds of women serving in federal and state fire agencies. In 1999, women comprised about 2 percent of career firefighters nationally, although this varied widely with some major departments having no women and others having up to 10 to 15 percent (Berkman, Floren, & Willing, 1999b).

Figure 1. Number and percentage of career women firefighters, 1983 to 2015



Data source: National Fire Protection Association (NFPA). (n.d.). *Firefighting occupations by women and race*. Retrieved from <https://www.nfpa.org/News-and-Research/Data-research-and-tools/ARCHIVED/Fire-statistics/The-fire-service/Administration/Firefighting-occupations-by-women-and-race>.

In 2015, women made up about 3.7 percent of career U.S. firefighters (Haynes & Stein, 2017). The percentage of women in the fire service had nearly doubled in the 15 years since the USFA/WFS study. The “U.S. Fire Department Profile — 2015” offered more reliable data than in the past and reported that women held 12,850 career firefighting roles and 72,250 volunteer roles nationally, averaging 7.3 percent of the U.S. fire service overall (Haynes & Stein, 2017).

Today, women are found in all ranks of the fire service, from recruit firefighters to chiefs of departments. Women fire chiefs lead organizations ranging in size from small volunteer fire departments to large metropolitan fire departments, including Decatur, Georgia and San Francisco, California. Many of the departments that were on the cutting edge of hiring women in the 1970s and 1980s employed these women through a full career to retirement, and are now experiencing the power of mentorship as the second generation of women are entering the fire service and joining these pioneering departments. The women who volunteer or serve as career firefighters within today’s fire service share the same dedication to their work and commitment to their community as the women 200 years ago.

Emerging health and safety concerns

Integrating women into organizations and departments that for generations had been bastions of all-male “homes-away-from-home” has not been easy. Despite more women serving in the fire service in recent years, growth and inclusion of women in the ranks has been extremely slow and lags behind the growth of women in other male-dominated fields (Hulett, Bendick, Thomas, & Moccio, 2008). Additionally, the fundamental purpose and mission of the fire service has changed in the last 35 years from departments that primarily fought fires to fire rescue organizations that provide multiple services. These include fire suppression, Emergency Medical Services (EMS), rescue services, hazardous materials mitigation, water rescue services, community risk-reduction services and education, technical rescue, arson investigation, and fire code enforcement.

The USFA recognized the changes happening as more women joined the fire service nationwide. In 1979, the USFA convened a “Women in the Fire Service” seminar seeking to identify emerging issues and offer chiefs and departments the tools to face the future of an integrated and diverse fire service (Armstrong, Berkman, Floren, & Willing, 1993). In 1993, the USFA published “A Handbook on Women in Firefighting: The Changing Face of the Fire Service” to address issues of a gender-integrated workforce (Armstrong et al., 1993).

Following the publication of the 1993 handbook, concerns arose pertaining to health and safety issues among women in the fire service. Subsequently, the USFA convened a symposium in 1994 to identify these issues and create recommendations for action (USFA, 1996). Almost 25 years later, the recommendations made by the task force at the symposium are still relevant. In fact, many are just now starting to be investigated or resolved, and others have yet to be initiated or instituted. The recommendations listed below are those from the 1994 symposium that continue to relate to health and safety issues among women firefighters in 2018.

USFA recommendation: Develop an improved data reporting system with more detailed incident and exposure information, including gender (USFA, 1996).

How it would help: Having a functional dataset would enable researchers and departments to validate and address or eliminate problems. It could help more quickly identify national and regional trends. More detailed data would strengthen the database.

Status check: There has been an improvement in the data reporting system, but it remains a voluntary system. The information relies on local departments to categorize and report incidents. Gender-specific information on health- and safety-related issues often go unreported.

USFA recommendation: “USFA develops a national clearinghouse to gather and disseminate information on successful or innovative programs” (USFA, 1996).

How it would help: Having a single point of contact, i.e., “clearinghouse,” would enable departments to research and evaluate different programs that have been proven effective. This resource would increase standardization throughout the fire service, make better use of limited resources to address these issues, and minimize the false starts and trial and error in policies and procedures.

Status check: The successful and innovative programs developed by individual departments are shared through conferences, trade magazines, and personal contacts. The National Fire Academy (NFA) is very loosely considered a “clearinghouse” to gather and disseminate information. There needs to be a validation system to assist local jurisdictions in identifying applicable programs in similar communities that could be adopted or adapted.

USFA recommendation: National and state organizations must create a mechanism for applicable information to reach those who need it most, the firefighters (USFA, 1996).

How it would help: The fire service has historically relied on the traditional hierarchical distribution of information. This system often takes months for information to trickle down to the appropriate end user from the desk of the chief or executive officer.

Status check: The hierarchical distribution method still prevails. Although the internet has made more information available to the end user in theory, this does not usually work as an effective dissemination method in practice.

USFA recommendation:	Develop teamwork training to better support an integrated, diverse workforce (USFA, 1996).
How it would help:	The development of functional teamwork training would enable fire service members to better understand the diversity of the team and their strengths. The rising issue in the modern fire service is that of firefighter mental health. The stresses of the job and the fire service's macho "do not talk about feelings" and "handle it like a man" mentalities are incongruent with the modern fire service. Functional teamwork includes an open, honest and safe place to talk.
Status check:	Teamwork training tends to be offered by a human resources department or outside provider that understands very little about the fire service, including the challenges of living together, working long shifts together, and depending on one another to save each other's lives.

USFA recommendation:	The NFA will train administrators on women's issues in the fire service (USFA, 1996).
How it would help:	Leaders need to take all team members into consideration and to model appropriate behaviors. Putting one agency in charge of training would help streamline the process.
Status check:	The NFA includes the female perspective in their trainings, whenever possible. However, less than 0.4 percent of the fire service attended the NFA in 2015, regardless of gender. A clear and consistent message must be delivered by the NFA and then taken back to home departments and acted upon.

USFA recommendation:	Study various ways of completing tasks effectively and disseminate approved task attainment options in local trainings for all fire service members (USFA, 1996).
How it would help:	A woman's center of gravity is lower than that of a man, and in general, a woman has less upper body strength. By disregarding these facts, it forces women to use unsafe biomechanics and increases the chance of injury.
Status check:	Most training is still based on standardized practices that do not allow for variation. To support Women in Fire's mission to address this gap, in 2018, the Fire Instructor Development Conference included the hands-on course "Fireground Drills from the Street: Leverage, Force, and Aggression," which had a focus on unconventional methods for overcoming height and strength issues, using the proper tools, and adjusting technique with recognition of body type and strength.

USFA recommendation: Develop a program to inform health care providers about the work of first responders and their health concerns (USFA, 1996).

How it would help: Health care providers must be familiar with potential exposures for fire service personnel in order to develop proper treatment plans, especially in relation to returning to work after an illness or injury.

Status check: Over the past 25 years, numerous studies have investigated firefighters' exposures and increased risk for disease (see Chapters 4, 7 and 9). The National Institutes of Health is currently conducting a study on the safety of firefighter's breast milk. Some of the health issues are addressed through the IAFC's/IAFF's Wellness Fitness Initiative. If a department has yet to adopt the Initiative, medical providers may know very little about the demands, exposure risks, and stresses of the fire service.

USFA recommendation: "USFA ensures that the full diversity of the fire service is represented in groups that develop equipment and facility designs" (USFA, 1996).

How it would help: This issue goes back to the feeling of being integrated and welcome, truly being a part of the team and not a guest that others are hoping will soon leave. If a woman must question whether she is welcome every time she enters a fire station, she will be less likely to stay for a career. There is an undertone of bullying and harassment in not providing adequate facilities for all employees. Once again, this adds to the overall stress of the career.

Status check: For nearly 40 years, there has been active discussion on the need for individual bathrooms, separate sleeping facilities, and the replacement of the terms fireman and firemen with firefighter and firefighters. This is out of the control of the USFA but is well within the control of individual departments and organizations.

USFA recommendation: Collaborate with national associations and manufacturers to develop properly fitted clothing, gear and protective equipment for the diverse team members of the fire service (USFA, 1996).

How it would help: Take the sizing of gloves as an example: Women’s hands are not smaller versions of men’s hands; women have longer fingers and a narrower palm. When women are forced to wear oversized and ill-fitting gloves, it is a clear safety concern and becomes impossible for them to hold items securely. The inappropriately sized clothing and equipment adds another level of stress to an already stressful career. The military started accepting women into the academies about the same time that women were entering the career fire service, and yet those women have equipment that fits their body sizes appropriately, including uniforms and body armor.

Status check: The majority of protective gear or uniforms are sized-down versions of men’s gear. This leaves the onus on women to adapt to the ill-fitting garments. Several bunker gear manufacturers currently offer a women’s cut, but it is still considered a “custom cut” and is, therefore, more expensive. The general sentiment is that the purchasing pool for women’s sizes is too small to make it profitable. The size of the purchasing pool and the percentage of women in the fire service present a challenge for women being properly fitted for personal protective equipment (PPE). This issue also extends into gloves. An Ohio-based glove manufacturer is working with Women in Fire to address the issue of improper glove fit, but reports a large number of women firefighters they size for proper fit have hands too small to fit on the NFPA glove sizing chart.

USFA recommendation: Work to make mental health insurance coverage equivalent to physical health claims (USFA, 1996).

How it would help: First responders have high-stress jobs and are often exposed to traumatic events. The mental health service needs of first responders are great. For more information on mental health issues among women in the fire service, see Chapter 7.

Status check: Most medical insurance providers limit the number of mental health visits per year to a level far below what should be considered adequate for first responders. There is also a need for mental health providers who have an expertise in vicarious trauma to address the needs of first responders.

Twenty-five years have passed, and yet so many of the recommendations from the 1994 symposium remain goals today. From not feeling welcome in a male-dominated profession to ill-fitting equipment to reproductive concerns, there is still a lot of work to do.

This report serves as a status check on long-term and emerging issues of health and safety for women in the fire service. It will highlight already existing resources that address these issues and make recommendations for improving the fire service for women and for all.

Chapter 2: Women Firefighter Occupational Health and Safety Issues

Firefighting is an inherently dangerous job, attributing to 69 fatalities and 62,085 injuries among firefighters while performing job duties in 2016 alone (Haynes & Molis, 2017). Knowing and understanding the risks that contribute to such outcomes has long been at the heart of preventing such tragedies. Identifying trends can influence policy and lead to better safety practices, improved training and enhanced compliance. Recognizing any differences that may occur with occupational risks affecting subgroups of the work force (gender, ethnicity, race, etc.) becomes more important as the diversity of the fire services grows.

Despite growing numbers of women in the fire service, the small sample sizes of women firefighters often lead to their elimination from study when it comes to research regarding occupational hazards (Jahnke et al., 2012). It is unknown what specific risks women face and whether these risks differ from the general firefighter population. This chapter focuses on the data available at this time, creating a snapshot of the injuries and fatalities of women firefighters.

“A National Report Card on Women in Firefighting” refers to several factors that contribute to low numbers of women in the field such as physical requirements, psychological tension, workplace culture, harassment and discrimination (Hulett et al., 2008). Outside of recognized work hazards, could similar factors attribute to the injuries and causes of fatalities experienced by women firefighters? Do occupational hazards of the fire service affect women differently?

Health status of women firefighters

In an epidemiological study of women firefighters conducted by Jahnke and colleagues, women in the fire service tended to report being in good to excellent health (Jahnke et al., 2012). When compared to their male counterparts, women firefighters tended to be younger, more educated, more likely to be single, more likely to use tobacco products, and to have healthier body compositions (Jahnke et al., 2012). Using self-reported physical activity as an estimation of



cardiopulmonary fitness, women firefighters were significantly less likely to meet NFPA recommended standards than their male counterparts (career females, 22.2 percent; career males, 38.7 percent; volunteer females, 7.7 percent; and volunteer males, 23.6 percent) (Jahnke et al., 2012). However, when an exercise-based evaluation of cardiopulmonary health (the Gerkin protocol) was used to assess fitness, no difference between men and women firefighters was found (Poplin, Roe, Peate, Harris, & Burgess, 2014).

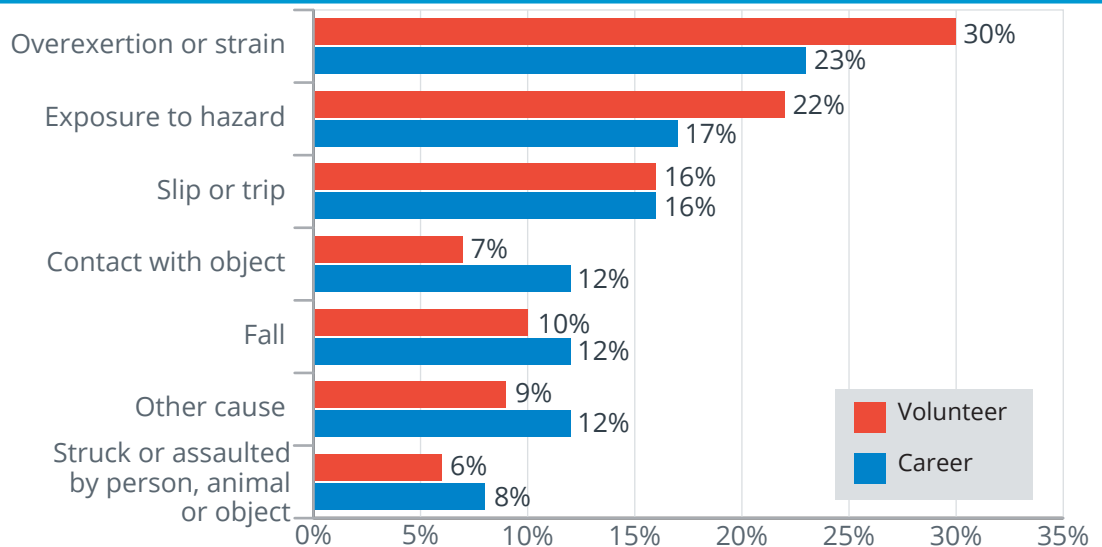
When looking at mental health, almost 1 in 4 career women firefighters and 4 in 10 volunteer women firefighters scored in the range of concern on the Center for Epidemiological Studies Short Depression Scale used to assess depression (Jahnke et al., 2012). However, over 80 percent of both career and volunteer women firefighters indicated

that they felt confident to handle problems most of the time, indicating good coping skills (Jahnke et al., 2012). Using a self-reported, web-based survey, Stanley, Hom, Hagen and Joiner evaluated the prevalence of suicidal thoughts and behaviors over the course of firefighters' careers (Stanley et al., 2015). Findings indicated that gender did not contribute to the rates of career suicide ideation or attempts, nor to career nonsuicidal self-injury; however, women firefighters were found to report suicidal plans less than male firefighters (Stanley et al., 2015). Factors with correlations to suicidal thoughts and behavior included lower rank, less experience, membership in a volunteer department, experience with suicide-related responses, and active-duty military history (Stanley et al., 2015).

The Bureau of Labor Statistics (BLS) conducts an annual survey of private and public employers' Occupational Safety and Health Administration 300 logs (a record of reportable injuries and illnesses and related details) and publishes the results in the Survey of Occupational Injuries and Illnesses (SOII). The SOII only includes "employed" firefighters, thus volunteers are excluded from this dataset (BLS, 2016). In 2015, the BLS reported 13,280 firefighter nonfatal occupational injuries and illnesses for a rate of 3.98 per 100 full-time employees (BLS, 2016). This rate was almost four times higher than the rate of 1.04 for all workers (BLS, 2016). The BLS also reported that firefighters took a median of 11 days away from work that year, higher than the 8-day median for all workers (BLS, 2016).

In 2013, the BLS published a special report on firefighter injuries, illnesses and fatalities, titled the "Firefighter Factsheet" (BLS, 2016). The "Firefighter Factsheet" reported that, in 2011, firefighters had injuries and illnesses resulting in time loss from work at four times the rate for all workers (BLS, 2013). Women represented 8 percent of those cases although they only made up about 4.5 percent of the firefighting workforce (BLS, 2013). This suggests that women firefighters have an increased risk (1.8 times) of an occupational injury or illness.

Figure 2. Women fireground injuries by cause of injury, 2010-2014 annual averages



Source: Campbell, R. (2017). Patterns of female firefighter injuries on the fireground. Quincy, MA: National Fire Protection Association. Retrieved from <https://www.firerescuemagazine.com/content/dam/fe/downloads/FFN-FRM-Downloads-Editorial/osfemalefireground.pdf>.

Both injury frequency and duration differ between men and women firefighters. Using compensation claims from 1987 to 1998, a large Midwestern city found that gender correlated with injury frequency, with women firefighters reporting 33 percent more injuries than their male counterparts. Age, time in career, sex, marital status, and type of injury all significantly influenced injury duration. Women, older employees, and married firefighters tended to take longer to recover. Marital status interacted with gender affecting return-to-work rates for all firefighters; married women firefighters returned to work first followed by single males, single females and lastly, married male firefighters (Liao, Arvey, Butler, & Nutting, 2001).

Recently the NFPA released an examination of women firefighter injuries on the fireground using data collected through the National Fire Incident Reporting System (NFIRS) and the Annual Fire Experience Survey. From 2010 to 2014, women firefighters experienced an estimated 1,260 injuries on the fireground. Of the reported injuries, 69 percent were minor in nature, requiring only first aid, and only 2 percent were severe or life threatening. The primary cause of injury among both career and volunteer women firefighters was overexertion or strain; findings were similar to that of all firefighters injured during that time. Volunteer women firefighters were more likely to suffer from exhaustion, fatigue, smoke inhalation and breathing difficulty when compared to their career counterparts. Career women firefighters, on the other hand, were more likely to suffer from strain, sprain, contusions, bruising and other minor traumas. Most injuries happened while fighting structure fires (80 percent) and the majority of those injuries occurred while individuals were outside of the structure (62 percent). Thirty percent of injuries experienced by women firefighters happened to individuals under the age of 29, which was 10 percent more than the general firefighting population in that age group during the same period (Campbell, 2017).

Just as injuries are a growing concern among the fire service, so are acts of violence against emergency service personnel. Women are more likely to be paramedics than they are to be firefighters, and patients are more likely to assault paramedics than firefighters in urban fire departments. Though Taylor et al. discovered that gender was not a factor contributing to patient-initiated violence, the finding that women in fire departments tended to be emergency medical responders, and therefore at greater risk of assault, is concerning (2016).

Recommendations

Increase the presence of women as subjects in fire service research.

Due to the small number of women in the fire service, the sample sizes of most studies remain small and the generalization to the larger population of current and future women firefighters remains in question and warrants further study.

Research gender-specific risk factors and solutions in order to prevent injuries on the job, focusing on adapting tasks, gear and training to the specific needs of women firefighters.

The contributions and attributes of physical training programs could be investigated as a way to reduce a majority of injuries among all firefighters, as well as decrease instances of exhaustion and fatigue among women firefighters. Some promising research is already underway. Participation in a well-designed, 16-week physical fitness program increased the aerobic capacity of firefighters, better enabling them to handle the physical demands of the occupation (Roberts, O'Dea, Boyce, & Mannix, 2002).

Cultural norms could also be contributing to some of the injury distributions. Departments may shy away from assigning women tasks deemed more dangerous, such as offensive interior operations, due to a work culture that still aligns firefighting with traditional gender roles. However, most of the injuries on the fireground occur outside of the structure, where women tend to be. Culture may also play a role in the higher rates of younger women firefighter injuries, as their life experiences may reflect an upbringing more aligned with traditional gender roles and, consequently, less experience in physically demanding jobs. Discovering and addressing gender-specific risk factors contributing to injuries is the first step in their reduction and could have impacts that reach further than improved safety records.

Chapter 3: Recruitment and Retention Issues Related to Women Firefighter Health and Wellness

Women firefighters make up a small percentage of the fire service as a whole. To become a gender-inclusive industry, it is important for organizational leaders to examine successful methods to attract and retain women. Gender-specific issues were identified as one of the six main barriers for retention in the fire service (McDonald, 2016). Developing strategies to retain women is also key for an organization to maximize human capital and for creating the strongest pool of leadership candidates (Johnson & Tunheim, 2016). Specific recruitment and retention barriers women face in the fire service include physical challenges, psychological strains, and challenges tied to the long-time culture of the fire service being a male-dominated field.

Physical challenges

Physical challenges can be a barrier for some women trying to enter the fire service. These physical challenges may also extend into the duration of women firefighters' careers. Many departments, both volunteer and career, require the passing of a physical agility entrance test. Prospective women firefighters have an 85 percent failure rate with the agility test compared to their male counterparts' failure rate of 9 percent (Sinden et al., 2013). Fire departments can legally refuse the hiring of candidates not able to pass the physical fitness requirements if the physical tasks are directly related to and necessary for the job position. There have been cases where agility tests were created to intentionally serve as a barrier for women.

One method to ensure a fair and consistent evaluation of physical fitness for both women and men who

Resource break

The California Joint Fire Fighter Joint Apprenticeship Committee (2007) has produced a "Candidate Preparation Guide: Candidate Physical Ability Test (CPAT)." The guide offers five training programs for the CPAT:

1. Flexibility & Warm-Up Exercises.
2. Weight Training Circuit Workout.
3. Calisthenics Circuit Workout.
4. CPAT Running Program.
5. Task-Specific Exercise Training.

Access this resource at: <http://www.cffjac.org/go/jac/?LinkServID=3E94B79A-1CC4-C201-3E4BF872E67CB568>.

Certified personal trainers/firefighters Dan Kerrigan and Jim Moss developed Firefighter Functional Fitness, a program that incorporates equipment that already exists in the fire department in fitness workouts. The program focuses on the Four Pillars of Firefighter Functional Fitness: physical fitness, recovery and rest, hydration, and nutrition and lifestyle.

Access this resource at: <http://firefighterfunctionalfitness.com>.

The IAFF/IAFC offers a manual intended to improve the mental, physical and emotional capabilities and help firefighters withstand the stresses and strains of the job.

Access this resource at: <http://services.prod.iaff.org/ContentFile/Get/40146>.

are candidates for the fire service is for the industry to standardize the use of the CPAT. The CPAT evaluates an individual's ability to perform basic firefighting functions. The CPAT requires a candidate to wear a weighted vest while performing a number of physical activities that simulate firefighting tasks. To assist candidates with passing the CPAT, department leadership can orientate candidates to the test, provide training resources to allow for physical preparation, and offer open practice sessions.

The need for physical fitness for women firefighters extends beyond entry into the fire service. The injury rate among women firefighters is 33 percent higher than their male counterparts (Liao et al., 2001). One factor that may contribute to the higher number of injuries among women is a woman firefighter's resistance to break away from a task and/or the resistance to ask for help from male counterparts during strenuous tasks. This resistance may stem from the fear of being viewed as weak by their male counterparts. It is important for department leadership to create a culture where women firefighters feel comfortable speaking up about unsafe conditions and are able to ask for help from male counterparts without fear of judgment.

Psychological strain

The psychological strain of firefighting is another retention issue for women in the fire service (Jahnke et al., 2012). The risk of developing mental health issues is high among firefighters in general (Jahnke et al., 2012). Compared to their male counterparts, women firefighters face a significantly increased risk of mental health issues because of an increased level of discrimination (Jahnke et al., 2012). Discrimination among women firefighters can lower retention and negatively impact mental health (McDonald, 2016). Women firefighters also face social exclusion, another precursor to increased mental health effects (Sinden et al., 2013). This social exclusion stems from being left out of social activities that their male colleagues participate in (Sinden et al., 2013). Conversely, involvement in social inclusion is a protective factor for retention (McDonald, 2016).

Resource break

The NVFC's Share the Load program is a free program that provides firefighters with access to mental health resources and professionals 24/7.

Access this resource at: <https://www.nvfc.org/programs/share-the-load-program/>.

For more information about mental health concerns among women in the fire service, see Chapter 7.

Culture of the fire service

The long-time male-dominated culture of the fire service may lead to barriers for the success of women in the fire service. Male firefighters with negative attitudes toward women being in the fire service can be a barrier for women joining a department and create difficulty in developing a positive work culture (Sinden et al., 2013). Women firefighters are at risk of higher levels of anxiety, exposure to sexism, lower job association, and higher levels of coworker conflict (Sinden et al., 2013). Fire departments that fail to address negative behaviors can also develop a poor reputation (McDonald, 2016). The exploration of organizational culture is important for leaders seeking to improve retention. Organizations that invest in creating a positive culture can increase job satisfaction and retention in the fire service (McDonald, 2016).

📄 Resource break

The Fire Service Reputation Management White Paper produced by Cumberland Valley Volunteer Firemen's Association (2010) identifies a series of social, cultural and ethical issues threatening the fire service. The document draws awareness to negative behaviors, outlines the implications for leadership, and strongly urges the incorporation of a fire service code of ethics.

Access this resource at: <https://firefighterbehavior.com/wp-content/uploads/2017/09/Reputation-Management-White-Paper.pdf>.

The National Firefighter Code of Ethics establishes criteria for fire service personnel to promote a culture of integrity and professionalism within the industry.

Access this resource at: https://www.usfa.fema.gov/downloads/pdf/code_of_ethics.pdf.

Recommendations

Fire service leadership should implement evidence-based strategies to recruit and retain women firefighters.

Suggested strategies include standardizing the CPAT, promoting inclusivity through human resources trainings, accommodating the schedules of volunteer firefighters to address work-life balance challenges, offering nonwage benefits as an incentive to attract and retain, recognizing employee accomplishments and life moments, developing programs for family engagement, and employing various recruitment methods specific to gender inclusion (McDonald, 2016).

Conduct a study on recruitment and retention strategies specific to women firefighters.

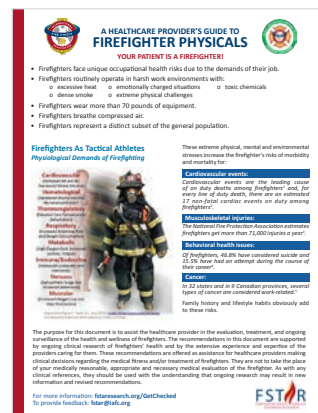
Such a study does not exist at the time of this publication. Other industries that engage both career and volunteer workforces have demonstrated that retention barriers vary by gender (Waters & Bortree, 2011).



Chapter 4: Heart Health for Women in the Fire Service

Firefighters face far higher cardiac demands than non-firefighters, making heart health a key aspect of physical readiness in the fire service (IAFF, 2013). The USFA (2017) indicated 24 percent of all deaths in the U.S. were cardiac related, but 47 percent of line-of-duty deaths (LODDs) in the fire service were tied to a cardiac emergency. With an increase of women entering the fire service, additional research is needed to measure the impact of heart health specific to women firefighters. Currently, cardiac fatality is the number one killer of women in the U.S. and is responsible for one in every four deaths among women (Centers for Disease Control and Prevention (CDC), 2017). To address the risk, a proactive approach of screening, healthy diet, regular physical activity, and a supportive health-focused environment is essential to every career and volunteer firefighter.

Of the women in the general population who die from heart disease, 64 percent have no symptoms (CDC, 2017b). Even with the increase of heart disease awareness, only 54 percent of women are aware that it is the number one killer among women (CDC, 2017b). Therefore, women firefighters must take control of their personal health to reduce the risks of cardiovascular disease. To begin, women firefighters should inform their primary care physicians about the unique risks of those serving in the fire service. This is especially true for volunteer firefighters, since they would most likely list their full-time career on a patient intake form and not their role as a firefighter. Notification to the primary care physician should occur at the first visit, and a reminder should be given at each subsequent visit. The IAFC (2016) provides a guide for health care providers to address the specific health needs of firefighters. “A Healthcare Provider’s Guide to Firefighter Physicals” is a quick and easy-to-read fact sheet that outlines the unique medical needs of patient care when treating a career or volunteer firefighter (IAFC, 2016). While the tool provides excellent information, it does not address the needs and risks specific to women firefighters. Additional research is needed to determine the gender-specific health impacts on women in the fire service.



📄 Resource Break

The IAFC created “A Healthcare Provider’s Guide to Firefighter Physicals,” which any firefighter can present to a personal care provider to ensure an annual physical is performed with the specific demands of firefighting in mind.

Access this resource at: <http://www.fstaresearch.org/resource/?FstarId=11591>.

Core principles for healthy behaviors

Changing the culture toward healthier choices can be challenging but may reduce the risk of cardiovascular disease and events among women firefighters. Fire departments must establish an environment that supports making healthy choices in order to decrease the risk of cardiac events to members. The first step in the process incorporates the recommendations of NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Department Members* and includes obtaining annual physicals compliant with NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. NFPA 1583 (2015) indicates a fire chief should appoint a health and fitness coordinator, which can be an internal or external individual.

The health and fitness coordinator is key to setting the tone and momentum of the health efforts. The coordinator can offer health programming and opportunities to collaborate with local resources. For example, the Winona Fire Department (Ohio) collaborated with the Ohio State University Extension's Expanded Food and Nutrition Education Program (EFNEP). The EFNEP offered firefighters and family members food

and nutrition education classes at no cost to the department. The group met monthly over a period of time to increase personal knowledge of basic nutrition, the benefits of physical activity, food safety, and stretching food dollars. Winona Fire Department members succeeded in a 92 percent behavior change in nutrition practices and a 77 percent change in food safety practices (Expanded Food and Nutrition Education Program, 2014). Similar services are available through local extension offices across the U.S.

↓ Resource break

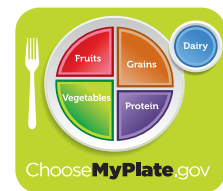
Engage firefighters and family members in a culture of physical fitness and nutrition through a USDA funded EFNEP.

A complete listing of EFNEPs programs can be accessed at <https://nifa.usda.gov/resource/efnep-partner-websites-2017>.

Eating well

According to the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA), the prevalence of preventable diet-related chronic diseases has increased at an alarming rate. Over the past century, Americans have moved from malnutrition and deficiencies to half the population becoming overweight and obese, resulting in an increase of cardiovascular disease, cancer and type 2 diabetes. Dietary changes are key to reducing risk.

Everything counts when thinking about making healthier choices — meals, snacks and drinks. Small changes, like reducing the amount of salt, fat and sugar in one's diet, can make a big impact and build momentum in a new lifestyle. The USDA's MyPlate outlines user-friendly strategies to make healthier food choices. The resource also provides strategies for special populations such as older individuals, high-risk groups, and children. MyPlate recommends:



- ❖ Making half the plate fruits and vegetables.
- ❖ Eating lean cuts of animal proteins and opting for plant-based proteins.
- ❖ Drinking low or nonfat dairy.
- ❖ Making half of grain consumption whole grains.

Choose a variety of foods, drinks and colors from each food group. Consuming a wide variety of nutrients is essential to a healthy lifestyle. For example, add vegetables that are red, orange or dark green to meals or snacks. These colorful options are full of vitamins and minerals. Other great vegetable choices are acorn squash, sweet potatoes or collard greens. They taste good and are full of vitamins and minerals.

For more information about MyPlate go to www.chooseMyPlate.gov.

Hydration

Women firefighters also need to keep hydration a priority because dehydration increases cardiac strain. Hydration is also a key element of firefighter rehabilitation under NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises*, so sipping water throughout the day is a key strategy to stay hydrated. This process, called prehydration, is vital on days with increased risk of heat stress. According to the CDC (2017b), dehydration can cause unclear thinking, mood changes, constipation, overheating and kidney stones.

Beverages are an important part of staying hydrated and establishing healthy eating patterns. Sugary drinks add to the overall caloric intake but offer little or no nutrients. Drinking water can quench thirst, hydrate the body, and control calorie intake when substituting for sugary drinks. Choose water first.

Physical activity

Physical activity and healthy eating go hand in hand in achieving a healthy lifestyle. In an average year, there are close to 70,000 injuries and 100 fatalities in the fire service (Haynes & Molis, 2017). Women firefighters also have 33 percent more injuries than males (Sinden et al., 2013). Strain, sprain or muscular pain represents the largest injury category, and cardiac events are the leading cause of firefighter fatalities (Haynes & Molis, 2017). The more physical activity, the



greater the benefits and overall feeling of well-being. Most Americans do not get enough physical activity (MyPlate, 2017). The 2008 Physical Activity Guidelines for Americans recommends 150 minutes of vigorous physical activity per week (HHS, 2008). While this sounds like a lot, research has found that there are cumulative benefits in blocks of physical activity time as short as 10 minutes, as long as it totals 150 minutes per week (CDC, 2015).

The benefits of physical activity are broad and long lasting. The benefits include reducing the risk of cardiovascular disease, high blood pressure, arthritis symptoms, weight gain and stroke. Physical activity increases mental health, fitness, sleep and cognitive functioning (CDC, 2017b). According to the CDC, women are at a higher risk for osteoporosis than their male counterparts. Maintaining a diet high in calcium along with weekly weight-bearing physical activity can reduce the risk of osteoporosis (2016). Activities such as weight lifting, running, doing pushups and jumping rope are good choices.

Certified personal trainers and firefighters, Dan Kerrigan and Jim Moss, indicated a need to focus on “The Big 8” to improve physical fitness and reduce the occurrence of injury on the fireground. “The Big 8” includes functional movements and interrelated components during workouts that include push, pull, carry, lift, drag, core, capacity and flexibility (Moss & Kerrigan, 2015). The eight components encompass flexibility/core strength, cardiovascular capacity and strength training. Moss and Kerrigan (2015) indicated by adding healthy nutrition and lifestyle, optimal firefighter functional fitness can be reached.

Recommendations

Fire service leadership should review and implement NFPA 1582 and 1583 to ensure department compliance.

Suggested strategies include incorporating structured fitness and nutrition programs, annual physicals, and referrals to community supporters.

Conduct additional research on gender-specific health and wellness needs that are specific to both career and volunteer firefighters.

Fire service leadership should review the NVFC’s Heart Healthy Firefighter website for resources on implementing health and wellness programs.

The NVFC website offers a collection of resource guides for establishing and funding wellness programs. The site can be accessed at <https://healthy-firefighter.org/start-a-program/>.

Chapter 5: Women Firefighter Injury and Death Tied to Roadway Incidents

Performing first responder operations on the roadway is a frequent occurrence for fire service members, and one that comes with great risks. According to the Emergency Responder Safety Institute (ERSI), from 2000 to 2017, 87 firefighters were struck by a moving vehicle and killed on the roadway (ERSI, 2017). Firefighters are not exempt from the dangers that come with roadway operations. Women firefighters had almost double the proportion of deaths from struck by incidents compared to their male counterparts (ERSI, 2017). Between 1994 and 2015, 12 percent of women firefighter fatalities and 7 percent of male firefighter fatalities were tied to struck by incidents on the roadway (IAFF, 2005).

To help standardize how first responders perform traffic control duties at incident scenes, NFPA 1091, *Standard for Traffic Control Incident Management Professional Qualifications* (2015 Edition) was created to establish on-the-job requirements for roadway operations (NFPA, 2015). NFPA 1091 promotes safer operations with minimum job performance requirements for Traffic Control Incident Management Personnel, to help authorities having jurisdiction ensure personnel are adequately prepared to carry out the duties of the job (NFPA, 2015).

To improve the safety of first responders operating on the roadway, the Federal Highway Administration developed the Traffic Incident Management (TIM) program, a framework for a planned and coordinated multidisciplinary process for roadway operations. This includes the National TIM Responder Training (National Highway Institute (NHI), 2018). The goal of this no-cost course is to provide first responders with a shared understanding of requirements for safe, quick clearance of roadway incident scenes, clear and reliable communication, and responder safeguards for roadway operations (NHI, 2018).



📌 Resource highlight: Responder Safety Learning Network

The Responder Safety Learning Network offers free online resources for first responders. Resources of interest discussed in this chapter include:

- 🔗 Understanding the New NFPA 1091 online course.
- 🔗 National TIM Training Certificate online course. Upon completion of the modules and passing of the Skills Challenge test, credit will be given and a download of a certificate equivalent to completing the National TIM Responder Training Program will be made available.
- 🔗 PIO and Public Educator Engagement page. Information is designed specifically for PIOs and educators for educating the public. Resources include video public service announcements, media templates, downloadable posters, a press packet, and information for leadership.

Access this resource at: <http://www.respondersafety.com/>.

The next challenge in reducing injury and LODDs on the roadway is public education to prevent distracted driving. Over 3,400 people will die and 390,000 will be injured due to distracted driving (National Highway Traffic Safety Administration, n.d.). Each year, dozens of responders from fire, law enforcement, EMS, the Department of Transportation, safety service patrols, and towing and recovery are killed from being struck by passing vehicles while operating at roadway incidents, with a greater number sustaining injuries (ERSI, 2017). These deaths and injuries are preventable.



Recommendations

Make the National TIM Responder Training a department requirement for all team members as a proactive approach to reducing injury and LODDs of women firefighters on the roadway.

Knowledge gained from the course will allow first responders to use a common set of practices and advanced standards during roadway operations. It will equip first responders with a common set of core competencies and will assist in achieving the TIM National Unified Goal of strengthening responder safety (NHI, 2018).

Increase the number of PIOs and Public Educators to educate their communities about the dangers distracted drivers pose to first responders operating on the roadway.

PIOs are integral to the safety of first responders and protecting property (Emergency Management Institute (EMI), 2016). They are responsible for effectively communicating with community members (EMI, 2016). It is key for the first responder community to inform the public that personal behaviors matter greatly when approaching and passing emergency scenes on the roadway and how these behaviors can affect the work of emergency personnel.

Chapter 6: Emergency Vehicle Operation-Related Women Firefighter Injury and Death

Firefighters are more likely to die in a motor vehicle accident than during the course of firefighting operations (Haynes & Molis, 2017). In fact, vehicle-related deaths account for 20 to 25 percent of all fire service fatalities, which is the second leading cause of death for firefighters behind cardiac-related causes (USFA, 2014). The risk of injury or death from emergency vehicle or apparatus accidents does not differ among genders.

In 2015, the NFPA estimated there were 16,600 collisions involving fire department emergency vehicles responding to or returning from incidents (Haynes & Molis, 2017). This is the highest number of collisions since the NFPA began collecting this information in 1990 (Haynes & Molis, 2017). Firetruck, or apparatus, accidents may account for only a small percentage of injuries, but when they do happen, the outcomes are often more serious injuries and more fatalities (USFA, 2014).

Many factors play into an apparatus accident, but through review of case studies and research, there are five common themes: lack of seat belts, lack of apparatus maintenance, excessive speed and loss of control, apparatus operation and distractions, and intersections.

Seat belts

Statistically more than 80 percent of firefighters killed in collisions are not wearing seat belts (IAFF, 2005). When firefighters do not wear their seat belts, ejection from the apparatus becomes frequent since nothing is counteracting the force of the accident. Research shows that 3 out of 4 people who are ejected from an apparatus will die, and 8 out of 10 fatalities from a rollover crash involve occupant ejection (USFA, 2014). Wearing a seat belt while in an apparatus could ultimately be the determining factor in whether or not a firefighter survives a crash. Despite these statistics, seat belts are still not being worn. The common complaint is that seat belts are restrictive or uncomfortable to wear over their PPE. This has resulted in some vehicles having the seat belts removed or tucked away beneath the seat cushions.

↓ Resource Break

Get your department on board by instituting a seat belt policy and signing a seat belt pledge. For example:

- International First Responder Seat Belt Pledge: <https://www.seatbeltpledge.com/>.
- Sample seat belt policy: <http://www.vfis.com/seat-belt-safety>.

NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*[™] requires all riders on a fire apparatus to be seated and belted prior to the movement of the apparatus (NFPA, 2018). Nevertheless, considering many are not abiding, a “seated and belted” policy should be enforced to ensure the safety of all firefighters, and this responsibility falls on the operator. Having high visibility seat belts or monitors that send a signal if belts are not buckled are some ways to enforce seat belt use. Ultimately the operator must enforce that all firefighters have their seat belts on before the apparatus moves.

Lack of apparatus maintenance

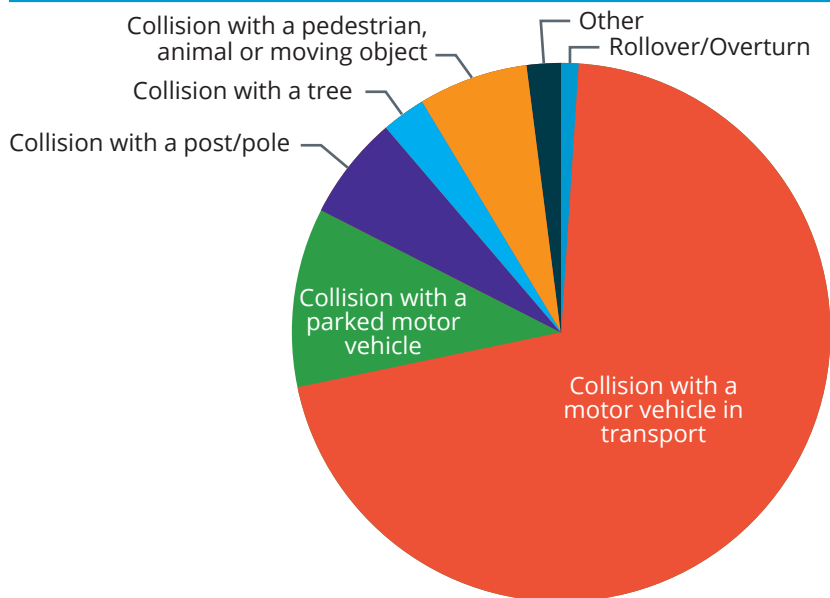
Sometimes apparatus accidents are not a result of the driver but are due to neglected maintenance. An apparatus that is not properly maintained can negate the safest driving practices. Leaking fluid, brake or steering defects, inoperable wiper blades and poor tire conditions can all result in apparatus accidents. Additional problems that may appear to be small, such as broken door latches and missing or inoperable seat belts, can contribute to injury and/or death. Apparatus with any of these problems should be removed from operations until repairs are made.

When it comes to apparatus maintenance, it is important to create a program that meets the requirements of NFPA 1915, *Standard for Fire Apparatus Preventive Maintenance Program* (NFPA, 2000). Drivers should perform operational safety inspections every day before their tour of duty. If there is a minor problem, they should attempt to correct it. If there is a major problem, then the operator must notify their supervisor. Defective apparatus must not remain in service, and it is important to repair small problems, like a broken door latch, as soon as possible. All maintenance problems, both small and large, must be resolved before an apparatus can return to operation.

Excessive speed and loss of control

Approximately two-thirds of fire apparatus crashes happen while en route to an emergency situation (Donoughe, Whitestone, & Gabler, 2012). Although many factors may contribute to a crash, excessive speed often results in loss of control of the apparatus. There is a direct correlation between excessive speed and decreased safety when operating any vehicle, especially during curves, passing maneuvers and inclement weather (USFA, 2014). The use of lights and sirens can also cause “siren syndrome” where drivers tend to drive faster and more aggressively because they are operating under emergency conditions (USFA, 2014).

Figure 3. Causes of firetruck collision, 2000-2009



Data source: Donoughe, K., Whitestone, J., & Gabler, H. C. (2012). Analysis of firetruck crashes and associated firefighter injuries in the United States. *Annals of Advances in Automotive Medicine*, 56, 69-76. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3503424/>.

To lower the risk around excessive speed, it is important for operators to understand that adding response time is better than having an accident. Apparatus should not exceed the speed limit, and it is acceptable to tell a driver to slow down but never acceptable to tell them to speed up. Since many accidents happen when apparatus wheels leave the paved road, it is recommended that operators stop the apparatus completely before creeping back onto the road. To combat siren syndrome, some fire departments have created policies where different calls require different responses: low risks mean no lights or sounds, high risks require both, and medium risks may have just lights but no sirens. St. Louis, Virginia Beach, Salt Lake City and Phoenix have implemented “on the quiet” responses where they do not use lights or sounds for certain calls (USFA, 2014). They have all observed drastic reductions in collisions, but no reduction in service delivery or patient care, nor increases in fire losses or mortality rates (USFA, 2014).

Apparatus operation and distractions

Many apparatus accidents are a result of drivers being distracted or not being trained on a specific apparatus. There are many distractions today, such as cellphones, computers, maps and radios, and they are all leading to an increase in accidents because they divert the driver’s focus away from the road (USFA, 2014). In addition to distractions, drivers may be undertrained on an apparatus or may not be qualified to drive a specific vehicle. Switching to a different size vehicle or having limited familiarity with a specific vehicle can result in more collisions when driving to and from a call or while backing up at a site or at the station.



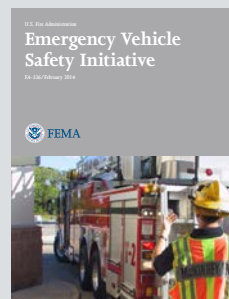
Distractions are hard to ignore, but to lower that risk a second person should operate all devices so that the driver can focus solely on the road and navigating traffic. Apparatus operation is difficult; therefore, departments are encouraged to follow the NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, which states all drivers must complete a formal training program on the exact types of apparatus they will drive (NFPA, 2017). If they are not thoroughly trained they must not operate the vehicle. It has also been suggested to make it a requirement that drivers obtain a commercial driver’s license and have formal training with ample practice time. Backing up an apparatus is another operational concern, but best practices are to follow NFPA 1500 to create a backing policy, one that states if the driver cannot see the spotters then they must not back up the vehicle (NFPA, 2018).

Resource Break

The Emergency Vehicle Safety Initiative, launched in 2002, has two main goals:

1. Learn more about emergency responder fatalities associated with the roadway.
2. Create a list of best practice safety measures, which reduce the likelihood of firefighter fatalities during a response or roadway scene.

Access this resource at: https://www.usfa.fema.gov/downloads/publications/fa_336.pdf.



Intersections

The most likely location for a fire apparatus collision is at an intersection. This is a result of civilian drivers failing to yield to emergency vehicles when they have a green light or stop sign, or firefighters not coming to a complete stop before proceeding through a red light or stop sign. Firefighters often do not come to a complete stop and many do not slow down prior to an intersection either, which has resulted in collisions. These accidents can also be a result of low visibility due to weather, distracted civilian drivers, or drivers who do not abide traffic laws and standards.

NFPA 1500 requires the apparatus come to a complete stop before proceeding (NFPA, 2018). A complete stop could extend the response time by two or three seconds per intersection, but adding a few seconds to a call is better than a collision (USFA, 2014). If it is not possible to stop completely, the vehicle must slow down to a speed where it can be stopped if necessary. Drivers are encouraged to at least “cover the brake,” meaning keep a foot on the brake in case they need to abruptly stop. In addition, if multiple vehicles are travelling from the same start location to final destination, they should follow the same route to reduce the chance of vehicles encountering each other at an intersection.

Recommendations

Departments should create and strictly enforce seat belt policies in alignment with NFPA 1500.

Seat belts must be worn at all times when riding inside the fire apparatus. Integrate into the fire service culture and, more importantly, enforce seat belt pledges, policies, and standards of procedure.

Follow NFPA 1915 for apparatus maintenance guidelines. Departments need to create and adhere to apparatus maintenance programs.

Apparatus maintenance is critical to operational functions and should be performed daily. Small issues can become big issues when related to safety and should be resolved immediately or the apparatus should be taken out of service.

Reduce speed to the legal limits and come to a complete stop at intersections when operating fire apparatus.

Speed is directly correlated with reduced safety, and although responding to an emergency, following the speed limit is better than being involved in a collision. Intersections are dangerous and a common place for collisions involving fire apparatus. Stopping or at least reducing speed at intersections is recommended for the safety of firefighters and civilians.

Follow NFPA 1002 guidelines to ensure apparatus operators are properly trained.

Distractions should be minimized for the apparatus operator, and personnel should be trained specifically for the apparatus they will be driving.

Chapter 7: Mental Health and Suicide Among Women Firefighters

It is common knowledge that firefighting is stressful. According to CareerCast (2017), “firefighter” ranked as the second most stressful job, just below enlisted military personnel. Firefighters have a plethora of varied stressors that involve family, their career, their gender, finances, personal health and many other stressors (Kimbrel et al., 2011; Jahnke et al., 2012). Exposure to occupational stress, traumatic stress, discrimination and sleep deprivation can contribute to cardiac issues, gastrointestinal issues, alcohol use, weight gain, depression, post-traumatic stress disorder (PTSD) and other stress-related reactions (Jahnke, Poston, Haddock, & Murphy, 2016; Sawhney, Jennings, Britt, & Sliter, 2017).

For the past 25 years, there have been a growing number of studies that explore the health and wellness of firefighters. While this is extremely beneficial for understanding and creating programs to address the overall health of firefighters, especially as it pertains to mental health and suicide, women firefighters’ experiences are often excluded or homogenized (Jahnke et al., 2012). What has been lacking is a concerted effort to understand the implications of these findings on women firefighters. They do the same jobs and are exposed to the same stressors as their male counterparts, but unique factors may compound these issues.

The fire service is a male-centric and hyper-masculine culture that requires women to navigate a hostile environment of varying degrees (Berkman et al., 1999a; Murphy, 2011; Khan, Davis, & Taylor, 2017). The most visible factors unique to women firefighters are gender-based discrimination and harassment, and despite being documented and studied in relation to recruitment and retention, how these impact women and their health is not readily known (Hulett et al., 2008).

There is a need for research on women firefighters to gather results that may inform health and wellness programs to address their needs and the unique circumstances they face. The following discussion will focus on the available research of mental health and suicide risks among women firefighters.

Depression

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), major depressive disorder is linked to a high mortality rate that is attributed to suicide (American Psychiatric Association (APA), 2013). Depression is a mood disorder that negatively affects an individual physically, psychologically and cognitively. Some of the most prominent experiences of depression include persistent sadness or emptiness, loss of interest, irritability, isolation, fatigue (sleep too much or cannot sleep), cognitive difficulties, and multiple aches and pains (APA, 2013).

The twelve-month prevalence of major depressive disorder among women is 1.5 to 3 times higher than men (APA, 2013). Women firefighters also reported higher rates of depression than male firefighters, although women firefighters had lower rates than women in the general population (Murphy, Beaton, Cain, & Pike, 1994).

Jahnke et al. (2012) assessed health outcomes and health risk behaviors in career and volunteer women firefighters. Researchers administered several self-report surveys that addressed the frequency of feelings and behaviors of depression, and how stressful

they perceive their lives. The participants' responses suggested that nearly a quarter of career women firefighters are at risk for depression, and more than a quarter of career participants noted feelings of anger, nervousness and stress in the range of fairly often to often (Jahnke et al., 2012). For volunteer women firefighters, the frequency was lower with a third scoring at a high risk for depression (Jahnke et al., 2012). Despite their noted struggles, both groups of women felt confident in their ability to cope (Jahnke et al., 2012).

Post-traumatic stress disorder

PTSD or post-traumatic stress syndrome (PTSS) is a disorder that arises from exposure to traumatic stressors. The resultant symptoms involve four main categories: reliving the experience or trauma-associated experience, avoiding reminders of the event, having negative beliefs and feelings, and feeling keyed up (APA, 2013). According to the DSM-5, the projected lifetime prevalence of PTSD is 8.7 percent by age 75 (APA, 2013).

PTSD development depends on the type of trauma, frequency of exposure, and appraisal of trauma (if the trauma is not perceived as traumatic, then few reaction symptoms will develop). The expectation is that groups such as veterans and first responders will exhibit a higher rate of PTSD. However, when men and women are compared across their lifespans, PTSD is more prevalent in women than men (APA, 2013). The speculation is that women are more likely to experience traumatic events (APA, 2013).

A plethora of research has investigated the prevalence of PTSS and PTSD in first responders. The study findings varied in results for the rate of PTSS or PTSD found among first responders, which included study participants that were predominately male firefighters (Boffa et al., 2017).

Stanley, Hom, Spencer-Thomas and Joiner (2017a) investigated the association of PTSD and suicide with anxiety sensitivity ("fear of fear") among women firefighters. The most prominent finding of this study supports that cognitive anxiety sensitivity concerns are statistically linked to PTSD and suicide risk (Stanley et al., 2017a). The study also investigated symptom clusters of PTSD and the anxiety sensitivity concerns (global, cognitive and social). The results demonstrated a couple of important associations: First, the global and cognitive anxiety sensitivity concerns support a link between PTSD symptoms of re-experiencing and suicide risk, and second, cognitive anxiety sensitivity concerns statistically link between PTSD, numbing symptoms, and suicide risk.

↓ Resource Break

Chaplains are often thought of as a resource for the community, but they are an invaluable resource to firefighters as well. Sometimes firefighters find it easier to approach a chaplain than a peer or mental health professional. Chaplains may or may not be church affiliated. If they are associated with a church, it is preferred that their activity with the fire department be nondenominational so they are approachable to all fire department and community members, regardless of beliefs.

Information to start a chaplain program and training can be found at: <https://ffc.wildapricot.org/institute>.

Overall, the results of this study are promising. The finding of anxiety sensitivity, specifically cognitive concerns as a link between PTSD and suicide risk, provides several

intervention points (Stanley et al., 2017a). Also, the results of this study are consistent with previous research conducted with predominantly male firefighters. These results demonstrate a link between the PTSD symptom clusters of re-experiencing, numbing symptoms and suicide risk (Boffa et al., 2017).

Alcohol

Alcohol is culturally accepted in the U.S., and alcohol use disorder is a common problem. Alcohol use disorder is characterized by several factors that include drinking more than intended, being unable to stop drinking, continuing to drink even if it makes you feel worse, and drinking or being sick from drinking that impacts the home, family and/or job (APA, 2013). Alcohol use and associated disorders affect men more than women. Alcohol intoxication is a significant contributor to suicidal behavior (APA, 2013).

In the fire service, alcohol is a socially accepted vehicle for comradery and coping. A large study of alcohol use in firefighters (predominately male) found that alcohol consumption was used to cope with the effects of occupational stress and repeated exposure to trauma (Jahnke, Poston, & Haddock, 2014). The prevalence of alcohol use within the fire service is significantly higher than the general population, with more episodes of binge drinking (approximately 50 percent of firefighters) contributing to poor health outcomes (Haddock et al., 2012). In one study, 61 percent of women firefighters reported having had a drink within the past three days versus 46 percent of women in the general population (Haddock, Poston, Jahnke, & Jitnarin, 2017).

As stated in the DSM-5, alcohol is rarely the only problem. For firefighters, excessive drinking is most often associated with a number of mental health issues, such as depression, anxiety and post-traumatic stress symptoms (Carey, Al-Zaiti, Dean, Sessanna, & Finnell, 2012; Jahnke et al., 2014; Jahnke et al., 2016). This study on women firefighters supports the notion that women firefighters use alcohol to cope with occupational stress and trauma, just as their male counterparts do, but at a lower rate (Jahnke et al., 2014). Endorsement of problem drinking is also associated with reports of occupational injury (Haddock et al., 2017). Treating the abusive alcohol use and identifying the co-occurring mental health issues provides several opportunities for earlier interventions.

Suicide

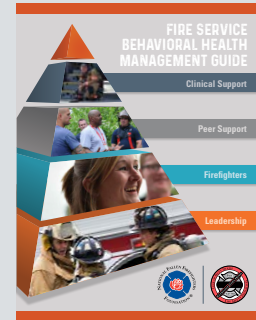
Suicide is not a diagnosis but an act that is often the result of distress that overwhelms the individual's ability to cope. It most often co-occurs with mental health issues, such as depression, anxiety, PTSD, bipolar disorder, eating disorders, certain personality disorders, and alcohol and substance use and abuse (American Foundation for Suicide Prevention, 2018).

Women in all protective services die by suicide at a higher rate than women in any other occupation (McIntosh et al., 2016). The high rate is likely due to several factors that may increase the risk for suicide which are consistent with gender-related discrimination, including job-related isolation and demands, stressful work environments, and work-home imbalance (Chetkovich, 1997; Berkman et al., 1999a; LaTour, 2008; McIntosh et al., 2016).

📄 Resource Break

From experts on traumatic and occupational stress of military, police and fire, the NFFF has developed health and safety initiatives, trainings and resources to aid departments in caring for the overall health of their members (National Fallen Firefighters Foundation, 2017). The culmination of the work sponsored by the NFFF is the Fire Service Behavioral Health Management Guide (NFFF, 2017).

Access this resource at: <http://www.everyonegoeshome.com/wp-content/uploads/sites/2/2017/12/behavioral-health-mgmt-guide-122017.pdf>.



In an effort to understand women — an at-risk group — and to develop suicide screenings, prevention and intervention tools, Stanley et al. (2017b) investigated suicidal thoughts and behaviors among pre- and post-career women firefighters, along with personal and occupational correlates. Overall, the study found high rates of pre- and post-career suicidality. However, a decrease of rates of attempts and nonsuicidal self-injury was shown for post-career suicidality (Stanley et al., 2017b). Marital status and having children correlated with a decrease in the rate of career suicidality. While age had an inverse relationship to career suicidality, women who were younger and less experienced in the fire service reported higher career suicidality (Stanley et al., 2017b). Comparisons of pre- and post-career women firefighters' career suicidality occurrences for all factors was less than a previous nationwide study comprised primarily of male firefighters (Stanley et al., 2017b). The results of this study are useful for developing pre-career screenings and prevention and intervention strategies.

Findings for the Stanley et al. (2017b) study suggested that marital status and having children decreased rates of career suicidality. The results are consistent with research on prevalence and risk factors for suicidal ideation in which gender, young age, lower education, and unmarried status confer risk (Nock et al., 2008). As a result, Stanley et al. (2017b) proposed that marital status and having children appear to be protective factors that decrease career suicidality.

The contrast between marriage as a protective factor and the high rate of divorce of women firefighters brings into question how protective marriage is for women in the fire service (Haddock, Jahnke, Poston, Jitnarin, & Day, 2015). While marriage of women firefighters, in this study, was found to decrease the rate of heavy alcohol use and depression, being a firefighter seems to negatively impact women's marital status (Haddock et al., 2015).

Firefighters are exposed to suicide attempts and deaths at a higher rate than the general population, and they also have a higher rate of suicidal thoughts and behaviors, which suggests a correlation between the two (Stanley et al., 2015). Gulliver et al. (2016) explored the possible correlation directly and found evidence to support it. In conjunction with and in response to the positive correlation between suicide exposures and the suicidal thoughts and behaviors in firefighters, they proposed a standard of practice for suicide postvention to increase behavioral wellness of firefighters. This would consist of programs and interventions for survivors following a death by suicide (Gulliver et al., 2016).

Resource Break

If a firefighter is struggling, reach out. The NFFF (2017) suggests the use of ACT, an acronym based on the U.S. Army's Ask, Care, Escort program.

A Ask. Ask how they feel.

C Care. Demonstrate that you care with words or body language.

T Take. The best way to know that someone is getting the help they need is to accompany them.

Mental health effects of discrimination and harassment

Since women first entered the career fire service, unique factors have posed challenges for fire departments. Two handbooks were written in response to the recognized and expected challenges of integrating women into a male-dominated environment: "The Changing Face of the Fire Service: A Handbook for Women in Firefighting" (Armstrong et al., 1993), and "Many Women Strong: A Handbook for Women Firefighters" (Berkman et al., 1999b). The earlier handbook highlighted issues such as recruitment, station facilities, reproductive issues, childcare, hair standards, firefighter marriages, sexual harassment and diversity (Armstrong et al., 1993). The latter handbook included topics addressed in the earlier handbook in addition to training, physical fitness, equipment and protective gear (Berkman et al., 1999b).

Despite the two decades that have passed since these books were written, far too many of these issues persist even today and have been the subject of discrimination suits brought by women firefighters against their departments. Most often discrimination and harassment is presented in terms of legal impact and financial costs, but it has a significant psychological cost on the target and observers. It may not occur immediately but often develops slowly over time. Women in the fire service have identified a number of discriminatory and harassing incidents, ranging from overt physical and verbal attacks to denigrating jokes and pranks (Murphy, 2011). With the exception of the more overt attacks, the participants stated that the constant little jabs wore them down over time (Murphy, 2011).

Symptoms of discrimination and harassment are physical, cognitive and psychological. Women firefighters claimed to experience the following psychological symptoms as a result of discrimination or harassment: anxiety, fear, paranoia, agitation, crying, depression, self-doubt, irritability and nightmares (Murphy, 2011). Cognitive symptoms included difficulty with concentration and decisions, forgetfulness, and increased mistakes (Murphy, 2011). The physical symptoms shared by women firefighters included increased heart rate and blood pressure, physical agitation, tremors, sweats, chest tightness, insomnia, headaches and stomachaches (Murphy, 2011).

Participants shared that they used several coping strategies, but concerningly most of the participants stated that they drank alcohol to relax or decompress (Murphy, 2011). These symptoms are consistent with traumatic stress response, depression, anxiety, PTSD and alcohol use. While no participant in the Murphy (2011) study expressed suicidal ideations, the resultant mental health issues increase the risk of suicide. Stanley et al. (2017b) found similar results in their study investigating the association between harassment, suicidality and psychiatric symptoms among women firefighters.

For more on the discrimination and harassment of women in the fire service, see “Chapter 8: Discrimination, Harassment, Bullying and Inclusion Issues.”

Summary

Firefighters are at increased risk for PTSD, alcohol abuse and suicide, regardless of sex, although women in protective services were identified to have the highest rate of death by suicide. There are a number of risk factors that contribute to mental health problems and suicide, and some risk factors are more salient for women, including job-related isolation, job demands, stressful work environments and work-home imbalance (McIntosh et al., 2016).

Most of the listed risk factors can be attributed to three main factors: personal, occupational and fire service culture. The personal factors include increased prevalence of depression and anxiety, particularly for women (APA, 2013); a higher divorce rate for women firefighters (Jahnke et al., 2012); stigma against mental illness; and barriers to seeking help (Mardikar et al., 2013; Hom, Stanley, Ringer, & Joiner, 2016). The occupational factors include exposure to another’s physical and mental pain, knowing a victim of suicide (Harvey et al., 2016; Kimbrel et al., 2011), and exposure to hazardous environments. The fire service culture factors include issues that are particularly salient for women, such as isolation, exclusion or loss of comradery (no room in the brotherhood) and varying degrees of harassment (Hulett et al., 2008; Mardikar et al., 2013; Murphy, 2011).

Therefore, it is in the best interest for fire service organizations to implement programs that address all contributing factors, including discrimination and harassment.

Recommendations

Create a comprehensive behavioral health policy that addresses mental health and alcohol issues within the fire service.

Define who the program will serve, and identify leaders within the ranks to champion the behavioral health program within the department. The behavioral health program should include several components:

- ◆ Membership support at all levels, especially the leadership.
- ◆ Ongoing education on behavioral health issues.
- ◆ Self-care practice.
- ◆ Peer support team.
- ◆ Chaplain program.
- ◆ Clinical support.

Ensure that all members of the fire department understand the expectations and goals of the program, especially confidentiality. Firefighters cite several reasons for not seeking mental health care, including embarrassment, harm to one’s reputation, fear of special treatment by peers, concerns for appearing weak, and loss of reputation (Hom et al., 2016). Despite the cited reasons, firefighters with severe mental health issues did seek help but still held those beliefs (Hom et al., 2016).

In developing a peer support program, it is necessary to engage a mental health professional to oversee and provide support for the peers. Members should be chosen carefully and should be approachable by most members of the department. They need to be properly trained and have ongoing training. They need to be healthy, both mentally and physically, because they need to be able to help in traumatic and high-stress

situations. They also need to be available for other stressors that department members may encounter. Have the peers be visible and easy to access. Peers also need to clearly understand confidentiality and when it may be broken (NFFF, 2017). Also ensure that peer support team members know where to refer affected individuals.

Research supports the use of certain work recovery strategies to mitigate development of mental health symptoms after stress exposure (Sawhney et al., 2017). These strategies should be included in a comprehensive behavioral health management program. A few strategies that help mediate occupational and traumatic stressors and mental health symptoms are: work-related talks, time with coworkers/supervisors, exercise, recreational activities, relaxation, and mastery experiences (Sawhney et al., 2017).

Resource break

Firefighters benefit from mindfulness meditation and yoga. Firefighters who practiced mindfulness reported fewer symptoms of PTSD, depression, physical aches and pains and alcohol problems (Smith et al., 2011). Kaplan, Bergman, Christopher, Bowen, & Hunsinger (2017) found support for the efficacy of Mindfulness-Based Resilience Training for increased stress resilience and reduced burnout. The results suggest that mindful meditation helps build resilience and contributes to better stress management (Kaplan et al., 2017). Yoga has also proven effective in helping firefighters; perceived PTSD symptoms decreased after just four yoga classes, and a measurable improvement on functional movement was shown (Cowen, 2010).

If the resources are available, it is strongly urged to include family members in the behavioral health program (Gulliver et al., 2016; NFPA, 2018).

A final component of a behavioral health program is having clinical support. When seeking clinical support, a decision needs to be made regarding how the clinician will be integrated into the fire department. Larger departments with a comprehensive behavioral health program may want to employ a clinician full time, while other departments may contract with a clinician and use them as needed (for training, consulting and/or therapy). Ensure that any individual or group that works with your department understands the fire service culture and the unique factors facing women firefighters, namely the impact of discrimination and harassment (Murphy, 2011).

Conduct psychological testing at the time of hiring to establish a baseline and identify possible mental health risks. Follow up with annual psychological screenings along with fitness screenings, and consider conducting full psychological evaluations at periodic intervals to track changes to allow earlier interventions for alcohol use, mental health issues, and suicidality. Ensure resources are available for team members.

A study on pre-career and career prevalence rates of suicidal thoughts and behaviors of women firefighters noted that women who endorsed suicidal thoughts and behaviors pre-career were at increased risk for suicidal thoughts and behaviors later in their career (Stanley et al., 2017b). The information from these evaluations or screenings should not be grounds to reject a potential employee or dismiss a current one, but instead should be used proactively to promote health, prevention and interventions (Stanley et al., 2017b).

Resource Break

Post mental health awareness resources around the firehouse and remind firefighters monthly of the resources available.

The NVFC's Share the Load program is a free program to career and volunteer departments that provides access to critical resources to help first responders and their families. The program includes the Fire/EMS Helpline, which is a no-cost 24-hour service to provide assistance with issues such as stress, PTSD, addiction, etc.

- Fire/EMS Helpline — 1-888-731-FIRE (3473).
- Share the Load™ videos and print resources addressing warning signs and how to seek assistance are also available at no cost.

Access this resource at <https://www.nvfc.org/programs/share-the-load-program/>.

The IAFF has created an Online Behavioral Health Awareness Course. Designed specifically for fire service members, this online self-paced course provides an overview of a range of mental and behavioral health topics, including strategies for maintaining emotional wellness. It is open to all firefighters, whether a member or not.

Access this resource at: <http://client.prod.iaff.org/#page=behavioralhealth>.

Reduce the stigma associated with mental health in the fire service through education and open dialogue.

Reducing stigma in the fire service means talking about mental health and education and normalizing stress reactions (Moffitt, Bostock, & Cave, 2014). Educate all members throughout their careers to recognize mental health signs, symptoms and risk factors. Apply the same concept for firefighter mental health as for apparatus and equipment checks.

When mental health issues are suspected, a direct nonjudgmental conversation in a nonthreatening and private location should occur. Offer objective evidence as to what behaviors have been observed. Provide prevention and intervention strategies, suited to short-term modifiable risks, specific to the individual and the department (Franklin et al., 2017).

Identify local resources, and become involved in local and state government, to gain support for policies that benefit firefighters who are impacted by mental health issues.

The research has provided a number of needed interventions to mitigate the impact of the cumulative effects of traumatic and occupational stressors. In the general population, there are a number of treatments for disorders related to stress reactions — such as PTSD, depression and alcohol use — but only a few studies have examined interventions specific for the fire service.

Recognizing suicide warning signs in firefighters and emergency medical technicians

Behavioral health is a key component of an overall firefighter health and wellness program. Unfortunately, it is a difficult subject to discuss — many factors affect a firefighter’s ability to understand when a fellow brother or sister is suffering, but that does not make it any less critical an issue.

By far, the number one comment by fire and EMS chiefs associated with departments that have suffered a loss is that they did not realize or recognize the warning signs that their member was displaying until after the loss had occurred.

The Firefighter Behavioral Health Alliance (FBHA) tracks and validates firefighter and EMT suicides in the United States. FBHA has traveled across North America presenting behavioral health workshops with an emphasis on suicide awareness.

Top five suicide warning signs — Think RAILS

R Recklessness/ Impulsiveness	These might be subtle signs such as purchasing guns when a person has always been against them, riding a motorcycle recklessly, or charging into burning buildings against policy or procedure.
A Anger	Suppressed anger or explosive anger from seemingly minor issues can be a dangerous sign. Displacement (directing one’s anger at someone else instead of the intended person) is often observed. Displacement is most often directed at a firefighter or EMT’s family.
I Isolation	Becoming distant from their career company around the station or volunteer firefighters who do not participate in drills or calls as much. Members might even display isolation around their family. They lose interest in family activities.
L Loss of confidence in skills/abilities	Several firefighters and EMTs have advised FBHA they lost confidence in their ability to get the job done due to concentrating on emotional or personal issues they were battling. A seasoned team member who cannot remember how to put an engine in gear to pump is an example.
S Sleep deprivation	Loss of sleep can indicate stress, anxiety, post-traumatic stress or several other emotional issues a member might be struggling with and not realize.

For more information, visit: <http://www.ffbha.org/>.



Chapter 8: Discrimination, Harassment, Bullying and Inclusion Issues

Harassment and discrimination are challenges in organizations throughout the U.S., and the fire service is no exception. Women face discrimination and harassment in the fire service, and it impacts not only recruitment and retention of women firefighters but also their physical and mental health (Murphy, 2011; Hulett et al. 2008).

Harassment and discrimination have no place in the fire service. From unwanted sexual attention, sexist comments, bullying, hazing, exclusionary practices based on gender, to rape, harassment is not only illegal; it has financial impacts as well. Employers may be held liable for actions, even if they were not aware of an incident. These behaviors may cause a negative financial impact, stress, decreased productivity, and high turnover rates (McDonald, 2017).

In a study of gender differences of occupational stressors experienced by firefighters, male and female participants identified the same top-five stressors: wage/benefit concerns, job skill concerns, sleep disturbance, substandard equipment, and safety concerns (Murphy et al., 1994). The biggest difference was that discrimination was ranked sixth by women firefighters and was not relevant for the men (Murphy et al., 1994). Murphy et al. (1994) suggested that the prominence of discrimination for women may actually be an important mediating factor for some of the stressors that the women identified.

Culture of the fire service

In 2016, the Equal Employment Opportunity Commission (EEOC) released a report of workplace harassment, that noted women in male-dominated occupations are at a greater risk of harassment (Feldblum & Lipnic, 2016).

The culture and traditions of the fire service create institutional barriers that disproportionately affect women, including:

- ◆ Bunkroom and bathroom configurations (not having appropriate facilities, not allowing privacy, controlling access time) (Yoder & Aniakudo, 1997).
- ◆ Recruiting and testing (lowering the physical standard, not training at all, or over-training).
- ◆ Equipment and personal protective gear (not made available, poor quality, or too big) (LaTour, 2008).
- ◆ Outdated policies.

The old adages, “that’s how it has always been done” or “it’s always been that way” are often used as excuses for failing to update policies and practices.

Harassment and discrimination against women firefighters

Women firefighters have repeatedly described discrimination and harassment as key barriers to having more women in the fire service and as the most impactful stressors they deal with on the job (Hulett et al, 2008; Murphy, 2011). Women in the fire service share: “I have experienced different treatment because of my gender”; “I have encountered ill-fitting equipment”; and “My gender has created barriers to my career development” (Hulett et al., 2008). Additional discriminatory practices experienced by women in the fire service include:

- ◆ Being shunned or isolated (Hulett et al., 2008).
- ◆ Lacking privacy while changing, showering, and using the bathroom (Hulett et al., 2008).
- ◆ Training denials or differences (Hulett et al., 2008).
- ◆ Exclusion from firehouse relationships (both inside and outside of work) (Yoder & Aniakudo, 1997) and isolation at work (Murphy, 2011).
- ◆ Lack of social support (Murphy, 2011).
- ◆ More severe discipline than male counterparts (Murphy, 2011).
- ◆ Lack of promotional opportunities (Murphy, 2011).
- ◆ Disregard for competencies (Yoder & Aniakudo, 1997).
- ◆ Highlighting mistakes made by women and enforcing a double standard (Yoder & Aniakudo, 1997).
- ◆ Unwillingness to accommodate special physical needs (e.g., allowing different biomechanical techniques to raise a ladder) (Yoder & Aniakudo, 1997).

Such acts of discrimination toward women firefighters can negatively impact mental health, which in turn can result in lower retention rates of women firefighters. Women firefighters experiencing negative attitudes from male counterparts may experience lower job satisfaction due to a poor work environment. Compared to their male counterparts, women firefighters are at risk for higher anxiety, exposure to sexism, and higher levels of conflict in the workplace (McDonald, 2016).

What to do if being harassed

Fire department employees or volunteers who are the victims of harassment should:

- Confront their harasser ONLY if they are comfortable doing so.
- Know the department's policies and procedures for filing a complaint.
- Immediately notify their supervisor or their supervisor's superior if their supervisor is the harasser.
- Document the incident to include time, place, actions and witnesses.
- Immediately notify police if the behavior involves criminal behavior such as attempted rape, rape, battery or sexual assault.
- Contact their employee assistance program.
- File a formal complaint with the Federal EEOC or with their state or local fair employment practices agency.
- Consult an attorney if harassment continues or they are not confident in the internal remedies, or if they are retaliated against for filing a complaint (Berkman et al., 1999a).

Sexual harassment and the decision to take action can be very stressful. If the department offers an employee assistance program, consider using it. Victims should try not to place blame on themselves. No one has to tolerate, on or off duty, sexual harassment, assault, hazing or bullying.

Workplace violence, bullying and the impact to women firefighters

Workplace bullying has been described as a counterproductive workplace behavior that includes mistreatment and abuse. The U.S. Department of Labor (DOL) indicates almost two million Americans report being a victim of workplace violence annually. The DOL defines bullying as any act or threat in the workplace that may include physical violence, harassment, intimidation, or disruptive behavior that is threatening. Bullying behaviors may range from subtle behaviors that include excessive work assignments, jokes and gossiping to extreme behaviors such as violence, aggression, threats and insults (Samnani, 2013). Unfortunately, public service workers, and thus first responders, are at a higher risk for workplace violence as compared to those in other professions (McDonald, 2017).

Women firefighters are not exempt from workplace bullying, and the impact on women can differ from their male counterparts. Workplace violence directed toward women is usually subtle. Female victims of bullying often experience a greater amount of health issues and long-term sicknesses (Mundbjerg Eriksen, Høgh, & Hansen, 2016).

📌 Resource break

The IAFC Safety, Health and Survival Section partnered with a number of organizations, such as Women in Fire and Cumberland Valley Volunteer Firemen's Association, to create a bullying and workplace violence prevention toolkit. The toolkit is a collection of policies, articles and resources to prevent bullying in the workplace.

Access this resource at <https://www.iafc.org/topics-and-tools/resources/resource/bullying-and-workplace-violence-prevention-toolkit>.

Workplace bullying goes beyond an individual; it may also lead to negative consequences for a fire department's reputation (McDonald, 2017). Organizations that have a bullying presence often experience high rates of turnover and legal involvement. Community support can also be greatly reduced from the negative attention bullying can bring. There is a high impact from bullying to both human and financial resources within a fire department.

To reduce the impact bullying has on an individual and an organization, it is critical for department leadership to be proactive. Bullying can be reduced by implementing clear workplace rules and policies, offering formal training to all employees on workplace violence and department policies, establishing a formal process for management and resolution of bullying, and implementing a mentoring program (McDonald, 2017).

Sexual harassment

Federal law defines sexual harassment as “unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature” when

- ◆ Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment.
- ◆ Submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual.
- ◆ Such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment (Equal Employment Opportunity Commission, n.d.).

Harassing behavior takes various forms: verbal, nonverbal and physical. Examples of verbal harassment include whistling, sexual comments, requests for sexual favors, repeatedly asking someone on a date, and repeatedly asking about one's sex life (Berkman et al., 1999). Nonverbal forms of harassment include touching oneself sexually, staring, blocking one's path, and giving unwanted gifts (Berkman et al., 1999). Physical harassment can range from touching, patting, squeezing, pinching, brushing against, or cornering, to physical aggression (Berkman et al., 1999a).

Sexual harassment is a power play that is degrading, humiliating and intimidating to its victims (Berkman et al., 1999). It is based on aggression and hostility, not sexual desire (Berkman et al., 1999). Often its victims feel powerless against it. There are two forms of sexual harassment found in the fire service. **Quid pro quo** involves demands for sexual favors in return for employment benefits; the conduct is a condition of employment or can be used as a decision for employment (Berkman et al., 1999). The other form is **hostile-environment** harassment which targets gender and makes the workplace hostile and threatening; the purpose is to interfere with one's work performance (Berkman et al., 1999a).



According to a 1995 WFS survey, 88 percent of career women firefighters and 83 percent of volunteer women firefighters had been subjected to one or more of the following types of harassment at some point during their work in the fire service:

- ❖ Unwelcome requests or demands for sexual favors from coworkers or supervisors.
- ❖ Unwelcome physical contact.
- ❖ Sexually explicit or derogatory posters, photographs, or cartoons present or posted in the workplace that were offensive.
- ❖ Sexually explicit or derogatory movies or videotapes shown in the workplace that were offensive.
- ❖ Sexual or sexist jokes or comments that were offensive (Berkman et al., 1999a).

Most of the harassment was ongoing, with 71 percent of career women firefighters and 59 percent of volunteer women firefighters experiencing the behavior at the time of the survey. Quid pro quo harassment was previously thought to be relatively uncommon in the fire service. However, 25 percent of career women firefighters and 30 percent of volunteer women firefighters reported experiencing unwelcome requests or demands for sexual favors in connection with their work or volunteer service (Berkman et al., 1999a).

Resource break

In 2014, Women in Fire and the IAFC delivered a public service announcement against sexual harassment and sexual assault in the fire service. The message states that sexual assault is “inconsistent with the values of the fire service and will not be tolerated” (Women in Fire, n.d.). The organizations challenged all leaders to foster a true climate of trust and respect. This video can be found at <https://www.womeninfire.org/sexual-harassment/>.

Lack of reporting

Women firefighters may be particularly vulnerable to occupational stress and are more likely to encounter barriers to receiving help (Mardikar et al., 2013). The EEOC estimates that up to 75 percent of workplace harassment goes unreported (Feldblum & Lipnic, 2016). The most commonly cited reasons for not reporting are: fear of losing one’s job or credibility, retaliation, getting a colleague in trouble, being embarrassed, and/or not being believed (Feldblum & Lipnic, 2016). Due to these fears, and the belief that reporting would do no good and make things worse, victims often suffer in silence (Feldblum & Lipnic, 2016). There is a lack of faith that management will do anything to stop the problem. Additionally, the more the victim depends on their income, the more likely they are to put up with harassment.

Chief officers often overlook discriminatory practices. Therefore, women firefighters who experience harassment and/or discrimination also must endure a lack of management support, fear of social consequences, and fear of a confidentiality breach (Mardikar et al., 2013). This is particularly concerning due to the significant impact of discrimination and harassment on mental and physical health.

Recommendations

The culture of the fire service must change to be more inclusive of women.

A proposed strategy for cultural change includes these five elements (Hulett et al., 2008; Mardikar et al., 2013; Murphy, 2011):

1. The commitment of top leadership such as the fire chief, mayor and commissioners.
2. Accountability and monitoring that includes rewards and consequences to ensure mid-level leaders maintain equity in their departments.
3. Knowledgeable human resource management to provide objective, transparent, and performance-based procedures to minimize the impact of biases that affect hiring, promotions and assignments.
4. Establishment of a zero-tolerance policy for discriminatory and harassing behaviors, including bullying, applied equally to everyone. Provide relevant, ongoing training.
5. Sustained and consistent effort to change the culture.

Cultural change needs to come from the top down. Company officers must support the policies and exhibit fair treatment to all members under their command (Berkman et al., 1999a).

Every department should adopt a clearly written zero-tolerance policy against discrimination, harassment and bullying for all. Provide ongoing education on the policy, and be proactive and accessible to all.

Fire service leaders should take a proactive approach to stopping harassment in their departments through the following actions (Berkman et al., 1999a):

- ◆ Adopt written policies with clearly defined expectations and discipline that prohibit discrimination and harassment.
- ◆ Provide a confidential step-by-step process to file complaints within the department.
- ◆ Provide resources for filing complaints outside of the department.
- ◆ Educate all members on sexual harassment, bullying and hazing.
- ◆ Support people who file complaints of harassment.
- ◆ Handle complaints promptly and confidentially.
- ◆ Prevent retaliation against people who file complaints.

Education should be ongoing, not incident driven. Education on what constitutes discrimination and harassment, and the physical and mental health impacts, should be conducted on a regular and consistent schedule.

Chapter 9: Firefighter Cancer and the Woman Firefighter

Cancer incidences among firefighters have shown to be higher than that of the general population. There is concern about cancer among women firefighters; however, the small proportion of women in the fire service has confounded researchers and resulted in a lack of knowledge regarding cancer and women firefighters. Also, due to small sample sizes, many studies do not include women, or they are unable to report on cancer statistics among women firefighters. The resulting knowledge gaps may have lasting health impacts on the community of women firefighters.

Studies that have evaluated cancer risk among women firefighters suggest that women firefighters, like their male coworkers, may be at an elevated risk for overall cancer incidence (Daniels et al., 2014). These studies also suggest that women firefighters may be at an elevated incidence risk for breast (Daniels et al., 2014), cervical, thyroid (Ma, Fleming, Lee, Trapido, & Gerace, 2006) and bladder cancers (Daniels et al., 2014).

Given the knowledge gaps regarding women firefighters' risk for these cancers, the data from male firefighters indicate areas for future research to assess risks for women firefighters. Despite these knowledge gaps, there remains enough evidence regarding cancer incidence and mortality in the firefighter population to advocate for a precautionary approach and, therefore, for action to protect women firefighters' health.

In addition to studies on cancer risk among firefighters, a small but growing body of research examines firefighters' exposures to toxic chemicals, including carcinogens and hormone disruptors, on the fire ground, in stations, and from their gear. Exposure to carcinogenic chemicals and hormone-disrupting chemicals do not discriminate on the basis of sex or gender. Exposure to these chemicals may be mitigated through protective equipment, firehouse design and structural changes. Recommendations must be tailored to specific fire department needs and culture to be effective.

This chapter examines the published, peer-reviewed data regarding cancer incidence and mortality among firefighters. Specific attention was given to women firefighters and cancer, reproductive cancers in male firefighters, suggestive data for male firefighters, and specific cancers. The exposure risks faced by firefighters are detailed to suggest causation and association while also providing a framework for necessary improvements. Lastly, the suggested intervention tactics provide a framework for both exposure and cancer risk reduction as well as workforce empowerment in the face of health concerns.

Resource break

The Firefighter Cancer Support Network (FCSN) provides one-on-one mentoring and assistance to firefighters diagnosed with cancer. FCSN also provides awareness and prevention training.

Access this resource at: <https://firefightercancersupport.org/>.

The evidence

Overall cancer incidence in firefighters

Several studies have investigated overall cancer incidence and mortality in the firefighter population; however, very few studies include women firefighters in their sample or report statistics on this population. The two studies that did report on overall cancer incidence among women firefighters indicated a significant increased incidence of 24 to 63 percent; however, only one study was statistically significant (Ma et al., 2005; Daniels et al., 2014).

Three out of five studies that looked at overall cancer incidence in male firefighters found statistically significant elevations, ranging from 6 to 85 percent higher risk. Of those five studies, only two of them report statistics for cancer incidence for women firefighters. These data suggest elevated incidence for women firefighters (Ma et al., 2005; Daniels et al., 2014); however, their confidence intervals are wide because the number of women in each study is small. For this reason, it cannot be concluded whether nonspecific cancer incidence is significantly elevated in the women firefighter community.

Half of the studies that measure overall cancer mortality in the firefighter population indicate elevated mortality from 10 to 73 percent for male firefighters. Only one published, peer-reviewed study that addresses similar concerns among women firefighters was found, but the Daniels et al. (2014) study does not indicate elevated cancer mortality for women firefighters. This conclusion is not definitive because a wide confidence interval accompanies this finding.

Risk for specific cancers in women firefighters

Data assessing specific cancer incidence and mortality provide evidence for elevated incidence of cervical, thyroid (Ma et al., 2005), breast and bladder cancer (Daniels et al., 2014).

Statistics concerning cervical and thyroid cancer report elevated incidence for both cancers (Ma et al., 2005). Cervical cancer incidence is more than four times higher in women firefighters; likewise, thyroid cancer incidence is nearly three times higher in women firefighters (Ma et al., 2005). Despite these significantly elevated incidence statistics, the ability to draw meaningful conclusions about the degree of significance of such incidence is thwarted due to wide confidence intervals.



Furthermore, breast and bladder cancer data may suggest increased incidence and mortality for both cancers, while wide confidence intervals also raise questions about the degree of significance of these findings (Daniels et al., 2014).

While Daniels et al. found that over half of cancer cases diagnosed in women firefighters are breast cancers, with left-sided disease being more common, potential confounding variables in the research create a significant degree of doubt which may suggest that incidence is not elevated in this population (2014). Evidence also more firmly suggests elevated bladder cancer incidence and mortality, but wide confidence intervals inhibit the ability to perform sound assessments of the degree of significance (Daniels et al., 2014).

Reproductive cancers are also of interest because elevated incidence and mortality may be associated with exposures to endocrine-disrupting chemicals in the firefighter population. Endocrine-disrupting chemicals could result in elevated incidence and mortality for reproductive cancers among women firefighters as well. This hypothesis is supported by the Ma et al. and Daniels et al. studies which indicate elevated breast and cervical cancer in women firefighters. Data should be employed to design more thorough studies of specific cancers in women firefighters to address concerns about reproductive cancers across the firefighter population.

Factors that impact exposures

There are several difficulties when attempting to assess exposure in the firefighting community. One such difficulty is that firefighters face several types of chemical exposures due to different kinds of fires, varying roles in the workplace, and duration of service.

Exposure impacts are also complicated by several factors, such as interactions between different chemicals and interactions between harmful chemicals and biological factors in different bodies both due to behaviors and biological history.

Certain aspects of firefighters' work culture may compound chemical exposure risk factors, including shift work, stress and trauma exposure. Individual behaviors such as smoking cigarettes, drinking alcohol and chewing tobacco may also compound risk factors presented by occupational chemical exposure. As a group, it was found that rates of binge drinking (Haddock et al., 2017), cigarette smoking and tobacco chewing (Jitnarin, Poston, Haddock, Jahnke, & Day, 2015) were high for firefighters and impact this population's health.

Several studies have attempted to assuage confounding factor concerns by assessing methods to stratify the firefighter population by fire time or by work role. Austin, Dussault and Ecobichon (2001) assert that failure to sort firefighters into groups based on exposure times may have resulted in underestimates of firefighter cancer incidence among groups of particularly high risk (Austin et al., 2001).

Resource break

Preventing exposure to carcinogens is key on the fireground and in the workplace. A few practical measures firefighters can take to limit exposures are:

- Gross decontamination.
- Wiping down skin post fire.
- Doffing and containing gear.
- Showering post incident.

The Kent Fire Department and the Washington State Council of Fire Fighters created a best practices guide for reducing firefighter risk of exposure to carcinogens. "Healthy In, Healthy Out" is a well-rounded resource that provides education in regards to taking these preventative measures.

Access this resource at: <http://www.wscff.org/2016%20Postings/Health%20In-Out.pdf>.

Recommendations

Develop and study firefighter cancer prevention programs that reduce risk factors for cancer and limit exposure to known carcinogens.

To reduce cancer risks, implement programs that also reduce other risk factors and improve overall firehouse health. These programs would address nutrition, exercise, tobacco use, alcohol use and mental health.

For example, Frattaroli et al. (2013) studied a health program adopted by 98 volunteer firefighters to combat cardiovascular disease, another condition of concern within the firefighter population. This program invested in individual, workplace and community measures to curb health concerns. The study highlighted the ways in which some intervention tactics require community outreach and cultural shifts, whereas some simply require the availability of physical resources. Scales, microwaveable bowls, books and an electric grill were purchased for this study and yielded meaningful change for the firehouse (Frattaroli et al., 2013).

Invest in additional, high-performing protective gear and firehouse supplies in order to reduce exposures.

Physical and fiscal resources play into other prevention tactics. The importance of providing adequate protective gear for all body types and fostering a work culture that supports their usage cannot be stressed enough. During fires, well-fitting masks and other PPE are a must, as is their accessibility. Properly fitting gear for female firefighters is essential. This could potentially impact the ability to work safely, for instance, ill-fitting bunker gear may have gaps that could act as bellows during movement, drawing in toxic materials. In a 2011 qualitative study of the experiences of women firefighters, multiple women firefighters indicated that gear, such as boots, bunker pants, and breathing apparatuses, was maladapted to their body shapes (Sinden et al., 2013). One woman firefighter asserted, “They have female gear out there, but we don’t have it” (Sinden et al., 2013).

Many concerns have also been raised about firefighters’ exposure when they are at their most vulnerable — after a fire while wearing or handling heavily contaminated gear, and at the firehouse while wearing no gear at all. After fires, simple supplies, such as an extra set of turnouts, cleaning wipes, a change of clothes on the rig and storage for contaminated gear, can reduce the amount of time a firefighter spends in the presence of contaminated clothing. In the firehouse, diesel extractors and washing extractors can inhibit contamination. Allocating space away from the apparatus floor for living quarters would also decrease exposure in the firehouse while not wearing protective equipment.

Chapter 10: Opportunities for Future Research

Evidence on health and safety issues among women firefighters has only recently been a focus of study, and the results are trickling in. Further research involving larger samples of women in the fire service are needed in order to generalize results to women firefighters. The following are areas of interest to the health and safety of women firefighters.

Injuries among women in the fire service

The NFPA annual report of firefighter injuries is based on information collected from its National Fire Experience Survey, which does not collect information on gender (Haynes & Molis, 2017). In 2016, the NFPA published a study of firefighter fireground injuries based on NFIRS data collected from 2010 to 2014 (Campbell, 2017). This dataset included gender information, but because of the relatively low proportion of women firefighters represented (3 percent of career, 7 percent of volunteer), further characterization of injuries among women was not conducted. Other variables of interest, such as cause of injury, nature of injury, etc., were not stratified by gender. This represents a missed opportunity to better understand fireground injuries among women in the fire service and to adapt gear and PPE to better meet the needs of women in the fire service.

Cancers affecting women firefighters and the exposures that cause them

While there has been increased attention given to research of cancers affecting firefighters, the data is limited in regards to women firefighters. Evidence would suggest an increased rate of incidence and mortality from reproductive cancers in male firefighters. Specifically, there has been documentation shown that testicular and prostate cancer are of higher incidence (Bates, 2007). Findings show increased cervical cancer in the women firefighter population, with incidence of more than four times higher than the general population (Ma et al., 2005). Elevated incidence and mortality of reproductive cancers may be associated with exposure to endocrine-disrupting chemicals. With the potential that these chemicals could affect women firefighters, further research needs to be done to find out more about the health concerns. Ultimately, overall nonspecific cancer incidence and mortality must be more thoroughly examined to make meaningful assessments of cancer trends in the women firefighter community. To better distill meaningful data, larger sample sizes stratified by workplace role and/or duration of service are necessary.

The effect of serving as a firefighter on a woman's reproductive health

With a better understanding of how the fire service may affect fertility and pregnancy among women firefighters, resources for this population can be improved to better support women.

The effect of improperly fitting protective gear for women firefighters

Studies show that ill-fitting gear is a barrier for women to be successful. The lack of proper PPE may also lead to injuries and an increased exposure to harmful chemicals. To better understand the PPE requirements of women firefighters, there is a need for future research of sizing needs for career and volunteer women firefighters. There is also a need for comparison of proper sizing needs to the NFPA sizing standards, an understanding of the best method for measuring women for properly fitting gear, and availability of properly fitting gloves and turnout gear.

Recruitment, retention and promotion for women in the fire service

Another area to examine is promotional opportunities for women firefighters compared to their male counterparts. Improved tracking of career and volunteer firefighters in regards to rank and gender would greatly assist in deepening the understanding of women's needs for leadership development, recruitment and retention resources across the board. This would also give an opportunity to review standards of practice that affect healthy work environments.

References

- American Foundation for Suicide Prevention. (2018). *About suicide*. Retrieved from <https://afsp.org/about-suicide/>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Armstrong, D. S., Berkman, B., Floren, T. M., & Willing, L. F. (1993). *The changing face of the fire service: A handbook of women in firefighting*. Emmitsburg, MD: Federal Emergency Management Agency, U.S. Fire Administration.
- Austin, C. C., Dussault, G., & Ecobichon, D. J. (2001). Municipal firefighter exposure groups, time spent at fires and use of self-contained-breathing-apparatus. *American Journal of Industrial Medicine*, 40(6), 683-92. doi:10.1002/ajim.10023
- Bates, M. N. (2007). Registry-based case-control study of cancer in California firefighters. *American Journal of Industrial Medicine*, 50(5), 339-44.
- Berkman, B., Floren, T. M., & Willing, L. F. (1999a). *Many faces, one purpose: A manager's handbook on women in firefighting*. Madison, WI: U.S. Fire Administration's Women in the Fire Service. Retrieved from <https://www.usfa.fema.gov/downloads/pdf/publications/fa-196-508.pdf>
- Berkman, B., Floren, T. M., & Willing, L. F. (1999b). *Many women strong: A handbook for women firefighters*. Madison, WI: Women in the Fire Service. Retrieved from <http://www.iaff.org/hr/diverserecruitment/download/Many%20Women%20Strong.pdf>
- Boffa, J. W., Stanley, I. H., Hom, M. A., Norr, A. M., Joiner, T. E., & Schmidt, N. B. (2017). PTSD symptoms and suicidal thoughts and behaviors among firefighters. *Journal of Psychiatric Research*, 84, 277-83. doi:10.1016/j.jpsychires.2016.10.014
- Bureau of Labor Statistics. (2013, July 19). Firefighter factsheet — July 2013. Washington, D.C., U.S.A. Retrieved from <https://www.bls.gov/iif/oshwc/foi/osar0017.htm>
- Bureau of Labor Statistics. (2016, November 10). Table 3. Number, incidence rate, and median days away from work for nonfatal occupational injuries and illnesses involving days away from work by selected worker occupation and ownership, 2015. Washington, D.C., U.S.A. Retrieved from <https://www.bls.gov/news.release/osh2.t03.htm>
- California Fire Fighter Joint Apprenticeship Committee. (2007). Candidate preparation guide: Candidate physical ability test. Retrieved from <http://www.cffjac.org/go/jac/?LinkServID=3E94B79A-1CC4-C201-3E4BF872E67CB568>
- Campbell, R. (2017). Patterns of female firefighter injuries on the fireground. Quincy, MA: National Fire Protection Association. Retrieved from <https://www.firerescuemagazine.com/content/dam/fe/downloads/FFN-FRM-Downloads-Editorial/osfemalefireground.pdf>
- CareerCast. (2017). *Most stressful jobs of 2017*. Retrieved from <http://www.careercast.com/jobs-rated/most-stressful-jobs-2017>

-
- Carey, M. G., Al-Zaiti, S. S., Dean, G. E., Sessanna, L., & Finnell, D. S. (2012). Sleep problems, depression, substance use, social bonding, and quality of life in professional firefighters. *Journal of Occupational and Environmental Medicine*, 53(8), 928-33. doi:10.1097/JOM.0b013e318225898f
- Centers for Disease Control and Prevention. (2017a). *Suicide: Risk and protective factors*. Retrieved from <https://www.cdc.gov/violenceprevention/suicide/riskprotectivefactors.html>
- Centers for Disease Control and Prevention. (2017b). *Facts on women and heart disease*. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_women_heart.htm
- Chetkovich, C. (1997). *Real heat: Gender and race in the urban fire service*. New Brunswick, NJ: Rutgers University Press.
- Cowen, V. S. (2010). Functional fitness improvements after a worksite-based yoga initiative. *Journal of Bodywork and Movement Therapies*, 14(1), 50-54. doi:10.1016/j.jbmt.2009.02.006
- Cumberland Valley Volunteer Firemen's Association. (2010). *Fire service reputation management white paper*. Retrieved from <http://firefighterbehavior.com/wp-content/uploads/2017/09/Reputation-Management-White-Paper.pdf>
- Daniels, R. D., Kubale, T. L., Yiin, J. H., Dahm, M. M., Hales, T. R., Baris, D., . . . Pinkerton, L. E. (2014). Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950-2009). *Occupational and Environmental Medicine*, 71(6), 388-97. doi:10.1136/oemed-2013-101662
- Donoughe, K., Whitestone, J., & Gabler, H. C. (2012). Analysis of firetruck crashes and associated firefighter injuries in the United States. *Annals of Advances in Automotive Medicine*, 56, 69-76. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3503424/>
- Emergency Management Institute. (2016, July 14). *Public information officer (PIO)*. Retrieved from <https://training.fema.gov/programs/pio/>
- Emergency Responder Safety Institute. (2017). *ResponderSafety.com*. Retrieved from <http://www.respondersafety.com/>
- Equal Employment Opportunity Commission. (n.d.). *Sexual harassment*. Retrieved from: https://www.eeoc.gov/laws/types/sexual_harassment.cfm
- Feldblum, C. R., & Lipnic, V. A. (2016). *Select task force on the study of harassment in the work place*. Washington D.C.: Equal Employment Opportunity Commission. Retrieved from https://www.eeoc.gov/eeoc/task_force/harassment/report.cfm
- Floren, T. M. (2007). *Women in firefighting: A brief history*. Retrieved from <https://www.i-women.org/firefighters/history-of-women-in-firefighting/>
- Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., . . . Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. *Psychological Bulletin*, 143(2), 187-232. doi:http://dx.doi.org/10.1037/bul0000084

-
- Frattaroli, S., Pollack, K. M., Bailey, M., Schafer, H., Cheskin, L. J., & Holtgrave, D. R. (2013). Working inside the firehouse: Developing a participant-driven intervention to enhance health-promoting behaviors. *Health Promotion Practice, 14*(3), 451-58. doi:10.1177/1524839912461150
- Gulliver, S. B., Pennington, M. L., Leto, F., Cammarata, C., Ostiguy, W., Zavodny, C., . . . Kimbrel, N. A. (2016). In the wake of suicide: Developing guidelines for suicide postvention in fire service. *Death Studies, 40*(2), 121-28. doi:10.1080/07481187.2015.1077357
- Haddock, C. K., Jahnke, S. A., Poston, S. C., Jitnarin, N., Kaipust, C. M., Tuley, B., & Hyder, M. L. (2012). Alcohol use among firefighters in the Central United States. *Occupational Medicine, 62*(8), 661-64. doi:http://dx.doi.org/10.1093/occmed/kqs162
- Haddock, C. K., Jahnke, S. A., Poston, W. S., Jitnarin, N., & Day, R. S. (2015). Marriage and divorce among firefighters in the United States. *Journal of Family Issues, 37*(16), 2294-2308. doi:http://dx.doi.org/10.1177/0192513X15583070
- Haddock, C. K., Poston, W. S., Jahnke, S. A., & Jitnarin, N. (2017). Alcohol use and problem drinking among women firefighters. *Women's Health Issues, 27*(6), 632-38. doi:http://dx.doi.org/10.1016/j.whi.2017.07.003
- Harvey, S. B., Milligan-Saville, J. S., Paterson, H. M., Harkness, E. L., March, A. M., Dobson, M., . . . Bryant, R. A. (2016). The mental health of fire-fighters: An examination of the impact of repeated trauma exposure. *The Australian and New Zealand Journal of Psychiatry, 50*(7), 649-58. doi:10.1177/0004867415615217
- Haynes, H. J., & Molis, J. L. (2017). *United States firefighter injuries — 2016*. Quincy, MA: National Fire Protection Association. Retrieved from <https://www.nfpa.org/News-and-Research/Publications/NFPA-Journal/2017/November-December-2017/Features/US-Firefighter-Injuries-2016>
- Haynes, H. J., & Stein, G. P. (2017). *U.S. fire department profile — 2015*. Quincy, MA: National Fire Protection Association. Retrieved from <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/US-fire-department-profile>
- Hom, H. A., Stanley, I. H., Ringer, F. B., & Joiner, T. E. (2016). Mental health service use among firefighters with suicidal thoughts and behaviors. *Psychiatric Services, 67*(6), 688-91. doi:10.1176/appi.ps.201500177
- Hulett, D. M., Bendick, M., Jr., Thomas, S. Y., & Moccio, F. (2008). *A national report card on women in firefighting*. Retrieved from <https://www.i-women.org/wp-content/uploads/2014/07/35827WSP.pdf>
- International Association of Fire Chiefs. (2016). A healthcare provider's guide to firefighter physicals. *Fire Safety Through Advanced Research*. Retrieved from <http://www.fstaresearch.org/resource/?FstarId=11591>
- International Association of Fire Fighters. (2005). *Emergency vehicle and roadway scene safety*. Retrieved from <http://www.iaff.org/hs/EVSP/PowerPoint%20Presentation%20in%20PDF.pdf>
- International Association of Fire Fighters. (2013). *Heart disease in the fire service*. Washington, D.C.: International Association of Fire Fighters. Retrieved from http://www.iaff.org/hs/PDF/HeartDiseaseManual_2013.pdf

-
- International Association of Women in Fire and Emergency Services. (n.d.). *Sexual harassment*. Retrieved from <https://www.i-women.org/sexual-harassment/>
- Jahnke, S. A., Poston, C. W., Haddock, C. K., Jitnarin, N., Hyder, M. L., & Horvath, C. (2012). The health of women in the US fire service. *BioMed Central Women's Health*, 12:39. doi:10.1186/1472-6874-12-39
- Jahnke, S. A., Poston, W. S., & Haddock, C. K. (2014). Perceptions of alcohol use among US firefighters. *Journal of Substance Abuse & Alcoholism*, 2(2), 1012. Retrieved from <https://www.jscimedcentral.com/SubstanceAbuse/substanceabuse-2-1012.pdf>
- Jahnke, S. A., Poston, W. S., Haddock, C. K., & Murphy, B. (2016). Firefighting and mental health: Experiences of repeated exposure to trauma. *Work*, 53(4), 737-44. doi:10.3233/WOR-162255
- Johnson, E. R., & Tunheim, K. A. (2016). Understanding the experiences of professional women leaders living and working in Sweden. *Advances in Developing Human Resources*, 18, 169-186. doi:10.1177/1523422316641894
- Kaplan, J. B., Bergman, A. L., Christopher, M., Bowen, S., & Hunsinger, M. (2017). Role of resilience in mindfulness training for first responders. *Mindfulness*, 8(5), 1373-80. doi:<http://dx.doi.org/10.1007/s12671-017-0713-2>
- Khan, Y. A., Davis, A. L., & Taylor, J. A. (2017). Ladders and lifting: How gender affects safety behaviors in the fire service. *Journal of Workplace Behavioral Health*, 32(3), 206-225. doi:<https://doi.org/10.1080/15555240.2017.1358642>
- Kimbrel, N. A., Steffen, L. E., Meyer, E. C., Kruse, M. I., Knight, J. A., Zimering, R. T., & Gulliver, S. B. (2011). A revised measure of occupational stress for firefighters: Psychometric properties and relationship to posttraumatic stress disorder, depression, and substance abuse. *Psychological Services*, 8(4), 294-306. doi:<http://dx.doi.org/10.1037/a0025845>
- LaTour, J. (2008). *Sisters in the brotherhoods: Working women organizing for equality in New York*. New York: Palgrave MacMillian.
- Liao, H., Arvey, R. D., Butler, R. J., & Nutting, S. M. (2001). Correlates of work injury frequency and duration among firefighters. *Journal of Occupational Health Psychology*, 6(3), 229-42.
- Ma, F., Fleming, L. E., Lee, D. J., Trapido, E., & Gerace, T. A. (2006). Cancer incidence in Florida professional firefighters, 1981 to 1999. *Journal of Occupational and Environmental Medicine*, 48(9), 883-88.
- Ma, F., Fleming, L. E., Lee, D. J., Trapido, E., Gerace, T. A., Lai, H., & Lai, S. (2005). Mortality in Florida professional firefighters, 1972 to 1999. *American Journal of Industrial Medicine*, 47(6), 509-17.
- Mardikar, A. A., Steffen, L. E., Kimbrel, N. A., Fay, C., Zimering, R. T., & Gulliver, S. B. (2013). Gender differences in barriers to occupational health in fire service. American Psychological Association.

-
- McDonald, C. (2017, December 27). *Bullying: Does it really matter? The impact of bullying in the fire service*. Retrieved from <http://www.firerescuemagazine.com/articles/print/volume-12/issue-12/features/bullying-does-it-really-matter.html>
- McDonald, C. M. (2016). *Retention of internal stakeholders in the U.S. volunteer fire service*. Retrieved from <http://scholarworks.waldenu.edu/dissertations/3180/>
- McIntosh, W. L., Spies, E., Stone, D. M., Lokey, C. N., Trudeau, A. T., & Bartholow, B. (2016). Suicide rates by occupational group — 17 states, 2012. *Morbidity and Mortality Weekly Report*, 65, 641-645. doi:<http://dx.doi.org/10.15585/mmwr.mm6525a1>
- Moffitt, J., Bostock, J., & Cave, A. (2014). Promoting well-being and reducing stigma about mental health in the fire service. *Journal of Public Mental Health*, 13, 103-13. doi:10.1108/JPMH-02-2013-0004
- Moss, D., & Kerrigan, J. (2016). *Firefighter Functional Fitness: The Essential Guide to Optimal Firefighter Performance and Longevity*. Firefighter Toolbox, LLC.
- Mundbjerg Eriksen, T. L., Høgh, A., & Hansen, A. M. (2016). Long-term consequences of workplace bullying on sickness absence. *Labour Economics*, 43, 129-50. doi:10.1016/j.labeco.2016.06.008
- Murphy, B. (2011). *A grounded theory study of women firefighters' experiences of stress on the job (Unpublished doctoral dissertation)*. Seattle, WA: Argosy University.
- Murphy, S. A., Beaton, R. D., Cain, K., & Pike, K. (1994). Gender differences in fire fighter jobs stressors and symptoms of stress. *Women & Health*, 22(2), 55-69.
- National Fallen Firefighters Foundation. (2017). *Fire service behavioral health management guide*. Emmitsburg, MD: National Fallen Firefighters Foundation. Retrieved from <http://www.everyonegoeshome.com/wp-content/uploads/sites/2/2017/12/behavioral-health-mgmt-guide-122017.pdf>
- National Fire Protection Association. (2000). *NFPA 1915: Standard for fire apparatus preventive maintenance*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association. (2015). *NFPA 1901: Standard for traffic control incident management qualifications*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association. (2017). *NFPA 1002: Standard for fire apparatus driver/operator professional qualifications*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association. (2018). *NFPA 1500: Standard on fire department occupational safety, health, and wellness program*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association. (n.d.). *Firefighting occupations by women and race*. Retrieved from <https://www.nfpa.org/News-and-Research/Data-research-and-tools/ARCHIVED/Fire-statistics/The-fire-service/Administration/Firefighting-occupations-by-women-and-race>
- National Highway Institute. (2018). *National traffic incident management responder training — web-based*. Retrieved from https://www.nhi.fhwa.dot.gov/course-search?course_no=133126A

-
- National Highway Traffic Safety Administration. (n.d.). *Distracted Driving*. Retrieved from <https://www.nhtsa.gov/risky-driving/distracted-driving>
- Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., . . . Williams, D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *The British Journal of Psychiatry*, *192*(2), 98-105. doi:<https://doi.org/10.1192/bjp.bp.107.040113>
- Poplin, G. S., Roe, D. J., Peate, W., Harris, R. B., & Burgess, J. L. (2014). The association of aerobic fitness with injuries in the fire service. *American Journal of Epidemiology*, *179*(2), 149-155.
- Roberts, M. A., O'Dea, J., Boyce, A., & Mannix, E. T. (2002). Fitness levels of firefighter recruits before and after supervised exercise training program. *Journal of Strength and Conditioning*, *16*(2), 271-7.
- Samnani, A.-K. (2013). The early stages of workplace bullying and how it becomes prolonged: The role of culture in predicting target responses. *Journal of Business Ethics*, *113*(1), 119-32. doi:[10.1007/s10551-012-1286-6](https://doi.org/10.1007/s10551-012-1286-6)
- Sawhney, G., Jennings, K. S., Britt, T. W., & Sliter, M. T. (2017). Occupational stress and mental health symptoms: Examining the moderating effect of work recovery strategies in firefighters. *Journal of Occupational Health Psychology*, Online publication. doi:[10.1037/ocp0000091](https://doi.org/10.1037/ocp0000091)
- Sinden, K., MacDermid, J., Buckman, S., Davis, B., Matthews, T., & Viola, C. (2013). A qualitative study on the experiences of female firefighters. *Work*, *45*(1), 97-105. doi:[10.3233/WOR-121549](https://doi.org/10.3233/WOR-121549).
- Smith, B. W., Ortiz, J. A., Steffen, L. E., Tooley, E. M., Wiggins, K. T., Yester, E. A., . . . Bernard, M. L. (2011). Mindfulness is associated with fewer PTSD symptoms, depressive symptoms, physical symptoms, and alcohol problems in urban firefighters. *Journal of Consulting and Clinical Psychology*, *79*(5), 613-17. doi:[10.1037/a0025189](https://doi.org/10.1037/a0025189)
- Stanley, I. H., Hom, M. A., Hagan, C. R., & Joiner, T. E. (2015). Career prevalence and correlates of suicidal thoughts and behaviors among firefighters. *Journal of Affective Disorders*, *187*, 163-71.
- Stanley, I. H., Hom, M. A., Spencer-Thomas, S., & Joiner, T. E. (2017a). Examining anxiety sensitivity as a mediator of the association between PTSD symptoms and suicide risk among women firefighters. *Journal of Anxiety Disorders*, *50*, 94-102. doi:[10.1016/j.janxdis.2017.06.003](https://doi.org/10.1016/j.janxdis.2017.06.003)
- Stanley, I. H., Hom, M. A., Spencer-Thomas, S., & Joiner, T. E. (2017b). Suicidal thoughts and behaviors among women firefighters: An examination of associated features and comparison of pre-career and career prevalence rates. *Journal of Affective Disorders*, *221*, 107-114. doi:<http://dx.doi.org/10.1016/j.jad.2017.06.016>
- Taylor, J. A., Barnes, B., Davis, A. L., Wright, J., Widman, S., & LeVasseur, M. (2016). Expecting the unexpected: A mixed methods study of violence to EMS responders in an urban fire department. *American Journal of Industrial Medicine*, *59*(2), 150-163. doi:[10.1002/ajim.22550](https://doi.org/10.1002/ajim.22550)

-
- U.S. Fire Administration. (1996). *Health & safety issues of the female emergency responder*. Emmitsburg, MD: U.S. Fire Administration. Retrieved from <https://www.usfa.fema.gov/downloads/pdf/publications/fa-162.pdf>
- U.S. Fire Administration. (2014). *Emergency vehicle safety initiative*. Emmitsburg, MD: U.S. Fire Administration. Retrieved from https://www.usfa.fema.gov/downloads/pdf/publications/fa_336.pdf
- Waters, R. D., & Bortree, D. S. (2011). Improving volunteer retention efforts in public library systems: How communication and inclusion impact female and male volunteers differently. *International Journal of Nonprofit and Voluntary Sector Marketing*, 17(2), 92-107. doi:<https://doi.org/10.1002/nvsm.438>
- Yoder, J. D., & Aniakudo, P. (1997). "Outsider within" the firehouse: Subordination and difference in the social interactions of African American women firefighters. *Gender & Society*, 11(3), 324-41.



Appendix A: Resources

Candidate Preparation Guide for the Candidate Physical Ability Test

The California Fire Fighter Joint Apprenticeship Committee has produced a Candidate Preparation Guide for the Candidate Physical Ability Test (CPAT). The guide offers five training programs for the CPAT:

1. Flexibility & Warm-Up Exercises.
2. Weight Training Circuit Workout.
3. Calisthenics Circuit Workout.
4. CPAT Running Program.
5. Task-Specific Exercise Training.

Dan Kerrigan and Jim Moss developed Firefighter Functional Fitness, a program that incorporates equipment that already exists in the fire department into fitness workouts. The program focuses on the Four Pillars of Firefighter Functional Fitness: Physical Fitness, Recovery and Rest, Hydration, and Nutrition and Lifestyle.

Fire Service Reputation Management White Paper

<https://firefighterbehavior.com/wp-content/uploads/2017/09/Reputation-Management-White-Paper.pdf>

The Fire Service Reputation Management White Paper produced by Cumberland Valley Volunteer Firemen's Association identifies a series of social, cultural and ethical issues threatening the fire service. The document draws awareness to negative behaviors, outlines the implications for leadership, and strongly urges the incorporation of a fire service code of ethics. It is important for fire service leaders to be able to identify and understand the impact of a toxic culture (Cumberland Valley Volunteer Firemen's Association, 2010).

Firefighter Cancer Support Network

<https://firefightercancersupport.org/>

The Firefighter Cancer Support Network (FCSN) provides one-on-one mentoring and assistance to firefighters diagnosed with cancer. The FCSN also provides awareness and prevention training.

Firefighter/First responder behavioral health hotlines and websites

- 📍 Fire/EMS Helpline — 888-731-FIRE (3473).
- 📍 Firestrong — <https://firestrong.org/> or 844-525-3473.
- 📍 Safe Call Now (international support) — <https://www.safecallnow.org/> or 206-459-3020.
- 📍 Code 4 Northwest — <http://www.code4nw.org/> or 425-243-5092.

International Association of Fire Chiefs

<https://www.iafc.org/>

Programs, education, training, tools and resources for departments, chief officers, officers, families and clinicians; relevant trainings and resources under Safety and Health.

International Association of Fire Fighters

<http://www.iaff.org/>

On-line training programs including cancer awareness and prevention, behavioral health, emergency incident rehabilitation, and emergency vehicle safety. Additional resources include CPAT, the Wellness Fitness Initiative, and materials related to health and safety.

International Association of Fire Fighters Center of Excellence for Behavioral Health Treatment and Recovery

<https://www.iaffrecoverycenter.com/>

Firefighter-specific treatment for substance use and mental health issues.

National Fallen Firefighters Foundation

<https://www.everyonegoeshome.com/>

Life safety initiatives, trainings and resources for departments, peers, firefighters, families and clinicians.

<https://www.firehero.org/>

Resources for survivors, departments, firefighters, families, etc.

National Fire Protection Association

<https://www.nfpa.org/>

Codes and regulations, statistics, and trainings.

National Firefighter Code of Ethics

https://www.usfa.fema.gov/downloads/pdf/code_of_ethics.pdf

The National Firefighter Code of Ethics establishes a criteria for fire service personnel to promote a culture of integrity and professionalism within the industry.

National Volunteer Fire Council

<https://www.nvfc.org/>

Resources, trainings and programs to benefit departments, firefighters and families, including:

- 🔦 Serve Strong — <https://www.nvfc.org/ServeStrong/>.
- 🔦 Share the Load — <https://www.nvfc.org/programs/share-the-load-program/>.

Responder Safety Learning Network

<https://learning.respondersafety.com/>

The Responder Safety Learning Network offers a no-cost, self-paced online program using plain language so that first responders can gain an understanding of NFPA 1091 and how

it can be used as a training objectives blueprint. Resources of interest discussed in this chapter include:

- ◆ Understanding the New NFPA 1091 online course.
- ◆ National TIM Training Certificate online course. Upon completion of the modules and passing of the Skills Challenge test, credit will be given and a download of a certificate equivalent to completing the National Traffic Incident Management Responder Training Program will be made available.
- ◆ PIO and Public Educator Engagement Page. Information is designed specifically for PIOs and educators for educating the public. Resources include video public service announcements, media templates, downloadable posters, a press packet, and information for leadership.

https://learning.respondersafety.com/Training_Programs/Understanding_the_New_NFPA_1091.aspx

Share the Load

<https://www.nvfc.org/programs/share-the-load-program/>

The National Volunteer Fire Council Share the Load program is a free program that provides firefighters with access to mental health resources and professionals 24/7. It is important for department leadership to educate members on the available resources for assistance.

The Cancer Alliance Report

<http://www.everyonegoeshome.com/wp-content/uploads/sites/2/2016/06/CancerAllianceReport.pdf>

Prepared by the Fire Service Occupational Cancer Alliance. This addresses research needs and recommendations, and helps to set a plan for how the fire service approaches cancer.

Women in Fire

<https://www.womeninfire.org/>

Resources, training and mentorship for women in the fire service.



Appendix B: Acronyms

BLS	Bureau of Labor Statistics
CDC	Centers for Disease Control and Prevention
CPAT	Candidate Physical Ability Test
DOL	Department of Labor
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
EEOC	Equal Employment Opportunity Commission
EFNEP	Expanded Food and Nutrition Education Program
EMS	Emergency Medical Services
EMTs	emergency medical technicians
FBHA	Firefighter Behavioral Health Alliance
FCSN	Firefighter Cancer Support Network
HHS	U.S. Department of Health and Human Services
IAFC	International Association of Fire Chiefs
IAFF	International Association of Fire Fighters
LODDs	line-of-duty deaths
NFA	National Fire Academy
NFFF	National Fallen Firefighter Foundation
NFIRS	National Fire Incident Reporting System
NFPA	National Fire Protection Association
NVFC	National Volunteer Fire Council
PIO	Public Information Officers
PPE	personal protective equipment
PTSD	post-traumatic stress disorder
PTSS	post-traumatic stress syndrome
SOII	Survey of Occupational Injuries and Illnesses
TIM	Traffic Incident Management
USDA	U.S. Department of Agriculture
USFA	U.S. Fire Administration
WFS	Women in the Fire Service



Appendix C: Campaign Ads

Retention in the U.S. Volunteer Fire Service

Dr. Candice McDonald

The U.S. volunteer fire service is experiencing its biggest challenge to date with volunteer firefighter retention. The number of volunteer firefighters in the U.S. has decreased by 12% since 1984.

2015
1984

...involuntarily volunteer firefighter turnover negatively affects the sustainability of a fire department.

Volunteer firefighters donate \$139.8 billion a year of time

The cost to outfit and train a firefighter is approximately \$27,095

BARRIERS TO FIREFIGHTER RETENTION

Sleep Deprivation.
Volunteer firefighters report an average of three to six hours of sleep during nights of deployment.

Mental Health.
Repeat exposure to traumatic events is a key risk factor for substance abuse and mental disorders in firefighters.

Gender Specific Issues.
Female firefighters are at risk of higher anxiety, exposure to sexism, lower job association, and higher levels of coworker conflict.

Work Life Balance.
Competing demands between family and the demands of the fire service may influence a volunteer's decision to disengage.

Job Satisfaction.
Poor leadership can impact levels of job satisfaction & retention among volunteer firefighters.

Generational Factors.
Generational conflict exists between older and younger employees because of diverse perceptions of work-life balance and work ethics.

Retention Strategies

What can be done to improve retention?

Schedule Accommodations

Recognition

Nonwage Benefits

Opportunities for Employee Success

Family Involvement

Recruitment Efforts

Source: McDonald, C. M. (2016). Retention of internal stakeholders in the U.S. volunteer fire service (Doctoral dissertation). Retrieved from <http://scholarworks.waldenu.edu/dissertations/3180/> Contact Candice: Mycdevelopment@Gmail.com

It takes a Person with
HEART
to do your
job.



KEEP IT STRONG.

Over the last decade, nearly 31 percent of female firefighter deaths were due to **heart attack** – the leading cause of on-duty firefighter fatalities. Protect your health so you are at your best and ready to respond with resources from the Heart-Healthy Firefighter Program.

www.healthy-firefighter.org





Traffic Incident Management is everyone's responsibility. Roadway operations are some of the most dangerous runs we make, but handling the many aspects of working and managing roadway incident scenes is often not part of standard agency training. On the Responder Safety Learning Network you will learn from national leaders, see demonstrations, and get practical tips you can start using today when responding to road and highway incidents.

ALL TRAINING IS FREE. Online learning modules cover:

- Traffic Control
- Advance Warning
- Blocking
- Safe Parking
- PPE
- Scene Control
- Emergency Lighting
- Sobriety Checkpoints
- Vehicle Fires
- Crash Investigation Safety
- Move It or Work It
- The MUTCD
- HAZMAT
- Medevac Safety
- Incident Command & Management
- Public Outreach
- Media and Crowd Management
- Interagency Planning & Training
- Rural Roads
- Long Term Events

This online training is suitable for all responding agencies — fire, EMS, law enforcement, safety service patrols, departments of transportation, special traffic control units, fire police, and towing and recovery. Available, 24/7/365 on your computer or mobile device.

Get the safety training you are missing at the Responder Safety Learning Network — recommended practices, vetted by experts, and compliant with the MUTCD, *NFPA 1091*, the National Unified Goal, and FHWA's National TIM Training. Respondersafety.com also delivers thousands of pages of news and resources for emergency responders.



Complete RSLN's ten-module National Traffic Incident Management online training to earn your National TIM certificate.

START TODAY AT LEARNING.RESPONDERSAFETY.COM

ATTENTION: **WOMEN** in the Fire Service

TRAFFIC INCIDENT MANAGEMENT

BE a leader in your agency.

RETURN home safely to your family.

GET trained at Respondersafety.com



RUNNING THE ROADS

FIRE DEPARTMENT RESPONSES TO ROADWAY INCIDENTS

LOCAL FIRE DEPARTMENTS RESPONDED TO

4,461,000

INCIDENTS ON ROADWAY PROPERTIES IN 2014

TODAY

12,200

roadway responses
occur every day



2/3

of roadway
responses were
EMS CALLS
OR RESCUES

2017

About **40,100** people died in motor vehicle crashes

TOP 3 CAUSES

ALCOHOL, SPEEDING, and DISTRACTED DRIVING

Number of **FIREFIGHTERS**
STRUCK & KILLED on
roadways since 2000

91

19

as of 11/8/18

Number of **FIREFIGHTERS**
& **EMTs** STRUCK & KILLED
in 2017 & 2018

**PROTECT YOUR RESPONDERS
AT ROADWAY SCENES.**



**PUT DOWN YOUR PHONE.
SLOW DOWN AND MOVE OVER**
GIVE THEM ROOM TO SAVE LIVES!

DATA SOURCES— FD roadway responses: Ahrens, Marly, and Ben Everts. Fire Department Roadway and Vehicle Incidents. National Fire Protection Association, 2017. MV fatalities: "Safety on the Road." National Safety Council Motor Vehicle Fatality Estimates, 2017. <https://www.nsc.org/road-safety/safety-topics/fatality-estimates> and Safety On the Road. National Safety Council, 2018. <https://www.nsc.org/road-safety>. FF fatalities: Fahy, Rita. U.S. Firefighters Struck and Killed by Vehicles, 2000-2013. National Fire Protection Association, 2014; Fahy, Rita F, et al. Firefighter Fatalities in the United States, 2015. National Fire Protection Association, 2016; Fahy, Rita F, et al. Firefighter Fatalities in the United States — 2016. National Fire Protection Association, 2017; Firefighter Fatalities in the United States in 2014. United States Fire Administration. Federal Emergency Management Agency, 2015; United States Fire Administration Firefighter Fatalities Database (<https://apps.usfa.fema.gov/firefighter-fatalities/>); ResponderSafety.com LODD news reports; and EMS1.com news reports.



RESPONDERSAFETY
.COM

A service of the Cumberland Valley Volunteer Firemen's Association

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MOVE OVER SLOW DOWN FOR STOPPED EMERGENCY VEHICLES



IT'S THE LAW

THIS YEAR,

OVER 3400 PEOPLE WILL DIE

& 390,000 WILL BE INJURED

DUE TO DISTRACTED DRIVING.*

*SOURCE: NHTSA

WILL YOU
BE ONE
OF THEM?

PUT DOWN YOUR PHONE

NO Call. NO Text. NO Livestream.

8 Fast Facts on the Impact of Bullying in the Fire Service

Dr. Candice McDonald

What is workplace bullying?

Workplace bullying is an interpersonal behavior to harm a coworker, with the intent to cause the victim serious social, psychological, or psychosomatic distress.



What is bullying?

Bullying is a persistent negative behavior in the workplace that lasts for at least six months and reflects negative acts at work such as gossiping, withholding information, and a pattern of maltreatment.

What is bullying behavior?

Bullying behavior in the workplace ranges from subtle behavior (excessive work assignments, jokes, gossiping, and over monitoring) to the more extreme behaviors (violence, aggression, threats, and insults).



Who is at the highest risk?

Compared to other professions, public service workers are said to be at a higher risk for workplace violence.

Did you know?

Almost 2 million Americans report being a victim of workplace violence annually and 21% report witnessing it.

What's the impact of bullying?

Effects of bullying include insomnia, depression, anxiety, irritability, isolation, illness, and low job satisfaction. In some cases, prolonged exposure to bullying can lead to self-destruction or suicide.



Can bullying really harm my fire department as a whole?

Workplace bullying can have negative consequences on an organization's reputation and effectiveness. Bullying leads to high turnover and can impact the development, productivity, and effective engagement of employees.

Does bullying impact men and women differently?

Women who experience bullying in the workplace have higher rates of long-term sickness and adverse impacts to health.



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Working for a fire-safe America

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