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U.S. Fire Administrator's Summit on Fire Prevention and Control

WORKGROUP REPORT | OCTOBER 2023 – AUGUST 2024



FEMA



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





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

Letter From the U.S. Fire Administrator to the President of the United States

October 2024

The President
The White House
Washington, D.C.

Dear Mr. President:

As we gather for the 2024 U.S. Fire Administrator's Summit on Fire Prevention and Control, I am honored to present this report that outlines America's fire service accomplishments and the collaborative approach to implement the National Fire Strategy.

This year marks the 50th anniversary of the U.S. Fire Administration (USFA), created by the Federal Fire Prevention and Control Act in 1974 and reauthorized by your signature on the Fire Grants and Safety Act on July 9, 2024. While substantial progress has been made over the past 50 years to address the scourge of fire on our nation, there is still much work to be done.

The fire service is making great strides toward tackling the challenges before us by speaking with #FireServiceOneVoice. We took the initial step in 2022 when we held the first U.S. Fire Administrator's Summit on Fire Prevention and Control during the 100th anniversary of Fire Prevention Week. At that Summit, fire service leaders came together to establish a National Strategy to address the fire-related challenges facing the nation. During the 2022 and 2023 Summits, topic-specific workgroups were created to develop and implement comprehensive solutions focused on these challenges. This report reflects the work to date and the ongoing initiatives before us.

Fire remains a threat to individuals and to communities across our homeland. Fire is also a threat that transcends national borders. In May 2024, the U.S. Fire Administration hosted the inaugural **World Fire Congress, where 56 nations** came together to establish a **global fire service leadership network** dedicated to supporting and strengthening the fire service around the world— and developing solutions to the shared problems we face.

In the United States, a proactive and resourced whole-of-government approach is needed to stop fire in our communities and on our landscapes. This approach includes addressing wildfire due to climate change; improving codes and standards; supporting the health, safety, and wellbeing of our first responders; developing recruitment and retention programs for a diverse and well-trained workforce; addressing the impact of the growing number of homeless in urban and suburban communities; leading the discussion on the fire safety of lithium-ion batteries and other alternative energy sources; and understanding the synergy that can come from data and technology projects such as the fire service's new interoperable information and data analytics platform – the National Emergency Response Information System (NERIS).

I urge leaders throughout our nation to review and celebrate the accomplishments, and to work with us to implement the recommendations contained in this report. With continued partnership at the federal, state, and local levels, we can save lives and shape a safer, better future for fire service, firefighters, and the people we serve.

I look forward to discussing the way forward with you at the 2024 Summit on Fire Prevention and Control on October 8, 2024.

Sincerely and Respectfully,

Lori Moore-Merrell, DrPH, MPH
U.S. Fire Administrator
U.S. Fire Administration



U.S. Fire Administrator's Summit on Fire Prevention and Control Workgroup Report

Introduction

The 2022 U.S. Fire Administrator's Summit on Fire Prevention and Control outlined a Fire Service National Strategy and set the strategic direction to address the fire related challenges facing our nation. The summit was the beginning of a comprehensive and strategic approach to addressing these challenges. Six workgroups were established in 2022 and an additional four workgroups were established in 2023 to develop comprehensive and actionable solutions focused on the following areas:

Impact of Climate Change

Prepare all firefighters for the climate-driven increase in wildfires in the wildland urban interface (WUI) and in rural and suburban communities by providing them with the proper training and equipment.

Codes and Standards

Create safer communities by supporting the adoption, implementation and enforcement of the current minimum codes and standards, as created by a national consensus process, including in the WUI and under-served and vulnerable populations in rural and urban areas; and provide affordable and safe housing.

EV/Energy Transition

Lead and inform the discussion on the fire safety of lithium-ion batteries and other alternative energy sources within our communities, at all levels of government, and with industry partners.

Recruitment and Retention

Invest in recruitment and retention programs to address the shortage of firefighters and make the fire service more diverse and inclusive.

Firefighter Cancer

Establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for firefighters, and reduces and eliminates PFAS exposure.

Mental Health and Wellbeing

Provide comprehensive mental health and wellbeing resources, including those focused on suicide prevention, for all Fire and EMS personnel.

Firefighter Cardiovascular Health and Wellness

Establish a comprehensive strategy to reduce cardiovascular disease and cardiovascular events among fire/EMS personnel, including a decrease in cardiovascular fatalities by 25% in ten years and 50% in twenty years. This strategy must include access to appropriate screenings, investments in research, and promotion of evidence-based programs (behaviors or regimes) to minimize risks and enhance cardiovascular health.

EMS

Prepare and invest in Emergency Medical Services (EMS) to meet evolving emergency medical needs and integrate innovative practices to improve overall health, safety, and well-being in local communities.

Data and Technology

Embrace a culture of data and technology throughout the fire and emergency services to enhance the effectiveness, efficiency, and equity of fire department service delivery through modern systems, methods, and practices.

Whole-of-Government Approach

Employ a proactive and fully resourced whole-of-government approach, with significant involvement by the fire service, to address threats – including fire – to the health and safety of our nation's population.

This report outlines the progress made in these areas as well as recommendations for future action.



Workgroup Summary

Impact of Climate Change

Overarching Goal:

Prepare all firefighters for the climate-driven increase in wildfires in the wildland urban interface (WUI) and in rural and suburban communities by providing them with the proper training and equipment.

Issue:

The United States and every nation around the world is impacted by climate change. It affects us all. The fire service is facing new and increasing challenges driven by these climate events and hazards -- from extreme heat to extreme cold to drought, to severe storms, rising sea levels, wind, floods, and of course fire.

From 1980 to September 2024, there have been 396 confirmed weather/climate disaster events with losses exceeding \$1 billion each that have impacted the United States. According to NOAA, these events included 31 drought events, 44 flooding events, 9 freeze events, 202 severe storm events, 63 tropical cyclone events, 23 wildfire events, and 24 winter storm events. Overall, these events resulted in the deaths of 16,499 people and had significant economic effects on the areas impacted.¹ These occurrences not only result in substantial financial losses but also impose increasingly significant social and economic burdens. Specifically, recent wildfires, both in the United States and abroad, have led to substantial economic damage and have placed significant social strains on affected regions. Over the past decade, devastating wildfires perpetuated by extreme heat have surged in frequency, leaving a trail of destruction to property, natural landscapes, vital watersheds, and placing an increasing number of people and communities in harm's way.

The **wildland urban interface (WUI)** is where suburban and rural areas merge with the wildland. About one-third of the U.S. population—**99 million people**—live in the WUI, and it is estimated that **45 to 46 million structures**, nearly half of U.S. building stock, are in the WUI.

There is widespread expectation that climate change may further increase the intensity, duration, and frequency of wildfires. For example, in July 2023, NASA recorded the world's hottest month on record² since 1880. During that scorching month, more than half of the country experienced an extreme heat alert. Throughout 2023, the pervasive smoke from Canadian wildfires blanketed large swaths of the U.S. causing air quality concerns in states along the East Coast.³ On the morning of August 8, 2023, drought-driven wildfires coupled with hurricane-force winds on Maui devastated the town of Lahaina, resulting in the deadliest wildfire in the United States in over a century.

Additionally, 2024 also saw intense fire as the Park Fire in Northern California expanded at lightning speed amid record heat and high winds, leaving behind a vast burned area.⁴ Numerous communities continue to face heightened threats from increasingly frequent and more powerful storms. Ruidoso, New Mexico, experienced an enduring double disaster. In early 2024, two massive fires along the mountains encircling the town, burned more than 25,000 acres and nearly a thousand homes, and killed two people. Since June 2024, eight floods came down the same mountainsides into the village.⁵

While these extreme weather events have a profound impact on the overall well-being of communities including supply chain operations, infrastructure stability, food security, and overall public health, it is our fire and rescue departments that stand on the frontlines. They are the first responders charged with swiftly engaging in the aftermath of these events by issuing alerts, facilitating evacuations, conducting rescues, and striving to stop catastrophic outcomes.

Throughout history, fire and rescue departments have dedicated countless hours preparing to respond to catastrophic events, making every effort to limit the impacts on the communities they protect. However, the seemingly relentless effects of climate change are causing our fire service leaders to rethink their customary risks and adjust to new and emerging threats of today's emergency response environment.

WUI fires are one of the most devastating fire problems in the United States. The increasing incidence of climate-driven wildfires that affect communities means that more municipal fire departments are responsible for wildland/WUI firefighting. In August 2023, the wildfire-initiated suburban conflagration of Lahaina, Hawaii, damaged or destroyed more than 2,200 structures and killed more than 100 people.

Currently, most structural firefighters receive little to no training on how to respond, remain safe and/or how to operate effectively in this type of extremely dangerous and dynamic fire environment. Structural firefighters, accustomed to fighting one structure fire at a time, are now being confronted with multiple structures burning simultaneously in urban and suburban communities and in the wildland urban interface and intermixed communities. They must react and respond with

uncharacteristic tactics and strategies to successfully mitigate the event by reducing or eliminating fire spread. The reality is that they must add urban interface wildfire strategies and tactics to their operational skillset.

"Throughout much of the United States and globally, wildfires are growing in intensity, size, and destructiveness. When wildfire enters the interface, the effects on communities can be catastrophic, including overwhelmed response capabilities, tragic loss of life, disastrous property loss, and socioeconomic devastation. The threat of catastrophic wildfire in America's interface and suburban communities demand national attention and a unified approach. Current approaches to wildfire mitigation and management do not match the scale of the issue."

– Dr. Lori Moore-Merrell, U.S. Fire Administrator, 2024

According to the 2021 National Fire Protection Association's *Fifth Needs Assessment of the U.S. Fire Service* document, 87% of fire departments in the U.S. are responsible for responding to wildland and urban interface fires, yet 78% of these departments that perform wildland and WUI firefighting operations have unmet training needs – and these needs are even more pronounced in smaller departments. Nearly half (47 percent) of the departments that perform wildland and WUI firefighting operations indicated that their training does not include specialized WUI firefighting operations training.

Fire departments cannot safely and effectively respond to wildland or WUI fires without proper personal protective equipment (PPE). Two-thirds of departments have unmet needs for wildland PPE for their firefighters, both men and women.⁶ Research, innovation, and standards for respirators purpose-fit for wildland and WUI firefighting, as well as PPE for female firefighters are needed. There are significant risks associated with ill-fitting PPE because firefighters are not able to move as easily or as quickly as they need to.

If not addressed, the lack of wildfire/WUI training and appropriate PPE for all responding personnel in local fire departments will likely lead to an increase in firefighter injuries and deaths.

Accomplishments:

WUI Awareness

- ▶ The U.S. Fire Administration (USFA) developed and launched two WUI fire awareness tools to raise awareness about where WUI areas exist throughout the United States and potential susceptibility to fire in areas relative to wildfire hazard exposure.
 - ▶ **WUI Fire Property Awareness Explorer** – provides the initial data-informed basis for residents to “Know Where You Live” in proximity to the location of the WUI and other fire-prone areas. Raising awareness is the first step and serves as the starting point for residents to take action in preparing for and mitigating at the individual resident and property level. [WUI Fire Property Awareness Explorer \(arcgis.com\)](https://arcgis.com)
 - ▶ **WUI Fire Community Awareness Explorer** – provides a quick snapshot of counties or places in the United States and potential exposure to wildfire hazards for structures in the WUI. Users interested in building fire-adapted communities and resilience can quickly identify vulnerable structures or areas in the WUI to help inform community risk reduction planning and targeted outreach efforts. [WUI Fire Community Awareness Explorer \(arcgis.com\)](https://arcgis.com)

These new tools allow for local fire service and community stakeholders to apply consistent data in the implementation of community risk reduction, code adoption and enforcement, mitigation, and planning efforts toward building more resilient, fire-adapted communities.

Wildfire Field Sensors at the Urban Interface

- ▶ The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) and USFA are working to develop, test, pilot, and deploy early wildfire detection technology. These wildfire sensors identify unusual concentrations or spikes in chemical gases and particulates providing 24-hour sensing and alerting capabilities to assist firefighters on the front lines and keep our communities safe and resilient.

In 2022-2023, the wildfire sensor initiative deployed 200 initial Alpha phase pilot sensors in collaboration with state and local government stakeholders throughout the United States and Canada. Those sensors have provided 185+ early detections, continue to provide fire alerts and warnings, and have collected over 1,000,000 hours of data in the field to enhance the Artificial Intelligence (AI) / machine learning (ML) algorithms now being deployed in the Beta version.

In 2024, the Department has deployed 215 Beta wildfire sensors to high-risk areas across the United States for operational testing and evaluation, including the 80 sensors across the Hawaiian Islands. The Beta version of the sensors require less solar power to recharge, are equipped with wind sensors to increase the accuracy of wildfire location prediction, and have better ability to operate in areas with limited cellular coverage.

National Fire Risk Index

- ▶ Starting in FY25, USFA is partnering with DHS S&T to develop a National Fire Risk Index to help understand the impact of different mitigations on community vulnerability in a network setting at the parcel and structure level.

The Index will be comprehensive of all types of fire and fire environments, with functionality to examine risks of each type of fire and environment separately. It will also account for how climate change will impact the likelihood of ignition, wind conditions, and vegetation characteristics as well as how such changes will alter risk. It will be designed to integrate with FEMA's National Risk Index and the National Emergency Response Information System (NERIS).

Wildfire Evacuation Initiative

- ▶ USFA convened two Wildfire Evacuation Roundtables in 2024 to integrate and connect resources and tools for improved wildfire evacuation before and during incidents. The events brought

together leaders, subject matter experts, researchers, federal interagency partners, fire service leaders, law enforcement, fire weather experts, academia, research and data experts, and technology developers.

Wildfire Risk, Resilience, and Insurance

- ▶ The American Property Casualty Insurance Association (APCIA), the Insurance Institute for Business & Home Safety (IBHS), and USFA jointly hosted an Executive Discussion on Wildfire Risk, Resilience, and Insurance in July 2024.

During the Executive Discussion, participants learned about the fire dynamics of recent conflagrations; advances in wildfire science; and the findings of the Wildland Fire Mitigation and Management Commission and discussed opportunities to advance individual and community level resilience to wildfire. Participants included senior leaders from the insurance industry, leaders from federal, state, and local fire service agencies, representatives from forest management agencies, and other related national organizations.

Wildfire Resilience Experiments

- ▶ IBHS and CalFire jointly conducted a series of 10 experiments testing structural resilience, structural hardening measures, and other variables required to measure the behavior of different types of buildings, codes, and materials exposed to wildfire conditions.

World Fire Congress Communities of Practice

- ▶ The inaugural World Fire Congress brought together delegates from 56 nations and established an international fire service Community of Practice focused on Climate Change Impacts. [World Fire Congress 2024 - National Fallen Firefighters Foundation \(firehero.org\)](https://www.firehero.org/)

Training

- ▶ The International Association of Fire Chiefs (IAFC) Wildfire Programs Division, in cooperation with the USDA Forest Service and its fire-adapted community partners, is leading an effort to identify gaps and mitigate barriers in wildfire and WUI training for fire service personnel and other practitioners. This work includes a survey of practitioners and partners.
- ▶ The National Fire Academy (NFA) and partnering organizations have expanded WUI/wildfire training offered. Additional and planned courses include:
 - ▶ Wildfire Fatality Investigation Course (two deliveries expected after development)
 - ▶ This is a development between Western Carolina University, School of Forensic Anthropology, ATF, and NFA to educate structural fire investigators in wildland fire fatality concepts using human and animal cadavers.
 - ▶ Responding to the Interface (five deliveries expected after award)
 - ▶ This delivery contract between NFA and IAFF is to deliver up to five courses for structural firefighters teaching them how to operate in the interface with the equipment they have available.
 - ▶ WUI Risk Assessment and Mitigation for the Fire Service (five deliveries expected after award)
 - ▶ A Society of Fire Protection Engineers (SFPE) course highlighting WUI risk assessment for the fire service with field deliveries through the state fire training directors. This is expansion of an existing course unit into a new freestanding course that incorporates the review of new construction site plans with respect to ICC WUI code and NFPA 1140/1142 Standards for Wildland Fire Protection/Water Supplies for Suburban and Rural Firefighting.
 - ▶ NFA development of a two-day climate change course for weekend/field deliveries (internal development)

- ▶ Wildfire Investigation (FI-210/N0775) (two deliveries completed)
 - ▶ NFA/USFA/CALFIRE project to deliver wildland investigation courses for structural fire investigators in California.
- ▶ Wildfire Investigation (FI-110) (under development)
 - ▶ To be added as a complementary course to F/W0770 Fire Investigation: First Responders – creating added value for fire investigation students by giving them two courses within the same weekend offering.
- ▶ Complex Case Management of the Wildfire Investigation (FI-310)
 - ▶ To be delivered with NFA/USFS/BLM as an advanced/complex case investigation course using both wildfire and structural examples.
- ▶ NFA and state training partners have increased offerings for Incident Management Teams.
 - ▶ For FY 24, over 90 offerings with expectation to exceed 2000 students.
 - ▶ Supported Hawaii, Texas, Tennessee, North Carolina and Louisiana with building capacity and competencies after major events in those jurisdictions.
- ▶ The Wildland Fire Mitigation and Management Report Released

The Wildland Fire Mitigation and Management Commission released its report outlining a comprehensive, consensus-based set of 148 recommendations to Congress to address the nation's wildfire crisis. [Media Release: Wildland fire mitigation and management commission report \(fema.gov\)](#)

 - ▶ The Commission, created by President Biden's Bipartisan Infrastructure Law and [announced](#) in December 2021, was charged with making recommendations to Congress to improve federal policies related to the mitigation, suppression and management of wildland fires in the United States, and the rehabilitation of land devastated by wildland fires.
 - ▶ The Commission noted that only by putting significantly more focus and resources toward proactive pre-fire and post-fire planning and mitigation can we break the current cycle of increasingly severe wildfire risk, damages, and losses.
- ▶ The Northeast Region Cohesive Wildland Fire Management Strategy group (NE RSC) has been actively engaged in increasing outreach and education of local fire departments on wildfire and WUI topics. Fire department engagement has expanded into a set of resources on the organization website (<https://www.northeasternwildfire.net/fire-department/>) including a training "Fire Adapted Communities for the Fire Service" developed by the IAFC as part of its cooperative agreement with the USDA Forest Service.

Northeast Regional Cohesive Strategy is chartered under the national Wildland Fire Leadership Council (WFLC) to coordinate and support its mission and priorities across 20 Northeast and

"The wildfire crisis in the United States is urgent, severe, and far reaching. Wildfire is no longer simply a land management problem, nor is it isolated to certain regions or geographies. Across this nation, **increasingly destructive wildfires are posing ever-greater threats to human lives, livelihoods, and public safety.** Further, the drivers of the wildfire crisis are numerous and complex, and themselves are influenced by multiple forces and factors at all scales. Despite widespread recognition of this crisis and decades of concerted action, wildfire impacts continue to mount."

– ON FIRE: The Report of the Wildland Fire Mitigation and Management Commission, 2023

Midwest states. [Northeast Region Cohesive Wildland Fire Management Strategy \(northeasternwildfire.net\)](http://northeasternwildfire.net) NE RSC works to facilitate understanding of wildland fire policies and how they can be applied to make meaningful progress towards landscape resilience, fire adapted communities, and a safe, effective wildfire response.

Personal Protective Equipment (PPE)

- ▶ UL Research Institutes' Fire Safety Research Institute (FSRI) is conducting ongoing research on the effectiveness of wildland firefighting respirators.
- ▶ A research project on "Development of Novel Personal Protective Clothing (PPC) Designs for Structural/Wildland Female Firefighters" is being conducted by Florida State University and North Carolina State University with collaborative support from the Fire Protection Research Foundation. Funding for this project is through a DHS/FEMA Assistance to Firefighters Grant (AFG) Program. The research will evaluate female structural and wildland firefighting personal protective clothing (PPC) for its improved fit, functionality, mobility, and comfort and develop the first female firefighting PPC designed using body measurements from actual U.S. female firefighters.

Recommendations:

Training

- ▶ Develop a searchable online database/knowledge base of available training courses that enables partners and practitioners to locate and access training through a single platform.
- ▶ Identify gaps and opportunities in content and delivery.
- ▶ Prioritize identified gaps and opportunities to inform short-term actions that mitigate those gaps and maximize opportunities.
- ▶ Ensure that all USFA NFA courses and content offered by fire service partners are available virtually/online.
- ▶ Modernize all existing curricula by partners such as the National Wildfire Coordinating Group (NWCG) and the U.S. Fire Administration (USFA) that includes relevant concepts such as mitigation, fire adaptation, Cohesive Strategy, Community Wildfire Protection Plans, post-fire processes and needs, etc.
- ▶ Create new curricula where needed.
- ▶ Publicize availability and importance of wildfire/WUI training courses to municipal fire departments.

Personal Protective Equipment (PPE)

- ▶ All local (municipal) departments must have appropriate PPE for all personnel responding to wildland and WUI fires.
- ▶ Gain consensus between National Fire Protection Association (NFPA), National Institute for Occupational Safety and Health (NIOSH), and other federal and state occupational safety agencies on the definition of "WUI environment" for the purposes of defining the minimum requirements for respirators for wildland and WUI environments.
- ▶ Secure funding and establish public-private partnerships to complete necessary research and innovation for respirators that are purpose-fit for wildland and WUI firefighting.
- ▶ Secure funding and establish public-private partnerships to complete necessary research into design standards for PPE for female firefighters for structural as well as wildland and WUI fires.
- ▶ Incorporate the subsequent design standards for PPE for female firefighters into official standards.
- ▶ Advocate for the design, manufacture, and purchase of PPE for female firefighters designed to the proper standards.

Codes and Standards

Overarching Goal:

Create safer communities by supporting the adoption, implementation and enforcement of the current minimum codes and standards, as created by a national consensus process, including in the WUI and under-served and vulnerable populations in rural and urban areas; and provide affordable and safe housing.

Issue:

State and local governments are responsible for promoting the use and enforcement of current codes and standards. The federal government can help by incentivizing compliance and providing funding to state and local jurisdictions for code implementation, inspection, and enforcement. This will increase fire and life safety in communities, especially in the WUI and among underserved and vulnerable populations.

Structure Fires

A 2019 National Institute for Building Sciences report found that model building codes improve building resilience to natural disasters and save \$11 for every \$1 invested. All nationally recognized modern building and fire codes require the use of life-saving technology like smoke alarms, carbon monoxide alarms, and automatic fire sprinkler systems. Nevertheless, the U.S. Department of Housing and Urban Development estimates that there are approximately 570,000 multifamily public housing units that were constructed before the sprinkler requirement was established. A significant portion of these units lack the protection offered by fire sprinklers putting millions of Americans at risk.

Through linking data with the Centers for Disease Control and Prevention's (CDC's) Social Vulnerability Index, we can see that socioeconomic status, household composition, racial and ethnic makeup, and housing status all play a role in a community's vulnerability to fire and the risks faced by firefighters. Fire disproportionately impacts our most vulnerable populations: older adults, children, people of color, low-income populations and people with disabilities. This is an equity issue. The single most significant impact on civilian loss of life due to fire is ensuring that any housing funded by the government is built and maintained with the minimum national building code.

In buildings with automatic fire sprinkler systems, the civilian fire death rate is 90% lower than non-sprinklered buildings and the injury rate is 32% lower.⁷ Furthermore, property damage decreases significantly in buildings protected by fire sprinklers. Nearly three out of five home fire deaths are caused by fires in properties without smoke alarms or smoke alarms that failed to operate.

Residential fires burn hotter and faster than they did in the past. In a fire today, you have the least time to safely exit your home than at any point in history. The severity of these fires has grown incredibly. Fire-related fatalities in 1- and 2-family homes have increased by 20% since 1980. In the period between 2012 and 2019, this increase is 30%. There are several factors leading to the increased severity of residential fires. Homes constructed today tend to be larger than in the past, leading to more complex escape routes and increased evacuation times. New homes tend to have open spaces, making it easier for smoke and fire to spread. Modern furnishings are made from synthetics and plastics that burn hotter and release more toxins than traditional materials. Positive evolutions in construction have led to lighter building materials and more energy-efficient homes, but they have also led to heat capture. Green building materials such as energy-efficient residential exterior walls can pose new fire safety risks. New technologies, such as lithium-ion batteries and residential battery energy storage systems (ESS), can be new ignition sources in the home. All of this leads to faster fire propagation, shorter time to flashover, rapid changes in fire dynamics, shorter escape times, shorter time to collapse, and other new and unknown hazards. Depending on where

you live in the nation, local fire department response time from the initial notification could be 6 or more minutes. In modern homes, flashover can occur in 3 to 5 minutes.

Wildfire

Globally, we are experiencing extreme weather events and significant shifts in temperature. Wildfires encountered by today's fire service are unlike those of a generation ago. Severe droughts and longer periods of hot weather alternating with bouts of heavy precipitation contribute to vegetation growth. Fluctuations between an overabundance of rain and severe droughts with extreme high temperatures result in that vegetation becoming dead and dry, contributing to fire intensity and spread. To further exacerbate this situation, many communities in the WUI are facing water shortages, impacting their ability to conduct fire suppression. These impacts, along with the decisions our society has made about using and managing landscapes, have created today's wildfire disaster potential.

According to the National Interagency Coordination Center, in 2022, there were 68,988 wildfires in the U.S., which burned over 7.57 million acres and destroyed 2,717 structures, of which 1,261 were residences. Despite this, FEMA reports only 25% of hazard-prone jurisdictions in the U.S. have adopted the latest 2 editions of hazard-resistant building codes.

A McClatchy analysis of the 2018 Camp Fire in California found that a 2008 building code designed for California's fire-prone regions requiring fire-resistant roofs, siding and other safeguards appears to have protected more than 100 homes in the path of that fire. Of the 350 single-family homes in the path of the Camp Fire that were built after 2008, 51% were left undamaged by the fire. By contrast, only 18% of the 12,100 homes built before 2008 escaped damage.

Fire Risks From Emerging Technology

Current building and fire codes are based on three-year cycles. State adoption of these national model codes can lag further behind. This creates the scenario where new technologies, such as large-capacity electrical storage battery systems, or building materials utilized to promote building energy performances, are out-pacing the ability of the national codes to keep pace with fire protection designs and requirements. This lag in the ability of the model codes to keep pace with technology has impacted the fire service's ability to develop appropriate response models or tactical protocols.

Accomplishments:

Promotion of the adoption, implementation, and enforcement of fire and building codes/standards

- ▶ Multiple organizations issued position statements on single-exit stairwells:
 - ▶ International Association of Fire Fighters and Metro Chiefs Joint Statement
 - ▶ International Association of Fire Chiefs Life Safety Section
 - ▶ National Association of State Fire Marshals
 - ▶ National Fallen Firefighters Foundation
- ▶ NFPA hosted a two-day Single Exit Stair Symposium in September 2024.
- ▶ USFA continues to work with FEMA to incorporate fire as a hazard type and as a disaster type into the ecosystem of FEMA resources.
- ▶ USFA, in collaboration with FEMA Office of Resilience, are establishing dedicated staff with building code expertise to focus on adding "fire" to the FEMA array of building code resources.
- ▶ USFA participates in FEMA's Building Codes Task Force to implement FEMA's Building Code Strategy.
- ▶ USFA participates in the Mitigation Framework Leadership Group's National Initiative to Advance Building Codes, which has entered its second year of implementation.

- ▶ USFA published the Home Fire Fatalities and Social Vulnerability Explorer (<https://gis-fema.hub.arcgis.com/pages/structure-fire>) and the Property and Community WUI Awareness Explorers (<https://gis-fema.hub.arcgis.com/pages/wui-awareness>) to the FEMA Geospatial Resource Center to raise awareness of fire hazards and to support community risk reduction and code adoption efforts.

Fire Codes Study and Building Code Adoption Tracking (BCAT)

- ▶ USFA is conducting a Building Codes Save: Fire Hazards Pilot Study with plans to conduct an expanded national study.
 - ▶ The pilot study is evaluating data and methods for calculating the losses avoided by adopting structure fire-resistant building codes and the International Wildland-Urban Interface Code (IWUIC). The pilot study will lead to a nationwide analysis, and the results will help encourage the adoption of structure fire- and wildland fire-resistant building codes and standards.
- ▶ USFA is working with FEMA to expand its Building Code Adoption Tracking (BCAT) system to make it more detailed and to better incorporate fire and wildfire.

Closing data and research gaps regarding Codes and Standards

- ▶ USFA continuing to move forward with the new NERIS system to improve fire and emergency services data collection, analysis, and report dissemination.
- ▶ USFA pursuing projects to document the history of building codes in the United States.
- ▶ Energy Storage Systems
 - ▶ USFA created an EV and Energy Transitions Workgroup as part of the U.S. Fire Administrator's Summit.
 - ▶ USFA conducted webinar available internationally and hosted on USFA website on battery fires including consumer products, EVs, and ESS.
 - ▶ IAFF worked with DOE on Residential ESS Research and issued a report (https://www.iaff.org/wp-content/uploads/IAFF_DOE_ResidentialESSConsiderations_Final.pdf).
 - ▶ IAFF hosting three one-day in-person workshops on Lithium-ion batteries including standard references.
 - ▶ San Francisco, CA
 - ▶ Orlando, FL
 - ▶ Long Beach, CA
 - ▶ Seven in-person workshops from IAFF included ESS/codes and standards.
 - ▶ NFPA is considering the development of a comprehensive standard, proposed as NFPA 800, Battery Safety Code, to provide uniform, minimum requirements to address fire, electrical, life safety, and property protection from battery hazards. Requirements are anticipated to include fire, explosion, and other dangerous conditions related to battery technologies as experienced through the lifecycle of a battery: raw materials and battery production through storage, use, and end of life. Comments on the proposal closed July 12, 2024, and a decision is forthcoming.
 - ▶ ICC Ad-Hoc Battery Energy Storage Committee.
- ▶ EV and Modern vehicle fuel loads in modern parking garages. Required fire protection and suppression fire response.
 - ▶ USFA drafting *Electric Vehicle Fire/Rescue Response Operations*, Health and Safety Guide in collaboration with NHTSA and the IAFF.

- ▶ Residential construction: Emerging construction products, i.e., T-studs, etc.
 - ▶ Energy efficient homes, specific to insulation and impact on fire performance.
 - ▶ IAFF Research Project on Energy Efficient Residential Exterior Walls Meeting Fire Safety (<http://www.iaff.org/building-construction-and-fire-safety-code/energy/>).

Model codes

- ▶ Congress continues to work on the Pro Codes Act which ensures that a standard does not lose its copyright protection by virtue of having been incorporated by reference into law or regulation, provided that the standard is available for free viewing on a publicly accessible website. This legislation is critical to supporting the work of NFPA, ICC, and other standards developers.

Testing and research needs

- ▶ USFA Memorandum of Understanding with NIST signed.
- ▶ USFA and national organizations continuing national discussions on the need for fire labs (NRTLs) to address lack of fire and life safety research and testing.

National-level housing fire and life safety initiatives

- ▶ Multiple sprinkler related bills reintroduced in Congress.
 - ▶ High-Rise Fire Sprinkler Incentive Act
 - ▶ Public Housing Fire Safety Act
- ▶ The Fire Grants and Safety Act was signed into law reauthorizing the U.S. Fire Administration and raising the authorization level for the agency by about \$20 million.
 - ▶ Additional funding for the agency helps to support USFA's work to improve fire and life safety in America.
- ▶ In recent years, the HUD budget has continued to acknowledge the risk of fire in HUD housing and has proposed funding to support various fire and life safety initiatives.
 - ▶ Increased funding for HUD for fire safety through the federal appropriations process helps to support HUD in improving fire and life safety in HUD-funded housing.
- ▶ USFA and fire service organizations continue to meet with HUD on fire safety concerns including additional technology.

Recommendations:

- ▶ The federal government should adopt current minimum standards and codes and set an example of designing their buildings to be the latest in codes and standards.
- ▶ Promote the adoption, implementation, and enforcement of fire and building codes/standards as created by national consensus processes.
 - ▶ Provide a database of all jurisdictions that have adopted the minimum building and fire codes.
 - ▶ Provide a database and repository of information on the jurisdictions that have adopted codes and standards above the minimum.
- ▶ Work with FEMA to amend the document "Building Codes Save: A Nationwide Study" (November 2020) to include structural fires and fires in the wildland urban interface.
- ▶ Provide current research or identify research that shows the cost benefit of adopting modern building codes and how that integrates into a comprehensive fire prevention and response approach to life safety.

- ▶ Research the data gap to tell the right story — the Fire Service story — regarding Codes and Standards. Establish a workgroup to identify specific areas of research gaps related to, but not limited to:
 - ▶ Energy Storage Systems
 - ▶ EV and Modern vehicle fuel loads in modern parking garages. Required fire protection and suppression fire response.
 - ▶ Residential construction: Emerging construction products, i.e., T-studs, etc.
 - ▶ Energy efficient homes, specific to insulation and impact on fire performance.
 - ▶ Net Zero homes
 - ▶ The evaluation of the applicability of current Test Standards, i.e., NFPA 285, ASTM E119, NFPA 13R, etc.
 - ▶ Automated Storage Systems
 - ▶ Plastic building materials
- ▶ Create a voice from the fire service to explain the benefit and value of the local standards to state and local officials.
 - ▶ Teach fire service personnel how to get involved in the process.
- ▶ USFA initiate efforts to meet with the community planners and developers of the model codes to promote fire service participation and to reduce barriers for participation.
- ▶ USFA engage with NIST to identify building code testing and research needs of the fire service and define steps on how to move forward.
- ▶ U.S. Fire Administrator appoint a Commission or Ad Hoc Committee to develop recommendations for USFA to meet the intent of Section 12 of the Fire Prevention and Control Act to review, identify, and recommend processes, that may allow the Administrator to utilize the authority to review, evaluate, and suggest improvement in State and local fire prevention codes, building codes, and any relevant Federal or private codes and regulations. This Commission shall consider resources internally or externally available and/or additional funding requirements to meet the intent of the Act specific to Section 12. To potentially counter the efforts at State governments to evaluate code changes based on cost, the Fire Administrator, or designee, shall consider the human impact of code requirements, standards, or provisions in terms of comfort and habitability for residents or employees, as well as the fire prevention and control value or potential of each such requirement, standard or provision.
- ▶ The USFA Codes and Standards resource page should include up-to-date code and state-level standards including:
 - ▶ A page with Codes and Standards for each state and local level.
 - ▶ Statistics on the costs of not adhering to Codes and Standards (greater loss of property and more significant loss of life).
 - ▶ Links to relevant studies.
- ▶ Coordinate with other research partners to develop a research agenda to test broader theories in building codes for life safety cost/benefit.
- ▶ Encourage federally funded housing fire and life safety initiatives to implement current law and add fire sprinklers.



Workgroup Summary

EV/Energy Transition

Overarching Goal:

Lead and inform the discussion on the fire safety of lithium-ion batteries and other alternative energy sources within our communities, at all levels of government, and with industry partners.

Issue:

The fire service must lead the discussion of safety surrounding lithium-ion (LI) batteries and other alternative energy sources. **As lithium-ion battery powered products** of all scales from e-scooters to electric vehicles to energy storage systems **grow increasingly prevalent**, the fire service's trusted voice and unique insight can engage all stakeholders in **understanding the associated risks** and work to **ensure policy decisions consider the safety of our people and communities**.

While LI batteries are an attractive option to power our many modern needs, fire risk increases when they are damaged or used, stored, or charged incorrectly. These batteries will also be found throughout the supply chain and can be exposed to fire from other sources. Combined with what we know of their **complex fire risk**, their ubiquitous presence **requires the fire service to turn research, data, and response experiences into operational considerations quickly**. LI batteries and emerging alternatives constitute a significant component of the drive to reduce emissions worldwide. They are part of a complex global ecosystem of multinational agreements and organizations, geopolitical security questions, and finite natural resources. While a daunting task, the **fire service has a central and critical role in ensuring policy decisions address fire safety risks**. The following sections highlight areas where an immediate impact can be made:

Complex Operational Challenges

Firefighters need to consider the presence of LI batteries in all operations, including the risk of faster flashover rates and increased temperatures. The stored energy in a LI battery presents the risk of thermal runaway, which can occur when damaged cells experience uncontrolled increases in temperature and pressure. Current research shows that LI batteries present four hazard scenarios for firefighters: flammable gas release (e.g., an accumulating cloud that could result in a flash fire), flaming (e.g., pressurized jets which extend several feet), vented deflagrations, and explosions. In addition, LI batteries present response challenges that are outside of the norm.

While LI batteries are engineered to be safe, the nature of these devices is that they may continue to hold a charge after being damaged, even if fully submerged in water. This phenomenon is known as stranded energy. Nevertheless, firefighters are often operating around damaged equipment and must always consider the risk that engineered safety systems and elements are no longer functioning as intended. Fires associated with alternative energy sources can require personnel and water resources far exceeding normal expectations to circumvent the robust physical protection intended to prevent abuses which can instigate thermal runaway in the first place. This stresses a department's ability to maintain resources for all emergencies. Additionally, when the cells in a LI battery inside an electric vehicle (EV) fail, they have the potential to release toxic combustion byproducts, and there are concerns that exposures from EV fires may be more harmful than car fires involving a traditional internal combustion engine (ICE) vehicle.

Community Safety

While our communities are generally aware of risks associated with their ordinarily benign devices, it is important for the fire service to adopt fire safety messaging regarding LI batteries and alternative energy sources to share with the public about their unique risks. Messaging on these devices' safe

usage, storage, charging, disposal, and what to do when experiencing a thermal runaway is needed. As policy decisions are made regarding what is allowed to be sold on the U.S. market, the fire service must play a role in discussing the safety of these items, with a specific focus on the components directly affecting the fire safety of U.S. communities.

Need for Research

Research is being conducted to better understand the hazards associated with LI batteries and means for mitigation of those hazards. Nevertheless, more research is needed. To the extent possible, the fire service must continue to mitigate exposure to toxic chemicals released during fires involving LI batteries. Ongoing research is needed to understand the new and complex hazards LI batteries can present, and to provide firefighters with data and information to inform operational procedures. As an emerging technology, there are additional research questions that the fire service can take the lead in addressing with its community partners. For example, how do charging stations fit safely within current zoning and code ordinances? There is an existing roadway infrastructure built for gasoline distribution — how do these two systems work together safely? What challenges exist during the entire lifecycle of lithium-ion powered products, what risks exist, and how do they evolve? How effective are current exposure reduction efforts (e.g., laundering, preliminary exposure reduction (PER)) at removing LI battery contamination from firefighter turnout gear?

While LI batteries are an emerging technology, the reality is that the industry is already seeking alternatives. New technologies will likely seek to increase energy density, allowing a smaller battery footprint with increased capacity. It is critical for the fire service to understand the risks of these new technologies.

Accomplishments:

- ▶ Numerous webinars, podcasts and other educational materials have been disseminated to the fire service. Examples include:
 - ▶ <https://www.usfa.fema.gov/a-z/lithium-ion-batteries.html>
 - ▶ <https://www.firescienceshow.com/137-e-mobility-fires-with-adam-barowy/>
 - ▶ <https://www.theforwardfirefighter.com/episodes/episode-19>
 - ▶ <https://www.firerescue1.com/lithium-ion-battery-fires/li-ion-battery-fires-barowy-and-goldfeder-tackle-the-spaghetti-of-tactical-considerations>
- ▶ FSRI, FDNY, USFA, ATF, and Consumer Product Safety Commission (CPSC) launched the Take CHARGE of Battery Safety Campaign. [Battery Safety - Take Charge \(batteryfiresafety.org\)](https://batteryfiresafety.org)
- ▶ FSRI conducted seven full-scale free burn experiments to investigate changes in fire behavior and occupational exposures to firefighters with electrification of passenger vehicles. Research partners include NIOSH, EPA, and Duke University.
- ▶ FSRI conducted one outdoor electric vehicle live fire exercise with the Boston Fire Department and Worcester Polytechnic Institute (WPI).
- ▶ IAFF and UL Solutions issued report: *"Considerations for Fire Service Response to Residential Battery Energy Storage System Incidents"*. https://www.iaff.org/wp-content/uploads/IAFF_DOE_ResidentialESSConsiderations_Final.pdf
- ▶ New York City passed a law requiring e-bikes/scooters be certified to UL standards.
- ▶ HR:1797 and S:1008 - Setting Consumer Standards for Lithium-Ion Batteries Act are moving through Congress.

- ▶ The International Association of Fire Chiefs (IAFF) has continued to develop relationships with National Fire Chiefs Council (United Kingdom) Lithium-Ion Task Force to compare resources for the fire service.
- ▶ Society of Fire Protection Engineers (SFPE) hosted a multi-day and topic conference related to electric vehicles, e-mobility devices, energy storage systems, and bulk storage of batteries, with Dr. Lori Moore-Merrell giving a keynote speech. <https://www.sfpe.org/events-education/liveeducation/in-personeducation/liionsymposium>
- ▶ International Code Council (ICC) Fire Code Action Committee stood up a lithium-ion battery work group. Multiple code changes were submitted for the 2027 International Fire Code as part of the Group A code development process.
- ▶ International Code Council (ICC) has developed an ad-hoc committee on Lithium-Ion Batteries which includes four workgroups covering topics of the built environment.
- ▶ The National Volunteer Fire Council developed and released an EV/Alternative Fuel Vehicle (AFV) Course and held a train-the-trainer event in June 2024 to increase training capacity. <https://www.nvfc.org/nvfc-in-person-training/>
- ▶ The National Institute for Occupational Safety and Health (NIOSH) is in the process of establishing an internal Lithium-ion Battery Workgroup. Additionally, NIOSH has approached other federal agencies like the Environmental Protection Agency (EPA) to gather information on their initiatives regarding the assessment of occupational exposures to LI batteries nationwide.
- ▶ North American Fire Training Directors hosted an Instructor Development Webinar for Response to EV Incidents for state academy instructors.
- ▶ North American Fire Training Directors, in partnership with NFPA, are making the NFPA Fire Incident Response Simulated Training (FIRST) Application and the Energy Storage & Photovoltaic Systems Emergency Response program available at no cost to all state training academies.
- ▶ The World Fire Congress hosted a session on Emerging Technologies, which focused primarily on lithium-ion batteries and has resulted in the establishment of a community of practice to share practices, data, and other information related to incident response involving alternative energy technologies.

Recommendations:

Data & Research

- ▶ Establish a mechanism to monitor industry for incidents and research.
- ▶ Ensure that NERIS includes the ability to track EV/battery product incidents.
- ▶ Conduct research on topics such as: EV suppression, battery fire environmental exposure, firefighter exposure during lithium-ion battery and EV fires, hazards of battery fires in structures (parking garages, homes, energy storage systems, etc.), safe operations around and management of stranded energy, and safe disposal of damaged batteries.

Partnerships

- ▶ Engage/forge new partnerships to stay abreast/ahead of the evolving issues.

Training

- ▶ Survey state and local training academies and begin culling training programs for best practices.
- ▶ Share Workgroup findings/recommendations with fire service curriculum developers/publishers.

Legislation

- ▶ Continue to support the passage of H.R.1797/S.1008.

Regulation

- ▶ Work with agencies like DOE, CPSC, DOT, HHS, etc. on battery risk mitigation, health effects, etc.

Codes and Standards

- ▶ Encourage fire service representation and participation in future code development committees such as the proposed National Fire Protection Association (NFPA) 800, proposed standard on lithium-ion batteries.
- ▶ Ensure fire service participation in all current codes and standards with lithium-ion batteries such as NFPA 855, UL 9540, UL 9540A.

Firefighting

- ▶ Support research to develop best practices on all forms of lithium-ion battery fires including mobility, EV, and Battery Energy Storage Systems. Based on research support development of Job Performance Requirements and other processes in various NFPA standards on firefighting.

Workgroup Summary

Fire Service Recruitment and Retention

Overarching Goal:

Invest in recruitment and retention programs to address the shortage of firefighters and make the fire service more diverse and inclusive.

Issue:

In recent years there has been a steady decline in the number of firefighters in the nation. This decline is impacting both career and volunteer departments, leaving the communities they serve vulnerable to threats and increasing the stresses among firefighters and the municipalities. It is imperative that we invest in programs to incentivize individuals to join volunteer and career fire departments.

Historically, the fire service hasn't had to recruit and retain members actively. There were usually too many applicants for career positions, and communities fully supported their local volunteer department generation after generation. But that has changed, and dramatically so over the past few years, due to retirements, time demands, and the effects of the pandemic.

The National Fire Protection Association's 2022 U.S. Fire Department Profile estimated there are 1,041,200 career and volunteer firefighters in the United States, which is approximately 62,100 less than in 2010. In 2010, the rate of firefighters per 1,000 citizens was 3.57. In 2020, the rate of firefighters per 1,000 citizens was 3.14. At the same time, call volumes have more than tripled, primarily due to increased emergency medical calls. With firefighter shortages come response time delays, closed stations, firefighter safety issues, mandatory overtime and increased time demands on volunteers, and financial impacts on municipalities.

The fire service also struggles to recruit and retain women and people of color. Women represent 11% of volunteer firefighters and 5% of career firefighters, according to the NFPA's 2022 U.S. Fire Department Profile.⁸ The most recent data from the Bureau of Labor Statistics in 2020 reported that 13.1% of career firefighters were Hispanic or Latino, 8.4% were African American, and 1.2% were Asian-Pacific Islanders.⁹

Accomplishments:

Recruitment

- ▶ The Recruitment and Retention Workgroup has identified dozens of best practice programs around the nation. The list includes programs that are fire and EMS created and managed, partnerships with other fire service organizations, partnerships with community colleges and universities, etc.
- ▶ Apprenticeship, cadet, internship, and supplemental education programs are being actively used around the nation as a vehicle to recruit career and volunteer fire and EMS personnel with much success. Examples include:
 - ▶ High school fire programs
 - ▶ Los Angeles Fire Department (CA) Firefighter/EMS Magnet High School program
 - ▶ Vermont high school apprenticeship
 - ▶ Fairfax County (VA) Public Schools Academy program partnership with the Fairfax County Fire and Rescue Department
 - ▶ Evergreen Fire-Rescue (CO) high school Cadet Emergency Medical Responder program
 - ▶ City of Rochester (MN) Fire Department high school firefighter program

- ▶ Gwinnett County (GA) Fire and Emergency Services Department/Maxwell High School of Technology Fire & Emergency Services/Firefighting program
- ▶ Long Beach (CA) Fire Department Fire Pathways program
- ▶ City of Miramar (FL) Fire Department/Broward County (FL) School District - Everglades High School Fire Academy Program and emergency medical training
- ▶ Loudoun County (VA) Public Schools – Academies of Loudoun
- ▶ Cobb County Fire Department/Cobb County School District – Osborne High School (GA) Firefighting Pathway program
- ▶ Sioux City (IA) Community School District/Sioux City Career Academy fire science pathway program
- ▶ Stafford County (VA) Fire and Rescue/Stafford County Schools High School Firefighting Pathways Program
- ▶ Pflugerville (TX) Fire Department/Hendrickson High School Fire Academy
- ▶ Salem (OR) School District – West Salem High School CTE Emergency Services Program
- ▶ Allegheny County Emergency Services and Allegheny County (PA) Fire Academy/ Highlands High School and North Hills High School Fire Service Training Class
- ▶ Jefferson County Public Schools – Fairdale High School Fire Science and EMS Program and Fern Creek High School Fire Science Program
- ▶ Roger L. Putnam Vocational Technical Academy (MA)
- ▶ Chicopee Comprehensive High and Chicopee High School (MA)
- ▶ New Hampshire Fire Academy – Outreach program with high school counselors
- ▶ Fire service sponsored youth programs (Junior/Cadet Firefighters, Explorers, etc.)
 - ▶ National Fallen Firefighters Foundation National High School Fire and EMS Cadet Symposium
 - ▶ National Volunteer Fire Council Junior Firefighter Program
 - ▶ Prince William County (VA) Fire Junior Firefighter
 - ▶ Waukegan (IL) Fire Department Cadet Program
 - ▶ Nassau County (NY) Junior Firefighters (NVFC)
 - ▶ Vermont week-long cadet program (resident program)
 - ▶ South Media (PA) High School /Local fire (PA law) - Schoolhouse to Firehouse
 - ▶ Alessandro High School First Responder Pathway Program (Hemet, CA)
 - ▶ Fort Lauderdale (FL) Fire Explorer Program
 - ▶ Hershey Fire Department (PA) Junior Firefighters
 - ▶ Howell Township Fire Company #1 (NJ) Volunteer – Junior Firefighter Program
 - ▶ Alpha Fire Company – Littlestown, PA – Junior Firefighter Program
 - ▶ East Norwich (NY) Junior Firefighter Program
 - ▶ Hauppauge (NY) Fire Department Explorer Post #660
 - ▶ Smyrna (GA) Fire – Junior Firefighters
 - ▶ El Paso (TX) Fire Department Summer Youth Academy

- ▶ East Valley Cadets Program – Mesa (AZ) Fire Department (this is a regional Cadet program hosted in Mesa, that includes Mesa, Gilbert, Queen Creek, Apache Junction areas)
- ▶ Fairfax County (VA) Fire & Rescue Explorer Program
- ▶ Solutions for At-Risk Youth (SFARY) – Richmond (CA) Fire [SFARY Firefighter Youth Academy | SFARY Firefighter Youth Academy](#)
- ▶ Milwaukee Fire Department – Junior Fire Institute - <https://mkejfi.com/>
- ▶ Fire Cadet Program - Dekalb County Fire Rescue Department (GA)
- ▶ Broward County (FL) Fire Chiefs Association – Explorer & [Cadet Committee Cadet / Explorer Subcommittee – Fire Chiefs Association of Broward County \(fcabc.com\)](#)
- ▶ Internships - college related, summer hire, others
 - ▶ Fairfax City (VA) summer hire
 - ▶ New Hampshire tech program live-ins (career path)
 - ▶ Vigilant Hose Company (Emmitsburg, MD)
 - ▶ College Park (MD) Fire Department)
 - ▶ Elsmere (NY) Albany County – “bunk-in” students
 - ▶ Oklahoma State University
 - ▶ St. Michaels University (VT)
 - ▶ Greenville City (SC) Fire Department Firefighter Summer Training Program
 - ▶ Alabama A&M University “FireDawgs” (Wildland Firefighting)
 - ▶ Clackamas County (OR) Fire District Firefighter Internship Program
 - ▶ USDA Forest Service wildland firefighter outreach with HBCU (Historically Black Colleges and Universities) Florida A & M, Southern University in Louisiana, Tuskegee University, and Alabama A & M University
 - ▶ Laramie County (WY) Fire Authority
- ▶ Youth Camps, Girls Camps, etc.
 - ▶ West Virginia University/WVU Fire Training - Junior Fire Fighter Camp
 - ▶ City of Manassas (VA) – Girls Camp
 - ▶ Portland (OR) Local 45 – Girls Camp
 - ▶ Arlington County (VA) Hurricane Camp
 - ▶ Vermont - Women’s Camps
 - ▶ Phoenix Fire Camp (NY) NY Women in Fire
 - ▶ Fairfax County (VA) Fire & Rescue Summer Camp
 - ▶ Women in Fire (various – nationwide)
 - ▶ El Segundo (CA) Girls Empowerment Camp
 - ▶ Charlotte (NC) Fire - Camp Ignite
 - ▶ CAL FIRE (CA) Camp Cinder <https://www.fire.ca.gov/camp-cinder>
 - ▶ Wentzville (MO) Fire Protection District – Kids Camp
 - ▶ Orange County Fire Authority (CA) Fire – Empowerment Camp
 - ▶ Lafayette (PA) Fire – Kids Camp <https://www.lafayettefire.com/cadetcamp/>

- ▶ Eugene-Springfield (OR) Fire & EMS – Camp Ignite
- ▶ Delaware State Fire School - Camp Fury
- ▶ Los Angeles City (CA) Fire Department – Girls Camp
- ▶ Anchorage (AK) - Northern Lights and Sirens
- ▶ Prince George's County (MD) Fire & Rescue - Camp Embers
- ▶ Girls Future Firefighter Camp <https://girlsfuturefirefightercamp.com/>
- ▶ Aurora Fire Rescue (CO) – Camp Spark <https://www.9news.com/article/news/local/aurora-fire-rescue-camp-spark-girls-firefighters/73-13e36e77-3394-4fb0-9f13-a62de0c99bff>
- ▶ Black Fire Brigade (Chicago non-profit)
- ▶ Greenville (SC) Fire Department Firefighter Training Camp <https://www.greenvillesc.gov/1991/Firefighter-Summer-Training-Program>
- ▶ Des Moines (IA) Summer Fire Camp https://www.dsm.city/departments/fire/iowa_hero_academy.php
- ▶ Aspire Academy – Mesa (AZ) Fire Department (this is regional and will rotate to other cities each year)
- ▶ Camp Fury – Tucson (AZ) Fire Department
- ▶ Henrico (VA) Fire Department – Girls on Fire
- ▶ Milwaukee Fire Department (+ Milwaukee Police, Girl Scouts, Bell Ambulance, Milwaukee Area Technical College) - <https://www.gswise.org/en/members/for-girl-scouts/camp-and-outdoors/camp-hero.html>
- ▶ Camp Blaze – North Bend (WA)
- ▶ Blazing Brave Camp (GA) – Decatur Fire Rescue & DeKalb County Fire Rescue
- ▶ Programs for Women
 - ▶ Dallas (TX) Fire & Rescue - L.A.D.D.E.R. program
 - ▶ San Antonio (TX) Fire – Hero Like Her Program
 - ▶ Women in Fire – Various programs around the nation
 - ▶ Girls Build – Portland (OR) – Port of Portland Fire & Rescue/Hillsboro Fire
- ▶ High School Programs that use STEM for fire recruitment
 - ▶ UL FSRI Programs [FSRI Safety Academy](#)
 - ▶ FDNY High School Robotics Club
 - ▶ Firefighter Youth Academy (Richmond, CA) - Support for Actively Rising Youth (SFARY) <https://www.firefighteryouthacademy.org/>
 - ▶ Scappoose (OR) Fire District
- ▶ STEM Middle School & Community Programs
 - ▶ UL FSRI [Xplorlabs](#) - with modules on:
 - ▶ [The Science of Fire Forensics - UL Xplorlabs](#)
 - ▶ [The Science of Thermal Runaway - UL Xplorlabs](#)
 - ▶ [The Science of Fire Safety - UL Xplorlabs](#)
 - ▶ [The Science of Extraction to E-Waste - UL Xplorlabs](#) (lithium-ion batteries)
 - ▶ For more info on all the above ULRI.xplorlabs@ul.org

- ▶ The National Volunteer Fire Council (NVFC) has a national recruitment campaign for volunteer fire and EMS members -- Make Me a Firefighter campaign (<https://makemeafirefighter.org/>)
- ▶ Several states have statewide recruitment campaigns for volunteer fire and EMS members. Example include:
 - ▶ Maryland State Firefighters Association
 - ▶ Firefighters Association State of New York – Recruit NY
 - ▶ New Hampshire State Fire and EMS Recruiting Network
 - ▶ Ohio State Fire Marshal’s Office
 - ▶ Vermont – All fire stations host open houses on the same day
 - ▶ New York State “Fire In You” campaign includes a website that will help a potential recruit identify and contact their local volunteer department.
- ▶ The International Association of Fire Fighters (IAFF) is working with U.S. Department of Labor to create a national apprenticeship program for the fire service and EMS. Examples of apprenticeship programs include:
 - ▶ California Joint Apprenticeship Committee (CAL-JAC) <https://caljac.org/>
 - ▶ Washington State Firefighters Joint Apprenticeship Committee with Department of Labor and Industries (L&I)/Washington State Apprenticeship and Training Council (WSATC)
 - ▶ Oregon - Oregon State Firefighters Council
 - ▶ Pittsburgh (PA) EMS
 - ▶ Milwaukee (WI) Fire Department Fire Cadet program <https://city.milwaukee.gov/fpc/Jobs/Fire-Cadet/Learn-More.htm>
 - ▶ New Hampshire Fire Academy – Apprenticeship New Hampshire [Earn As You Learn, Hire Skilled Workers | ApprenticeshipNH](#)
- ▶ The National Volunteer Fire Council (NVFC) is working with U.S. Department of Education and other entities on Comprehensive Technical Education (CTE) and cadet programs for the fire service and EMS.
- ▶ The National Fire Academy maintains an active partnership with more than 100 colleges as part of its Fire & Emergency Services in Higher Education (FESHE) Program. <https://www.usfa.fema.gov/nfa/about/feshe/index.html>
- ▶ Several national fire service associations have submitted a grant under the FEMA Assistance to Firefighters Grants (AFG) Program to create a national media campaign including Public Service Announcements (PSAs) that share what the fire service does, how individuals can serve as either career or volunteer members and connects them with local opportunities (searchable by zip code). The Recruitment and Retention Workgroup, which includes representatives from each of the national fire service and EMS organizations, and affinity associations, would play an integral role in helping with this campaign upon successful grant award.
- ▶ Several national fire service associations have submitted a grant under the FEMA Assistance to Firefighters Grants (AFG) Program to create a nationwide “How to Become a Firefighter” portal showcasing new and existing recruitment resources and related social media sites. The Recruitment and Retention Workgroup, which includes representatives from each of the national fire service and EMS organizations, and affinity associations, would play an integral role in helping with this campaign upon successful grant award.

- ▶ Fire service organizations and fire departments around the country have produced promotional recruitment videos. Examples include:
 - ▶ National Volunteer Fire Council has a page dedicated to this at <https://makemeafirefighter.org/what-its-like> and a “Ride With Us” Video series that depicts the life of a firefighter
 - ▶ The City of Milwaukee (WI) Fire Department had two promotional videos professionally produced called “A Place For Everyday Hero’s”- <https://youtu.be/Fx9ibSXMctQ?si=4DgHPXYDfEYadDD2> and <https://www.youtube.com/watch?v=rFrgbjmSfjE>
 - ▶ California’s Becoming a Firefighter (a collaboration of Cal-JAC & Firefighter Candidate Testing Center). <https://www.youtube.com/@BecomingAFF>
- ▶ The Recruiting and Retention Workgroup is exploring ways to bridge EMS training for military medics while the individuals are still in the service. The United States Army’s COOL (Credentialing Opportunities On-Line) Program is a valuable resource in this area <https://www.cool.osd.mil/army/index.html>
- ▶ Many fire departments are partnering with the Department of Defense SkillBridge program which provides an opportunity for military service members to gain valuable civilian work experience through specific industry training, apprenticeships, or internships during the last 180 days of service.
 - ▶ Fairfax County Fire - Hero to Hero (Skillbridge), Hiring our Hero’s, and Hire Vets Now. Veterans are able to use the GI bill during recruit school.
 - ▶ Department of Defense Skillbridge [DOD SkillBridge Program - Authorized SkillBridge Organizations Page \(osd.mil\)](#)
 - ▶ Hilton Head Island (SC) Fire & Rescue Skillbridge [SkillBridge Program Job Opportunities \(hiltonheadislandsc.gov\)](#)
 - ▶ New Hampshire Skillbridge for Fire & EMS careers [DOD SkillBridge Program | Goffstown, NH \(goffstownnh.gov\)](#)
 - ▶ Oceanside (CA) Fire Skillbridge [SkillBridge | Oceanside, CA – Fire](#)
 - ▶ Dallas (TX) Fire & Rescue Skillbridge [Dallas Fire Rescue Internship DOD SkillBridge Program \(dallascityhall.com\)](#)

Other programs for veterans and spouses include:

- ▶ Connecticut Fire Academy (GI Bill)
- ▶ Illinois Fire Service Institute – University of Illinois (GI Bill)
- ▶ Massachusetts Fire Academy (GI Bill)
- ▶ ICC Military Families Career Program (Vets & Families) Fire & Building Officials
- ▶ Vegas Valley Veterans Handcrew (BLM Wildfire) [Vegas Valley Veterans Crew | National Interagency Fire Center \(nifc.gov\)](#)

Recruitment and Retention

- ▶ Members of the Recruitment and Retention Workgroup have brought awareness to recruitment and retention resources available to career and volunteer fire and EMS members around the nation through podcasts; webinars; presentations at state, regional and national conferences; magazine articles; and social media.

- ▶ FEMA Assistance to Firefighters Grants continue to play an important role in firefighter recruitment and retention in both career and volunteer fire service agencies across the nation.
 - ▶ The Staffing for Adequate Fire and Emergency Response Grants (SAFER) was created to provide funding directly to fire departments and volunteer firefighter interest organizations to help them increase or maintain the number of trained, "front line" firefighters available in their communities.
 - ▶ There are three SAFER efforts that have had a significant impact:
 - ▶ Hiring of Firefighters (Career),
 - ▶ Recruitment and Retention for Fire Departments (Volunteer),
 - ▶ Recruitment and Retention for Interest Organizations which support state, local, tribal, and territorial efforts.
- ▶ The International Association of Fire Chiefs (IAFC) has developed a Bullying and Workplace Violence Prevention Toolkit called "Respect Our House" <https://www.iafc.org/topics-and-tools/resources/resource/bullying-and-workplace-violence-prevention-toolkit>
- ▶ The National Volunteer Fire Council (NVFC), the International Association of Black Professional Firefighters (IABPFF), the International Association of Fire Chiefs (IAFC) and the IAFC Volunteer and Combination Officers Section (IAFC-VCOS), the National Association of Fire Training Directors (NAFTD), the National Association of Hispanic Firefighters (NAHFF), and Women in Fire issued a Joint Statement declaring they will not tolerate harassment, bullying behavior, or discrimination of any kind and that all members of fire, EMS, and rescue services should be treated and treat others with dignity and respect. <https://www.nvfc.org/wp-content/uploads/2019/03/Anti-Harrassment-and-Bullying-Statement.pdf>
- ▶ The U.S. Fire Administration collaborated with NVFC to create a "Retention and Recruitment for the Volunteer Emergency Services" manual <https://www.usfa.fema.gov/downloads/pdf/publications/retention-and-recruitment-for-volunteer-emergency-services.pdf>
- ▶ NVFC has conducted research on recruitment and retention and offers the following reports:
 - ▶ Volunteer Retention Research Report <https://www.nvfc.org/wp-content/uploads/2020/08/20Aug-NVFC-Retention-Research-Report-FINAL.pdf>
 - ▶ Volunteer Firefighter Recruitment and Retention Formative Research Results https://www.nvfc.org/wp-content/uploads/2016/09/NVFC_Formative-Research_2015_Report_v1f.pdf
- ▶ Firefighters Association of State of New York (FASNY) conducts an annual census (survey) of volunteer departments to establish some empirical data/baselines of the status of the volunteer service in the state.
- ▶ The Recruiting and Retention Workgroup identified a variety of best practices related to retention:
 - ▶ Benefits for volunteer firefighters (local)
 - ▶ Nassau County (NY) – Fire tuition
 - ▶ Spring Lake (NJ) Fire Department – Drop-in office space for teleworkers
 - ▶ Hershey (PA) Fire Department – Drop-in office space and Wi-Fi for teleworkers
 - ▶ Aspen (CO) Fire -- Health insurance for volunteers
 - ▶ Virginia – Mortgage relief program for volunteer and career

- ▶ Stafford County (VA) Fire – 401K program for volunteers
- ▶ Fairfax County (VA) Fire – Length of Service Award Program (LOSAP) for volunteers and a local property tax credit program to incentivize volunteers <https://fcvfra.org/become-a-volunteer/>
- ▶ Local property tax credit programs to incentivize volunteers
 - ▶ Gettysburg (PA) [Volunteer Fire Protection Service Tax Credit Program | Gettysburg PA](#)
 - ▶ Prince William County (VA)
 - ▶ Loudoun County (VA)
 - ▶ Cumberland County (PA) – Real estate tax paid by the volunteer, up to \$250. [Volunteer Firefighter & EMS Tax Credit | Cumberland County, PA - Official Website \(cumberlandcountypa.gov\)](#)
- ▶ State tax incentive programs to bolster volunteer fire department ranks
 - ▶ Maryland – \$7,000 income tax credit after 3 years of active service <https://marylandvolunteer.org/benefits/>
 - ▶ New York State – \$200 income tax credit and property tax reduction of up to 10% of the assessed value of property for qualified volunteers
 - ▶ Delaware – \$1,000 tax credit
 - ▶ Maine https://www.maine.gov/revenue/sites/maine.gov/revenue/files/inline-files/23_employer_fire_ems_volunteer_ff.pdf
 - ▶ Alabama – Volunteer firefighters can get mileage tax credits on their state income tax
 - ▶ Pennsylvania – Tax credits for volunteers <https://www.osfc.pa.gov/recruitment-retention/Pages/Volunteer-Tax-Credit-Incentive-Program.aspx>
 - ▶ Iowa – \$250 tax credit <https://www.iowafirefightersassociation.com/250-tax-credit>
 - ▶ Illinois – Volunteer emergency worker credit (Public Act 103-0009) is a \$500 non-refundable credit <https://tax.illinois.gov/individuals/credits/volunteer-emergency-worker-credit.html>
 - ▶ Oklahoma <https://oklahoma.gov/content/dam/ok/en/fire/documents/ok-gov-fire-imported/FTAC%20Tax%20Credit%20Packet%2012-20-18.pdf>
 - ▶ Nebraska – \$250 refundable income tax credit <https://revenue.nebraska.gov/incentives/volunteer-emergency-responders-incentive-act/general-information>
 - ▶ Arkansas <https://www.arkleg.state.ar.us/Home/FTPDocument?path=%2FAssembly%2F2023%2F2023R%2FFiscal+Impacts%2FHB1241-DFA1.pdf>
 - ▶ North Carolina <https://www.ncleg.gov/Sessions/2021/Bills/House/PDF/H575v1.pdf>
 - ▶ Wisconsin Legislative Council Study Committee on Volunteer Firefighter and Emergency Medical Technician Shortages https://docs.legis.wisconsin.gov/misc/lc/study/2016/1498/010_july_26_2016_meeting_9_30_a_m_legislative_council_large_conference_room/july26mins_empt
 - ▶ South Carolina – \$3,000 tax credit for qualifying volunteers for over 20 years called the VIP program. There is a bill before the General Assembly this year to double it to \$6,000. Details on the program here: <https://statefire.llr.sc.gov/osfm/vip.aspx>
 - ▶ West Virginia – \$1,000 tax credit <https://tax.wv.gov/Documents/TSD/tsd453.pdf>

- ▶ Tennessee – Pay incentive, paid directly to firefighters Career: \$800.00 per year, must be Firefighter II within 3 years to remain eligible, completes 40 hours of in-service each year
Volunteer: \$600 per year, must be Firefighter I within 5 years to remain eligible, completes 30 hours of in-service each year.
- ▶ Virginia Tax Credit for Volunteers
<https://law.lis.virginia.gov/vacode/title58.1/chapter30/section58.1-3019/>
- ▶ Tax incentives for firefighters to live in communities they serve
 - ▶ Baltimore City (MD) – \$2,500 property tax credit
 - ▶ Portland (OR)
- ▶ College tuition assistance programs to recruit and retain
 - ▶ Texas A & M
 - ▶ NY State – Statewide reimbursement per semester – grades based – commitment to volunteer fire department for another year.

Recommendations:

- ▶ Support the development of apprenticeship, cadet, internship, and supplemental education programs as a vehicle to recruit career and volunteer fire and EMS personnel.
- ▶ Continue to support efforts of the International Association of Fire Fighters (IAFF) which is working with U.S. Department of Labor to create a national apprenticeship program for the fire service and EMS.
- ▶ Support efforts of the National Volunteer Fire Council (NVFC) working with U.S. Department of Education and other entities on Comprehensive Technical Education (CTE) and cadet programs for the fire service and EMS.
- ▶ Create an online repository of best practices for recruitment and retention.
- ▶ Create national media campaign including Public Service Announcements (PSAs) that share what the fire service does, how individuals can serve as either career or volunteer members and connects them with local opportunities (searchable by zip code).
- ▶ Create a nationwide “How to Become a Firefighter” portal showcasing new and existing recruitment resources and related social media sites.
- ▶ Explore ways to bridge EMS training for military medics while the individuals are still in the service.



Workgroup Summary

Firefighter Cancer

Overarching Goal:

Establish a comprehensive firefighter cancer strategy that invests in research, provides access to cancer screening for firefighters, and reduces and eliminates PFAS exposure.

Issue:

Firefighters have a 9% higher risk of developing cancer and a 14% higher risk of dying from cancer compared to the general public.¹⁰ Approximately 70% of fatalities honored by IAFF in recent years have been occupationally related cancer deaths.¹¹

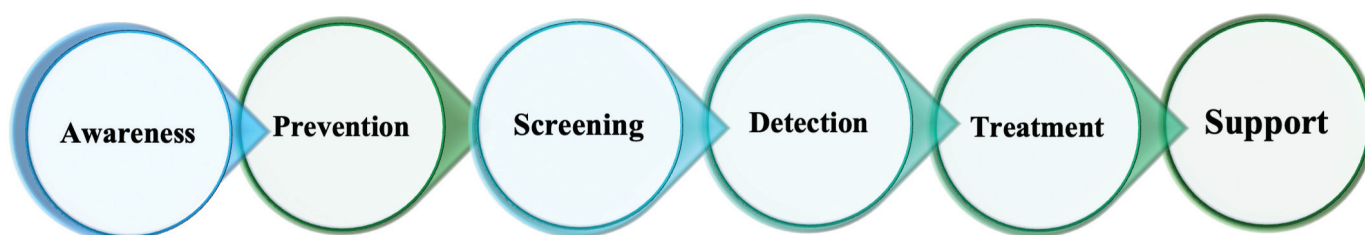
Occupational cancer in the fire service has moved from anecdotal discussions to a prominent place in health and safety considerations to protect firefighters adequately and consistently. An increase in research led by dedicated subject matter experts has, over the last two decades, more closely linked the hazards of the occupation with an increased risk of cancer in firefighters and others working in this hazardous environment.

Recently, the World Health Organization's International Agency for Research on Cancer (IARC) declared a firefighter's occupational exposure at the highest level, as a "Group 1 threat carcinogenic to humans."¹² Based on the epidemiological evidence, the IARC Working Group concluded that there is a causal relationship for mesothelioma and bladder cancer in firefighters. Additional credible positive associations were identified for colon cancer, prostate cancer, testicular cancer, melanoma, and non-Hodgkin's lymphoma. This finding, the result of years of research, is a game-changing opportunity to further consolidate hard-won gains in research and knowledge into profound impacts. In 2010, the National Institute for Occupational Safety and Health (NIOSH) launched a multi-year study that found firefighters have excess cancer risk compared to the general population for multiple cancers, including testicular, brain, prostate and colon cancers, as well as mesothelioma, multiple myeloma and leukemia.¹³

Departments large and small, career and volunteer, structural and wildland, are taking steps to reduce this risk and educate their members, however, more help is needed. Much of the research on occupational cancer isn't making it to the street firefighter in language they can understand. Current firefighter cancer research efforts are not fully coordinated and the specific exposures and mechanisms leading to the increased cancer rates are not known. Existing cancer screening recommendations do not take into account that firefighting is a significant risk factor for cancer. Per- and polyfluoroalkyl substances (PFAS), carcinogenic forever chemicals that degrade very slowly, are found in a firefighter's blood, their firehouses, some firefighting foams, and most concerning, bunker gear -- the very gear meant to protect firefighters. Although more research is needed, the next-generation PFAS-free bunker gear and PPE might remove this risk.

Accomplishments:

- Development of a linear model to guide the Firefighter Cancer Workgroup on national strategic planning:



- ▶ Developed cancer awareness campaigns across the nation through collaborations among fire service organizations, firefighters, clinicians, and cancer researchers.
 - a. In February 2024, the First Responder Center for Excellence for Reducing Occupational Illness, Injuries, and Deaths (FRCE) hosted the Firefighter Occupational Cancer Alliance meeting in Charlotte, NC. Several national leaders and organizations participated in the meeting, and multiple workgroups were developed to align the priorities of cancer awareness and prevention.
 - b. A Firefighter Cancer Workgroup member attended several scientific conferences arranged by American Association of Cancer Research (AACR) to:
 - 1. Bring awareness on cancer incidence among firefighters to thousands cancer researchers.
 - 2. Engage cancer researchers worldwide in addressing cancer prevalence in firefighters. This has already resulted on several international collaborations.
 - 3. Develop collaborations for early cancer detections.
 - 4. Identify advancements in cancer prevention and treatments.
 - 5. Identify advancements in cancer screening and potentials for AI and minimally invasive screening tests.
 - 6. Identify funding opportunities for cancer related research.
 - c. The Firefighter Cancer Support Network (FCSN) in collaboration with International Association of Fire Fighters (IAFF) have produced several educational materials, including Train the Trainer, and delivered them nationally to over 700 firefighters.
- ▶ Captured occupational exposures among firefighters to better understand the exposure pathways.
 - a. As of September 23rd, 2024, over 16,400 firefighters have consented to participate in the NFR.
 - b. 14 fire departments have been recognized as Gold Helmet Departments by NIOSH for enrolling 50% of their active firefighters OR more than 300 of their active firefighters in the National Firefighter Registry for Cancer.
 - c. Applications (NCSA) on developing a brief/debrief application to improve better post-incident conversations and analysis of the actions taken and identification of areas of improvement, encompassing both volunteer and career firefighters.
- ▶ Developed online/open access educational and training materials for exposure reduction and cancer prevention. Some examples include:
 - a. The Illinois Fire Service Institute (IFSI) has developed a data-driven, online Chemical Exposure and Cardiovascular Risk Reduction course, which will also be available on the International Firefighter Cancer Symposium (IFCS) website for greater distribution.
https://www.fsi.illinois.edu/content/courses/programs/description.cfm?course_id=1420
 - b. Through IFSI Exposure Reduction Program, funded by the Illinois State Fire Marshal, more than 12,400 firefighters now have access to the Preliminary Exposure Reduction equipment across 335 fire departments in the state of Illinois (as of August 30, 2024).
 - c. The National Fallen Firefighters Foundation collaborated with the National Carbon Monoxide Awareness Association to produce an online training module on the hazards of carbon monoxide and the associated ramifications, including links between carbon monoxide exposure and cancer.
- ▶ Initiated cancer screening efforts and methodologies for early cancer detection/ prevention. Some examples include:
 - a. The Fire Fighter Cancer Cohort Study (FFCCS) provides a national framework to collect and integrate firefighter epidemiologic surveys, biomarkers, and exposure data focused on carcinogenic exposures, health effects, and prevention in partnership with the fire service.

1. Over 6000 firefighter participants across 31 states and from over 275 different fire departments (as of September 15, 2024).
 2. Recently published findings in a peer-reviewed journal looking at the contribution of both years of firefighting and serum PFAS levels on epigenetic changes in prostate cancer genes. <https://onlinelibrary.wiley.com/doi/10.1002/em.22589>
 - a. The Illinois Fire Service Institute (IFSI) has purchased a mobile laboratory specifically devoted to collection of biological samples from firefighters in the state of Illinois, where scientists can meet firefighters where they are.
 - b. The Firefighter Cancer Support Network (FCSN) in collaboration with American Academy of Dermatology (AAD) have developed a “Firefighter Skin Checks Program” and have amassed the equipment and skills needed to create national program to screen firefighters for skin cancer. So far over 2500 firefighters have been screened
 - c. New Hampshire Senate Bill 352, signed by Governor Chris Sununu in July 2024, appropriated \$5 million to fund early detection cancer screenings for active and retired firefighters in New Hampshire.
- Engaged cancer advocacy groups to support firefighters and their families. Some examples include:
- a. To support firefighters and their families as they navigate difficult times during cancer treatment, Illinois Fire Service Institute (IFSI) has reached out to Triage Cancer, a nonprofit organization that provides free education on the legal and practical issues that may impact individuals diagnosed with cancer and their caregivers, through events, materials, and resources.
 - b. On May 16, 2024, the Senate Judiciary Committee unanimously approved S. 930, the Honoring Our Fallen Heroes Act. The legislation expands the Public Safety Officers’ Benefits (PSOB) program to cover certain occupational cancers. The national fire service organizations are working with our Congressional allies to identify vehicles for passage before the end of the 118th Congress.
 - c. On August 27-29, 2024, the National Fallen Firefighters Foundation (NFFF) hosted the Firefighter Life Safety Summit in St. Louis, MO. The Summit marked the 20th anniversary of the landmark event that launched the 16 Firefighter Life Safety Initiatives. Over the past two decades, these initiatives have been a catalyst for numerous safety improvements in the fire service. This year’s Summit celebrated those wins and worked to determine the important work that still needs to be done.
 - d. The Governor of Florida, Ron DeSantis, signed a bill in May 2024 to support firefighters battling cancer – ensuring they get leave time and employee retention benefits equivalent to those provided for other injuries or illnesses incurred in the line of duty.
- University-affiliated labs and organizations across the country are taking specific and nuanced looks into firefighter cancer.
- a. Integrating engineering and biological sciences to reduce exposure by means of artificial intelligence (AI), virtual reality, and machine learning. (i.e., IFSI collaboration with Department of Computer Science, National Center for Supercomputing Applications).
 - b. Engaging physicians at early stages of their career to the health and safety challenges firefighters face (i.e., IFSI collaboration with first-ever, Engineering-Based Medical School).
 - c. University of Florida Cancer Center working on prevention, detection and treatment of firefighter cancer.
 - d. University of Arizona collaboration with other academic and government institutions to conduct firefighter cancer research at large scale (i.e., the FFCCS).

Recommendations:

Overall

- ▶ Develop a national-level comprehensive firefighter cancer strategy. A national strategy should include an awareness campaign, policy examples, chief officer support, and company officer training.
- ▶ Invest in research to expand our understanding of the mechanisms between occupational exposures and cancer, why firefighters are at heightened risk from some cancers, and better understand the cancer risks of our understudied populations, including women and minorities.
- ▶ Incorporate cancer mitigation strategies into training on operational strategies and tactics.
- ▶ It is imperative that the primary care community understand the risk factors for cancer among firefighters.

Converting Research to Plain Language

Convert research to plain language so fire service members have a better understanding of the risks and steps they can take to reduce their occupational exposure to carcinogens. Plain language materials make it easier for everyone to understand and use health information. Examples of such materials include infographics that are available in multiple languages; research summaries that have minimal technical jargon; short videos with worker testimonials; webinars; and misinformation alerts.

- ▶ Identify the appropriate organization (perhaps the Firefighter Cancer Support Network) to coordinate the championing of efforts to translate firefighter cancer research into practice and disseminate information through existing organizational channels.
- ▶ Identify relatable fire service stories and personnel to share brief but hard-hitting and candid messages about cancer prevention, early detection, treatment management, and evidence-based recommendations in easily accessible formats (e.g., video, pictures).
- ▶ Form a coalition comprised of the First Responder Center for Excellence (FRCE), Firefighter Cancer Support Network (FCSN), National Fallen Firefighters Foundation (NFFF), International Association of Fire Fighters (IAFF), International Association of Fire Chiefs (IAFC), National Volunteer Fire Council (NVFC), Fire Department Safety Officers Association (FDSOA), and International Association of Arson Investigators (IAAI) research groups to produce “one voice” of plain language actionable devices (e.g., infographs, plain talk messaging).
- ▶ Create actionable approaches for translating research to practical actions for all layers of the fire service through engagement with a diverse range of stakeholders.
- ▶ Use technology to facilitate the translation of research into practice. This can include the development of mobile applications, online resources, and other tools that make it easier for firefighters and fire departments to access and implement evidence-based strategies.
- ▶ Explore what prevention messages have been successful in motivating engagement in other national marketing campaigns.
- ▶ Develop and secure funding for a targeted, co-branded marketing campaign to educate the fire service on current and emerging science related to the optimization of health for firefighters.

Firefighter Cancer Screening

Promote the advantages of and access to cancer screenings for all fire service members so indicators of cancer can be discovered at the earliest possible exam, improving survivability.

- ▶ Seek and secure cancer screenings for all members of the fire service exposed to carcinogens and options for cancer screening for the families of the firefighters.
- ▶ Convene an advisory panel of experts to develop and regularly revise recommendations for screenings based on emerging literature.

- ▶ Support research on the sensitivity and specificity of screening approaches currently being used by the fire service.
- ▶ Provide resources for recruiting fire service centric healthcare providers and cancer researchers. Continue partnerships and foster relationships within the research community that promotes cancer screenings for firefighters.
- ▶ Develop an algorithm of screening recommendations by age, years of service, and other health risk factors.
- ▶ Determine the potential for funding cancer screenings through existing sources within the federal government (e.g. DHS) and disseminate possibilities to the fire service.
- ▶ Develop a roadmap for negotiating more aggressive cancer screening coverage with health insurance providers and disseminate the methodology nationally.
- ▶ Leverage National Firefighter Registry (NFR) data to understand patterns of developing cancer nationally.
- ▶ Leverage the data collected by payees of state cancer presumption legislation to identify trends in diagnosis.
- ▶ Capitalize on forthcoming IARC monograph to identify cancers at highest likelihood of diagnosis.
- ▶ Encourage the National Firefighter Registry (NFR) to conduct a regular survey of cancer screenings and outcomes to developed cancers.
- ▶ Encourage other studies to integrate cancer screenings as a data collection component to further the understanding of the utility of various screening approaches.
- ▶ Encourage all departments to provide annual medical exams to their personnel in accordance with NFPA 1582.
- ▶ Build a relationship with the national medical associations (e.g. American Medical Association) to educate providers on cancer development and treatment approaches for fire & EMS.
- ▶ Prioritize outreach and training to healthcare providers in occupational health settings, primary care, and specialties.
- ▶ Provide resources to develop a comprehensive approach to recruit, engage and support healthcare providers who work with firefighters.

PFAS and Toxicants

Increase funding for more research on the effects of PFAS and other toxicants on fire service member health outcomes.

Policy Level

- ▶ The USFA should support development of a central clearinghouse for firefighter PFAS exposure information.
- ▶ Fire service organizations and researchers should develop recommendations for serum PFAS screening programs in firefighters.
- ▶ The USFA should support efforts that engage firefighters in conducting scientific research focusing on PFAS and other toxicants screening.
- ▶ The USFA should support development of a consortium that fosters collaborative efforts among fire service organizations and research scientist in academic settings focusing on PFAS and other toxicant exposure and their effects on physiological disruptions holistically (e.g., cancer, liver toxicity, hormone disruption, mental health, resiliency, etc.).
- ▶ The USFA should support cross sectional and longitudinal academic research efforts focusing on identifying the biomarkers of effect due to PFAS and other toxicant exposures.

- ▶ The USFA should support the academic research efforts focusing on the effects of PFAS exposure and other toxicants on other health related issues in addition to cancer.
- ▶ The USFA should support research efforts that include engagements of health care providers as well as State and local representatives (education and outreach with higher impact).

Scientific Research

- ▶ Connect data sets to elucidate exposure in firefighter histories (e.g., military exposures, Environmental Working Group (EWG) contamination maps).
- ▶ Compare PFAS screening tests to facilitate combining results from different labs
- ▶ Carry out cross sectional and longitudinal analysis of changes in firefighter serum PFAS

Environment

- ▶ Identify additional sources of PFAS in the firefighting work environment (burning sofa, carpet, household items, dust, water, etc.).
- ▶ Quantify the presence of each PFAS.
- ▶ Identify the type of PFAS in different sources.

Exposure

- ▶ Identify exposure pathways in firefighters.
- ▶ Quantify transdermal exposure vs. inhalation vs. ingestion.

Effect

- ▶ Identify and elucidate biological mechanisms resulting from PFAS exposures (Genomic, Epigenomic, miRNA, Exposome, Oxidative stress assays, Chronic inflammation Markers, Telomere length, Immune functional assays, Metabolomic assays, Cell Proliferation assays).
- ▶ Expand list of biomarkers of effect studied in firefighters.
- ▶ Explore expansion of and new analytic methods to elucidate biological mechanisms that increases cancer risk in firefighters e.g. untargeted approaches, metabolomics, immune effects, mutational frequency, clonal expansion, long read sequencing, use of epi-genetic clocks as a risk factor.

PFAS Reduction and Elimination Interventions

- ▶ Biomedical/clinical intervention.
- ▶ Environmental Intervention (water treatment, landfill, etc.).

Products of Combustion — Environment

- ▶ Expand list of environmental analytics studied on the fire ground.
- ▶ Explore expansion of and new analytic methods to further characterize environmental contaminants e.g., untargeted approaches, NMR-MS.

Products of Combustion — Exposure

- ▶ Expand list of biomarkers of exposure studied in firefighters.
- ▶ Explore expansion of and new analytic methods to better characterize firefighters' exposures e.g. untargeted approaches, PHE-T to measure exposure and CYP/EPHX pathway.

Products of Combustion — Effect

- ▶ Expand list of biomarkers of effect studied in firefighters.
- ▶ Explore expansion of and new analytic methods to elucidate biological mechanisms that increases cancer risk in firefighters e.g., untargeted approaches, metabolomics, immune effects, mutational frequency, clonal expansion, long read sequencing, use of epi-genetic clocks as a risk factor.

Bunker Gear

- ▶ Develop new standards for PFAS-free bunker gear and PPE.
- ▶ Develop, evaluate, and manufacture next-generation PFAS-free bunker gear and PPE as quickly as possible.
- ▶ Secure funding for and invest in well-fitting, PFAS-free bunker gear and PPE for every firefighter.
- ▶ Find a safe way to dispose of existing contaminated bunker gear and PPE so that we are not spreading PFAS contamination into the environment.

Human Factors

Study, identify, and provide strategies that consider human factors elements impacting fire service member response to cancer prevention — this includes considering complex organizational factors surrounding fire department processes and procedures, including leadership and communication around cancer prevention, and how these processes intersect with and influence individual firefighter practices.

- ▶ Secure funding to develop and deliver cancer prevention messaging that is based on human factors.
- ▶ Increase training and messaging that focuses on how human factors influence firefighters' views of cancer prevention messaging.
- ▶ Revisit USFA programming to ensure cancer prevention messaging considers the role human factors play in how members of the fire service receive, process, and implement cancer prevention messages.
- ▶ Policy recommendations relative to improving human factors must be defined by current research.
- ▶ Human factor research and guidance should occur prior to tool/equipment/research (invest in people before we invest in things).
- ▶ Ensure currently known and vetted Human Factors information is widely disseminated, across a variety of platforms, at low or no cost.
- ▶ Seek Congressional funding to support research that considers the relationship between human factors and occupational firefighter cancer. Funding should include studying the particular the role of the company officer and how firefighters process cancer prevention messaging.
- ▶ Cancer-related research studies should include human factors components that identify barriers and potential solutions at the individual and fire company level.
- ▶ Cancer-related research studies should incorporate human factors components in interventions that help the fire service execute evidence-based practices at the individual and fire company level.

Developing High Priority Research Programs

Develop new or support existing nationally focused research programs to prioritize and address the most threatening cancer risks to fire service members.

- ▶ Develop a National Fire & EMS Cancer Research and Prevention Program. Centralize data integration, leveraging existing efforts. Develop strategies to enhance national laboratory coordination along with standardized collection protocols.
- ▶ Support consistent and ongoing funding for the National Firefighter Registry (NFR), the Firefighter Cancer Cohort Study (FFCCS), and other programs trying to understand cancer and reduce exposures and adverse health effects at a national level.
- ▶ The USFA should work with federal funding agencies to establish a center to fund the Firefighter Cancer Cohort Study (FFCCS) and other national firefighter research initiatives and provide a mechanism for coordination among these studies and state funded initiatives. Within this center, funding and coordination should be provided to assist research studies or public health

surveillance programs aimed at evaluating the effects of high-risk exposures such as large industrial fires and other manmade and natural disasters.

- ▶ Support the development and deployment of a national strategy for responding to large scale natural and manmade disasters to collect real time biological samples, and survey data to understand the short- and long-term impacts of major events that leverages fire service infrastructure and support and integrates research into standard response protocols within the national incident management structure.
- ▶ The USFA should develop a robust data collection system for identifying responders at an emergency incident and make the data available for research or public health surveillance. Such data is instrumental to understanding firefighters' unique exposures and evaluating how they relate to disease outcomes. Improve the nationwide system for identifying responders at emergency incidents, leveraging existing technology (e.g., computer aided dispatch, mobile devices, etc.) to remove some of the reporting burden on departments.
- ▶ Create a mechanism for providing data to the fire and EMS community, public health and medical communities, and other stakeholders in near real time. Coordination should be between all national data stewards to modernize data dissemination in an efficient and relevant way. Provide report back of biomarkers of exposure and effect (e.g., serum PFAS, DNA methylation) including dashboard, summary stats, education of fire service and link to incident level information/data, as is being carried out in the Firefighter Cancer Cohort Study (FFCCS). Use these reporting mechanisms to encourage implementation and utilization of empirically supported risk mitigation. The USFA can support and coordinate existing exposure and biological effect report-back programs.
- ▶ Support efforts to understand the intersection of other health outcomes with cancer (e.g., reproductive health) and, in doing so, leverage existing health outcome data sources (e.g., Medicaid/Medicare, stroke registry, NDI, NDBPS, FFCCS). Increase coordination and data sharing across systems that monitor health outcomes Congress should consider expanding the scope of the National Firefighter Registry (NFR) to include other health effects beyond cancer that may have similar risk factors.
- ▶ Research or public health surveillance programs should leverage fire service organizations to support community-engaged research that is focused on firefighters and other first responders. Leverage the fire service for data collection protocols — such as regional response teams — which can act as a force multiplier for research and discovery. Cultivate and support firefighter research champions, providing the necessary background, training, clearances, etc. for them to assist with specific research or support activities.

Presumptive Laws & Public Safety Officer Benefit (PSOB)

Campaign for uniform national occupational cancer presumption and expansion of the Public Safety Officer Benefit (PSOB) Program to include occupational cancer for all fire service members.

- ▶ The Public Safety Officers' Benefits (PSOB) program should be expanded to cover line-of-duty deaths and permanent disabilities that occur as a result of occupational cancer.
- ▶ A publicly available and consistently updated database of state cancer presumption laws should be made available to the fire service and hosted online. The database should include statutory references to improve ability to access reliable information.
- ▶ Model state cancer presumption legislation should be developed and shared with state and local fire service advocates with the goal of achieving uniform and universal coverage in all 50 states with coverage for all firefighters (career and volunteer). The 'uniformity' should be considered a 'floor' or starting point rather than a maximum. The model legislation should include a toolkit with resources for advocacy campaigns to enact the legislation.
- ▶ A continuous and ongoing process should occur to ensure coverage evolves as science is developed and/or new exposures are identified.

Workgroup Summary

Mental Health and Wellbeing

Overarching Goal:

Provide comprehensive mental health and wellbeing resources, including those focused on suicide prevention, for all Fire and EMS personnel.

Issue:

Fire and Emergency Service (EMS) personnel¹⁴ are exposed to events that have powerful and lasting impacts on their mental health and wellbeing. Challenges include cumulative exposure to structural fires, mass casualty events, natural disasters, medical emergencies, suicide, pediatric calls, violence, and others. Fire and EMS personnel also cope with organizational dysfunction, internal moral injury, Line-of-Duty Death (LODD), and the profound biopsychosocial impact of shiftwork¹⁵ and sleep deprivation. Volunteer Fire and EMS personnel may encounter the additional stress of managing work-life-volunteer balance. Mounting evidence reflects that Fire and EMS personnel are at increased risk for a range of mental health challenges and disorders.

Historically, mental health and wellbeing support, as part of an overall healthy lifestyle, has not been well integrated into fire service culture. Fire/EMS personnel may often face barriers to care due to mental health provider shortages throughout the United States. Even when available, mental health clinicians often lack specialized professional training to deliver culturally effective care when treating clients in public safety occupations. This lack of cultural awareness in working with Fire/EMS personnel can have a compounding negative effect and further compromise engagement in seeking mental health care.

Although important strides have been made to normalize the topic of mental health in the fire service, greater attention and resources are needed, as cultural stigma continues to be a persistent impediment to comprehensive progress. In addition, significant disparities exist in the utilization of available mental health programming and resources, which are often influenced by age and years of service. To date, there is no formal national strategy for monitoring rates and predictors of occupational stress injuries and/or suicide within the fire service. While significant efforts have been made in 2024 to better understand the impact of state-level policies that target firefighter mental health and wellness,¹⁶ continued rigorous assessment and subsequent evaluation of programming is needed.

Firefighters and other rescue personnel develop post-traumatic stress disorder (PTSD) at a rate similar to military service members returning from combat, according to an August 2016 study from the Journal of Occupational Health Psychology.¹⁷ This report reveals approximately 20% of firefighters and paramedics may meet the criteria for PTSD at some point during their careers, compared to a 6.8% lifetime risk for the general population. In addition, according to the National Vital Statistics System (NVSS), the rate of male firefighter suicide in the United States is 33.8 per 100 people, compared to 17.8 per 100 people among all working-age adults ages 18-64.¹⁸ Policy and programming efforts aimed to reduce firefighter suicide should incorporate defined goals established in the National Strategy for Suicide Prevention released in April 2024.¹⁹ Efforts in this report that align with federal strategic directions on suicide prevention include integration of suicide prevention into workplace culture, improved access to crisis care, and, among other needs, prioritization of quality research of firefighter suicide and suicide prevention.

This report underscores the complex mental health issues that Fire and EMS personnel experience and highlights the need for a federal, state, and local inter-disciplinary, cross-organizational series of strategies to reduce the debilitating effects of cumulative occupational stress and exposure, including:

1. Culturally informed mental health specialists to address the unique needs of Fire and EMS personnel.
2. Ongoing research to develop mitigation strategies to manage the impact of repeated traumatic exposures.
3. Financial support for mental health services.
4. Compilation of best practices for building and promoting a supportive culture for normalizing help-seeking behavior.
5. Gathering best practices for obtaining access to mental health and wellbeing resources.
6. Identification of measurable outcomes and valid tools to assess progress toward the overarching goal.

A national research agenda for first responder mental health is required to advance all strategic areas outlined in this report: Culture, Providers, Individual Values, Interventions, Predictors, and Funding.

Accomplishments:

- ▶ Adoption of interstate licensing compacts for licensed mental health professionals has progressed rapidly in 2023-2024. To date, a combined forty-two states and Washington, DC have enacted interstate compact legislation through the [Psychology Interjurisdictional Compact \(PSYPACT\)](#), the [Counseling Compact](#), and/ or the [Social Work Licensure Compact](#). Historic progress in the enactment of interstate licensing compacts has paved the way for mental health clinicians from a range of professional disciplines to practice across state lines, expanding provider access and choice for first responders seeking mental health services as consumers. (See Appendix A)
- ▶ The Mental Health and Wellbeing Workgroup has developed a guide on recommended mental health clinician standards, which outlines specific clinician criteria for providing trauma-informed, highly skilled, and culturally aware care to fire service members. (See Appendix B, “Core Characteristics for Mental Health Clinicians Working with Fire and Rescue Personnel”.)
- ▶ Efforts continue across the fire service to increase access to and catalog vetted mental health clinicians, who demonstrate cultural awareness, advanced training, and/ or special experience working with fire service populations. [The National Volunteer Fire Council's \(NVFC\) Behavioral Health Directory](#) was recently established and is intended to categorize vetted clinicians by zip code, state, specialty, and insurance accepted. A similar directory of mental health providers who self-identify as working with first responders has also been established by [Responder Strong](#), a partner of the non-profit organization NDRI Ventures.
- ▶ The Workgroup has identified at least eight training programs (below) designed to prepare mental health clinicians to treat Fire and EMS personnel. In conjunction with efforts to develop recommended core curriculum guidelines for clinician training, **these programs require further evaluation, comprehensive vetting and classification by the next cohort of the USFA Mental Health and Wellbeing Workgroup.**
 1. [Understanding the Fire Service for Mental Health Clinicians](#) hosted by International Association of Fire Fighters (IAFF)
 2. [Treating Fire Service Members in Behavioral Health Settings](#) hosted by International Association of Fire Fighters (IAFF)
 3. [Clinician Awareness Program](#) hosted by the Florida Firefighters Safety & Health Collaborative and UCF Restores
 4. [Understanding Fire Service Culture](#) / Fire Service Cultural Competency Certificate Program hosted by the Fire Service Psychology Association (FSPA)
 5. [Helping Heroes](#) hosted Medical University of South Carolina
 6. [A Firefighter's Life](#), hosted by Firefighter Behavioral Health Alliance (FBHA)

7. Certified First Responder Counselor hosted by Lighthouse for Public Safety/ Academy Hour
 8. Occupational Awareness Training hosted by First Responder Health (Canada)
- ▶ The Workgroup has identified three gold standard resources that offer a fundamental framework for comprehensive mental health and wellness programming that can be adopted by career, volunteer, and combination fire departments (IAFF/IAFC Wellness Fitness Initiative, First Responder Behavioral Health Access Program (BHAP) Toolkit, and NVFC Psychologically Healthy Fire Departments: Implementation Toolkit).
 - ▶ The Workgroup has identified 19 topics of interest to contribute to a national research agenda that deepens understanding of first responder mental health.
 - ▶ The Workgroup has identified six evidence-based prevention programs that promote individual psychological resiliency and/ or suicide prevention in the fire service.

Recommendations:

Overall

The United States Fire Administration (USFA) shall be provided the legislative mandate to create an Advisory Panel on Mental Health and Wellbeing of the Fire Service. The Advisory Panel shall assume responsibility for the following functions undertaken by the 2024 Mental Health and Wellbeing Workgroup:

1. Organize sub-advisory groups to include content experts to aid in the development of the recommendations.
2. Provide oversight to sub-advisory groups.
3. Provide comments and recommendations to the Fire Administrator regarding necessary resources to address the identified needs.
4. Provide improvements and/or revisions to recommendations deemed appropriate.
5. Review scientific research in the areas of mental health and wellbeing.

The following are immediate actionable steps identified by the Workgroup for the United States Fire Administrator to consider:

1. Contact counterparts at federal agencies (DHS, CDC, HHS, NIOSH, DOJ, DOD, NIH/ NIMH) to establish a working group focused on information sharing on first responder mental health initiatives.
2. Request a meeting with the Centers for Disease Control (CDC) Director to discuss strategies to prioritize first responder mental health research, prevention, and treatment strategies.
3. Convene national health care entities to prioritize access to culturally competent care for first responders.
4. Continue discussion with the Substance Abuse and Mental Health Services Administration (SAMHSA) Director to explore the adoption of adding a dedicated first responder option to the 988 Suicide and Crisis Lifeline.
5. Engage the National Fire Protection Association (NFPA) on its next Fire Service Needs Assessment Survey; plan measurable data points to illuminate successful programs and unmet needs.
6. Call on the First Responder Center for Excellence (a division of the National Fallen Firefighters Foundation) to re-establish the annual Mental Health Symposium in 2025 to highlight best practices, successful programs, and creative implementation strategies.
7. Establish full-time staff in the USFA Division of Research, charged with executing Workgroup report action steps.

8. Execute the Federal Advisory Committee Act (FACA) process to establish a federal advisory group to prioritize envisioned work.

Culture

Convene a sub-advisory panel charged to:

1. Identify existing and/or build new resources for department personnel of all ranks, to integrate into mental health and wellbeing culture initiatives.

The Workgroup has identified the following key resources in this area:

- a. The [Wellness-Fitness Initiative 4th Edition](#) developed by the International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC), outlines a comprehensive behavioral health program model for organizations to support the mental and behavioral health needs of recruits, active fire fighters, and retirees.
- b. The [First Responder Behavioral Health Access Program \(BHAP\) Toolkit](#) (established by the Second Alarm Project) is a free comprehensive resource designed to support the behavioral health needs of fire and emergency services personnel, offering a range of evidence-informed strategies and interventions and resources for an organization to establish and customize or enhance an existing behavioral health program.
- c. The [Psychologically Healthy Fire Departments: Implementation Toolkit](#) (developed by the National Volunteer Fire Council) is designed to foster member wellbeing while enhancing department performance. Although there is no “one-size-fits-all” approach to creating a psychologically healthy fire department, the types of practices that support wellbeing and performance can be grouped into six categories: Member Involvement, Health and Safety, Member Growth and Development, Work-Life Balance, Member Recognition, and Effective Communication.

Additional resources that promote the integration of mental health and wellbeing into organizational culture include:

- a. [Mental Health Awareness Month Toolkit | SAMHSA](#)
 - b. [Workplace Mental Health - The Working Well Toolkit](#)
 - c. [San Bernardino, California Behavioral Health Toolkit](#)
 - d. [Center for Firefighter Behavioral Health – Medical University of South Carolina](#)
2. Establish a national research agenda that promotes a deeper understanding of first responder mental health. A non-exhaustive list of existing research initiatives that would benefit from additional federal support and/ or reflect current research gaps in first responder mental health that warrant further attention are indicated below.²⁰ (Note: the Workgroup chose not to create a prioritized list, but rather ordered the list with a focus on magnitude):
 - a. Assessment of integration and implementation of existing mental health resources into fire service organizations.
 - b. The development of supportive cultures for seeking mental health and wellbeing resources throughout the life cycle of a first responder.
 - c. Development of large-scale, long-term cohort studies to identify predictors of suicidal ideation, depression, anxiety, and substance use/abuse disorders among Fire/EMS personnel
 - d. Assessment of the impact of incorporating changes to ICD 10-Z codes to include the occupational stressors of Fire/EMS personnel.
 - e. Analysis of data collected by the Public Safety Office Suicide Reporting Module of the National Violent Death Reporting System (NVDRS), to be released by the CDC in 2024.

- f. Identification of protective and predictive factors in post-service (retiree) first responder mental health.
- g. Evaluation of post-critical incident downtime for Fire and EMS personnel.
- h. Efficacy of peer support intervention in countering short-term and long-term effects of traumatic occupational exposure.
- i. Utilization and efficacy of first responder mental health and wellness mobile apps.
- j. Evaluation of mental health, productivity, and social wellbeing outcomes of afternoon or evening shift start times.
- k. Utilization and efficacy of therapy dogs in mitigating acute effects of traumatic occupational exposure.
- l. Evaluation of longitudinal outcomes on fire service members who attend residential or inpatient behavioral health treatment.
- m. Exploration of best practices in aftercare for fire service members to maintain treatment gains (i.e. symptom stabilization, quality of life improvements) achieved in intensive, partial, or inpatient levels of behavioral healthcare.
- n. Evaluation of treatment efficacy of existing PTSD psychotherapeutic interventions for fire service cohorts (see list under *Interventions*, recommendation #1).
- o. Analysis of safety and efficacy of emerging interventions (ex: Stellate Ganglion Block (SGB), psychedelic-assisted therapy, acupuncture) as alternative or integrative treatment interventions for PTSD.
- p. Analysis of return-on-investment (ROI) utilizing health economist perspective on mental health and wellness programming in the fire service.
- q. Identification of best practices for retirement planning and post-retirement mental health support for first responder populations.
- r. Identification of best practice strategies to maintain mental health and wellness among fire service leaders.
- s. Meta analysis on efficacy of stress inoculation and resiliency programs through the fire service.

Individual Values

Convene a sub-advisory panel charged to:

1. Develop and sustain a comprehensive, evidence-based, industry-focused marketing campaign to normalize mental health and wellbeing support as one component of an overall health and wellbeing lifestyle.
2. Identify drivers and barriers to seeking mental health and wellbeing support to reveal future research opportunities.
3. Evaluate patterns of use of existing mental health resources across age and length-of-service cohorts within the Fire/EMS community and, if indicated, develop strategies to improve utilization tailored to unique groups.
4. Develop policy templates for departments to implement immediate and on-going assistance to Fire/EMS personnel who are seeking mental health and wellbeing support. Templates are needed to support members coping with both occupational stress due to traumatic exposure to critical or high-risk incidents, as well as those coping with non-occupational personal or environmental life stressors.

Providers

Convene an ongoing sub-advisory panel of stakeholders charged to:

1. Support interstate licensing compacts for mental health treatment providers in all 50 states and territories.
 - a. In remaining states without enacted legislation, fire service and public safety leaders are encouraged to work with state legislatures to adopt permissive legislation. This may include connecting advocates in states without legislation and mentors in states with legislation to facilitate passage.
2. Develop and disseminate evidence-based standards for defining a trauma-informed, culturally-competent clinician.
3. Provide clinician training programs to enhance efficacy and treatment delivery for mental health clinicians interested in working with Fire/EMS personnel. Include standards for number of hours of ride-along time with Firefighters, EMT's, and Paramedics to be considered culturally-competent and trauma-informed.

Convene a sub-advisory panel charged to:

1. Prepare educational materials for Fire/EMS personnel to understand what mental health and wellbeing therapy is, how to access it, what to expect, the different types of therapies, the professional qualifications and skills of provider types, differences between experimental and certified best-practice approaches, and what to look for when seeking support.
2. Identify and utilize funding sources for development of education materials.
3. Identify and provide information about existing programs (i.e., 988) to support individuals in crisis as well as report those in need.
4. Identify one source to host, publish and maintain the materials.
5. Advance a national communication and dissemination strategy for all the mental health and wellbeing materials.

Interventions

Convene a sub-advisory panel charged to:

1. Identify available evidence-informed, mental health and wellbeing interventions, as well as those needing validation addressing prevention, intervention, and post-intervention programs or strategies. The Workgroup identified 10+ evidence-based mental health treatments or interventions that are recommended to address common mental health challenges that impact Fire and EMS personnel. This is not an exhaustive list but includes (without prioritization):
 - a. Cognitive Behavioral Therapy (CBT)
 - b. Cognitive Processing Therapy (CPT)
 - c. Dialectical Behavioral Therapy (DBT)
 - d. Exposure Therapy (PE)
 - e. Accelerated Resolution Therapy (ART)
 - f. Eye Movement and Desensitization Reprocessing Therapy (EMDR)
 - g. Motivational Interviewing (MI)
 - h. Brief Strategic Family Therapy (BSFT)
 - i. Suicide Postvention
 - j. Nutrition-based intervention²¹

2. The Workgroup identified the following examples of evidence-informed prevention programs that promote individual psychological resiliency and/ or suicide prevention in the fire service. This is not an exhaustive list but includes (without prioritization):
 - a. IAFF Safety Planning Intervention for Suicide Prevention
 - b. IAFF Resiliency Training
 - c. FRCE Stress First Aid Program
 - d. FBHA Saving Those Who Save Others (includes Family Edition)
 - e. IAFF Peer Support Training
 - f. Mental Health First Aid
 - g. Applied Suicide Intervention Skills Training (ASIST)

The following recommendations are identified as requiring a more formal level of engagement (i.e. staffing, resources, funding) and are deferred to a future cohort of the USFA Mental Health Workgroup:

1. Develop a summary document with current science-based recommendations of evidence-based interventions and best practices for their implementation.
2. Develop “accreditation” standards supported by the USFA for programs that specifically target the fire service (i.e. need to be validated for the fire service and meet national standards for utilization).
3. Identify source (s) to host, publish, and maintain a directory of wellness/prevention resources and validated treatment interventions for Fire/EMS personnel.
4. Advance a national coordinated strategy for dissemination of the directory of interventions and resources.

Monitor Predictors

Convene a sub-advisory panel charged to:

1. Identify validated assessment tools that adequately measure first responder mental health and occupational stress.
2. Identify further research needed in this area.
3. Identify a source to host, publish, and maintain a directory of identified assessment tools.
4. Advance a national strategy for dissemination of assessment tool directory.
5. Create implementation guidelines (toolkit) for departments to adopt annual mental health screening including those contained in the current NFPA standard.
6. The following instruments have been identified by the Workgroup as accepted and effective screening measures of mental health conditions that commonly impact Fire and EMS personnel, including PTSD, major depression, substance use disorder (SUD), and suicidal thoughts/ behavior.
 - a. Primary Care PTSD Screen for DSM-5 (PC-PTSD-5)
 - b. PTSD Checklist for DSM-5 (PCL-5)
- c. Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-2)
 - d. Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-9)
 - e. Columbia-Suicide Severity Rating Scale Screen with Triage for Primary Care (CSSR-S)
 - f. CAGE-AID Questionnaire (CAGE)
 - g. Alcohol Use Disorders Identification Test (AUDIT)
 - h. Drug Abuse Screening Test- 10 (DAST-10)

These instruments are also recommended in NFPA 1582²² as non-diagnostic screening options that can be used as part of annual behavioral health screening process for fire service personnel. Further research is needed to assess the specific value of using these assessment tools with Fire and EMS personnel. See Appendix C for further details.

7. Identify key metrics for tracking mental health and wellbeing program utilization by having departments report information to a national database; develop subsequent database for collecting and providing utilization data of mental health and wellbeing programs.

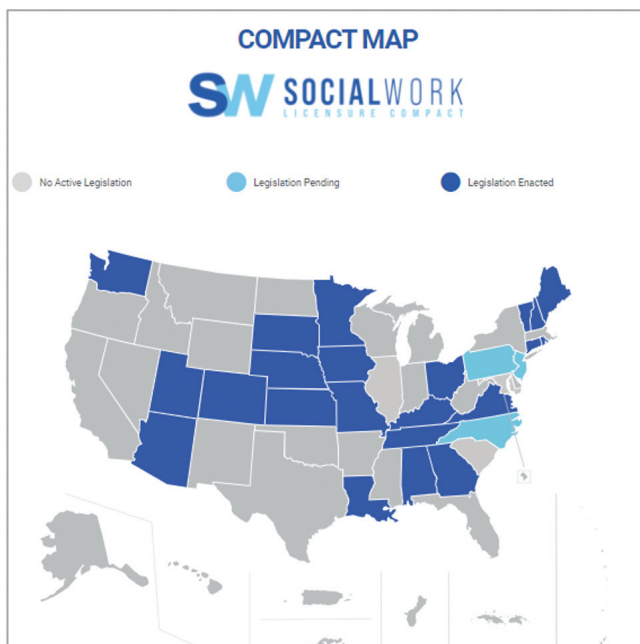
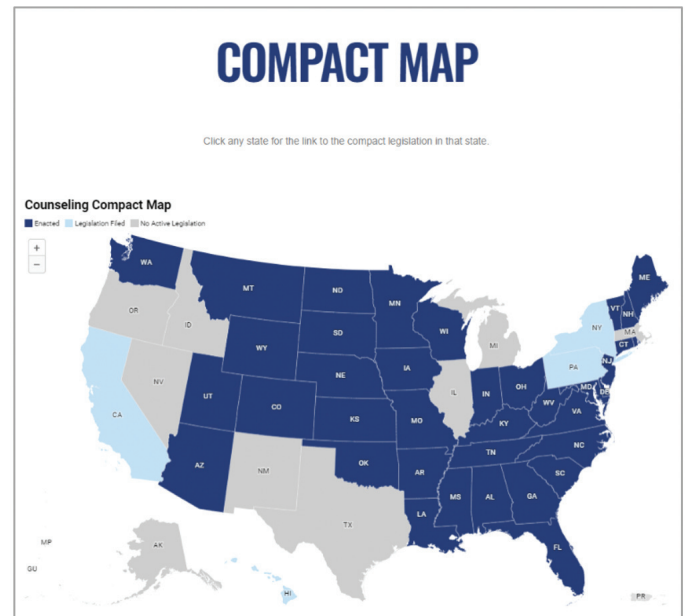
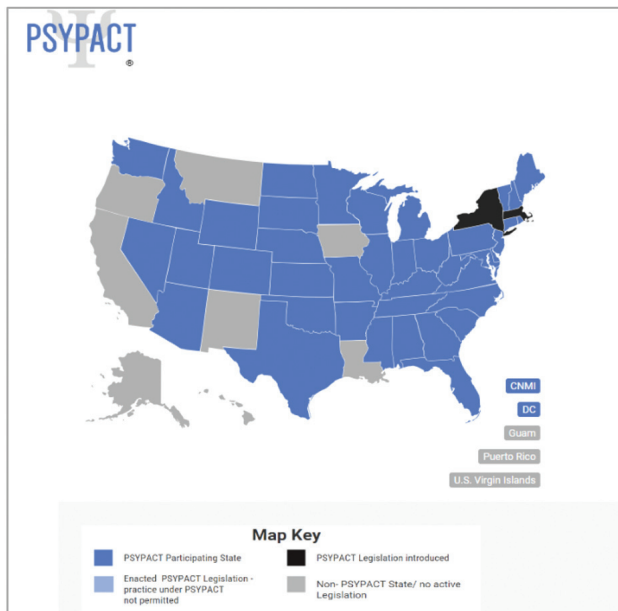
Funding

Convene a sub-advisory panel charged to:

1. Recommend the types of funding needed to provide and monitor the success of infrastructure (access to programs, education for personnel, and dissemination) to embed mental health and wellbeing programs in Fire/EMS departments and organizations.
2. Identify sources of financial support for mental health and wellbeing programs of Fire/EMS personnel not covered by health insurance, or state and regionally funded programs.
3. Provide a guidance publication for departments and organizations on how to develop a robust grant proposal to acquire mental health and wellbeing programs.
4. Identify one source to host, publish, and maintain the database of applicable grants for evidence-based mental health programs and/ or research initiatives focused on first responder mental health.
5. Advocate for funding to support the development of large-scale, long-term cohort studies designed to identify predictors of suicidal ideation, depression, anxiety, and substance use/abuse disorders among Fire/EMS personnel.
6. Create legislative toolkits for state fire service leaders to advocate and request state and local sustained resourcing for firefighter mental health and wellbeing services and programs.
7. Engage healthcare economists to evaluate the cost/benefit analysis of prevention and intervention programs across the spectrum of care and services in existence and contemplated in the future.

Appendix A

Adoption of interstate licensing compacts for mental health has progressed rapidly in 2023-2024. To date, a combined forty-two states and Washington, DC have enacted interstate compact legislation through the Psychology Interjurisdictional Compact (PSYPACT), the Counseling Compact, or the Social Work Licensure Compact. The maps below demonstrate the status of legislation for each licensing compact, as of July 31, 2024.



Appendix B

Core Characteristics for Mental Health Clinicians Working With Fire and Rescue Personnel

Mental health and wellbeing are central to the overall health, performance, and longevity of fire and rescue personnel. In today's fire service, there is an increased demand for specially qualified mental health clinicians who can effectively serve this population. Summarized in five domains below is a non-exhaustive list of core characteristics to consider when determining a clinician's suitability to work with fire and rescue personnel. These domains include cultural competence, occupational awareness, trauma-informed care, clinical best practices, and clinician accessibility.

► **Cultural competence** can be defined as the clinician's ability to understand and respect different values, attitudes, beliefs, and behaviors across diverse cultures and social groups, while effectively integrating these components into treatment delivery.²³ *A clinician that displays cultural competence in working with fire and rescue personnel will:*

- Possess individual cultural awareness by regularly examining their own personal beliefs, assumptions, and norms, while refraining from imposing these on the fire service member.
- Seek fire service education, experiential learning (i.e. ride alongs, fireground training, station visits, etc.), or possess considerable professional or familial experience with fire service members and/ or public safety professionals.
- Appreciate the fire service community as a distinct subculture with established social norms, shared values, attitudes, and behaviors, which may or may not shape the client's attitude towards mental health services. The clinician can identify important similarities and key differences between fire and rescue professionals and other emergency responders (i.e. police, military, corrections, etc.).
- Conduct a culturally informed assessment that incorporates knowledge of the fire service experience into case conceptualization, while staying focused on client's presenting problem and expectations for treatment. A culturally competent clinician will refrain from assuming their client identifies with all aspects of fire service culture, nor automatically attribute the client's distress to the occupation.

► **Occupational awareness** is related to cultural awareness, but not the same. Occupational awareness refers to a functional understanding of fire service operations. *A clinician who displays occupational awareness in working with fire and rescue personnel will:*

- Display a basic understanding or desire to learn about daily operations of fire and rescue personnel, including common activities on shift, frequent types of service calls, fire service apparatus, and related terminology.
- Is familiar with fire service rank as a para-military chain of command structure and can consider any psychosocial implications for the fire service client.
- Can adapt treatment sessions around a rotating shift schedule, with flexibility as needed due to mandatory overtime, call-backs, staff shortages etc.
- Recognize the direct impact of shiftwork on the fire service member's mental and physical health, sleep, relationships, family life, healthcare, leisure, etc.

► **Trauma-informed care** recognizes the impact of past trauma on an individual's well-being and how it can affect their neurological, biological, psychological, and social development, while aiming to prevent re-traumatization in delivery of care. Trauma-informed care encompasses six key principles, which can be summarized as 1) safety; 2) trustworthiness; 3) peer support; 4) collaboration; 5) empowerment/ choice; and 6) cultural, historical, and gender issues.²⁴ *A clinician who provides trauma-informed care when working with fire and rescue personnel will:*

- Explore how occupational trauma in the fire service may be impacted by a history of previous or childhood trauma, while not assuming that all fire service clients are coping with a traumatic response.

- ▶ Be trained and proficient in one or more therapeutic modalities that are recognized as evidence-based treatments for trauma. (See footnote for examples).
 - ▶ Explain confidentiality with great care, including limitations of confidentiality that are relevant to public safety personnel seeking mental health assistance
 - ▶ Offer a meeting space that strives to protect confidentiality, while minimizing opportunities for interaction with the public and/ or other public safety personnel.
 - ▶ Incorporate peer support assistance as a supplement to treatment, while embracing the therapeutic value of lived experience in the fire service community.
 - ▶ Collaborate with the fire service client to establish a personalized treatment plan with concrete goals that are meaningful to the client.
 - ▶ Display professional integrity and transparency in all aspects of delivery of care.
- ▶ **Clinical best practices** reflect a combination of skills, standards, and approaches that benefit all client populations, but are especially important when working with fire and rescue personnel. This population may defer seeking care until they are in crisis, acutely symptomatic or functionally impaired, and thus will benefit from a direct therapeutic approach that empowers the client with a clear path forward towards recovery. *A clinician working with fire and rescue personnel should be prepared to:*
- ▶ Encourage/ enable the fire service member to complete intake paperwork and any clinical scales before sessions, to maximize time spent with clinician during initial and subsequent sessions.
 - ▶ Complete the initial diagnostic evaluation/ assessment and tentative treatment plan within the first two sessions with the fire service member.
 - ▶ Utilize standardized time-limited interventions that allow the fire service member to anticipate treatment duration, track progress, and receive psychoeducation.
 - ▶ Be trained or proficient one or more interventions that are recognized as evidence-based treatments²⁵ for clinical depression, generalized anxiety, post-traumatic stress disorder/ acute stress reactions, substance use disorder, and marriage/relationship crisis.
 - ▶ Establish a clear plan for crisis care between sessions, to eventually include a complete suicide safety plan,
 - ▶ Have access to other mental health professionals for professional consultation as needed who also work with fire/ rescue or public safety personnel.
 - ▶ Secure explicit permission from fire service client to coordinate care as indicated with prescribers, intensive outpatient programs, inpatient programs, and fire department physician, etc.
- ▶ **Clinician accessibility** is critically important to fire and rescue personnel seeking mental healthcare. In their line of work, fire and rescue personnel are required to provide an immediate response to calls for service and often anticipate the same in return, when seeking mental healthcare. *A clinician who is accessible to fire and rescue personnel will:*
- ▶ Respond to initial inquires for service within 24 hours and offer a limited number of next-day appointments when clinically indicated.
 - ▶ Provide a 15-minute consultation to the fire service member free of charge, to establish rapport and therapeutic fit, before asking the client to complete intake information.
 - ▶ Accept major insurance and/ or establish a sliding scale, as private pay is cost-prohibitive for many public safety personnel.
 - ▶ Provide telehealth services as an option to enhance convenience and privacy for fire service clients, while offering office visits for those who prefer in-person care. Consider if fire service member's access to home computer will be a barrier in delivery of care.
 - ▶ Use plain, concrete language with fire service client in all aspects of delivery of care.

Appendix C

The following instruments have been identified by the Workgroup as a non-exhaustive list of industry-recognized screening measures for PTSD, clinical depression, substance use disorder (SUD), and active suicidality.

► **Primary Care PTSD Screen for DSM-5 (PC-PTSD-5)**

Prins, A., Bovin, M. J., Kimerling, R., Kaloupek, D. G., Marx, B. P., Pless Kaiser, A., & Schnurr, P. P. (2015). *Primary Care PTSD Screen for DSM-5 (PC-PTSD-5)*. Retrieved from <https://www.ptsd.va.gov/professional/assessment/documents/pc-ptsd5-screen.pdf>

► **PTSD Checklist for DSM-5 (PCL-5)**

Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. Retrieved from https://www.ptsd.va.gov/professional/assessment/documents/PCL-5_Standard.pdf

► **Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-2)**

Pfizer Inc (1999). *Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-2 & PHQ-9)*. Retrieved at http://www.cqaimh.org/pdf/tool_phq2.pdf

► **Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-9)**

Pfizer Inc (1999). *Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ-2 & PHQ-9)*. Retrieved at http://www.cqaimh.org/pdf/tool_phq9.pdf

► **Columbia-Suicide Severity Rating Scale Screen with Triage for Primary Care (CSSR-S)**

The Columbia Lighthouse Project (2016). *Columbia-Suicide Severity Rating Scale Screen with Triage for Primary Care (CSSR-S)*. Retrieved at <http://cssrs.columbia.edu/documents/c-ssrs-screener-triage-primary-care/>

► **CAGE-AID Questionnaire (CAGE)**

Brown (1995). CAGE-AID Questionnaire. Retrieved at http://www.cqaimh.org/pdf/tool_cageaid.pdf

► **Alcohol Use Disorders Identification Test (AUDIT)**

World Health Organization (1982). Retrieved at Alcohol Use Disorders Identification Test <https://www.drugabuse.gov/sites/default/files/files/AUDIT.pdf>.

► **Drug Abuse Screening Test- 10 (DAST-10)**

Addiction Research Foundation, (1982). Drug Abuse Screening Test (DAST-10). Drug Abuse Screening Test (DAST-10). Retrieved at http://www.bu.edu/bniart/files/2012/04/DAST-10_Institute.pdf.

Workgroup Summary

Firefighter Cardiovascular Health and Wellness

Overarching Goal:

Establish a comprehensive strategy to reduce cardiovascular disease and cardiovascular events among fire/EMS personnel, including a decrease in cardiovascular fatalities by 25% in ten years and 50% in twenty years. This strategy must include access to appropriate screenings, investments in research, and promotion of evidence-based programs (behaviors or regimes) to minimize risks and enhance cardiovascular health.

Issue:

Although firefighting is recognized to involve exposure to numerous hazards, approximately 50% of LODD (on-duty deaths) are due to cardiovascular-related events—including heart attacks, sudden cardiac arrests, and stroke.²⁶ In fact, sudden cardiac death results in approximately seven times as many firefighter deaths as burn injuries.²⁷ In addition to cardiac-related fatalities, there are several hundred non-fatal cardiac events (injuries) that are reported every year (although accurate data is lacking and the number may be significantly higher), resulting in significant lost time, adverse impacts to staffing, and disability-related retirements. It is believed many more firefighters die from cardiac events when they are not on-duty or after retirement, and these deaths are not typically counted in fatality reporting.

The occupational demands of firefighting may trigger acute cardiovascular events or contribute to and exacerbate the chronic development of cardiovascular disease (CVD). On an acute basis, the combination of occupational stressors, including heavy physical exertion and psychological stress, can provoke an acute cardiac event in firefighters with underlying CVD. On a chronic basis, a constant state of sympathetic nervous system arousal, exposure to traumatic events, disrupted sleep cycles, and exposure to particulate matter and other chemicals can adversely affect the circulatory system and the heart leading to different forms of cardiovascular disease.

Cardiovascular disease outcomes can be predicted based on CVD risk factors. Many of these risk factors are affected by behavioral choices and work environment/structure. Data obtained from occupational medical evaluations illustrate that firefighters have concerning rates of traditional CVD risk factors. When considered in aggregate, one study of firefighters found approximately 69% of participants had blood pressure values indicative of hypertension, 33% had elevated blood cholesterol, and 36% were considered obese based on body mass index (BMI). Moreover, when firefighters were grouped by age, 77% of those in their 50s had hypertensive blood pressure values, 40% had high cholesterol values, and 44% were obese.²⁸

There is a pressing need to make research and best practices more readily available to the fire service, to invest in funding to better elucidate the role of occupational factors in advancing cardiovascular disease or triggering acute events, and to support the development of comprehensive wellness and fitness programs focused on CVD mitigation and prevention.

Relatedly, with recent Tentative Interim Amendments (TIA) changes to NFPA 1582, which now base cardiorespiratory fitness guidelines on age and sex-based norms for all firefighters (candidates and incumbents), if a firefighter falls below the established percentile, they are placed on restricted duty. If this occurs, the standard requires an individualized assessment plan by a physician. Access to education, materials, research, and best practices (including awareness and support of programs), will ensure these medical assessments are efficient and comprehensive.

In addition, annual medical evaluations with appropriate cardiac screening are an important step in protecting firefighters' cardiovascular health. Research has found that nearly 80% of sudden cardiac

deaths among U.S. firefighters occurred in individuals with autopsy-confirmed evidence of atherosclerosis **and** an enlarged heart (either cardiomegaly or left ventricular hypertrophy).²⁹ Ironically, most occupational medical evaluations do not screen for these underlying conditions, but rather simply assess risk factors.

Many organizations have called for comprehensive wellness and fitness programs to support firefighter cardiovascular health, mental health, and occupational readiness, and to decrease the risk of cancer. Although many groups have devised fitness programs tailored to the fire service, cardiovascular disease remains perhaps the most intractable cause of death among firefighters. Medical evaluations must adopt more sensitive testing to more effectively identify occult coronary vessel disease in fire/EMS personnel. Further, a great deal of research is needed to better understand what type of programming is most effective for different groups of firefighters.

Accomplishments:

While cardiovascular incidents remain a leading cause of death among firefighters, the national fire service organizations, and our federal government partners, have long realized this and have made efforts to address the problem.

- ▶ There are individual departments on the front edge of testing including angiograms, CT scans, and Echocardiograms. These are identifying occult cardiovascular disease at a rate higher than the national rates.
- ▶ The International Association of Fire Fighters (IAFF) is currently exploring unique opportunities with prominent stakeholders to create minimally invasive, low-cost, and highly accessible screening tools capable of assisting in describing the health status of individual firefighters while controlling for and acknowledging additional risk factors. Subsequently, this endeavor serves to advocate for a data repository, alongside other experts who call for the same approach, while ultimately collaborating and developing a framework to better understand cardiorespiratory needs across all roles in the fire service (current state and progression of specific health outcomes over time).
- ▶ Additionally, the IAFF played a role in addressing inequities raised by the FEMA Office of Equal Rights. The cardiorespiratory guidelines have been updated and are now based on age and biological sex-based norms, which means that the same relative standard is used for all firefighters (candidates and incumbents). The changes were made to recognize that cardiorespiratory fitness is key health metric and is an integrated measure of the peak functioning of the cardiovascular and respiratory systems – both of which are affected by a person's size and biological sex.
- ▶ The IAFF launched Fit to Thrive, a program structured specifically to help more firefighters become more active more often. In just three years, the program has mentored more than 4,000 front-line ambassadors across 800 departments. This represents more than 180,000 firefighters. The critical elements of education, training, and resources are prioritized and provided to support ongoing efforts to improve physical activity habits (as a first step) and physical fitness (as a second step).
- ▶ The IAFF also has secured a grant to update the Wellness-Fitness Initiative (WFI) to include guidelines and strategies that promote mindfulness, healthy dietary habits, regular physical activity, sleep quality, and social connectedness alongside experienced individuals. Collectively, these five behaviors will help shape the health and wellness of firefighters, while significantly impacting their risk of cardiovascular disease. Because administrative, organizational, and resource barriers during any implementation process will influence the success of a wellness-fitness initiative, an implementation roadmap is being developed to ensure complementary behavioral change strategies, such that departments have step-by-step processes to best utilize existing knowledge, resources, and ultimately support the success of their program's implementation.
- ▶ In 2015, the National Fallen Firefighters Foundation (NFFF) hosted a conference to address cardiovascular disease in the fire service. This meeting was attended by more than 60 representatives of fire service constituency organizations, fire departments, and subject matter experts representing different fields of research associated with occupational health and cardiovascular health. Leading subject matter experts presented the current state of the science

regarding heart disease-related death and disability in the fire service. These experts then worked together with fire service leaders in a consensus-building framework to identify recommendations to lessen cardiovascular events and to identify ways to transition scientific findings and best practices to the fire service to increase the adoption of best practices for cardiovascular disease (CVD) prevention and treatment.

- ▶ In 2016, the National Fallen Firefighters Foundation created the First Responder Center for Excellence for Reducing Occupational, Illness, Injuries, and Deaths, Inc. (FRCE) to provide increased awareness, training, and research to ensure that first responders have the correct tools and information to build and maintain a healthy foundation to reduce injuries and fatalities related to behavioral health, cardiac, cancer prevention as well as overall improved health and wellness. The FRCE hosts a series of articles, research studies, and other information to help public safety personnel better understand cardiac risks and how to mitigate the impact on health, well-being, and ability to save lives.³⁰
- ▶ The FRCE, with the International Association of Fire Chiefs (IAFC), the IAFC Safety, Health, and Survival Section, the IAFF, and the National Volunteer Fire Council (NVFC), sponsored the *Provider's Guide to Firefighter Medical Evaluations*.³¹
- ▶ The National Fire Protection Association (NFPA) in 2023 began including municipal and non-municipal firefighter sudden cardiac deaths occurring within 24 hours of duty in its annual study of on-duty fatal firefighter injuries. Previously, sudden cardiac deaths were only included if the heart attack occurred while the firefighter was on duty or made a specific physical complaint before going off duty.
- ▶ The content of NFPA 1582 *Standard on Comprehensive Occupational Medical Program for Fire Departments* has evolved over the past few years as a result of a few Tentative Interim Agreements (TIAs) issued by the Standards Council that specifically address perceived disparate approaches to evaluating individuals performing the tasks of a firefighter. Chapters 8 (Annual Occupational Fitness Evaluation of Members) and 9 (Occupational Medical Evaluations—Medical Conditions Involving the Endocrine System and Metabolic Function) of NFPA 1582 are particularly relevant.
- ▶ NFPA 1580 *Standard for Emergency Responder Occupational Health and Wellness* represents the latest recommendations of the technical committee related to the requisite cardiorespiratory fitness and aerobic capacity of firefighters. It is anticipated to have its 2nd draft posted by October 2024.
- ▶ Since 1998, the National Institute of Occupational Safety and Health (NIOSH) has conducted 715 medical fatality investigations. In the past five years, they have completed 15 cardiac fatality investigations, with four still open. Through the Fire Fighter Fatality Investigation and Prevention Program, NIOSH conducts investigations of firefighter line-of-duty deaths to formulate recommendations for preventing future deaths and injuries.
- ▶ In 2009, the International Association of Fire Chiefs (IAFC) issued a position statement urging fire chiefs to adopt and implement comprehensive health and fitness programs for their departments.³² The NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program* clearly outlines the necessity and mechanisms for establishing a departmental health and fitness program. Compliance with this standard is important because the overall health and fitness of every firefighter is a critical component of a department's operational capabilities. Data has demonstrated that heart attacks and strokes are a leading cause of firefighter deaths, and there is an alarming increase in the nature and extent of cancer cases directly linked to a firefighter's exposure to hazardous environments. Since firefighter injuries and sudden cardiac deaths can be dramatically reduced with a comprehensive health and fitness program, the measurable benefits of such a health and fitness program are cost-effective for both the community and the fire department. The IAFC believes every fire chief should adopt and implement a comprehensive health and fitness program, including annual medical evaluations and cancer screenings that meet NFPA 1582, to ensure the safety and well-being of every firefighter under his/her jurisdiction and should personally pledge to participate in the same program, along with the firefighters, to demonstrate his/her commitment.

- ▶ In 2017, the IAFC released the *Emergency Services Road Map to Health & Wellness*,³³ concise, readily applicable, research-based information on the importance of a comprehensive fire personnel wellness program, educational resources, and sample documents. The Fire Department Guide to NFPA 1582 was deployed in 2013 by the IAFC Safety, Health & Survival (SHS) Section to provide a tool for departments to better understand and use NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments. In 2015, the SHS Section, with support from the IAFC, took on the challenge to better understand the status of firefighter-specific medicals in the U.S. and to find a way to get every firefighter an annual medical. The Emergency Services Road Map to Health & Wellness, released in Dec. 2017, is the result of that process.
- ▶ The National Volunteer Fire Council (NVFC) launched the Heart-Healthy Firefighter Program in 2003 to combat the alarming trend of heart attacks in the fire service. The program promotes fitness, nutrition, health awareness, and resources for all members of the fire and emergency services, both volunteer and career. Resources are designed to help individuals take control of their health as well as help departments implement a health and wellness program.
- ▶ The NVFC has released several guides to help departments focus on cardiovascular health, including Volunteer Fire Service Culture: Essential Strategies for Success (2018), Addressing the Epidemic of Obesity in the United States Fire Service (2011), Securing Sponsors for Department Health and Wellness Programs, and the Heart-Healthy Firefighter Resource Guide (2011, but currently in the process of being updated for rerelease in 2025). The NVFC also worked with USFA on the Health and Wellness Guide for the Volunteer Emergency Services (2009) and with USFA and Women in Fire on Emerging Health and Safety Issues Among Women in the Fire Service (2019).
- ▶ In addition, the NVFC offers courses and webinars in its on-demand training platform on topics including creating a department health and safety culture, firefighter physicals, obesity in the fire service, and stress management. The organization has also released position statements on diabetes in the fire service and firefighter medical assessments, and it promotes smoking cessation resources through its Put It Out campaign. It has released a series of videos on health tips, functional fitness demonstrations, physicals, smoking cessation, and other heart health topics. The NVFC also works to encourage heart health best practices through promotional tools including posters, articles in the annual Firefighter Strong print newsletter, and sessions at the annual NVFC Training Summit.
- ▶ Colorado State University created the Cardiac One Risk Evaluation (CORE) program in partnership with the Colorado Firefighter Heart, Cancer and Behavioral Health Trust (“the Trust”) to offer mobile screening for cardiovascular disease risk factors. The purpose of this program is to increase the number of firefighters who have received basic screening and education on their own cardiovascular disease risk. To be eligible for benefits from the Trust for cardiovascular-related incidents, members must have this basic screening, which may also be done by primary care physicians. However, we recognized the need to provide this screening and education in healthcare deserts in Colorado.
- ▶ Colorado State University has also contacted the Trust regarding data sharing on non-fatal incidents. The Trust has agreed to share de-identified data on the more than 100 claims that have been filed since their inception.
- ▶ The National Institute of Standards and Technology (NIST) is developing a model for real-time heart health monitoring in firefighters.

Recommendations:

Compile resources in a central repository from stakeholder organizations highlighting research and best practices in cardiovascular health for fire and EMS personnel.

- ▶ Stakeholder organizations have conducted a considerable amount of research on firefighter and EMS cardiovascular health and have developed materials outlining best practices, however, there is no central location to access these materials. The creation of a central “clearing house” where the fire and emergency services could access the latest information, research, and best practices for

firefighter cardiovascular health would help close this information gap.

- ▶ To this end, Workgroup members have begun compiling studies, procedures, and other resources. We recommend that USFA should launch an online portal by the end of 2024. Stakeholders (including representatives of the national fire service organizations and institutions with expertise in researching firefighter cardiovascular health) should be drafted to assist in the development of the portal.

Address cardiovascular health in firefighter and EMS populations with identified high risks.

- ▶ Significant risk factors for cardiovascular disease include age, tobacco use, obesity, hypertension, dyslipidemia, and elevated blood glucose. There is also evidence that occupational factors in the fire and emergency services (impacting all firefighters and EMS personnel, including volunteer, career, and wildland firefighters) can be related to the acceleration of cardiovascular disease.
- ▶ To address this, it is important to develop awareness tools to educate the fire and emergency services on the multiple risk factors related to cardiovascular health. The development and distribution of these resources should be an ongoing effort by the USFA and the national fire service organizations.
- ▶ Additionally, there is a need for a provider guide, with an emphasis on age and other risk factors impacting cardiovascular health in the fire service, focused on educating providers about specific risk factors in subpopulations (e.g. older volunteer firefighters). We recommend that the development of this provider guide be completed by the national fire service organizations in advance of the 2025 United States Fire Administrator's Summit on Fire Prevention and Control.

Develop programming to promote cardiovascular health in the fire and emergency services.

- ▶ Cardiovascular health is necessary for operational effectiveness, safety, and the health of fire and EMS personnel. We need to consider holistic programming that addresses modifiable cardiovascular disease risk factors, cardiovascular health, and cardiorespiratory function.
- ▶ We must develop a framework that addresses the continuum of optimal cardiovascular health to avoid severe cardiovascular disease (or a cardiac event) and create messaging to help focus attention on improving health at the earliest point possible. All firefighters should be focused on modifiable risk factors irrespective of time in service and maintain this focus throughout their careers. Firefighters with cardiovascular disease risk factors (such as high blood pressure, cholesterol, prediabetes, and the use of tobacco products) should have access to programming that aims to address these risk factors. There should be a joint framework of education and wellness programs that will address knowledge gaps and preventative measures, including prevention and wellness habit changes. This should be an ongoing effort undertaken by USFA, in partnership with the national fire service organizations.
- ▶ We further recommend the development of an annual training module, similar to the asbestos training module³⁴ required of all firefighters, with a focus on cardiovascular health and other risk factors facing firefighters and EMS personnel. The training module should be developed by the national fire service organizations, with an emphasis on the North American Fire Training Directors (NAFTD) and the International Society of Fire Service Instructors (ISFSI).

There need to be developed more sensitive instruments to capture fatal and non-fatal cardiovascular events among all firefighters.

- ▶ An estimated 10-11% of firefighter fatalities are due to unspecified medical conditions³⁵ that may be cardiac-related, suggesting that the actual number may be higher than those reported. Additionally, there is a lack of data on the number of non-fatal cardiovascular events experienced by firefighters and EMS personnel.
- ▶ We recommend expanding the scope of the National Firefighter Registry to capture health information beyond cancer exposures, including fatal/non-fatal cardiovascular events experienced

by firefighters and EMS personnel. Because the Firefighter Cancer Registry Act³⁶ specifically creates the NFR to determine cancer incidents in firefighters, Congress would likely need to pass legislation expanding the authority. We recommend the government relations representatives for the national fire service organizations explore legislation to expand the authority of the NFR in the 119th Congress.

- ▶ Additionally, we recommend the National Uniform Billing Committee (governing body for forms and codes use in medical claims billing in the United States) update the emergency room intake form to capture volunteer and secondary employment information. We believe the number of fatal and non-fatal cardiovascular incidents among firefighters is underreported. This is due in part to the fact that volunteer and secondary employment information is not captured when volunteer firefighters are admitted to the emergency room. Efforts to update the emergency room intake form in the past have been met with resistance, but we believe now is the time to revisit the issue.
- ▶ The Workgroup proposes that the National Fire Protection Association add a limited number of questions to its Annual Fire Experience Survey that query municipal fire departments (career, volunteer, and combination) about the number of non-fatal cardiac incidents among personnel in the prior year and the impact of those incidents on fire department operations.
- ▶ Explore the feasibility of developing a surveillance system to capture on-duty non-fatal cardiovascular incidents experienced by municipal and non-municipal firefighters. As with the occupational injury surveillance efforts, including the United States Fire Administration's collection of information on firefighter fatalities, information on non-fatal cardiac incidents could be used to identify the extent of the underlying problem and identify potential areas of intervention.
- ▶ Engage the Heart Trusts (or similar entities) that are tracking cases for reimbursement for data collection for non-fatal incidents (while keeping them anonymized).

Establish educational programs with targeted communications regarding hypertension and other comorbidities of cardiovascular disease in the fire service.

- ▶ There exists a need to increase awareness regarding hypertension and other comorbidities early and aggressively. Examples of comorbidities include, but are not limited to, obesity, use of tobacco products, interrupted sleep, diet/nutrition, lack of exercise, dehydration, and chronic stress. The lifestyle association with continued exposure to traumatic events contributes to pathophysiological changes.
- ▶ The national fire service organizations should consider developing model procedures and the promotion of best practices to encourage fire/EMS personnel to monitor their blood pressure as a sensitive marker of cardiovascular risk.

ADDITIONAL RESOURCES:

- ▶ <https://firstrespondercenter.org/document/a-healthcare-providers-guide-to-firefighter-physicals/>
- ▶ <https://www.iafc.org/topics-and-tools/resources/resource/guide-to-the-nfpa-1582-annual-physical>
- ▶ <https://www.iafc.org/about-iafc/positions/position/iafc-position-health-and-fitness-programs-for-every-department>
- ▶ <https://www.iafc.org/topics-and-tools/resources/resource/emergency-services-road-map-to-health-wellness>

Workgroup Summary

Emergency Medical Services

Overarching Goal:

Prepare and invest in Emergency Medical Services (EMS) to meet evolving emergency medical needs and integrate innovative practices to improve overall health, safety, and well-being in local communities.

Issue:

In the 50 years since the origins of the modern EMS framework in the United States, EMS has come a long way. It was once staffed by dedicated volunteers with basic first aid training, driving modified hearses to render care to neighbors when manpower was available. EMS has transformed through the decades into a profession and essential service. Today's EMS agencies are overwhelmingly staffed 24 hours a day, 7 days a week by crews of licensed and trained clinicians with hundreds or even thousands of hours of education and training. These professionals function in ambulances equipped with state-of-the-art equipment with price tags in the hundreds of thousands of dollars, often creating fiscal challenges for EMS agencies. While EMS providers of the past had basic training and focused on rapid transport to an emergency department, emergency medical technicians (EMT) and paramedics of today are healthcare clinicians who provide advanced medical care, with all the education and responsibility that the public expects of healthcare clinicians. The clinicians in our workforce today can provide care far beyond basic bleeding control and CPR. They can administer whole blood products, provide pharmaceutical interventions for countless conditions, and provide treatments at home that were once only available in specialty hospitals. The profession of today shares little resemblance to their predecessors in the 1970s aside from their dedication to helping others in their time of need. As the scope of practice has expanded, EMS now faces numerous issues which federal, state, local, tribal, and territorial governments (SLTT) must work to address to enable EMS clinicians to continue to provide excellent care.

EMS professionals face a changing landscape. Communities are asking EMS agencies to do more, often with less resources, to serve as a safety net for the underprivileged among us. Instead of maintaining a "response posture", where EMS clinicians are only leaving the station to respond to emergency 911 calls, by way of call demand, EMS is now being asked to serve the community in a preventative role as well.

Issue Spotlight: EMS & Opioids

As substance abuse and the opioid epidemic have plagued every corner of the nation, the EMS community has been tasked with ensuring immediate care is provided to those experiencing overdoses. Beyond the administration of lifesaving care, EMS clinicians are being tasked more

Opioids

Opioid responses by the Fire Service and EMS have been increasing for years. Agencies are actively working on improving how they manage these types of situations. Implementing social services as a follow-up to these incidents, connecting patients with community agencies, is one small step to not only mitigate and reduce these types of calls but also to ensure individuals receive the resources to help them regain stability in their lives.

Today, a significant role of Fire and EMS is not only responding to emergencies but also proactively working to prevent them. As first responders, we **accept the responsibility** of safeguarding our communities and taking measures to minimize the occurrence of emergencies.

– Chief Mary Cameli, Mesa Fire/
Medical Department, Mesa, AZ

frequently with providing care to at-risk individuals by assisting with substance use disorder (SUD) treatment medications as patients wait for SUD treatment resources that are limited. This can lead to reductions in overdoses. For example, from 2014 to 2019, providing paramedics and crisis support workers with extra education on substance use disorders and stigma reduction led to a 19% decrease in overdoses in St. Charles County, Missouri (PALF, 2020). Additional contributing factors to increasing demand on the system include EMS responses to the growing behavioral and mental health crisis across the country as well as EMS clinicians serving as the safety net for unhoused persons who rely on them when primary care is not an option.

Issue Spotlight: Serving the Unhoused with Respect and Dignity

The complexity of administering care and the growing population of unhoused individuals means the demand for EMS will only grow. According to work published by the National Alliance to End Homelessness, “In 2022, counts of individuals (421,392 people) and chronically homeless individuals (127,768) reached record highs in the history of data collection” (NAEH, 2024). Some of the specific issues EMS agencies face when caring for the unhoused include:

- ▶ **Heightened Risk of Fires and Related Injuries:** The reliance on open flames for warmth and cooking due to inadequate shelter and heating options increases the risk of fires, further straining EMS resources.
- ▶ **Access to Basic Needs:** The inability to access proper nutrition and medications complicates the management of medical emergencies.
- ▶ **Episodic Care:** The episodic nature of EMS care may not align with the continuous care required by unhoused individuals, leading to gaps in treatment.
- ▶ **Health Equity:** The lack of housing contributes to health inequity, as unhoused individuals face barriers to healthcare access, including lack of insurance and resources.
- ▶ **Behavioral Health Needs:** Significant unmet medical and behavioral health needs among the unhoused create barriers to accessing care.

Complexities in Care for the Unhoused

The need for emergency responses in hard-to-reach areas, often with limited access to the unhoused, complicates rescue and medical efforts.

– Otto Drozd III, Executive Secretary, Metropolitan Fire Chiefs Association

A recent literature analysis published in the Journal for Academic Emergency Medicine highlights just a few of the unique health challenges EMS agencies face when assisting the unhoused, “Homeless persons pose special challenges for the emergency provider (EP) and defy conventional assumptions about patient responsibility in health care delivery. They suffer a higher burden of chronic illness (e.g., cardiovascular disease, mental illness, hypertension) and infectious disease (e.g., tuberculosis [TB]), are disproportionately vulnerable to violence and injury and are at increased risk of premature death and disability” (Salhi et al., 2018).

Issue Spotlight: Reimbursement from Alternative Treatment Models

The changing landscape of how healthcare systems are developing new and innovative ways to respond to behavioral health or substance abuse care by sending some patients straight to specialized treatment facilities and bypassing already crowded hospital emergency departments is creating challenges for EMS agencies in that they are often unable to collect reimbursement for costs incurred. At present, EMS agencies that perform these services do not receive any payment from insurance companies since Centers for Medicare and Medicaid Services (CMS) does not recognize this as a billing option. This often leaves the burden of payment on patients who are not able to afford the daily cost of living, let alone an ambulance service invoice. This issue affects all

EMS entities but has significantly greater impacts on communities with larger unhoused populations.

EMS agencies are also seeing drastic upticks in non-emergent service requests. This includes increasing demands for lift assists due to falls at residences or assisted living facilities, as well as other call types indicative of an aging population lacking adequate social services to support it. These factors contribute to the evolving role and identity of EMS in 2024 and beyond. New care models have the potential to address these issues.

Treatment in Place and Transport to Alternate Destinations

Studies have proven that the treatment in place (TIP) and transport to alternate destinations (TAP) not only offer better economic models but also have improved patient satisfaction in these types of programs throughout the world.

– Susan Bailey, MSEM, NRP, Director, Louisiana Department of Health – Bureau of EMS

“Mobile Integrated Healthcare (MIH) is a patient-centered, innovative delivery model offering on-demand, needs-based care and preventive services, delivered in the patient's home or mobile environment” (Roeper et al, 2018). One aspect of MIH is community paramedicine (CP), which utilizes specially trained clinicians to provide advanced care to patients in the field who would otherwise require admission to a healthcare facility.

Data is limited but promising when it comes to cost savings and patient satisfaction in communities that have implemented CP programs. The Emergency Triage, Treat, and Transport program (ET3) was a program through the CMS designed to allow participating EMS agencies to bill Medicare for patients who were treated outside of the hospital. The program was discontinued in 2023 due to poor participation. The small sample of participating agencies did yield some data that showed, on average, TIP saved Medicare around \$500 per patient contact (CMS, 2023). Currently, CMS reimbursement is only authorized for transportation provided by ambulance. The ability to treat a patient in the field without transporting them to the hospital or treating them and transporting them to an alternate destination, such as a rehabilitation facility, mental health treatment facility, or other healthcare institution that doesn't traditionally take patients directly from the field, will almost certainly mean better outcomes for patients and less financial and overcrowding stress on the nation's hospitals.

In addition to cost savings, preliminary data from CP and TIP programs show that patient satisfaction in the programs is very high as well. One of the more established systems in this space is the MedStar Mobile Healthcare system in Ft. Worth, TX. Utilizing tools such as a nurse triage program, patients who contact 911 fifteen or more times in a 90-day period are placed in a High Utilizer Group (HUG) and visited by an MIH team to help manage their care without transporting them to the emergency department every time they call 911. Between 2009 and 2019, it is estimated that this program has “saved \$23 million in healthcare expenditures for an ambulance, ED and admissions (\$29,481 per enrolled patient)” (Zavadsky, 2019). Patient satisfaction reported by Medstar Mobile Health shows “a 36% improvement in their health status, a 96% patient satisfaction rating and 98% of the enrolled patients would recommend the service to others” (Zavadsky, 2019).

As EMS continues to evolve, the culture, community, and identity of the industry are dramatically changing. There is a growing need to recognize EMS for what it is today, a unique and essential public safety and healthcare system that requires recognition as well as funding support, regardless of its systematic design. The support required goes beyond funding and revenue models for sustainability; it extends to ensuring the clinicians that staff these ambulances have the training and equipment they need and, more importantly, the ability to do their jobs while staying safe from

violence and other occupational hazards. Without a properly equipped, trained, and cared-for workforce, the EMS community cannot prepare for and meet the demands of tomorrow.

Looking ahead, we can already see new challenges on the horizon – challenges that are better met with preparation today instead of reactive responses tomorrow. These challenges involve the changing scope of practice for EMS clinicians through the national trend of “out-of-hospital” care in addition to the legacy standard of “prehospital” care. The crowding of emergency departments and shortfalls in the healthcare continuum will almost certainly result in an increase of EMS workload. This will require continued advancements in practicing community paramedicine, allowing reimbursement for treatment in place, and the embracement of alternate transport sites as well as a true coordinated care model that values partnerships between EMS and hospitals, public and private clinics, skilled nursing, and long-term care facilities, as well as 911.

Recommendations

Advancing Protocols: While states and territories are responsible for setting their own standards for EMS systems for the public health and healthcare clinician licensure processes, there needs to be support from the federal level in the form of data and research. The federal government must empower federal agencies to conduct research and release reports that state-level medical directors may use to support the expanded scope of practice for EMS clinicians with a particular focus on out-of-hospital opioid treatments and community paramedicine (Mobile Integrated Healthcare).

- ▶ Empower federal agencies to provide research and data to local and state counterparts.
- ▶ Direct federal agencies to focus research on pressing issues including addressing the changing landscape of EMS, the challenges facing the profession, and where EMS is heading.
- ▶ Direct federal agencies to review existing laws and guidance to ensure they are in alignment with the needs of local EMS agencies and make recommendations for improvement.

Empowering EMS to Better Serve the Unhoused: To effectively address these issues, a multifaceted approach is essential. This includes enhancing housing security, providing mental health support, and expanding community outreach education. Such measures are vital for safeguarding the well-being of those experiencing homelessness and ensuring the continued effective service of EMS and fire departments to the entire community.

The current state of homelessness represents a critical public health issue that demands coordinated action and comprehensive policy responses. It is a collective responsibility to ensure the safety and dignity of every individual, requiring collaboration across all levels of government, community organizations, and the public.

- ▶ Direct federal agencies to review existing laws and guidance to better understand how a national approach can address the problem.
- ▶ Provide funding for training for clinicians to better understand the complexities of providing care for those who are unhoused.
- ▶ Develop frameworks rooted in evidence-based strategies to integrate EMS into whole of government solutions to mitigate risks to the unhoused and those without shelter.

Equipping EMS with the Tools to Treat Substance Abuse: EMS has been tasked with care for those individuals experiencing substance abuse addiction. While public health agencies have received significant increases in funding to treat opioid addictions, this money has not carried over to the clinicians most frequently encountering individuals requiring care. EMS must be given the capacity to handle this demand. Beyond funding for the staff to render the necessary care, funding must also be available for advanced training to keep clinicians up to date on best practices. State and local entities must work to update protocols, allowing groundbreaking treatment methods to come into practice and deployment of evidence-based medicine into the field.

- ▶ Support grant programs for agencies sending staff to continuing education courses focused on opioid and addiction treatment.
- ▶ Support EMS agencies and professional organizations working to share best practices for EMS to treat substance abuse issues.
- ▶ Adopt policy changes allowing states to alter prehospital protocols to implement specialized out-of-hospital treatments by qualified clinicians with proper medical director oversight.

Public Education / Healthcare Literacy: Federal, state, and local governments must act to support a generalized public education campaign to inform the nation on when to call 911 and when not to. These campaigns must expand beyond the appropriate use of 911 and include information relating to alternative services available outside of EMS and the hospital systems (988, social services, drug and alcohol services, local-level elderly ombudsmen, etc.). There are growing concerns that certain entities may inappropriately use EMS to address issues that should be handled in other ways. Data supports the analysis that some private skilled nursing facilities will overuse emergency services to augment short staffing in cases involving lift assists and other non-emergency needs. Research has shown that residents of private-equity-owned nursing homes were 11.9% more likely to have a preventable emergency department visit and 8.7% more likely to experience a preventable hospitalization (Braun et al., 2021). The importance of this issue was highlighted by a Biden–Harris Administration Fact Sheet issued in 2022 (White House, 2022). Whenever situations like this occur, it takes the emergency ambulance out of service for significant periods of time, thereby preventing them from being available to address other emergency dispatches. These types of incidents cost taxpayers millions of dollars a year, and advancements in public education on when to use the service can mitigate this issue.

- ▶ Identify mechanisms for agencies to use to address the appropriate use of the 911 system, including nurse-led 911 triage programs.
- ▶ Fund public safety campaigns to educate the public, similar to programs used by NHTSA relating to highway safety.
- ▶ Fund grants to local entities to highlight services such as 988 or county level social work.

Treatment in Place (TIP) and Transport to Alternate Destinations (TAD): Congress and CMS must work together to alter the medical billing codes available to EMS. EMS must be able to seek insurance reimbursement (from government and commercial insurers) for services rendered on the scene when no transport is necessary and for transport to alternate destinations for treatment.

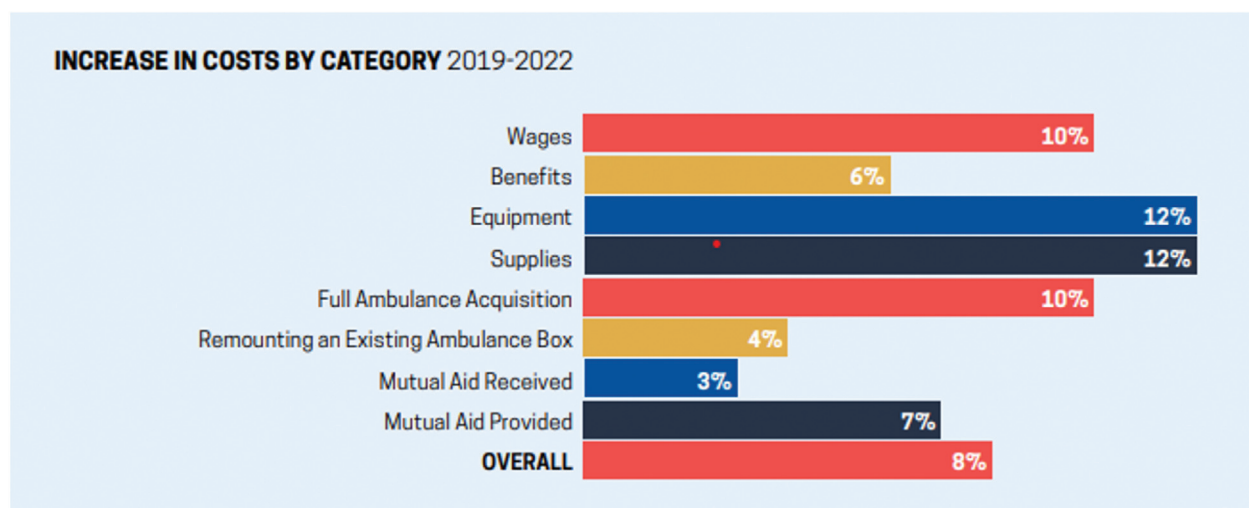
- ▶ Consult with Congress and CMS to conduct a review of existing billing codes that impact EMS.
- ▶ Identify barriers for CMS to update and expand billing procedures allowable to include treatment in place and reimbursement for transport to alternate destinations.
- ▶ Identify actionable steps to reduce the burden on hospitals, freeing up room in the emergency department for critical patients.

Cooperation and Culture: EMS delivery models continue to shift as local governments and health systems continue to integrate them into more aspects of the healthcare continuum. These changes are accompanied by cultural changes. The federal government must work with state, local, tribal, and territorial government counterparts to ensure that, regardless of the model adopted, EMS fulfills its mission of providing essential public health services.

- ▶ Expand the EMS Compact and other programs to build a stronger EMS culture across the country and modernize the workforce through targeted recruitment and retention efforts.

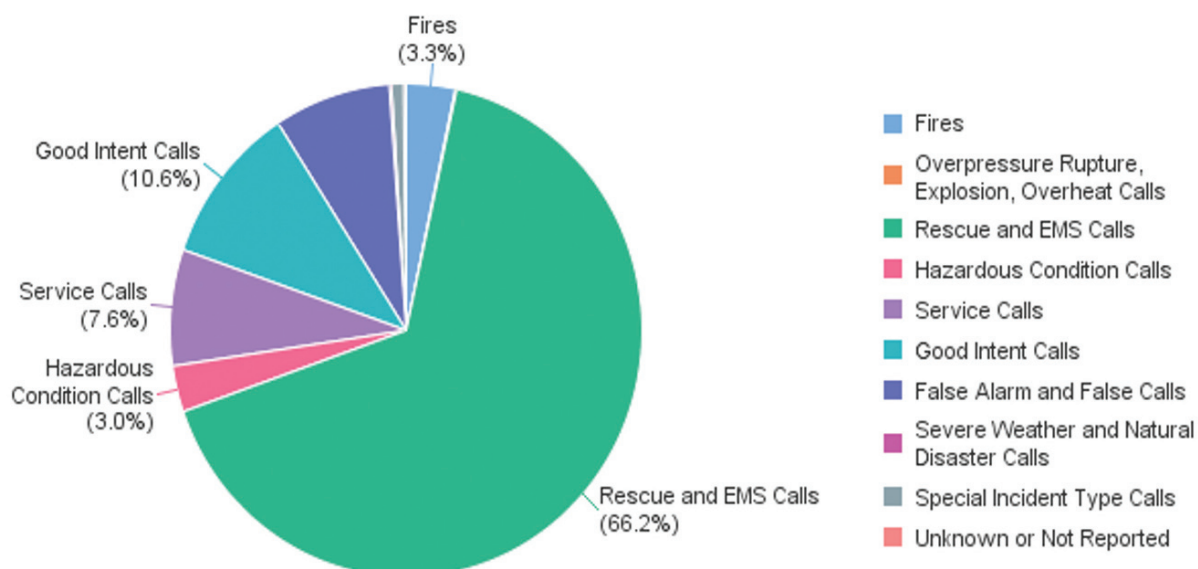
Funding and Sustainability: As communities increasingly turn to EMS for services, there has been a widening gap in revenue and operational costs for agencies across the country. The National Association of Emergency Medical Technicians reports that between 2019 and 2022, EMS agencies

saw a net increase of 8% in overall costs across all categories, with only a 5% average increase in fee for service revenue per transport, with 30% of agencies reported no increase, and 13% reported a decrease in fee for revenue (NAEMT, 2023, p. 2).



<https://www.naemt.org/docs/default-source/ems-data/ems-economic-and-operational-models-survey-02-20-2023-final.pdf>

Incident Type Category Summary



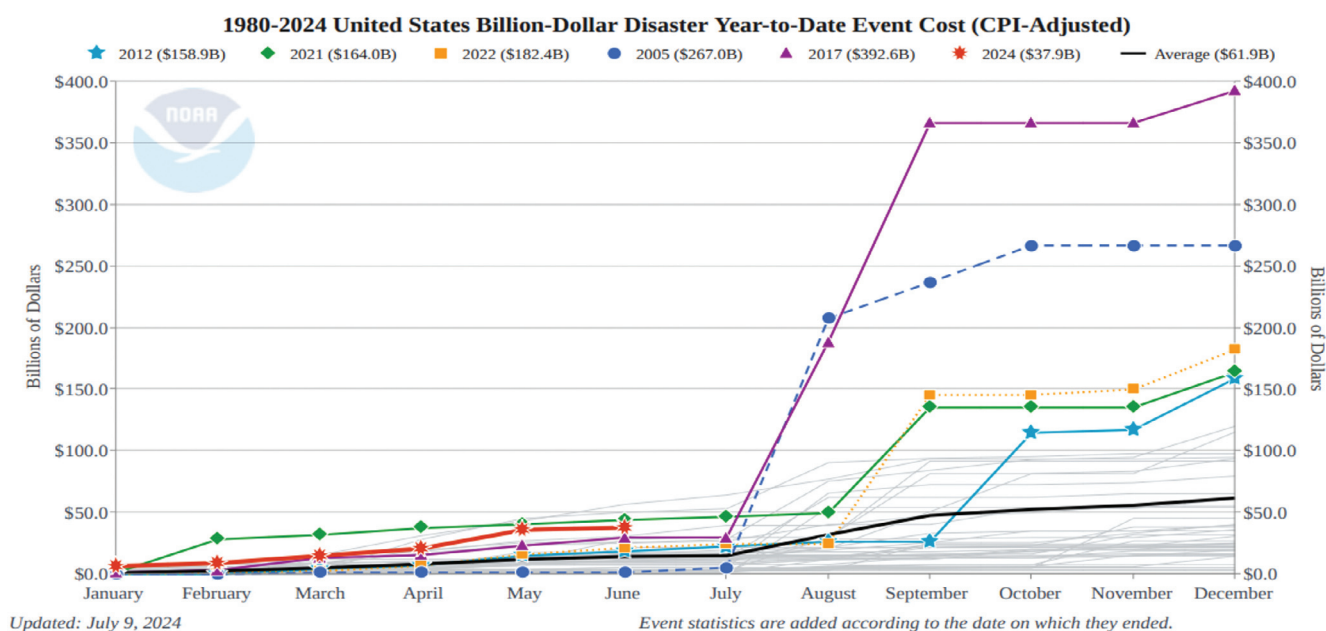
NFRIS Data Reported as of 07/31/2024 1

Additional support through government agencies or alternative billing options must be implemented to keep agencies in service. The threat of funding shortfalls is paramount and becoming ever clearer with the growing presence of “ambulance deserts” across the United States, areas where no EMS agency serves, or response times for emergency calls exceed 25 minutes. Many communities are unaware that they live in these areas until a loved one is in urgent need of life-saving care. Research from the Maine Rural Health Center analyzing ambulance deserts in 41 states found that 4.5 million people lived in ambulance deserts and that eight states had fewer than three ambulances covering every 1,000 square miles of land area (Jonk, 2023). County and municipal planning officials must ensure the limited resources emergency services receive are allocated based on services performed. Data will play a key role in this decision-making. According to the National

Fire Incident Reporting System (NFIRS), fire departments respond to emergency medical type calls more than any other response type. In 2023, data reported as of July 31, 2024, fire departments reported in NFIRS a total of 21,101,413 calls for rescue and EMS services out of 31,867,167 incidents. The rescue and EMS total represents 66.2% of all incidents reported. As data-gathering tools such as the National Emergency Response Information System (NERIS) come online and into service, state, local, tribal, and territorial government officials will be equipped with advanced tools to aid in defensible decision-making. While all public safety services play a vital role in the safeguarding of a community's well-being, it is essential that funding levels meet the evidence-based demands being created. Solutions to address these issues include:

- ▶ Explore new and existing funding streams to state, local, tribal, and territorial entities to ensure adequate funding for EMS agencies in underserved areas.
- ▶ Identify funding shortfalls and potential sources for addressing them.
- ▶ Assist local governments with data for more informed budget and resource decision-making.

Funding for Readiness: In addition to base sustainability needs, there is a growing concern about agencies' abilities to respond to new threats and challenges requiring modern equipment and advanced training for personnel. As the nation (and the world) experience the increasingly deadly impacts of climate change, it is important to recognize that the need for EMS is extending beyond traditional 911 emergencies. EMS agencies are the primary medical response element immediately following mass casualty incidents (MCIs) including those resulting from natural disasters and they must have the ability to operate until federal support or mutual aid compacts can arrive. As data from the Federal Emergency Management Agency and National Oceanic and Atmospheric Administration shows, year after year, the number of "billion-dollar disasters" across the United States increases (NCEI, 2024).



As the number of these events increases, the ability of the federal government to respond <https://www.ncei.noaa.gov/access/billion>

adequately decreases, placing more burden on local entities to meet the community's needs. Areas never previously impacted by natural disaster are experiencing them, and government data states the severity and frequency will only increase from here. No longer is this a question of "if" an event will happen, but rather "when" a community will experience a tornado, hurricane, wildfire, heatwave, earthquake, or straight-line winds causing devastating damage to persons and property. Agencies

must have funding to train staff and maintain a constant state of readiness in the event these occur.

- ▶ Expand access to federal grants for EMS agencies for disaster preparedness.
- ▶ Create new programs specifically designed to meet EMS needs, including stockpiling PPE, medical equipment, and other necessary items for natural disasters and mass casualty events.
- ▶ Review existing training and associated costs to allow EMS clinicians to receive advanced training for disaster response.

EMS Clinician / Responder Safety: CDC and NIOSH data highlight the risks EMS professionals face on any incident. The National Institute for Occupational Safety and Health (NIOSH) reports there were an estimated 16,900 injuries among EMS clinicians requiring emergency department treatment (*Emergency Medical Services Clinician Injury Data: An Overview*, 2024). The work of EMS clinicians is inherently dangerous from the second they start work. The dangers start at the station, including exposure to potentially cancer-causing chemicals. They continue during emergency response using lights and sirens to drive to a patient in need. Upon arriving on scene, EMS clinicians are exposed to dangerous pathogens or viruses, physical or verbal violence from patients, bystanders, families, or others. When operating on roadways; distracted, impaired, or confused drivers kill approximately 50 responders each year. In addition, threats from mass shootings, crowds, hazardous air pollutants (wildfires), and other on-scene threats are increasingly impacting clinician safety. We owe it to our nation's EMS professionals to minimize these threats wherever possible and ensure they are equipped with the proper personal protective equipment (PPE), training, and support to do their jobs to the best of their abilities.

- ▶ Instruct NIOSH to conduct studies expanding in scope beyond current models to fully understand the risks EMS clinicians face on the job.
- ▶ Determine what legal protections exist for injured EMS professionals and assess the need for additional federal safeguards to ensure responder safety, including from violent acts experienced on the job.
- ▶ Expand the traffic incident management systems (TIMS) training and availability to EMS clinicians who are significantly underrepresented in trained TIMS responders.
- ▶ Provide funding opportunities for personal protective equipment crucial to enhancing EMS personnel safety and effectiveness when responding to acts of violence, mass shootings, and active shooter hostile events.
- ▶ Consideration of a systems approach to EMS that prioritizes calls and creates an opportunity to address low-priority and preventable calls to another system besides the 911 response system.
- ▶ Adoption and facilitation of well-being policies that include addressing evidence-based guidelines for fatigue within the profession, such as those issued by the National Association of State EMS Officials (NASEMSO).
- ▶ Fostering an environment where well-being services may be offered to EMS responders with no or limited charge, whether within health insurance programs, risk management programs, or grant offerings.

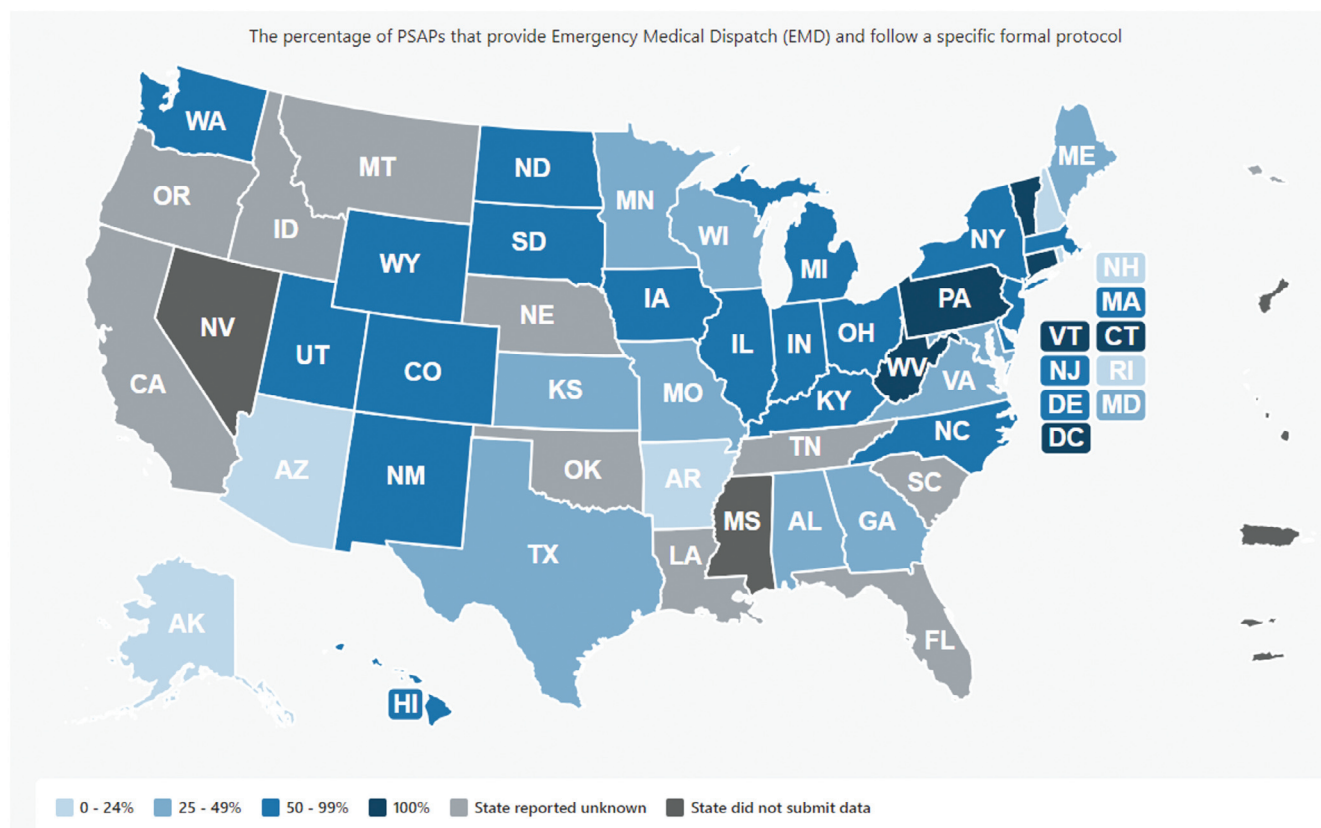
EMS is a challenging work environment from the work hours to the work environment including periods of no activity truncated by periods of serious injury or illness response or incidents.

– Kraig Kinney, State EMS Director, EMS Division, Indiana Department of Homeland Security

Data Integration:

Data is an essential piece of EMS. From the time a call to 911 is placed, data is paramount. According to reports from NHTSA's 911 Office; "advancements in 911 technology now provide PSAP/ECC staff

and first responders with more detailed and accurate data about callers and incidents. Sharing this data between first responder agencies is vital to improving response times and outcomes and providing robust situational awareness.” (911 DataPath, 2024). EMS relies on data to ensure safe arrival to the scene.



During treatment and transport, EMS clinicians transmit data to the receiving facility, allowing hospital staff to prepare for patient arrival and prevent delays in the continuum of care.

The federal government must assist EMS with having access to data to better perform their jobs. At present, most data sharing is unidirectional, and this must change. According to a national survey conducted by the National Association of Emergency Medical Technicians (NAEMT), 55% of EMS agencies exchange data with other healthcare providers, the majority is one-way from EMS to other healthcare providers (NAEMT, 2016, p. 7). Lack of system integration, perceived HIPAA regulations issues/privacy concerns, lack of interest from other healthcare sectors, and lack of integration with the National EMS Information System (NEMSIS) are identified causes.

EMS must have access to data from the receiving hospital for improved patient outcomes and quality assurance coordinators must be able to evaluate patient outcomes after they are transferred to a hospital bed. As community paramedicine increases nationwide, EMS must have access to patient records to ensure care is continued after hospital discharge to prevent readmission and ensure the best care moving forward. Currently, federal laws, such as HIPAA, are misunderstood by some but can actually encourage patient information sharing.

- ▶ Review existing privacy regulations for reasonable changes to be made to allow for better patient outcomes through better sharing of data.
- ▶ Identify barriers to multidirectional information sharing
- ▶ Incentivize healthcare facilities and EMS agencies to share data through Health Information Exchanges.

Essential Public Health Service Status: The COVID-19 pandemic made it abundantly clear that Emergency Medical Services are, in fact, an essential service, on par with fire departments, police departments, and hospitals. EMS needs recognition on this level to ensure funding is in place, recruitment and retention goals are met, and the sustainability from the last 50 years continues for the next 50 and beyond. At present, communities are not required to provide an EMS service to its residents. Federal and state governments must find creative ways to address this to ensure everyone in the United States has access to an ambulance in the event of a medical emergency.

- ▶ Identify actionable ways to elevate the status of EMS as an essential service.
- ▶ Integrate EMS into community vulnerability assessments.
- ▶ Ensure EMS leadership is integrated into the entirety of the healthcare continuum through rule changes and financial benefits.
- ▶ Research methods to make EMS an appealing career worthy of pursuing.

Accomplishments

- ▶ Successfully brought the necessary EMS stakeholders to the table for the first time, ensuring voices from across the profession, from volunteer to paid, fire department based to third party, rural to urban, and from local to federal have been given a seat and welcomed into the discussion.
- ▶ Identified the most pressing issues impacting the emergency medical services community and the nation and highlighted potential solutions to help create a more equitable and accessible out-of-hospital care system for all we serve.

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APPENDIX A:

FEDERAL AGENCIES IDENTIFIED AS EMS PLAYERS WITHIN THE FEDERAL GOVERNMENT

1. 911
2. Administration for Strategic Preparedness and Response (ASPR)
3. Assistant Secretary for Planning and Evaluation (ASPE)
4. Bureau of Indian Affairs (BIA)
5. Centers for Disease Control and Prevention (CDC)
6. Centers for Medicare & Medicaid Services (CMS)
7. Commissioned Corps of the U.S. Public Health Service (USPHS)
8. Department of Defense (DOD)
9. Department of Homeland Security (DHS)
10. Department of Justice/PSOB
11. Department of Labor (DOL)
12. Department of Transportation (DOT)
13. Emergency Medical Services for Children (EMSC)
14. Federal Aviation Administration (FAA)
15. Federal Communications Commission (FCC)
16. Federal Interagency Commission of EMS (FICEMS)
17. Federal Emergency Management Agency (FEMA)
18. Health & Human Services (HHS)
19. Health Resources and Services Administration (HRSA)
20. Indian Health Service (IHS)
21. National EMA Advisory Council (NEMSAC)
22. National Institute of Health (NIH)
23. National Telecommunications and Information Administration (NTIA)
24. NHTSA Office of EMS
25. National Institute for Occupational Safety and Health (NIOSH)/Occupational Safety and Health Administration (OSHA)

26. Park Service
27. Substance Abuse and Mental Health Services Administration (SAMHSA)/988
28. Tribal Nations

APPENDIX B:

NGOS IDENTIFIED AS EMS PLAYERS WITHIN THE FEDERAL GOVERNMENT

1. Academy of International Mobile Healthcare Integration
2. American Academy of Orthopedic Surgeons
3. American Academy of Pediatrics, Committee on Pediatric Emergency Medicine
4. American Academy of Pediatrics, PEPP Steering Committee
5. American Ambulance Association (AAA)
6. American College of Emergency Physicians – Committee on EMS
7. American College of Surgeons, Committee on Trauma
8. American College of Surgeons, EMS Committee
9. American Geriatrics Society
10. American Heart Association
11. American Public Health Association
12. American Red Cross
13. American Society for Testing and Materials
14. America's Health Insurance Plans
15. Association of Air Medical Services
16. Association of Healthcare Emergency Preparedness Professionals
17. Association of Public Safety Communications Officials International
18. Cardiac Arrest Registry to Enhance Survival
19. Coalition Against Bigger Trucks
20. Coalition for National Trauma Research
21. Commission for Accreditation of Ambulance Services
22. Commission on Accreditation of Allied Health Education Programs
23. Commission on Accreditation of Prehospital Continuing Education
24. Committee on Accreditation of Educational Programs for the EMS Professionals
25. Committee on Tactical Combat Casualty Care (CoTCCC)
26. Committee on Tactical Emergency Casualty Care (TECC)
27. Communications Security, Reliability, and Interoperability Council (FCC)
28. DHS Science and Technology Committee - EMS Sub-committee
29. Emergency Services Sector Coalition
30. Healthcare Information and Management Systems Society
31. International Academies of Emergency Dispatch
32. International Association of EMS Chiefs
33. International Association of Fire Chiefs – EMS Section
34. International Association of Fire Fighters
35. International Association of Flight and Critical Care Paramedics
36. International Board of Specialty Certification
37. International Critical Incident Stress Foundation
38. International Public Safety Association
39. International Trauma Life Support
40. Joint National EMS Leadership Forum

41. National Academies of Science, Engineering and Medicine Preparedness Forum
42. National Association for Search and Rescue
43. National Association of EMS Educators
44. National Association of EMS Physicians
45. National Association of State EMS Officials
46. National Collegiate EMS Foundation
47. National Council on Readiness and Preparedness
48. National EMS for Children Innovation and Improvement Center
49. National EMS Management Association
50. National EMS Memorial Service
51. National EMS Museum
52. National EMS Quality Alliance (NEMSQA)
53. National EMS Safety Council
54. National EMS Safety Council
55. National Pediatric Disaster Coalition Executive Committee
56. National Registry of Emergency Medical Technicians
57. National Rural Health Association
58. National Safety Council
59. National Ski Patrol
60. National Stroke Association
61. National Traffic Incident Management Coalition
62. National Volunteer Fire Council – Ems Section
63. Navajo EMS Nation
64. NFPA Technical Committee on Active Shooter
65. NFPA Technical Committee on Ambulances
66. NFPA Technical Committee on Drones
67. NFPA Technical Committee on Emergency Responders Occupational Health (ERHAAA)
68. NFPA Technical Committee on EMS
69. NFPA Technical Committee on HAZMAT
70. NFPA Technical Committee on MIH
71. NFPA Technical Committee on PPE
72. Pan-American Trauma Society
73. Pediatric Emergency Care Coordinator Learning Collaborative Advisory Committee
74. Prehospital Guidelines Consortium
75. Prehospital Pediatric Readiness Steering Committee
76. Public Safety Advisory Committee for FirstNet
77. Public Safety Group Recert Editorial Advisory Board
78. Rural Domestic Preparedness Consortium
79. SAFECOM Emergency Response Council-DHS
80. Special Operations Medical Association
81. State EMS Offices
82. The National EMS Memorial Bike Ride, Inc.
83. Trauma Centers Association of America
84. USFA Cardiovascular; USFA Codes and Standards; USFA Data and Technology; USFA EMS; USFA Firefighter Cancer; USFA Impact of Climate Change Workgroup; USFA Ion Batteries; USFA Mental Health; USFA Recruitment and Retention; USFA Whole of Government



Workgroup Summary

Data and Technology

Overarching Goal:

Embrace a culture of data and technology throughout the fire and emergency services to enhance the effectiveness, efficiency, and equity of fire department service delivery through modern systems, methods, and practices.

Issue:

In 1985, the U.S. Fire Administration released the National Fire Incident Reporting System (NFIRS). Almost 40 years later, this legacy system no longer meets the needs of all-hazards fire departments. Departments are increasingly experiencing demands for service in an environment of shifting population trends, climate change impacts, recruitment and retention challenges, and declining availability of resources. These challenges are compounded by the limitations in the legacy NFIRS and, as a result, the fire and emergency services lack a standardized, authoritative, and reliable source of actionable data and information on all-hazards incidents. As a result, government and industry leaders do not have the information they need to fully address the nation's fire problem and risks involving other hazards. The legacy NFIRS system is not cloud based or interoperable, and does not have the capability for direct data capture, geolocation, analytics, dashboard reporting, or data exchange via application programming interfaces (APIs).

In May 2023, USFA commenced the development of the National Emergency Response Information System (NERIS) to replace the legacy NFIRS. NERIS is a modern, secure, and cloud-based system that will continue to be modernized over time. The goal of NERIS is to empower the local fire and emergency services community by equipping them with near real-time information and analytic tools that support data informed decision-making for enhanced preparedness and response to incidents involving all hazards. NERIS will be the leading source for comprehensive information and advanced analysis on fire-related issues in the United States. By collecting, integrating, and analyzing all-hazards incident data, the NERIS platform will offer up-to-date information on fire and emergency situations across the United States. It will also provide timely insights into significant or noteworthy events. It will provide the fire service community with reliable predictive analytics to support enhanced preparedness and response to all-hazard incidents, wildland urban interface (WUI) events, community risk reduction efforts, climate change threats, and emerging threats and hazards.

Using NERIS, all fire departments nationwide – regardless of type and size – can contribute and have access to accurate and reliable aggregated data. This data will be seamlessly integrated with other relevant information, empowering fire departments to make informed decisions for their daily operations as well as for long-term planning and prevention efforts. With the launch and availability of NERIS, we will catalyze a major shift in how fire service leaders and firefighters apply data analysis to inform mission critical decision making. Facilitating a shift in data collection and use among the fire service will vary depending on the data-centric culture that exists within each department. Consequently, it is important to enable technology capabilities, enhance staffing, and make data training available within departments. USFA is committed to supporting departments in implementing this culture shift, across all types of fire departments and communities ranging from small, volunteer departments in rural communities to large, departments in urban areas.

By elevating the maturity of fire department data and technology skills, we will learn not only how many incidents there were but also what they were and why, when, and where they happened supported by quantitative insights. The maturity progression in fire departments data and technology skills can be summarized through the following levels and capabilities:

1. Descriptive analysis of what happened,

2. Diagnostic analysis of why it happened,
3. Predictive analysis of what is likely to happen in the future and evolving threats,
4. Prescriptive analysis of what do we need to do. As the fire service looks further into the future, the ability to leverage artificial technology and other advanced technologies will only be possible with complete, accurate, reliable, and interoperable data.

Accomplishments:

Since the launch of NERIS development in May 2023, there have been several major data and technology accomplishments by USFA and the national fire service organizations, including the following:

- ▶ February 2024 – Engaged with stakeholders nationwide to gather requirements and inform the development of the NERIS data schemas.
- ▶ March 2024 – Launched the Prototype NERIS and onboarding 6 fire departments for testing. [Media Release: Six fire departments onboarded onto the new National Emergency Response Information System \(fema.gov\)](#)
- ▶ May 2024 – Released the Core NERIS Data Schemas in beta version. [NERIS Core Data Schemas Released In Beta \(fsri.org\)](#)
- ▶ June 2024 – Rolled-Out a National Fire Data Week focused on NERIS that provided broad distribution of core thought leadership on the transition to NERIS. [Welcome to National Fire Data Week 2024 | UL's FSRI – Fire Safety Research Institute](#)
- ▶ July 2024 – Released and launched the Wildland Urban Interface (WUI) Fire Awareness Tools. [New tools launch to raise awareness on wildland urban interface fire \(fema.gov\)](#)
- ▶ August 2024 – Launched the Beta NERIS and onboarding 50 fire departments for beta testing. [After Successful Prototype, NERIS Expands to 50 New Fire Departments in Beta Testing \(fsri.org\)](#)
- ▶ August 2024 – Released the Secondary NERIS Data Schemas for public feedback. [NERIS Releases Secondary Data Schemas for 30-Day National Engagement Period | UL's FSRI – Fire Safety Research Institute](#)
- ▶ August 2024 – Released initial version of the NERIS API Infrastructure and Sandbox for CAD and RMS to begin developing and testing APIs for integration with NERIS. [NERIS Releases Key API Infrastructure to Enable Connected Services \(fsri.org\)](#)

Focusing on the initial scope for the Data and Technology National Strategy Workgroup, we:

- ▶ Identified sixteen awareness, ten marketing, and ten education and training activities for NERIS and incorporated them into an 18-month NERIS Roll-out Communication, Education, and Training Plan.
- ▶ Outlined a high-level Fire Data-Technology Maturity Framework addressing People and Culture, Process and Governance, IT Systems, Data, and Analytics.
- ▶ Developed a process for systemically collecting success stories from local fire departments on their use of data and technology.

The Data and Technology National Strategy Workgroup included membership from national fire and emergency service organizations. Over the past year, they have also had significant accomplishments in this area.

- ▶ The International Association of Fire Chiefs held their Technology Summit International Conference in December 2023 and convened Fire Data Analysis Working Group sessions in December 2023 and August 2024.
- ▶ The National Fire Protection Association published a brand standard for Fire and Emergency Service Analyst Professional Qualification in June 2024.
- ▶ The Center for Public Safety Excellence launched their new Fire and Emergency Service Analyst (FESA) professional credential in September 2024.

Recommendations:

- ▶ Continue to support, champion, and promulgate NERIS throughout the launch and National roll-out among all local fire departments.
- ▶ Identify and use established key performance indicators (KPIs) for each lane within the Fire Data-Technology Maturity Framework and for each level within that lane.
- ▶ Develop a self-assessment tool based on the enhanced Fire Data-Technology Maturity Framework, building on successful models, that allows departments to understand where they are and the next steps to advance their use of data-enabled technology.
- ▶ Establish a nationwide cadre of leading and innovative Fire Data Experts (that hold recognized professional credentials) to provide technical assistance to local fire departments. The cadre will guide and build the capacity of local fire service leaders and firefighters in all types of departments (career, volunteer, and combination) in standardized and effective data collection, exchange, quality, analysis, and the safe use of AI models in enhancing analysis products.
- ▶ Develop a user-friendly library of fire department data and technology success stories that include actionable tips for replication using a web-based collection process developed by the Data and Technology National Strategy Workgroup.
- ▶ Develop a technology roadmap for the fire service focusing on other types of technology, such areas as wearables, virtual reality, robotics, unmanned aerial systems, and artificial intelligence. Identify the use cases for these types of technologies and develop a research and implementation roadmap based on the use cases.



CAPITOL HILL FIRE SERVICE GROUP PHOTO | 2024 CFSI SYMPOSIUM AND DINNER

Whole-of-Government Approach

Overarching Goal:

Employ a proactive and fully resourced whole-of-government approach, with significant involvement by the fire service, to address threats — including fire — to the health and safety of our nation's population.

Issue:

Our nation's fire and emergency services have an all-hazards role and mission that extends beyond the fire problem in the United States — ranging from responding to natural disasters such as hurricanes, tornadoes, and floods as well as threats to homeland security to ensuring immediate care is provided to those experiencing overdoses, often serving as a healthcare “safety net” for people experiencing homelessness, and organizing and staffing mass vaccination clinics during the height of the COVID-19 pandemic.

Staff shortages facing the career and volunteer fire services and the wellbeing of fire and EMS personnel have wide ranging impacts not just at a local and state level, but at the national level as well.

The fire service must be included in federal policy development when federal agencies develop policies and programs related to public safety, such as first responder mental health, building and fire codes, and the five mission areas of the National Preparedness Goal (prevention, protection, mitigation, response, and recovery).

In 2011, fire departments responded to just over 30 million calls; in 2021, fire departments ran more than 36 million calls per year — a 22% increase. These calls are not just for structural fire, but wildfire and other natural disasters; emergency medical response, mutual aid, hazardous materials response, water rescue, active shooter and hostile events, and much more.³⁷

The National Fire Protection Association estimates the total cost of fire in the United States (the collective of all net expenditure on fire protection and all net losses due to fire incidents) in 2014 was \$328.5 billion, which was 1.9% of the U.S. Gross Domestic Product (GDP). Losses that year were \$55.4 billion.³⁸

Between 2013 and 2022, 37,295 people in the United States died from fire.³⁹

The August 2023 Maui fire was the deadliest in modern history and early estimates indicate rebuilding could cost over \$5.5 billion with the overall economic toll estimated as high as \$16 billion.^{40 41}

Beyond whole-of-government reactive responses to fire and other disasters, America also needs a proactive, resourced whole-of-government approach to our nation's fire problem. The most effective way to achieve this goal is through the United States Fire Administration (USFA), the lead federal agency, which represents over one million firefighters and emergency services personnel who serve a most vital role in protecting our communities from fire and other threats.

Many departments and agencies in the federal government administer programs that impact the fire and emergency services. These departments have a responsibility to engage with fire service stakeholders — inside and outside of the federal government — when developing policies, programs, and procedures impacting fire and life safety. Despite the fire service's significant footprint within these departments' missions, there is a lack of coordination and cohesive policy development among the agencies.

A whole-of-government approach to fire and emergency services could best be achieved by USFA coordinating these policies within the federal government and ensuring that the fire service

stakeholders can more effectively operate at that level. The United States Fire Administration needs to become more of a coordinator of multidisciplinary response, preparedness, and mitigation within FEMA and the Department of Homeland Security. The USFA must be fully funded and appropriately staffed in order to execute its mission. As many response agencies already have, each FEMA region should have a dedicated USFA specialist to assist in the planning and response to disasters.

Protecting our nation from fire and other threats to our citizens cannot be addressed in silos, it must be addressed holistically and proactively.

Accomplishments:

- ▶ The national fire service organizations successfully advocated for the passage of legislation to reauthorize the United States Fire Administration and the AFG/SAFER grant programs.
- ▶ The National Fallen Firefighters Foundation requested and received a special Presidential Proclamation recognizing the National Fallen Firefighters Memorial Ceremony in May 2024.
- ▶ CFSI submitted a request to the Office of Bureau of Justice Assistance to give the U.S. Fire Administrator a visible and active role in the Public Safety Medal of Valor Program.
- ▶ CFSI passed a consensus resolution, submitted by the National Fallen Firefighters Foundation, to endorse the work of the United States Fire Administration's Whole-of-Government Working Group.

Recommendations:

United States Fire Administration

- ▶ Need to develop an awareness campaign within the federal government and for the public of the United States Fire Administration.

Background: There is a lack of awareness about the United States Fire Administration. The United States Fire Administration was authorized as the National Fire Prevention and Control Administration by the Fire Prevention and Control Act of 1974. Domiciled initially in the U.S. Department of Commerce, the agency had its name changed in 1978 and one year later was relocated to the newly formed Federal Emergency Management Agency in 1979. In 2002, Congress relocated USFA to the newly formed U.S. Department of Homeland Security when it approved legislation establishing the agency.

USFA represents over one million firefighters and emergency services personnel. Its leadership team possesses a broad range of experience and backgrounds in disaster response. Further, the training it provides to members of the fire and emergency services through the National Fire Academy increases our nation's capabilities to respond to all disasters that threaten our homeland. Despite the importance of USFA's mission to the security of our country, the agency and its leaders have been underutilized at the federal policy level since its inception. The United States Fire Administration deserves proper stature at the federal level because of its mission and the critical roles performed by its one million constituents in protecting our homeland.

USFA also needs to exert more effort in educating the public about its mission and the all-hazards role of our nation's fire and emergency services. Each day, the public witnesses fire apparatus and EMS vehicles responding to emergency calls.

Nevertheless, they lack an understanding of the staffing, training, and equipment needed to respond to approximately 37 million emergency calls each year, and the costs associated with maintaining a fire department.

Research

- ▶ USFA should host a publicly accessible repository of fire prevention and safety research, including research funded through the Assistance to Firefighters Grant (AFG) and Staffing for Adequate Fire and Emergency Response (SAFER) grants focused on firefighter health and safety, fire prevention

and life safety, and recruitment and retention.

Background: The Federal Emergency Management Agency released a report in December 2022 titled “Fire Prevention and Safety (FP&S) Grant Program Research and Development (R&D) Activity: Project Abstracts.” The beginning of the report provides general information about the grant program, including the number of research projects funded from FY05 through FY21 (137) and the aggregate amount of grant funding awarded (\$140,635,997). The report then provides abstracts of all the research projects, including potential outcomes stated by the applicants. At the time of publication, 31 of the 137 projects were active, while 106 were designated as closed. A repository that includes the results of this research with links to published papers would be of great value to the federal government, the fire and emergency services, and the general public.

The same applies to Fire Prevention and Safety grants: The FEMA grants office or the United States Fire Administration should develop a repository of fire prevention and safety programs funded with AFG grants. By creating such a repository, USFA can facilitate the dissemination of essential safety programs, fostering advancements in prevention programs and potentially reducing the number of deaths and injuries caused by fire.

- Proposal for an interagency committee chaired by the U.S. Fire Administrator, to enhance coordination of federal fire programs within various federal agencies.

Background: There are different interagency committees in the federal government that focus on specific issues. There are interagency committees for the wildland-urban interface, EMS, and environmental changes in public safety. Nevertheless, no committee provides coordination and cohesion for the broad spectrum of federal fire programs among the various federal agencies.

The report presented at the 2022 U.S. Fire Administrator’s Summit on Fire Prevention and Control showed a list of federal agencies overseeing federal fire programs.

These programs impact all aspects of fire and emergency responses. An interagency committee that can facilitate communications among the various agencies administering federal fire programs would strengthen the federal government’s role in supporting local first responders and create greater efficiencies in allocating federal resources to local first responders.

Federal Emergency Management Agency

- The U.S. Fire Administrator, who holds the position of senior advisor to the FEMA Administrator, must be treated accordingly. Inclusion in policy discussions and pre-disaster and disaster-response meetings with the FEMA Administrator and other senior advisors is vital.

Background: “FEMA’s mission is helping people before, during, and after disasters.” That is the first line of its mission statement. At the local level, firefighters and emergency services personnel primarily perform this mission. Therefore, the FEMA Administrator should engage the U.S. Fire Administrator in the highest-level discussions on policy matters and pre- and post-disaster response meetings.

- USFA should have a senior staff member assigned to each FEMA regional office to serve as USFA’s liaison with state and local fire agencies to facilitate the delivery of federal programs and resources that support the mission of state and local fire agencies.

Background: The Federal Emergency Management Agency has ten regional offices in different parts of the country, supporting state and local communities with pre-disaster planning and post-disaster recovery. They link local and state emergency operations and FEMA’s headquarters, facilitating communications between FEMA leadership and local and state emergency response operations. USFA should have a senior staff member assigned to each regional office, working directly with local fire and emergency response agencies to ensure that these agencies receive the federal resources needed to respond to large-scale disasters.

- The U.S. Fire Administrator should accompany the FEMA Administrator whenever the latter travels to communities devastated by disasters, especially when firefighters and emergency response

personnel are extensively involved in the rescue and recovery efforts. With access to resources and USFA personnel trained in recovering operations and incident command, the Fire Administrator can serve an essential function in recovery operations while offering support and technical information to the FEMA Administrator during meetings and media interviews.

Background: Quite often, when a large-scale disaster strikes a community, a high-ranking Administration official is dispatched to the scene to send a message to the public about the Administration's commitment to the recovery efforts. During their visits, they meet with local and state officials and conduct interviews with local media to discuss the federal government's role in the recovery efforts.

The U.S. Fire Administrator should accompany the FEMA Administrator whenever the latter travels to communities devastated by disasters, especially when firefighters and emergency response personnel are extensively involved in the rescue and recovery efforts. With access to resources and USFA personnel trained in recovering operations and incident command, the Fire Administrator can serve an essential function in recovery operations while offering support and technical information to the FEMA Administrator during meetings and media interviews.

- ▶ ESF-4 Emergency Support Function (ESF) #4 — The national fire organizations support USFA's initiative to explore how USFA can assume a more significant role in ESF-4.

Background: Emergency Support Functions are part of the National Response Framework which outlines how the nation responds to all types of disasters and emergencies. ESF-4 addresses coordinating firefighting activities and providing personnel, equipment, and supplies in support of local, state, tribal, territorial, and insular area agencies involved in wildland, rural, and urban firefighting operations. The United States Forest Service is the lead federal agency for implementing ESF-4.

For many years, USFA has expressed reasons why USFA should assume a more prominent role in ESF-4, primarily for fires in which structural firefighting crews are deployed. On May 1, 2023, USFA Administrator Moore-Merrell conducted a meeting to discuss USFA's role in ESF-4. Representatives for local, state, and national fire organizations attended, as did FEMA and the U.S. Forest Service representatives. Fire representatives agreed that USFA should assume a more significant role, citing USFA's understanding and experience with mutual aid and interstate agreements.

Department of Homeland Security

- ▶ Cybersecurity and Infrastructure Security Agency (CISA): Need better coordination between the agency and USFA on critical infrastructure programs and cyber and data security for fire departments and EMS agencies.

Background: The fire and emergency service falls under the Emergency Services Sector (Emergency Services Sector | Cybersecurity and Infrastructure Security Agency CISA), one of the 16 areas of critical infrastructure covered by the Department of Homeland Security's Cybersecurity & Infrastructure Security Agency. CISA focuses on cybersecurity and also public safety communications interoperability through SAFECOM (SAFECOM | CISA). Fire departments continue to work to improve communications and interoperability and are at risk of cyber attacks. USFA should strive to develop a closer relationship with CISA to develop training and alert systems to help fire and EMS departments prepare for 21st Century threats.

- ▶ Science and Technology Directorate: The Directorate should maintain its commitment to disseminating information to the fire service regarding new research and technologies that benefit the firefighters and emergency services personnel.

Background: The mission of the Science and Technology Directorate is to "enable effective, efficient, and secure operations across all homeland security missions by applying scientific, engineering, analytic, and innovative approaches to deliver timely solutions and support departmental acquisitions." The operative work for the fire and emergency services is "timely." With emerging

threats placing greater responsibilities on local fire departments to protect their communities, it is imperative that the Department of Homeland Security, through the Science and Technology Directorate, continue its commitment to disseminate research and information on new technologies to the fire service on a “timely” basis.

Department of Agriculture

- ▶ The United States Forest Service and the United States Fire Administration need to increase collaboration in providing information to the fire and emergency services about the Federal Excess Personal Property Program (FEPP) and the Firefighter Property Program (FPP).

Background: FEPP and FPP can provide fire departments with specific types of excess federal equipment and resources. It includes vehicles (pick-up trucks, sports utility vehicles, 2½ ton trucks), fire trucks, generators, trailers, hoses, nozzles, pumps, air compressors, and other equipment used by fire departments. Even though the

U.S. Forest Service is the lead federal agency administering both programs, the U.S. Fire Administration should assume a facilitating role to make fire departments aware of both programs.

Department of Commerce

- ▶ The United States Fire Administration and the National Institute of Standards and Technology (NIST) need to continue their collaboration in developing and implementing a research agenda and distributing research findings to the fire and emergency services. Furthermore, the two agencies need to continue pursuing opportunities with the research community to leverage resources and share data, which will have a far-reaching impact on advancing the field of fire research in our nation.

Background: On November 5, 1997, representatives of the U.S. Fire Administration and the National Institute of Standards and Technology signed a Memorandum of Understanding. The purpose of the MOU was to improve and enhance the effectiveness of the cooperation between USFA and NIST in establishing research priorities, conducting the research, and sharing information about the research between the two agencies and the fire safety community. Twenty-five years later, on July 17, 2023, the two agencies reaffirmed their commitment to work together by signing another MOU.

Since 1997, the research community has assumed a more significant role in establishing the research agenda and performing the research. The shift can partly be attributed to the authorization of the Assistance to Firefighters Grant Program in 2000, which created a grant program for fire research. Since then, the grant program has awarded over \$140 million in federal grants to universities and research facilities for conducting research on firefighter health and safety. Separate from the AFG program, research facilities, such as UL's Fire Safety Research Institute and the National Development Research Institutes' affiliate, NDRI-USA, Inc., have been conducting research of their own, looking for solutions to existing fire safety threats with considerable success. And to their credit, UL's Fire Safety Research Institute has sponsored the National Fallen Firefighters Foundation's initiative to develop a national fire research agenda. NFFF has now published the 4th edition of its research agenda. As two leading federal agencies for fire research, both USFA and NIST should assume a more active role in this initiative.

Department of Defense

- ▶ The Department of Defense needs to address the issue of civilian firefighters employed at military installations not being reimbursed for travel costs to attend National Fire Academy classes or backfill stations.

Background: Currently, military installations will not cover travel costs for civilian firefighters to attend classes at the National Fire Academy, nor will they cover costs to backfill their stations when these firefighters attend classes.

- ▶ The Department of Defense needs to establish a formal dialogue with the United States Fire

Administration to explore opportunities for technology transfers and surplus property transfers that can benefit the fire and emergency services.

Background: The Department of Defense, through the five branches' various research and training centers and the Defense Advanced Research Project Agency (DARPA), among other offices, conducts extensive research to develop new technologies and training for our nation's military. This includes technologies that can track personnel movement and weather patterns, enhance communications at disaster scenes, detect chemical agents, and optimize resource deployment. This same technology can find applications in the fire service, giving firefighters next-generation equipment that will enable them to perform their work safely. First, however, the Department of Defense and the U.S. Fire Administration must lay the groundwork for a dialogue to initiate discussions on Department of Defense technologies that can benefit our nation's fire and emergency services.

- ▶ The Department of Defense should partner with USFA to ensure that active-duty military personnel who separate from military service are aware of opportunities in the fire and emergency services and that such career changes can be facilitated as seamlessly as possible — including waivers for transferable skills and certifications.

Background: Military veterans possess several skills and attributes that make them highly qualified to be firefighters and EMS providers. To help our veterans transition from military careers, the Department of Defense and USFA should develop either a marketing campaign or program that makes veterans aware of opportunities in the fire service. Furthermore, the two agencies should develop a review process to waive course requirements for Firefighter 1 certification based on specific skills acquired during military service as well as ensure military-trained EMS personnel are eligible to obtain National Registry certification.

Department of Education

- ▶ The United States Fire Administration and the Department of Education need to increase collaboration in tracking and releasing data on incidents involving on- and off-campus student housing fires and carbon monoxide incidents.

Background: Both USFA and the Department of Education provide information and statistical data about fires on college campuses on their respective websites. USFA's information focuses primarily on fire prevention, whereas the Department of Education, by law, must compile annual reports of crimes and fires on college campuses using information submitted by colleges and universities.

Fire on college campuses is no longer the threat it once was due to smoke detector and sprinkler requirements in on-campus housing and classrooms; however, the threat of fire remains serious in off-campus housing. The challenge for public safety is determining just how great a threat it is. There is no reporting system for off-campus housing fires, and this problem needs to be addressed if we are to understand the true threat of fire on college campuses. In addition, we need to develop fire safety programs for colleges and local fire departments aimed at off-campus housing, using the synergy of the United States Fire Administration and Department of Education to carry out this initiative.

- ▶ Any action taken by the Administration or Congress to forgive student loans must include loan forgiveness for students employed or volunteering in public service, including the fire and emergency services.

Background: If the Biden Administration continues to pursue student loan forgiveness following the Supreme Court ruling, forgiveness should apply to loans held by individuals in public service, including fire and emergency services.

Department of Health and Human Services

- ▶ USFA must assume a more substantial role in the decision-making process for releasing all COVID and future pandemic- and disaster-related resources from the Strategic National Stockpile.

Background: During the pandemic, the national fire organizations worked together to communicate the needs of the fire services to minimize the health and safety risks of COVID-19 to our nation's firefighters and emergency services personnel. They deserved priority access to pandemic-related resources from the national stockpile because they worked on the front lines treating COVID-19 patients, but they did not always receive it. USFA needs to assert itself more in future discussions and implementation of federal policy regarding pandemic response to ensure that our firefighters have a stronger voice at the federal level and acquire the resources they need to protect themselves when the next pandemic strikes.

- ▶ With the passage of the Empowering the United States Fire Administration Act (PL 117-246), the National Institute of Occupational Safety and Health (NIOSH) and USFA will need to coordinate efforts to investigate large-scale fires and develop reports of their joint findings.

Background: PL 117-246 states the U.S. Fire Administrator is authorized to “send incident investigators, which may include safety specialists, fire protection engineers, codes and standards experts, researchers, and fire training specialists, to the site of the fire to conduct a fire safety investigation...” The law requires the Administrator to work in cooperation with other federal agencies that also have investigative authority. Although the law does not cite specific agencies, the National Institute of Occupational Safety and Health and the Bureau of Alcohol, Tobacco, Firearms and Explosives are two agencies that have such authority. USFA will need to work with these agencies and other agencies with similar investigative authority to ensure that they collaborate and avoid actions that may impede and negatively impact ongoing investigations.

- ▶ There is a sense among the national fire organizations that the Centers for Medicare and Medicaid Services (CMS) does not grasp the full operations of the emergency medical services system; therefore, USFA and CMS should formalize lines of communication between the two agencies to enhance the latter's understanding of the fire-service based EMS system in the continuum of emergency medical care.

Background: CMS continues to deny reimbursement to EMS agencies unless the patient is transported to a hospital. This failure to recognize the ability of EMS personnel to either treat patients on scene or transport them to alternative destinations of care forces fire departments to perform increasingly high amounts of unreimbursed care. Reimbursing EMS as a form of patient care, rather than simply a mode of transportation to a hospital, would allow fire departments to care for low- acuity patients in a more appropriate and economical manner. The Department of Health and Human Services (HHS) as a whole should also give greater consideration to how EMS agencies, and specifically fire-based EMS agencies, are included in pre- emergency planning through the Assistant to the Secretary for Preparedness and Response as well as all other HHS entities. HHS recognition of the fact that fire departments are EMS agencies, and thus critical components of the overall healthcare system, is an essential component to improving both the day-to-day healthcare system as well as large-scale emergency plans.

- ▶ Emergency Support Function 8 (Public Health and Medical Services Annex): ESF-8 “provides the mechanism for coordinated Federal assistance to supplement state, tribal, and local resources in response to a public health and medical disaster, potential or actual incidents requiring a coordinated Federal response, and/or during a developing potential health and medical emergency.” While FEMA assumes the primary role within DHS to provide support in distributing medical supplies and transporting patients requiring medical aid, ESF-8 does not mention USFA. Yet, at the federal level, USFA represents the most extensive emergency medical delivery system: fire service-based EMS. ESF-8 needs to establish a role for USFA in coordinating and dispatching fire service-based EMS services.

Background: In 2007, the Fire Service-Based EMS Advocates released a report titled “PREHOSPITAL EMERGENCY MEDICAL RESPONSE: The Role of the United States Fire Service in Delivery and Response.” Five national fire organizations formed the foundation of the Advocates: the Congressional Fire Services Institute (CFSI), International Association of Fire Fighters (IAFF),

International Association of Fire Chiefs (IAFC), National Fire Protection Association (NFPA), and National Volunteer Fire Council (NVFC). Summarizing the role of the fire service in delivering emergency medical care, the abstract stated:

Prehospital 9-1-1 emergency response is one of the essential public safety functions provided by the United States fire service in support of community health, security, and prosperity. Fire service-based emergency medical services (EMS) systems are strategically positioned to deliver time-critical response and effective patient care.

Fire service-based EMS provides this pivotal public safety service while also emphasizing responder safety, competent and compassionate workers, and cost-effective operations. As the federal, state, and local governments consider their strategic plans for an 'all hazards' emergency response system, EMS should be included in those considerations and decision-makers should recognize that the U.S. fire service is the most ideal prehospital 9-1-1 emergency response agency.

The abstract offers a compelling reason why USFA ESF-8 should clarify a role for USFA in the coordination and dispatch of fire service-based EMS services: the entity that USFA represents at the federal level — the American fire and emergency services — is the largest provider of emergency medical services in the nation and the first agency to respond to public health and medical disasters.

Department of Housing and Urban Development

- The Department of Housing and Urban Development (HUD) and USFA need to increase their communication and collaboration to address fire and life safety in federally funded and insured housing.

Background: In 2022, two fires in federally funded housing properties claimed the lives of 29 victims, raising public concern about the existential threat of fire in public housing across the nation. These two fires prompted USFA to conduct a whistle-stop tour with national media events in New York City and Philadelphia to raise greater awareness about the threat of fire in public housing.

As the administrator of federal housing programs in this country, the U.S. Department of Housing and Urban Development has primary responsibility at the federal level to oversee compliance with fire codes in federally funded housing properties; however, there is no reason why the United States Fire Administration cannot serve an important safety role, offering support with technical guidance, public safety education programs, fire data, and information about detection and suppression systems.

Department of Justice

- The U.S. Fire Administrator should have a more significant role in the Public Safety Medal of Valor Program, including the annual awards presentation at the White House.

Background: The Public Safety Medal of Valor Program is the highest national award for valor presented to a public safety officer - firefighters, law enforcement officers, and emergency medical services. Awarded by the President of the United States, in the name of Congress, the Medal of Valor is presented to officers who have shown extraordinary valor beyond the call of duty. Despite being the nation's highest-ranking fire service official, the U.S. Fire Administrator plays little to no role in the annual ceremony. This is a disservice to the members of the fire service who are honored every year with this prestigious award.

- Establish a cooperative agreement between USFA and the Bureau of Justice Assistance to share information about firefighter deaths and injuries.

Background: Both the United States Fire Administration (USFA) and the Bureau of Justice Assistance (BJA) track firefighter line-of-duty deaths. Nevertheless, there is no formal interagency agreement to share information about line-of-duty deaths and injuries or the circumstances surrounding those incidents. A formal data-sharing agreement would help USFA and BJA identify causes of line-of-duty deaths and injuries, allowing the agencies to better determine best practices to avoid future deaths and injuries. A formal agreement will also enhance the review process for determining eligibility for being honored at the National Fallen Firefighters Memorial.

Department of the Treasury

- ▶ Needs to partner with USFA to inform businesses of tax incentives that support fire sprinkler retrofits.

Background: In 2018, Congress approved the Tax Cut and Jobs Act. The legislation included key provisions of the Fire Sprinkler Incentive Act, which was first introduced in 2003 and would provide economic incentives to retrofit commercial properties with automatic fire sprinklers. National fire organizations developed the idea of the legislation following the Station Club fire in West Warwick, RI that claimed the lives of 100 victims.

There is plenty of data that demonstrates the efficacy of automatic fire sprinklers. Yet, there are a plethora of commercial properties across the country that lack sprinkler systems to protect against fires. The incentives are straightforward and financially beneficial. Working together, USFA and the Department of Treasury should develop an awareness campaign to alert eligible businesses about the incentive, which will save lives and property.

- ▶ Needs to partner with USFA to ensure fire and emergency services are aware of tax/retirement incentives for fire and EMS personnel (e.g., Volunteer Responder Incentive Protection Act).

Background: Smaller communities nationwide served by volunteer fire departments face a growing risk to their residents due to a shortage of volunteer personnel. There were just 676,900 volunteers in the U.S. in 2020, compared to 897,750 in 1984. Not only are there fewer volunteers, but the average age of volunteer firefighters continues to rise. According to NFPA, more than one-third of volunteers in small communities were over the age of 50 in 2020; in 1987, only 15.9% were.

To address this challenge at the federal level, Congress approved legislation that provides tax incentives for volunteer fire and EMS personnel, however (like the fire sprinkler incentive), there needs to be more awareness about the volunteer incentive. Utilizing their respective resources, USFA and the Department of Treasury should work together to promote the incentive to help the volunteer fire service with recruitment and retention campaigns.

Department of Veterans Affairs

- ▶ The Department of Veterans Affairs (VA) should partner with USFA and the five military branches to ensure veterans are aware of fire and emergency services opportunities.

White House

- ▶ Specifically, USFA should have a representative actively engaged with many of the offices/councils under the Executive Office of the President, including (but not limited to):
 - ▶ National Economic Council
 - ▶ National Security Council
 - ▶ Climate Policy Office
 - ▶ Office of Science and Technology Policy
 - ▶ Office of the National Cyber Director
 - ▶ National Space Council

Background: The roles and actions of firefighters and emergency services personnel are of consequential significance to our nation's economy, environment, and security. Nevertheless, policy offices within the White House have a history of not engaging the U.S. Fire Administrator in the discussions at the highest levels on policy proposals. It is in the best interest of an Administration — and our nation's economic security and safety — to engage the U.S. Fire Administrator in such policy discussions.

- ▶ Participation in the annual National Fallen Firefighters Foundation Memorial Weekend that honors firefighters killed in the line of duty should be a high priority for the President and Vice President.

Background: Since the first National Fallen Firefighters Memorial Ceremony in 1981, only two Presidents have attended — President George W. Bush in 2002 and 2007, and President Barack Obama in 2015 — and no Vice President has.



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- ⁹ <https://www.bls.gov/opub/ted/2021/men-accounted-for-about-75-percent-of-workers-in-protective-service-occupations-in-2020.htm>

Firefighter Cancer

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- ¹¹ <https://www.iaff.org/cancer-awareness-month/>
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- ¹³ <https://blogs.cdc.gov/niosh-science-blog/2017/05/10/ff-cancer-facts/>

Mental Health and Wellbeing

- ¹⁴ The term "Fire and EMS personnel" broadly includes all firefighters (structural, wildland, career, volunteer, aircraft rescue and firefighting (ARFF), civilian, DOD, private sector, public sector) including Emergency Medical Technicians, Paramedics, and Technical Rescue specialists who provide services in their communities. By whatever descriptor is used, all first responders, including public safety telecommunicators, are affected by the physiological changes that attend responding to tragic events.
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Whole-of-Government Approach

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Appendix:

Summit Workgroups

Bold indicates group lead(s)

Workgroup 1

Impact of Climate Change

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Whole-of-Government Approach

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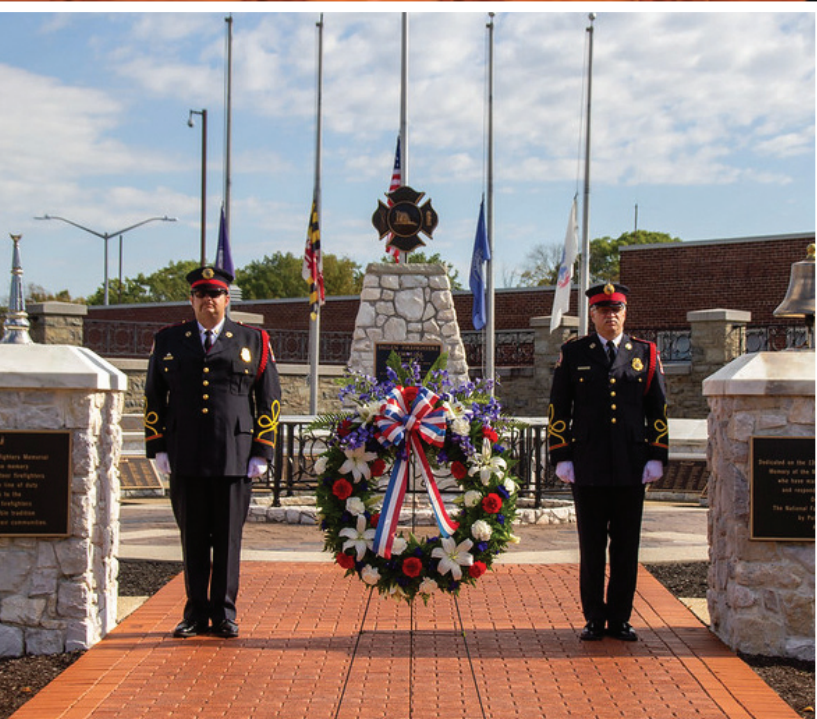
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