

WORK-RELATED INJURY

WORKING GROUP SUMMARY REPORT



Tools to Assist Departments, Providers,
and Personnel in Addressing Work-Related
Injury and Illness

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FRCE BACKGROUND

The *First Responder Center for Excellence for Reducing Occupational Illnesses, Injuries, and Deaths* (FRCE) is a subsidiary affiliate of the National Fallen Firefighters Foundation (NFFF). The NFFF was established by US Congressional charter in 1992 to address firefighter line-of-duty deaths. The NFFF created its trademark *Everyone Goes Home*™ (EGH) project in 2004 as a result of an industry-wide consensus effort to identify the principal preventable factors contributing to firefighter fatalities and expand the effort to address not just mortality but also morbidity factors impacting the fire and emergency medical services (EMS) personnel. This effort produced the 16 Firefighter Life Safety Initiatives (FLSIs), which in turn were developed into a range of health, wellness, and safety efforts disseminated throughout the US first response community. EGH™ became one the nation's most recognized and subscribed fire service programs, widely attributed as among the most substantial contributions leading to a nearly two-thirds reduction from 169 line of duty fatalities in 1978 (NFPA, 1987) to only 62 in 2019, the lowest recorded since these data were first collected (USFA, 2020).

FRCE was created in 2018 as a separate not-for-profit organization. Its charge is to build partnerships and coalitions to create and implement research-to-practice (R2P) efforts that can deliver theoretically grounded, empirically supported awareness, education, and intervention projects across all aspects of America's widely diverse first responder structure. FRCE efforts have been highly productive in its five target domains: cardiac health and disease prevention; awareness and prevention of occupational cancers; behavioral health; musculoskeletal injury prevention; and issues related to overall health and safety of firefighters (e.g., firefighter physicals; wellness and fitness programs). Established knowledge translation approaches identify the best empirical research in areas related to its mission and translate these into applied programs that can be delivered across a wide range of settings in user-friendly, accessible, and affordable formats.



FRCE has prioritized its efforts into five principal areas of focus: behavioral health, cancer prevention, cardiac health, health and wellness programming, and physical examinations. Its behavioral health programming has concentrated on operationalizing the components developed through EGH™, FLSI 13, including the widely disseminated and adapted Stress First Aid (SFA) program. Its cancer prevention and reduction efforts have centered around FRCE's role in coordinating the work of the Fire Service Occupational Cancer Alliance, created in response to priorities emerging from the Tampa2 conferences. Cardiac health efforts have included the coordination of EGH projects focused on reducing the incidence and impact of the industry's most strongly established cause of duty-related morbidity and mortality. Promotion of annual physical examinations for all fire and EMS personnel includes a memorandum of understanding with the International Association of Fire Chiefs (IAFC) to develop resources for firefighters and clinicians on physicals and how to best implement a physical program, and the building of the work of FSTAR and NFFF's work related to EGH, FLSI 6.

This project launches the expansion of FRCE's R2P work to address the impact of occupationally related illness and injury to firefighters and emergency medical responders. The frequency of occupational illnesses (see discussion below) suggests that few firefighters will escape work-related HYP injury during their firefighting career and that many—possibly most—are likely to experience multiple episodes. The increasing research attention to occupationally influenced engendered illnesses likewise suggests that exposures accumulated over the course of a firefighting career may increase an individual's propensity to manifest a variety of conditions, many of which can hold life-altering or even life-ending implications. While much attention is rightfully given to prevention, surprisingly little systematic work has been created regarding how best to help fire departments, firefighters, medical and allied health care providers, families, and other supporters manage the experience, navigate the often-complex avenues of care, and find their way to a productive resolution.

This session, underwritten by a Fire Prevention and Safety grant from the Assistance to Firefighters Grants (AFG) program, assembled a diverse panel of professionals versed in various elements of firefighter illness and injury to outline the scope of the problem from the perspective of the injured firefighter, the department involved, providers likely to be engaged in care, and others who play critical roles in adjustment and recovery with a focus on moderating the impact of these conditions on organizations, individuals, and those who surround and support them.

Occupational Illness and Injury in Fire and EMS



Firefighting is an inherently dangerous, highly physical activity. The National Fire Protection Association (NFPA) *Standard on Comprehensive Occupational Medical Program for Fire Departments* (NFPA Standard 1582, 2022) identifies fourteen essential tasks critical to the occupation, each of which involves exposure or exertion sufficient to result in illness or injury. The standard also notes that many of these will still result in compromise even if performed properly with compliant use of appropriate personal protective equipment. It should not be surprising, then, that the rate of occupational injury and illness is high across settings or activities.

How high is more difficult to reliably establish. NFPA, for example, publishes annual summaries of injuries reported through the National Fire Incident Reporting System (NFIRS). The number of reported injuries has shown a more or less steady downward trend across the most recent decade reported (Campbell, 2021) but remains at approximately 24,000 annual injuries reported (down from over 32,000 in 2009 and 2010); of these, approximately 24 percent were of sufficient severity to result in loss of time. An analysis of injuries seen in emergency departments projected an annual rate of 260 injuries per 10,000 firefighters (Marsh *et al.*, 2018); a review of reports from NFPA (Reichard & Jackson, 2010) found rates of 3.4 per 100 (340 per 10,000) for single role EMS workers, 7.4-9.2 per 100 (740-920 per 10,000) for career firefighters, and 1.3 per 100 (130 per 10,000) for an overall rate of about 3.5 per 10,000 (350 per 100). The data used in these formulations, however, has been noted to hold a range of discrepancies (Kahn & Moiser, 2018).

The rate of reported injuries for career firefighters far exceeds that for volunteers but there is reason to suspect that reporting behaviors may play a primary role in this distinction, along with the lower volume and range of activities typically associated with smaller but far more numerous volunteer departments. South Carolina Fire, the state's oversight component for fire service (Quizon & McCabe, 2020), found that as many as one in four injuries went unreported, including injuries that necessitated medical transport. Another reason, of course, may be that these smaller agencies with less frequent experience of injury and treatment lack the codified mechanisms for reporting, referring, evaluating, treating, and rehabilitating injuries that are typically well established within metro-sized agencies. Injuries reported are similar across career and volunteer departments (Karter, Jr., 2013) though both injury nature and seasonality matters differ somewhat with respect to the wildland community (Britton *et al.*, 2013).

The economic impact from these injuries is enormous but difficult to measure with certainty. Butry *et al.* (2019) produced updated economic impact assessments for the US Department of Commerce estimating an overall annual impact from nonfatal firefighter injuries of \$1.6B–\$5.9B, with an average cost of \$25,771–\$95,031 per injury. This translates to an average annual loss of \$53,657–\$197,860 per US fire department with an average annual loss of \$1468–\$5412 per firefighter. The range of loss varies greatly with the nature and extent of injury, ranging from average total loss values of \$5,819 for relatively minor injury categories (e.g., cuts) to average total losses of \$774,145 for major injuries such as drownings. The majority of medical expenses (approximately 45 percent) are paid through Worker Compensation insurance or funds, but the majority of indirect costs (approximately 65 percent) are absorbed by the firefighter out of pocket.

Protocols for treating occupational exposures, illnesses, and injuries appear to be very specific to locale and organization, though little has been reported in the way of systematic review or assessment. Even where reporting structures are well established, compliance has been noted to face variations and challenges (Quizon & McCabe, 2020). While the general protocols for treating various injuries are reasonably well known and understood by professional practitioners, relatively few outside dedicated firefighter clinic settings are apt to know how these need to be applied to the unique essential tasks and characteristics of the firefighting occupation (Eastman, 2022). Beyond the care of physicians and surgeons, many firefighter injuries require physical and occupational therapy as a core component of rehabilitation, job hardening, and return to work; little was located in initial searches for preparing allied health professionals to address firefighter-specific issues.

Psychological, behavioral, social, and emotional elements of recovery and adjustment are recognized as pertinent determinants of recovery trajectories (Noll, Mallows, & Moran, 2021). Various other sources of work, relationships, and/or burnout can also impede recovery and adjustment (Smith *et al.*, 2018). Rarely have these considerations appeared to be systematically incorporated into protocols, even though they may prove essential to the firefighter's progress through recovery. It is also unclear how commonly firefighters themselves, when facing injury or illness and entering the treatment and recovery process, have access to “road maps,” advocates, or other structured support systems prepared to help them anticipate, respond to, and navigate their recovery process. This is again likely to prove starkly less available to the nation's volunteer fire departments, their personnel, and those who provide their care.

It has become increasingly apparent that these domains interact in many ways and on many levels. Much of injury and disease prevention is based on psychological and behavioral factors. Indeed, the US Preventive Services Task Force (USPSTF) developed guidelines on

behavioral counseling as a key element in disease prevention and recently released new recommendations regarding behavioral counseling in the prevention of cardiovascular disease—the leading cause of fireground death (Patnode *et al.*, 2022). A substantial proportion of fireground deaths in more than a decade of NIOSH investigations included behaviorally based actions and decisions as causal contributors (often as major factors) (Hard *et al.*, 2019; Kunadharaju, Smith, & DeJoy, 2011).



Photo courtesy of the U.S. Fire Administration

Psychological consequences of injury on careers and lifestyles are well recognized, with rehabilitation psychology a recognized subspecialty that plays a substantive role in many rehab settings. This may be compounded further with firefighting where, for example, active membership has been suggested to play a protective factor with respect to suicide, but career separation may present a reversal of that protective role and even present an exacerbation of risk (Gist, Taylor, Watson, & Leto, 2019).

This meeting called together industry thought leaders with experience in various elements of these domains to explore the current and evolving needs of the industry respecting behavioral aspects of prevention, treatment, rehabilitation, and recovery; develop approaches to establishing the current status of efforts to address these intersections; propose preliminary pathways for development and evolution of effective approaches to more effectively integrate these domains; and suggest resources to be developed in order to support those pathways across the wide range of fire, rescue, and EMS systems serving our nation. Objectives for the meeting included:

- Scoping of the problem areas and their various facets.
- Initial needs assessment and identification of further lines of exploration and inquiry.
- Identification of initial pathways for awareness of need and integration with other elements and resources (to specifically include behavioral health resources); and
- Preliminary design of resources to support enhanced integration of behavioral health concerns into occupational health, treatment, and rehabilitation programs.

The working group was conducted in Minneapolis, Minnesota, over two days with the process facilitated by Dr. Richard Gist, Deputy Director of the Kansas City (Missouri) Fire Department and long-time advisor and consultant to NFFF and FRCE.

Linkage to FRCE Priority Areas

The 16 Firefighter Life Safety Initiatives that form the foundation for EGH™ were the product of a groundbreaking national symposium held March 10-11, 2004, in Tampa. Two days of intensive exploration involving a wide range of fire service leaders resulted in the identification of sixteen fundamental principles that demanded aggressive, comprehensive address if firefighter illnesses, injuries, and fatalities were to be meaningfully reduced in the following decade. Once these were identified, NFFF began an intensive program of building coalitions, marshaling resources, and shaping focus around the implementation of these landmark proposals.

Three years later, more than two hundred fire service representatives convened again in Novato, California to flesh out each of the 16 initiatives and offer specific recommendations for their implementation. Experts in specific areas were commissioned to produce a white paper for each FLSI that would summarize current information and serve as the linchpin for focused discussion. A ten-year reevaluation of the 16 Firefighter Life Safety Initiatives, dubbed “Tampa2” to acknowledge the program’s origins, revisited the overall EGH™ effort and the progress of each FLSI. A number of issues focused on the prevention of accidents and injuries on the fireground and elsewhere in the workplace; still, others focused on issues like safety culture, technology development, research support, accountability, apparatus design, and near-miss investigations. Other areas addressed behavioral health, wellness and fitness, and similar issues. But despite the clear impact of navigating the injury experience for America’s firefighters—an experience nearly all are likely to encounter at some point in their service—surprisingly, nothing was codified regarding this dealing with injuries and illnesses once they occurred.

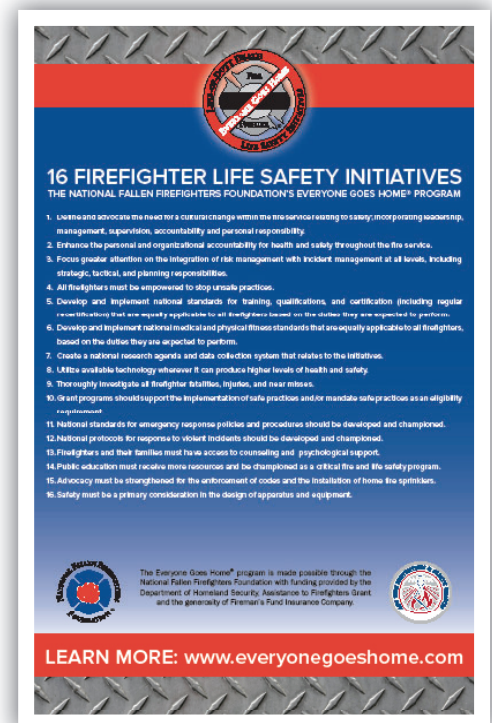
FRCE, along with other fire service organizations, has focused stringent attention on expanding the implementation of mandatory medical evaluations for entrant firefighters and instituting annual medical examinations for incumbents. NFPA 1582, *Standard on Medical Requirements for Fire Fighters*, was first issued in 1992. Over the course of its revision and evolution, it has come to provide a comprehensive guideline for the basic components of occupational medical programming carefully tied to fourteen core performance elements central to functioning as a firefighter. While its chapters provide detailed guidance regarding entrant evaluations, annual medical evaluations of incumbent firefighters, and annual fitness evaluations for incumbents, management of the recovery process from occupational injury or illness remains unaddressed. Proposed NFPA 1580, a consolidation of standards relating

to medical evaluations, fitness, and wellness programs (NFPA 1581, NFPA 1582, NFPA 1583, NFPA 1584), remains silent on the matter, leaving a void with respect to guidance for fire departments, firefighters, and health care providers.

FRCE has long recognized the critical role of operationalizing standards, guidance, and best practices in helping the fire service deliver the highest levels of care and compliance in health, wellness, and fitness. Accordingly, an objective was established in the FRCE, FY 2020 Fire Prevention & Safety grant to develop mechanisms to prepare firefighters, fire departments, and health care providers to address the impacts of occupational illness and injury. This work group session represents the first phase of the implementation plan for that objective.

Scoping the Problem

When tackling an issue with many dimensions and little in the way of an existing, systematic body of information on which to rely, the preliminary steps center around scoping. This phase of project development gathers available inputs, synthesizes these into a preliminary schematic, and identifies specific objectives and steps to begin work toward solutions. Scoping processes may employ a variety of input approaches including literature scans, surveys, expert consensus panels, or essentially any appropriate combination of such methods. Scoping reviews are used to identify questions, organize information, propose strategies, and set the stage for more focused actions (Sucharew & Macaluso, 2019).



EGH Life Safety Initiatives

For this project, the scoping phase utilized a sample of subject matter experts holding knowledge and experience in domains known to be critical to the issues under examination: fire department policymakers, fire service insurers, health care providers, behavioral health specialists, peer support managers, case management personnel, and health researchers. The process from there followed a systematic but open-ended pathway beginning with a basic overview of goals, flowing then into a discussion of known issues, current approaches, observed or anticipated obstacles, and possible sources for further input and examples. The final phase proposed possible projects to address key issues from the perspectives of fire departments, health care providers, and firefighters.

Once projects are selected for development, the R2P process for their development follows a more or less standard model. It is, at its essence, rather simple:

1. Establish the best empirical information to form the basis for proposed solutions (get it right).
2. Build translation models that make the proposed solution easy and desirable for the end users to utilize (make it easy).
3. Get the products out to end users in ways that effectively reach the right targets and compel them to act (get it out there).
4. Evaluate, reassess, refine, and redeploy as the products are put to use (keep it working).

Moderating Impact on Fire Departments, Firefighters, and Families

The first round of discussion centered on identifying key issues at a broader conceptual level. No matter the level of analysis considered (department, firefighter, provider, family), wide variability and lack of consistency regarding approaches and pathways emerged as a primary source of uncertainty. Such uncertainty breeds many undesirable impacts: anxiety, frustration, missteps, miscues, anger, and resentment can all be elements of uncertain and/or faltering processes. Illness or injury can threaten life-altering consequences, process transparency, and consistent application across cases and situations are absolute necessities in helping to moderate impacts from these highly challenging life events.

Uncertainty is, to a large extent, unavoidable. No injury, circumstance, or individual is ever exactly the same. The variability of worker compensation regulations between jurisdictions is another obvious limiting factor, as is the variability between case management structures associated with differing insurance carriers and payment systems. Resources available for treatment and rehabilitation vary widely from location to location, as do the processes differing care settings employ to manage care and interact with patients. Even in large departments, where systems have often evolved more structure due to the frequency of cases encountered, consistency remains a constant challenge. The vast majority of the fire service, however, is comprised of small agencies with limited resources and less frequent demand. Each case can end up following a more or less *ad hoc* course, with the process seeming as if it was reinvented from scratch each time the need arises.



Photo courtesy of the U.S. Fire Administration

Guidance for fire departments comes from several directions but most appear driven by procedural compliance with respect to worker compensation regulations and/or payer-prescribed processes. Important factors that should receive consideration were identified to include:

- Clear prioritization of organizational support for the injured firefighter.
- Emphasis on predetermined policies, procedures, and processes that can be readily understood, enacted, and explained at the earliest stages of injury management.
- Transparent and active coordination between all entities involved in treatment, compensation, rehabilitation, return to work, and related matters.
- Ensuring that physicians and allied health care providers involved in the firefighter's care have access to information regarding both work tasks and workplace environment to help guide treatment and rehabilitation plans.

- Continuity of department interaction during recovery and rehabilitation, such as meaningful modified duty opportunities, supervised use of department exercise facilities in rehabilitation, or similar efforts to preserve social integration with the organization.
- Evaluation of psychosocial reactions and impacts as a part of the injury management process.
- Support for peer structures to include advocacy and support for firefighters during these periods.
- Proactive access to behavioral health resources to assist with recovery and transitions.

The second phase of the scoping process is centered on project ideas that could help address key issues identified. Project parameters were generally guided by the same basic principles that have underpinned FLSI 13 and FRCE initiatives since their inception:

- Resources developed should be readily accessible to fire service consumers.
- Time and expense needed to acquire new products or skills should be minimized.
- Changes in services provided should have minimal impact on the cost of services.
- Products and protocols should be compatible with and adaptable to a diverse range of organizations, personnel, and communities.
- Ongoing methods to promote evaluation, refinement, and dissemination should be developed and maintained.

Ideas to be considered were generally sorted into those designed to be utilized at the department level, those that would be firefighter-facing, and those that would address healthcare providers. Ideas that the group saw as particularly viable were explored to identify potential stakeholders, partners, and funding streams as well as preliminary suggestions regarding dissemination and sponsorships. Emphasis was placed on products that could be adopted and/or adapted by multiple stakeholder and partner groups, and which could be co-branded and/or re-branded to help maximize dissemination and adoption strategies. Project possibilities are presented on the following pages.

PROJECT POSSIBILITIES

1. Fire Department Tools and Initiatives

Large career departments have typically evolved standard policies regarding the reporting, processing, handling, and payment of occupational injuries and illnesses. These codify for the agency, the firefighter, insurers, case managers, providers, and others who may become involved in the expected processes decisions to be made, processes to be followed, and actions to be taken. Most have developed relationships with a variety of providers to facilitate care and rehabilitation, hold established relationships with insurers and worker compensation bodies, have codified programs and standards for modified duty and return to work, and other resources. Such guidance is valuable to all concerned and forms the foundation for fair, equitable, and predictable navigation of the often-complex pathway from onset to resolution.

The working group recognized that such detailed guidance may not consistently exist in departments that are smaller, where these events are less commonplace, and where a dedicated administrative structure in occupational health is unlikely to be present. This can lead to inconsistency, uncertainty, and lapses in care. These proposals seek to collect a broad sample of existing policies and information from departments with well-established programs and abstract from these the essential components for a model template and resource guide based on best practices of the industry. These would be translated into modifiable/fillable electronic formats and made widely available for fire departments to adapt to their specific needs and circumstances in advance of immediate needs. Additional suggestions were made for resource compendia to assist with securing the various types of information and relationships required to facilitate policy implementation. A recommendation was also made to develop training and support to prepare existing (or developing) peer support programs to incorporate actions and activities to assist firefighters and their families following injury and throughout recovery and transitions.

Strategy 1-A: Model Policy Template

Tasks:

- Identify subject matter expert panel to select samples, review policies, and recommend content.
- Develop an outline for core content to be included in the model template.
- Generate a request for policies, protocols, algorithms, process charts, etc., respecting core content areas.

- Collect and review content received.
- Facilitate working group sessions for SMEs to select content to populate the model template.
- Generate and circulate draft(s) for review and editing.
- Translate the final version into a downloadable electronic format.
- Generate dissemination and social marketing plan to broadly distribute and encourage utilization.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Other SMEs as indicated
- Online publication support
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- Insurers
- Potential vendors

Funding:

- AFG FPS project
- Sponsorships

Strategy 1-B: Resource Compendium

Tasks:

- Identify resources needed to implement elements of the model template.
- Develop an outline for core content for the resource guide to complement the model policy template.
- Generate requests for resource options utilized by fire service agencies.
- Collect and review content received.
- Facilitate working group sessions for SMEs to select content to populate the resource guide.
- Generate and circulate draft(s) for review and editing.
- Translate the final version into a downloadable electronic format.
- Generate dissemination and social marketing plan to disperse broadly and encourage utilization.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Other SMEs as indicated
- Online publication support
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- Insurers
- Potential vendors

Funding:

- AFG FPS project
- Sponsorships

Strategy 1-C: Insurance Resources

Tasks:

- Identify a subject matter expert panel well versed in fire service worker compensation insurance, occupational health, and related areas.
- Develop an outline for core content to be included in a moderately comprehensive resource guide.
- Collect and review materials and information needed to populate the guide.
- Generate and circulate draft(s) for review and editing.
- Translate the final version into a downloadable electronic format.
- Generate dissemination and social marketing plan to disperse broadly and encourage utilization.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Insurance industry representatives
- Other SMEs as indicated
- Online publication support
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- Insurers
- Potential vendors

Funding:

- AFG FPS project
- Sponsorships

Strategy 1-D: Integrating Peer Support

Tasks:

- Identify potential SMEs to develop guidance materials to employ in assisting firefighters facing occupationally engendered injuries or illnesses.
- Survey existing peer support programs for current policies, procedures, training materials, and such directed toward this population.
- Collect and review content received.
- Develop outline and support materials to create online training for peer support personnel.
- Create draft curriculum and support materials for review and editing.
- Contract development and hosting of the online training module.
- Translate the final version into a downloadable electronic format.
- Generate dissemination and social marketing plan to disperse broadly and encourage utilization.
- Evaluate uptake, utilization, and impact.

Players:

- Established peer support entities
- SMEs in related areas (e.g., Second Alarm Project)
- Other SMEs as indicated
- Online training development SMEs
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*

Funding:

- AFG FPS project
- Sponsorships

2. Firefighter Facing Materials

Confronting occupational injury or illness presents circumstances that are often fraught with uncertainty. The process is complex and can seem convoluted; timelines and next steps are often unestablished or unclear. Sometimes, especially in larger, highly active departments, there is senior personnel who can help inform the firefighter facing these situations for the first time regarding processes and expectations, but even then, there is no guarantee that information will be current or that the experience of one firefighter will map accurately and informatively onto the situation of another. In smaller agencies, where such events may not be commonplace, persons with prior knowledge to impart may prove to be scarce.

While every case is likely to hold substantial differences, there are also important similarities that can help one navigate the process as it unfolds. Understanding terms, knowing where to find information, and being prepared to ask the right questions at the right times—are the assets that can help one find his or her way through the maze. Accordingly, participants proposed the development of an app to help firefighters navigate their experience.

Another critical option identified is based on the Veterans Administration AboutFace website created to allow veterans confronting PTSD to connect with actual stories from a wide variety of fellow Soldiers, Sailors, Marines, and Airmen who, across decades of deployments and conflicts, experienced situations and reactions which might be similar to theirs (<https://www.ptsd.va.gov/apps/aboutface/>). A similar web-based approach to presenting a cross-section of firefighters, injury or illness types, experiences, and solutions was suggested to provide a source for more behaviorally and emotionally centered support.

Strategy 2-A: Navigating Occupational Injury App

Tasks:

- Identify subject matter experts to develop an approach and create preliminary content and a navigation map.
- Contract for content development and platform development.
- Create content to populate the platform.
- Prepare beta version for preliminary end-user review.
- Conduct one or more focus groups (in person or virtual) to gather input and refine.
- Pilot working version with selected sample of potential users.
- Incorporate input into the final working version.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Other SMEs as indicated
- Content developers
- Platform developers
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*

Funding:

- AFG FPS project
- Sponsorships

Strategy 2-B: AboutFace Style Web Program

Tasks:

- Identify subject matter experts to develop an approach and create preliminary content and a navigation map.
- Contract content and platform developers.
- Generate content to populate the beta version.
- Conduct one or more focus groups (in person or virtual) to gather input and refine.
- Pilot working version with selected sample of potential users.
- Incorporate input into a final working version.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Other SMEs as indicated
- Content developers
- Platform developers
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*

Funding:

- AFG FPS project
- Sponsorships

3. Health Care Provider Materials

Occupational injuries and illnesses require extensive interaction with a variety of healthcare professionals across a range of specialties and disciplines. Most will hold expertise in treating the conditions presented but surprisingly few, especially outside areas with large concentrations of specialty care, are apt to be well-versed in dealing with firefighters and the peculiar characteristics of their work and occupational settings.

Central to providing working knowledge is ensuring that all providers brought into the treatment effort have access to the *Essential Job Tasks* outlined in NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* (NFPA, 2022) to provide critical insight on the nature of the work toward which treatment and rehabilitation are directed. Similarly, case management plays a critical role in ensuring that the patient remains engaged, progresses through the treatment and rehabilitation program, and maintains compliance with the critical elements necessary to recover. Guidance for case management is therefore another priority established by the working group.

Physical therapy plays an essential role in returning injured firefighters to the job and helping avoid reinjury wherever possible. Recovering firefighters will typically spend much more time with physical therapists than with either physicians or case managers, and the work they perform with them is absolutely critical—not only to their trajectory of recovery but to protect their future capacity to function on and off the job for the remainder of their fire service career and after. Suggested is a web resource for physical therapists, prepared in concert with PTs experienced in fire service work.

Psychosocial impacts of injury often merit specialized attention, but little specific training is readily available to behavioral health providers regularly serving firefighters. A partnership should be explored with Division 22 (Rehabilitation Psychology) of the American Psychological Association and the Center for Firefighter Behavioral Health at the Medical University of South Carolina to produce online training modules designed to prepare fire service behavioral health providers to assist throughout the process of treatment, rehabilitation, and adjustment.

Another option proposed was to collaborate with partners in the medical field to produce a *Medscape* module on the diagnosis, treatment, and rehabilitation of firefighter injuries. *Medscape* is a widely subscribed platform for online medical education, with peer-reviewed content covering current best practices and evidence-based treatment. This effort would also open new partnership opportunities to further FRCE objectives for enhancing the care and treatment of the fire service population.

Strategy 3-A: Essential Job Task Handout

Tasks:

- Identify provider representatives to work with fire service SMEs to develop a simple, useful, two-sided handout to accompany patient referrals.
- Build on similar handouts constructed for providers conducting firefighter medical evaluations.
- Supply a downloadable and printable document that can accompany electronic referrals and be carried by the patient to the first appointment.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Fire service medical providers
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- ACOEM, AAFP, and/or APTA

Funding:

- Minimal expense required

Strategy 3-B: Web Resources for Physical Therapists

Tasks:

- Identify subject matter experts in fire service physical therapy to develop an approach and create preliminary content and a navigation map.
- Contract content and platform developers.
- Generate content to populate the beta version.
- Conduct one or more focus groups (in person or virtual) to gather input and refine.
- Pilot working version with selected sample of potential users.
- Incorporate input into the final working version.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Physical therapists with solid fire service experience
- Content developers
- Platform developers
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- ACOEM
- APTA

Funding:

- AFG FPS project (write grant for APTA?)
- Sponsorships
- Vendors

Strategy 3-C: Rehabilitation Psychology Modules

Tasks:

- Explore partnership with MUSC Center for Firefighter Behavioral Health and Division 22 of APA to design and produce modules to be added to CFFBH online programs for behavioral health providers.
- Assist MUSC and partners to secure funding.
- Assist as needed with developing focus groups and similar vehicles to guide and assess content.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Center for Firefighter Behavioral Health
- Division 22, American Psychological Association
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- MUSC CFFBH
- Division 22, APA

Funding:

- AFG FPS project (with MUSC CFFBH)
- Sponsorships
- Vendors

Strategy 3-D: Case Management Guideline

Tasks:

- Identify insurers, worker compensation programs, and fire departments with established case management functions for fire service occupational illness and injury.
- Facilitate a working group to establish an outline for case management of firefighter injury and illness.
- Generate an outline for case management resources (to include a guidebook and downloadable process maps, forms, checklists, and materials).
- Create a working draft and circulate it for input and revision.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Working group representatives
- Fire service case management professionals
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- Fire service insurers

Funding:

- AFG FPS project
- Sponsorship partners

Strategy 3-E: Medscape Module

Tasks:

- Develop partnerships with fire department occupational medicine specialists to begin the development process.
- Utilize that avenue to establish a relationship with ACOEM, AAFP, and/or other pertinent partners.
- Propose content to *Medscape*.
- Convene a working group to develop content.
- Complete the development process and submit.
- Generate dissemination and social marketing plan for launch and disbursement.
- Evaluate uptake, utilization, and impact.

Players:

- Fire department OccMed specialists
- Content developers
- Platform developers
- Marketing and outreach support

Partners:

- NVFC, IAFC, IAFF, FEMA AFG, *et al.*
- ACOEM
- AAFP

Funding:

- AFG FPS project
- Sponsorships
- Vendors

FRCE DEVELOPMENT STRATEGY

This report includes a number of suggested options to support fire departments, firefighters, and healthcare providers in navigating occupational injury and illness. Not all strategies can be implemented simultaneously. FRCE will need to develop a strategic plan that establishes priorities, sets timelines, and coordinates efforts to secure partnerships, funding, and such. This could easily represent a three- to five-year phased commitment, culminating in a rollout symposium similar to that employed for the original FLSI 13 package (sponsored through NIOSH R-13 mechanism). Done correctly, it can represent a serious and lasting contribution to the industry that is both greatly needed and long overdue.

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