

# COVID-19 Behavioral Health Considerations for Wildland Firefighters

## Purpose

The COVID-19 pandemic and its associated impacts on daily life can increase behavioral health risks for wildland firefighters. It is important to recognize these impacts early and use strategies to support wildland firefighter behavioral health.

This document provides a brief overview of the behavioral health impacts and risk factors related to the COVID-19 pandemic for wildland firefighters. Additionally, it provides support strategies that agencies and organizations working with wildland firefighters can use to promote resilience.

## Overview

Under normal circumstances, wildland firefighters are disproportionately impacted and susceptible to severe behavioral health symptoms. Wildland firefighters can experience high levels of depression, post-traumatic stress disorder (PTSD), and death by suicide.

As a result of the COVID-19 pandemic, wildland firefighters are at increased risk for:

- Feelings of isolation.
- Lack of social support.
- Reduced connectedness with their team and leaders.
- Decreased access to mental health and medical resources.

Their risk is increased due to:

- The impacts of social distancing measures on shift schedules, sleeping arrangements, and peer support and socialization.
- Unstable employment.
- Ongoing worry about becoming ill and spreading the virus to their loved ones.

Additionally, wildland firefighters spend extensive time in demanding work environments that can lead to serious medical complications. As it relates to the pandemic, smoke inhalation may impact COVID-19 outcomes for firefighters. These complications can worsen mental health conditions.

To build resilience and mitigate risks to wildland firefighters, organizations should:

- Build social and organizational support structures that promote behavioral health.
- Offer behavioral health resources and services.
- Offer training on mental health support and resilience.
- Encourage informal support among peers and colleagues.

## Behavioral Health Impacts

**Wildland firefighters are directly exposed to extreme stress and harsh, unpredictable work environments for extended periods of time.**<sup>1,2,3,4,5</sup>

- Wildland firefighters represent a relatively small proportion of firefighters in the United States.<sup>6</sup> They often work upwards of 12- to 16- hour shifts that are extremely physically demanding, for up to 14 consecutive days or more.<sup>7</sup> While some work in full-time positions, many others may work in seasonal or volunteer positions.
- The structure of wildland firefighting crews is unique. It is often compared to that of the National Guard or Reserves of the U.S. Armed Forces.<sup>6</sup>
- Trust and group cohesion may be established quickly among wildland firefighters. However, it is unlikely that ad hoc crews offer a comparable level of support to longstanding crews within individual fire departments. This is due to shortened activation length and isolation from friends and family.
- Wildland firefighting is unpredictable in nature. The unpredictability is significantly heightened by COVID-19 response measures, such as the impacts of social distancing measures on shift schedules, sleeping arrangements, and peer support and socialization.

**Specific risks to wildland firefighters due to COVID-19 include increased feelings of isolation, lack of social support, reduced feelings of connectedness with their team and leadership, and decreased access to mental health and medical resources.**

- Wildland firefighters spend long periods of time away from their families and friends during fire season. Separation may be even more impactful during the 2020 season due to COVID-19 response measures requiring them to be away from their support systems for months prior to the season. Additionally, the configurations of wildland firefighting crews during deployments often lead them to experience less group cohesion, camaraderie, bonding, connectedness, and belongingness. They may feel they have few friends and are disconnected from others.<sup>6</sup>
- First responders, including wildland firefighters, are called to fill many different support roles for the community. Despite being emotionally and physically taxed themselves, they are still called to fill these roles in disaster situations like the COVID-19 pandemic.

**Physical demands increase vulnerability to behavioral health impacts.**

Wildland firefighters spend extensive time in hostile environments that can lead to serious medical complications. These complications can make mental health conditions worse. Additionally, smoke inhalation may impact COVID-19 outcomes. Smoke from wildland fires contains:<sup>8</sup>

- Carbon monoxide.
- Respiratory irritants, such as acrolein, formaldehyde, fine particulate matter, benzene (a carcinogen), nitrogen dioxide (a primary air pollutant), volatile organic compounds, ozone (a secondary air pollutant), and toxic agricultural residues.

This exposure can lead to:<sup>8</sup>

- Asthma.
- Chronic obstructive pulmonary disease (COPD).
- Emergency room visits and hospital admission due to respiratory illness, such as pneumonia, acute bronchitis, pharyngitis, laryngitis, sinusitis, and rhinitis.
- Increase in mortality due to respiratory illness.
- Stroke.
- Heart failure.
- Cardiac dysrhythmia (abnormal heartbeat).
- Systemic inflammation (weakened immune system).
- Thrombosis (blood clots).
- Neurological effects, such as damage to brain tissues.

### **Physical strain often worsens stress and symptoms of trauma and burnout.**

- Firefighters are exposed to extreme heat that causes physical strain and noise that may harm their hearing.<sup>1,2</sup> Almost 55% of firefighters' noise exposures exceed the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (85 decibels over 8 hours). Thirty-two percent of exposures exceed the Occupational Safety and Health Administration (OSHA) permissible exposure limit (90 decibels over 8 hours). While 65% of firefighters report that they use some form of hearing protection, only 19% reported receiving proper training regarding the use of hearing protection devices.
- Firefighters also experience work-related injuries, 50% of which are lower back, knee, and ankle sprains and muscle strains occurring on the fire line.<sup>4</sup> Between 2001 and 2012, 247 wildland firefighter deaths were reported. The most common causes of death were associated with aviation, vehicles, medical events, and entrapments or burnovers.<sup>7</sup>

### **Sleep deprivation contributes to behavioral health issues.**

Wildland firefighters often experience restricted sleep during deployments due to early shift schedules, longer deployments, and uncomfortable sleep accommodations that can include exposure to smoke, noise, and heat.<sup>5</sup> Insufficient sleep can result in:

- Physical health impacts, such as increases in work-related injury, cardiovascular disease, heart attacks, and systemic inflammation.
- Mental health impacts, such as increased risk of PTSD and depression.
- Cognitive impairment, such as slower reaction times, reduced awareness, impaired short-term memory, and decreased communication and decision-making abilities.

### **Compared to the general civilian population, firefighters are at heightened risk for depression, PTSD, and suicide.<sup>9,10</sup>**

- Volunteer firefighters often report higher rates of mental health difficulties such as depression, PTSD, and suicidal thoughts. They are less likely to receive mental health treatment than their paid counterparts.<sup>9,10</sup>

- Full-time firefighters typically have higher rates of problematic alcohol use.<sup>9</sup> Approximately 58% of firefighters engage in binge drinking and 14% engage in hazardous drinking.<sup>10</sup>
- Rates of mental health conditions experienced by wildland firefighters are difficult to find. These data are most commonly extrapolated from general firefighters, where 14–22% experience PTSD and 11% experience depression.<sup>10</sup> Given the previously mentioned impacts of the COVID-19 pandemic on work and social supports, wildland firefighters may be at increased risk of depression, PTSD, and suicide for the 2020 season.
- The suicide rate for firefighters is 18 out of 100,000, which is significantly higher than the 13 out of 100,000 in the general population.<sup>10</sup> In 2015, 2016, and 2017, there were 143, 139, and 103 reported suicides among firefighters in the United States, respectively.<sup>10</sup> The Firefighter Behavioral Health Alliance (FBHA) estimates that only about 40% of firefighter suicides are reported. If this estimate is correct, the actual number of suicides could be approximately 358 in 2015, 348 in 2016, and 257 in 2017. This is more than twice the number of firefighters who died in the line of duty during those years.<sup>3,9,10,11,12,13</sup>
- Across their career, approximately 47% of firefighters experience suicidal thoughts,<sup>10,14</sup> 19% contemplate a plan for death by suicide, 16% make an attempt, and 16% engage in non-suicidal self-injury.<sup>14</sup> When compared to their non-wildland firefighting counterparts, wildland firefighters experience disproportionately higher levels of suicide risk.<sup>6</sup>

**Despite the prevalence of PTSD, depression, substance abuse, and suicidal thoughts in firefighters, it is often very difficult for firefighters to find and access behavioral health resources.**<sup>10</sup>

- Accessing behavioral health resources is challenging for firefighters in normal circumstances. It is likely that the COVID-19 pandemic will create a high demand for behavioral health support among the general population. Thus, these resources may be even more difficult for wildland firefighters to access.
- Additionally, there is a lack of discussion around mental health symptoms. Firefighters may feel shame and guilt over mental health experiences.
  - They are consistently fearful of seeking services because of stigma, being placed on administrative leave, or being forced to leave their job.<sup>3,10,15</sup>
  - Many expect negative outcomes from behavioral health treatment and encounter organizational barriers, such as concerns getting time off from work and lack of access to a mental health provider who has experience working with firefighters.<sup>3,10</sup>
  - Firefighters also frequently worry that their colleagues will perceive them as weak, less skilled, or as a risk or liability to the rest of the team.

## Recognizing Signs of Burnout and Trauma

There are many signs of burnout and trauma. The symptoms listed in Table 1 (p. 5) are the most common. Individuals and organizations that work with wildland firefighters are encouraged to watch for these signs and take steps to provide support before symptoms get worse.

**Table 1: Symptoms of Burnout and Trauma<sup>16,17</sup>**

Physical Symptoms	Cognitive Symptoms	Emotional Symptoms	Behavioral Symptoms
<ul style="list-style-type: none"> <li>• Fatigue</li> <li>• Nausea</li> <li>• Rapid heart rate</li> <li>• Chest pain</li> <li>• Difficulty breathing</li> <li>• Dizziness</li> <li>• Headaches</li> <li>• Stomachaches</li> <li>• Fainting</li> <li>• Too hot/too cold</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty concentrating</li> <li>• Difficulty beginning a task</li> <li>• Forgetfulness</li> <li>• Intrusive thoughts, images, or sounds</li> <li>• Nightmares</li> <li>• Suspiciousness</li> <li>• Hyper alert</li> </ul>	<ul style="list-style-type: none"> <li>• Guilt</li> <li>• Shame</li> <li>• Worry</li> <li>• Anxiety</li> <li>• Sadness</li> <li>• Depression</li> <li>• Fear</li> <li>• Irritability</li> <li>• Anger</li> <li>• Panic</li> <li>• Denial</li> <li>• Grief</li> <li>• Overwhelmed</li> <li>• Restless</li> </ul>	<ul style="list-style-type: none"> <li>• Anger outbursts</li> <li>• Yelling</li> <li>• Crying</li> <li>• Withdrawal or isolating behaviors</li> <li>• Argumentative</li> <li>• Increased alcohol or drug use</li> <li>• Changes in appetite</li> <li>• Changes in sleep</li> </ul>

## RISK FACTORS

There are a number of risk factors that could help identify wildland firefighters who may be at risk for negative behavioral health impacts.

### **Risk factors associated with higher rates of depression, PTSD, anxiety, and burnout in firefighters:**

- Long hours or assignments<sup>18</sup>
- Working in unfamiliar or demanding circumstances<sup>18</sup>
- Not having enough job-related information<sup>18,19</sup>
- Having too many people to supervise<sup>18,19</sup>
- Having too many, conflicting, or unfamiliar job duties<sup>18,19</sup>
- Excessive exposure to gory sights/sounds and environmental hazards<sup>18,19</sup>
- Not taking at least one day off each week<sup>18</sup>

### **Risk factors associated with increased suicidal thoughts and behaviors in firefighters:**

- Lower firefighter rank<sup>14</sup>
- Fewer years of firefighter service<sup>14</sup>
- Membership in an all-volunteer department<sup>14</sup>

- History of professionally responding to a suicide attempt or suicide-related death<sup>14</sup>
- Active duty military status<sup>14</sup>
- Intimate partner problems<sup>15</sup>
- Job problems (such as tensions with a coworker, poor performance reviews, increased work pressure, or fear of being laid off)<sup>15</sup>
- Problems with alcohol<sup>15</sup>
- Symptoms of trauma<sup>15</sup>

## Support Strategies

This section outlines recommended support strategies for promoting resilience in wildland firefighters. Implementing these actions can promote resilience and reduce behavioral health impacts.

### OVERVIEW OF RECOMMENDED ACTIONS

- Build social and organizational support structures that promote behavioral health.<sup>6,18</sup>
- Foster positive relationships with coworkers.<sup>18,20</sup>
- Supervisors should establish and maintain supportive relationships with staff.<sup>18,20</sup>
- Supervisors should be open and approachable.<sup>18,20</sup>
- Maintain clear lines of communication with staff.<sup>21</sup>
- Establish strategies for firefighters to recover from work shifts.<sup>3</sup>
- Offer training on mental health support and resilience.<sup>3,18,21</sup>
- Encourage informal support among peers and colleagues.<sup>3,6,11</sup>
- Offer behavioral health resources and services.<sup>3</sup>

### PROMOTING RESILIENCE

Organizations can promote resilience by:

- Increasing social support in order to decrease stigma and shame associated with mental health symptoms. This also helps raise wildland firefighters' willingness to seek formal support.
  - Emphasize behavioral health programs, like peer support, an Employee Assistance Program (EAP), or an outside therapist. Build relationships with providers who have training and experience working with firefighters.<sup>3,6,8,15</sup>
  - Confidentiality may be a concern for those seeking in-house support, such as through peer support or EAP. Organizations can provide support by talking openly about mental health and common symptoms of trauma and burnout (Table 1, p. 5). By creating more opportunities to talk about shared experiences of trauma or feelings of anxiety and depression, wildland firefighters can better provide social and emotional support to each other.
- Emphasizing healthy sleep routines and optimizing sleep environments.<sup>5</sup> Motels provide higher sleep quality over tents or vehicles. Sleep environments that are cool, dark, and quiet can be hard to set up on site, but are still important goals. Provide earplugs to reduce noise.

- Consider moving sleeping areas away from high traffic areas (that is, areas with high foot traffic near arriving crew members).
- If sleep environments can't be optimized, plan for increased fatigue risk in the next day or shift. Schedule more frequent rest or coffee breaks. Increase communication or supervision.
- When possible, structure shifts to provide regular rest and recovery periods. Consider providing sleep and activity trackers (e.g., smartwatches) to firefighters for self-monitoring physical activity and sleep quality.
- Providing training on the use of hearing protection devices.<sup>1</sup>
- Providing information and training on relevant topics, such as compassion fatigue, burnout, symptoms of trauma,<sup>6</sup> and mindfulness techniques.<sup>3</sup>

## More COVID-19 Information and Resources

Stay up-to-date on the [current COVID-19 situation in Washington](#), [Governor Inslee's proclamations](#), [symptoms](#), [how it spreads](#), and [how and when people should get tested](#). See our [Frequently Asked Questions](#) for more information.

A person's race/ethnicity or nationality does not, itself, put them at greater risk of COVID-19. However, data are revealing that communities of color are being disproportionately impacted by COVID-19 – this is due to the effects of racism, and in particular, structural racism, that leaves some groups with fewer opportunities to protect themselves and their communities. [Stigma will not help to fight the illness](#). Share accurate information with others to keep rumors and misinformation from spreading.

- [WA State Department of Health 2019 Novel Coronavirus Outbreak \(COVID-19\)](#)
- [WA State Coronavirus Response \(COVID-19\)](#)
- [Find Your Local Health Department or District](#)
- [CDC Coronavirus \(COVID-19\)](#)
- [Stigma Reduction Resources](#)

**Have more questions about COVID-19?** Call our hotline: **1-800-525-0127**, Monday – Friday, 6 a.m. to 10 p.m., Weekends: 8 a.m. to 6 p.m. For interpretative services, **press #** when they answer and **say your language**. For questions about your own health, COVID-19 testing, or testing results, please contact a health care provider.

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To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 ([Washington Relay](#)) or email [civil.rights@doh.wa.gov](mailto:civil.rights@doh.wa.gov).

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