

## Cal-IHEA Quick Strike Consultation

### Evidence Review of Firefighters, Mental Health, and Suicide Risk

The Centers for Disease Control and Prevention (CDC) has the most comprehensive data on suicide rate comparisons by occupation. Using 2015 CDC data, suicide deaths were analyzed by Standard Occupational Classification (SOC) major groups for decedents aged 16-64 years from the 17 states participating in the 2015 National Violent Death Reporting System (NVDRS). The occupational group with the highest male suicide rate in 2015 was Construction and Extraction (53.2 per 100K) and the group with the highest female suicide rate was Arts, Design, Entertainment, Sports, and Media (15.6 per 100K).<sup>1</sup> Protective Services, which includes firefighters, ranked as the #2 occupational group with the highest suicide rate for women (12.2 per 100K) and #6 occupational group for men (28.2 per 100K).

Firefighters commonly encounter traumatic events during duty hours. In a study of seventeen traumatic experiences, firefighters with more traumatic experiences had more severe post-traumatic stress disorder (PTSD) symptoms<sup>2</sup>.

Potentially traumatic events	N	%
<b>Indirect PTE</b>		
1. I have had an experience of rescuing a seriously injured child or dealing with the dead body of a child.	117	54.2
2. I have had an experience of witnessing or dealing with a dead body.	174	80.6
3. I have had an experience of witnessing or dealing with a body of a suicide victim.	145	67.1
4. I have had an experience of working with mass casualty.	103	47.7
5. I have had an experience of exposure to toxic agents or infection.	90	43.7
6. I have had an experience of witnessing or dealing with a seriously injured person.	156	72.2
7. I have had an experience in which someone was injured or died on account of my actions.	8	3.7
<b>Total</b>	<b>195</b>	<b>92.0</b>
<b>Direct trauma PTE</b>		
8. I have had an experience of being physically assaulted by someone.	47	21.8
9. I have had an experience of someone attacking me with a gun or weapon.	71	32.9
10. I have experienced myself or my family being threatened.	35	16.2
11. I have had an experience of being in fear for my life while on duty.	138	36.9
12. I was seriously injured on duty.	65	30.1
<b>Total</b>	<b>150</b>	<b>70.8</b>
<b>Colleague-related PTE</b>		
13. Colleague(s) have died on duty.	93	43.1
14. Colleague(s) have been seriously injured on duty.	82	38.0
15. Colleague(s) have committed suicide.	36	16.7
<b>Total</b>	<b>120</b>	<b>56.6</b>
<b>Sexual PTE</b>		
16. I have had an experience of sexual assault or rape while on duty.	3	1.4
17. I have had an experience of sexual harassment while on duty.	11	5.1

Depression and post-traumatic stress disorder symptom severity are most strongly associated with lifetime suicidal ideation and attempts among firefighters<sup>3-5</sup>, suggesting that interventions targeting depression and PTSD management can reduce suicide rates among firefighters. Mindfulness interventions for PTSD have been identified as potentially helpful for suicide prevention among firefighters<sup>6</sup>, but no rigorous suicide prevention intervention studies have been conducted. Firefighters have high rates of exposure to physical (~33%) and sexual abuse (~25%) *outside* of the workplace, which increases their risk for suicidal thoughts and behaviors. Factors outside the workplace contribute to increased suicide risk and should be considered in suicide prevention interventions for firefighters.<sup>7</sup>

Data on health services utilization among firefighters is scant, but evidence indicates that young male firefighters (aged 30-39) are at higher risk of hospitalization compared to other employed men of similar age.<sup>8</sup> The majority of firefighters with a history of elevated suicide risk received mental health services in the past<sup>9</sup>, but more research is needed to understand the opportunities for delivering interventions to prevent suicide among firefighters.

#### References

1. Peterson C, Stone DM, Marsh SM, et al. Suicide Rates by Major Occupational Group 17 States, 2012 and 2015. *MMWR Morb Mortal Wkly Rep.* 2018;67(45):1253-1260. doi:10.15585/mmwr.mm6745a1
2. Lee JH, Lee D, Kim J, Jeon K, Sim M. Duty-Related Trauma Exposure and Posttraumatic Stress Symptoms in Professional Firefighters. *J Trauma Stress.* 2017;30(2):133-141. doi:10.1002/jts.22180
3. Martin CE, Tran JK, Buser SJ. Correlates of suicidality in firefighter/EMS personnel. *J Affect Disord.* 2017;208:177-183. doi:10.1016/j.jad.2016.08.078
4. Bing-Canar H, Ranney RM, McNett S, Tran JK, Berenz EC, Vujanovic AA. Alcohol Use Problems, Posttraumatic Stress Disorder, and Suicide Risk Among Trauma-Exposed Firefighters. *J Nerv Ment Dis.* 2019;207(3):192-198. doi:10.1097/NMD.0000000000000947
5. Stanley IH, Hom MA, Joiner TE. A systematic review of suicidal thoughts and behaviors among police officers, firefighters, EMTs, and paramedics. *Clin Psychol Rev.* 2016;44:25-44. doi:10.1016/j.cpr.2015.12.002
6. Stanley IH, Boffa JW, Tran JK, Schmidt NB, Joiner TE, Vujanovic AA. Posttraumatic stress disorder symptoms and mindfulness facets in relation to suicide risk among firefighters. *J Clin Psychol.* 2019;75(4):696-709. doi:10.1002/jclp.22748
7. Hom MA, Matheny NL, Stanley IH, Rogers ML, Cogle JR, Joiner TE. Examining Physical and Sexual Abuse Histories as Correlates of Suicide Risk Among Firefighters. *J Trauma Stress.* 2017;30(6):672-681. doi:10.1002/jts.22230
8. Lee DJ, Fleming LE, Gomez-Marín O, Leblanc W. Risk of hospitalization among firefighters: The National Health Interview Survey, 1986-1994. *Am J Public Health.* 2004;94(11):1938-1939. doi:10.2105/ajph.94.11.1938
9. Hom MA, Stanley IH, Ringer FB, Joiner TE. Mental Health Service Use Among Firefighters With Suicidal Thoughts and Behaviors. *Psychiatr Serv Wash DC.* 2016;67(6):688-691. doi:10.1176/appi.ps.201500177