The Ruderman White Paper on

Mental Health and Suicide of First Responders

Miriam Heyman, PhD

Jeff Dill, MA, NBCC

Robert Douglas, DCC

April 2018

The Ruderman Family Foundation

At the Ruderman Family Foundation, raise the profile of issues related to disability, inclusion, and mental health. We believe that full inclusion of people with disabilities is not a matter of charity, but of civil rights. Mental health and suicide among first responders is a topic that needs to be explicitly and frequently addressed by media outlets, policy makers, first responder professionals, and the public at large. We hope that this White Paper will spark a conversation about mental health that will ultimately facilitate access to services for all people, including first responders.

Our Mission

The Ruderman Family Foundation believes that inclusion and understanding of all people is essential to a fair and flourishing community. Guided by our Jewish values, we support effective programs, innovative partnerships, and a dynamic approach to philanthropy in our core area of interest: advocating for and advancing the inclusion of people with disabilities in our society. The Foundation provides funding, leadership, expertise and insight in the U.S. and Israel, with offices in both countries. Visit us at: http://www.rudermanfoundation.org

Primary Contributors

Miriam Heyman is a Program Officer at the Ruderman Family Foundation, where she is responsible for the oversight of programs related to disability inclusion. She began her career as a Special Education Teacher in the New York City Public Schools, and while teaching she earned a Master's degree in Special Education from the City University of New York. Miriam received a Ph.D. in Applied Developmental and Educational Psychology from Boston College, where she focused her studies on individuals with developmental disabilities and their families. Miriam is passionate about working towards inclusion in all settings and throughout the life

span. She has published research findings related to employment and the well-being of people with disabilities in several journals, including the Journal of Intellectual Disability Research, Early Child Development and Care, and The Journal of Vocational Rehabilitation. Miriam is also an adjunct faculty member at Boston College, where she teaches undergraduate and graduate psychology courses.

Jeff Dill founded the Firefighter Behavioral Health Alliance (FBHA) in 2011. Jeff travels the United States and Canada holding workshops to teach firefighters and EMS about behavioral health awareness and suicide prevention. FBHA is the only known organization that collects and validates data on firefighter and EMT suicides across the United States. In addition, FBHA holds classes for counselors / chaplains, family members, and first responders who are preparing for retirement. Jeff holds a Master's Degree in Counseling from Argosy University in Illinois, He is a Licensed Professional Counselor, and a retired Captain at Palatine Rural Fire Protection District in Inverness, Illinois.

Robert E. Douglas, Jr. is the Executive Director and Founder of the National Police Suicide Foundation, Inc. out of Seaford, Delaware. The Foundation provides educational training seminars for emergency responders on the issue of suicide / mental health. In July 1994, Bob retired as an Agent after serving 20 years with the Baltimore City Police Department and 5 years as a Patrol Officer with the Temple Terrace Police Department in Temple Terrace, Florida. He holds a B.S. Degree in Criminal Justice from the University of South Florida and a Masters of Science Degree in Criminal Justice Management from the University of Baltimore. Bob also has a Masters in Theology from St. Mary's Seminary and a Doctorate Degree in Christian Counseling from Kingsway University and Theological Seminary in Norwalk, Iowa. Bob lectures at the FBI National Academy on Mental Health / Suicide Prevention for Law

Enforcement personnel. He recently retired as the Senior Pastor at Jenkins Memorial Church in Riviera Beach, Maryland, where he has served for 24 years. Bob also served as Police Chaplain for FOP Lodge #3 in Baltimore City from 1988 to 2002 and served as Chaplain for Alcohol, Tobacco, and Firearms in Washington, D.C. Bob is also the founder of Compassionate Shepherd Ministries in Laurel, Delaware.

Additional Contributors

Ron Clark, RN, MS, APSO is a military veteran and a retired sergeant from the Connecticut State Police (CSP) with 23 years of law enforcement service. He was the first certified CSP Peer Helper and Instructor, commander of the EAP / Medical unit and was a member of the tactical team as an Advanced Life Support Medic. He was also the Senior Flight Nurse for the Med-Evac unit and coordinated the Surgeons and Chaplains program. He helped establish the first Critical Incident Stress Debriefing Team in Connecticut and served as its President. Clark holds a Master of Science degree in Counseling Education and has been a Registered Nurse since 1969. He served 12 years as the Chairperson of the Middlebury, CT, Police research and education collaborative dedicated to the health and well-being of law enforcement officers and the communities they serve.

William Evans is the Commissioner of the Boston Police Department. Evans was born in Boston and grew up in a crowded, triple-decker apartment. Evans was raised by his four older brothers after the death of his mother when he was three years old. In 1980, he was a Boston Police Cadet and joined the Boston Police Department in 1982. He spent five years as a patrolman, during which time he was awarded the BPD's Medal of Honor for his role in apprehending an armed robbery suspect following a high-speed chase. As a captain, Evans was first stationed in District 14, which consisted of the Allston-Brighton neighborhood of Boston. It

was the BPD's most densely populated district and contained 75,000 residents. Evans continued to move up the ranks throughout his years of service, and in 2009, Evans was promoted to Superintendent in charge of the Bureau of Field Services, overseeing special events and the Department's patrol division. Evans played a role in the peaceful handling of Boston's 70-day occupation of Dewey Square and had pivotal responsibilities in the Boston Marathon bombing strategic response team. On November 1, 2013, Mayor Menino appointed Evans Interim Commissioner of the Boston Police Department. In January 2014, Mayor Walsh invited Evans to serve as Police Commissioner on a permanent basis. Evans has made historic strides in diversity and inclusion by appointing the first black Superintendent-in-Chief, William Gross, and bolstering his command staff with a 40% representation of minorities and women.

Table of Contents

Executive Summary

Overview

The unparalleled bravery of first responders is brought to the attention of the public following huge and tragic events, such as the recent incidents of terror in Parkland, Las Vegas, Orlando, Sandy Hook, and more. However, public discourse seldom acknowledges the fact that first responders witness tragedy and horror regularly, if not daily. Constant exposure to death and destruction exerts a toll on the mental health of first responders, and yet many do not disclose mental health issues nor do they access treatment. This paper seeks to raise awareness about the issue of mental health among first responders in order to alleviate stigma and facilitate access to services.

Focus and Findings

This paper presents data on the prevalence of mental illness and suicide among first responders. Key take-aways are as follows:

- Police and firefighters, when compared to the general civilian population, are at heightened risk for depression, post-traumatic stress disorder (PTSD), and suicide. These findings are also relevant for EMS workers, but since many EMS workers are also firefighters, these two professions are often undistinguished in research.
- Both police officers and firefighters are more likely to die by suicide than in the line of duty.
- At least 22 Massachusetts firefighters have taken their own lives since 1996, and 4 EMS workers have died by suicide since 1997. On average, there is one *reported* firefighter suicide per year in Massachusetts. The actual number is likely much higher. *We estimate that the suicide rate for firefighters in Massachusetts is twice as high as the suicide rate*

for the general Massachusetts population. This is the first paper to report state-specific data on first responder suicide for Massachusetts.

- The vast majority of first responder suicides are not covered by the mainstream media, and the public is not given the opportunity to celebrate the lives of those lost.
- There are several barriers that prevent first responders from accessing mental health services, including shame and stigma. These same barriers prevent families from talking openly about the suicide of a loved one, thereby contributing to silence and lack of awareness around the issue of first responder suicide.
- There are also several innovative approaches to promoting mental health among first responders, and many of them are currently at work in the city of Boston.

Conclusions

Leaders within the first responder professions are beginning to speak openly about mental health. Commissioner Evans of the Boston Police Department speaks openly about how he prioritizes his own mental health and the mental health of his officers. There is still a lot of work to be done to ensure that all first responders feel encouraged and not ashamed to access critical and potentially life-saving mental health services. Recommended next steps include exploring instituting *mandatory* mental health check-ups for first responders. Also, we should celebrate the lives of first responders who die by suicide. Through media coverage and more, they should be remembered as heroes.

Introduction

First responders witness horror on a daily basis. These men and women, including firefighters, law enforcement personnel, and emergency medical services (EMS) workers, have front row seats to the horrendous aftermath of natural disasters, terrorist attacks, violent domestic

disputes, traffic accidents, and more. Many first responders have military experience, and therefore their experiences as first responders pile onto a career that is already rife with trauma. These professionals embody astounding bravery and resilience, but at the end of the day, they are only human. Constant exposure to death and destruction exerts a psychological toll on first responders, resulting in post-traumatic stress disorder (PTSD), substance abuse, depression, and even suicide. This paper brings to light the high rates of mental illness and suicide among first responders. It is critical to address this issue in order to destigmatize mental illness so that our heroes are able and comfortable to access the care that they need. Their lives depend on it.

In the aftermath of "big events", news outlets illuminate the heroism of first responders. In the days and years following the September 11th attacks on the World Trade Center, the 2017 terror attack in Las Vegas, and the recent wildfires in California, the American public learned of the rescuers who sacrificed their health and well-being in order to save others. This recognition is well-deserved and important; the public should know about and celebrate the men and women who ran towards the collapsing buildings, bullets, and wildfires so that they might have a chance to save a life. However, often missing from these portraits of heroism is the acknowledgement that *first responders are exposed to trauma on a daily basis*. Law enforcement personnel use the term *critical incidents* to describe traumatic events, examples of which are listed in Table 1. In one survey of 193 police officers from small and midsize police departments, officers reported the number of critical events that they had witnessed during the course of their career. The average number of events witnessed by officers was 188 (Chopko, Palmieri, and Adams, 2015). Also, the officers had witnessed a wide variety of horror; on average, the events that they witnessed fell into 15 different categories (the categories are listed in Table 1 below).

Several *academic* studies have documented trauma and its consequences among first responders. These studies provide an important base of information, but they are not widely disseminated outside of academic circles and therefore do not by themselves raise public awareness about the critical issue of mental health. In one study of 400 police officers, 10% of those surveyed reported that they had killed or seriously injured someone during the first three years of their career (Komarovskaya et al., 2011). Clearly, traumatic experience is not restricted to the big news events that the American public sees on television.

Table 1: Critical Incidents in the Law Enforcement Profession (taken from Chopko et al., 2015)
Mistake that injures / kills colleague
Mistake that injures / kills bystander
Colleague killed intentionally
Colleague killed accidentally
Being taken hostage
Being seriously beaten
Being shot at
Colleague injured intentionally
Kill or injure in the line of duty
Badly beaten child
Sexually assaulted child
Trapped in life-threatening situation
Severely neglected child
Threatened with a gun
Your loved ones threatened
Seriously injured intentionally
Life-threatening man-made disaster
Exposed to AIDS or other diseases
Colleague injured accidentally
Shoot at suspect without injury
Threatened with knife / other weapon
Mutilated body or human remains
Life-threatening natural disaster
Life threatened by toxic substance
See someone dying
Making a death notification
Being seriously injured accidentally
Life-threatening high speed chase
Sexually assaulted adult
Animal neglected, tortured, killed
Decaying corpse
Life threatened by dangerous animal
Body of someone recently dead
Badly beaten adult

It is not surprising that exposure to trauma is linked to mental health issues, including PTSD and substance abuse. In one study of 750 police officers, researchers found that exposure to critical incidents was statistically significantly correlated with alcohol use and PTSD symptoms (Menard & Arter, 2013). Officers who had experienced more critical incidents were more likely than their colleagues who had experienced fewer such incidents to report experiencing PTSD symptoms and using alcohol.

It is clear that first responders experience trauma as they respond to events that do not necessarily make national news, and yet the mainstream media is only beginning to talk about the intersection between mental illness and the lived experiences of firefighters and law enforcement officers. Relevant headlines include, "Increasing First Responder Suicide Rates Spark Concern" (US News and World Report), "Firefighter Raising Awareness about Risk of Depression, Suicide, For First Responders" (NBC Washington), and "A Quiet Rise in Wildland Firefighter Suicides" (The Atlantic). As this paper will demonstrate, given the prevalence of mental illness and suicide among first responders, the media must pay more attention to this issue. This will be a critical step towards destigmatizing the receipt of mental health services for those who need it most, the bravest among us who put their lives in danger daily in order to protect us all.

Prevalence of Mental Illness

Dozens of articles have been published in research journals which document prevalence rates of mental health issues among various groups of first responders. These articles are important because they document the mental health crises that impact first responders. As this paper argues, a critical next step will be to bring this issue to the forefront of public attention.

This section begins with a review of the prevalence rates of issues including alcohol abuse, depression, suicidal ideation, and PTSD. Firefighters and law enforcement officers are discussed in turn, and this information is summarized in Table 2. Trauma and mental health are also relevant for EMS workers, but since a vast number of these individuals are also firefighters, most research does not distinguish between the two (Stanley, Hom, & Joiner, 2016). Therefore, the discussion of firefighters is applicable to EMS workers as well.

The major takeaway from the academic research is that multiple forms of mental illness are more common among first responders than among civilians. Suicide is among the most devastating consequences of mental illness, and numerous studies have documented the extent to which mental illness (including alcohol abuse, depression, and PTSD) is a risk factor for suicide among first responders. These issues are described below, and are followed in the next section by a discussion of the toll of mental illness – including diminished work capacity and most tragically, suicide.

Table 2: Mental Health Outcomes

Mental health outcome	*Fire fighters*	*Police officers*	*General population*
PTSD	14.6% - 22% [1]	35% [2]	6.8% (in one's lifetime)[3]
Depression	11%[4]	9%[5] - 31%[6]	6.7%[7]
Thoughts about suicide	46.8% (ever)	7.8% (pervasive)	unknown

[1] Martin, Vujanovic, Paulus, Bartlett, Gallagher, & Tran, 2017
[2] Austin-Ketch, Violanti, Fekedulegn, Andrew, Burchfield, & Hartley, 2012
[3] United States Department of Veterans Affairs, 2017
[4] Carey, Al-Zaiti, Dean, Sessanna, & Finnell, 2011
[5] Robert Douglas, personal communication
[6] Obidoa, Reeves, Warren, Reisine, & Cherniack, 2011
[7] National Institute of Mental Health, 2017

Firefighters

According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5), PTSD is a condition that results from exposure to "death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence" (American Psychiatric Association, 2013). The person who suffers from PTSD "persistently" re-experiences the event in forms such as flashbacks and nightmares, and general well-being is impacted through symptoms that include trouble sleeping, trouble concentrating, irritability, and feelings of isolation, self-blame, and more (American Psychiatric Association, 2013). Several studies have documented high rates of PTSD among firefighters. In one study, researchers administered a standardized measure of PTSD called the Impact of Events Scale – Revised to 94 paid professional firefighters, and they gave the same assessment to 91 professionals from occupations outside of emergency service (Wagner, McFee, & Martin, 2010). The firefighters scored statistically significantly higher than the group of other professionals on the measure of PTSD; in fact, their scores were approximately twice as high. It is important to note that there is diversity within the firefighter community, and firefighters from different backgrounds might be more or less susceptible to PTSD. For example, some geographic locations have easily available mental health services, while it might be more difficult to access these services in relatively remote areas. Also, different attitudes towards mental health exist across cultures (i.e., Hispanic versus Caucasian), and this impacts the likelihood that firefighters will seek mental health treatment. Finally, paid firefighters might be more likely to receive mental health services through their departments than their volunteer counter parts. While these differences are important, the several studies that have investigated PTSD among firefighters have each concluded that the rate of PTSD is higher for firefighters than for civilians, regardless of

geographic region (urban versus rural), ethnicity, and paid versus volunteer status (Arbona & Schwartz, 2016; O'Neill & Wagner, 2012; Wagner et al., 2010). Clearly, PTSD is a pervasive challenge among the men and women who risk their lives to save the lives of others.

In addition to documenting the prevalence of PTSD among firefighters, researchers have also noted high rates of binge and hazardous drinking behavior. One research team examined drinking among female firefighters, and found that 40% reported binge drinking during the previous month, and 16.5% of female firefighters who used alcohol screened positive for problem drinking behaviors (Haddock, Poston, Walker, Jahnke, & Jitnarin, 2017). Another study included both male and female firefighters and found even higher rates of binge and hazardous drinking – 58% and 14%, respectively (Carey, Al-Zaiti, Dean, Sessanna, & Finnell, 2011). These same researchers found a depression rate of 11% in their sample of 112 firefighters, compared to 6.7% in the general United States population of adults ages 18 and over. The consequences of depression, substance abuse and PTSD are severe; in a survey of more than one thousand fire fighters from across the country, 46.8% reported thinking about or imagining suicide at least one time during their career (Stanley, Hom, Hagan, & Joiner, 2015). Statistics on completed suicides are presented later in this paper.

Taken together, this research documents the prevalence of mental illness among firefighters. As subsequent sections demonstrate, mental illness exerts a huge toll, with consequences including diminished work performance and even suicide. These studies also demonstrate that within the academic and research circles, people are paying attention to the issue of firefighter mental health. A common theme throughout this paper is that the time is now to expand this conversation to the larger community. This will help erase the stigma around

mental health, so that our heroes feel comfortable accessing the help that they so desperately need.

Law enforcement officers

Police officers respond to different calls than firefighters, but across these two professions, we see a similar impact of trauma on mental health. We saw previously that there is diversity among firefighters, and there is diversity among law enforcement personnel as well. These professionals come from different cultural backgrounds, they have different personal histories, and they occupy a wide array of roles in law enforcement. Each of these factors and many more impact how people respond to traumatic events, what services they can access, and how they feel about accessing these services. Despite this diversity, we see a pattern of poor mental health outcomes among our heroes in blue. In one survey of 220 corrections officers, researchers identified a depression rate as high as 31% (Obidoa, Reeves, Warren, Reisine, & Cherniack, 2011). This figure is astounding in light of the 6.7% prevalence rate in the general population (National Institute of Mental Health, 2017). Other studies of law enforcement officers have obtained smaller estimates of depression prevalence (9% in a sample of police officers), but even with this smaller estimate, the prevalence of depression is higher within this profession than within the civilian population (Robert Douglas, personal communication).

Our police officers deal with other mental health issues as well. One team of researchers estimated the prevalence of PTSD to be 35% (Austin-Ketch, Violanti, Fekedulegn, Andrew, Burchfield, & Hartley, 2012). These processes have disastrous consequences; in one survey of 193 active police officers in a Midwestern state, 7.8% agreed with the statement, "found the idea of taking your own life kept coming into your mind" (Chopko, Palmieri, & Facemire, 2014).

As we saw with firefighters, considerable effort within the academic and research communities has been made to identify and document mental illness among law enforcement personnel. This epidemic of mental illness among first responders has disastrous consequences for the men and women in uniform, and for all members of society. This paper will turn to a discussion of these consequences, which range from diminished daily functioning to suicide. The paper will then highlight barriers to care, as well as a discussion of promising practices in the arena of first responder mental health, with a focus on Boston.

The Toll of Mental Illness

Mental Illness in the Daily Life of First Responders

Depression, PTSD, and substance abuse cause suffering for individuals with these conditions and their family members. This human suffering is sufficient justification to pay attention to the widespread prevalence of mental illness among the first responder community. In addition to the impact on individuals, the cost to society of ignoring these issues is high; we know that mental illness is treatable, and yet without treatment, it can severely impact and limit functioning. Our society depends on the intuition, energy, and decision-making skills of first responders, and untreated mental illness exerts a toll on these capacities. One study conducted by researchers at the University of Toronto demonstrates how dangerous it is to ignore the mental health crises among our first responders. Researchers interviewed emergency workers from several different professions, including police officers, police communicators, paramedics, and child protection workers. They assessed the extent to which each study participant had PTSD, and they also exposed study participants to simulated emergencies in the research laboratory. They found that first responders with PTSD showed "performance deficits on complex cognitive tasks", which could include tasks that required first responders to assess risks,

plan multi-step responses to an emergency, and pay attention to competing stimuli (i.e., more than one victim and / or perpetrator) (Regehr & LeBlanc, 2017). This research finding makes perfect intuitive sense; symptoms of PTSD include flashbacks and intrusive thoughts, and when people are distracted, they are less able to devote attention to the task at-hand. We frequently hear about the impact of distracted drivers – drivers who are texting are dangerous behind the wheel, for example. Distraction in the form of PTSD is no less dangerous when it impacts the decision making of first responders. One study found that within a sample of more than 3,000 firefighters, those who had PTSD symptoms were more likely to report having work-related injuries, compared to their colleagues who did not have PTSD (Katsavouni, Bebetsos, Malliou, & Beneka, 2016). And yet all too often, we ignore the PTSD, fail to provide adequate treatment, and contribute to the diminished capacity of our first responders. In an article that appeared in the FBI's National Academy Associate Magazine, one police officer shared, "When I was involved in my first shooting, I was cleared right away and I wasn't given any administrative time off. Basically they bought you a beer and told you you were a hero. You had to deal with it all on your own, and there weren't any department resources, not even a chaplain to talk to."

Mental health can be deleterious to physical health, and poor physical health interferes with first responders' abilities to complete their daily work. Therefore, the relationship between mental health and physical health is another piece of evidence that ignoring the mental health of first responders is costly to our society. All humans exert stress hormones such as cortisol, and moderate levels of these hormones are normal and healthy. However, when levels of stress become toxic and hormone levels increase, this exerts a physiological toll on the body. Heightened levels of cortisol disrupt functioning of the immune and metabolic systems, for example. Given the high rates of mental illness among first responders, we would expect to see

heightened rates of poor physical health outcomes as well, and there is research to support this hypothesis. In one study conducted by researchers at the Centers for Disease Control and Prevention, researchers compared several health indicators between a cohort of police officers and the general American population. The study found that "a higher percentage of officers were obese (40.5% vs. 32.1%), had a metabolic syndrome (26.7% vs. 18.7%), and had higher mean serum total cholesterol levels (200.8 mg/dL vs. 193.2 mg/dL) than the comparison employed populations (Hartley, Burchfiel, Fekedulegn, Andrew, & Violanti, 2011). Physical health is an essential prerequisite for a productive and reliable workforce. With physical health so dependent on mental health, we are doing ourselves a disservice by ignoring the mental health crisis among first responders.

Suicide

Suicide is the most catastrophic consequence of failing to treat mental illness. PTSD, depression, and alcohol abuse are often present before a suicide, and therefore we should view these disabilities as opportunities to provide treatment that could potentially save lives. In one study of firefighters, researchers found that elevated levels of PTSD were associated with a higher likelihood of thinking about suicide and / or having a history of suicide attempts (Boffa, Stanley, Hom, Norr, Joiner, & Schmidt, 2017). Other researchers reached a similar conclusion about the relationship between depression and thinking about suicide; firefighters who reported experiencing depression were more likely than their non-depressed colleagues to think about suicide (Martin, Tran, & Buser, 2017). Substance abuse also plays a critical role in suicide; alcohol is present in over 85% of police officer suicides (Robert Douglas, personal communication).

Suicide is the tragic result of mental illness that so often goes untreated and / or ignored. *This paper is the first to present suicide rates across several categories of first responders. As such, it should be a critical call to action for all who care about our heroes in red and blue.* Data regarding suicide rates of firefighters and police officers is described below, and compared to suicide rates among the general civilian population. Table 3 below provides a summary of the statistics on suicide.

Table 3: Suicide Rates

	Firefighters	*Police officers*	*General population*
Suicide rate	18 / 100,000[8]	11-17 / 100,000[8]	13 / 100,000[8]

Note. Suicide prevalence rates for police officers come from the Badge of Life. Suicide data for firefighters was provided by the FBHA, and prevalence rates were calculated as described below. Please see the methodology section for more information.

In 2017, at least 103 firefighters and / or EMS workers across the United States committed suicide. Data for firefighters and EMS workers is combined, since many professionals play both roles. In the paragraphs that follow, to avoid confusion, this group will be referred to as firefighters.

The 103 firefighter deaths represent a decrease from previous years; there were 143 and 139 reported suicides in 2015 and 2016, respectively. In contrast, there were 93 firefighters who died in the line of duty in 2017. *Firefighters are more likely to die by suicide than in the line of duty*. Data on firefighter suicide comes from the Firefighter Behavioral Health Alliance (FBHA), an organization that receives confidential reports on firefighter suicide through its website. For each reported suicide, the Founder of FBHA contacts the Chief of the deceased's fire department to validate the report. While FBHA is well-known among firefighters, many firefighters have not heard of the organization and therefore the number of reported suicides is an

undercount of the actual number of suicides. FBHA estimates that approximately 40% of firefighter suicides are reported. If this estimate is correct, *the actual number of 2017 suicides would be approximately equal to 257. This is more than twice the number of firefighters who died in the line of duty.* This estimate of 257 was divided by the total number of career and volunteer firefighters in the country plus the total number of EMS workers in the country, to arrive at the prevalence rate listed above in Table 3, which is strikingly higher than the prevalence rate for the general population.

The suicide rate among police officers is also shockingly high. An organization called Badge of Life is conducting ongoing web surveillance to capture police suicide data. According to a publication by the organization, "In this age of world web communications, a police suicide in even the smallest and most remote community is generally transmitted nationally and through police websites, forums, and blogs" (O'Hara, Violanti, Levenson, & Clark, 2013). As many as 55,000 websites are reviewed each year by organization staff. This review has identified 141 suicides in 2008, 143 suicides in 2009, 126 suicides in 2012, 108 suicides in 2016, and 140 suicides in 2017 (the years for which data is available). Numbers of police officer suicide deaths and line of duty deaths fluctuate annually, but in 2017 there were 129 line of duty deaths, in contrast to 140 suicides. In 2012, Ronald Davis, the Director of the Office of Community Oriented Policing Services (COPS) announced that the number of police officer deaths from suicide that year was "twice as high as compared to traffic accidents and felonious assaults during 2012" (IACP, 2014). *As is the case with firefighters, in 2017, police officers were more likely to die by suicide than in the line of duty.*

Regarding the comparison between national police officer suicide rates and national civilian suicide rates, according to statistics collected by the Badge of Life, police officer suicide

rates fluctuate around the suicide rates of the general population, and in some years the rate of police officer suicide is considerably higher than the rate of civilian suicide. In 2008, the police officer suicide rate was 17/100,000, compared to a general rate of 11/100,000. This discrepancy has declined recently; in 2016 there were 12 police officer suicides per every 100,000 officers, compared to 13 civilian suicides per every 100,000 civilians. This lower rate of police officer suicides compared to civilian suicides might be unique to 2016; in 2016 there were 108 police officer suicides, and in 2017 there were 140 (a 30% increase).

Also, according to Ron Clark of the Badge of Life, the suicide rate for police officers should be even lower than the suicide rate among the civilian population. This is because police officers must pass psychological assessments before they are allowed entry into the law enforcement profession. Therefore, at entry into the field of law enforcement, *all police officers meet a baseline of mental health*. The suicides we see must reflect deterioration of mental health that occurs after men and women become police officers.

This issue is not adequately addressed through policy or practice. In the words of Craig Steckler, the President of the International Association of Chiefs of Police, "Officer mental health is an issue of officer safety, and we should treat it as such. From body armor and seatbelt use policies, to self-defense and verbal judo training, we can all list a variety of measures available to ensure our officers' physical safety. But what are we doing to actively protect and promote their mental and emotional health? Sadly, in many cases, it is not enough" (IACP, 2014).

Unfortunately Massachusetts is not immune to the catastrophe of first responder suicide, and this is the first publication to bring this startling fact to light. Data for Massachusetts is separated for firefighters versus EMS professionals. In Massachusetts, at least 22 firefighters

have died by suicide since the year 1996, averaging about one death each year. Numbers from recent years indicate that there might be an increase in the prevalence of firefighter suicide in Massachusetts. There were three reported deaths in 2013, 5 in 2014, 2 in 2015, 2 in 2016, and in 2017, at least two firefighters died by suicide. While these numbers from recent years are higher than the one death per year average noted above, it is also possible that we are seeing a rise in reporting, and not a rise in actual death by suicide.

If we use the most recent year for which data is available, 2017, then the two *reported* firefighter deaths that year yield a suicide prevalence rate of 8.3/100,000, with an estimated total of 24,000 firefighters in Massachusetts, according to the State Fire Marshall's office (Jeff Dill, personal communication). If we assume that those two deaths represent 40% of the actual number of firefighter deaths by suicide, then the prevalence rate grows to 20.8/100,000. This is in contrast to the overall suicide prevalence rate of 9/100,000 in Massachusetts. At a bare minimum, firefighters commit suicide at the same rate as others in Massachusetts. If we assume that the number of reported suicides is lower than the number of actual suicides (which is by all means a fair assumption), *we can arrive at the hypothesis that firefighters commit suicide at more than twice the rate of other residents of Massachusetts*.

At least four emergency medical services workers living and working in Massachusetts have taken their own lives since 2007. State-specific data on police officer suicide is not available, but there is no reason to believe that police officers in Massachusetts are immune to the mental health crises that impact their colleagues across the country. See Table 4.

Table 4: Massachusetts Suicides		
	Firefighters (since 1996)	*EMS workers (since 2007)*
Suicides in Massachusetts	22	4

Note. Suicide information comes from the FBHA. Please see the methodology section for more information.

There are a couple of caveats that need to be presented alongside this data. First, while comparisons to the general civilian population can be instructive, they should be interpreted with caution. Suicides in the general civilian population are more common among males than females (National Institute of Mental Health, 2017), and the majority of both firefighters and police officers are male. The second caveat is as follows. Experts in the field unanimously agree that the reported suicides reflected in the numbers above are a vast underestimation. Shame prevents family members from disclosing the suicide of loved ones. As noted previously, experts estimate that the data on firefighters cited above only represents 40% of actual firefighter suicides. There is underreporting of police officer suicides as well. Shame and stigma breed incentives for hiding the suicide of a loved one; in some police departments, officers who die by suicide are not buried with honor, and the names of officers who die by suicide are not permitted on the National Law Enforcement Memorial in DC. Departments are also wary to acknowledge death by suicide; the President of the International Association of Chiefs of Police has referenced "collective silence" and a "refusal to speak openly about the issue" of mental health and suicide (IACP, 2014). As a result of shame and stigma surrounding suicide experts, estimate that "approximately 17% of police suicides are misclassified as accidents or undetermined deaths" (O'Hara et al., 2013).

This paper will now turn to a discussion of the barriers that impede progress around the issues of first responders, mental health, and suicide. It will conclude with promising practices – programs and policies across the nation and in our local Boston community that have accepted the call to better serve our nation's heroes.

Barriers to Progress

The issue of first responder suicide is complex and difficult to address. Approximately 90% of police officers who commit suicide use a gun, and it is not possible to limit police officer access to these weapons (Robert Douglas, personal communication). There are also cultural barriers – personality traits that exist within the men and women who become first responders in the first place, cultures within the professions and the departments, and lack of awareness across the American public about mental health in general. In additional to these cultural barriers, policies within departments make it difficult for first responders to access the critical and life-saving mental health care that they need. Accessibility and affordability of services are examples of these policies that, for better or for worse, can impact mental health outcomes. This section explores cultural barriers and policy impediments to promoting positive mental health among first responders. The white paper then concludes with a look at promising practices – a window into policies and programs in Massachusetts and beyond that are pushing the needle on first responder mental health.

Cultural Barriers Among First Responders

The men and women who choose to become first responders, the people who make a career out of risking their lives to help others, see themselves as tough. Experts describe first responders as "macho" and having a "lack of empathy" for mental health issues (Bell & Eski, 2016). The President of the International Association of Chiefs of Police has said, "In a

profession where strength, bravery, and resilience are revered, mental health issues and the threats of officer suicide are often 'dirty little secrets' – topics that very few want to address or acknowledge" (IACP, 2014). In fact, not only are people embarrassed to speak openly about their struggles with mental health, they fear that speaking out could negatively impact their career advancement. There is the perception that honesty around mental illness could be "career destroying" (Bell & Eski, 2016). This perception is not unjustified; as described previously, young men and women who wish to become police officers must pass a mandatory psychological screening. To some extent, mental health is a prerequisite for this work.

In this climate in which no one talks about mental health, first responders feel isolated and do not access the help that they so desperately need. Ron Clark, Chairman of Badge of Life, says that countless officers who have struggled with mental health issues have said to him, "I feel like an orphan in my own department" (Ron Clark, personal communication). The irony is that first responders *perceive* their colleagues to be judgmental about mental health issues, but this perception might not accurately reflect reality. In one study of 248 police officers, officers shared their own perceptions of mental illness, and they also shared how they think their colleagues perceived mental illness. The police officers indicated that their colleagues were unaccepting of mental illness, and yet those same colleagues were less judgmental than their colleagues assumed them to be (Karaffa & Koch, 2016). One can infer from these results that officers do not talk about mental illness with their colleagues, and silence is interpreted as negative judgment. From this same survey, researchers found that officers who assumed their colleagues were judgmental about mental health issues were less likely than other officers to access mental health services for themselves.

Given the lack of conversation around mental health amongst first responders, it is perhaps not surprising that conversation around suicide is also sparse. The majority of police departments do not have a policy related to police officer suicide within their organization (Robert Douglas, personal communication). Of the 18,000 law enforcement agencies across our nation, approximately 3-5% have suicide prevention training programs (Robert Douglas, personal communication). Clearly, departments are reluctant to openly address this issue, although there are exceptions, which are discussed later in this paper. In departments in which silence prevails, officers and firefighters who are contemplating suicide do not know that they are not alone. They do not know that there are people out there who can help them, and that they must not be ashamed to ask for help.

In summary, there is not enough conversation about mental health within police and fire departments. Silence can be deadly, because it is interpreted as a lack of acceptance and thus morphs into a barrier that prevents first responders from accessing potentially life-saving mental health services.

Lack of Awareness Within the Larger American Public

Stigma around mental illness is not isolated within fire, police, and EMS departments. According to the National Alliance on Mental Illness, on average, children and teens with mental illness wait eight to ten years after the onset of symptoms to access mental health services. This can be attributed to many factors, including people's lack of knowledge about their own condition, an unwillingness to self-identify as a person in need of mental health services, shame, fear, embarrassment, and lack of availability of services. All of these factors relate to stigma. If young children were educated about mental health, if policy makers prioritized and funded mental health services to the same extent as other medical services, and if people spoke openly

about mental illness so as to eradicate shame – if all of these elements of stigma were erased from our society – people would no longer wait ten years before accessing services. This would diminish suffering and also enable people to fulfill their potential; research cited earlier in this paper found that the experience of mental illness can interfere with decision making, a skill that is critical for our first responders that devise emergency responses on a daily basis. Raising public attention around mental illness will lead to all people accessing services more quickly after the onset of symptoms, and our first responders are included among the people who will benefit. This will reduce the number of suicides, and also enable our first responders to fulfill their duties to the best of their abilities.

Yet despite the imperative of having a society that acknowledges mental illness and the importance of mental health services, major media outlets stay relatively silent around this issue as it pertains to first responders. As described in an earlier section of this paper, firefighters are more likely to die by suicide than in the line of duty. Similarly, about twice as many police officers die by suicide than are killed by gunshot or in a traffic accident, combined. And yet from reading the news or watching it on television, one would never guess this. An online search of the New York Times revealed *no articles about police officer or firefighter suicide in 2017*. The lead author of this paper entered the search terms "police officer suicide" and restricted the dates to search for articles published between January 1st 2017 and January 29th 2017. *Zero relevant articles appeared*. Then, the lead author entered the terms "firefighter suicide", and restricted the dates to the same range. The New York Times published no articles about firefighter death by suicide during this time period. There are older articles about first responder suicide, such as an article published in 2003 entitled Officer Shoots Himself. However, since we know that there are dozens of first responder suicides every year, it is still

fair to conclude that the mainstream media outlets stay relatively silent on this issue. In contrast, media outlets provide extensive coverage of first responders who are killed in the line of duty. New York Times headlines from the most recent twelve months include, Officials Piece Together Chaotic Events After Officer Killed, and A Risk We Choose: Emergency Workers Mourn One of Their Own, and The Latest: Suspect in Deputy's Death Appears in Court. This coverage is appropriate, since these men and women are heroes who should be publicly acknowledged and mourned. Yet stories about first responder suicides are rare, likely feeding a public impression that this is not an issue. The public needs to know about this as an issue, so that our citizens can push policy makers to devote funds, and so that our first responders can feel supported instead of ashamed as they make the brave decision to access services.

The Boston Globe has published pieces related to first responder mental health, most notably a piece in 2016 entitled True Crime: The toll of duty. This piece was an important first step, and yet it did not provide data regarding the prevalence of suicide in Massachusetts. Also, in a search of Boston Globe articles conducted in the same manner as the New York Times search (described above), only four articles were found (in an unlimited date range) that covered the suicide of a first responder. We know that suicides in Massachusetts occur annually for firefighters alone, and more than annually when police officers are taken into account; they should be brought into the public light in order to reduce stigma and facilitate access to care.

Pragmatic Barriers

Shame and stigma are arguably the strongest barriers that stand between first responders and mental health services. However, it is important to acknowledge pragmatic barriers as well, including the convenience of accessing services, work schedules that permit mental health treatment, etc. Surveys of both police officers and firefighters have revealed that these pragmatic

barriers are pervasive. In one online survey administered to 525 firefighters from across the United States, firefighters reported on the cost and availability of mental health services (Stanley, Boffa, Hom, Kimbrel, & Joiner, 2017). The responses from these firefighters suggest that access to services is particularly problematic for volunteer firefighters, and as a result, this particular group of first responders has worse mental health outcomes than career first responders. Police officers, especially those who work for small police departments (not large urban centers), also report pragmatic barriers to service access (Violanti, Hartley, Mnatsakanova, Andrew, & Burchflel, 2012). When the American public pays attention to issues surrounding the mental health of first responders, decision makers will feel pressure to remove these pragmatic barriers. Raising awareness about these issues is a critical step in the right direction.

Steps in the Right Direction

Legislative Action

In January of 2018, President Trump signed into law the Law Enforcement Mental Health and Wellness Act. This law provides funding for peer mentoring programs, designed to enable law enforcement officers to get help from those who truly understand their experiences – their law enforcement colleagues. The law also calls for an evaluation of the effectiveness of other initiatives, including crisis hotlines and mandatory mental health wellness checks. This is a critical step in the right direction, as it explicitly addresses pragmatic barriers by providing funds for services.

First Responder Leadership

Several first responders have called for greater attention to the issue. Jeff Dill, a retired firefighter, founded the Firefighter Behavioral Health Alliance (FBHA) in 2011, and the organization is dedicated to raising the profile of issues surrounding mental health, and

challenges related to on-the-job trauma and the stressors of retiring. FBHA staff travel over 130,000 air miles every year presenting workshops on subjects including addictions, PTSD, depression, suicide, retirement, and developing programs for families. FBHA also does consulting work for organizations who want to develop or enhance their own behavioral health programs. FBHA was recently hired by the San Diego Fire Department to assist in developing their program.

The National Police Suicide Foundation (NPSF) is a comparable organization devoted to addressing this issue as it pertains to law enforcement officers. NPSF provides educational seminars to educate the general public along with law enforcement organizations on suicide awareness and prevention. The organization also provides scholarships for family members nationwide who lost loved ones to law enforcement suicide. The mission of NPSF is to provide suicide awareness and prevention training programs and support services that will establish a standard of care for emergency responders and promote employee wellness.

Police leadership is paying attention. The President of the International Association of Chiefs of Police has declared that "officer mental health is an issue of officer safety" (IACP, 2014). In 2014, the International Association of Chiefs of Police (IACP) issued a report entitled Breaking the Silence of Law Enforcement Suicides. This report contains suggestions for specific programs and policies that departments can adopt in order to push the needle on this issue. For example, peer support and employee assistance programs should ensure that first responders receive care from others who understand their unique experiences – other first responders. Family training programs alert family members to the warning signs of depression, PTSD, substance abuse, and suicide, so that families can look out for their loved ones and refer them to care if needed. Some departments encourage annual mental health check-ups. The report also

provides sample policies and procedures for departments to follow after an officer experiences a critical incident. These policies may include mandatory mental health services, or time off to facilitate access to mental health services. Finally, the report suggests recommendations for ways in which a department can honor the life of an officer who died by suicide. Hopefully, respectful celebrations of life will reduce much of the shame that family members experience following these tragic events.

Perhaps most importantly, the 2014 report calls for culture change. It reads,

> "Unfortunately, in many law enforcement departments the culture toward mental wellness or addressing emotional problems of any kind is one of disdain and avoidance. The presumption within this culture is often that the mere presence of an emotional problem indicates a weakness on the officer's part. That perception leads to the even more dangerous perception that being open about these issues can make the officer vulnerable, even to the point of losing his or her job. Significant progress in curbing officer suicide and enhancing officer mental wellness is only achievable if the culture does an about-turn toward openness and support for all aspects of officer health and wellness, particularly mental health."

Indeed, culture change is necessary in order for our first responders to feel encouraged and not ashamed to access the care that the need. In order to achieve culture change, first responder leadership must be vocal. The 2014 IACP report explains, "Hearing from the chief personally and candidly carries a tremendous amount of weight. In particular, police chiefs or others who have triumphed over their own mental health issues should champion this subject and share their own success stories." This paper now sheds light on how Boston leadership is championing the issue of first responder mental health. Boston is lucky to have leaders who acknowledge the issue and are working towards enormous change.

Boston

The Boston Police Department

Since 2013, Commissioner William Evans has led the Boston Police Department. Commissioner Evans was interviewed for this white paper, and during this interview, he conveyed a strong commitment to the mental health of his officers. Commissioner Evans encourages his officers to seek mental health treatment by speaking about his own experiences. He talks openly about the stress, trauma, and exhaustion that he experienced in the aftermath of the Boston Marathon Bombing, during which he led the mission that ultimately led to the arrest of Dzhokhar Tsarnaev. After the arrest, Commissioner Evans' wife encouraged him to seek counseling. He says, "It's one of the best things she ever did, make me go talk to someone. I did it. It was good. Now I like to tell that story to people."

And Evans does tell this story to people – he recently visited officers in the United Kingdom to discuss mental health in the aftermath of the shooting at the Ariana Grande concert. Evans, along with several other Boston Police Officers, have met with officers in the United Kingdom to express solidarity and to help erase stigma associated with the after-shocks of terrorism- depression, PTSD, anxiety, and more. Evans also visits trainees in the academy, and expresses to them the importance of health, both physical and mental.

According to Evans, the Boston Marathon bombing was pivotal in changing attitudes about mental health amongst Boston police officers. He recalls a time in which officers were supposed to be "tough guys" in the aftermath of tragedy, without any time off or encouragement to seek counseling. Now, after a critical incident, an officer is encouraged to access the Department's array of mental health services, and paid time off can be provided. The Boston Police Department has a residential campus for mental health services where officers can stay for up to one week, and visits are completely anonymous. The Boston Police Department also has a partnership with McLean Hospital, which in the aftermath of the Marathon Bombing, agreed to

provide psychological services to police officers at very low cost. Officers also have access to a premiere athletic facility, their family members receive education and support regarding mental health issues, and they benefit from the fundraising and programming of the Boston Police Foundation, an organization that is committed to promoting mental health and wellness. And as stated earlier, in Commissioner Evans, Boston police officers have a leader who sees the value in promoting mental health awareness.

When asked what he wishes he could accomplish in the realm of mental health, Commissioner Evans explained that mental health checks and services following critical incidents are voluntary and not mandatory. He wishes he could automatically provide paid time off and care to all officers who witness a tragedy. This is a clear and relevant vision for the future. His mere articulation of this vision is a step in the right direction for first responders across the country, as it explicitly acknowledges the importance of mental health.

The Boston Fire Department

Patrick Hayes is a Lieutenant of the Boston Fire Department and the Employee Assistance Program Coordinator. This program enables firefighters to discuss mental health and related issues with their peers and colleagues – other firefighters. It also provides additional services, including referrals to treatment programs at places including McLean Hospital.

Lieutenant Hayes acknowledges the need to provide firefighters with mental health services, and he is also well aware that these services are more effective when they are peer-to-peer. He explained, "A cop isn't going to want to talk to me. You generally gravitate towards your own people. The Peer Support Model is important. There are no civilians." According to Lieutenant Hayes, this program is an asset to Boston. It has existed here since the 1980s, and

many fire departments across the country don't have similar programs, or any programs that utilize a peer support model.

Lieutenant Hayes agrees with Commissioner Evans that the Boston Marathon Bombing was a turning point with regard to how the city confronts mental health among first responders. After the bombing, firefighters became able to receive administrative leave with pay for absences related to mental health. Similar to the police department, the fire department formed a partnership with McLean Hospital following the bombing, enabling firefighters to receive services there through their insurance. With regard to the influence that the Marathon Bombing had on the fire department's awareness of mental health, Lieutenant Hayes said that after this horrific event, he and several of his colleagues began to "see the light". In many ways, our city responded to tragedy by becoming stronger, more aware, and building resilience through facilitating access to mental health services.

As is the case across the country, there still do exist pragmatic barriers to care for firefighters in Boston. Lieutenant Hayes explained that many people must go out of state for substance abuse treatment, in order to go to a facility that aligns with their insurance coverage. Lieutenant Hayes believes that if more people could access care within Massachusetts, more people would get care overall.

The Boston Medical Community

Boston is known for its excellence in medicine, and the medical community here has taken on the issue of first responder mental health. The community has also extended the issue to consider the impact of trauma on all hospital professionals. Dr. Brendel, a psychiatrist at Massachusetts General Hospital, expressed during an interview that given the vast exposure to trauma among first responders and hospital employees, mental health issues should be expected,

and therefore should not be referred to as "disorders" at all. Instead, we should speak of mental illness as an "occupational hazard" – a normal part of the job experience for both first responders and hospital employees.

Even before the Marathon Bombing, Boston was a recognized leader in the area. In 2008, Boston hosted a meeting supported by the CDC for international leaders from first responder and medical professions. The purpose was to discuss how to prepare for emergencies, and this preparation included addressing first responder mental health. Each participating hospital made changes based on the findings from the convening. At Massachusetts General Hospital, they implemented a system in which three mental health teams responded to each emergency: one team to help survivors directly, one team to help family members of victims, and a third team dedicated to employee mental health. This was in place at Massachusetts General Hospital before the Marathon Bombing, and there is no doubt that after the bombing, employees benefitted as a result.

Currently, hospital leadership is continuing to emphasize the importance of mental health. Dr. Paul Biddinger is an emergency physician at Massachusetts General Hospital and the Chief of the Division of Emergency Preparedness. He sees mental health as a critical part of his work. Dr. Biddinger encourages all hospital staff and first responders to debrief together following a resuscitation. He also speaks publicly about his own emotional experiences during and after the Marathon Bombing, thus setting an example for his colleagues across the hospital. The hospital is currently exploring cutting-edge innovation that will move the needle on this issue. Application software can enable employees to "check in" so that they can monitor their own well-being, and be encouraged to access help when needed. Dr. Biddinger and his team are exploring this and other solutions to raising awareness and facilitating access to care.

Conclusion

First responders experience trauma as a regular part of their job. Perhaps not surprisingly, when compared to members of the civilian population, they experience heightened levels of depression, PTSD, suicidal thoughts, and more. First responders are more likely to die by suicide than to die within the line of duty. There is hardly any media attention devoted to this issue, contributing to a pervasive silence, shame, and stigma. These factors make it more difficult for first responders to access potentially life-saving mental health services.

It is time to raise awareness of this issue, both within the first responder profession and across the wider American public. Attention to this issue will lead to a removal of pragmatic and stigma-related barriers to care. Boston is a leader in the field, and it is time for the rest of the nation to follow in its footsteps. Also, in light of the leadership provided by Boston, there is the opportunity for Boston to continue to expand its leadership in the area. Commissioner Evans alluded to policies including mandatory mental health check-ups and the automatic receipt of paid time off following exposure to critical incidents. Boston should take the lead in this area to demonstrate its commitment to our everyday heroes.

Methodology

Data on firefighter suicide was collected by the Firefighter Behavioral Health Alliance (FBHA), an organization that receives confidential reports on firefighter suicide through its website. For each reported suicide, the Founder of FBHA contacts the Chief of the deceased's fire department to validate the report. While FBHA is well-known among firefighters, many firefighters have not heard of the organization and therefore the number of reported suicides is an undercount of the actual number of suicides. FBHA estimates that approximately 40% of firefighter suicides are reported.

Badge of Life collected police suicide data through its web surveillance methodology. According to a publication released by the organization, "In this age of world web communications, a police suicide in even the smallest and most remote community is generally transmitted nationally and through police websites, forums, and blogs" (O'Hara, Violanti, Levenson, & Clark, 2013). As many as 55,000 websites are reviewed each year by organization staff.

Information about other mental health outcomes including depression and PTSD was gathered from academic journals by the lead author on this paper, a developmental psychologist. Information regarding innovation and opportunity nationally and in Boston was collected through several interviews with content experts, including the people listed as co-authors and contributors: Jeff Dill, Dr. Robert Douglas, Ron Clark, and William Evans. Other experts interviewed include: Lieutenant Patrick Hayes of the Boston Fire Department; Dr. John Herman, Associate Chief, Department of Psychiatry at Massachusetts General Hospital; Dr. Paul Biddinger, Chief, Division of Emergency Preparedness, and Director, Center for Disaster Medicine at Massachusetts General Hospital; Dr. Rebecca Brendel, Medical Director, The One Fund Center.

REFERENCES

Arbona, C., & Schwartz, J.P. (2016). Posttraumatic stress disorder symptom clusters, depression, alcohol abuse, and general stress among Hispanic male firefighters. *Hispanic Journal of Behavioral Sciences, 38*(4), 507-522. doi: 10.1177/0739986316661328

Austin-Ketch, T.L., Violanti, J., Fekedulegn, D., Andrew, M.E., Burchfield, C.M., & Hartley, T.A. (2012). Addictions and the criminal justice system, what happens on the other side? Post-traumatic stress symptoms and cortisol measures in a police cohort. *Journal of Addicitons Nursing, 23*(1), 22-29. doi: 10.3109/10884602.2011.645255

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.).

Anonymous. (2003, September 2). Officer shoots himself. *New York Times*. Retrieved from http://www.nytimes.com/2003/09/02/nyregion/officer-shoots-himself.html

Bell, S., & Eski, Y. (2016). Break a leg – it's all in the mind: Police officers' attitudes towards colleagues with mental health issues. *Policing: A Journal of Policy and Practice, 10*(2), 95-101. doi: 10.1093/police/pav041

Boffa, J.W., Stanley, I.H., Hom, M.A., Norr, A.M., Joiner, T.E., & Schmidt, N.B. (2017). PTSD symptoms and suicidal thoughts and behaviors among firefighters. *Journal of Psychiatric Research, 84*, 277-283. doi: 10.1016/j.jpsychires.2016.10.014

Brown, S.R. (2016, September 12). 9/11 first responder acts the hero again 15 years later helping Queens neighbor. *Daily News*. Retrieved from http://www.nydailynews.com/new-york/queens/9-11-responder-acts-hero-15-years-article-1.2789251

Callahan, B. (2017, October 4). First responders to Las Vegas mass shooting tell stories of heroism. *ABC News.* Retrieved from https://www.ktnv.com/news/first-responders-tell-stories-of-heroism

Carey, M.G., Al-Zaiti, S.S., Dean, G.E., Sessanna, L., & Finnell, D.S. (2011). Sleep problems, depression, substance use, social bonding, and quality of life in professional firefighters. *Journal of Occupational and Environmental Medicine, 53*(8), 928-933. doi: 10.1097/JOM.0b013e318225898f

Centers for Disease Control and Prevention (2018). *Emergency medical services workers*. Retrieved from https://www.cdc.gov/niosh/topics/ems/

Chopko, B.A., Palmieri, P.A., & Facemire, V.C. (2014). Prevalence and predictors of suicidal ideation among U.S. law enforcement officers. *Journal of Police and Criminal Psychology, 29*(1), 1-9. doi: 10.1007/s11896-013-9116-z

Freyer, F.J. (2017, March 1). Suicides in Mass. rise 40 percent in a decade. *Boston Globe*. Retrieved from https://www.bostonglobe.com/metro/2017/02/28/suicides-mass-rise-percent-decade/jzG4aS5aylM9ufJe2aEXrK/story.html

Gentzler, D., & Romano, C. (2017, June 21). Firefighter raising awareness about risk of depression, suicide for first responders. *NBC News*. Retrieved from https://www.nbcwashington.com/news/health/Firefighter-Raising-Awareness-About-Risk-of-Depression-Suicide-for-First-Responders-430000343.html

Goodman, D.J. (2017, March 25). A risk we choose: Emergency workers mourn one of their own. *New York Times*. Retrieved from https://www.nytimes.com/2017/03/25/nyregion/bronx-emt-worker-funeral-woodlawn-cemetery.html?mtrref=query.nytimes.com&auth=login-email

Haddock, C.K., Poston, W.S., Jahnke, S.A., & Jitnarin, N. (2017). Alcohol use and problem drinking among women firefighters. *Womens Health Issues, 27*(6), 632-638. doi: 10.1016/j.whi.2017.07.003

Hansman, H. (2017, October 29). A quiet rise in wildland firefighter suicides. *The Atlantic*. Retrieved from https://www.theatlantic.com/health/archive/2017/10/wildland-firefighter-suicide/544298/

Hartley, T.A., Burchfiel, C.M., Fekedulegn, D., Andrew, M.E., & Violanti, J.M. (2011). Health disparities in police officers: Comparisons to the U.S. general population. *International Journal of Emergency Mental Health, 13*(4), 211-220.

IACP (International Association of Chiefs of Police). 2014. *IACP National Symposium on Law Enforcement Officer Suicide and Mental Health: Breaking the Silence on Law Enforcement Suicides*. Washington, DC: Office of Community Oriented Policing Services.

Karaffa, K.M., & Koch, J.M. (2016). Stigma, pluralistic ignorance, and attitudes toward seeking mental health services among police officers. *Criminal Justice and Behavior, 43*(6), 759-777. doi: 10.1177/0093854815613103

Katsavouni, F., Bebetsos, E., Malliou, P., & Beneka, A. (2016). The relationship between burnout, PTSD symptoms and injuries in firefighters. *Occupational Medicine, 66*(1), 32-37. doi: 10.1093/occmed/kqv144

Komarovskaya, I., Maguen, S., McCaslin, S.E., Metzler, T.J., Madan, A.,..& Marmar, C.R. (2011). The impact of killing and injuring others on mental health symptoms among police officers. *Journal of Psychiatric Research, 45*(10), 1332-1336. doi: 10.1016/j.psychires.2011.05.004

Martin, C.E., Tran, J.K., & Buser, S.J. (2017). Correlates of suicidality in firefighter / EMS personnel. *Journal of Affective Disorders, 208*, 177-183. doi: 10.1016/j.jad.2016.08.078

Martin, C.E., Vujanovic, A.A., Paulus, D.J., Bartlett, B., Gallagher, M.W., & Tran, J.K. (2017). Alcohol use and suicidality in firefighters: Associations with depressive symptoms and

posttraumatic stress. *Comprehensive Psychiatry, 74*, 44-52. doi: 10.1016/j.comppsych.2017.01.002

Menard, K.S., & Arter, M.L. (2013). Police officer alcohol use and trauma symptoms: Associations with critical incidents, coping, and social stressors. *International Journal of Stress Management, 20*(1), 37-56. doi: 10.1037/a0031434

National Alliance on Mental Illness (2014). *Mental health facts*. Retrieved from https://www.nami.org/getattachment/Learn-More/Mental-Health-by-the-Numbers/childrenmhfacts.pdf

National Institute of Mental Health (2017). *Major depression*. Retrieved from https://www.nimh.nih.gov/health/statistics/major-depression.shtml

National Institute of Mental Health (2017). *Suicide*. Retrieved from https://www.nimh.nih.gov/health/statistics/suicide.shtml

National Law Enforcement Officers Memorial Fund (2018). *Officer fatality data*. Retrieved from http://www.nleomf.org/facts/officer-fatalities-data/year.html

O'Neill, M., & Wagner, S.L. (2012). Mental health implications of volunteer fire service membership. *Disaster Prevention and Management, 21*(3), 310-319. doi: 10.1108/09653561211234499

Obidoa, C., Reeves, D., Warren, N., Reisine, S., & Cherniack, M. (2011). Depression and work family conflict among corrections officers. *Journal of Occupational and Environmental Medicine, 53*(11), 1294-1301. doi: 10.1097/JOM.0b013e3182307888

Ohara, A.F., Violanti, J.M., Levenson, R.L., & Clark, R.G. (2013). National police suicide estimates: Web surveillance study III. *International Journal of Emergency Mental Health and Human Resilience, 15*(1), 31-38.

Police One. (2018). Trump signs mental health bill for police officers. *PoliceOne.com*. Retrieved from https://www.policeone.com/health-fitness/articles/469073006-Trump-signs-mental-health-bill-for-police-officers/

Regehr, C., & LeBlanc, V.R. (2017). PTSD, acute stress, performance and decision-making in emergency service workers. *Journal of the American Academy of Psychiatry and the Law, 45*(2), 184-192. doi: 10.1037/t12199-000

Singal, S. (Producer). (2017, October 12). CA wildfire firefighters lose homes while saving others. *NBC Nightly News*. Retrieved from https://www.nbcnews.com/nightly-news/video/ca-wildfire-firefighters-lose-homes-while-saving-others-1072165443756

Stanley, I.H., Boffa, J.W., Hom, M.A., Kimbrel, N.A., & Joiner, T.E. (2017). Difference in psychiatric symptoms and barriers to mental health care between volunteer and career firefighters. *Pyschiatry Research, 247*, 236-242. doi: 10.1016/j.psychres.2016.11.037

Stanley, I.H., Hom, M.A., Hagan, C.R., & Joiner, T.E. (2015). Career prevalence and correlates of suicidal thoughts and behaviors among firefighters. *Journal of Affective Disorders, 187*, 163-171. doi: 10.1016/j.jad.2015.08.007

Stanley, I.H., Hom, M.A., & Joiner, T.E. (2016). A systematic review of suicidal thoughts and behaviors among police officers, firefighters, ETMs, and paramedics. *Clinical Psychology Review, 44*, 25-44. doi: 10.1016/j.cpr.2015.12.002

United States Department of Veterans Affairs (2017). *Epidemiology of PTSD*. Retrieved from https://www.ptsd.va.gov/professional/PTSD-overview/epidemiological-facts-ptsd.asp

Venteicher, W. (2017, March 25). Increasing first responder suicide rates spark concern. *US News and World Report*. Retrieved from https://www.usnews.com/news/best-states/pennsylvania/articles/2017-03-25/increasing-first-responder-suicide-rates-spark-concern

Violanti, J.M., Hartley, T.A., Mnatsakanova, A., Andrew, M.E., & Burchflel, C.M. (2012). Police suicide in small departments: A comparative analysis. *International Journal of Emergency Mental Health, 14*(3), 157-162.

Wagner, S.L., McFee, J.A., & Martin, C.A. (2010). Mental health implications of fire service membership. *Traumatology, 16*(2), 26-32. doi: 10.1177/1534765610362803

Weiss, J. (2016). The toll of duty. *The Boston Globe*. Retrieved from https://apps.bostonglobe.com/true-crime/toll-of-duty/