



MINNESOTA FIREFIGHTER INITIATIVE (MNFIRE) | 2023

Taking the Lead

The state of firefighter health in Minnesota



EXPLORE Minnesota

FIR

• 10,000 lakes

<u>4</u>	<u>Introduction — MnFIRE Executive Director Wayne Kewitsch</u>
<u>6</u>	<u>Overview — Hometown Heroes Assistance Program</u>
<u>12</u>	<u>Q&A — MnFIRE President and Co-founder George Esbensen</u>
<u>14</u>	<u>Feature — Austin Fire Chief Jim McCoy</u>
<u>16</u>	<u>Feature — Coon Rapids Firefighter Christian Worby</u>
<u>18</u>	<u>Feature — St. Bonifacius Captain William Ewald</u>
<u>22</u>	<u>Firefighter Cardiovascular Diseases — Dr. Paul J. Anderson</u>
<u>26</u>	<u>The Firefighter Cancer Epidemic — Dr. Zeke McKinney, Steve Shapira</u>
<u>30</u>	<u>Sleep Insufficiency in the Fire Service — Dr. Nick Blonien</u>
<u>34</u>	<u>The Winter Blues — Dr. Melinda R. Coscarelli, PhD</u>
<u>36</u>	<u>Meet MnFIRE Peer Supporters</u>
<u>38</u>	<u>In the News</u>
<u>40</u>	<u>Social Media</u>
<u>42</u>	<u>Firefighter Health Forum</u>
<u>44</u>	<u>MnFORE Golf Tournament</u>
<u>46</u>	<u>Looking Ahead</u>
<u>47</u>	<u>PeerConnect App</u>

Hometown Heroes Assistance Program Delivers Immediate Impact on Minnesota Firefighters' Lives

Every few years, a pundit declares that the nonprofit model is broken, made up of slow-moving dinosaurs with too much overhead, too much bureaucracy and a lack of focus on impact.

Those pundits likely haven't met many firefighters.

When the Minnesota Legislature passed the [Hometown Heroes Assistance Program](#) on June 30, 2021, the Minnesota Firefighter Initiative (MnFIRE) sprang into action to implement an assistance program with expanded emotional trauma resources, an up-to-\$20,000 critical illness policy and ongoing health and wellness training for the state's 20,000 firefighters.

Much of the program was up and running in just one month, with MnFIRE paying out claims almost immediately. The MnFIRE Assistance Program, modeled on employee assistance programs familiar to many for-profit companies, went live on Oct. 1, 2021.

How was MnFIRE, a 501(c)3, able to sidestep the pitfalls that often emerge when the government approves a large amount of funding to a nonprofit



organization — in this case, \$4 million a year?

In the fire service, we're trained to act fast in the face of a crisis, so we took a decidedly nontraditional approach to implementing this important program. The key to its fast-turn success was partnering with two important private-sector companies, both already making a huge impact in the marketplace: Optum and Securian. Bringing those two companies to the table allowed MnFIRE to implement the Hometown Heroes Assistance Program quickly, efficiently and effectively. In addition to building a consortium of partners to get things done, MnFIRE was able to lock in rate guarantees, which means that there's no reason to ask the legislature for a rate increase during this current session.

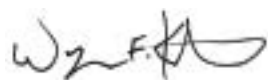
By leveraging these massive Minnesota-based companies and their track record of successfully delivering similar — although not exactly identical — services to corporate America, and not spending valuable time and resources on distractions like hiring employees or building out office space, MnFIRE was able to generate results, and offer free, life-saving resources to our state's firefighters, almost immediately.

In this annual report, you'll find stories about the impact the Hometown Heroes As-

“In the fire service, we're trained to act fast in the face of a crisis, so we took a decidedly nontraditional approach to implementing [the Hometown Heroes Assistance Program].”

sistance Program is having on Minnesota's fire service, and details about how it is already demonstrating significant return on the legislature's investment. And we're just getting started. Thanks in no small part to the Hometown Heroes Assistance Program, 2022 was another landmark year for Minnesota firefighter health and wellness. All of us in the fire service would like to offer our sincere thanks to the legislators who have made an unprecedented difference in the lives of our state's hometown heroes, their families and their communities. Your support means everything to us.

If you have any questions at all about the program, please don't hesitate to contact me at 612-819-8848 or wkewitsch@mnfireinitiative.com.



Wayne Kewitsch
EXECUTIVE DIRECTOR



Hometown Heroes Assistance Program Elements



- Up to 5 no-cost yearly personal and confidential sessions with trained professionals.
- Can be matched with a trained peer supporter.
- If you are in crisis or need support, call 1-888-784-6634 or visit mnfireinitiative.com.



- A free insurance policy providing up to \$20,000 towards expenses after a diagnosis of cancer, cardiac or other critical illness.
- To file a claim, call 1-888-784-6634 or visit mnfireinitiative.com.



- Ongoing, free annual training to keep you up to date on occupational health risks.
- Basic awareness training and deep-dive sessions covering cancer, emotional trauma, cardiac, nutrition and family.
- Sign up at mnfiretraining.org.

MnFIRE Assistance Program (MAP)

Confidential help is available over the phone or online, anytime for any firefighter and/or their family. The MnFIRE Assistance Program (MAP) targets emotional health and stress unique to the fire service through connection to mental health care and peer support.

Phone lines are answered 24/7 and provide confidential support, guidance and mental health resources. Any member of a firefighter's household, including children living away from home, can access the MAP. Effective October 1, 2021, each firefighter and/or their family members can access up to five counseling visits a year (additional support is ensured as needed). Firefighters are also matched with a member of MnFIRE's team of trained peer supporters who know firsthand the difficulties firefighters face and are well-equipped to walk alongside a firefighter in need as they navigate their situation.



For more details or for help,
call 888-784-6634 or visit
liveandworkwell.com.
Access code: MnFIRE.

“Going into the fire service, every candidate expects to fight fires, but the fact of the matter is we’re 80% medical response and that has a highly emotional response. The emotional aspect was heavy for me,” says William Ewald of the St. Bonifacius Fire Department.



“I’ve learned how to better manage my stress and help me get through it so it’s not so impactful on myself or my family.”

MnFIRE Critical Illness Program

All Minnesota firefighters have been automatically enrolled in a statewide Critical Illness insurance policy which covers diagnoses of cancer, cardiac or other critical illnesses, and provides a lump-sum cash payment up to \$20,000 to assist with expenses. For instance, if you have a heart attack either on the job or mowing the yard, you can receive a cash payout to help manage expenses like medical bills and travel costs to and from specialist visits.

The effective date is August 1, 2021, which means all qualified claims for diagnosed illnesses from that date on are eligible.



For more information
or to file a claim, call 888-784-6634
or visit securian.com/mnfire-insurance.

“This program has allowed me and my family to focus on my treatment rather than worry about our finances due to the cancer diagnosis,” says Christian Worby, a Coon Rapids firefighter battling multiple myeloma.



“It’s great having the extra financial support. It’s an extra safety net. It’s an expensive deal having a major illness.”

MnFIRE Awareness Training

Free annual MnFIRE Awareness training on the different health risks facing firefighters is already available for every Minnesota firefighter, and the Hometown Heroes Assistance Program allows us to provide additional awareness and cardiac, emotional wellness and cancer deep-dive trainings to keep the momentum going. The list of available training topics continues to expand, and this year also includes sleep, fitness and nutrition, and a session specifically tailored to fire service spouses and significant others.



For more information or to register for training, visit mnfiretraining.org.

Bret Anderson, Lake Elmo firefighter, is grateful for the support:

“Thank you, as a firefighter, for all that MnFIRE does to educate and assist the fire service in preparing, protecting and preserving our bodies and minds both for now and for the future.”

The Hometown Heroes Assistance Program also funds annual MnFIRE Awareness trainings for medical doctors and mental health professionals statewide. This ensures that all firefighters in Minnesota have regional access to informed and trained medical professionals to help with prevention, mitigation, diagnosis and treatment of cardiac issues, emotional trauma and cancer.



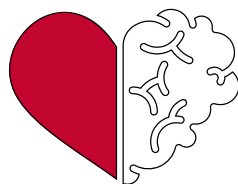
Minnesota firefighters can receive help for a crisis. Find out more information or file a claim by calling 888-784-6634 or visiting mnfireinitiative.com.



In July 2021, the Minnesota Legislature passed and the Governor signed the most comprehensive firefighter well-being legislation in the nation. Already the Hometown Heroes Assistance Program has supported hundreds of peer support calls and visits with mental health providers, trained the majority of the state's firefighters on their occupational health risks, and has paid out \$1.5M in critical illness claims.

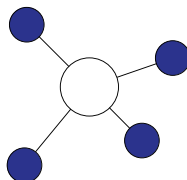
The Hometown Heroes Assistance Program dedicates \$4 million per year to ensure that every Minnesota firefighter has access to the education, prevention and care needed to handle a cardiac, emotional trauma or cancer diagnosis.

Since its inception, the program has changed — and saved — lives by providing:



850+ FIREFIGHTER-FOCUSED MENTAL HEALTH PROVIDERS across the state to offer up to five no-cost counseling sessions to firefighters and their families.

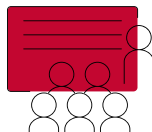
In the first year, the MnFIRE Assistance Program has facilitated **745+ PROVIDER VISITS**.



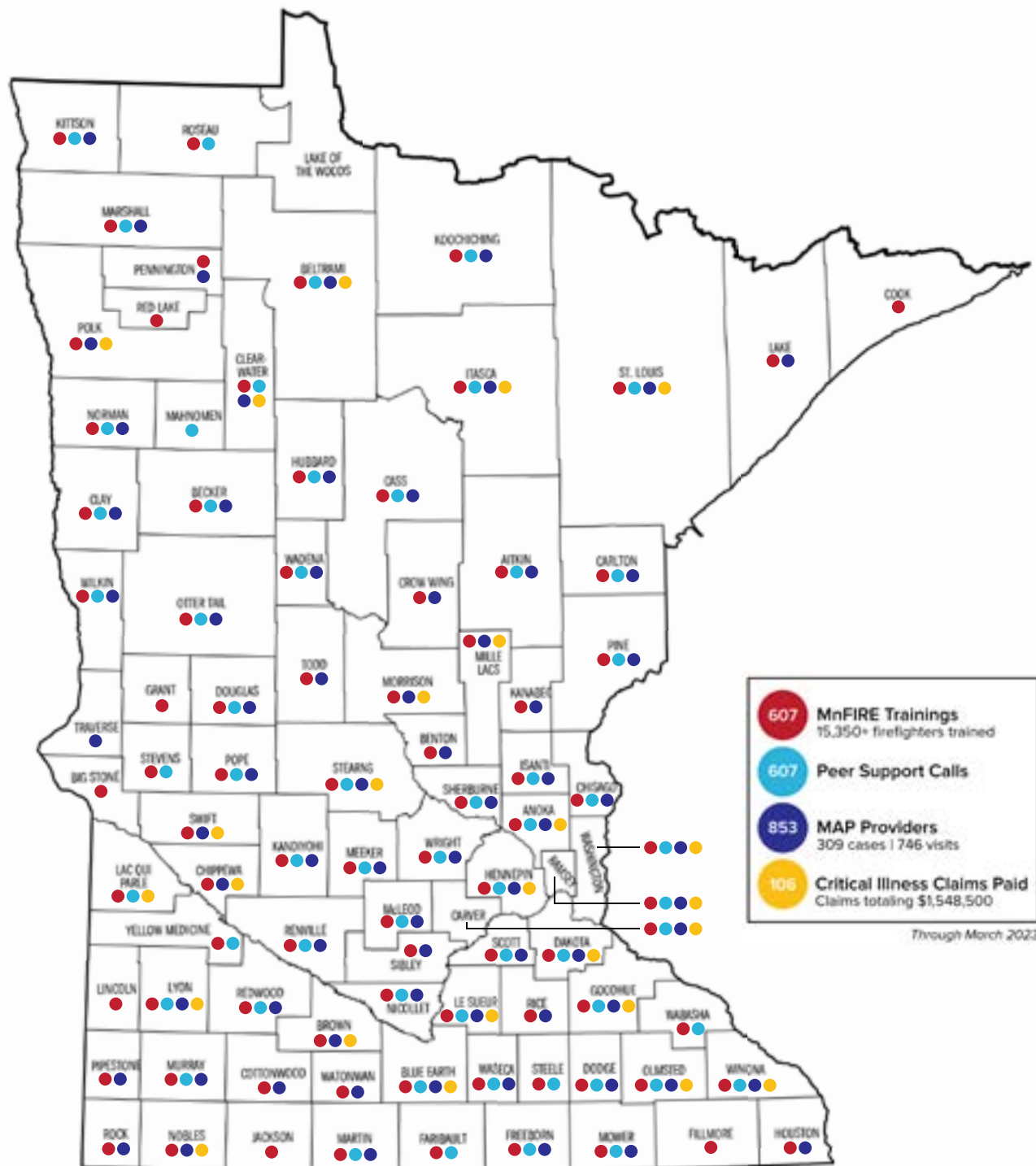
An expanded network of trained MnFIRE peer supporters, which responded to **600+ CALLS**.



105+ PAID CRITICAL ILLNESS CLAIMS, totaling **\$1.5 MILLION**. Illnesses have included full-benefit cancer, COVID-19, post-traumatic stress disorder, skin cancer, other cancer, ALS, heart attack, sudden cardiac arrest, heart disease, kidney failure, coronary artery disease needing surgery and other mental disorders.



600+ MnFIRE TRAININGS to **15,350+ FIREFIGHTERS**.



This major milestone in the fight for Minnesota firefighter health has provided support to firefighters in 86 of Minnesota's 87 counties and combines three vital elements, all led by the Minnesota Firefighter Initiative (MnFIRE): an assistance program with expanded emotional trauma resources, an up-to-\$20,000 critical illness policy, and ongoing health and wellness training.

All active Minnesota firefighters statewide — volunteer, paid-on-call, part-time and full-time — can access the MnFIRE Assistance Program, are automatically enrolled in the Critical Illness insurance policy and can receive training — all at no cost to them.

Minnesota firefighters can receive help for a crisis, find out more information or file a claim by calling 888-784-6634 or visiting mnfireinitiative.com.

A Champion for Change

Q & A WITH MnFIRE PRESIDENT AND CO-FOUNDER GEORGE ESBENSEN



Longtime suburban Fire Chief George Esbensen knew life could be better for Minnesota firefighters. So along with some like-minded and passionate industry colleagues, together they built a bridge between the private and public sectors, gaining much needed health and wellness support for those in the fire service and their families. Now, as MnFIRE's volunteer Board President, Esbensen continues to champion for MnFIRE, celebrating the enormous strides the organization has made since its inception in 2017, scrutinizing its untapped potential and strategizing an even stronger future.

What sparked the idea for the Minnesota Firefighter Initiative?

It really has to do with a long career in the fire service and noticing the pattern of going to a lot of hospital visits and funerals. Typically, it was for one of the same three things: cancer, cardiac issues or suicide. We saw how prevalent they were regardless of whether firefighters were in a big city or little city, volunteer or career. We know that if things are predictable, they're addressable, so a couple of my long-time fire service colleagues and I decided to start looking into this more in-depth and figure out what was going on. We tried to find a way to make it better for people.

What has MnFIRE accomplished so far?

Since the [Hometown Heroes Assistance Program](#) kicked off, it has supported hundreds of peer support calls and visits with mental health providers, trained the majority of the state's firefighters on their occupational health risks, and has paid out \$1.5 million in critical illness claims — all at no cost to firefighters, their departments or their communities.

I think we're bringing order to chaos when it comes to firefighter well-being. There's now a place for people to turn when issues arise. We've provided free resources to fire service leaders around the state who want to

do the right thing, but because of the size and scope of their own organizations didn't have the bandwidth to create, deliver and support a training curriculum. Now Minnesota firefighters can avail themselves of all these resources that previously weren't available to them.

What do you see for MnFIRE and Minnesota firefighters in the future?

The Minnesota fire service has a legacy of not advocating for itself so it's been suffering in silence this whole time. We ask a lot of our firefighters, and Minnesota is starting down the path of properly supporting them, but we need to do more.

"I think we're bringing order to chaos when it comes to firefighter well-being. There's now a place for people to turn when issues arise."

I'm looking toward a day when firefighters stick up for themselves and are role models for their own well-being. I want to see health and wellness ingrained into the culture in the fire service. And I think we can get there. It is starting to happen. We know that once we can get

firefighters on board with the message that they'll take it and run with it. There are really some fabulous gains to be made.



McCoy Knows Knowledge Helps Further Wellness

AUSTIN FIRE CHIEF PRIORITIZES FIREFIGHTER HEALTH WITH MnFIRE TRAINING

Firefighters often focus on people who need help before tending to their own needs. As a fire chief, Jim McCoy knows it's part of his job to give the members of his Austin Fire Department resources to make their health a priority. It's why McCoy had his department complete MnFIRE training.

"This is one thing we can do for us," said McCoy, who has been in the fire service nearly 24 years. "Our other firefighter training focuses on helping others, but we need (MnFIRE training) to make sure we are healthy, too."

From these trainings, McCoy and his department became MnFIRE aware and then dove deep into learning about cancer and cardiac diagnoses along with mental health. The trainings helped them find ways to try to avoid these

diagnoses and gave them coping mechanisms for getting through them.

McCoy acknowledged that some cancer can be mitigated by changes, such as bagging gear on scene to keep the carcinogens out of the cabs, taking a shower and washing gear after every fire/exposure and wearing SCBAs throughout the entire operation from firefighting to overhaul. While cardiac issues sometimes depend on an individual's genetic makeup, McCoy said he can encourage his department to eat healthy and work on physical fitness to help keep them heart healthy. For his own overall health, McCoy and his wife watched MnFIRE's nutrition training videos online led by Chef Marshall O'Brien. Now the couple continuously works together to cook the nutritious recipes they learned from the training videos.

McCoy said. "In the past, that term 'suck it up' was the norm in the fire service. It was almost as if feelings weren't allowed."

McCoy is glad that mentality is changing.

"Now it's OK to talk about it, have feelings and let people know it's a struggle," he said. "Through MnFIRE and other programs, we have routes to deal with mental health – to talk to people and become well again."

The MnFIRE trainings are part of making that change.

"All the trainings have been wonderful and it's something that needs to continue," McCoy said. "The more knowledge we have on prevention the better off we are."

"In the past, the term 'suck it up' was the norm in the fire service ... Now it's OK to talk about it, have feelings and let people know it's a struggle."

Mental well-being is the one area that needs the most improvement in the fire service, McCoy said.

"Mental health is nothing you can see, and it's so engrained in us to 'suck it up,'" McCoy said.

For more information about MnFIRE Training, visit mnfiretraining.org.



Critical Illness Program Provides Financial Support for Coon Rapids Firefighter

Christian Worby, a firefighter for the Coon Rapids Fire Department, at first thought the pain in his side he started experiencing in Summer 2020 was a fractured rib. The 42-year-old didn't seek medical attention because he figured the treatment plan for such a break was allowing it to heal on its own; however, when the pain continued off and on for over a year, Christian knew something else was wrong.

In October 2021, a biopsy revealed Christian had multiple myeloma, a non-curable cancer of the plasma cells. It is a situation becoming all too familiar with firefighters across the state.

Thankfully for firefighters in Minnesota, the [Hometown Heroes Assistance Program](#) (HHAP), the most comprehensive firefighter well-being legislation in the nation, passed through the legislature last year. The HHAP offers financial support for cancer diagnoses through the MnFIRE Critical Illness program, which provides a lump-sum cash payment up to \$20,000 to assist with expenses. The Critical Illness benefit also covers diagnoses of cardiac

and other critical illnesses. Christian said this program has allowed his family to focus on treatment rather than financial worry due to the cancer diagnosis.

In addition to maxing out their deductible, the Worby family was paying out of pocket for gas money to travel to weekly appointments at the Mayo Clinic in Rochester, along with accommodations while away from home and receiving treatment. Plus, Christian didn't have enough sick time to cover the minimum of six weeks he was away while having chemotherapy treatment and a stem cell transplant. The Critical Illness program can help with all of these extra expenses.

"I was blown away when I heard about [the Critical Illness program]," Christian said.

Christian thought submitting a claim for the Critical Illness program was an easy process. After making a phone call, creating an account and send-

ing in paperwork, his application was approved.

"It's great having the extra financial support," Christian said. "It's an extra safety net. It's an expensive deal having a major illness."

For five months after his diagnosis, Christian was able to continue working while doing a mild chemotherapy treatment. At the beginning of April, Christian started an intensive six-week chemotherapy treatment and stem cell transplant, which required him to stay in Rochester.

"They take my stem cells out to keep them safe and then give me a traditional high dose of beat-the-heck-out-of-you chemo," he said. "Then they slowly give me my stem cells back and let my body figure out which way is up again."

"I was blown away when I heard about [the Critical Illness program]. ... It's great having the extra financial support."



To show support, fellow Coon Rapids Fire Department firefighters shaved their heads the day before Christian began his treatment, a moment captured by the local news, KARE 11 (NBC).

While multiple myeloma is found in the general population, it is found more often in firefighters. Only 20% of the cases found are discovered in those under the age of 50.

“Because I’m so young it wouldn’t surprise me if being a firefighter was a contributing factor,” Christian said.

While Christian knows the cancer is not curable, it is treatable. And Christian wants to fight the illness to gain as much time as possible to share with his wife and together watch their two young sons — ages 7 and 2 — grow.

“For some people, it’s aggressive cancer, and some people, it’s not, so I just cross my fingers and remember I’m comparatively young,” he said.

While the diagnosis is challenging for his family, he is thankful for the HHAP.

“We’re very fortunate in Minnesota we’ve had people working on [the Hometown Heroes Assistance Program], and that we have it available to us,” Christian said. “It’s a smooth application process and if you qualify and you heard about it, then why wouldn’t you apply? It would be really unfortunate if someone was able to apply for this assistance but had no idea it existed.”

All Minnesota firefighters have been automatically enrolled in this state-wide Critical Illness insurance policy. **To learn more about the Hometown Heroes Assistance Program or to file a claim, visit mnfireinitiative.com/hhap.**

MnFIRE Helps William Ewald in More Ways Than One

THE HHAP GIVES ST. BONI CAPTAIN ASSISTANCE IN TIME OF NEED

Since Day One, William Ewald has fully supported MnFIRE and its mission, especially the [Hometown Heroes Assistance Program](#) (HHAP).

“But I was the absolute last one who thought I would need it because I felt so good,” said William, who is a captain for the St. Bonifacius Fire Department.

When William faced health challenges, the 59-year-old reached out to MnFIRE for help through the HHAP not once, but twice.

“I was a bit in denial at first that I needed this resource ... because pride can get in the way,” he said.

But he is glad he moved his pride to the side to accept the free resources from the HHAP. William used two of three components of the HHAP for his health challenges: the MnFIRE Assistance Program (MAP), which targets emotional health and stress unique to the fire service; and the Critical Illness Program, an insurance policy which covers diagnoses of cancer, cardiac or other critical illnesses, and provides a lump-sum cash payment up to \$20,000 to assist with expenses.

“These are resources available for us in our time of need after we have helped others in their time of need,” William said. “Because sometimes we need the help.”

William has also participated in the third component of the HHAP: training, which provides free education to fire service members across the state about health risks facing firefighters. All of the HHAP resources are free to all active Minnesota firefighters — volunteer, paid-on-call, part-time and full-time.

Using MAP: A Call for Help

William first reached out for help after a tough medical call involving a 5-year-old girl, who reminded William of his granddaughter.

“Going into the fire service, every candidate expects to fight fires, but the fact of the matter is we’re 80% medical response and that has a

highly emotional response,” William said. “The emotional aspect was heavy for me.”

So he called the MnFIRE hotline number.

“All of us at St. Boni have the number programmed into our phone,” William said. “But as the phone rang, I hung up because I was too scared to talk. (The MnFIRE Peer Support program director) called me back in minutes.”

William and the peer support director talked through the scenario William had just experienced. After the call, the director texted to reassure William that she and others through MnFIRE will always answer the call and be there for help.

“That was a meaningful day,” William said. “We continue to encounter those tough scenarios, but through MnFIRE I learned how to better manage my stress so it’s not so impactful on me and my family. [The MnFIRE Peer Support program director] coached me through how to cope and get through the process.”

Using the Critical Illness Program: A Cancer Diagnosis

As a firefighter, William knew his chance of receiving a cancer

“The support, resources, encouragement and how much [MnFIRE] cares and stays engaged will be uplifting even in your darkest hours. It’s a tremendous and valuable resource we all need to use.”

diagnosis was higher than most people. But it still was a shock to learn in June he has prostate cancer.

“What followed was my strongest support system of the people I met through MnFIRE,” William said. “Emails they sent me were overwhelmingly supportive, encouraging and optimistic. They were engaged in the process, to help with resources and guide how MnFIRE could help with a cancer diagnosis.”

MnFIRE helped William walk through the process of applying for the Critical Illness program.

“I opened the MnFIRE website and pushed the ‘Apply Now’ button,” William said. “I thought, ‘It cannot be this easy.’”

Within five minutes, William had the online paperwork filled out and other paperwork ready for his oncologist to fill out. The process from applying to having the money in his bank account took 10 days.

“It’s that simple,” William said. “I thought it would take months. This is really good legislation.”

The money immediately went to use in a variety of ways, including paying the family’s maximum out-of-pocket insurance expenses.



“A PET scan alone is \$28,000, and I will need three of those,” William said. “This [Critical Illness program] gives you the comfort of knowing you’re already managing cancer. You don’t need to focus on resources, and this allows you to focus on recovering without worrying about your copay. It brought unexpected relief we hadn’t counted on.”

William had surgery the week of Aug. 8 and eased back into work starting with light duty. He is optimistic for the future, in part due to MnFIRE and the HHAP. For other firefighters hesitant to reach out for help, William shares encouragement.

“Make the call and have that initial courageous conversation,” he said. “The support, resources, encouragement and how much they care and stay engaged will be uplifting even in your darkest hours. It’s a tremendous and valuable resource we all need to use.”

To learn more about accessing these free, life-changing resources for yourself or a loved one, visit mnfireinitiative.com/hhap or call 888-784-6634.





Firefighter Cardiovascular Diseases

By Dr. Paul J. Anderson, MD



Every year in the United States, approximately half of all on-duty deaths among firefighters are caused by heart attack and stroke. Numerous studies have shown that the intense physical demands of front-line fire-

fighting and a lack of physical readiness in the firefighter cause these deaths. Key solutions to this problem are firefighter education, departmental adherence to NFPA 1582 and 1583, and personal lifestyle changes among firefighters.

In the general population, cardiovascular diseases are the leading cause of death in the United States. According to the Centers for Disease Control and Prevention, heart disease causes one in four deaths each year in the United States, approximately 600,000 deaths per year. More than half of these deaths occur among men and the majority of deaths from heart disease are related to coronary artery disease (CAD). There are approximately 370,000 coronary artery disease deaths per year in the United States. Overall, there are approximately 735,000 heart attacks each year in the United States.

Coronary artery disease (CAD) develops from plaque buildup in the arteries of the heart which leads to narrowing of the blood vessel and de-

creased blood flow to the heart muscle. These plaques can lead directly to total blockage of the coronary arteries or the plaques may rupture causing a similar blockage that leads to complete cessation of blood flow to the heart muscle called ischemia. Ischemia causes muscle death, decreased heart function, and in some cases rupture of the muscular wall of the heart.

The main risk factors for coronary artery disease include smoking, high blood pressure, and high cholesterol. About half (47%) of all Americans have at least one of these risk factors. In general, coronary artery disease is a lifestyle disease, meaning that behavioral choices in the individual are the primary causes of the disease state.

The physical demands of firefighting create acute health risks for firefighters who have an underlying cardiovascular disease. On average, typical firefighting equipment weighs 60 pounds, which includes turnout gear, tools, and self-contained breathing apparatus. While wearing this equipment, firefighters engage in physical maneuvers including but not limited to stair climbing, victim rescue, demolition, running, crawling, and the hauling of a charged fire hose. In addition, these activities are undertaken in extreme heat and in the context of heightened sympathetic activation (i.e. stress and anxiety) which only

“The physical demands of firefighting create acute health risks for firefighters who have an underlying cardiovascular disease.”

intensifies the extreme strain in the cardiovascular system encountered during structural firefighting.

According to the United States Fire Administration, in 2018 there were 25 sudden cardiac deaths with onset while the victim was on duty. Cardiac-related events accounted for 44% of the on-duty fatalities over the past 10 years (2008 through 2018). National Fire Protection Association (NFPA) research from 1977 through 1986, shows an average of 60 firefighters a year suffered sudden cardiac deaths while on duty (44.7% of the on-duty deaths during that period). These are cases in which the onset of symptoms occurred while the victim was on-duty and death occurred immediately or shortly thereafter. The average number of deaths fell to 44 a year in the 1990s and to 31 in the past decade. In spite of this reduction, sudden cardiac death continues to be the number one cause of on-du-

ty firefighter fatalities in the U.S., and in almost every year has accounted for the single largest share of on-duty deaths in the year. In addition, countless deaths occur annually to current and former firefighters whose health was compromised during their years in the fire service.

Selected narratives from 2018 related to firefighter cardiac death were included in the NFPA report and are included here to illustrate the gravity of the problem.

Sudden Cardiac Death Following Training

At approximately 7:45 a.m., a 30-year-old career firefighter arrived at the firehouse for his 24-hour shift. Soon after arriving, he began washing and cleaning apparatus and checking equipment. After morning equipment checks, the firefighter helped move over 200 pounds (90 kg) of trauma kits into a vehicle in the back of the station. A half hour later, he and his truck mates repaired a pull out tray located in an upper storage compartment on the heavy rescue. During the repairs, he was on a ladder and handed down numerous heavy tools and then repaired the pull out tray and placed all items back into the compartment.

For the next three hours, the firefighter performed more vehicle maintenance and then participated in training with five other

firefighters. The training evolution consisted of donning structural firefighting protective ensemble including self-contained breathing apparatus (SCBA), and performing search training while on air.

The members participating then performed low profile and maneuvered through tight spaces under a fire truck while on air. At the end of the drill, the victim had used more than half of his air cylinder and began complaining of chest discomfort. The training ended around 2 p.m., when the firefighters ate lunch and had some down time in the firehouse. At approximately 7 p.m., the victim took 200mg of Ibuprofen and seemed unsettled for the next few hours. Fellow firefighters observed the victim kneeling on the concrete in obvious discomfort. He stated that he thought he pulled a pectoral muscle. At 10:30 p.m., the victim informed his company that he was going home before the “pain struck again”. The victim left the firehouse and went home, which was located a mile (1.6 km) down the road. An hour later, the victim’s wife dialed 911 reporting her husband was unconscious. Fellow firefighters arrived on scene and began advanced life support measures and he was transported to the hospital where he died from an acute myocardial infarction. The fire department does not provide annual physicals for its members but

does have a voluntary wellness and fitness initiative.

Cardiac Event in a 64-year-old Volunteer Responding to Fire

A local volunteer fire department received calls reporting a dwelling on fire. Firefighters were dispatched at 1:46 p.m. A firefighter with nine years’ experience responded in his personal vehicle to the firehouse, got out of his vehicle, donned his turnout coat, and bunker pants, climbed into the front driver’s seat of the engine company and responded at 1:48p.m. with another firefighter. The engine arrived in two minutes and the crews encountered a confined cooking fire on the stove. The driver suffered a medical emergency while sitting in the driver’s seat, never leaving the cab of the truck. Fellow firefighters unfastened his seatbelt and removed him from the cab. They brought him to the ground where they initiated basic life support. An advanced life support ambulance was dispatched on the initial call and arrived on scene to begin life saving measures. The 64-year-old victim was initially in ventricular fibrillation (NFPA Research pg. 20) and CPR was initiated and sustained using a mechanical CPR device. An intravenous line was established. The victim intubated in accordance with local protocols, and was defibrillated five times. He was transported and

treated at the emergency room. Resuscitation efforts ceased just over an hour later.

Cardiac Event at Station While Preparing for Drill

A 31-year-old captain who was the son of the fire chief was at the firehouse alone preparing for an upcoming company drill. He was wearing his protective ensemble and using SCBA. The fire chief, driving by the firehouse, saw his son's truck and stopped to see what he was doing. He opened the front door of the firehouse and heard a PASS device sounding. He found his son unresponsive on the apparatus floor, with his face piece off, but wearing his SCBA. The chief immediately requested an advanced life support ambulance. The victim had been with the department for 15 years and was an active member. He had a preexisting condition of deep vein thrombosis and pulmonary embolisms.

According to his physician, he had been cleared for firefighting duties and activities.

Cardiac Event at Station Following Strenuous Activity During Rescue

A 32-year-old assistant chief was at the firehouse cleaning equipment that had been used in a trench rescue earlier in the day. He was found unresponsive in the firehouse bathroom by his co-workers who immediately performed cardio pulmonary resusci-

tation. The chief had performed strenuous activity while operating at a technical rescue two and a half hours prior to his death. An autopsy was performed on the victim and post mortem results indicated he had a prior cardiac history of hypertension and coronary artery disease (CAD), including left ventricular hypertrophy (LVH), a risk factor for

“The transformation of firefighter cultures and the presence of lifestyle coaching programs are the hallmarks of the department with low risk levels for cardiovascular disease events.”

sudden cardiac death. The autopsy results also indicated that LVH can be caused by hypertension and CAD. The cause of death identified through the medical examiner was most likely hypertensive and atherosclerotic cardiovascular disease. The department indicated it does not have an established wellness and fitness initiative, but does provide annual physicals to its members.

These cases illustrate a number of important realities regarding cardiovascular disease among firefighters. First, all of these victims had some

form of underlying cardiovascular disease but were still cleared for firefighting duties. Second, there appears to be a lack of awareness among firefighters in these areas about the symptoms of heart attack and heart disease. Third, the existence of rigorous annual screenings and/or well-being programs is variable among fire departments.

Reducing the risk of cardiovascular disease death among firefighters in the United States depends upon reducing the upstream cumulative risks of heart attack in this working population. Some interventions rely on departmental leadership and funding and some interventions are

the professional responsibility of the firefighter. Departmental leadership can prioritize the promotion of safe firefighting practices according to NFPA 1582 and 1583, the use of a self-contained breathing apparatus during overhaul, and the implementation of recovery and recycle rotations that provide adequate rest during strenuous activity. Annual medical examinations should be provided whenever possible and should focus on robust coronary artery disease screening including smoking status, blood pressure management, and cholesterol measurement. The implementation of annual cardiorespiratory

fitness testing that meets recommendations in NFPA 1582 (VO₂ max = 42 mL/kg/m; 12 METS) alone would provide significant reductions in the prevalence of cardiovascular risk factors in departments where it is implemented. Additional study could be valuable to determine what a better standard should be as VO₂ max decreases with age and is lower (at the same age) for women than men. Departmental leadership can also provide education regarding cardiovascular diseases and how to reduce the risk of death on the job from a heart attack. Well-being programs serve to provide a stimulus for culture change in the fire service.

Firefighters can take several actions to reduce their pre-existing risk profile before they engage in firefighting activities. First of all, firefighters should understand their pre-existing risk for coronary artery disease and other heart diseases. Every firefighter should be educated that if they have early onset of coronary artery disease (a coronary artery disease event in a first-degree male relative younger than 55 years of age or in a first-degree relative who is female less than 65 years of age places them at increased risk) in a first-degree relative they should have more frequent cholesterol checks, and they should lower their threshold to start medication to control cholesterol. Education for firefighters should include demonstrating how they can use the American College of Cardiology/American Heart Association cardiovascular risk calculator online.

Firefighters should be educated about blood pressure management through eating a low-sodium diet, regular physical activity, and the use of medication if needed. They should also be screened and educated regarding elevated serum cholesterol and how to control it through lifestyle modification or medications, if needed. Diabetic firefighters should be carefully educated regarding adequate control of blood sugar and how their condition predisposes them to cardiovascular disease and increased risk of death on the job.

Lifestyle modification should be a core component of all education for firefighters to reduce cardiovascular disease risk. First, firefighters must not smoke and those who do should be encouraged to quit. Individuals who wish to quit smoking should be provided with readily available support structures for the next cessation attempt. Typically this involves the use of medication, counseling, and group therapy as needed. Second, every firefighter should receive education about moderate alcohol consumption and eating a diet that is predominantly whole food, plant-based, and that avoids processed foods. Many chronic conditions that are risk factors for cardiovascular disease (high blood pressure, high cholesterol, diabetes) can be reversed with the implementation of strict dietary changes. Firefighters should be educated about the tracking applications on their phones or smart devices that will allow them to document their eating habits and improve portion control

and food selections. Third, every firefighter should receive education about minimal requirements for physical activity, including at least 150 minutes of moderate activity every week. For those who already maintain a physical activity regimen, high intensity interval training that mimics firefighting duties should be included on a weekly basis to improve readiness for the extreme physical challenge of firefighting duties. Strength training is also a critical element of physical readiness for firefighters because muscular fitness and capacity reduces cardiovascular demand. Firefighters should be encouraged to perform large muscle group and core strength training using body weight or other weights at least twice a week.

In general, most studies reveal that educational efforts towards behavior change must be combined with some level of personal coaching and cultural reinforcement if they are to be effective. The fact that firefighters form intense team relationships through living, eating, and working together provides a tremendous support for behavior change. Each department, and perhaps each station can create their own unique culture regarding well-being that will serve as a support or a barrier to reducing cardiovascular disease risk. The transformation of firefighter cultures and the presence of lifestyle coaching programs are the hallmarks of the department with low risk levels for cardiovascular disease events.

Dr. Paul J. Anderson is the MnFIRE Medical Director, Cardiac.

The Firefighter Cancer Epidemic

By Dr. Zeke McKinney, MD, MHI, MPH, FACOEM and Retired Captain Steve Shapira



The fire service has a proud tradition of answering the bell whenever the call comes in. No matter who is calling, the time of day, or location, firefighters spring into action to hopefully mitigate the situation and make the public's day a bit brighter.

Modern day emergency calls cover many things — brush fires, structure fires, automobile accidents, life-threatening medical emergencies, non-life-threatening medical calls, false alarms and other hazardous situations. All must be responded to with the same speed and professionalism. Firefighters are also our cities' first line of defense during weather-related emergencies, hazardous materials issues, ice and water rescues, building collapses and trench rescues. This truly is now an all-incident profession which requires men and women to become a jack of all trades.

Because emergency calls include hazards in all kinds of settings, the health hazards firefighters now face have also changed. Think of it this way: firefighters are exposed to any type of chemical or product that may be present in a home, business or vehicle, and these are on fire. That means firefighters have exposures to soot, complex

chemicals, solvents, heavy metals and all of these may be on fire. The ways in which firefighters are exposed to these hazards is through breathing, swallowing and from their skin.

The biggest concern caused by these exposures is firefighters' risk of cancer. In the past, this problem may not have been as obvious because firefighters were not as aware of this danger. The efforts of many organizations, including the Firefighter Cancer Support Network (FCSN) and the International Agency for Research on Cancer (IARC; part of the World Health Organization), have served to raise awareness among not only firefighters, but the general public as well. The IARC, who normally evaluates whether various exposures are carcinogenic or cancer-causing, studied the occupation of firefighting in 2007 and released a report in 2010 in which they classified firefighting as Group 2B (possibly carcinogenic). Then in 2013, FCSN released their landmark document, "Taking Action Against Cancer in the Fire Service."

The increased awareness of firefighters' various hazards has led to more emphasis on how to prevent these exposures. Historically, the main concern for firefighters was fire and heat, and turnout gear was designed specifically for this purpose. However, as a greater understanding of other exposures has grown, the need to reduce other exposures than heat has grown as well.

The major ways in which exposures to hazardous compounds have been reduced are: (1) implementing ways to clean turnout gear, fire trucks and firefighters themselves; (2) developing new and improved turnout gear to protect against more than only the hazard of heat; and (3) wearing respiratory protection more consistently. In the past decade, more and more fire departments have obtained "extractors" for turnout gear — essentially industrial washers and dryers — in addition to at least a second set of turnout gear. Additionally, departments more commonly have regular schedules to clean their fire trucks, both inside and out. Most importantly, firefighter decontamination or "decon" procedures have become more formalized, including on-site decontamination processes, and showering as soon as possible after a fire ("shower within the hour"). Now, newer equipment is designed to also reduce how much exposures can actually reach the skin both through better overlap where different components of turnout gear meet and through use of less permeable materials. Another way in which firefighters have reduced exposure is through more consistently using a self-contained breathing apparatus (SCBA), not only during active suppression, but also during overhaul or investigation.

In parallel with efforts to reduce exposures, researchers have been continuing to work to understand how big of a problem cancer in

firefighters really is. One of the challenges in studying this problem is that it is impossible to know who will get cancer and when. As such, all studies to date have been retrospective (looking back in time), where once we know someone has a cancer, we then go back and try to understand what their exposure was. This method has also been limited by only being aware of the cases where firefighters' cancers were reported or known in some way. Nevertheless, many researchers have studied the problem of cancer in the fire service and generally have observed both increased rates of cancer in firefighters

as opposed to the general public, as well as increased rates of specific cancers. This has been difficult in some ways, particularly around more

common cancers that are well-known to be associated with factors outside of firefighting, such as genetics, family history, age or lifestyle choices, such as smoking cigarettes. A major step in the right direction to start monitoring firefighters was the passage of the 2018 Firefighter Cancer Registry Act by the US Congress. Enrollment in the registry through the National Institute for Occupational Safety and Health (NIOSH; part of the CDC) will start for all firefighters — regardless of whether someone has had cancer or not — later in 2023.

Alongside the importance of understanding how common cancer is in the fire service, is understanding how much exposure firefighters have during their duties. Modern tools for monitoring exposures are becoming more available to firefighters all the time. One excellent tool, supported by the International Association of Firefighters (IAFF), is the National Fire Operations Reporting System (NFORS) Exposure Tracker, a mobile app that allows firefighters to log their own calls in a consistent fashion, though it relies on individuals actually keeping track of their incidents. Increasingly researchers

“... cancer is now the leading cause of duty-related deaths for firefighters, exceeding heart disease.”

and clinicians are considering what biomarkers (biological measures, such as via blood or urine) may be appropriate to monitor consistently for firefighters. Researchers are also incorporating the use of wearable devices to monitor exposures to various compounds.

With all of this uncertainty, what do we know so far? As of 2022, and excluding COVID-19, cancer is now the leading cause of duty-related deaths for firefighters, exceeding heart disease. In part, this is likely related to our increased

awareness of firefighters having died of cancer and being able to appropriately associate their occupation with their illness. Although research is ongoing, NIOSH states that firefighters have a 9% higher risk of being diagnosed with cancer and a 14% higher risk of dying from cancer than the general U.S. population. In terms of specific cancers, various types of cancers have been established to be associated with the occupation of firefighting, including mesothelioma (a unique type of lung cancer), bladder cancer, testicular cancer, various blood cancers (leukemia, lymphoma, and myeloma), skin cancers (such as melanoma), brain cancers, prostate cancers and colon cancers. One additional challenge is that cancer of any organ system, such as “lung cancer,” actual-

ly refers to multiple different types of cancers, and it is not possible yet to know in most cases which specific cancers are or are not associated. Nevertheless, the increasing research in this area led to a re-evaluation of the occupation of firefighting by the IARC during 2022. Although the final report on this work is to be released later in 2023, they now classify firefighting as an occupation as Group 1 (carcinogenic to humans). The recent IARC work noted strong evidence of the association between mesothelioma and bladder cancer with the occupation of firefighting, as

Critical Illness Claims Summary

Appendix	2
Bladder	1
Blood	6
Breast	2
Brain	1
Kidney	2
Larynx	1
Lung	3
Pancreas	3
Prostate	13
Rectum	2
Skin	4
Testicle	1
Thymus	1
Thyroid	3
TOTAL	45

well as plausible evidence for colon, prostate and testicular cancers, melanoma and non-Hodgkin lymphoma. For other cancers, it is not as much a lack of evidence as it is that there is mixed evidence based on studies done in a number of different ways.

Here in Minnesota, we have had state-level legislation regarding the presumption that the occupation of firefighting is associated with someone's cancer since 1988, but based on how it is written, it has been hard to prove. The first time a workers' compensation claim was settled about a firefighter's occupational cancer was in 2016, and the first time a claim was truly accepted was in 2021. This shows that although we have come a long way, there is still a ways to go to establish the general understanding of how significantly firefighting can increase someone's risk of cancer. The recent change in the IARC classification of firefighting may help. The importance of this presumptive legislation is to support a firefighter when they get sick, so they and their family can be protected from the financial burdens of a cancer diagnosis, given that medical bankruptcy is the most common cause of bankruptcy in the U.S.

MnFIRE worked diligently to protect firefighters even further through lobbying to establish the Hometown Heroes Assistance Program (HHAP) in Minnesota law in 2021. This program allows firefighters with a critical illness — such as cancer — to immediately receive up to \$20,000 to

reduce the financial stress of this diagnosis. The numbers of claims filed by Minnesota firefighters in which this benefit was received is shown in the sidebar to the left.

Despite all of this progress, there is still a long way to go. In particular, there is still very limited data on cancers affecting women, who historically only made up 4% of the fire service nationally, but are growing in proportion extremely rapidly. An additional issue for women is that personal protective equipment (PPE) was traditionally designed for a man's body shape, thus diminishing the effectiveness when turnout gear is worn by a woman. Even though turnout gear has gotten better at reducing exposures from fire calls, the types of materials used to create the gear, such as polyfluoroalkyl substances (PFAS), are a different health risk in terms of exposure. A similar concern exists around aqueous film forming foam (AFFF), which also contains PFAS. So all of the work in understanding the dangers of firefighting is a double-edged sword; as we explore the hazards, we also learn about new hazards we may not have realized.

While occupational firefighter cancer is no longer a new topic within the industry, the need to continue with health and wellness education and prevention is an ongoing challenge the fire service will face in the foreseeable future.

Dr. Zeke McKinney is the MnFIRE Medical Director, Cancer. Steve Shapira is a retired St. Paul Fire Captain.

Prevention is an area where the fire service has made great strides, but there is still work to be done. Many departments have implemented Standard Operating Procedures and Guidelines with varying levels of success. Numerous organizations have put in place standards or best practices, including the IAFF, National Fire Protection Association (NFPA), and the FCSN. In March 2018, the National Volunteer Fire Council addressed this need by releasing 11 best practices, which are as follows:

1. Full protective equipment (PPE) must be worn throughout the entire incident, including SCBA during salvage and overhaul.
2. A second hood should be provided to all entry-certified personnel in the department.
3. Following exit from the IDLH, and while still on air, you should begin immediate gross decontamination of PPE using soap water and a brush, if weather conditions allow. PPE should then be placed into a sealed plastic bag and placed in an exterior compartment of the rig, or if responding in POVs, placed in a large storage tote, thus keeping the off-gassing PPE away from passengers and self.
4. After completion of gross decontamination procedures as discussed above, and while still on scene, the exposed areas of the body (neck, face, arms, and hands) should be wiped off immediately using wipes, which must be carried on all apparatus. Use the wipes to remove as much soot as possible from head, neck, jaw, throat, underarms and hands immediately.
5. Change your clothes and wash them after exposure to products of combustion or other contaminants. Do this as soon as possible and/or isolate in a trash bag until washing is available.
6. Shower within the hour: Shower as soon as possible after being exposed to products of combustion or other contaminants.
7. PPE, especially turnout pants, must be prohibited in areas outside the apparatus floor (i.e., kitchen, sleeping areas, etc.) and never in the household.
8. Wipes, or soap and water, should also be used to decontaminate and clean apparatus seats, SCBA and interior crew area regularly, especially after incidents where personnel were exposed to products of combustion.
9. Get an annual physical, as early detection is the key to survival. The National Volunteer Fire Council (NVFC) outlines several options at nvfc.org. "A Healthcare Provider's Guide to Firefighter Physicals" may be downloaded from fstaresearch.org/resource/?FstarId=11591
10. Tobacco products of any variety, including dip and e-cigarettes should never be used at any time on or off duty.
11. Fully document ALL fire or chemical exposures on incident reports and personal exposure reports.

Sleep Insufficiency in the Fire Service

By Dr. Nick Blonien, DO



Poor sleep quality is a public health epidemic, and a problem estimated to burden nearly half of American adults. Decreased physical and cognitive performance, adverse

health outcomes, decreased

safety, and lost productivity are some of the well described consequences seen in individuals, workforces, and populations who are underslept. Sleep insufficiency is defined by at least three months of reduced sleep duration on most nights with sleepiness during the day. In adults, at least seven hours of quality sleep per night is deemed sufficient.

The fire service is disproportionately impacted. In a profession where traumatic experiences and hazardous exposures contribute independently to increased risk of cardiometabolic disease, psychosocial illness, and cancer, quality sleep is a necessary component of firefighter resilience against such inherent threats within this workforce. Unfortunately, shift work and nighttime disruptions prevent most firefighters from getting adequate sleep on a consistent basis. Such chronic sleep deprivation is likely to accelerate the development of illnesses that are already all too prevalent in the fire service.

Since 2019, the International Agency for Re-

search on Cancer (IARC) has recognized night shift work as a group 2A carcinogen, meaning probably carcinogenic, given limited evidence in humans but sufficient evidence in animals. Other recent research evaluating poor sleep in firefighters showed that sleep disorders are widely underdiagnosed across the fire service, and lead to 2-3 times higher odds of motor vehicle crash, work injury, diabetes, heart disease, and mental illness.

Getting quality sleep at the firehouse is difficult. Anticipation of a call at night prevents restful sleep. Then a call comes in, and the sympathetic “fight-or-flight” response is activated. This sharpens focus and primes the body for action, but makes it incredibly difficult to fall back asleep once the run is complete. Plus, firehouses often have shared sleeping quarters, which limits the ability to personalize the sleep environment when time for sleep is available. At home, firefighters tend to prioritize time with family and other personal obligations over resolving “sleep debt” accrued from a busy night on duty. With call volume quadrupling over the last 20 years but no increase in manpower to match,

“Poor sleep quality is a public health epidemic ... the fire service is disproportionately impacted.”

firefighters are busier while on duty and may be called upon to work overtime instead of getting sufficient rest between scheduled shifts.

Sleep is the most restorative and rejuvenating element of human life. During sleep, the body clears waste products of metabolism and cellular function, and builds neural networks in the brain that are responsible for learning and memory. Sleep replenishes the immune system, balances hormones, and repairs the body so that it is primed for work and activity upon waking the following morning. There may not be a single biological function that doesn’t benefit from a good night’s sleep.

There are two primary drivers of sleep that must be aligned for quality sleep to occur: (1) circadian rhythm, and (2) homeostatic sleep drive.

The circadian rhythm is the body’s daily rhythmic expression of genes in alignment with light and darkness, which ultimately results in the occurrence of bodily processes throughout the day in a timed manner to optimize function.

This daily rhythm is regulated by the body’s “master clock”, the suprachiasmatic nucleus (SCN). Even in the absence of light or other external cues, the SCN maintains inherent periodicity of

its signaling, thanks to “clock” genes which code for proteins that oscillate in self-sustaining fashion to maintain an intrinsic timing system.

Successful alignment of the circadian rhythm with the external environment depends heavily on ambient light. When specialized cells in the back of the eye sense light, they send a signal to the SCN, which blocks melatonin release from the nearby pineal gland. Without light, melatonin is released to act on the brain and other organ systems, playing an important role in regulation of sleep, circadian rhythm, immune function, glucose balance, and more. Melatonin itself does not directly induce sleep or tiredness. Rather, it provides a signal to the brain and rest of the body that it is time to engage in nighttime behavior, whether that be rest or activity. For example, melatonin is released at night (during darkness) in both diurnal and nocturnal mammals.

Homeostatic sleep drive, or simply tiredness, is the result of adenosine accumulation in the brain. During the awake period, the active body and alert brain require more energy. The body’s cellular energy currency is adenosine tri-phosphate (ATP). After ATP is used, adenosine molecules accumulate in the brain as a breakdown product, ultimately binding with receptors in certain brain areas to inhibit wakefulness. During sleep, adenosine and other metabolic waste products are cleared from the resting central nervous system by the glymphatic system. Upon waking after a restful night of sleep, adenosine levels are decreased.

How Firefighters Can Maximize Sleep Quality

1. Build a Sleep Sanctuary

The ideal sleep environment is cool, dark and quiet. If the firehouse has shared sleeping quarters, aim to set the temperature somewhere between 60-67° F. Avoiding screen use for two hours before bed is incredibly important, as the light emitted from electronic screens has a powerful impact on the body’s internal clock. Fans and other generators of “white noise” may be helpful in creating a restful environment in an otherwise noisy firehouse. It also may be worth considering using light bulbs in sleeping quarters that are less stimulating to the eyes. Think red or dimmer light.

2. Develop a Bedtime Routine

The brain needs to associate the bed with sleep only. Common techniques to help calm the body and recruit the parasympathetic “rest and digest” system include warm showers, gentle stretching, meditation, and structured breathing. Consider a pre-bed routine that starts with taking a hot shower, followed by some reading under dim light on a non-electronic source, then 5-10 minutes of “cyclic sighing” in bed (4-second deep nasal inhale, 8-second slow oral exhale). These behaviors can calm the nervous system and set the stage for sleep.

3. Nap Strategically

Napping can improve daytime alertness and help resolve sleep debt, but it has to be done properly. Napping at the wrong time of day or for too long can compromise nighttime sleep quality. Naps for less than 30 minutes in the early afternoon (around 1-3 p.m.) are best, when the body’s circadian rhythm yields a natural dip in arousal. But only nap if needed, because oversleeping is also harmful to overall health.

4. Live an Active and Healthy Life

Daily exercise leads to the increased accumulation of adenosine, the primary molecule responsible for tiredness, or “sleep drive,” at the end of the day. Exercise will also help with weight loss, which can prevent development of sleep disorders like obstructive sleep apnea (OSA). Limiting caffeine intake to the morning and less than 400mg daily is ideal. Aim for minimal alcohol intake as well, and know that a drink is less disruptive to sleep if had earlier in the day versus evening. Meal timing can also affect the body’s internal clock, so avoiding eating for the first 1-2 hours after waking and 2-3 hours before bed can be helpful.

5. Promote a Pro-Sleep Culture

The machismo “I’ll sleep when I’m dead” mentality needs to end. Research shows that education, awareness, and implementation of sleep programs in fire departments are effective in improving overall sleep quality. Address fatigue and sleep status often (perhaps daily), discuss it with other firefighters, and make sleep a priority off duty. Hopefully, efforts at the leadership level can also drive changes at the departmental level, like favorable scheduling, improved sleeping quarter conditions, and sufficient manning, to help facilitate quality sleep at work and at home.

Once asleep, the brain cycles through different types of sleep every 90 minutes or so. Initially, the brain enters NREM sleep, defined by the absence of rapid eye movement. There are three stages of NREM sleep, stage 3 being the deepest and most restorative. NREM sleep stages 1, 2, and 3 appear in predictable sequence before REM sleep first appears around 90 minutes after falling asleep. On a normal night of rest, this cycle will repeat 4-6 times. The brain spends more time in deep NREM sleep during the first half of the night, and more time in REM sleep during the second half.

Experts have likened periods of wakefulness, NREM sleep, and REM sleep to reception, reflection, and integration, respectively. An awake body interacts with the external environment to receive information. A brain in NREM sleep processes and stores collected information, with deep sleep serving as a particularly important period for body repair. REM sleep is the most important period for memory formation and strengthening of neural networks.

Sleep quality is optimized when (1) circadian rhythms are synchronized with light/darkness and other rhythmic cues, (2) homeostatic sleep drive is high, and (3) environmental conditions are favorable. 99% of the population needs at least seven hours of quality sleep per night (on average) to avoid adverse health and performance effects due to insufficient sleep. It's

difficult for firefighters to get this amount on a routine basis for a variety of reasons, including:

- Shifts are usually 24-48 hours.
- The firehouse sleeping environment is often a shared room with excess noise and light.
- Anticipation of an incoming call makes sleep less restful.
- Increasing call volume means alarm awakenings are more frequent.
- Limited staffing drives mandated overtime and less off-duty rest.
- For some, lower salaries drive need for second jobs outside of scheduled shifts.
- Family and social responsibilities take priority outside of work.

All of these factors make attaining routine quality sleep difficult in a profession already at increased risk for adverse health outcomes due to work in extreme environments. Therefore, firefighters must do all they can to maximize sleep quality when sleep opportunity is available.

It will always be challenging for firefighters to get sufficient sleep on a routine basis. But with a culture that prioritizes quality sleep and consistent implementation of techniques known to help, firefighters can minimize the effects of insufficient sleep on performance and overall health, keeping them healthier for their families, colleagues, and the public they proudly serve.

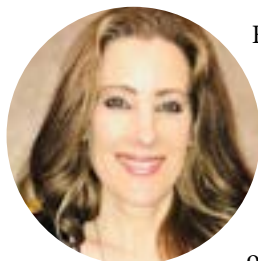
Dr. Nick Blonien is a MnFIRE Medical Expert, Lifestyle Medicine.





The Winter Blues

By Melinda R. Coscarelli, PhD LADC, LPCC



Feeling a little blue? Once the days start getting shorter, it is especially important to start paying more attention to your moods. Due to the lack of sunlight, the pineal gland produces more

melatonin, the hormone which makes us feel drowsy. Melatonin is constantly being regulated according to how much sunlight we are being exposed to. Melatonin comes from the neurotransmitter Serotonin, which plays a key role in such body functions as mood, sleep, digestion, nausea, wound healing, bone health, blood clotting and sexual desire.

It is common for most people to be impacted with mild symptoms occasionally. Most people will admit there are days when staying home and bummin' out in their PJ's sounds a heck of a lot better than going on a call.

However, if you start struggling with not wanting to get of bed, loss of interest in hobbies, isolating from friends and loved ones, appetite changes, feeling hopeless, helpless or worthless, wanting to sleep most of the day or having suicidal thoughts or ideations, you could be experiencing something more serious called Seasonal Affective Disorder, aka SAD. It is believed that as much as 20% of the population

could have a mild version of SAD.

Because SAD is mostly a biophysical response to our environment, the best way to combat the symptoms are with the same type of approach. Serotonin is mostly found in our gut, so eating a healthy diet is one of the best and most effective prescriptions you can take to heal your body. Instead of spending a lot of money on doctor bills, devote some to nutrition. Remember, before we had expensive pharmaceuticals, all we had were food, minerals and herbs to heal us. This is not advice to stop taking any of your medications, of course.

“Connection to others make us feel valued and appreciated.”

Even making little tweaks to your diet will improve your mood and overall health and well-being. Some of my tips include:

- Eating protein within 30 minutes of waking up in the morning which will help with hunger throughout the day. This will help with carb cravings which we tend to have more of during the winter months.
- Eating protein with everything you eat; this keeps your body temperature higher and helps with metabolism.

- Eating turkey about 30 minutes before bed due to the tryptophan, the enzyme that makes you feel sleepy. It might help you sleep better. Also, Serotonin is made from tryptophan. When it comes to protein, remember about 30 grams/ meal is usually enough depending on your overall health and wellness goals and your body weight. A person's diet should be mostly vegetables.

Exercise is also another important factor to fight the winter blues. Most people know the benefits of working out. Doing HIIT (high-intensity interval training) is shown to be most effective for combating mental health concerns. But always consult your doctor before starting any rigorous workout plan. HIIT releases the most endorphins, gives confidence and makes us feel stronger. Thirty minutes of HIIT and you will see!

Some other random ways to boost your endorphins are eating spicy food; using aroma therapy with scents like lavender or lemongrass; enjoying the scent of a candle that reminds you of something nostalgic like your grandmother's cookies or the scent of pine trees; listening to upbeat music; eating dark chocolate; or having more intimacy with your partner.

Make sure your Vitamin D levels are where



they should be. Vitamin D has been shown to help regulate mood and reduce depression and anxiety symptoms. Most people who live in the Midwest are deficient. You can easily get your levels checked by scheduling a blood test with your MD. If you feel your levels are off, Vitamin D is sold over the counter. As with all supplements, read the labels and make sure you are getting a good product. Try not to buy something with a bunch of fillers in it. And always take supplements as directed unless your doctor prescribes it otherwise.

There are SAD lights you can purchase that will give you the same rays as the sun to help boost your Vitamin D levels. You can purchase them online or at most big box stores around \$30 without a prescription. Of course, for people who love winter, getting their Vitamin D the natural way — being outside and having their skin exposed to the sun — is always best. Thankfully, about 10-15 minutes will suffice for baring yourself to Mother Nature.

It goes without saying, but make sure you are getting enough sleep. Even though you may be feeling more tired and sluggish it doesn't mean you are getting more sleep. Sleep is essential for mental, emotional and physical wellbeing. It is recommended to get 7-9 hours of quality sleep. It is best to have a normal sleep schedule and stop using all screens such as phones, computers and TVs about an hour before bed. If you

struggle with the inability to shut your mind off at night, try meditating or try using white noise. You can also try searching for sounds or music that contain delta brain waves, the same brain waves we have when we are falling asleep. You can also try taking a cool shower or bath to lower your body temperature.

And last but not least, make sure you have some fun! Even if you feel like hibernating during the winter, there are plenty of winter activities. Winter is not going anywhere; you can expect it every year. So learning to find something you can actually look forward to during the season of dormancy will definitely help perk you up. Volunteering your time to a worthy cause or finding a new hobby or interest are easy ways to fill your calendar and keep your spirits high. And don't forget about your friends. Nurture the relationships that are dear to you! Connection to others make us feel valued and appreciated, so pick up the phone when you start feeling down.

If you need to talk to someone, the MnFIRE Assistance Program is here for you 24/7 offering peer support and counseling services. Completely free and completely confidential. Call 888-784-6634.

 **Visit my blog for more tips and tricks:**
PRONETWORKTOOLS.COM/BLOG

Dr. Melinda R. Coscarelli is the MnFIRE Medical Director, Mental Health.

Meet MnFIRE Peer Supporters

Our peer supporters are the backbone of the MnFIRE Assistance Program. By matching firefighters with someone who has experienced the same struggles, we're making it easier for folks to get the emotional support they need while reducing the stigma around talking about mental health and suicide that has historically pervaded the fire service. But who are these peer supporters, and what's it actually like when you call them?



Ange

South Metro Fire Department



Jim

Retired Firefighter



Meet Ange

Tell us a little about yourself, your history with the fire service and who you are outside of your role as a firefighter?

I currently work in the prevention division at South Metro Fire Department, where I've been for 10 years — with the first 8 years working on the streets. I joined MnFIRE in 2020 and also volunteer with the Metro CISM team. Outside of my role in the fire industry, I have been married to my husband for 11 years and we have two small kids who keep us busy. The warmer months are spent outdoors, and I love to travel! Health and wellness are extremely important to me, and you can find me in the yoga studio when I have free time.

Why did you become a MnFIRE peer supporter?

After seeing one of my own members at my department battling mental health issues, it became apparent to me that those of us in the industry needed to be the ones making the change and I wanted to be a part of it. MnFIRE was the perfect place for me to start that journey.

What is the most rewarding part of being a peer supporter?

The most rewarding part for me is making a connection with someone who I maybe would have never met before. Part of MnFIRE's process is connecting you with like-minded people or putting you in touch with someone who has been in your shoes. Even though I'm the peer supporter, the connection goes both ways for me. The fire industry is unique and not easily understood by those not in it and this is a great opportunity for our industry to come together as one big family.

What is the most surprising part of being a peer supporter?

The most surprising aspect for me is that there are so many others out there who have walked a similar path as I have. When you utilize the Peer Support side of MnFIRE, they aim to pair you with someone who has shared experiences. I think this is one of the many reasons that MnFIRE is so successful.

What do you see as the most valuable component of the MnFIRE Hometown Heroes Assistance Program (HHAP)?

I truly think the mental health resources of the HHAP are the most valuable. Mental health in our industry has been overlooked for so long and having something in

place for past, current and future generation firefighters is only going to help make this a more sustainable career. No one in the fire industry needs to carry their burdens alone and MnFIRE has made it possible to access mental health care comfortably.

What two suggestions would you share with every Minnesota firefighter to improve their mental health?

MnFIRE has done a great job at teaching the fire industry the signs and symptoms of mental and emotional distress. Some of these signs and symptoms can sneak up on you so just paying attention to what your body needs at the moment is really important. Shift work makes it hard but sticking to routine as best as possible is so beneficial for our mental health. Also, having your support network intact will be so valuable to you as a firefighter. Having at least one or two people who you trust and who are available at any given hour is essential.



Meet Jim

Tell us a little about yourself, your history with the fire service and who you are outside of your role as a firefighter?

I became a firefighter in 1992, then had a gap and came back in 2018. I'm an honor guard member. My first career was in the computer business. I retired in 2018 and prayed about what I want to do when I grow up. I made a pretty big career change from computers/systems to health care. I'm currently working in homecare as the CEO of New Dimensions Home Health Care, so very blessed to try and make someone's day a little better.

I'm very involved with my church and on a couple of committees, and I coach basketball. My wife is my best friend; we've been married since 1986. We have a white Samoyed named Shiloh. I take great pride in taking care of myself both physically and mentally.

My whole goal is to give someone a four-letter word that is huge and it's called "HOPE."

Why did you become a MnFIRE peer supporter?

Because I truly believe the opportunity to make a difference in people's lives is what it's all about. Everyone has a story, and they need to be heard, valued, respected and cared for.

What is the most rewarding part of being a peer supporter?

Spending time listening to people (really listen-

ing) being so thankful and saying, "WOW, I've never felt so good talking to someone about my struggles and issues. I thought it was just me and not being strong." I say that's why God gave us two ears and one mouth — we're supposed to spend twice as much time listening.

What is the most surprising part of being a peer supporter?

I wasn't sure I had any other expectations of being a peer supporter, other than the blessings that I've received. Meeting people where they're at and being a confidential resource that cares about and loves them.

What do you see as the most valuable component of the MnFIRE Hometown Heroes Assistance Program (HHAP)?

I first became a firefighter back in 1992, and I can say that I wish the MnFIRE HHAP would have been around then. It's unreal all the support that someone in need can get now. The other thing that is amazing, no issue is too small nor big. You never know when a firefighter is in need of someone that understands. It's a safe place to know you're not alone and so many people care about you.

What two suggestions would you share with every Minnesota firefighter to improve their mental health?

What you're experiencing isn't unusual, you're not alone. Spend time each day to take care of yourself, eat, sleep, exercise, pray and practice mindfulness.

In the News

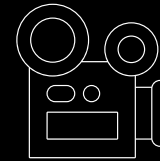
In 2022, MnFIRE continued building awareness of the health challenges and risks facing Minnesota's firefighters, as well as the new Hometown Heroes Assistance Program resources available to them and their families at no cost. From the signing of the Hometown Heroes Assistance Act to firsthand testimonials from firefighters who have used these impactful benefits, sharing news about the Hometown Heroes Assistance Program via television, radio, newspapers, social media and more has helped us reach even more firefighters so they now know about the potentially life-changing, free resources that are available to them.

183

TOTAL MnFIRE & HHAP STORIES

345M+

TOTAL POTENTIAL AUDIENCE



TELEVISION



RADIO



PRINT/ONLINE

IN TOP-TIER OUTLETS INCLUDING:

KARE • KSTP • WCCO • FOX 9 • KTTC • KAAL • WDIO • KQDS • STAR TRIBUNE
MINNESOTA PUBLIC RADIO • PIONEER PRESS • DAILY DISPATCH • WTIP
MANKATO FREE PRESS • EMS1 • FIREHOUSE • FIRERESCUE1 • FIRE ENGINEERING
OWATONNA'S PEOPLE PRESS • SUN SAILOR • AUTHORITY MAGAZINE



Minn. governor signs \$8M firefighter health act

Hometown Heroes Assistance Program includes an assistance program, critical illness insurance and health and wellness training

Jun 13, 2022

By Leila Merrill

ST. PAUL, Minn. — The application process for Minnesota pandemic "hero pay" opened last week and on Monday the governor planned to gather with fire service leaders and legislators for a ceremonial signing of the Hometown Heroes Act.

St. Bonifacius firefighter faces cancer battle with new state supports

By Maury Slater | Published July 15, 2022 | Updated 10:50PM | Minnesota | FOX 9



St. Bonifacius firefighter faces cancer battle with new state supports

The 40-year-old firefighter has the state's new cancer support program for firefighters. He received a \$4 million grant to help with his cancer battle.

Cancer causing chemical in firefighter gear

Maury Slater KJZZ-TV
August 26, 2022 - 6:46 AM



Hometown Heroes program provides funds for firefighter physical, emotional aid

By Maury Slater KJZZ-TV
July 26, 2022 | Updated May 15, 2022



Hometown Heroes program was announced at a press event in July.

Hometown Heroes Assistance Program sees success at helping firefighters with medical, mental health needs



First-Of-Its-Kind Program Helps Firefighters, Most Of Whom Are Part-Time, With Health Care Costs

By Maury Slater KJZZ-TV
July 26, 2022 | Updated May 15, 2022



Minnesota firefighters find relief in \$4M investment to their health and wellness

By Kristen Miller kristen.miller@segecmu.com Feb 17, 2022 Updated May 15, 2022



MnFIRE President George Esbensen announced the passage of the Hometown Heroes Assistance Program at a July 15, 2022, news conference at the Altonville Fire Department.

Less than two years in, MN Hometown Heroes Program is saving lives

Rates of suicide among first responders remains much higher than the general public, but a state program is making progress.



Hometown Heroes Act helps Minnesota firefighters



State program supports firefighters facing cancer, cardiac issues, emotional trauma

Cathy Wurster and Lindsay Guntzel January 26, 2022 4:08 PM



Chaska, Minn., firefighter Doug Taitz leaves Hometown Heroes, in September 2021 at the start of a 200-mile walk to raise awareness of high mortality rates among firefighters. Courtesy of MnFIRE 2021 file

Video: The program supports firefighters facing cancer, cardiac issues, emotional trauma.

Social Media

Building awareness for the Home-town Heroes Assistance Program and MnFIRE continued online as well as we grew our followings on Facebook, LinkedIn and Twitter. On these social platforms, we continued growing relationships, increasing engagement and interacting with the fire service community — and it's yet another important channel we've used to spread the word about all of the different HHAP benefits.

40



Maximizing the Message

Traditional and social media are just two ways we share with firefighters and other stakeholders about the work MnFIRE is doing and the benefits offered through the Hometown Heroes Assistance Program.

It does take some creativity to reach all 20,000 firefighters in the state! We've mailed posters and brochures directly to fire stations, and at the most recent Firefighter Health Forum, we even reminded attendees about the support available to them via stickers on all conference bathroom mirrors.

We have some exciting and effective ideas planned for the next year, including more video and out-of-home solutions. Keep an eye out!





IN A POST-EVENT SURVEY OF 2023
FIREFIGHTER HEALTH FORUM ATTENDEES:

Over 95%
of respondents are **definitely likely** or
likely to recommend the forum to others.

*“The information I received will
be very helpful as I navigate my
career moving forward.”*

— FIREFIGHTER HEALTH FORUM ATTENDEE



Firefighter Health Forum

The 2nd Annual Firefighter Health Forum provided over 100 firefighters and their significant others with meaningful discussions on firefighter health and wellness.

An animated keynote from Dr. Jody Janati shed light on tips and tricks to communicate effectively and with zero drama. And retired Fire Chief Arjuna George shared his personal experience with burnout and his journey to recovery and better self-care during his afternoon keynote.

In breakout sessions for current peer supporters, fire service leaders, and fire service significant others and spouses, we tackled some of the most critical health issues facing Minnesota's fire service and their families — from free Hometown Heroes Assistance Program resources, to how to have difficult conversations with fellow firefighters and prioritize mental wellness.

The first-ever spouses and significant others track at the forum premiered the brand-new Spouses & Significant Others MnFIRE training curriculum that we're thrilled to provide to firefighter partners and families this year and beyond! We discussed the tools, skills and perspective needed to make smart decisions about the physical and mental health of the family.

Here's what one attendee said about this new avenue of support:

"From day one, eight years ago, when my husband became a volunteer firefighter, I wanted to learn how to support him on the home front. Spouses had zero resources until now. I am so grateful for all the work MnFIRE is doing to empower firefighters and their families."

Thanks again to everyone who made the 2023 Firefighter Health Forum a success, including our keynote speakers Chief Arjuna George and Dr. Jody Janati, the MnFIRE board, and all our other health expert partners.

SAVE THE DATE:

We're already looking forward to the 2024 Firefighter Health Forum at Grand Casino Mille Lacs on Saturday, Jan. 20, 2024. We hope to see you there!

Our Most Successful MnFORE Golf Tournament Yet

In 2022, the MnFORE Golf Tournament raised \$109,000 to support the health and well-being of Minnesota's firefighters. This single-day fundraiser is our largest of the year. Money raised at this event helps us continue to provide critical support and resources to Minnesota's firefighters so they can prioritize and protect their health, and live longer, healthier and happier lives.

The event sold out with 144 golfers who embraced the opportunity to support MnFIRE and played the exclusive 18-hole golf course designed by golf legend Jack Nicklaus. It's always a day of friendly competition — both on the fairway and the fashion runway!

Special thanks to our MnFORE sponsors and volunteers who made the 2022 event possible.

SAVE THE DATE:

The Fifth Annual MnFORE Golf Tournament will take place July 24, 2023, at Bearpath Golf & Country Club.





A Bright Future for Firefighters Ahead

The Hometown Heroes Assistance Program advocated for and managed by MnFIRE has had a monumental impact on firefighters' lives throughout Minnesota in its first two years, and we look forward to the happier and healthier fire service future we see on the horizon thanks to this program. In 2023, look forward to:

Expanded MnFIRE training, on topics including:

- Sleep
- Fitness
- Nutrition
- Leadership
- A session specifically for spouses/significant others of firefighters

Support and free resources for fire service spouses, significant others & families

Good health starts at home, and being a firefighter impacts everyone in your family — so we're doing more to reach out and provide support to fire service significant others, spouses and family members. Our new training is designed to give them the tools, skills and perspective needed to support the health and well-being of their firefighter loved one — and their family.

An expanded and enhanced mental health provider network

We're continuing to strengthen our network of mental health providers who are specifically trained in treating and supporting firefighters. From provider trainings to additional outreach in the rural communities in need of more providers, we look forward to strengthening our provider relationships and boosting the MAP network this year.



Thank you again to the legislators who have made this commitment to the health and well-being of Minnesota's fire service. Your continued support makes this growth possible.



Introducing: The New MnFIRE PeerConnect App!

In 2023, MnFIRE is amplifying its mission with the help of smartphone technology.

This free tool is available to all firefighters in Minnesota and their families. Created in partnership with First Response Mental Health, the MnFIRE PeerConnect app provides users the ability to easily request peer support via phone, text or email — confidentially.

We've heard from firefighters how impactful our peer supporters can be. They are specially trained individuals who innately understand

what our firefighters are going through — because they've been there, too. And knowing that someone who "gets it" is available and willing to talk, at any time, can be encouraging to those in need of help.

The app will also be a library for additional health and wellness resources, including exclusive articles plus the latest MnFIRE news and events. We're looking forward to leveraging this new platform to extend the reach of our resources and provide instant connectivity for Minnesota's firefighters and their families.

How to access the app:

1. Download

From your smartphone, download the app from the Apple App Store or Google Play.

2. Open

When prompted, "ALLOW" notifications.

3. Welcome!

You are now viewing the MnFIRE PeerConnect app as a guest. If you want to contact a peer supporter, you can do so immediately via the "Call Hotline" button or the "Have us Contact You" button on the "Connect" page. Other resources can be found in the "News-feed" and on the "Library" page.



IPHONE



ANDROID





The Minnesota Firefighter Initiative is
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IRS. Tax/EIN number: 38-4049248.