

Health and Wellness Initiative (HWI) at Chelsea Fire Department

Wayne R. Ulwick Jr.

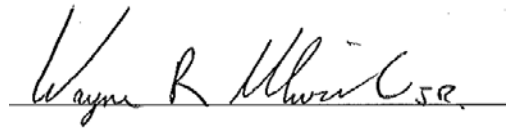
Chelsea Fire Department

Chelsea, Massachusetts

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed:

A handwritten signature in black ink, reading "Wayne R. Ulwick Jr." with a horizontal line underneath. The signature is written in a cursive style.

Wayne R. Ulwick Jr.

Abstract

The problem was the Chelsea Fire Department (CFD) has not developed a plan needed for a health and wellness initiative (HWI). The purpose was developing a HWI specific to the CFD needs. This applied research project (ARP) used action research methodology to answer the following three research questions: (a) What health and wellness risks should the CFD be focusing on? (b) What components are other fire departments using as part of their fire service HWI? (c) What are the perceived strengths and weakness from human resources (HR), cohorts, chief, union, and families on adopting a HWI at the CFD? A literature review was used to establish a knowledge base for this subject matter. The research design used personal interviews, focus group discussions, survey tool, subject matter experts, and development of a draft policy that added integrity to the research. The results determined that union participation throughout policy development and implementation of a HWI is crucial in buy-in from the membership. Survey results show, if given the equipment and knowledge (personal trainers, nutritionist, financial advisors, incentives etc.) the majority would voluntary participate in a HWI. Results also showed the focus for CFD leadership is prevention of cancer, cardiac events, and obesity. Research recommendations included implementing physical fitness that is realistic to firefighter job functions and is goal attainable, as well as considerations that will support nutrition, sleep, stress management, resilience, and physical conditions.

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Health and Wellness Initiative at Chelsea Fire Department

Forbes Magazine ranks the occupation of firefighting as one of the most dangerous jobs of 2016 (Strauss, 2016). Firefighters face many challenges from occupational health hazards at emergency incidents. Injuries reported relating to firefighting include smoke inhalation, cuts, burns, overexertion, and strains. Injuries have generated lost work time for approximately 44 percent of firefighters across the nation (FEMA, 2016, p. 1).

In the past twelve years 5 active duty members of the CFD have succumbed to heart or cancer related death caused by firefighting. Recently, firefighter Peter Kannler lost his battle with occupational cancer at thirty-seven years of age leaving behind a wife and two children. The CFD administration and union leaders are calling for a change in the way the job is done at their organization (Daniel, 2016). The problem is the CFD has not developed a plan needed for a health and wellness initiative (HWI). The purpose is developing a HWI specific to the CFD needs.

This applied research project (ARP) utilizes action research methodology to answer the following three research questions: (a) What health and wellness risks should the CFD be focusing on? (b) What components are other fire departments using as part of their fire service HWI? (c) What are the perceived strengths and weakness from human resources (HR), cohorts, chief, union, and families on adopting a HWI at the CFD?

The overall goal of this research project is the development of a living document that can be customized to prevent employment health risk caused by job related tasks of firefighting. Designing a HWI will provide a different set of tools needed for each member of the CFD.

Background and Significance

A recent active line of duty death (LODD) at the Chelsea Fire Department (CFD) has left a department in mourning. Chelsea Firefighter Peter Kannler lost his battle with occupational cancer at the age of thirty-seven years old. In the past twelve years from the writers experience the CFD has had over five active line of duty deaths (LODD) caused by occupational stress or exposure to their job-related assignments. In the past year, the reported cancer rate at the CFD has been estimated at two percent of 92 employees. Cancer rates in the fire service are statistically higher than the general population. Studies have shown the increased risk of cancer in firefighters can range from 1.3 times for prostate cancer, to 5.2 times for cervical cancer in female firefighters, to as much as 36 times higher for kidney cancer in firefighters with 40 or more years of service (Garis & Mark, 2012).

The leading cause of LODDs in the fire service is sudden cardiac death, which accounts for approximately 45 percent of all firefighter duty-related fatalities (Harvard school of public health [Harvard], 2007). Occupational exposures caused from increased cardiovascular activity, emotional stress, and pollutants cause a strain on the heart. A 2007 research study focused on firefighter's risk of heart attacks at emergency incidents. Data from this study showed firefighters have an up to 100 times the normal rate of suffering from a heart attack than civilian population (Kales et al., 2007).

Due to the known risks of firefighting, the State of Massachusetts (MA) provides benefits for families who have lost love ones due to occupational dangers from the job. The "heart, lung, and cancer presumption retirement law" covers firefighter's health if impaired or death from hypertension or hearth disease, diseases of lungs or respiratory track, and certain conditions of cancer ("M.G. L Chapter 32, Section 94," 2008).

From 2012 to 2014 the National Incident Reporting System (NIFRS), estimated 66,200 firefighter injuries were job related. Fire related injuries have been reported in this time span as being designated minor in nature, but take a heavy toll of city government's overtime and workmen's compensation claims. A main objective of this ARP is focused on wellness in relation to injury prevention and health (FEMA, 2016).

Firefighter injuries have increased in the past year due to critical incidents. The CFD reported 277 structure fires in 2013 which caused 38 fire service connected injuries (Massachusetts fire incident reporting system [MFIRS], 2013). The City of Chelsea MA is self-injured, meaning the employer ultimately retains the full risk of paying claims instead of a third-party insurer. From 2013 to 2016 workmen's compensation has cost the city 307,810 dollars in tax dollars (P. Johnson, personal communication, September 23, 2016).

Age and gender play an important role in creating a HWI specific to the CFD. Currently, the average age of the CFD is approximately 38 years of age (observation February 7, 2017). Male firefighter injuries peak between ages 40 and 44 with females peaking between 25 and 34 nationally. Overall, the average peak age of injuries reported are between ages 35 and 44 (FEMA, 2016).

Health and wellness at the CFD needs to be specific to the areas that are affecting the department the greatest. Wellness is a personal component of a person's lifestyle, which different factors need to be identified for effective change. There are six individual states of mind that affects a person's wellness. These components are physical, occupational, social, spiritual, intellectual, and emotional ("SDW," 2016). Every individual has certain needs and values. Offering tools and rehabilitation needed to change a person's lifestyle will be determined by how a wellness initiative is implemented.

Health and wellness at the CFD has always been done on a personal or voluntary basis. A recent survey showed that 73 percent of the CFD participates in a healthy lifestyle. One out of the three of CFDs' fire stations are equipped with adequate fitness equipment.

Population and development of the City of Chelsea has grown beyond the work load of their fire houses. The fire department staffing has been consistent for over twelve years. The fire department has not seen growth with its evolving city. The minimum staffing between four shifts is eighteen firefighters assigned to three engines, two ladder trucks, and a command car. The members of the CFD work forty-eight hours a week living in three fire houses across 1.8 square miles. The CFD responded to 10,125 calls in 2015, with Engine Two being the busiest company responding to 3,430 emergency incidents. The National Fire Protection Association (NFPA) and the National Institute for Occupational Safety and Health (NIOSH) have reported that fire departments across the nation lack adequate staffing. Insufficient staffing has contributed to millions of dollars in time-lost injuries, thousands of on-the-job injuries, and dozens of LODDs each year (Wilson, 2009).

Neither the City of Chelsea nor the CFD leadership have taken part in best practice research for the health and wellness of its employees. Tradition and cultural norms may be the reason why best practices from others are not implemented. Literature that can be freely obtained by the fire department are:

- *NFPA 1500 Standard on Fire Department Occupational Safety and Health Program* was introduced to the fire service in 1987; recent addition (2013) focuses on comprehensive wellness program.
- *NFPA 1582 Standard on Comprehensive Occupational National Medical Program for Fire Departments* was introduced in 1992, recently updated in 2013.

- *NFPA 1583 Standard on Health-Related Fitness Programs for Fire Department Members* was introduced in 1995, recently updated in 2015.
- The International Association of Firefighter's (IAFF) and International Association of Fire Chiefs (IAFC) developed the *Joint Labor Management Wellness Fitness Initiative (WFI)* in 1997, current addition established in 2008.

This literature has been around for some time, but has never been adopted by the CFD. Currently, there is no formal written standard operating procedure (SOP) that represents health and wellness for the fire department. This has resulted in CFD not having the administrative tools needed to support an overall HWI.

Past, Present, and probable Future Impact

The CFD LODDs in the past 12 years is a major concern for the organization. Unfortunately, pinpointing exact cause of how each individual developed cancer or cardiac event is a difficult task. Finding a way to minimize exposure to carcinogens, increase staffing, and live a healthier lifestyle is a start. Currently the CFD is moving in the right direction by addressing past practices that may have led to illness and injury. This ARP will be the beginning of diagnosing the problem to help address this complex issue. If the CFD does not start the process of finding ways to minimize illness and injury, the future impact will be more LODDs from illness and sudden cardiac events.

Applied Research Project Linkage and Goals

This ARP will add a custom perspective to the different values and needs of the CFD. Fire departments across the country are unique in character and do not possess the traditional traits and customs of Greater Boston Area fire departments. This ARP will highlight the current

needs of the department through HWI. Now the CFDs' focus is on reducing cancer, cardiac events, and obesity.

National Fire Academy's Executive Fire Officer Program (EFOP) Executive Leadership (EL) R0125. This ARP relates to EL course goals by developing the ability to conceptualize and employ key processes used by effective executive-level leadership managers in the exercise of adaptive leadership (Federal Emergency Management Agency [FEMA], 2015, p. vii). Having a traditional union fire department buy in to a new concept is a difficult adaptive challenge. Understanding the values of each member and having the union take ownership will be influential in implementation and success of a new policy.

U.S. Fire Administration [USFA] Strategic Plan. A key mission of the USFA is to reduce firefighter injuries and on-duty fatalities by fostering national leadership to advocate proper prevention, preparedness, and response (U.S. Fire Administration [FEMA], 2016). This has clearly been shown as a major issue at the CFD. The research design supports goal number one of the USFA:

- Goal 1: Reduce Fire and Life Safety Risk Through Preparedness, Prevention and Mitigation. (U.S. Fire Administration [FEMA], 2014, p. 9)

Significance to the Organization. A desired outcome of this ARP is to reduce illness, injury, or death caused by occupational health related risks. The USFA goals will be directly aligned with the research problem by developing a custom HWI that meets the needs and values of the individual members of the CFD. Every member of the CFD has felt an emotional impact of losing a fellow brother firefighter. Preparing members for a healthy career and retirement is a future goal.

After recent events at the CFD, Chief Leonard Albanese of the CFD tasked the writer of this ARP as the health and wellness deputy chief. This position is new to the writer and the department. This ARP will be the basis of best practices for the formulation of a HWI custom designed for the CFD. This will be the first draft of a living document.

Literature Review

This section is formatted with an outline of critical findings from relevant documents of others. Research in the field of health and wellness has led to literature from leaders of the IAFF, IAFC, NFPA, USFA, and medical professionals. Subject matter continuance with research includes reducing occupational cancer, heart health, obesity, nutrition, fitness, and reducing injury and lost work time. This section will help the researcher answer the following three research questions: (a) What health and wellness risks should the CFD be focusing on? (b) What components are other fire departments using as part of their fire service HWI? (c) What are the perceived strengths and weakness from HR, cohorts, chief, union, and families on adopting a HWI at the CFD?

Organizations

International Association of Fire Fighters. The IAFF is a labor union which represents firefighters in the United States (U.S) and Canada. The IAFF is one of the most active lobbying organizations in Washington, DC. The IAFF is a leader in health and safety initiatives for the fire service for over a century. In 2008, the IAFF and IAFC developed *The Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI) 3rd Edition* to assist fire departments across the nation and Canada (International Association of Fire Fighters [IAFF], 2016).

National Fire Protection Association. The NFPA is a global nonprofit organization, devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and

related hazards. NFPA delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach, and advocacy. NFPA has published material to aid in HWIs:

- NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*
- NFPA 1582: *Standard on Comprehensive Occupational Medical Program for Fire Departments*
- NFPA 1583: *Standard on Health-Related Fitness Programs for Fire Department.*

(National Fire Protection Association [NFPA], 2016)

International Association of Fire Chiefs. IAFC is the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search and rescue, and public safety policy. IAFC provides a forum for fire and emergency service leaders to exchange ideas, develop professionally and uncover the latest products and services available to first responders. The IAFC has joined the IAFF in publishing *WFI 3rd Edition* in 2008 (International Association of Fire Chiefs [IAFC], 2016).

United States Fire Administration. USFA is an entity of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA). The mission of the USFA is to provide national leadership to foster a solid foundation for our fire and emergency services stakeholders in prevention, preparedness, and response (U.S. Fire Administration [FEMA], 2016).

Chelsea Fire Department. The CFD is a civil service career fire department with 92 sworn personnel. The CFD advances public safety through its fire prevention, investigation, and education programs. The timely delivery of these services enables the CFD to make significant

contributions to the safety of the City of Chelsea and homeland security efforts. The CFD is taking the initial steps to promote health and wellness in the workplace by establishing a HWI (City of Chelsea Massachusetts [CFD], 2016).

IAFF Local 937. Local 937 is the official bargaining unit for members of the CFD. Members of the union are represented and not separated by rank and file. Local 937 has been recognized as one of the strongest unions in the State of MA.

City of Chelsea Human Resource Department. The HR Department is an internal customer service department for City of Chelsea employees past and present. The HR Department is responsible for the following areas in relation to health and wellness for fire service personnel:

- employee and union relations
- support for collective bargaining
- monitoring workers' compensation
- police and fire medical administration
- overseeing unemployment benefits
- managing personnel records
- policy development, implementation, and administration
- employee training and development. (City of Chelsea Massachusetts [Human resources], 2016)

Risk

The occupation of firefighting is one of the most dangerous jobs in the world. The pride and respect of being a part of the fire service outweighs the risks of the job. A key issue in firefighting is not seeing the hidden dangers of illness and injury that can be prevented. One way

of facilitating change in an organization to uncover these hidden dangers. Leading change in an organization is a difficult task to undertake. Three areas of focus for change to be successful are figuring out what to conserve from past practices, figuring out what to discard from past practices, and inventing new ways that build from the best of the past (Heifetz, Linksy, & Glashow, 2009, p. 69). Past practices in the fire service that remain current are under staffing, twenty-four-hour shift schedules, high cancer rates, and heart related deaths and injuries.

Cancer. A focused risk that the CFD has experienced for over a decade are active LODDs caused by cancer. Cancer has become an occupational disease of the fire service. IAFF research provides linkage that long-term exposure to plastics from fire and hazardous chemicals is linked to lung disease and many forms of cancer. A new study provides evidence that 68 percent of all firefighters fall victim to cancer. Since 2002, 54.8 percent of LODDs on the wall at the IAFF Fallen Fire Fighter Memorial have died from occupational cancer (Center for Disease Control and Prevention [CDC], 2016). These names include Firefighter Mike Coyne and Firefighter Peter Kannler of the CFD.

Boston Fire Department (BFD) has engaged in an ongoing war against cancer in the fire service. Their powerful (Cancer Prevention in the BFD YouTube video) message has reached thousands of fire departments across the country, projecting a light on the high percentage of cancer rates at the BFD. Now, cancer screenings are available to all members throughout their careers in hopes of identifying cancers while they are still treatable. CFD has also been impacted by the BFD message. Now, members of the CFD are cleaning their gear after fires, keeping fire department equipment and gear on the apparatus floor, and educating its membership on how to prevent cancer at all cost. The CFD like the BFD has had professional company test air quality in their fire houses (Mackin, 2016).

The CFD administration has identified a need for a HWI at the CFD. The focus has been on high cancer rates and LODDS from past and current events. There is no way to pin point the exact cause of cancer and certain types of injuries, but taking a stand with prevention is a proactive step for the organization.

Cardiac. The leading cause of LODDs in the fire service is sudden cardiac death, which accounts for approximately 45 percent of all firefighter fatalities (Smith, Barr, & Kales, 2013). Obesity in the fire service equates to cardiac events. More than two-thirds of Americans are overweight and 73 percent to 88 percent of firefighters fall in this category. This population of individuals are at increased risk for:

- metabolic syndrome
- cardiovascular disease
- low HDL (good) cholesterol
- high low-dense LDL (bad) cholesterol
- high triglycerides
- hypertension
- diabetes
- cancer
- sleep disorders. (National Volunteer Fire Council [NVFC], 2011, p. 14)

Occupational exposures caused from increased cardiovascular activity, emotional stress, and pollutants cause a strain on the heart. If a firefighter has underlining cardiovascular disease, this may trigger a cardiac event of some kind (Kales, Soteriades, & Christiani, 2007). A 2007 research study focused on firefighters' risk of heart attacks at emergency incidents. Data from

this study found firefighters have up to 100 times the normal rate of suffering from a heart attack (Kales et al., 2007).

Firefighters in the U.S. have been characterized as being sub-par physically fit and obese (Storer et al., 2014, p. 661). A firefighters' body mass index (BMI) can be linked to heart disease related risk factors. Evidence also suggests that firefighters with high BMIs have greater arterial stiffness, where the artery walls begin to fray because of mechanical stress. Arterial stiffness is a key component of heart attacks and strokes (NVFC, 2011, p. 13). On the fire ground a combination of carbon monoxide (CO) and cyanide when inhaled can result in tissue hypoxia, in turn, leads to myocardial ischemia in some individuals. Arterial stiffness increases with obese firefighters during strenuous activity. Study has shown that three to four drills lasting twenty minutes at a maximum three hour intervals showed diastolic dysfunction which is a reduction in the lateral wall E wave ¹during post firefighting training. Individual characteristics are a factor if a persons' health status is fit or unfit (Smith, Barr, & Kales, 2013).

A major weakness in managing organizations is obesity in the workforce. Obesity in the fire service is one of the main factors in lost work time due to sick or injury status. Obesity creates direct and indirect costs. Effects of this medical condition includes:

- absenteeism
- lower worker productivity
- greater disability than those who maintain a healthy weight
- premature death
- presentism. (NVFC, 2011, p. 10)

¹ E-wave representing the early, passive filling of the left ventricle

Indirect costs are those that are not direct medical expenditures that pay out in a workmen's compensation case. Indirect cost represents lost productivity in the organization. An indirect cost that organizations have trouble addressing in the work place is presentism. This is having members who are present at work, but do not perform. Presentism is an area of focus linked to obesity in the fire service. This is an indirect cost that places the workload on efficient employees who, in turn, are at great risk of injury due to work overload (NVFC, 2011, p. 10).

Tucker and Friedman found that obese workers were 70 percent more likely to experience "high-level" absenteeism (seven or more absences due to illness in the past six months) than lean employees (Friedman & Tucker, 1998, p. 203). Pronk and associates found that obesity was associated with more lost work days and greater difficulty getting along with co-workers. In contrast, greater levels of physical activity and cardiorespiratory fitness were associated with higher work quality, job performance, and greater work quantity in workers from a variety of occupations (Pronk et al., 2004, p. 20).

The National Development and Research Institutes found that BMI is an accurate way of classifying the weight status of firefighters when compared to other, more clinical-based measures (NVFC, 2011, p. 13). In comparison to Massachusetts (MA) firefighters, Harvard Medical School found that firefighters who received a heart presumption retirement (retiring with the assistance of disability awards due to cardiovascular conditions and diseases) were more likely to be obese or have a high BMI (NVFC, 2011, p. 14). BMI has been proven to trigger sudden cardiovascular or cerebrovascular events which accounts for 49 percent of LODDs in the U.S. (Storer et al., 2014, p. 661). Further, data shows evidence that obesity in the fire service is higher than the general population. Rates of obesity in the U.S. are tracked through the National

Health and Nutrition Examination Survey (NHANES). Data from this survey proves that 112,000 Americans each year die from preventable deaths caused by obesity (NVFC, 2011, p. 6).

Cardiovascular health in firefighters is largely determined by physical fitness. Other concerns are cardiovascular history or how you take care of yourself. Obesity in the fire service is ranging from 32 percent to 40 percent of firefighters. Hypertension is approximately 20 percent to 30 percent among this group and dyslipidemia has been reported in greater than 20 percent of firefighters. With statistics driving the risk of what is to come, aerobic fitness should be of utmost importance (Smith et al., 2013).

Sudden Cardiac Disease (SCD) in firefighters (90 percent) is linked to Coronary Heart Disease (CHD). Most autopsies on firefighters who have suffered SCD often show coronary atherosclerosis usually accompanied by left ventricular hypertrophy (LVH)/cardiomegaly. Personal who do not see a primary care physician or do not participate in medical health evaluations through their department could have a latent diagnosis of CHD or a clinical equivalent. Firefighter autopsies have found that 60 percent of LODDs have left ventricular hypertrophy cardiomegaly. This discovery plays a major role in Cardiovascular Disease (CVD) events in the fire service (Smith et al., 2013).

Behavioral. Job-related duties are key in reasons why firefighters have issues with weight gain. Factors include:

- 24-hour shift work
- sleep disruption
- unhealthy eating patterns
- absence of fitness standards. (NVFC, 2011, p. 4)

When brainstorming health related factors from business work styles, studies show 24-hour shift work leads to significant wear and tear on workers' bodies and minds. Researchers from Circadian Technologies, Inc. have found that employees under these extended work hours, have sick leave usage and turnover rates nearly three times greater than the general population. These same studies have correlated workers' compensation costs directly to the degree of employee fatigue (Circadian Technologies [CT], 2004). Health related factors associated with 24-hour shift work include:

- family life impacted from stress (divorce)
- fatigue (results in 12 percent of fire department fatalities from vehicle crashes in 2015). (Fahy, Leblanc, & Molis, 2016, p. 10)
- increased likely hood of obesity
- high risk of cardiovascular disease
- high risk of mood swings
- complication with diabetes
- substance abuse
- depressed immune system
- financial strain. (Fire Engineering [FE], 2007)

Sleep disruption is one component of obesity in America's fire service. The circadian rhythm is the physiological cycle the body and hormones go through in a 24-hour period. A person's internal circadian biological clocks regulates the timing periods of sleepiness and wakefulness throughout the day. The circadian rhythm dips and rises at different times of the day, so adults' strongest sleep drive generally occurs between 2:00 to 4:00 am and in the afternoon between 1:00 to 3:00 pm (National Sleep Foundation [NSF], 2016). Foods consumed

at night are processed differently during the day. Disruption to the cycle by being awake and introducing light when the body expects to be asleep in the dark, can cause interruption to the typical cycle. A common cause in disruption of sleep is a hormone (ghrelin hormone) which makes your body feel hungry when it is not (NVFC, 2011, p. 29).

Personal discussions with members of the CFD have shown that many members suffer from sleep apnea (observation November 9, 2016). Sleep apnea is a common and serious sleep disorder that causes you to stop breathing during sleep. The risks involved with this disorder include higher rates of obesity because the body does not go through a full sleep cycle (National Heart, Lung, and Blood Institute [NIH], 2016).

Shift work has led to many behavioral problems with fire service personnel. Personnel who are scheduled to 24-hour shifts have shown decreased levels of serotonin in the body. This can lead to behavioral issues at work and home (Jahnke, 2016). The CFD is one of the busiest fire departments per capita in the nation. Department personnel at the CFD are accustomed to 24-hour shift work. The IAFF relates stress from 24-hour shift work and exposure to human sufferings, in proper sequence, leads to heart disease, and behavioral problems (IAFF/IAFC, 2008, p. 7).

Mental health can be a hidden factor with first responders. Post-traumatic stress from repeated exposure to unnerving incidents leads to higher risk of anxiety and depression. Outcomes from these types of behavioral health issues can increase alcohol and substance abuse. Alcoholism carries many empty calories that contributes to obesity (Jahnke, 2016).

Stress can affect an employee in many ways. Financial security is a factor that is usually not addressed in the fire service. At the CFD, financial advisors are absent from current human resource offerings. Individual members living pay check to pay check are currently not treated as

a reportable issue. Financial security is found to influence overall wellness. Educating the workforce in financial principles is needed to become part of the behavioral aspects of overall wellness initiative. Studies have shown that nearly six in ten workers (58 percent) do not have a financial plan in place. Health risks that come with unstable financial situations are ulcers, digestive problems, migraines, anxiety, and depression caused by stress (The Institute for HealthCare Consumerism [IHC], 2016).

The three biggest threats to healthy nutrition choices at the firehouse are bonding over meals, portion size, and snacking (NVFC, 2011, p. 28). Peer pressure is a final behavioral factor overlooked. Cohorts, friends, and family can lead to a never-ending battle with unhealthy eating (Jahnke, 2016). Especially during the holiday season, foods with high sugar content are brought into the firehouses at an alarming rate (observation December 25, 2016). To combat poor eating habits, healthy eating and being active are key components of a HWI.

Physical. IAFF advocates that high levels of physical fitness are needed to perform necessary job duties in the fire service (IAFF, 2008, p. 7). Development and Research Institutes found that only 38.7 percent of career firefighters met the fitness threshold suggested by NFPA 1582 (NVFC, 2011, p. 13). Studies have found that physical activity alone is not a sole means of combatting weight loss in the fire service. Eric Revising obesity researcher at the Pennington Biomedical Research Center, provides insight from a 2010 *New York Times* article, “In general, exercise by itself is pretty useless for weight loss” (NVFC, 2011, p. 30). The amount of recommended activity related to improving health (i.e., at least 150 minutes of moderate-intensity activity) has generally not been associated with substantial or clinically important weight loss that is comparable to what would be considered successful as an obesity intervention

(NVFC, 2011, p. 30). Physical activity levels can be broken down in to average weight loss per minute. Physical activity levels:

- 150-250 minutes per week produces modest weight loss (4-7 pounds)
- more than 250 minutes per week is needed to produce clinically significant weight loss (11-16 pounds). (NVFC, 2011, p. 30)

Statistics show that working out five days per week with an average exercise between 50-80 minutes per session can achieve weight loss (NVFC, 2011, p. 30).

Anaerobic endurance is a trend that is scene in gyms across the world. High altitude masks and blast masks are being used by fire personnel. Anaerobically means training without oxygen, and after two minutes the bodies aerobic system kicks in. Anaerobic endurance is being strongly associated with tested job performance measures for firefighters and most valid predictor of firefighter job related functions (e.g., performance total, hose pull, victim drag, stair climb, and equipment hoist) (NVFC, 2011, p. 52).

Culture. A culture that has stayed with the CFD since the early 1900's is the fire alarm call box. A box alarm assignment will relay a loud tone that relates to a serious call for a certain type of incident or occupancy type. Box alarms are the initial alarm for all building fires. The tone is considered an unknown health risk that CFD has never identified. The tone creates a rapid increase in heart rate initiated by sympathetic physiologic arousal from the fire alarm bell. Hearts rates increase to near maximal levels during this time (Smith et al., 2013).

Fire departments need to focus on health and fitness standards that are custom to the culture and work standards. The Toronto Pearson Fire Department (TPFD) developed a wellness and fitness program custom to their personnel needs. The participation by members is voluntary, confidential, and non-punitive. The goal is to make a HWI realistic and goal attainable. The first

step of this fitness model was finding functional based fitness equipment. Functional based exercising focuses on everyday routines that the fire service job requires. To be prepared for this type of environment, the body needs all around strength. All members assigned to the respected fire house were shown how each piece of fitness equipment worked by the vendor. The next step is to develop partnerships with licensed professionals. This can include department physicians, nutritionists, exercise science and health promotion, sports conditioning, behavioural therapists etc. The TPFD involved their department physician which helped with prevention of work related injuries (Aitken, 2012).

Components

Medical Assessment. Annual medical assessments allow fire departments a tool to screen and educate personnel on current health. Identifying health and wellness issues that are not obvious on routine examination is a critical factor in designing a wellness initiative specific to department needs. Health screenings expose potential life threatening risks before they become deadly (Basri, 2012). National Development and Research Institutes' research team recently completed a national qualitative study on firefighters concerns with medical evaluations testing. Most common concerns in this field are:

- not knowing how data will be used
- repercussions of not passing
- validity of fitness test to actual job functions. (NVFC, 2011, p. 51)

Mobile health testing facilities are being used to bring medical testing equipment and health and wellness services to the employer. Professional Health Services (PHS) of Havertown, PA is providing mobile tractor trailer units equipped with advanced medical equipment and computer technologies. These units can travel anywhere in the country. Medical service includes:

- hearing testing
- vision screening
- blood and urine profiles
- pulmonary-function evaluations
- electrocardiograms
- chest X-rays. (Basri, 2012)

Patient confidentiality is met with medical information electronically stored in a secure HIPAA-compliant database. Once a health evaluation is completed, participants will be given a report that gives recommendations on how to improve individual health. Report information includes:

- diet
- exercise
- stress management
- cardiovascular risk assessment: targeting (nutrition, cholesterol reduction). (Basri, 2012)

Medical records can be used to track trends in health and lay the groundwork for future research (Basri, 2012). Tracking trends in medical data can bring awareness and focus on the high rates of cancers and other career illnesses in the fire service. Recently, the CFD sadly lost Firefighter Peter Kannler to occupational cancer. During his battle with cancer, firefighter Kannler was contributing to cancer research by allowing his personal medical information to be used for future research and tracking. Testing and data are the tools necessary to recognize the association between the incidence of cancer and other occupations illnesses in the fire service.

The Fire Chiefs Association of British Columbia (FCABC) developed a letter for fire fighters to bring to their primary care doctors. This letter provides guidance for proper cancer

screenings specific to the job-related hazards of firefighting. Medical experts believe that firefighters should start cancer screening ten years earlier than the usually recommended age. Further, doctors should be screening for other types of cancers, instead of the ones identified in presumption laws. Len Garis and Karin Mark explain,

A thorough and regular screening program is more likely to detect a cancer early, when there is a higher chance of effective treatment. Once cancer is advanced and has spread through the body, it's like a fire where flames engulf the house. There is less of a chance of effective intervention. (Garis & Mark, 2012)

Physician Louis Francescutti, President of the Royal College of Physicians and Surgeons agrees that earlier screening of firefighters for cancer makes sense from a prevention standpoint. Physicians who treat firefighters should make themselves aware of the increased risks faced by this patient group. More preventative screening will lessen the impact of the health risks faced by firefighters (Garis & Mark, 2012).

Gaining support by union leaders is a primary component in medical screening process. Dr Kenneth Kunz, an oncologist cancer consultant and researcher is investigating and promoting greater recognition of job-related cancers in firefighters and more cancer prevention mechanisms. Kunz's initiative has gained support by British Columbia's Professional Firefighters Association (BCPFA). The BCPFA has co-founded the development of Kunz's letter to doctors (Appendix A):

It was important to representatives of both the IAFF Local 1271 and the fire chief's association that we spearhead this issue that affects all firefighters, said IAFF Local 1271 President Mike McNamara. Prevention is our key objective. This initiative will save lives. (Garis & Mark, 2012)

Training. Scheduling fitness, like training, in a 24-hour shift needs to be considered. If fitness is not placed in the weekly training schedule as an everyday routine, it most likely will not happen (Humphrey, 2012). The Chelsea Police Department (CPD) in their city contract is granted one hour of wellness each day (observation January 18, 2017). A key element in The Baltimore City wellness program is providing personalized exercise prescriptions for each employer. Each participant receives a comprehensive report that details personalized recommendations on how to improve individual health and wellness. Participants in the Baltimore City program expressed positive feedback regarding the comprehensiveness of health evaluations and the post-testing reports (Basri, 2012).

The Boston Fire Department (BFD) has successfully implemented a health and wellness program partnered with IAFF Local 718, and O2X Human Performance Training. O2X has fire department personnel engaged in a four to five-day program that spans 24 weeks. Training focuses on all areas of physical and mental health required for on the job performance. This program offers hands-on training in developing healthier lifestyles which includes five pillars; nutrition, sleep, stress management, resilience, and physical conditions. Adam La Reau co-founder of O2X believes,

O2X Human Performance Training is much deeper than just being able to run faster, feel stronger or do more push-ups. It's about creating sustainable lifestyle changes that will improve the quality of life and well-being of each firefighter, and allow them to serve long, safe, and healthy careers. (Fire Engineering [FE], 2016)

Buy in from fire personnel is reported as positive. The younger generation of firefighters are participating as well as the senior members on the job. As of September 2016, over 450 members

of the BFD have participated in O2X (Mackin, 2016). Richard Paris President of IAFF Local 718 believes,

Our members attest, and I agree, that it's one of the best trainings I've received in 31 years working as a firefighter. I highly recommend O2X to any union or municipality seeking to improve the complete wellness of their members. I'd be happy to answer any questions if they arise (O2X, 2016).

Staffing. In 1990, the Providence (RI) Fire Department conducted a study that recommended four firefighters as minimum while responding on fire apparatus. The NFPA reported at that time a 71-percent decrease in time lost due to injury using four-person staffing when compared with three-person staffing (Wilson, 2009). A study conducted by the Houston (TX) Fire department reported staffing below a crew size of four can overtax the operation force and lead to higher losses (Houston (TX) Fire Department, The District Tactical Advisory Committee [HFD], 2001).

Motivation. A department needs to have a motivational mindset to set future goals. A series on the *History Channel* called *The Selection*, involves ordinary citizens who volunteer to go through an intense physical and mental challenge of their lives patterned after Special Forces Selection. In one episode *Hell & High Water*, an instructor who served as a Navy Seal emphasized that the only way a person will get through Special Forces training is having a motivational mindset to succeed (observation January 15, 2017). Motivation most times come in some form of an incentive. The incentive could be money, fire department gear, or personal accomplishment. Some departments across the nation will challenge their members in a weight loss, fitness, lowering cholesterol, or a blood pressure challenge. The City of Chelsea HR Manager Pamela Johnson provides insight on how to establish incentives for a fitness challenge

at the CFD. She explains, presenting city council a proposal to make fitness challenges a line item on the next budget cycle. Allowing the council to decide will negate any contractual or legal issues (P. Johnson, personal communication, September 23, 2016). IAFF Local 937 President Anthony Salvucci discusses making the incentive a benefit for a firehouse and not an individual. He believes, “if a firehouse competes in a weight loss challenge, the incentive could be money spent on new fitness equipment” (personal communication, December 23, 2016).

Promoting a wellness initiative can be done in many ways. Designing creative ways to get employees involved include:

- contests
- newsletter
- training
- message boards
- new employee orientation
- wellness coordinator
- resources
- local marketing
- signs
- memberships. (Root III, 2016)

Participation. An interview in the results section was conducted with Assistant Chief Gordon Wallace from the Howard County Fire Department (HCFD). A high focus for this ARP is determining the buy-in from the organization. The HCFD has implemented a successful wellness initiative for their employees. The organizations formed an Occupational Health and Safety Committee. That committee works with the Howard County Wellness Group and focuses

on initiatives to improve employee health and wellness. Each Station has a gym and 15 fitness trainers on staff. Union buy-in came from literature from NFPA 1582 and the IAFF/ IAFC Joint Labor Management Wellness Fitness Initiative (WFI). Wallace explains, “By allowing these stakeholders to design the program from the ground up, it allows the buy in from the beginning because they have ownership” (G. Wallace, personal communication, September 16, 2016).

A large part of making members of a department willing to change their poor habits in nutrition and fitness is to provide them with knowledge. The Toronto Pearson Fire Department (TPFD) developed a wellness and fitness manual that fire firefighters use as a reference for information on nutrition and physical fitness. This manual includes sample workouts, injury prevention, and other health related literature (Aitken, 2012).

The TPFD is in the process of developing peer fitness trainers on each shift to help assist in nutritional counselling, designing fitness programs, and provide instruction on various exercise techniques. These peer coaches employed by the fire department will act as role models for the department in health and wellness. Specific area of wellness members will be trained in are:

- advanced training techniques
- movement and performance screening
- speed
- agility and quickness training
- trigger-point therapy
- advanced programming principles
- high-performance nutrition

The overall outcome is to have members assigned on each shift certified as personal training specialists (PTS) (Aitken, 2012). The final phase to this wellness initiative is sustainability over time. To accomplish this, the TPFD will monitor personal programs for fire firefighters based on their goals, previous injuries, functional assessments, time commitment for training, and access to fitness equipment away from the fire house. The feedback from their HWI has been well received by the TPFD. They have had a high participation rate among all divisions, fewer work related injuries, team building through shift workouts, participation in fitness challenges, and rehabilitation of existing injuries (Aitken, 2012).

HWI Weaknesses

Family/Cohorts. A weakness in guiding members of the CFD into a healthier lifestyle is personal issues, injuries, and not having the tools or motivation capable of changing. Families are a major factor in an individual lifestyle.

Creating an environment where families feel welcome is the most important factor in successfully engaging families and getting them to partner in efforts to improve health and wellness. Families need to feel welcome and informed about how to get involved. (Washoe County Health District, 2016, p. 2)

Families who do not take part in healthy living will not support the overall goal of a HWI at work and home. Participating as a team in healthy eating and fitness will negate any bad habits that a person is trying to get rid of. Recent survey data showed most the CFDs' families would support and participate in a healthy lifestyle change (results section).

Chief/HR/Union. Currently, the CFD does not have a designated fire department physician chosen by union and management to oversee the health and wellness of its

membership. When choosing a department physician, the city must review if physicians have thorough knowledge of the positions in the fire department. These include:

- essential job tasks
- physical demands
- psychosocial stressors
- chemical, biological, and physical exposures
- effects of medical conditions on essential job tasks. (IAFF, 2008, p. 12)

It is important that the physician is chosen by the union and city officials. The physician is key component in forming an occupational health and safety committee to build a HWI from the ground up. The physician is a vital advisor and consultant to both labor and management on all medical issues (IAFF, 2008, p. 12).

Physicians must adhere to all local, state, and federal laws pertaining to patient confidentiality. Specific information regarding the medical examination, evaluation, laboratory results, and medical diagnosis shall not be released unless written permission is obtained from the individual. Union members need to feel assured that medical information will never be shared with the chief or HR unless consent is granted (IAFF, 2008, p. 12).

HWI Strengths

Human Resources. HR departments track indirect and direct costs of work related expenditures due to lost work time caused by sick or injury status. A strength in HWIs from a human resources standpoint, investing in employees' health will likely reduce direct and indirect cost causing a loss of productivity in employees. This will also support a healthy career and retirement.

Union/Chief/HR. A key point strategy in developing a wellness plan is making it an initiative not a fitness-for-duty evaluation. The wellness model that successful companies should follow requires a holistic approach which is a view of engaging and developing the whole person. Organizations should focus on a healthy work environment, healthy eating habits, stress management, and finance management (Tillman, 2015). This can be a major strength or a failure in union buy-in. Making participation voluntary will encourage participation. Another difference in a wellness initiative is that it provides the participant education on his or her overall health through the completion of NFPA 82 health risk appraisal questionnaire and physical examinations (Basri, 2012). IAFF list benefits of wellness initiative for its members. They include:

- strength/stamina
- lower cholesterol
- decreased blood pressure levels
- risk of death, injury, or disability reduced
- increase job performance
- behavioral disorder reduced. (IAFF, 2008, p. 8)

IAFF recommends local unions take the leadership role in implementation of a wellness initiative. Most fire departments center on latest equipment, apparatus, and technology. The IAFF wants departments to shift the focus to wellness for uniformed personnel (IAFF, 2008, p. 8). Chelsea Firefighters IAFF Local 937 has the reputation of promoting the safest work environment for their employees. Collaboration with union leadership in implementing a wellness initiative should be started in the preparation stage of strategic planning. IAFF (2008) recommends,

Without union participation in establishing such a program there will be limited or no member “buy in” to the program. A wellness-fitness program must be collaborative between labor and management and is educational and rehabilitative and not punitive in nature (p. 8).

Using guidelines from IAFF *Fire Service Joint Labor Management Wellness Fitness Initiative (WFI)*, HWI has cost saving measures. For the City of Chelsea, research has shown a reduction in injury rates and sick leave usage in small and medium size departments from implementation of HWI. This ultimately will curbe overtime costs and workmen’s compensation claims. For aging members in the fire service, HWI can improve the quality of life through longevity with reduction in disability claims. Finally, HWI can also facilitate fire department compliance with federal, state, and local laws (IAFF, 2008, p. 8).

WFI has five main components:

- medical
- fitness
- medical/fitness/injury rehabilitation
- behavioral health
- data collection and reporting. (IAFF, 2008, p. 8)

To provide a uniform standard across all fire service organizations the IAFF worked directly with NFPA on helping the technical committee design the current standard of NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. Union partnership has ensured that incumbent evaluations of WFI will not be punitive to any employee participation.

There are financial benefits of implementing wellness initiatives besides just health. Wellness programs can help cut health care cost through your insurance provider. One way the city can cut workmen's compensation claims is investing in the health of their employees. The City of Chelsea HR department has estimated a 30 percent cost savings on insurance premiums through a wellness initiative per employee. The total cost for a family plan for each employee at the CFD is 5,254.44 dollars. If estimating cost savings by assuming many CFD personnel have a family plan, out of a 92 personnel department the savings would be estimated at 145,023 dollars. Some stipulations for 30 percent annual cost savings per employee is the participation in biometric screenings. Employees may need to pass health screenings that deal with cholesterol levels, lipid panel, blood pressure, blood glucose levels, as well as a measurement of height, weight, and body mass index (BMI) to earn the benefit. The employees who are unable to pass these screenings would be expected to enroll in a wellness program. Until the employee passes all required exams, they will not be eligible for cost savings on their premium (Tillman, 2015).

The City of Knoxville, Tennessee successfully cut their risk management budget by 605,640 thousand dollars by reducing workmen's compensation claims (Witt, 2012). Gary Eastes, Risk Manager for Knoxville was named 2012 Public Risk Manager of the year by the Public Risk Management Association. From 2003-2012, Eastes decreased the city's' per-employee medical costs by 26 percent below the national average and cut workdays lost from injury in half. He accomplished this by investing in workers' health. How he achieved success was adding physical therapist to cut outpatient rehab cost, case manager to review claims, education, and checkups. Having daily access to wellness coaches is shown to be beneficial to the cuts in workmen's compensation claims. In 2005, the year before the city began wellness

programs in earnest, 2,205 employee workdays were lost to injury. In 2011 there were 1,170 lost days (Witt, 2012).

IAFF, IAFC, and IAFF/IAFC Task Force have agreed that to successfully implement HWI, there is a need for a peer fitness trainer (PFT) on every shift. Currently the IAFF offers a *Fire Service PFT Certification Program*. Certified PFTs will be essential in helping the IAFF/IAFC Task Force accomplish two of its most fundamental missions:

- improving fire fighter health, wellness, fitness, safety and performance
- improving the effectiveness of fire fighters and every fire department in meeting the needs of the community. (IAFF, 2008)

Due to the difficulty of quantifying the benefits of wellness initiative, many companies are unable to offer them. Now the City of Chelsea has not offered a wellness program for their employees. However, a comprehensive analysis of 42 published studies of worksite health promotion programs showed that companies that implemented an effective wellness program realized significant cost reductions and financial gains, including:

- 28 percent reduction in sick days
- 26 percent reduction in health costs
- 30 percent reduction in workers' compensation and disability management claims
- 5.93 to \$1 savings-to-cost ratio. (Tillman, 2015)

The Aflac Workforces Report can validate these results. Study revealed that almost all companies believe HWIs are beneficial. Additionally, nearly half or more of all companies' survey believe they can lower health care premiums and feel they have a healthier workforce (Tillman, 2015). Cost savings on health insurance is considered a number one selling point for city managers in cities like Chelsea MA.

Cohorts/Families. *Fire Service Joint Labor Management Wellness Fitness Initiative (WFI)* is developed to provide for physician guidance. This standard allows physicians to become educated on firefighter's job functions and potential risks. Members can choose to have their medical evaluation conducted by their primary care physicians. It is the responsibility of the fire department physician to review individual medical evaluations. It is critical to convey to the membership of local unions that medical evaluations are non-punitive in nature and understand there is no blanket prohibitions for incumbent fire fighters. The chief of department along with the city officials need to create alternate job functions if a member is unable to return to the job do to an injury or illness. These job functions will allow on the job rehabilitation after a medical evaluation. During the rehabilitation process, members will have access to physical therapist, nutritionist, peer fitness coaches etc. If a member has a diagnosis of cancer or an underlying heart condition, the department needs to support this member in the process. The WFI has listed conditions that will and will not categorize an incumbent firefighter's return to duty.

Implementation of WFI will allow for an appropriate medical assessment, early detection of diseases and illnesses, as well as implementation of health promotional programs. Local unions must understand annual medical evaluations is an integral element that provides invaluable health status assessments of both the individual and department wide. All data must be reviewed by department medical provider and placed in an individual's confidential file (IAFF, 2008, p. 11). The collection of data to track trends and effectiveness of the program is an added value to the overall health and safety of the membership. Collecting unidentifiable aggregated data during exams allows for long-term analysis and the implementation of preventive programs (IAFF, 2008, p. 11).

Aflac Workforces Report documented the strengths of having an employee wellness initiative. Report showed employees who are offered tools to improve health from a wellness initiative are more likely to have a higher level of job satisfaction, feel happier with their employer, and be more satisfied with their overall benefits (Tillman, 2015).

Literature Review Summary

The occupation of firefighting has proven to be one of the most dangerous jobs in the nation. Cancer in the fire service has become an occupational disease. Obesity is a major contributing factor in cardiovascular disease within fire houses. Behavioral risks from personal lifestyles and exposures lead to many issues depending on the person. Prevention of health-related risk factors is one step in sustaining a healthier person and workforce. Research has shown, the implementation of HWI can even reduce financial cost to cities and towns while improving the health of their work force.

Literature supported by the findings of others gave the researcher knowledge to guide the CFD in understanding health and wellness in today's fire service. HWIs provide evidence on cost saving measures due to lost work time from sick or injured members. Annual medical assessments allow fire departments a tool to screen and educate personnel on their current health. Health screenings expose potential life threatening risks before they become deadly (Basri, 2012). Identifying health and wellness issues that are not obvious on routine examination is a critical factor in designing a wellness initiative specific to department needs. Data from clinical testing is a puzzle piece needed to recognize the association between the incidence of cancer and other occupational illnesses in the fire service.

The main scope to acquire buy in from the CFD is making HWI realistic and goal attainable. The next step is to develop partnerships with licensed professionals. This can include

department physicians, nutritionists, exercise science, and health promotion, sports conditioning, behavioural therapists etc. Each employee is configured differently by body type, age, and physical fitness ability. A personalized exercise prescription is needed to be custom for each user. Each participant receives a comprehensive report that details personalized recommendations on how to improve individual health and wellness.

A realistic approach to a successful HWI is to having members assigned on each shift certified as personal training specialists (PTS) (Aitken, 2012). Some departments offer PTS plus a fitness manual that fire firefighters use as a reference for information on nutrition and physical fitness. These peer coaches employed by the fire department will act as role models for the department in health and wellness

It is important that the physician is chosen by the union and city officials. The physician is key component in forming an occupational health and safety committee to build a HWI from the ground up. A key point strategy in developing a wellness plan is making it an initiative not a fitness-for-duty evaluation.

Critical findings and observations that have influenced this project are the amount LODDs, illnesses, and injuries the CFD has faced in the past 12 years. This is a wakeup call for the CFD and cities and towns alike that share similar demographics and culture. More needs to be done by city and fire service leaders on investing in firefighter health and wellness.

Procedures

This ARP utilizes action research methodology to answer the following three research questions: (a) What health and wellness risks should the CFD be focusing on? (b) What components are other fire departments using as part of their fire service HWI? (c) What are the

perceived strengths and weakness from HR, cohorts, chief, union, and families on adopting a HWI at the CFD?

Background

The writer of this paper attended Executive Leadership (EL) (R125), located at the National Fire Academy (NFA) in Emmitsburg Maryland. This course was held in August of 2016. During the writer's stay at the NFA he utilized the learning resource center (LRC). Amid this time, the writer gathered literature pertaining to his research problem and questions. Using the LRC search engine, key words examined included, health, wellness, health and wellness, health in wellness fire service, health and wellness firefighters, and health and wellness initiative. A limitation in this subject matter was using the term health and wellness initiative. It was shown that the fire service is typically using health and wellness as a policy or procedure and not an initiative. Professors and classmates assisted the researcher in developing a relevant research problem, purpose, and questions. After completion of the course the writer contacted his evaluator by email for approval. The evaluator approved the writer's proposal and provided guidance on how to proceed.

After returning from the NFA, many hours were spent gathering information through various literature sources. Google® search engine helped the researcher with finding relevant information. The researcher kept many references current in nature. Several references cited were within the past five years. Material pertinent to this paper is organized in a Microsoft Word® folder. Each piece of literature was labeled by the title of work. After literature was analyzed the title was marked done. This allowed organized access for improved time management. Once all literature was reviewed the writer started to interpret all data in his own

words. The researcher applied skills learned through EL class assignments, lectures, and readings that helped with this format.

The literature review involved an analysis of research provided from internet, published documents, articles, and policies. Several best practices addressed the high levels of overweight, obese, and unfit firefighters. Best practices reviewed by the researcher included:

- NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program*
- NFPA 1582 *Standard on Comprehensive Occupational National Medical Program for Fire Departments*
- NFPA 1583 *Standard on Health-Related Fitness Programs for Fire Department Members*
- IAFF/ IAFC *Joint Labor Management Wellness Fitness Initiative (WFI)*
- Fire Administration's Health and Wellness Guide for the Volunteer Fire and Emergency Services

Interviews with vendors certified in some aspect of health and wellness provided the researcher with a subject matter expert. Chief, command staff, union officials, and HR provide experience in preparing a draft policy. The process of data collection and interpretation will be shown in this section to be easily replicated for future researchers.

Policy Development

The union executive board and command staff were provided a draft of this ARP for review. Once knowledge of the subject matter was established, the researcher with all party's mentioned, were prepared to start the draft policy of the *Health and Wellness Initiative (HWI)*. The draft policy included input from all parties using literature from IAFF, IAFC, NFPA, and many organizations across the country. The researcher used email listings of Executive Fire

Officer (EFO) classmates from all four (2012-2016). Feedback provided 15 policies that guided the researcher in setting up the CFD's HWI (draft) DP-30 (Appendix D).

Health and Wellness Initiative (draft) DP-30. HWI policy will be new to members of the CFD. This ARP and draft policy will be the foundation of a living document for current and future members of the CFD.

Focus Groups

Command Staff. On July 20, 2016, Chief Leonard Albanese Jr., held a meeting with the Deputy Chief John Quatieri, and the researcher. Deputy Chief Quatieri is the CFD officer in charge of operations and policy development. The intent of the meeting is the development of HWI DP-30. Topics discussed covered medical evaluations, nutrition, fitness, prevention of cancer, and cost of development. Chief Albanese facilitated the meeting. Meeting lasted one hour. Hand written notes were used to document the discussion.

Nutrition. On September 13, 2016, Dana Harrison MS nutritionist and educator was contacted because of her expertise with fire department nutrition. Email was the initial means of communication used. Weeks after the first email sent, Ms. Harrison met with Chief Leonard Albanese Jr., Deputy Chief John Quatieri, and the researcher on having her educate and design nutrition plans for the CFD. Meeting lasted one hour. Hand written notes were used to record the conversation.

Interviews

Howard County Fire Department Columbia, MD. Battalion Chief Gordon Wallace was contacted on September 16, 2016 via cell phone. A Microsoft Word® document was used to record conversation (Appendix B). The focus of the interview is gathering feedback from successful implementation of a wellness program.

Union. CFD's IAFF Local 937 President Anthony Salvucci was contacted on December 21, 2016 to review ARP draft. Once the ARP was reviewed, survey questions were sent to President Salvucci on December 23, 2016 for review. Salvucci approved questions from the survey that were sent out to 92 members of the CFD. The researcher kept handwritten notes throughout the process. Personal conversations and feedback were provided to the researcher and archived for policy development.

HR. A meeting was conducted with HR Manager Pamela Johnson from City of Chelsea. Meeting lasted two hours. A print out of workmen's compensation claims for the past year were archived for this ARP. Hand written notes were taken to record conversation.

Subject Matter Experts

Nutrition. On September 13, 2016, Dana Harrison MS a nutritionist and educator was contacted because of expertise with fire department nutrition. Ms. Harrison was contacted by the researcher via email. Weeks after the first email sent, she met with Chief Leonard Albanese Jr., Deputy Chief John Quatieri, and the researcher on having her educate and design nutrition plans for the CFD. Meeting lasted one hour. Hand written notes were used to record the conversation.

O2X. A meeting with Chief Leonard Albanese Jr., was held to discuss O2X training. The meeting was held on December 23, 2016 in the chief's office. Meeting lasted 30 minutes. Hand written notes were used to record conversation.

Policy Writing. Chief Leonard Albanese Jr., Deputy Chief John Quatieri, and IAFF Local 937 President Anthony Salvucci were given DP-30 for review. Word® documents were sent out to all parties on December 23, 2016. Draft policy was returned to the researcher on January 25, 2016.

Survey

The final task of solving the research questions was distributing a survey to 92 employees of the CFD. The target group for the survey was only given to current CFD employees. A pilot survey was implemented to find any weaknesses. The pilot survey was issued to 10 members of the CFD who were picked randomly. Using the sample size calculator displayed on the creative research systems website the writer identified the confidence interval for the pilot survey (Creative Research Systems, 2012). The pilot survey confidence level was set at 95%, sample size 40, and population of 92. The sample population was chosen by the size of the department. The percentage was set at 50. The calculation results put the confidence interval for the pilot survey at 11.66. The members of the CFD tested the pilot survey which will be used to make generalization about the population of firefighters. The pilot survey on average took five minutes to complete.

The final survey was emailed to 92 employees of the CFD. The survey on average took five minutes to complete which was a median response from members. The six survey questions appear in Appendix C. Each question of the survey was selected based on its relevance to HWI and the three research questions. The survey sample size was calculated at 92 members of the CFD. This group was chosen because the HWI policy will only effect this group.

The survey was made up of six questions consisting of four open ended and two yes or no. The survey questions were sent out to 92 reputational referrals via Survey Monkey® software. Out of the 92 emails sent, 26 completed the survey, generating a response rate of 16 percent. Acceptable response to online survey is noted as 25-30 percent (Kittleson, 1995). The response rate percentage may be effected by members not currently at work due to service connected injuries, sick usage, and retirements. A department email was used to link the survey

to the respondents. The CFD HWI survey was sent out on January 25, 2017 and closed out on February 7, 2017.

Limitations

It is important to understand that developing a HWI policy for your department must be custom to the culture of the individuals served. To reproduce this research paper, the department will need to be comparable. Union buy-in is key to policy development and implementation. If a department is not unionized, then this ARP cannot be easily replicated. Also, contractual language between cities and towns with their local union are different across all jurisdictions. That is something future researchers need to consider.

Unsolicited Input

The researcher stayed in constant contact with Chief Leonard Albanese Jr., Deputy Chief John Quatieri, and IAFF Local 937 President Anthony Salvucci throughout this process. Personal conversations were discussed on many different occasions. Hand written notes were archived and applied to this ARP.

Definition of Terms

Body Mass Index. Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high fat content in individuals (Center for disease control and prevention [CDC], 2016).

Cancer. Cancer is a disease that begins in your cells. A normal process in your body is when new cells replace old ones. When this process does not go as planned extra cells form a mass called tumors. Malignant tumors contain cancer, which invades nearby tissue that spreads throughout your body. There are more than 100 different types of cancer. Most treatment plans may include surgery, radiation and/or chemotherapy (National Cancer Institute [NCI], 2016).

Cardiovascular Disease (CVD). CVD is considered any disease of the heart which includes coronary heart disease, stroke, and high blood pressure. CVD generally refers to conditions that involve narrowed or blocked blood vessels that can lead to a heart attack, chest pain (angina) or stroke (Mayo clinic staff, 2014).

Coronary Atherosclerosis. Hardening of the arteries in the heart. Number one killer of Americans (WebMD, 2016).

Coronary Heart Disease (CHD). CHD is a disease in which a waxy substance called plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle (National heart, lung, and blood institute [NIH], 2016).

Dyslipidemia. A disorder of lipoprotein metabolism, meaning overproduction or deficiency (MedicineNet.com, 2017).

Health Insurance Portability and Accountability Act (HIPAA). HIPAA is a law that establishes standards to protect the privacy of personal health information which is provided to doctors, hospitals, employers, and other health care providers (MedicineNet.com, 2016).

Health and Wellness Initiative (HWI). Wellness is defined as a positive approach to living. Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. HWI can have many elements to an individual department. Some focus can be on preventable risk, behavioral, culture, and individual needs (University of Nebraska-Lincoln, 2016).

Hypertension. Is defined as high blood pressure. Hypertension has no symptoms. In the United States, about 50 million have high blood pressure (The free dictionary by Farlex, 2017).

Left ventricular hypertrophy. Left ventricular hypertrophy is enlargement and thickening (hypertrophy) of the walls of your heart's main pumping chamber (left ventricle) (Mayo Clinic, 2017).

Obesity. Having greater than average body fat or BMI (Harvard, 2017).

Serotonin. A neurotransmitter that is involved in the transmission of nerve impulses that trigger the release of substances in the blood vessels of the brain. Serotonin is also key to mood regulation, pain perception, gastrointestinal function, including perception of hunger (MedicineNet.com, 2017).

Sleep apnea. Sleep apnea is a common sleep disorder in which you have one or more pauses in breathing or shallow breaths while you sleep. Sleep apnea occurs when a person has periods where their breathing pauses while they are sleeping. Thus, the quality of your sleep is poor, which makes you tired during the day. Sleep apnea is a leading cause of excessive daytime sleepiness. Sleep apnea is commonly associated with obesity. Risk for sleep apnea increases as weight increases, and is particularly common in men with a neck circumference over 17 inches and women with a neck circumference over 16 inches (National heart, lung, and blood institute [NIH], 2016).

Results

This section evaluates research data collected from focus group discussions, interviews, subject matter experts, and a survey tool. The advancement of HWI at the CFD needs to be realistic and attainable. Buy-in from employees, city, and union is imperative for overall success. This research paper used action research methodology that will help provide answers to the following three research questions: (a) What health and wellness risks should the CFD be focusing on? (b) What components are other fire departments using as part of their fire service

HWI? (c) What are the perceived strengths and weakness from HR, cohorts, chief, union, and families on adopting a HWI at the CFD?

Specific Answers to Research Questions

Identifying health and wellness risks at the CFD needs to be tracked over time. Currently, there is no data to be obtained to diagnosis the problem of why CFD firefighters are dying unexpectedly of cancer and cardiac events, or being injured at a high rate on the job. Survey question number two polled the top risks the CFD should be focusing on. Currently, prevention of cancer, cardiac events, and obesity is the sample populations' focus. Tracking reoccurring injuries and illnesses without violating state and federal laws can be beneficial to the future of the CFD. This data helped answer question one of this ARP.

Fire departments across the nation should have a custom policy to meet the needs of their employees. To respond to the second question, a variety of interviews and review of policies helped answer this question. Fire departments that were researched all have unique demographics and culture. The researcher reviewed seven polices from departments that include Spokane Valley Fire Department Washington (WA), Los Alamos County Fire Department New Mexico (NM), Chino Valley Independent Fire District Arizona (AZ), Maynard Fire Department Massachusetts (MA), Atlanta Fire Rescue Department Georgia (GA), Lenexa Fire Department Kansas (KS), and West Metro Fire Protection District Colorado (CO). Most departments that are union based, reference the IAFF/ IAFC *Joint Labor Management Wellness Fitness Initiative (WFI)* in their current policy. This initiative allows unions to use literature from the international to encourage union buy-in. After continuous meetings with IAFF Local 937 President Anthony Salvucci, Local 937 suggests that the policy development needs to be done through safety committee (personal communication, December 23, 2016). This committee is new to the CFD,

and will be the basis for successful participation of the membership. The researcher was fortunate to be asked to be a part of this committee due to the research from this ARP (personal communication, December 23, 2016).

The last question was determined through evaluation of best practices from the private and public sector. There are many strengths that can be attained through an HWI. One goal that all parties can agree on is helping individual employees live a long prosperous life. Literature has supported that a HWI can reduce work related illness and injuries while providing a more productive workforce. It has been shown that strong union departments and individuals want to participate if the results are non-punitive, voluntary, confidential, realistic, and attainable. Weaknesses with HWI can attribute to high costs of services. Most cities and towns are restricted with budgets that do not invest in employee health. The overall health and wellness of the CFD needs to be a top priority for city leaders. The amount of injuries and illness reported with the added costs of health care and workmen's compensation claims, outweighs any weaknesses that can be associated with policy development.

Policy development

The goal of this ARP is to produce a living document that will benefit members of the CFD through their careers and retirement. The policy development of HWI DP-30 is the first draft developed by the organization (Appendix D). The policy is separated in to three main sections.

Scope. Draft policy DP-30 is intended to establish organizational guidelines to promote the health and wellness of all uniformed employees through implementation, operation, and maintenance of a HWI. This HWI is intended to be *voluntary, confidential, and non-punitive*.

Purpose. Provide a framework in which to offer health and fitness information, education, evaluation, and support to the employees of the Chelsea Fire Department (CFD). The goals of the HWI are:

1. prevent accidents, injuries, illnesses, and exposures from occupational hazards
2. to improve the overall health and physical fitness of the members of the CFD
3. to develop a training environment that is more relevant to the firefighting world
4. increase personal and organizational productivity

Overview. HWI at the CFD will be coordinated through an effort from IAFF Local 937 Safety Committee, Chief of Department, and City of Chelsea Human Resources Department (HR). It is every employees' personal responsibility to maintain a healthy lifestyle for the benefit of the organization and their families.

1. *Organization:* The HWI is based on best practices from the IAFF, IAFC, and NFPA.
2. *Responsibility:* The City of Chelsea has the responsibility of providing safe and healthy work environments for their employees. It is the responsibility of each employee to use the knowledge and tools that ensures their health and safety.
3. *Limitations:* Making this an initiative and not a mandatory policy.
4. *Risk:* Exposures from hazardous environments caused during firefighting assignments is a major risk in the fire service. Employees may succumb to illness, injury, or death.

Focus Groups

Command Staff. The intent of this focus group was preparations for the development of draft DP-30. This was the beginning phase of the research development for this ARP. Findings from the focus group revealed that HWI is new to the CFD. Having the union and the 92 employees buy-in to this concept will be a difficult task to undertake. Chief Leonard Albanese

Jr., expressed his concerns with the benefits of a HWI. His focus is providing the CFD with medical evaluations. He stated, “At his previous employment a medical evaluation would have saved a firefighter’s life in North Providence Fire Department” (personal communication, July 20, 2016). Deputy Chief of Operations John Quatieri expressed his concerns stating, “That the death of FF Kannler is a wakeup call to our department”. “Having a policy in place for gear washing, fitness, nutrition etc. is beneficial to the department” (personal communication, July 20, 2016).

Nutrition. Dana Harrison MS nutritionist, was asked to meet with department heads. Her experience with fire department culture impressed all participants in the focus group. Ms. Harrison MS is contributing to healthier lifestyles in today’s fire service. The CFD is looking forward to working with her soon.

Interviews

Howard County Fire Department Columbia, MD. Battalion Chief Gordon Wallace provided valuable input on the concept of union buy-in. He explained that using the IAFF/ IAFC *Joint Labor Management Wellness Fitness Initiative (WFI)*, “Reinforces union buy in because their leadership has developed the best practice” (G. Wallace, personal communication, September 16, 2016). The concept of using literature from the IAFF provides local unions with leverage. This leverage is in the form of trusting leadership from their own organization.

Union. Working relationship with union leadership is shown to be beneficial with policy development. CFDs’ IAFF Local 937 President Anthony Salvucci was influential in providing a different perspective on how survey questions were written and policy development. The input from President Salvucci provided the highest degree of protection and guidance from a union

standpoint. From a union standpoint, HWI is for all parties to have ownership of developing a policy and having power of implementation.

HR. The intent of the meeting was to understand the aspects of workmen's compensation, injury leave, sick leave, monies used for lost work time, incentives of a HWI, health care, and city offerings for health and wellness of their employees. The researcher was given a brief overview of self-insured status. HR manager Pamela Johnson provided the researcher with knowledge on how HR manages different aspects of the fire department. She educated the researcher on workmen's compensation claims. Overall, the City of Chelsea has the capability of saving money in workmen's compensation claims by development of HWI. Also, the city will have a 30 percent savings on health insurance premiums if a HWI is implemented at the CFD.

Subject Matter Experts

Nutrition. On September 13, 2016, a focus group was held with Dana Harrison MS. Her expertise in the culture of the fire service impressed the researcher and command staff. She has a history of working with many similar MA fire departments. Her approach is making learning about nutrition hands on and providing realistic dynamics of eating at the fire house. She provides a basic, intermediate, and advanced classes. She would also provide one on one communication to firefighter and their families'. A key point in the focus group is allowing members to contact her confidentially because every person needs a custom prescription for nutrition. The Chief of department has purchased her program that will start in the spring of 2017.

O2X. Chief Leonard Albanese Jr., conducted an interview with Adam La Reau co-founder of O2X Human Performance Training. After the interview the researcher met with Chief Albanese on his findings. Chief Albanese Jr. explained the training and overall program is ideal

for the fire service. The training consists of a four to five-day program that spans 24 weeks. In the Chiefs' opinion, the CFD is not ready for this type of training. The reason why the CFD is not ready from his perspective is HWI is new and needs to be done at beginner's level. The Chief is now searching for alternative training to provide to his department.

Policy writing. The Chief of the department and union reviewed a draft version of this ARP and DP-30. The researcher assigned DP-30 has the official policy number on January 25, 2017.

Survey

A survey was generated to analyze the status of health and wellness at the CFD. Questions were designed to help answer three research questions. Survey appears in Appendix C.

Survey questions. Survey question one asks individual members their current age. This question was designed to find out the median age of the fire department. The median age of the department is estimated at 38 years of age. When designing a HWI, knowing the age group and level of fitness is key.

Question two asks, what health risks should the CFD be currently focusing on? This question provided answers to the current risks that much of the department agrees with. The top five risks the CFD should be focusing on in order are:

1. cancer
2. cardiac
3. obesity
4. financial security
5. PTSD

Other topics worth noting are promoting a healthier lifestyle, work environment, and prevention of lung disease. These topics should be placed on a five-year operation plan. Topics that effect a person's health the most will be prioritized in the order of risk.

Question number three asks a yes or no answer choice on an individual's current lifestyle. Most the sample population (73%) answered yes that they do live a healthy lifestyle. Only 27 percent said no to this question.

Question four asks a general question on what are your current needs and values, specifically to health and wellness? The sample population had a lot of similar answers to this question. The needs and values CFD members wanted the most were a nutritionist, state of the art fitness equipment, and exercise program (cardio, trainers, functional fitness exercises). Other areas of focus are better work conditions, stress management, facility safety (air quality, cleanliness etc.), medical health screenings, PTSD awareness and support, allotted workout times, and gym memberships or stipends.

Question five asked, if given the equipment and knowledge (personal trainers, nutritionist, financial advisors, incentives etc.) would you participate in a health and wellness initiative (HWI)? Most the sample population answered yes (84%) to this question. Only 12 percent answered no.

Question six asked if your family would support or take part in a healthier lifestyle. Again, much of the sample population said yes (88%). Only 12 percent said no.

Unsolicited Input

Throughout the ARP process and policy development many conversations were taken place with Chief Leonard Albanese Jr., Deputy Chief of Operations John Quatieri, and Local 937 President Anthony Salvucci. All parties share a common goal on making the health and welfare

of every employee at the CFD a number one priority. One advantage in implementation of a HWI is that many individual employees at the CFD already participate in a healthy lifestyle (observation, December 19, 2016). HWI will mostly help the members who do not practice or need guidance in one's wellness.

Unexpected Findings

Union participation is vital in developing a policy to benefit the health and wellness of its membership. As this ARP was evolving, IAFF Local 937 e-board has developed a Safety Committee for the members of the department. After IAFF, Local 937 President Anthony Salvucci had the opportunity to proof read this paper, he offered the researcher a chair on the seven-member board. President Salvucci expressed the value of this paper for our department and especially unions in the City of Chelsea who share the same health care provider (personal communication, December 23, 2016).

Summary of Results

Death or serious injury in an organization is a catalyst for change. The CFD unfortunately lost a firefighter at a young age to cancer. Command staff focus group highlighted that Firefighter Peter Kannler death is a wake-up call to this organization. Medical evaluations are considered the main agenda for Chief of the department. Union leadership is looking for ownership and implementation of policy DP-30. The City of Chelsea is anticipating a reduction in cost associated with injury and illness, while improving the safety and health of their employees through a HWI.

Throughout the ARP process command staff and union leadership are working together on a common goal. The overall goal is to reduce LODDs, injuries, and illness at the CFD. The

formulation of the Safety Committee by the IAFF Local 937 has brought value and relevance to this ARP.

Discussion

The results of this ARP and literature reviewed, supplied knowledge and approach to initiate change in an organization. The CFD will need to change past practices to reduce LODDs in their organization. This ARP used action research methodology to answer three research questions and development of draft DP-30. This discussion section will review how the results compare or contrast with any information that has been cited in the literature review

Risk

Firefighter Pete Kannlers' passing has been a catalyst for writing this ARP. His devotion to fire service and physical fitness will always be a cornerstone in the culture of the CFD. Today's fire service is faced with unknown risks daily. A new study provides evidence that 68 percent of all firefighters fall victim to cancer (Center for Disease Control and Prevention [CDC], 2016). Boston Fire Department (BFD) has engaged in an ongoing war against cancer in the fire service. Their powerful (Cancer Prevention in the BFD YouTube video) message has reached thousands of fire departments across the country, projecting a light on the high percentage of cancer rates at the BFD. Now, cancer screenings are available to all members throughout their careers in hopes of identifying cancers while they are still treatable (Mackin, 2016).

The fire service also identifies the leading cause of line-of-duty deaths (LODD) in the fire service is sudden cardiac death, which accounts for approximately 45 percent of all firefighter fatalities (Smith, Barr, & Kales, 2013). Survey results displayed that cardiac events are one of the most concerning issues at the CFD. A study found firefighters have up to 100

times the normal rate of suffering from a heart attack (Kales et al., 2007). Another study found that firefighters' body mass index (BMI) can be linked to heart disease related risk factors (NVFC, 2011, p. 13). There is a discrepancy in data provide between individuals cited when claiming the leading cause of death in the fire service is cardiac while others believe it is cancer. One thing that can be taken from this data is that the fire service needs to act in a manner to reduce LODDs. The CFD main concern of fire service risks is prevention of cancer, cardiac events, and obesity (observation February 7, 2017).

Policy Development

IAAF recommends local unions take the leadership role in implementation of a wellness initiative (IAFF, 2008, p. 8). The first step of draft policy DP-30 was meeting with specific members of the organization to strengthen the success of buy-in from the membership. Meetings took place with management, command staff, union, and HR. The reason for this approach is successful buy-in from all employees. Union partnership allows creditability and ownership that the draft policy is created in the best interest of their employees. The IAFF/ IAFC *Joint Labor Management Wellness Fitness Initiative (WFI) (2008)* recommends,

Without union participation in establishing such a program there will be limited or no member "buy in" to the program. A wellness-fitness program must be collaborative between labor and management and is educational and rehabilitative and not punitive in nature. (p. 8)

An interview with Gordon Wallace explains, "By allowing these stakeholders to design the program from the ground up, it allows the buy in from the beginning because they have ownership" (G. Wallace, personal communication, September 16, 2016). Making draft DP-30 a living document also gives employees ownership that this policy will be realistic and attainable.

IAFF Local 937 President Anthony Salvucci guidance provided the highest degree of protection from a union standpoint.

The City of Chelsea Human Resource (HR) department will ultimately be the backing needed for procurement of resources for HWI. The procurement of resources overtime will improve health while reducing workmen's compensation claims and sick usage. Studies comparing work shifts to the CFD's, found that employees under these extended work hours, have sick leave usage and turnover rates nearly three times greater than the general population (Circadian Technologies [CT], 2004). Using guidelines from IAFF *Fire Service Joint Labor Management Wellness Fitness Initiative (WFI)*, research has shown a reduction in injury rates and sick leave usage in small and medium size departments from implementation of HWI. This ultimately will curve overtime costs and workmen's compensation claims (IAFF, 2008, p. 8).

Pamela Johnson HR manager provided guidance on providing incentives for the CFD regarding HWI. She explains, presenting city council a proposal to make fitness challenges a line item on the next budget cycle (P. Johnson, personal communication, September 23, 2016). IAFF Local 937 President Anthony Salvucci discusses making the incentive a benefit for a firehouse and not an individual (personal communication, December 23, 2016).

Medical Assessment

Health screenings expose potential life threatening risks before they become deadly (Basri, 2012). Chief Leonard Albanese Jr., expressed his concerns on having the CFD take part in medical evaluations. He stated, "At his previous employment a medical evaluation would have saved a firefighter's life in North Providence Fire Department" (personal communication, July 20, 2016). Studies have shown, personal who do not see a primary care physician or do not

participate in medical health evaluations through their department could have a latent diagnosis of CHD or a clinical equivalent (Smith et al., 2013). Len Garis and Karin Mark explains,

A thorough and regular screening program is more likely to detect a cancer early, when there is a higher chance of effective treatment. Once cancer is advanced and has spread through the body, it's like a fire where flames engulf the house. There is less of a chance of effective intervention. (Garis & Mark, 2012)

The importance of medical evaluations to screen for cancers and other illnesses caused by structural firefighting needs to be a priority. Medical records can be used to track trends in health and lay the groundwork for future research (Basri, 2012). Educating employees on having medical evaluations done by their primary health care physician or city doctor needs to be brought to the CFD's attention. Gaining support by union leaders is a primary component in medical screening process,

It was important to representatives of both the IAFF Local 1271 and the fire chief's association that we spearhead this issue that affects all firefighters, said IAFF Local 1271 President Mike McNamara. Prevention is our key objective. This initiative will save lives. (Garis & Mark, 2012)

Fitness

Cardiovascular health in firefighters is largely determined by physical fitness (Smith et al., 2013). IAFF advocates that high levels of physical fitness are needed to perform necessary job duties in the fire service (IAFF, 2008, p. 7). Chief Leonard Albanese Jr., conducted an interview with Adam La Reau co-founder of O2X. The chiefs' opinion is the CFD is not ready for this type of training. The Boston Fire Department BFD has successfully implemented O2X at their fire department. Richard Paris President of IAFF Local 718 believes,

Our members attest, and I agree, that it's one of the best trainings I've received in 31 years working as a firefighter. I highly recommend O2X to any union or municipality seeking to improve the complete wellness of their members. I'd be happy to answer any questions if they arise. (O2X, 2016)

Buy in from fire personnel is reported positive at the BFD. As of September 2016, over 450 members of the BFD have participated in O2X (Mackin, 2016). Eric Revising obesity researcher at the Pennington Biomedical Research Center, believes, "In general, exercise by itself is pretty useless for weight loss" (NVFC, 2011, p. 30). Statistics show that working out five days per week with an average exercise between 50-80 minutes per session can achieve weight loss (NVFC, 2011, p. 30).

The leadership at the City of Chelsea must develop ways in providing superior equipment, training, and guidance on health and wellness. Now, there has been no talks on purchasing a program like O2X. Survey results showed that the top three areas CFD need to focus on are purchasing a nutrition specialist, personal training program, and updated fitness equipment. The Toronto Pearson Fire Department (TPFD) developed a wellness and fitness program custom to their personnel needs. The first step of this fitness model was finding functional based fitness equipment. The next step is to develop partnerships with licensed professionals (Aitken, 2012). Another consideration is scheduling fitness, like training, in a 24-hour shift. If fitness is not placed in the weekly training schedule as an everyday routine, it most likely will not happen (Humphrey, 2012). Regarding personal trainers, the TPFD is in the process of developing peer fitness trainers on each shift to help assist in nutritional counselling, designing fitness programs, and provide instruction on various exercise techniques (Aitken, 2012). Designing programs that meet the median age of the department served is key. Right now,

most of the CFD and their families take part or support a healthy lifestyle. Overall, organizations should focus on a healthy work environment, healthy eating habits, stress management, and finance management (Tillman, 2015).

Discussion Summary

Wellness is a personal component of a person's lifestyle, which different factors need to be identified for effective change ("SDW," 2016). Using best practices provided by the NFPA, IAFC, IAFF, CFD leadership, and fire departments across the nation allowed the researcher to focus on the development of HWI. The City of Chelsea's responsibility to their employees is providing a safe and healthy work environment. CFD leadership is given the task of requesting everything needed to uphold the cities responsibility.

Regarding risk to the CFD, research has identified LODDs to be drastically high for a small to medium size department. The loss of life from cancer and cardiac events is impossible to predict. Having the tools and knowledge to prevent these occurrences needs to be a focus for the future of the CFD.

This applied research project used action research methodology to produce a draft policy DP-30 (Appendix D). Organizational implications from the results section of this ARP will be placed in DP-30. This will be a living document that will change with the culture of the CFD.

Recommendations

After analyzing data collected through research and literature review, the writer has provided recommendations for future research. The main scope of this research project is to acquire buy in from the CFD by making HWI realistic and goal attainable.

Health and Wellness Initiative (draft) DP-30

The chief of department, command staff, IAFF Local 937, and HR must ensure that DP-30 stay voluntary, non-punitive, and confidential. IAFF Local 937 Safety Committee must ensure the DP-30 is implemented in a way that all members will be self-motivated and have ownership of policy development and implementation. It's up to management to understand the values and needs of the department for proper funding and procurement of resources. These requirements are outlined in the scope section of DP-30;

Scope. Draft policy DP-30 is intended to establish organizational guidelines to promote the health and wellness of all uniformed employees through implementation, operation, and maintenance of a HWI. This HWI is intended to be *voluntary, confidential, and non-punitive*.

Additional Considerations

Command Staff. Having a working relationship with command staff in an organization is beneficial to policy development. It is recommended to involve members who have the highest experience in policy and legal issues within your organization. The researcher used senior staff members who have organized department policy past, present, and future.

Union. During the development of the policy, it was determined a Safety Committee take the lead role in implementation. IAFF Local 937 has taken the task of developing this committee during the writing of this ARP. The researcher was asked to hold a seat, which he gladly accepted. Local 937 President offered this position to the researcher due to his experience with developing the HWI. DP-30.5 outlines proper procedures for the Safety Committee.

Another recommendation for union fire departments is using the guidelines set forth in IAFF/ IAFC *Joint Labor Management Wellness Fitness Initiative (WFI)*. Battalion Chief Gordon Wallace provided valuable input on the concept of union buy-in. He explains using WFI “Reinforces union buy in because their leadership has developed the best practice” (personal

communication, September 16, 2016). It is well known that fire departments strongly trust their union leadership. Having these members build the foundation of a HWI is key to buy-in.

Training. The CFD needs to implement physical fitness that is realistic to firefighter job functions and is goal attainable. Adam La Reau co-founder of O2X believes,

O2X Human Performance Training is much deeper than just being able to run faster, feel stronger or do more push-ups. It's about creating sustainable lifestyle changes that will improve the quality of life and well-being of each firefighter, and allow them to serve long, safe and healthy careers. (Fire Engineering [FE], 2016)

The CFD needs to place in their capital improvement plan a request for top of the line fitness equipment. Once this task is completed, hiring professionals to instruct on how to use this equipment and set future goals for each individual. IAFF, IAFC, and IAFF/IAFC Task Force have agreed that to successfully implement HWI, there is a need for a peer fitness trainer (PFT) on every shift (IAFF, 2008). This is a key element in sustainability over time. The CFD has already pursued a department nutrition specialist.

Terminology. Currently, CFD uses the term Health and Wellness Initiative (HWI) to represent draft policy DP-30. Majority of polices reviewed identify health and wellness as a policy and not an initiative. A key strategy in developing a wellness plan is making it an initiative not a fitness-for-duty evaluation. The wellness model that successful companies follow requires a holistic approach which is a view of engaging and developing the whole person (Tillman, 2015). Providing education on the differences between a wellness initiative and policy need to be addressed with union leadership

Future Research and Readers Recommendations

After the completion of the first draft of HWI DP-30, the researcher recommends future considerations that will support nutrition, sleep, stress management, resilience, and physical conditions. These considerations include:

- department nutritionist
- improved staffing
- personal training specialists (PTS)
- O2X training

Research Conclusions

Over the past 12 years of the researchers' career, he has attended five active LODDs due to cardiac events and cancer. These names will never be forgotten, Deputy Chief Joeseph Vonhandorf, Deputy Chief Charles Crowley, Captain Thomas Lassiter, Firefighter Mike Coyne, and Firefighter Peter Kannler of the CFD. Loosing these members at early stages of their lives is a loss to the fire service, CFD, and their families.

It is time now that the CFD act in preventing LODDs at their department. Using the guidelines in DP-30 will allow a foundation for change. With IAFF, Local 937 Safety Committee taking the lead role in implementation, change will have a greater success to occur. Overall, investing in employees' health will decrease medical cost, sick leave usage, and workmen's compensation claims, in turn, will acquire a more productive workforce (Witt, 2012).

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Appendix A



FIRE CHIEFS' ASSOCIATION OF BC
871 Oakview Street
Coquitlam, BC V3J 4T6
Phone: 604-492-3080
Email: admin@fcabc.ca

Dear Doctor,

The purpose of this letter is to provide information on *cancer screening and surveillance* for firefighters and emergency responders that may wish to establish a health maintenance program under your care. WorkSafeBC has recognized the growing body of scientific literature linking firefighting to a variety of job-related cancers and has passed the *Cancer Presumption Relief Act* of 2005. This legislation currently provides for ten different cancers as being connected with the occupation of firefighting: leukemia, lymphoma, brain, lung, esophageal, colorectal, kidney, bladder, ureter, and testicular cancer. However, numerous reports indicate that these are not the only line-of-duty cancers that firefighters are at risk for¹. Despite the correct use of personal protective gear, firefighters sustain intense and repeated exposures to highly variable mixtures of concentrated carcinogens. After inhalation, absorption through the skin, or inadvertent ingestion, these substances are widely distributed throughout the body. As a consequence, the tumours associated with firefighting are not limited to any specific organ system. Moreover, studies have indicated that the relative risk for these cancers can vary anywhere from 1.3 for prostate cancer, through 5.2 for cancer of the cervix in female firefighters², to as high as 36 times the risk for kidney cancer in firefighters with 40 or more years of service³. New statistics generated from the World Trade Center disaster show that these cancers are often of an aggressive variety and present at an age earlier than expected⁴.

For persons at standard risk for cancer, it is generally recommended that screening strategies such as colonoscopy and mammography begin at age fifty. However, because of the carcinogenicity associated with firefighting, some experts have recommended that firefighters assume cancer screening programs in the same manner as someone with a first degree relative with the disease. Firefighters have been encouraged to begin cancer screening programs at age forty, or ten years before an affected first degree relative. An initial screening program might involve a comprehensive physical examination, laboratory tests including complete blood count, serum chemistries, urinalysis and a bowel investigation such as endoscopy, CT colonography or fecal blood analysis. The screening of female firefighters could additionally include mammography, bimanual examination and Pap test. Certainly any symptoms in a firefighter such as cough, unexplained weight loss, irritative voiding symptoms or blood in the stools should be taken seriously and followed through to either resolution or definitive diagnosis.

I hope that this information will be helpful in guiding your decisions regarding requests by firefighters to establish cancer screening and surveillance programs. Firefighters as a group are highly motivated individuals and it is a pleasure to assist them in strategies that will decrease the burden of cancer in our society.

Kenneth R. Kunz, M.D., Ph.D.
Medical Oncology / Cancer Pharmacology
Victoria, B.C., CANADA V9V 1A4
kenn@netidea.com telephone (250) 995-1701

December 9, 2014

Date

1 *J Occup Environ Med* 2006; 48: 1189-202,

2 *J Occup Environ Med* 2006; 48: 883-8

3 *Arch Environ Occup Health* 2006; 61: 223-31

4 *Lancet* 2011; 378: 898-905

Appendix B

Interview Notes Form

Interview Details

Fire Department: Howard County Fire Department Date: 9/16/16 Time: 1800 HRS
 Name: Gordon Wallace
 Title: Assistant Chief Phone Number: (443) 542-1317

Questions to Ask Interviewer

Question: Has your department implemented a wellness initiative for your employees?
Yes we have built an Occupational Health and Safety Committee. That committee works with the Howard County Wellness group and focuses on initiatives to improve employee health and wellness. Each Station has a gym and we have 15 Fitness trainers on staff. Our policy is currently under revision but will lead an annual fitness awareness program when implemented.

Notes: _____

Question: If yes, how did your department get buy in from all stakeholders involved?
The focus was on NFPA 1582 and the IAFF/IAFC Joint Labor Management Wellness Fitness Initiative. By allowing these stakeholders to design the program from the ground up, it allows the buy in from the beginning because they have ownership.

Notes: _____

Question: What has the results been from implementation of your wellness initiative. What advice can you give other departments on implementing a health and wellness initiative?

Notes: The program is going through a refocus and the full results are still evolving. But the focus has turned from just a work out that we have to do, to helping each other meet goals and be accountable.

Additional Notes

Please attach your wellness initiative or policy.

There has been some literature on the use of mobile tractor trailer units that provide state of the art health evaluations for firefighters. If your department uses this tool, please explain.

Appendix C

Survey Monkey HWI CFD

1. What is your current age? *Open ended answer choice*
2. What health risks do you believe the CFD should be currently focusing on (ex. cancer, cardiac, financial, PTSD, obesity etc.)? *open ended answer choice*
3. Do you live a healthy lifestyle currently (ex. Exercise, choose healthy foods, consider yourself in good physical shape)? *y/n*
4. What are your current needs and values, specifically to health and wellness? *Open ended answer choice*
5. If given the equipment and knowledge (personal trainers, nutritionist, financial advisors, incentives etc.) would you participate in a health and wellness initiative (HWI)? *Open ended answer choice*
6. If you answered yes to question 5, would your family participate or support your decision to live a healthier lifestyle? *y/n*

Appendix D

Health and Wellness Initiative (HWI) Draft (policy) DP-30

Effective: (Draft)

References

NFPA 1500, NFPA 1582, NFPA 158, IAFF/IAFC Joint Labor Management Wellness Fitness Initiative (WFI)

Scope

This draft policy DP-30 is intended to establish organizational guidelines to promote the health and wellness of all uniformed employees through implementation, operation, and maintenance of a HWI. This HWI is intended to be *voluntary, confidential, and non-punitive*.

Purpose

Provide a framework in which to offer health and fitness information, education, evaluation, and support to the employees of the Chelsea Fire Department (CFD). The goals of the HWI are:

1. prevent accidents, injuries, illnesses, and exposures from occupational hazards
2. to improve the overall health and physical fitness of the members of the CFD
3. to develop a training environment that is more relevant to the firefighting world
4. increase personal and organizational productivity

Overview

HWI at the CFD will be coordinated through an effort from IAFF Local 937 Safety Committee, Chief of Department, and City of Chelsea Human Resources Department (HR). It is every employees' personal responsibility to maintain a healthy lifestyle for the benefit of the organization and their families.

1. *Organization:* The HWI is based on best practices from the IAFF, IAFC, NFPA, and subject matter experts.
2. *Responsibility:* The City of Chelsea has the responsibility of providing safe and healthy work environments for their employees. It is the responsibility of each employee to use the knowledge and tools that ensures their health and safety.
3. *Limitations:* Making this an initiative and not a mandatory policy.
4. *Risk:* Exposures from hazardous environments caused during firefighting assignments is a major risk in the fire service. Employees may succumb to illness, injury, or death.

DP-30.1 Risk Management Plan

In accordance with NFPA 1500 4.2, a written comprehensive risk management plan needs to be developed. The plan includes goals and objectives to ensure risks associated with fire department are identified and effectively managed.

The risk management plan shall include at least the following components:

1. Risk Identification: Potential problems

2. Risk Evaluation: Likelihood of occurrence of a given problem and the severity of its consequences
3. Risk Control Techniques: Solutions for elimination or mitigation of potential problems: implementation of best solution
4. Risk Management Monitoring: Evaluation of effectiveness of risk control techniques

30.2 Methodology. The Risk Management Plan uses a variety of strategies and approaches to address different objectives. The specific objectives are identified from the following sources of information:

1. Records and reports on the frequency and severity of accidents and injuries at the CFD.
2. Reports received from the city's worker's compensation
3. Specific occurrences (e.g. Post Incident Analysis) that identify the need for risk management
4. National trends and reports that are applicable to CFD
5. Knowledge of the inherent risks that are encountered by fire departments and specific situations that are identified in the City of Chelsea
6. Physical and medical evaluations (through primary care doctor) that are administered through the HWI
7. Accident and injury investigation reports
8. Additional areas identified by the IAFF Local 937 Safety Committee

DP-30.2 Plan Organization

The risk management plan includes the following:

1. Identification of the risks that members of the fire department encounter or may be expected to confront in both emergency and non-emergency situations
2. Non-emergency risks, including such functions as training, physical fitness, returning from an emergency incident, station activities
3. Emergency risks, including such functions as fire ground activities, non-fire incidents (Haz Mat, technical rescue, utility problems, etc.) EMS incidents and emergency response
4. Evaluation of the identified risks, based upon the frequency and severity of these risks occurring
5. An action plan for addressing each of the risks, in priority, with an annual review and update.
6. Selection of a means of controlling and reducing risks
7. Provisions for monitoring the effectiveness of the controls implemented employee health database for statistical analysis, forecasting, and long term planning (only allowed with employee consent)

DP-30.3 Monitoring Risks

The CFD's risk management program will be continually monitored by the Health and Wellness Deputy Chief, Training and Safety Deputy Chief, and the IAFF Local 937 Safety Committee.

Recommendations and revisions will be made based on the following criteria:

1. Annual accident and injury data
2. Significant incidents that have occurred
3. Information from department staff and personnel
4. Based on safety officer investigations and solicited advice from professional resources outside the fire department organization

DP-30.4 Health and Wellness Deputy Chief/Incident Safety Officer

The NFPA 1521 Standard for Fire Department Safety Officer is referenced. The 1521 Standard specifies the minimum requirements, duties and responsibilities of the fire department Health and Safety Officer (HSO) (*C-5*) and the Incident Safety Officer (ISO) (*H-1*).

30.4.1 Health and Safety Officer (Health and Wellness Deputy Chief). The HSO Officer will serve as the program manager of the health and safety program. The HSO shall be responsible for managing and maintaining operations of the program.

30.4.2 Incident Safety Officer (ISO) (Training and Safety Deputy Chief (H1)). The Incident Safety Officer shall be a fire department officer and shall meet the requirements for Fire Officer Level 1 specified in NFPA 1021, Standard for Fire Officer Professional Qualifications.

The ISO is appointed to respond to or assigned at an incident scene by the incident commander to perform duties and responsibilities specified in the NFPA 1500 Standard.

DP-30.5 IAFF Local 937 Safety Committee

In accordance with NFPA 1500, an Occupational Health and Safety Committee (Local 937 Safety Committee) was established to serve in an advisory capacity to the membership of Local 937 and the Fire Chief. The committee shall include the department health and safety officer, representatives of fire department management, and individual members or representatives of the member organization (Local 937). The Vice President of Local 937 shall serve as chairperson of the committee.

The purpose of the committee shall be to conduct research, develop recommendations, and study and review matters pertaining to occupational health and safety within the fire department. The committee shall hold regular meetings (minimum of 4 per year), special meetings when necessary, and provide written minutes of each meeting to be retained and made available to all members.

DP-30.6 Records

This standard establishes the procedures for maintenance of permanent records of all accidents, injuries, illness, and exposure to infectious agents and communicable diseases, or death that are or might be job related. It also establishes procedures for training records and vehicle records.

30.6.1 Training and Safety Deputy Chief (H1). H1 shall establish a data collections system and maintain permanent records of all accidents, injuries, illness, and exposures to infectious agents and communicable disease, or deaths that are or might be job related. The data system shall maintain individual records supplemental to Risk Management records that are specific to the fitness or performance programs. The database shall be confidential and maintained as specified in NFPA 1500. No individual medical exam reports are maintained by H1 without written permission of the individual member.

DP-30.7 Cancer Prevention

30.7.1 Inspection, Cleaning, and Repair of Protective Clothing. The Monthly Personal Protective Ensemble Inspection Log will be used by the ISO (H1) to document the inspection, repair and usability of all protective ensembles for members assigned to the station. Prior to classifying a component of the ensemble as “unacceptable”, H1 in coordination with the affected individual, should inspect the equipment to verify its condition and make appropriate arrangements for repair or replacement. The completed Monthly Personal Protective Ensemble Report should be forwarded electronically to the Deputy Chief in charge of equipment.

Each member will be directed to regularly inspect their clothing inside and out for any tears, holes, color change, dirt, or contaminants.

30.7.2 Cleaning and Repair. If a member of the department has clothing that is contaminated, it shall be that person’s responsibility to report the contamination to their supervisor as soon as possible. A contamination will be defined as an exposure or absorption to tars, fuels, resins, paints, acids, and or any other biological/hazardous material that cannot be removed by the required washing after an incident.

30.7.3 Protective Helmets. Helmets should be cleaned at least every six months or as soon as possible after an incident where it has been exposed to blood or body fluids, tars, fuels, resins, paints, acids, by-products of combustion, or other hazardous materials.

30.7.4 Protective Gloves, Footwear, and Hood. Protective gloves, footwear, and hood shall meet the applicable requirements of NFPA 1971 that are in effect at the time of ensemble component purchase. Inspection requirements and record keeping will be the same as for the other elements of the protective ensemble. These items will be included in the annual inspection of the protective ensemble. Hoods shall be cleaned on a regular basis to prevent exposure from carcinogens (diesel exhaust, smoke, haz-mat incidents etc.)

30.7.5 Bunker Gear/Living Area. Bunker gear shall not be worn on the second-floor living area. No exceptions.

30.7.6 Respiratory Protection/Use of SCBA/Responsibilities. SCBA shall be worn under any conditions as determined by the Incident Commander, Operations Officer, Safety Officer and/or Company Officer. Firefighters shall be provided with and shall utilize SCBA during all interior structural firefighting and overhaul operations or until the building has been released from fire department control.

30.7.7 SCBA Utilization. Operations where SCBA shall be utilized include, but are not limited to:

1. Structure fires
2. IDLH atmospheres
3. Vehicle fires
4. Hazardous materials operations
5. Dumpster fires
6. Overhaul

In addition, all personnel working below ground level or inside any confined space shall be provided with SCBA or SAR, and shall utilize that equipment until the safety of the atmosphere can be established by testing and continuous monitoring.

Note: No one shall remove such SCBA while in IDLH atmosphere, or potential IDLH atmosphere, except when necessary to escape a situation in which imminent danger to life exists.

30.7.8 Procedures for Post-Incident Decontamination of Firefighters. On incidents where it is suspected that a hazardous material, including normal combustion products, have been encountered, crews should perform an on-scene decontamination of their PPE. This will include:

1. Light rinsing of bunker gear at the scene (including boot treads)
2. Light rinsing of SCBA, bottles, and harness

Upon return to the station, everyone will completely clean the mask face piece, SCBA bottles, and harness with soap and water. Clothing worn under the PPE may need to be washed at the station. Contaminated clothing should not be taken home for cleaning. All contaminated clothing/bunker gear will be washed utilizing Gear Washers/extractors at their designated fire station. No exceptions

30.7.9 Facility Safety. All fire department facilities shall comply with Chapter 9 of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program. This includes directives towards facility safety standards, inspection of fire department facilities, and maintenance/repair of fire department facilities.

Note: A semi-annual facility health and safety inspection shall be conducted by the responsible shift commander. Operations Deputy Chief may conduct or participate in the inspection process at their discretion.

DP-30.8 Personal Exercise/Fitness Equipment Use in Fire Department Stations

CFD will equip fire department workout facilities with a standard complement of fitness equipment and make every effort to maintain and improve the approved fitness equipment as budget allows. Subject matter experts will train members of the CFD in using new equipment when purchased.

DP-30.9 Medical and Physical (To Be Announced (TBA))

Chapter 10 of NFPA 1500 contains physical, medical, and fitness guidelines that apply to all firefighters.

30.9.1 Annual Medical Exam (TBA). All members are encouraged to schedule a complete medical exam with their private physician on an annual basis.

DP-30.10 Physical Performance Requirements (TBA)

The department is required to develop physical performance requirements for candidates and members who engage in emergency operations in accordance with NFPA 1500.

DP-30.11 Health and Fitness (TBA)

The guidelines and standards set forth in this section for the physical fitness program apply to all department members regardless of assignment.

The purpose of the physical fitness program is to ensure an acceptable level of fitness to safely perform assigned duties and provide firefighters the resources necessary to deliver exceptional service to the community in conjunction with creating durability and longevity for all firefighters.

The voluntary assessment shall be based on the following fitness components: muscular strength and endurance, and aerobic/anaerobic capacity.

30.11.1 O2X training. (TBA).

30.11.2 Nutritionist. (TBA).

30.11.3 Allotted times to work out on shift (TBA). All firefighters shall maintain a state of health and physical conditioning to perform their assigned functions within the standards of the department. The expectation is that 24 hour personnel will exercise for one hour a day during a 24-hour shift while in service as schedule of duty allows. Three hours per week are authorized for 8-hour personnel assignments. Exercise will only be conducted in service and when all assigned tasks are completed (training, house work etc.)

DP-30.12 Confidential Health Data Base (TBA)

In accordance with NFPA 1500, the fire department shall ensure that a confidential, permanent health file is established and maintained on each individual member.

The individual health file shall record the following:

1. Vehicle accidents
2. Exposures-medical or chemical
3. Injuries

The data collection system for accidents, injuries, illnesses, exposures, and deaths provides both incident-specific information for future reference and information that can be processed in studies of morbidity, mortality, and causation.

DP-30.13 Fire Department Physician (TBA)

This section establishes the requirements for CFD Physician. The CFD physician will be chosen by the city in conjunction with IAFF Local 937.

The following criteria has been established by the CFD and IAFF Local 937 for the position of Fire Department Physician. The Physician shall be familiar with NFPA Standards 1500 and NFPA 1582 Medical Requirements for Firefighters and Guide for Fire Department Physicians and the department physical fitness and performance standards.

NFPA 1500:

- 1) 10-6.1 – The fire department shall have an officially designated physician who shall be responsible for guiding, directing, and advising the members regarding their health, fitness and suitability for assigned duties.
- 2) 10-6.2 – The fire department physician shall provide medical guidance in the management of the occupational safety and health program.

3) 10-6.3 – The fire department physician shall be a Massachusetts licensed medical doctor or osteopathic physician qualified to provide professional expertise in the areas of occupational safety and health as they relate to emergency services.

4) 10-6.4 – The fire department physician shall be readily available for consultation and to provide professional services on an urgent basis. This availability may be met by the identification of a substitute physician or physicians who can provide comparable service and is/are mutually agreed upon by the Department and Local 937.

NFPA 1582:

1) 4.2.1 - The fire department physician shall fulfill the following duties: understand the physiological, psychological, and environmental demands placed on firefighters; evaluate fire department candidates and members to identify medical conditions that could affect their ability to safely respond to and participate in emergency operations.

Note: The Physician shall liaison with the CFD and IAFF Local 937. The contract with the physician shall be approved by the City Attorney's Office and IAFF Local 937.

DP-30.14 Post-Injury/Illness Rehabilitation

It shall be an ongoing objective of the fire department to assist members affected by occupational injuries or illnesses in their rehabilitation and to facilitate their return to full active duty or limited duty where possible.

DP-30.15 Member Assistance and Wellness Program

This section outlines procedures for the Employee Assistance (EAP) and Wellness Programs in accordance with NFPA 1500.

30.15.1 Wellness Program. The wellness program shall provide health promotion activities and identify physical and mental health risk factors and shall provide education and counseling for preventing health problems and enhancing overall well-being.

Health promotion topics include:

1. Family orientation (recruit)
2. Weight control
3. Hypertension
4. Stress Management (EAP)
5. Nutritional guidance
6. Substance abuse (EAP)
7. Retirement planning (EAP, other)
8. Exercise recommendation

30.15.2 Employee Assistance Program (EAP). Employee Assistance Program Definition: The Employee Assistance Professional Association has defined EAP as “a worksite-based program designed to assist in the identification and resolution of productivity problems associated with employees impaired by personal concern, including but not limited to: health, marital, family, financial, alcohol, drug, legal, emotional, stress, or other personal concerns that may adversely affect employee job performance.”

The primary purpose of the EAP is to assist in the identification and resolution of productivity problems that may adversely affect employee job performance. The city contracts psychological services through private providers.

For EAP assistance, call the appropriate number below: TBA_____

30.15.3 Peer Support Team (PST): TBA

30.15.4 Critical Incident Stress Management (CISM). The program is made available to members exposed to, but not limited to, mass casualties, large life loss, fatalities involving children or fire department members, or any other emergency operation that may adversely affect the psychological or physical well-being of department members.

30.15.5 Critical Incident Stress Debriefing (CISD). In the wake of a critical incident, the crew has several options. If the shift commander, officer, or firefighter believes the crew is adversely impacted by the call, they can place the apparatus out of service. This out of service time is to be utilized to assist the crew in managing their individual response to the call in a healthy and effective way. An on-duty PST member should be contacted to coordinate a two-member response to the stations as soon as possible. This two person PST team will conduct an informal defusing with the crew and help the crew decide which subsequent course of action best serves them. There are three options post-defusing. One, the crew can opt to return to service. Note, everyone on the crew must make his or her own choice and may opt for one of the other options. Two, the crew may opt to remain OOS but stay together at the station. In the wake of critical incidents, firefighters sometimes find it better to stay with those who have shared the same experience rather than go home to be alone or take it home to their families. In this situation, another crew will be called to place the apparatus in service. Three, the crew may opt to remain OOS and go home. In this situation, another crew will be called to place the apparatus in service.

30.15.6 Defusing. A defusing is an informal session tailored to meet the immediate needs of the involved personnel. The intent is to listen to allow personnel to recap their perception of the events and their reactions. The PST members are there to listen, to reassure the personnel that their reactions are normal and to offer some guidance about what to expect, available resources, and to establish a presence that may make future interventions easier. The main purpose is to help stabilize personnel affected by the incident so that they can return to their normal states as quickly as possible. Stress management education is another area covered in a defusing.

Note: DP-30 will be reviewed by the IAFF Local 937 Safety Committee, Operations Chief, and Fire Chief. This is a living document that can be revised at any time due to changes in departments' values and needs.