Firefighter Fitness and Medical Evaluations: A Difficult Journey

BY JOHN K. MURPHY

Heart attacks and strokes were responsible for the deaths of 54 firefighters (47 percent) in 2007; the average age of the firefighter was 44 years old.¹ The number of firefighter deaths attributed to cardiac problems is three times greater than that for the U.S. population. Unfortunately, the number-one cause of death in North America is cardiovascular disease, mostly caused by obesity,² and, according to some research, 70 percent of heart disease fatalities are preventable through lifestyle changes.³

About 30 percent of preventable firefighter cardiac deaths occur during firefighting activities; a firefighter's chance of dying while fighting a fire is 100 times higher than when performing everyday activities.⁴ A 10-year study by the National Fire Protection Association (NFPA) found that about half of American firefighters who died of sudden cardiac arrest or suffered heart attacks had known heart conditions and about 75 percent had heart conditions that simple medical testing could have detected.

Firefighters don't generally start out with undiagnosed heart disease, as most departments provide some type of entry-level medical physical evaluation to determine if the firefighter candidate meets the minimum medical standards. These medical standards have been promulgated into the NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 Edition. Those who make it and are hired as firefighters face a lifetime of developing and maintaining good health habits and actively participating in a comprehensive fitness program to combat cardiovascular disease, stroke, injury, and possible death. The results of comprehensive entry-level and annual medical examinations have been surprising: The general consensus is that firefighters are generally healthy, and there are no silent medical problems on most of those evaluations. Other firefighters undertaking a medical evaluation have discovered some correctible hidden health problem and had them corrected. For still others, the medical problem is so severe that, even after correcting the medical problem, the firefighter was unable to return to work and had to retire or find other employment.⁵ The increase of overall health risks is attributed in part to occupational risks. Firefighters must perform physically intense work under conditions inherent in the job. Those environmental and physical exertion

conditions that increase myocardial oxygen demand are high temperatures and carbon monoxide levels, which are job-related hazards. These conditions lead to cardiac risk factors that are highest among firefighters than other comparable worker groups, such as long shore workers and lumbermen.⁶ The increase in cardiovascular risk factors, combined with physically stressful fire suppression work settings, account for heart attacks that cause almost half of firefighter on-the-job deaths.⁷ Although firefighters recognize the disparity between their occupational demands and physical health and the general population, previous lifestyle interventions have been largely unsuccessful.⁸

Despite the fact that firefighters' jobs require vigorous physical activity under extreme conditions and present the stress of urgent life-threatening situations, studies indicate a high prevalence of sedentary lifestyles, obesity, hypertension, dyslipidemia, certain malignancies, and chronic musculoskeletal complaints. Firefighters generally have lower physical fitness than workers in other hazardous occupations, including police officers and construction workers.⁹

Of the 38 victims of sudden cardiac events in 2007, post-mortem medical documentation showed that 10 firefighters had severe arteriosclerotic heart disease; five were hypertensive; four were reported to have had prior heart problems such as prior heart attacks, bypass surgery, or angioplasty/stent placement; and three were diabetic. (Some of the victims had more than one condition.) Over the past 25 years, post-mortem information or other details on the victims' medical histories have been available for 720 of the 1,155 sudden cardiac death victims. Of those 720 victims, 663 (or 92.1 percent) had suffered prior heart attacks, had severe arteriosclerotic heart disease, had undergone bypass surgery or angioplasty/stent placement, or were diabetic or hypertensive.¹⁰

Also included in the mortality and morbidity statistics are strokes, diabetes, obesity, and other preventable diseases, albeit poorly documented in the reports. These percentiles are recorded only for active-duty firefighters. The retired firefighter mortality rate is much higher. Just look at the last page of every International Association of Fire Fighters (IAFF) publication, but nobody keeps those statistics. It would be safe to say that longevity after retirement is not profound and that after firefighters leave active service and retire, they die at a rate that exceeds the national average per job classification, and often prematurely.

What the studies also don't cover are those firefighters who die from a cardiac event after returning home and while off-duty, several days after a call, in the gym working out, working at home, on vacation, sleeping, or soon after retirement. You can imagine that those tragic deaths followed the same pattern of those occurring in the line of duty—a known cardiac condition, an undiagnosed cardiac condition, or just plain denial—that precluded those firefighters from seeking a medical evaluation while on the job.

What are we doing to prevent this unnecessary loss of life? The lack of focus on wellness and fitness continues to plague fire departments. Many of these deaths can be prevented with a proactive wellness and fitness program. (10) Studies conducted by the American Heart Association and the Centers for Disease Control and Prevention (CDC) continue to show that modifying those identifiable behavioral characteristics can reduce a person's chance of dying prematurely from a heart attack. (2)

Although it is crucial that fire personnel be physically fit to perform essential job functions, being physically fit does not make one impervious to cardiovascular disease. Wellness is defined as having all aspects of health, including physical health, social health, mental health, and spiritual health. Incorporating all components of a health wellness and fitness program may decrease the risk of cardiovascular disease by 70 percent.¹¹

In view of the statistics relative to heart disease as a preventable disease, fire departments realized the need to incorporate a wellness and fitness program into their departments. In 1987, the NFPA developed a standard for occupational and health and safety that specifically addressed a wellness program for fire departments (NFPA 2000). Several years later, the International Association of Fire Chiefs (IAFC) and the IAFF initiated the Fire Service Joint Labor Management Wellness Fitness Initiative. The initiative in 1997 supported a comprehensive physical fitness program that required mandatory participation. More recently, the National Institute for Occupational Safety and Health (NIOSH) advocated that fire departments (CDC 2007). The United States Fire Administration (USFA) also recommends and promotes reducing firefighter fatalities by incorporating the recommendations from NIOSH, the IAFC, and the NFPA.

The NFPA maintains standards that address health issues related to firefighters. NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2007 Edition, includes key elements that focus on the comprehensive wellness and fitness program. NFPA 1582 outlines key elements that focus on fire department medical physicals and also provides for a health and fitness coordinator, a health and safety officer, an infection control officer, and a health and safety committee. NFPA 1583, *Standard on Fire Department Occupational Safety and Health Program*, 2008 Edition, focuses on fire department fitness programs. All of these standards are periodically updated to meet the increasing challenges of firefighter safety with common sense, science, and technology.

To combat these needless deaths, fire departments have created local fitness programs to address these issues; are formulating and promoting the Wellness Fitness Initiative Guidelines; are training peer fitness trainers; are purchasing fitness equipment for the fire stations; are encouraging fitness programs on duty; and are urging firefighters to eat a more healthful diet, to not smoke, to evaluate their risk factors, and to participate in a medical evaluation program.

Departments should encourage every firefighter over the age of 40 to get an annual comprehensive medical evaluation from a physician following the standards in NFPA 1582. In addition, firefighters should engage in programs that detect preventable and correctable conditions such as hypertension, diabetes, coronary artery disease, colon cancer, prostate disease, asthma, and other career- and life-ending conditions. Firefighters are urged to get into the gym and start a comprehensive cardiac and strength-building program that follows the guidelines in NFPA 1583. In addition, firefighters should wear their seat belts and pay attention to their health and well-being.

Statistics tell the story. It is critical that you get out of the dark ages of denial and create a comprehensive medical evaluation program in your department. Start collaborative discussions between labor and management to arrive at a solution; seek appropriate medical intervention to save your life. You must commit 24/7/365 to reap the benefits of these fitness programs. Do it today; tomorrow may be too late.

Endnotes

1. United States Fire Administration (USFA), 2007.

2. Centers for Disease Control and Prevention (CDC), 2007. Downloaded from CDC Web site. Accessed 2008.

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