

**32FST385**  
**Political and Legal Foundations**

**Sean McCullough**

**Term Paper Topic:**

**The Need for Independent Medical Exams of  
Recruits and Current Firefighters Before  
Training**

**Prepared For: Larry Bennett**

In order for any local fire department to effectively serve and protect their community, their staff needs to be trained. Firefighting is extremely demanding occupation, often pushing the human body to its limit. Even these professionals whose job and passion it is to save peoples lives can also fall victim due to lack of physical fitness and uninformed physicians. Although training operations occur everyday, this training is not only subject to new recruits; even veterans of twenty-five years participate. Too often training results in unnecessary deaths. The National Fire Protection Association released a report titled *U.S. Firefighter Deaths Related to Training, 1996-2005*, the report states that 100 firefighters died while engaging in training, 8 of which were recruits. Almost every single fire department in the United States if not every department requires recruits to pass a medical evaluation, and many other departments now require periodic medical evaluations. If these brave men and women are working everyday to better protect us how can they become better protected from routine training exercises? One main way to help reduce these unnecessary deaths would be the use of an independent medical review or exam of all recruits and current firefighters before training begins. As of right now many aspiring firefighters and current firefighters often see their family physician to conduct their medical review. Although many pass their evaluation, these doctors are often examining their patient in order to be able to participate in general physical labor. Many of the demands and concerns of firefighting are unknown to physicians, due to the fact that they are unaware of standards such as NFPA 1582, 2007 Edition, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. Other

<sup>3</sup>standards such as The Occupational Safety and Health Administration (OSHA)'s Revised Respiratory Protection Standard should also be incorporated into entry and periodic medical evaluations. Although not all states are required to comply with OSHA requirements, fire departments nation wide should comply voluntarily.

The first requirements regarding the initial mandatory medical requirements for firefighting candidates was in NFPA 1001 1974 edition, *Standard on Professional Qualifications for Fire Fighter*. Then in 1987 the first edition of NFPA 1500 *Standard on fire Department Occupational Safety and Health Program* was released, which required all members who participate in emergency operations to be examined by a physician annually. It also stated that the examination was to be developed and administered by the fire departments physician in recognition of the specific requirements of the members' activities. During the late 1980's members of the Technical Committee on Fire Fighter Professional Qualifications who developed NFPA 1001 and members of the Technical Committee on Fire Service Occupational Safety and Health who developed NFPA 1500 formed to create a new standard on the medical requirements for firefighters. This committee published the first edition of NFPA 1582 in 1992, and most recently the 2007 edition. In order to help prevent deaths due to training fire departments need to adopt and strictly enforces the requirements of NFPA 1582. In order to meet the requirements of NFPA 1582 the responsibility does not solely lay in the hands of the physician it is an equal partnership with the fire department.

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Section 9.1.3 NFPA 1582 outlines the essential job tasks to be performed by any firefighter.

- (1) Performing fire-fighting tasks (e.g., hoseline operations, extensive crawling, lifting and carrying heavy objects, ventilating roofs or walls using power or hand tools, forcible entry, etc.), rescue operations, and other emergency response actions under stressful conditions while wearing personal protective ensembles and SCBA, including working in extremely hot or cold environments for prolonged time periods
- (2) Wearing an SCBA, which includes a demand valve-type positive-pressure facepiece or HEPA filter masks, which requires the ability to tolerate increased respiratory workloads.
- (3) Exposure to toxic fumes, irritants, particulates, biological (infectious) and nonbiological hazards, and/or heated gases, despite the use of personal protective ensembles and SCBA.
- (4) Depending on the local jurisdiction, climbing six or more flights of stairs while wearing fire protective ensemble weighing at least 50 lb (22.6 kg) or more and carrying equipment/tools weighing an additional 20 to 40 lb (9 to 18 kg).
- (5) Wearing fire protective ensemble that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C).
- (6) Searching, finding, and rescue-dragging or carrying victims ranging from newborns up to adults weighing over 200 lb (90 kg) to safety despite hazardous conditions and low visibility.
- (7) Advancing water-filled hoselines up to 2 in. (65 mm) in diameter from fire apparatus to occupancy [approximately 150 ft (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles.
- (8) Climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces, and operating in proximity to electrical power lines and/or other hazards.
- (9) Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication(s), or hydration .

- (10) Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens .
- (11) Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions.
- (12) Ability to communicate (give and comprehend verbal orders) while wearing personal protective ensembles and SCBA under conditions of high background noise, poor visibility, and drenching from hoselines and/or fixed protection systems (sprinklers).
- (13) Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to civilians or other team members.<sup>1</sup>

After carefully understanding the requirements of daily actions a firefighter may have to perform the physician can then proceed to examine the patient in regards to a detailed medical evaluation as listed in Chapter 6 of NFPA 1582. Once the medical examination is completed the physician can now evaluate if there is any correlation between the results of the test and the tasks that their patient may be subjected to perform. Furthermore, the physician appointed by the department should clearly understand their responsibilities as outlined in Section 4.2.1.

The candidate or fire department member is also responsible to provide all information regarding the past and present medical conditions in order for a proper evaluation as outlined in Section 4.3.<sup>4</sup>

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<sup>1</sup> NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 Edition

<sup>2</sup> <http://www.cdc.gov/niosh/fire/reports/face200623.html>

### **4.3 Candidate and Member Responsibilities.**

Each candidate or member shall adhere to the following requirements:

- (1) Cooperate, participate, and comply with the medical evaluation process
- (2) Provide complete and accurate information to the fire department physician and other authorized medical care provider(s)
- (3) Report any occupational exposure such as exposure to hazardous materials or toxic substances and exposure to infectious or contagious diseases
- (4) Report to the fire department physician any medical condition that could interfere with the ability of the individual to safely perform essential job tasks, such as illness or injury, use of prescription or nonprescription drugs, and pregnancy <sup>1</sup>

Failure to provide information could prove to be deadly. One such case happened in Florida to a 22 year old fire fighter Trainee. During a routine warm up jog the Trainee collapsed after 350 yards. Instructors and crew notified dispatched, and began to perform CPR. Fire fighters and Emergency Medical Technicians were soon on the scene and the Trainee was transported to the hospital, 50 minutes after Trainee had collapsed he was pronounced dead at the hospital. The cause of death was listed as “hypertrophic and arteriosclerotic cardiomyopathy.”<sup>2</sup> The National Institute of Occupation Safety and Health (NIOSH) conducted an investigation concerning the young recruit’s death. The Trainee also suffered from Kawasaki Disease as a child which is leading cause of heart disease in children and also used an inhaler his asthma. A pre-placement medical evaluation was required by the State for all fire fighter candidates, many aspects are looked into including complete medical history and a physical examination. The doctor who performed the medical evaluations and

provides the information to the Fire Academy was the Trainee's primary care physician. The doctor was given a description of essential firefighting functions and had to complete a State medical evaluation form, although medical clearance for use of a SCBA was not required. It is unknown if the essential firefighting functions outlined in the State medical evaluation were similar to the tasks outlined in NFPA 1582 Section 9.1.3. The Physician approved the candidate fit to engage in firefighting training, there was no indication that physician knew of the trainee's prior medical conditions. This information should have been provided in accordance with NFPA 1582 Section 4.3, as stated above. Three of NIOSH's recommendations made reference to physicians need to be knowledgeable of the various aspects of NFPA 1582. A young man pursuing his boyhood dreams of becoming a firefighter came to tragic end. Events such as this stress the need for independent reviews of candidates prior to training. Although many doctors are aware of guidelines to declare a person "physically fit," a physician who understands standards such as 1582 is essential to properly evaluate candidates. Through compliance of such standards can we then see a reduction in unnecessary deaths and injuries.

OSHA's Revised Respiratory Protection Standard 1910.134 outlines employers must provide medical evaluations for respirators such as a Self-Contained Breathing Apparatus (SCBA) used by firefighters. Sections 1910.134(e)(1) states "The employer shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or

required to use the respirator in the workplace. The employer may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator<sup>1</sup>” Section 1910.134 (f) also outlines that before an employee may be required to use any respirator, the employee must be fit tested with the same make and model of respirator that will be used. Appendix A outlines the parameters of the fit testing. Compliance of this standard is required in any State which uses an OSHA approved State plan.

A Lieutenant of 25 years suffers sudden cardiac death after SCBA training in Florida. On May 27, 2005 a 43-year-old male participating in fire fighter survival skills and SCBA confidence/endurance training dies shortly after. Vital signs of each member were taken before and after the training session, at this time everything appeared normal. After lunch The Lieutenant had then reported that he felt ill and had requested to be a dropped off at a station with an ambulance unit. The Lieutenant was then shortly transported to a hospital where advanced life support (ALS) and CPR were performed for over 50 minutes before he was pronounced dead. The county medical examiner listed “atherosclerotic cardiovascular disease (CVD)” as the cause of death.<sup>3</sup> The firefighter suffered from two coronary artery disease (CAD) risk factors which were high blood cholesterol which was diagnosed in 1986 and male gender. The fire department offered periodic evaluations to all firefighters however the evaluations were completely voluntary. If the Lieutenant had participated in the voluntary medical evaluations a physician could have acknowledged the CAD risk factors he

suffered from. NFPA 1582 Section 9.4.3.1 and 9.4.3.1 (6) state that due to the firefighters CAD it limits his ability to safely perform essential job tasks 1, 2, 4, 5, 6, 7, 9, and 13, and the physicians to report the applicable job limitations to the fire department<sup>4</sup>. Although it is unknown if this could have prevented his death it would have been a warning sign and possibly relived him from such strenuous activities; such as SCBA training. Furthermore, as stated above OSHA's requires medical examinations and fitness training to be provided by employers whose employees use SCBA's, although the state Florida is not required to abide by such standards. The fire department already conducts annual medical evaluations the addition of the proper SCBA evaluations in accordance with OSHA would have a minimal financial impact and only be beneficial to the fire department.

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It is no lie that firefighting is a dangerous job, but with more attention on health issues, the amount of fatalities due to training can be reduced.

The men and women who perform these training exercises are doing so to better protect the place we call home and reduce the chance of deaths. Although it seems that even during training we have lost too many lives. As noted above it seems apparent that sudden cardiac deaths lead to the greatest amount of training related deaths. Thankfully organizations such as NFPA and OSHA have produced standards in regards to the medical review of firefighters. NFPA's 1582 outlines the requirements a physician must follow to accurately evaluate a

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<sup>3</sup> <http://www.cdc.gov/niosh/fire/reports/face200602.html>

<sup>4</sup> NFPA 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 Edition

future and current firefighters. The hardest variable to control is the physicians conducting the medical evaluations, the physician needs to understand the tasks that firefighter performs and the toll it puts on their bodies. I believe every department should have an independent physician who understands and complies with all standards related to the health and safety of firefighters. This will greatly reduce the amount of unnecessary deaths that occur during training. If fire departments around the country would utilize an independent review, I believe there would be a significant decline in deaths.

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