

**EVALUATION OF THE IMPLEMENTATION OF A PERIODIC
MEDICAL EXAMINATION PROGRAM FOR THE
FIRE DEPARTMENT OF THE CITY OF NEW YORK**

STRATEGIC MANAGEMENT OF CHANGE

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ABSTRACT

The Fire Department of the City of New York (FDNY) recognized that the health and wellness of its uniformed members played an important role in the member's overall performance and the department's ability to efficiently and effectively fulfill its mission. The ability of the department to provide regular medical examinations and fitness evaluations to its members was hampered; therefore, a revised program was implemented in August 1998.

The purpose of this applied research project was to evaluate the processes utilized to revise current periodic medical examination program within the Fire Department of the City of New York. In doing so, historical, descriptive and evaluative research methodologies were employed to answer the following four questions:

1. What medical examination and fitness evaluation standards exist and how do they compare to those that are utilized by the FDNY?
2. What is the responsibility of the FDNY to provide a periodic medical examination and fitness evaluation to its members?
3. Are there objective management indicators that can demonstrate the effectiveness of the FDNY's periodic medical examination program?
4. What is the satisfaction level of members of the department who are required to participate in the periodic medical examination?

The procedures employed included a literature review of current standards and legislation, fire service publications and journals, NFA research papers, as well as a survey of FDNY members relating to the frequency of examinations and member satisfaction. Further, interviews were conducted with the FDNY Fire Commissioner and Chief Medical Officer.

The results of the literature review clearly indicated the FDNY had an obligation to provide medical examinations and did indeed provide one to its members comparable to established standards and recommendations. The majority of FDNY members surveyed agreed that the FDNY provided a comprehensive examination that they were satisfied with it.

The research revealed that the FDNY medical program, although comprehensive, satisfying to its members, and institutionalized within the organization, had room for improvement.

It was recommended that the FDNY continue to provide medical exams to its members consistent with the current program. It was further recommended that the FDNY attempt to improve attendance and compliance, improve member satisfaction with the program, implement and/or expand on fitness/wellness programs and identify forces resistant to the program.

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INTRODUCTION

The Fire Department of the City of New York (FDNY) recognizes that the health and wellness of its uniformed members (firefighters, EMTs, Paramedics and Officers) plays an important role in the member's overall performance and the department's ability to efficiently and effectively fulfill its mission. The ability of the department to provide regular medical examinations and fitness evaluations to its members was hampered due to existing policy, the size of the workforce and the need for field unit availability to appropriately address high call volume. In January of 1992, the FDNY implemented a periodic medical examination program designed to monitor and improve the health and fitness of its members. In August 1998, a “revised” version of this program was implemented. Many changes were incorporated into the new program, including, but not limited to, aggressive scheduling, and an educational initiative and improved fitness and wellness programs.

The purpose of this applied research project was to evaluate the processes utilized to revise current periodic medical examination program within the Fire Department of the City of New York. Historical, descriptive and evaluative research methodologies were employed to answer the following four questions:

1. What medical examination and fitness evaluation standards exist and how do they compare to those that are utilized by the FDNY?
2. What is the responsibility of the FDNY to provide a periodic medical examination and fitness evaluation to its members?
3. Are there objective management indicators that can demonstrate the effectiveness of the FDNY's periodic medical examination program?

4. What is the satisfaction level of members of the department who are required to participate in the periodic medical examination?

To complete this research, a literature review was conducted from fire and emergency service publications, standards, regulations, legislation, journals, FDNY policies and procedures and applied research papers completed by National Fire Academy Executive Fire Officer students. A random survey of uniformed members of the FDNY was completed and interviews were conducted with the Fire Commissioner and the Department's Chief Medical Officer.

BACKGROUND AND SIGNIFICANCE

Fire fighting has been long recognized as a physically taxing and hazardous occupation. There is sufficient medical evidence demonstrating that many injuries can be prevented or reduced in severity by improved fitness and overall health (Fire Department of New York [FDNY], 1992). Fire fighting and emergency responses are very difficult jobs. People in these jobs perform functions that are physically and psychologically demanding, often under difficult conditions (National Fire Protection Association [NFPA], 2000)

In January 1992, the Fire Department of the City of New York (FDNY) issued a directive PA/ID 1-92 Periodic Medical Examinations. This policy set forth and established a periodic medical examination program that would allow all members of the FDNY to receive a complete medical examination every three years (FDNY, 1992).

In 1987, the National Fire Protection Association (NFPA) released the first version of its standard 1500 Standard on Fire Department Occupational Safety and Health Programs. The third edition of this standard was adopted on August 15, 1997. NFPA 1500 developed guidelines and heightened awareness for health and safety within the fire service. The number of fire fighter fatalities has continued to decline since the development of this standard (NFPA, 1997).

NFPA Standard 1582 Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians was revised and adopted in February 2000 (Third Edition). This standard addresses medical requirements for persons who perform fire fighting tasks (NFPA, 2000).

In March 1996, the FDNY expanded its mission as a result of the merger with the Emergency Medical Service. Today, the department has over 11,000 uniformed Firefighters and Officers as well as over 2,800 Emergency Medical Technicians, Paramedics and EMS Officers. The FDNY is responsible for providing fire suppression, prevention and investigation as well as emergency medical services to the 303.7 square miles of New York City. In 2000, the FDNY responded to over 444,000 fire alarms and over 1,073,000 EMS incidents. Insuring the health and fitness of such a large workforce, which responds to such a significant number of alarms, at times, can be an insurmountable task.

Since January of 1992, the FDNY had attempted to provide its members with a periodic medical examination. The purpose of such examinations was to:

- ... insure that members were and remained fit for full duty.
- ... prevent injuries and illness.
- ... promote early detection of conditions that may impair the member's future ability to perform his/her duties.
- ... help members recognize and modify habits that have an adverse impact on their health so that they may achieve a better quality of life. (FDNY, 1992)

In January 1998, Fire Commissioner Thomas VonEssen directed the Bureau of Operations to re-engineer the periodic medical examination process, specifically, the timeframe as to which members received a medical examination and the level of compliance with this process. NYC fire

officers and firefighters work a two-platoon, 25 group system. Each member is assigned to one of the 25 groups; six of the groups are working at any one time. The day platoon works 9 am – 6 pm and the night platoon, 6 pm – 9 am (Griffiths, 2001, p. 186). Under the original medical directive, a fire company was scheduled to attend medical examinations during a regular day tour, thereby allowing for up to 6 firefighters and one officer to attend during each scheduled event. Many firefighters prefer to work 24 hour tours and this is accomplished through mutual tour exchanges. Many times the scheduled company for medical exam had members working that previously attended a medical and therefore, many other members had not received examinations.

A review of health service records had revealed that many members had not had a medical examination in excess of 5 years. Furthermore, since NYC experienced such a high volume of call activity, it was necessary to more effectively schedule units for medical examinations, apparatus maintenance and training. Each of these events required a unit to be placed off service during its day tour.

The leadership of the FDNY is committed to the health and safety of its members. It recognized that every effort should be made to afford members a medical examination that would fulfill the goals established in the original program (1992) and it recognized that the results of its current effort was not significant enough. In July 1998, the FDNY revised and reissued PA/ID 1-92 detailing a more comprehensive and aggressive plan for scheduling members. Under this directive, up to six fire companies and one Chief officer were scheduled daily for medical examinations. Several changes were put into effect with this change:

... members were directed to report directly to health services on the scheduled examination day.

... apparatus assigned to these companies would receive maintenance while the company was attending their medical.

... mutual tour exchanges were restricted for those members who were in groups scheduled to attend a medical examination.

... several required training initiatives were added to the medical examination to provide for a complete workday (9x6) tour. (FDNY, 1998)

In August 1998, the new program was implemented on a limited level and in September 1998, expanded to meet the criteria of the PA/ID. Starting in February 2000, members of the FDNY's EMS Command and Bureau of Fire Investigation were scheduled by Operations for medical examinations.

The Strategic Management of Change (SMOC) course of the National Fire Academy's Executive Fire Officer Program is designed to provide executive level fire officers with the skills necessary for managing and leading change in fire and emergency service organizations (NFA, 2001,p. iii). This research project directly relates to Module 2: The Change Management Model of the SMOC course, specifically task 4.1 – Evaluate Initial Change Implementation (NFA, 2001, p. 2-15).

LITERATURE REVIEW

A literature review was performed to provide a summary of the findings of others as it relates to medical examinations and fitness evaluations for fire fighters. Furthermore, the literature review would help establish the responsibility of the FDNY to its members as it relates to their health and fitness.

National Standards

The National Fire Protection Association (NFPA) has two current standards that address medical and physical standards for fire fighters and emergency personnel. Both of these standards, NFPA 1500 Standard on Fire Department Occupational Safety and Health Program and NFPA 1582 Standard on Medical Requirements for Firefighters have been revised recently, 1997 and 2000 respectively. The 1997 edition of NFPA 1500 is a comprehensive standard, organized into 10 chapters with 3 appendices, covering a range of topics associated to Fire Department Occupational Safety and Health. The 1997 edition of NFPA 1500 contains an entire chapter (8) that addresses the medical and physical abilities of firefighters by requiring:

...that all candidates be medically evaluated and certified by a fire department physician (1.1).

...that candidates and members who are engaged in fire suppression shall meet the medical requirements of NFPA 1582 prior to being certified for duty (1.2)

...annual medical evaluations of all members who engage in fire suppression as specified in NFPA 1582 (1.3)

Section three of chapter eight, NFPA 1500 (1997) defines the parameters of a physical fitness program and the participation of members in such a program. Confidential and permanent health files are to be maintained on all members of the fire department (Chapter 8-4, 1997). The role of the fire department physician is delineated in chapter 8-6 (1997).

Member assistance and wellness programs are discussed in Chapter 9 of the 1997 edition of NFPA 1500. Departments shall provide members with assistance in those problems...that adversely affect fire department work performance (Chapter 9-1.1, 1997). Moreover, Chapter 9-2.1 (1997) of NFPA 1500 suggests that a wellness program which promotes identification of risk factors and enhances overall well being be implemented.

The 2000 edition of NFPA 1582, Standards on Medical Requirements for Firefighters and Information for Fire Department Physicians not only covers the medical requirements necessary for persons who perform fire fighting tasks (both candidates and incumbents), but established two categories of medical conditions that would assist fire department physicians to determine if a person was eligible to perform fire fighting operations or not (p. 1).

Although NFPA 1582 (2000) recommends annual medical evaluations designed to evaluate the person's ability to continue performing his or her duties and detect conditions that may affect this performance, it does recommend a more thorough medical examination on a periodic basis. (p. 22).

Legislation and Regulations

Federal regulations such as those from the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) have established standards as they relate to physicals for firefighters as it relates to their ability to perform job related tasks (Sauter, 1998). OSHA standards 29 *CFR* 1910.134 "Respiratory Protection" mandates that annual medical evaluations are given to members who utilize a respirator, such as firefighters, EMT's and Paramedics (Sauter, 1998). OSHA standard 29 *CFR* 1910.20 "Medical Record Keeping" outlines the requirements for medical record keeping and is echoed in NFPA 1582 (2000) in section 2-6.

Marsh in his NFA Applied research project indicates that the Civil Rights Act of 1991, American with Disabilities Act (1991), and the Discrimination in Employment Act Amendments of 1996 all demand a medical standard for firefighters if fire departments are to comply with the legislation (1996).

Other Material

According to Kelly and Prezant in a recent article of FireWorks, an in-house publication of the FDNY, there are many statistics available from the U.S. Bureau of Labor, International Association of Fire Fighters (IAFF), and the U.S. Fire Administration which report on the number of firefighter line of duty injuries and fatalities. While most agree that the number of fatalities and injuries has stabilized, firefighters still suffer the greatest number of job related illness/injury of any other US occupation. (2001, p. 2).

May, in an NFA Applied research project indicates that no matter what the proven benefits of a program, there will always be some that refuse to conform (1998).

The Fire Service Joint Labor Management Wellness/Fitness Initiative (Initiative) was published by the International Association of Fire Fighters and International Association of Fire Chiefs (IAFC) in 1997. This initiative identifies medical fitness, physical fitness, emotional fitness and access to rehabilitation as necessary components of a comprehensive wellness program (IAFF, 1997). In addition to identifying components necessary for a wellness program, the Initiative (1997) identified measurable indicators of a successful program, including: weight reduction, blood cholesterol level, decreased injury and/or disability, reduction of risks associated to death.

Interviews

Two interviews were conducted in conjunction with this research project. It was felt that they were necessary to provide historical insights as to the need for changing the FDNY's medical examination program and to support the evaluative process of the research.

Thomas VonEssen is the Fire Commissioner for the Fire Department of the City of New York. He has been in this position for the last 5 years. Prior to being appointed as Commissioner, Mr. VonEssen served as a firefighter for over twenty-five years and as President of the Uniformed Firefighter Association in NYC (1993-1996). His background as a firefighter and union president

gave him distinct insight into the need for a more effective medical examination program. In his interview, he states his goals for the improved program were “an increased awareness on the part of the members with regard to their overall fitness, health and well being. I wanted members to know they where health wise and to be able to identify those issues that were in need of correction.”

He further indicates that although he believes that members participating in the medical have a better understanding of their health status, achieving 100% member participation has not been accomplished. He would like to achieve 100% member participation and improve the overall quality of life for the FDNY members. He states that the FDNY medical program is “...saving lives, our own lives”.

Lastly, the Commissioner reflected on two items that have disappointed him. First the fact that the existing leadership of the unions are 100% hypocritical when it comes to members health and safety! They have failed to support the FDNY initiative for improving member health and wellness. Second is the administrations inability in the five years since the Fire/EMS merger to utilize the mutual skills of such a large and diverse workforce to improve their overall health and welfare.

Dr. Kerry Kelly has been a physician for over twenty-four years. She has served the FDNY for twenty years, the last 7 in the capacity of Chief Medical Officer. She was interviewed to review the historical background of the firefighter medical examination program and to provide an evaluative insight into the improvements in the program under the revised directive.

In her interview, she made several comments on the FDNY’s periodic medical examination program relative to this research paper. First, she indicated that the revised program clearly demonstrates a commitment on the part of the administration in developing a schedule to actually

get the members to attend a medical on a regular basis. This was an essential difference from the past, when member attendance was haphazard at best.

Second, she believes that the new program provides for greater member satisfaction. Members have been giving positive feedback about the program and she believes that this is a result of the added components coupled with the education and training initiatives that have been incorporated making the “new” periodic medical examination a comprehensive experience.

Lastly, she provided an in depth overview into the existing program and its various components and how they related to those indicated in NFPA standards 1500 and 1582.

Complete transcripts of the personal interviews conducted can be found in Appendix A (Thomas VonEssen) and Appendix B (Kerry Kelly M.D.).

The objective of this research was to evaluate the change implemented in the FDNY periodic medical examination program as it relates to existing standards, effectiveness and responsibility of the FDNY. The findings of the literature reviewed clearly established that the FDNY has a responsibility toward insuring the health and fitness of its members through the provision of a periodic examination process. The literature, specifically the NFPA standards, clarifies the components which are vital for an appropriate and objective evaluation, one which will assist a fire department physician in determining whether a member is fit for fire fighting duty. The references used were reflective of current practices and standards.

The interviews performed served to provide and clarify the intent of the change in the FDNY medical examination process and the realized improvement of this change. In the case of Commissioner VonEssen’s interview, his insight on the analysis as to why a change was necessary and its projected goals was important for this research to be effective. In the case of Dr. Kelly’s interview, her perspective on the improvements realized since the change and the overview

provided as to the components of the program further provided the necessary information for this research to continue.

PROCEDURES

Definition of Terms

Periodic Medical Examination – For the purpose of this research paper, an examination that is scheduled by the FDNY for its uniformed members. Members are scheduled to attend regularly, every 9 – 15 months.

Uniformed Member – a member of the FDNY in the title of firefighter, fire officer, fire marshal or supervising fire marshal.

EMS Member – a member of the FDNY in the title of EMT, Paramedic or EMS Officer.

Health – absence of illness or injury; an FDNY member in good health would be someone who is not sick or injured; or not requiring ongoing medical attention or rehabilitation.

Fitness – physical well-being; an FDNY member is considered fit if they are able to maintain a reasonable quality of life and perform the duties and tasks of a firefighter.

Wellness – any activity or behavior that would improve on health and fitness. Exercise and nutritional diet are examples of wellness.

This research project employed historical, descriptive and evaluative methodologies to evaluate the success of the implementation of a “revised” periodic medical examination program within the Fire Department of New York. The procedures used to complete the literature review included an examination of related fire and emergency service publications, standards, regulations, legislation and National Fire Academy (NFA) research papers.

The literature review provided the necessary historical and descriptive information to compare the FDNY medical program to existing standards and determine the FDNY's responsibility to provide a medical examination program to its members.

After the literature review, a decision was made to interview members of the FDNY Administration who are currently and actively responsible for the revision of and provision of the medical examination process. These interviews would provide historical and descriptive information necessary to compare the FDNY medical examination program and the department's commitment to providing such. They also provided necessary evaluative information to determine the effectiveness of the revised program.

Evaluative research in the form of a random survey was utilized to determine the effectiveness of the revised program and to ascertain member satisfaction.

Literature Review

The literature review was started at the United States Fire Administration's Learning Research Center (LRC) during the spring of 2001. The literature review was the result of an examination of fire and emergency service publications, standards, and regulations, legislation and NFA research papers pertaining to firefighter medical examination procedures and recommendations. It was continued at FDNY Headquarters through a review of FDNY policies, procedures and directives.

Interviews

Two executive level members of the current FDNY Administration were interviewed on August 23, 2001. Prior to the interviews, a question sheet was designed specific to the information that was to be solicited from the interviewees. Both interviewees were questioned about the revised medical examination program, whether firefighter fatalities resulting from stress and

overexertion was a problem in the FDNY, and their feelings on fitness and wellness program participation. Lastly, both were solicited for any other thoughts or comments that they had regarding fitness and wellness as it relates to those involved in the fire service. Those interviewed were; Mr. Thomas VonEssen, Fire Commissioner and Kerry Kelly MD, FDNY Chief Medical Officer. Both interviews were conducted at FDNY Headquarters which is located at 9 Metrotech Center, Brooklyn, New York.

In summary, the interviews proved to be very informative and those interviewed provided significant insight into the FDNY medical examination program, its components and the goals and objectives of the revised program.

Survey

A survey was prepared consisting of eleven questions. The purpose of the survey was to evaluate the effectiveness of the revised periodic medical examination program in improving attendance, promoting fitness and wellness, and educating members on their present state of health and wellness. The survey also questioned members as to additional components they would like to see included in the program.

Survey Population

FDNY is an all paid department that has over 13,000 Uniformed and EMS members. Each of these members is scheduled to participate in the periodic medical exam process. The survey tool was distributed to members as they reported for their scheduled periodic medical examination. Approximately 30-45 uniformed members and 10-15 EMS members are scheduled to attend each day. Surveys were distributed over a ten-day timeframe, this would potentially allow for approximately 600 members or 5% of the workforce to be surveyed.

Survey Instrumentation

An eleven-question survey was developed. Participation by the survey population was anonymous and voluntary. The first question asked for the members present title. Question 2 asked the member to recall the number of years between medical examination prior to the implementation of the “revised” medical. Question 3 asked for the number of exams that the member has participated in since implementation of the new program. These two questions (2 and 3) would be used to determine the efficiency of the new program. The next four questions were designed to determine if members were satisfied with the program and informed as to their overall health and wellness. Question 4 asked about the overall quality of the examination. Question 5 asked whether the member felt that the exam was comprehensive. Questions 6 sought to determine if members were fully informed of exam results and question 7 sought to determine if members could evaluate whether there was a change in their health/wellness since their last examination. Question 8 was designed to see if a members participation in the examination had an impact on a lifestyle change. Several possible changes were identified as well as an open category. The final three questions were specific to the revised examination process. Question 9 asked about the convenience of the scheduling process. Question 10 compared the current process to the previous one. Question 11 was developed to see if members felt the need for additional components to the program. Again, several choices were provided as well as an open (other) category. The survey instrument used is included in the appendix section of this document (Appendix C).

In summary, during the ten-day survey period, 307 members attended the medical examination and received a survey. Two hundred twenty-eight were returned, for a return rate of 74.26% of the surveyed population and approximately 2% of the total uniformed and EMS workforce population.

Assumptions

Procedures used to complete the research included four basic assumptions. First, it was assumed that the literature provided objective and impartial research. Second, it was assumed that survey participants answered the questions honestly and without bias. Third, it was assumed that survey responders did not participate in any collaborative effort. Lastly, it was assumed that the responses elicited from those interviewed were also truthful and freely given.

Limitations

This research paper was limited by a number of factors. Time constraints had an affect on this paper by limiting the scope of the research. The limited number of survey participants: the nature of the survey raised the matter of confidentiality, thereby required anonymity and voluntary participation. The availability of research material on the subject matter as this research was directed to evaluation of a program implemented wholly within the FDNY.

RESULTS

The answers to the research questions are as follows:

- 1. What medical examination and fitness evaluation standards exist and how do they compare to those that are utilized by the FDNY.**

A review of the literature revealed that there are clearly defined standards and typical components for firefighter medical and fitness evaluations. The Fire Service Joint Labor Management Wellness/Initiative of the IAFF and IAFC describes a comprehensive program committed to 1) the health and safety of personnel; 2) the productivity and performance of fire crews; and 3) the cost effectiveness and welfare fire departments (Riddle, 1999). NFPA standards 1500 and 1582 mirror the principal components of the IAFF/IAFC Initiative. The principal standards and components of a comprehensive medical and fitness program are:

- A. Medical – a comprehensive periodic examination including a physical examination, laboratory testing, vision and hearing testing, immunization and infectious diseases screening, chest x-ray, pulmonary function testing, and electrocardiogram.
- B. Fitness – an annual fitness evaluation specific to job tasks and responsibilities, a defined fitness program, including equipment and facilities, strength and endurance testing.
- C. Rehabilitation – assist members affected by occupational injuries or illnesses in their rehabilitation, the provision of physical therapy services, and the provision of alternative duty assignments.
- D. Wellness and Behavioral Health – the establishment of a member assistance program, a policy on tobacco and alcohol, stress and critical incident stress management and chaplain services.
- E. Health Database / Record keeping – the establishment of a confidential permanent health file that contains all the results of medical exams and physical exams. This database should also include exposures, job-related illnesses and injuries.

The FDNY's current medical program provides a thorough medical examination and fitness evaluation to its members every 9 – 15 months. Each of the items identified in section A are provided in the examination as is the fitness evaluation described in section B.

A physical fitness unit has been established with a fire officer and several firefighters. Equipment and exercise program design is available to members on their own time. Participation in this program is voluntary. The department has hired an outside vendor to provide physical therapy services to members requiring rehabilitation from job related injury.

The FDNY also assists members with alcohol, substance abuse, family problems, or stress through its counseling unit. Chaplain services are always made available to members at their request.

Lastly, over the last two years, the department has made significant progress in maintaining and monitoring member health and fitness exam records through a comprehensive computer database application.

2. What is the responsibility of the FDNY to provide a periodic medical examination and fitness evaluation to its members?

The literature clearly has identified that fire departments have an obligation to provide medical examinations and fitness evaluations to their members. NFPA 1500 requires that members shall be medically evaluated and certified by a fire department physician. It further states that members shall meet the medical requirements established in NFPA 1582. The IAFF/IAFC reiterates this responsibility in its joint initiative.

3. Are there objective management indicators that can demonstrate the effectiveness of the FDNY's periodic medical examination program?

The literature review provided some insight into management indicators that could demonstrate the effectiveness of the FDNY medical examination program. The Initiative (1997) outlines areas that could be monitored to an effective program. These include; weight reduction, decreased risk of death, reduction in job-related illness and injury, and improved laboratory work. Clearly, other items could be examined to demonstrate program effectiveness.

Questions 2 of the survey was specific to the period between examinations under the old FDNY medical program and Question 3 as to the present program. Of the 228 responses to question two, 64 were discarded for no answer. The remaining 164 surveys were analyzed and

indicated that 87 or 53% of those received medical exams every 2 years or less, 59 or 36% received medical exams between two and five years, and 18 or 13% received exams on average every 5 years. Question 3 was examined and 18 surveys were discarded for no response. Of the remaining 210 surveys, the results indicated the following: 30 or 14% had only one medical since 1998, 61 or 29% had two, 91 or 43% had three and 28 or 13% had four. When further analyzed, 86% of those surveyed had received more than one medical exam in the last three years, with 56% of those receiving a medical annually.

It is clear to see that attendance or average number of years between participation in scheduled exams is clearly an indicator that can be used to evaluate the effectiveness of the medical program. Based on the survey results, one can see that the FDNY has improved in providing periodic exams. Under the new program, 86% percent of those surveyed had a periodic exam, within the expected timeframe of 9-15 months, as compared to 53% under the previous program.

Other indicators can be utilized as well. Areas such as member lost time resulting from injury and the number of members placed off duty or onto alternative assignments can help determine the effectiveness of overall fitness and health of the workforce. The FDNY has realized a reduction of members assigned to light duty from over six hundred members in November 1998 to just over four hundred members in August 2001.

Question 8 of the survey asked members if their participation in the program had altered their lifestyle in any way, 140 or 61% indicated that it did.

4. What is the satisfaction level of members of the department who are required to participate in the periodic medical examination?

The survey tool was utilized exclusively to provide the answer to this question. The results from question four identified that 98.2% of those surveyed felt that the quality of the medical examination was fair, 25% of those felt the exam quality was excellent. 68.8% agreed with question 5, that the FDNY provided a comprehensive exam, 3.5% felt it wasn't and 27.7% were non-committal. Although the provision of an exam is important, educating members on their health is just as important: 168 or 73.6% of those surveyed felt they were informed of their results. The intent of Question 7 was to evaluate if members understood their overall health and fitness. Forty-five or 19.7% felt their condition improved, 75.8 % felt their condition remained the same, only 4 felt their conditioned worsened and 6 were not sure.

Questions 9 – 11 were specific to the revised examination program. Only 163 members responded to these questions. As for the scheduling process, 92 or 56.4 % agreed that it was convenient, while 23.9% disagreed. The results were almost evenly split for question 10, with 46% indicating that the current medical examination process was better than the previous and 54% felt it was worse. Question 11 specifically asked the members if they felt that any components should be added to the medical examination process. 50.9 % indicated that they would like to see additional components to the program, specifically:

- 25 indicated that they would like to see more health education provided
- 29 indicated that they would like to see a weight reduction program provided
- 32 felt a more comprehensive fitness program was needed (at the firehouse level)
- 13 indicated that they would like to see a smoking cessation program provided
- 3 asked for a PSA/Cancer screening process

- 4 asked for a more comprehensive stress testing program

DISCUSSION

The importance of medical and physical standards for firefighters has clearly been recognized as documented in NFPA 1500 and NFPA 1582 as well as the Fire Service Joint Labor Management Wellness-Fitness Initiative.

The purpose of this research was to evaluate the “revised” periodic medical examination and fitness evaluation program implemented in August 1998 by the Fire Department of New York. The FDNY was obviously committed to member health and fitness as it initially implemented a periodic medical examination program in January 1992. In FDNY directive PA/ID 1-92 (1992) the FDNY policy is described requiring medical examinations. In this directive, the FDNY recognizes that medical evidence indicates that many injuries...can be prevented or reduced in severity by improved levels of fitness (FDNY, 1992).

Change within an organization is constantly occurring. The need for change can be a result of internal or external forces. As for the need of the FDNY to change its medical examination program, the force behind the change can be seen as internal and external. Externally, new and improved standards for the NFPA as well as recommendations from the IAFF and IAFC came about since the initial FDNY program was implemented in 1992. Internally, the renewed commitment by the FDNY Administration toward improving the overall health and fitness of its members was a significant force behind the change. Whatever the force behind the change, the management of the change is important in achieving success. The National Fire Academy’s Strategic Management of Change (SMOC) program teaches the Change Management Model, which describes four phases necessary to affect change in an organization. Phase I is analysis, phase II is planning, phase III is implementation and phase IV is evaluation.

The SMOC Manual states “once a change is implemented, it must be continuously, systematically monitored to ensure it is working as anticipated” (NFA, 2001). The FDNY has monitored its revised medical program since implementation and has made some minor modifications. This research serves to provide a complete evaluation based upon the steps identified in the SMOC program.

The program that is provided by the FDNY is comparable to those identified by the NFPA. The FDNY has recognized its responsibility to insure the health and wellness of its members. It recognizes that fire fighting is the most hazardous occupation in the United States and has instilled many programs to protect the health and safety of its members.

The initial expectations as stated by the FDNY Fire Commissioner was to allow members to get a better understanding of their overall health status. Although the department has improved the frequency of medical examinations to the point where it is in-line with NFPA recommendations, it has not achieved 100% member compliance to the standard.

The current program is well established and compliance in attendance by members has greatly improved. These are signs that the change is becoming institutionalized within the department. No change is implemented without resistance; in this case, the FDNY met resistance to the new program from its labor unions. Although they promote health and safety of the membership, the Fire Commissioner believes that they did not provide appropriate support for this initiative, especially when it comes to member participation in a fitness program.

Some new controls were developed to insure and monitor the success of this program and minor changes were implemented in existing procedures to do the same. A scheduling and tracking program were developed and are utilized to monitor member participation and insure periodic scheduling of companies. The scheduling program provides ease of scheduling while

insuring that the ability to provide service is not affected. Changes were made to the departments Human Resource Information System (HRIS) to allow for tracking, review and analysis of medical records and information.

Members are obviously pleased with the new program, as the majority believes that the exam provided is complete and comprehensive. It is clearly a process that shares the findings of the medical exam with members and assists them in correcting identified deficiencies. Most members agree that they are informed of results and have an understanding of their medical health status. A majority have utilized information shared through the medical process to affect a positive lifestyle change, whether it be change in diet (88 of 140); modified drinking habits (10/140); follow-up with a private physician on a medical condition (41/140); improved fitness / exercise program (75/140); or smoking cessation (17/140). The department has also realized an improvement in the overall health of its members; recognized through the reduction of members currently operating in an alternative duty status.

Although a comprehensive medical examination and fitness evaluation program have obvious fiscal considerations attached to them, especially in a department with the size and complexity of the FDNY, these matters were not addressed in this research. As a medical examination program had previously existed, this study was aimed at evaluating the success in revising the program.

Lastly, ongoing evaluation is critical to the success of a change initiative. One such example is as follows. One of the early findings of program evaluation was that members were having laboratory blood work taken at the time of the annual exam, and the results being forwarded through the department mail. Often members considered this as being impersonal and non-effective in sharing medical advice when necessary. The program has since been modified to

allow for blood work to be taken prior to the member medical exam so that the results will be available to be discussed by the physician during member's scheduled medical examination.

RECOMMENDATIONS

The research clearly indicates that the FDNY has a responsibility to provide periodic medical examinations and fitness evaluations to its members. Although it has accepted this responsibility wholeheartedly, it is not compliant with the recommendation of providing an annual examination and has determined that a periodic examination of 9-15 months is appropriate. Based upon the size of the department, this is a realistic goal, however, efforts must be made to improve member compliance to 100% receiving an examination periodically, as opposed to the present result of 86%.

The exam provided by the FDNY is comparable to those that have been recommended by organizations or established through legislation. The FDNY has excelled in this area and should maintain the level of the examination. The research, however, has identified that members are split on their evaluation of the current process as compared to the exam process of the past. FDNY should consider a careful evaluation of the process and seek to determine what improvements can be made to improve overall satisfaction of the members.

Society in general encourages a lifestyle of wellness and fitness. This is echoed by the NFPA (standard 1582) and the FDNY through its periodic examination/fitness evaluation program. Although the research has indicated that 61% of those surveyed have implemented a positive lifestyle change because of their participation in this exam, the department should identify what percentage of its members actually should consider a lifestyle change. Furthermore, although participation in fitness/exercise programs are voluntary and available at present, the FDNY should consider expanding these programs to the firehouse level and where necessary, mandating member

participation. Nearly 40% of those who indicated that the program should be expanded identified fitness/exercise as an area in need of expansion. Additionally, echoing the comments of the Fire Commissioner, with a workforce so diverse as that of the FDNY, more can be done by the members to help themselves. Management should actively pursue initiatives that provide better health education and wellness programs such as weight reduction and smoking cessation.

Research methods employed during the development of this paper clearly acknowledge the dangers associated with fire fighting and emergency response. The FDNY is committed to insuring and improving the health and wellness of its members.

Finally, by continuing to evaluate and commit resources to member health and wellness, the FDNY will insure that its ability to provide high quality service to its community will continue, and not at the expense of its members. Future success is dependent upon identifying those forces, which cause resistance to this program, and overcoming them.

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APPENDIX A

Interview with Commissioner Thomas VonEssen, Fire Department of New York

On August 23, 2001 a personal interview was conducted with Thomas VonEssen, Fire Commissioner for the Fire Department of New York. His interview directly impacts the problem statement defined in this research paper. Commissioner VonEssen has 32 years with the FDNY. He was a career firefighter with over 25 years of service before being installed as the Fire Commissioner. Commissioner VonEssen has been the Fire Commissioner since March 1996. The following is a synopsis of the interview with Commissioner VonEssen:

Peruggia: Re-engineering the process by which Uniformed FF's and Fire Officers were scheduled for medical examinations was an important initiative implemented by your administration. What were your original expectations for a new program?

VonEssen: Increased awareness on the part of the members with regard to their overall fitness, health and well being. I wanted members to know they where health wise and to be able to identify those issues that were in need of correction.

Peruggia: Do you feel that your expectations have been met?

VonEssen: Yes. I believe that those members that have participated in the new medical program have a better understanding of their "health status". Unfortunately, our goal was 100 % member compliance (attendance) and we still haven't achieved that (though we are getting close).

Peruggia: What other changes would you like to see with the periodic medical examination program?

VonEssen: I would like to see us reach 100% participation in the program. The purpose of the program is to identify poor health and educate members as to how to improve. We can only help those who want to help themselves. Improving the quality of life is what it is all about. The periodic medical program is a costly initiative, but a very important one. To date I think we have

helped many members identify problems that were correctable. Many have made these corrections. **What we are doing here is saving lives; Our own lives!**

Peruggia: According to Ken Burris, Acting Fire Administrator and COO for the USFA, "many firefighters are still dying as a result of stress and overexertion at emergency scenes". Do you see this as a problem in the FDNY?

VonEssen: Absolutely. Ken is correct in his statement. This is a problem not just in FDNY but absolutely everywhere.

Peruggia: What do you think can be done to prevent or improve on this phenomenon?

VonEssen: We must raise awareness. When we implemented bunker gear, we had to be aware of the added burden to the firefighters. The Officers had to insure relief to prevent overexertion. For our EMS members, they must be aware of the health and monitor themselves while on assignment. There isn't always an officer there to tell an unfit EMT or Paramedic to rest after walking up two or three flights of a six-floor walk up. It is important to get to the patient quickly, but the member becoming another patient just doesn't help.

Peruggia: The department has a fitness program that members can participate in on a voluntary basis. Many firehouses and EMS stations have fitness equipment in the facility for member use. What are your feelings on a structured, ordered fitness program/wellness program for members who fit "specific" identified criteria?

VonEssen: Unions are 100% hypocritical when it comes to members health and safety! If unions were truly concerned about health and safety, on issues like this they would support mandated or ordered fitness and wellness programs. Management cannot force a member to be healthy. We can encourage exercise and dieting, but cannot impose it. If we did impose it, what

would happen to those who didn't participate? After all, the unions wouldn't let us fine or fire them.

Peruggia: Many departments include programs such as smoking and drinking cessation, weight reduction and health education as part of their fitness/wellness program. Do you envision these as worthwhile programs that may be implemented in the FDNY in the future?

VonEssen: I am disappointed that in the five years since the merger of EMS into FDNY we haven't been successful in using the mutual skills of such a diverse workforce to improve the overall health and welfare not only of our members, but that of the citizens of NYC. I think any program that can be supported, and improves the health and safety, especially of those who perform such physically tasking assignments like firefighter and EMTs, is worthwhile and deserves an evaluation. Again, I think some creativeness on the part of employee unions would prove beneficial here. Unions always want more, but are unwilling to give back or get involved.

Peruggia: Any other thoughts or comments regarding fitness and wellness as it relates to FF, EMT/EMTP and Fire and EMS Officers of the FDNY?

VonEssen: Yes! Members must take an active role in their health and well being. If they are scheduled for the periodic medical and are on vacation or other leave, they should take the initiative of rescheduling the exam, not just accept missing it until next time. There may be some problem that exists that may prevent there "being a next time". I think that if the EMS workforce truly wants to realize some of the benefits that firefighters are privileged to, such as; lung/heart bills, unlimited sick leave, etc., that they must improve their level of fitness/wellness. I think we (FDNY) have helped improve this in the EMS workforce over the last 5 years, but it still has a way to go.

APPENDIX B

Interview with Dr. Kerry Kelly, Fire Department of New York

On August 23, 2001, a personal interview was conducted with Dr. Kerry Kelly, Chief Medical Officer, of the Fire Department of New York. Her interview directly impacts the problem statements defined in this research paper. Doctor Kelly has been a physician for over 24 years. She has been with the FDNY for 20 years, the last 7 of which she has been the Chief Medical Officer. In addition to her work at the FDNY, Doctor Kelly has an established private family practice.

The following is a synopsis of the interview with Doctor Kelly:

Peruggia: The process by which uniformed Firefighters and Officers were scheduled for medical examinations was modified in August 1998 under an initiative of Commissioner VonEssen. How does the new program compare to the previous one?

Kelly: There are several advantages. Primarily, the commitment on the part of the administration in developing a schedule to actually get the members to attend a medical on a regular basis. In the past, scheduling was haphazard at best. We had no idea of who was coming for a medical and there were so many no shows with a plethora of excuses. No one monitored attendance, avoidance was very easy. Today participation is tracked and logged into a personnel database.

Peruggia: Do you see greater member participation?

Kelly: Definitely!

Peruggia: Do you see greater member satisfaction with the program?

Kelly: I believe so. We are always receiving positive feedback from those attending. I think the added components and commitment of the department for wellness/fitness has helped satisfaction. In addition, the fact that we are teaching prevention and identification of problems is noteworthy.

Peruggia: What do you consider the main components of the current program?

Kelly: The program encompasses has three main concentrations; Medical Exam, Laboratory analysis and specialized testing, and Education. The medical examination includes height and weight; blood pressure; exam of the eyes, ears, heart, abdomen, back, extremities and chest. Laboratory analysis and testing includes; EKG; Pulmonary function testing, chest x-ray, auditory exam, vision testing, blood monitoring, lipid profiling, hepatitis B and C surveying, MMR/Varicella testing and glucose monitoring. Education includes Right to know training, respirator fit testing and mask confidence, HazMat awareness and other mandated training. Education can also include counseling by the medical officer on the following; alcohol, diet, smoking, as well as diabetes and other chronic diseases.

Peruggia: What changes would you like to see with the periodic medical examination program?

Kelly: Developing personalized exercise strategies for members (comprehensive fitness), an injury prevention program (education), and the implementation of a weight reduction/maintenance program that can be utilized in the firehouse.

Peruggia: According to Ken Burris, Acting Fire Administrator and COO for the USFA, "many firefighters are still dying as a result of stress and overexertion at emergency scenes". Do you see this as a problem in the FDNY?

Kelly: Stress and exertion are variables that are hard to quantify. It depends on the member being active or inactive. Not equating stress is a problem. Factors that influence stress need to be examined: Lack of conditioning, cholesterol, extra weight and diabetes. Also, it is important to note that not all stress is bad. "Good Stress", like the rush of adrenaline, can be positive in many situations.

Peruggia: Many departments include programs such as smoking and drinking cessation, weight reduction and health education as part of their fitness/wellness program. Do you envision these as worthwhile programs that may be implemented in the FDNY in the future?

Kelly: These are clearly worthwhile programs, some of which currently exist within FDNY in some format. Usually, members are addressed individually from the Medical Officer during the examination. If a condition exists where active intervention is necessary, the member may be placed on a light duty status until the situation is remedied. Problems, which are identified, that do not require immediate attention will be monitored and the member will receive some counseling.

Peruggia: Any other thoughts or comments regarding fitness and wellness as it relates to FF, EMT/EMTP and Fire and EMS Officers of the FDNY?

Kelly: I think the overall trend in member health and fitness has improved, possibly as a result of the increased awareness on health and fitness as provided by the FDNY. I believe that smoking is down while diet, fitness/exercise among members increases.

APPENDIX C

PERIODIC MEDICAL EXAM / FITNESS EVALUATION: MEMBER SURVEY

If you are a uniformed member of the Department (Fire Operations, EMS Operations, Fire Investigations) and are regularly scheduled to receive a periodic medical examination, please read and answer the following questions. **Participation is voluntary and all replies will be kept confidential.** I appreciate the assistance of those of you who choose to participate. The survey is being conducted for a research paper (being completed for a National Fire Academy Executive Officer Development course) with regards to the Periodic Medical examination program that has been implemented by the department. Please leave a copy of the completed survey with the receptionist at the medical sign-in area after your examination is completed.

Please answer the following:

1. What is your present title:
 Firefighter Fire Officer EMT/EMT-P EMS Officer Fire Marshal
2. Prior to the implementation of the periodic examination program, can you recall the average number of years between department medical examinations that you participated in: _____
3. Since the implementation of the periodic examination program (8/98 Fire / 2/00 EMS), how many examinations have you participated in: _____
4. The overall quality of medical examination process is:
 Excellent Good Fair Poor
5. The periodic medical examination provided by the department is comprehensive:
 Agree Disagree Neutral
6. I am fully informed of the results of my medical examination:
 Agree Disagree Neutral
7. Since my last medical examination, my overall health has:
 Improved Worsened Stayed the Same Not Sure

8. Has/will participation in the periodic medical examination caused a change in lifestyle?

(Check all that apply)

- modified eating habits follow-up with private MD
 smoking cessation modified drinking habits
 fitness/exercise program other: _____

(Only answer the following questions with regard to the medical examination(s) provided since August 1998 for Uniformed Fire titles and February 2000 for Uniformed EMS titles)

9. The scheduling of the medical examination; off-duty (EMS) / on-duty (Fire), is convenient:

- Agree Disagree Neutral

10. The current medical examination process is:

- Better than the previous one Worse than the previous one Same as before

11. Is there anything you would like to see added to the periodic medical exam / fitness evaluation program?

- weight reduction program health education
 smoking cessation fitness/exercise program
 other: _____