

**EVALUATING FIRE DEPARTMENT
HEALTH AND WELLNESS PROGRAMS**

EXECUTIVE LEADERSHIP

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An applied research project submitted to the National Fire Academy
as part of the Executive Fire Officer Program.

April 1999

ABSTRACT

The Las Vegas Fire Department does not have any objective data to prove the effectiveness of its Health and Wellness program or justify the expense of the program to City management. Consequently, City management has questioned the program and the cost of the program on more than one occasion. The purpose of this applied research project is to evaluate the Las Vegas Fire Department's Health and Wellness Program by comparing it to The Fire Service Joint Labor-management Wellness-Fitness Initiative developed by the International Association of Fire Fighters and the International Association of Fire Chiefs. This study is also intended to identify objective outcome measurements that can demonstrate the effectiveness of a comprehensive Health and Wellness Program, in order to justify the expense of such program to City management, including the "in-house" medical examination component of the program. The research methodology used for this project was the evaluative type. The research questions to be answered by this project include the following.

1. How does the Las Vegas Fire Department's Health and Wellness Program compare to The Fire Service Joint Labor Management Wellness-Fitness Initiative developed by the International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC)?
2. Are there objective outcome measurements that can demonstrate that the Las Vegas Fire Department's Health and Wellness Program is effective?
3. What is the satisfaction level of firefighters who are required to participate in the medical examination component of the Las Vegas Fire Department's Health and Wellness Program?

To determine the answers to these questions, the procedures followed included a literature review of health and wellness issues and programs. Internal Fire Department reports and data was collected and reviewed. Medical examination results from an-house computer database maintained by the Department physician were reviewed in attempting to identify objective outcome measurements.

The results indicated that the Las Vegas Fire Department has in place the essential components of a comprehensive health and wellness program. The Department provides a comprehensive medical component, adequate fitness component, adequate rehabilitation program, the main behavioral health components, and collects health and safety data. There are areas where the Las Vegas Fire Department can improve, primarily in the area of expert advice regarding fitness, better coordination of rehabilitation programs, and health promotion activities, including injury prevention and education.

There were five (5) recommendations resulting from this study. Distributing the findings of the comparison between the Las Vegas Fire Department's wellness program and the IAFF/IAFC wellness program to members of the Department's Health and Wellness Committee was recommended. Communicate the objective measurable improvements in overall firefighter health to City management with periodic updates provided as necessary was recommended. The development of an action plan, prioritizing the wellness components and associated costs was one of the recommendations. Additional recommendations include, conducting a detailed cost analysis of the medical examination program and identify those areas where costs have been decreased or controlled and a final recommendation was to enhance the data collection program.

TABLE OF CONTENTS

	PAGE
Abstract.....	i
Table of Contents.....	iii
Introduction.....	1
Background and Significance.....	2
Literature Review.....	6
Procedures.....	20
Results.....	22
Discussion.....	33
Recommendations.....	36
References.....	37
Appendix.....	38

INTRODUCTION

Late in 1995 the Las Vegas Fire Department hired a physician as a part-time employee to conduct medical examinations for firefighters and guide the Department in the establishment of a comprehensive Health and Wellness Program. Since the physician was hired, various city officials from the City Managers Office, City Attorney's Office, and the Human Resources Department have on several occasions questioned the value of having a physician on staff. In some cases they have hampered the efforts to establish a comprehensive Health and Wellness Program, as well as attacked the in-house medical examination program. Consequently, it became obvious that the Las Vegas Fire Department did not have any objective data to prove the effectiveness of the Health and Wellness Program or justify the expense of the program to City management.

The purpose of this applied research project is to evaluate the Las Vegas Fire Department's Health and Wellness program by comparing it to The Fire Service Joint Labor Management Wellness-Fitness Initiative developed by the International Association of Fire Fighters and the International Association of Fire Chiefs. It is also intended to identify objective outcome measurements that can demonstrate the effectiveness of a comprehensive Health and Wellness Program, in order to justify the expense of such program to city management, including the "in-house" medical examination component of the program. The research methodology used for this project was the evaluative type. The research questions to be answered by this project include the following.

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the International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC)?

2. Are there objective outcome measurements that can demonstrate that the Las Vegas Fire Department's Health and Wellness Program is effective?
3. What is the satisfaction level of firefighters who are required to participate in the medical examination component of the Las Vegas Fire Department's Health and Wellness Program?

BACKGROUND AND SIGNIFICANCE

In 1986 the Las Vegas Fire Department and the bargaining group for the employees created a joint labor-management Safety Committee. In 1990 this Safety Committee agreed to adopt and implement the National Fire Protection Association Standard (NFPA) 1500; Standard on Fire Department Occupational Safety and Health Program. Both of these actions and the discussions from the monthly Safety Committee meetings over the next few years brought the issue of firefighter health and wellness to the forefront.

As required by state statute the Department was providing medical examinations to firefighters through a low-bid contract process. Although the Department adopted the NFPA Standard 1582: Standard for Fire Department Medical Examinations, the quality of these examinations was questionable. In late 1995 the Department hired a physician on a part-time basis to conduct medical examinations and advise the Department on health and wellness issues. At the time the rationale for hiring the physician included the fact that the City had lost several workers compensation claims because of poor record keeping and lack of documented follow-up counseling for correctable conditions, such as high blood pressure and smoking. In addition to this, the cost for medical examinations had increased 75% for non-stress EKG physicals and

31% for stress EKG physicals since 1991. The majority of the Firefighters were not happy with the current process comparing it to a “cattle call.” By hiring a physician, providing office space, and purchasing the equipment necessary for the physician to conduct the medical examinations, the Department saved over \$25,000 dollars the second year of having their own physician, in addition to better record keeping, follow-up counseling, and improved quality overall. The Department physician also developed an employee database containing the results of the medical examinations. At the end of 1996 the data was analyzed and it was evident that the overall health of the members of the Las Vegas Fire Department was poor. More than 25% were overweight based on the American Cancer Society’s guidelines for body mass index (BMI), nearly 50% had elevated cholesterol levels, and several individuals had questionable pulmonary function test results.

Despite the Department’s state of health, and the real and future potential improvements, the hiring of a Department physician was met with resistance from the beginning and continues to be an issue for certain city officials, specifically employees of the risk manager and city attorney offices. There were several concerns that were to be addressed prior to hiring the physician; everything from the physician’s pay and benefits to the computer system for the employee database was an issue during the initial negotiations with the physician. The pay issue revolved around the fact that the physician would make more money on an hourly basis than the City Manager, and no one was allowed to make more than the City Manager. The Department ended up lowering the physician’s hourly pay and added “incentive pay” in order to pay the originally negotiated salary. One Deputy City Attorney was so concerned about the City’s liability that he didn’t even want the physician to draw blood or write prescriptions. The issue of malpractice insurance addressed most of the City Attorney’s concerns. The City was also

covered by a sovereign immunity statute and could only be sued for \$50,000 dollars per incident. These and many other concerns were addressed and ultimately in late 1995 the physician was hired. Since originally hiring the physician several enhancements have been made to the medical examination process. A Health and Wellness Committee was established and additional components of a comprehensive health and wellness program, such as critical incident stress debriefing services, were provided to the members of the Department. In the past two years certain city officials have again questioned the value of hiring a Department physician and the “in-house” medical examination program. These recent concerns have centered on the cost and the effectiveness of the medical examination process.

In 1996, the first year the Department’s physician conducted the medical examinations, five (5) employees were discovered to have conditions requiring medical retirement, primarily heart and lung problems resulting in not meeting the NFPA medical standards. In 1997 three (3) firefighters were medically retired, two (2) as a result of the medical examination conducted by the Department’s physician. In 1998 only one employee was medically retired as a result of their annual physical. Prior to hiring the physician the Department had eighteen (18) firefighters who had been medically retired and were receiving medical retirement benefits. The City’s Workers Compensation Manager states that each one of these medical retirements costs the City a minimum of \$250,000 dollars. In addition to having to retire these firefighters, the City challenged their right to receive disability benefits because they felt the firefighters had “predisposing conditions” which they were aware of and neglected to correct. It was the City’s contention that they should not receive medical retirement benefits. In the state of Nevada, firefighters and police officers that are medically retired under the heart lung statute receive, in some cases, more pay than when they were working full-time. There are, and will be attempts

through the Nevada legislature to correct this loophole. The City is always seeking to reduce any expenses it may incur since these costs are unpredictable and unbudgeted.

In the most recent episode of doubting the value of a Department physician, the Director of Human Resources and the Workers Compensation Manager met with the senior management of the Fire Department and proposed that we discontinue doing medical examinations on firefighters. The rationale behind the proposal was based on costs the City pays for the medical examination program as well as the cost for medical benefits provided outside of the in-house medical examination program. They indicated that the City pays two other employee groups, the City Employees Association (CEA) and the Police Protective Association (PPA) less than they pay the International Association of Firefighters (IAFF), the Fire Department's employees. The CEA is paid \$293.08 per employee per month and the PPA is paid \$256.92 per employee per month while the IAFF is paid \$465.66 per employee per month to provide medical benefits to their members. In addition, with the in-house medical examination program for firefighters, the City pays much more for medical services than the other two (2) employee groups combined. They proposed that firefighters obtain medical examinations from the medical services paid for by the IAFF. In other words, get a physical from their private physician, pay for it, and bring in a copy of their results to the Fire Department. The Department's senior staff tried to argue the effectiveness of the in-house medical examination program and how additional testing components were being added to enhance the medical examination program. It became obvious that the Risk Manger and the Director of Human Resources were not convinced of the value of having a physician on staff. Fire Department management could not prove that the health of their members was improving due to the efforts of the Department physician and the Department's Health and Wellness program. Antidotal stories regarding improved health or the

fact that the Department physician had detected medical conditions not discovered in previous medical examinations didn't matter to the Risk Manager or the Director of Human Resources, it was the bottom line. Fire Department management needed proof that the Health and Wellness program and the Department physician were effective and would in the long term, save the City money.

Several units in the National Fire Academy's Executive Leadership course are related to this research project. Unit 5: Developing Influence Skills, relates to the fact that before you can influence anyone, good objective data is needed to prove your point. Unit 7: Assessing Organizational Culture is helpful when determining the satisfaction level firefighters have with the medical examination process. Unit 9: Labor Relations, has direct bearing on any proposed changes to the medical examination program that the Union may view as negative. And finally, Unit 10: Being in Transition, and Unit 11: Managing Change, are applicable when reviewing the old program and comparing it with the current program and the resulting changes made because of this review. All of the skills required of an effective Executive Fire Officer could be used to end the questioning and second-guessing of the Department's Health and Wellness Program.

LITERATURE REVIEW

There is a substantial amount of literature on health and wellness available at the National Fire Academy's Learning Resource Center. There are several other sources of information available from fire department related organizations such as the International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF). In addition to these sources, the Department physician provided numerous articles from professional medical journals.

Introduction

The Fire Service Joint Labor Management Wellness/Fitness Initiative was developed by the International Association of Fire Fighters (IAFF) and the International Association of Fire Chiefs (IAFC). The Fire Service Joint Labor Management Wellness-Fitness Initiative (referred to as the “Initiative” from here on) includes medical fitness, physical fitness, emotional fitness, and access to rehabilitation as the components of a comprehensive wellness program. The Initiative (1997) describes a wellness program as not just another program, but a total commitment to 1) the health, safety, and longevity of all uniformed personnel; 2) the productivity and performance of fire crews; and 3) the cost effectiveness and welfare of all fire departments. The Initiative (1997) also lists several benefits of a comprehensive wellness program. Some of these benefits are measurable while others are not. These benefits include the following:

- Greater strength and stamina
- Weight reduction and/or control (maintenance)
- Lower cholesterol and blood pressure levels
- Decreased risk of death, injury or disability from disease
- Heightened job performance and enjoyment from work
- Improved performance in physical activities
- Better posture and joint functioning
- Reduction of anxiety, stress, tension, and depression
- Increased energy, general vitality, and mental sharpness
- Enhanced self-esteem and self image
- More restful and refreshing sleep

- Enhanced capacity to recover from strenuous and exhaustive work
- Increased tolerance for heat stress and more effective body cooling
- Improved mobility, balance, and coordination

In addition to these benefits, the Initiative (1997) lists several reasons why a wellness program is cost effective.

Of the fourteen (14) benefits listed above, five (5) seem objective and easily measurable – greater strength and stamina; weight reduction; lower cholesterol and blood pressure; better posture and joint functioning, and decreased risk of death, injury or disability from disease. The others are subjective although one could argue that they could be measurable. For example, one might be able to provide antidotal evidence that fire fighters involved in a wellness program have heightened job performance or enjoyment from work. In comparing the Las Vegas Fire Department's wellness program to the Initiative (1997), this author will focus on the truly objective benefits.

The Initiative (1997) also mentions cost effectiveness for the community in terms of reducing injury rates, sick leave usage, and disability retirements resulting in less overtime since firefighters won't need to be replaced. In addition, with a wellness program there is less chance of fines for violations of federal, state, or local regulations regarding occupational health issues. Several large corporations have realized cost benefits through initiating or expanding wellness programs, primarily through long term savings. AT&T, Union Pacific Railroad, DuPont Chemical Company, and The Travelers Corporation tout returns of \$1.50 to \$3.40 for every one dollar invested in wellness. In January 1997 the City of Phoenix conducted an audit of their Disability retirement program for all city employees. The annual cost of disability pensions for firefighters was \$100,000 dollars; for police officers, with twice as many employees was

\$721,000 dollars; and the pension costs for all city employees, with five times as many employees than police and fire, was \$623,000 dollars. The Phoenix Fire Department's low costs are attributed to their twelve year commitment to wellness and thorough rehabilitation (IAFF, 1997).

In the corporate environment, wellness has expanded to include stress reduction, weight loss, smoking cessation, diet, safety, medical surveillance, health education, healthcare cost awareness, and lifestyle behavior changes (Smith, 1990). The Fire Service Joint Labor management Wellness/Fitness Initiative has five main components comprising a wellness program. These components include: 1) Medical, 2) Fitness, 3) Medical/Fitness/Injury Rehabilitation, 4) Behavioral Health, and 5) Data Collection and Reporting. These five areas serve as the basis for comparing the Las Vegas Fire Department's Wellness program to the Initiative (1997).

Medical

Medical screening and examinations are critical components of a wellness program (Malone, 1986; Pynes, 1996). Witte (1993) found the most effective wellness testing programs were designed to find conditions that are: 1) prevalent, 2) improved by effective interventions, 3) difficult to detect by historical or physical examinations, and 4) identifiable by laboratory testing with a high degree of specificity and reasonable sensitivity. The purpose of the medical examination, according to the Initiative (1997), is to accomplish the following:

- To determine, through the fire department physician, whether an individual is physically and mentally able to perform essential job duties without undue risk of harm to self or others
- To monitor the effects of exposure to specific biological, physical, or chemical agents

- To detect changes in an individual's health that may be related to harmful working conditions
- To detect any patterns of disease in the work force that might indicate underlying work related problems
- To provide the worker with information about the individual's occupational hazards and current health
- To provide a cost-effective investment in the early detection, disease prevention, and health promotion of the firefighter
- To comply with federal, state, provincial, and local requirements

In addition to these objectives, one would think firefighter satisfaction with the process would also be an important objective. This applied research project will attempt to assess that satisfaction level as well as compare the Las Vegas Fire Department's medical examination process with that listed in the Initiative (1997).

Medical examinations for firefighters are required every twelve months. They include a medical history questionnaire, a hands-on physical, and various diagnostic-testing procedures. The examination process and the laboratory testing is structured around the hazards and exposures firefighters encounter (IAFF, 1997). A review of the International Association of Fire Fighters 1997 Death and Injury Survey indicates that three disease processes caused 95.8 % of line of duty disability retirements. Heart Disease was the cause in 55.4% of the cases with lung disease next at 20.4% and cancer at 10.6%. These statistics are similar to those of the Las Vegas Fire Department's disability retirements. With statistics like these it makes sense that the majority of the medical examination process is aimed at early discovery of these diseases. The

hands on medical examination starts with standard vital signs (blood pressure, temperature, pulse, and respiratory rate) and an examination of the following systems or areas of the body:

- Head, Eyes, Ears, Nose and Throat
- Neck
- Cardiovascular
- Pulmonary
- Gastrointestinal
- Genitourinary
- Rectal
- Lymph Nodes
- Neurological
- Musculoskeletal

In addition to these areas, body composition is assessed. The Las Vegas Fire Department uses a formula for calculating a body mass index (BMI) for each fire fighter. The National Institutes of Health and the American Health Foundation define healthy weight as a BMI below 25. This BMI is an objective measure to determine potential health problems due to being overweight.

Diagnostic testing consists of laboratory tests of both blood and urine. Vision and hearing tests are also conducted. Hearing loss caused 4.4% of the line of duty retirements according to the 1997 IAFF Death and Injury Survey. Very extensive pulmonary testing is done, including a chest x-ray. Resting and aerobic EKGs are performed as part of the annual examination process. Fire Fighter medical examinations also include a cancer screening component, which consists of 1) breast exam, 2) mammogram, 3) PAP smear, 4) prostate

specific antigen (PSA), 5) digital rectal exam, 6) fecal occult blood testing, 7) skin exam, and 7) testicular exam (IAFF, 1997).

Firefighter medical examinations also include an infectious disease screening element and the administration of specific vaccines. This screening is done primarily through laboratory testing for Hepatitis and Tuberculosis. HIV testing is done as a baseline and whenever there is an exposure incident. Common vaccinations are required for firefighters, which include up to date Tetanus/diphtheria, MMR (measles, mumps, rubella), and polio. Hepatitis B and C vaccines as well as Influenza vaccines are also provided to firefighters (IAFF, 1997).

The Initiative (1997) also lists the qualifications for a fire department physician. Ideally, they should be board certified in occupational medicine, internal medicine or family practice. Physicians with specialties in occupational toxicology, industrial hygiene, epidemiology, infectious disease, pulmonary, cardiology, critical care, orthopedics, physiatry, burn care, and/or emergency medicine. Also important, is knowledge of job-related activities, physical demands of the occupation and stresses associated with fire fighting. The fire department physician should also be able to conduct job analysis, keep current on medical literature pertaining to fire service related issues and conduct ongoing research related to firefighter health, and safety and fitness (IAFF, 1997).

The final component of the medical examination process is the provision of written feedback concerning health risk and health status following the annual exam. These individualized health risk appraisals report findings and risks, suggest plans for modifying risks, helps improve physician patient relationship and helps firefighters claim ownership of their health states (IAFF, 1997).

Fitness

The Initiative (1997) addresses the fitness component of a wellness program by stating that “management of labor shall work together to provide workout scheduling, resource support, and/or access to resources on duty to support an individualized fitness program.” Components of successful physical fitness programs include following:

- Medical clearance to participate
- On duty time for exercise
- Exercise specialist and peer trainers
- The incorporation of fitness into the fire service philosophy
- Fitness evaluations of aerobic capacity, flexibility, muscular strength and muscular endurance
- Fitness self assessments
- Exercise prescriptions

Adequate equipment and facilities for a total and balanced exercise program must be available to firefighters. Equipment and facilities can be provided either by placing exercise equipment directly into the fire station, by placing in a central location, contracting with fitness centers, or by using outdoor facilities. Routine equipment inventory and inspections must be done so the equipment can be accounted for, maintained, repaired and replaced when necessary.

The types of equipment necessary include the following:

- Leg press machine
- Leg curl/extension machine
- Bench press
- Adjustable bench

- Lat pulldown/seated row machine
- Assortment of weights (recommended minimum of 300 pounds)
- Dumbbells (recommended a minimum of 5 - 60 pounds)
- EZ curl bar
- Floor mat (for abdominal and flexibility training)

Aerobic opportunities are also required for a complete exercise program. This can be accomplished through the use of commercial aerobic machines, such as a treadmill, stationary bike, stair-stepper or, rower. Of course walking or running will also provide aerobic opportunities (IAFF, 1997).

The fire department should establish a broad-based Fitness Committee that includes labor, management, a fire department physician, and exercise specialist. The Exercise Specialist should have a college degree in exercise physiology, kinesiology, or some related the field. Knowledge of the firefighter's job is essential. The Exercise Specialist should be able to ride along, conduct job analysis, and remain current on literature pertaining to fitness and fire fighting. Excellent communications and interpersonal skills are also necessary. It is also desirable to have someone who can conduct research related personal fitness and injury (IAFF, 1997). Although the Las Vegas Fire Department has a Health and Wellness Committee, they do not have an Exercise Specialist or any peer trainers.

The Initiative (1997) requires a mandatory, annual, non-punitive, and confidential fitness assessment, following medical clearance. The fitness assessment measures the individuals physical capacity pertaining to his or her job-related wellness. The results of the fitness assessment are provided to the individual firefighter and the fire department physician.

The fitness evaluation includes the following components:

- Aerobic Capacity Options:
 - Treadmill
 - Stair machine
 - Stationary cycle
 - Step test
- Flexibility
 - Sit-and-reach
- Muscular Strength
 - Hand grip dynamometer
 - Leg dynamometer
 - Arm dynamometer
- Muscular Endurance
 - Push up
 - Sit up

Some of the data collected will be entered into a confidential database to be used for future fire service research. All firefighters must understand that the goal of the fitness evaluation is only for personal fitness improvement. No standards have been set for any of the areas by the Initiative (1997). Firefighters are expected to improve upon assessments through a personalized exercise program (IAFF, 1997).

Rehabilitation

The Initiative (1997) states that “management and labor shall work together to provide a progressive individualized injury/fitness/medical rehabilitation program that shall insure full rehabilitation of any affected uniformed personnel to a safe return to duty status.” Annual statistics demonstrate that fire fighting is one of the most dangerous occupations in the world. In some departments 50 percent of retirements are due to on the job injuries and illnesses (IAFF, 1997). The 1997 IAFF Death and Injury Survey reports that more than two out of every five firefighters was injured in the line of duty. The Survey indicates that the frequency of firefighter

job-related injury is nearly six times that of workers in private industry. Firefighter rehabilitation must be made a priority, as the cost of treating injuries is significant. In addition to the cost, the mental anguish suffered by the firefighter and their family can be devastating. Rehabilitation programs can be in-house or contracted out.

The Initiative (1997) includes the following criteria for a successful rehabilitation program:

- A fire department medical liaison familiar with job requirements and fit for duty expectations
- A physical therapy organization familiar with job requirements and fit for duty expectations
- An alternate duty program
- Periodic re-evaluation following return to duty
- A personalized exercise prescription that considers job requirements and individuals past medical history
- A comprehensive injury prevention program

Rehabilitation programs must not be punitive and should include medical treatment, fitness training, and physical and occupational therapy (IAFF, 1997).

The rehabilitation program also includes component on injury prevention. To reduce risks to firefighters an aggressive injury prevention approach should be employed. An injury prevention program should include the following:

- A comprehensive and effective wellness program
- A physical fitness program

- A strong commitment to safety from both labor and management
- A designated safety officer
- An ergonomic analysis of all aspects of the job to look for ways to redesign the work environment
- An educational component that begins in the fire academy and continues throughout the entire career
- A recognition system for personnel who practice, play, and preach safety

An Injury Prevention Committee should be established with equal members from management and labor. The committee may wish to consult with the fire department physician, industrial hygienist, biomechanical engineer, and physical or occupational therapists (IAFF, 1997).

Behavioral Health

The Initiative (1997) states “management and labor shall support the provision of a behavioral health plan which may be delivered either through internal or external sources, based on specific elements”. Historically behavioral health has been ignored or taken for grant by the fire service. This has been changing as evidenced by Employee Assistance Programs and Critical Incidents Stress Debriefing Management Programs. Most fire departments do not have comprehensive behavioral health programs. Confidentiality and privacy must be insured when providing behavioral health services. Mental stress accounts for 6.2 percent of the line of duty disability retirements reported in the 1997 IAFF Death and Injury Survey. Firefighters must be able to cope effectively with the emotional, physical, and mental stresses of work and personal life in order to maintain a high level of job performance. In addition to employee problems related to mental health, the behavioral health component serves an important function in promoting health activities. Health promotion programs can include educational seminars and

material distribution on a variety of topics related to health and welfare. Weight control, nutrition, cholesterol control, tobacco cessation, fitness, stress management, hypertension awareness, preventive medicine, infection control, substance abuse, retirement planning, career/vocational guidance, shift work and sleeping disturbances, emergency services work and families, job associated grief counseling and other specific work related issues are all examples of health promotion topics (IAFF, 1997).

The fire department should hire or contract a behavioral health specialist to coordinate and oversee the program. This specialist should be a psychologist or a counselor with a master's degree and several years of occupational counseling. The specialist should be familiar with the unique stresses and psychosocial elements of fire service. Every precaution should be taken to insure confidentiality. If the firefighters do not trust that their participation in the program will be kept confidential, they will not use it (IAFF, 1997).

At least every two years all firefighters should be offered a voluntary confidential behavioral health evaluation. This evaluation should include areas dealing with stress, alcohol use, financial problems, family problems, substance abuse, departmental problems, weight management, tobacco abuse, and assistance with any of these problems for an immediate family member. The behavioral health specialist should review each survey, meet with each participant to review their individual survey, and offer counseling for any problems that may be identified (IAFF, 1997).

Critical incident stress management (CISM) includes pre-incident and post-incident activities, particularly education, diffusing, and debriefing. The Initiative (1997) recognizes the value of using trained physicians, professional counselors, and psychologists as the primary providers of intervention. Counseling services can be provided to uniform personnel on a wide

variety of issues. Such services should be provided to members through a variety of access points (IAFF, 1997). The Las Vegas Fire Department does provide critical incident stress management services to firefighters.

Data Collection

The data component of the joint IAFF/IAFC Wellness Initiative includes the storage and analysis of detailed case information related to medical condition (exam/laboratory data), fitness, rehabilitation, and behavioral health. It is the goal of the data collection described in the Initiative (1997) to collect long-term information on the health and fitness of fire service. It is intended that this information will quantify the medical and fitness history of the firefighter and qualify the impact of the wellness/fitness program. The following objectives were established to assist in meeting this goal.

- The Wellness/Fitness Initiative Information System was established as three integrated systems: the local fire department information system, the file transfer specifications, and the international database
- The data dictionary units were identified based on all of the Wellness/Fitness Initiative program components
- For those units identified, acceptable ranges of submitted values were established
- To ensure the integrity of the collected data, quality control measures were incorporated into the process from the beginning
- Data specifications for the collection, transfer, and aggregation of annual wellness/fitness data were defined

- The file transfer specification for sending annual information from local fire departments to the International database was defined
- The initial system was established as a prototype and limited to the participating task force fire departments for the first full year to test the data and system requirements
- The Wellness/Fitness Prototype Information System implementation time line was developed

There are 196 data elements included in the database. It is critical that the elements of the data collection system are the uniform, effective, and efficient collection of information from participating fire departments and the compilation of this information in an international database for analysis purposes. To accomplish this, key components of the information system have been described and defined (IAFF, 1997). Currently the Las Vegas Fire Department collects data from the medical examination program. This data will be used in this applied research project in an attempt to assess the state of health of firefighters. The data can provide objective measurements related to the results from the medical examination process.

PROCEDURES

The procedures used for this applied research project included a literature review of relevant materials obtained at the National Fire Academy's Learning Resource Center, as well as medical articles from the fire department physician. In addition to the literature review, several fire department reports that were related to sick leave, workers compensation records, and many internal memos were reviewed for the years 1994 through 1997. Once the literature was reviewed and potential objective outcome measurements were identified, this author spent several hours with the department physician reviewing medical data entered into the database

since 1996. The focus of the database review was to identify measurements that could be used to compare the overall state of health of the department's employees. The three main areas of data evaluated were diastolic blood pressure, body mass index (BMI), and cholesterol ratios. Three (3) years of data was reviewed using 1996 as the baseline for comparison.

A survey was utilized to assess the level of satisfaction firefighters have with the medical examination process. This survey was sent by email through the city's network to all fire suppression personnel. There are approximately 375 firefighters working for the City of Las Vegas. Eighty-three responses to the survey were emailed back to this researcher. These surveys were compiled and percentages determined in effort to quantify the opinions of the firefighters that were surveyed.

Using the evaluative research methodology, the literature was reviewed to compare the Las Vegas Fire Department's Wellness Program with that of The Fire Service Joint Labor Management Wellness-Fitness Initiative. The literature was also reviewed to identify potential objective outcome measurements for health and wellness programs. Data obtained through the medical examination process was then reviewed and compared from year to year. Fire Department sick leave records were compared for each year beginning in 1994 and through 1997. The amount of sick leave hours was analyzed as well as the number of days missed because of on the job injuries.

The only noted limitation was incomplete or missing data for 1998. The department physician had not completed data entry of all the information obtained from 1998 medical examinations. Also, the workers compensation records and on the job injury records were also incomplete due to data entry. When evaluating wellness programs the literature emphasizes the long-term benefits of effective wellness programs and only three years of medical examination

data was reviewed and only four years of sick leave usage and on the job injury data was evaluated.

RESULTS

1. How does the Las Vegas Fire Department's health and wellness program compare to The Fire Service Joint Labor Management Wellness-Fitness Initiative developed by the International Association of Firefighters (IAFF) and the International Association of Fire Chiefs (IAFC)?

Using the five main components, medical, fitness, rehabilitation, behavioral health, and data collection described in the Initiative (1997), a more detailed comparison can be made of the Las Vegas Fire Departments Health and Wellness program. The Initiative describes a wellness program as not just another program, but as a total commitment to health and wellness. The commitment of the Fire Chief for the City Las Vegas and the senior staff is in line with the commitment described in the Initiative (1997). Fire department management and labor have agreed since as early as 1986 that health and wellness is a priority for the members of Las Vegas Fire Department. In 1990 the management/labor Safety Committee agreed to adopt the National Fire Protection Association Standard (NFPA) 1500; Standard on Fire Department Occupational Safety and Health Program. The commitment to safety has carried over to the issue of firefighter health and wellness.

In comparing the medical component of the Initiative (1997) with the medical examination process currently provided by the Las Vegas Fire Department, the program provided by the Fire Department meets and exceeds the requirements listed in the Initiative. The Las Vegas Fire Department provides medical examinations to all personnel assigned to fire suppression duties on annual basis. The employee schedules the medical examinations in the

month of their birthday. All required laboratory testing is conducted at least one month prior to the scheduled appointment. Twenty-four hour employees schedule their appointments off duty and are compensated for four hours of overtime pay. Employees assigned to forty- hour workweek have their physicals while on duty. Las Vegas firefighters complete a medical history questionnaire annually and receive a hands-on physical as well as the diagnostic-testing procedures identified in the Initiative (1997). Line of duty retirements for the Las Vegas Fire Department are similar to the line of duty retirements listed in the IAFF 1997 Death and Injury Survey, with heart disease and lung disease accounting for the majority of these retirements. As in the Initiative (1997), the majority of the testing components focus on early identification of cardiovascular and pulmonary problems. Las Vegas firefighters do have a cancer-screening component as part of their annual medical examination, including mammography for female firefighters. The Initiative (1997) also requires an infectious disease-screening element, which includes the administration of certain vaccines. The Las Vegas Fire Department has a very aggressive infectious disease control program. All firefighters receive hepatitis B and C vaccines, as well pass annual flu shots. The hepatitis anti-body levels are tested annually. Additional booster vaccines are administered as indicated. HIV testing is done anytime there is an exposure to blood or blood products. The Department follows the current guidelines developed by the Center for Disease Control (CDC) and the local health district. In reference to the qualifications required for a fire department physician, the current individual filling that role meets and exceeds the requirements. The Las Vegas Fire Department physician is also an accomplished researcher and has written numerous articles and several books on a variety of topics from toxicology to treating sudden cardiac death. The Fire Department physician also provides written feedback concerning each firefighter's health risks and health status.

The fitness component described in the Initiative (1997) lists several sub-components that are not included in the Las Vegas Fire Department's Health and Wellness Program. The Las Vegas program provides for medical clearance to participate and allows on duty time for exercise. The Department does not employ an Exercise Specialist or utilize peer trainers. Although the department has a mandatory physical fitness program, compliance to the program is minimally monitored or enforced. The majority of the employees work out every shift and comply with mandatory physical fitness program. The Las Vegas Fire Department also does not provide fitness evaluations of aerobic capacity, flexibility, muscular strength and muscular endurance. Fitness self-assessments and exercise prescriptions are currently not provided to Las Vegas firefighters. The Department meets the equipment and facility requirements described in the Initiative (1997). Exercise equipment is currently provided in each fire station and firefighters are also allowed to exercise at fitness centers within their first- in response district. The Department has provided the equipment necessary for the aerobic opportunities required of the Initiative (1997). On the downside, the department does not have a routine equipment inventory process to account for exercise equipment. Routine inspections of the exercise equipment and maintenance of this equipment is less than ideal.

The Department also does not have in place a Fitness Committee to assist with meeting the requirements of a mandatory physical fitness program. The Department does provide guidelines for exercises and aerobic opportunities. The Department does not collect data related to physical fitness. There are several areas pertaining to the fitness component where the Las Vegas Fire Department could improve. There are adequate facilities and state-of-the-art exercise apparatus to facilitate exercises and working out, although the inventory and maintenance issues are neglected. Expert advice from individuals with expertise and exercise physiology and

flexibility would benefit the Las Vegas Fire Department's Health and Wellness Program.

Additionally, the creation of a Fitness Committee has a subcommittee of the Departments Health and Wellness Committee could provide the guidance necessary to comply with the requirements of the Initiative (1997).

The Las Vegas Fire Department does provide rehabilitation for job-related injuries or illnesses through the City's Workers Compensation Program coordinated through the City's Human Resources Department. The City's program is contracted out to preferred providers from the different specialty areas. The Initiative (1997) listed criteria for successful rehabilitation programs, which included a fire department medical liaison, a physical therapy organization, personalized exercise prescriptions, and a comprehensive injury prevention program. In addition to these, an alternate duty program and periodic reevaluations following return to duty currently exist as part of the Las Vegas Fire Department's rehabilitation program. The first three components are not adequately addressed presently. Although department has a strong commitment to firefighter safety, it does not have an organized injury prevention effort as defined by the Initiative (1997).

The Las Vegas Fire Department has been main components required for firefighter behavioral health. These consist of an Employee Assistance Program and Critical Incidents Stress the Briefing Teams to deal with the mental health aspects an employee may face. The other components required of the Initiative (1997) are health promotion programs that include the following programs:

- Weight control
- Nutrition education
- Cholesterol control

- Tobacco cessation
- Fitness education
- Stress management
- Hypertension awareness
- Preventive medicine
- Infection control
- Substance abuse
- Retirement planning
- Career/vocational guidance
- Shift work and sleeping disturbances
- Emergency services work and families
- Job associated grief counseling
- And other specific work related issues

Some of these programs are provided in an unorganized manner through the City of Las Vegas' Human Resources Department. The Department does provide infection control programs, referrals to substance abuse programs, limited retirement planning programs, and some cholesterol control through prescriptions for medications provided by the Department physician, but in general the Department doesn't provide the other programs.

The Initiative (1997) suggest hiring are contracting with a behavioral health specialist to coordinate and oversee the behavioral health program. The Department currently utilizes a part-time employee to coordinate the Critical Incident Stress Management Program. This employee has experience with critical incident stress, but does not possess a master's degree. The Department does not offer voluntary confidential behavioral health evaluations to firefighters.

The Initiative (1997) suggests that these evaluations include areas dealing with stress, alcohol use, financial problems, family problems, substance abuse, departmental problems, weight management, tobacco use, and assistance with any of these problems for an immediate family member.

The final component of the Initiative's wellness program is data collection. The Las Vegas Fire Department does collect certain data. The Department physician established a database consisting of laboratory and other diagnostic test results, which could be used for comparative purposes. The information from this database has been analyzed in an effort to answer the research questions posed by this project. The intent of the information collected by the Las Vegas Fire Department is the same as the Initiative's (1997), which is to quantify the medical and fitness history of the firefighter and qualify the impact of the wellness/fitness program. Currently the Department does not collect data on fitness and the data it collects from the medical examination process is not as comprehensive as the data elements listed in the Initiative (1997).

The conclusions reached from the comparative analysis of the Initiative's (1997) wellness components and those components of the Las Vegas Fire Department's Health and Wellness Program are as follows:

- The medical examination portion of the Las Vegas Fire Department's Health and Wellness Program meets and exceeds those of the IAFF/IAFC wellness initiative.
- Improvements in the fitness portion of the Department's wellness program consist of establishing a Fitness Committee, developing an inventory and preventive maintenance program for the Department's exercise equipment, providing fitness

- evaluations and fitness self-assessments, employ the use of an Exercise Specialist and peer trainers, and issue personalized exercise prescriptions.
- The Department's rehabilitation program has most of the components required by the Initiative (1997) including an alternative duty program and periodic re-evaluations following return to duty. The department does not have a medical liaison or utilize a single physical therapy organization. The Department is also deficient in the areas of personalized exercise prescriptions for rehabilitation and having a comprehensive injury prevention program.
 - The Las Vegas Fire Department's behavioral health component has the major elements of an Employee Assistance Program and a Critical Incident Stress management program required by the Initiative (1997), but does not provide any health promotion activities recommended.
 - The Department does collect data related to the medical examination process, infectious diseases, and job-related injuries and illnesses. The Department does not collect close to the 196 data elements identified by the Initiative (1997) and does not presently participate in the international database program coordinated by the IAFF.

2. Are there objective outcome measurements that can demonstrate that the Las Vegas Fire Department's Health and Wellness program is effective?

There were fourteen benefits listed in the Initiative (1997) that have some degree of measurability. The ones chosen for this research project were 1) diastolic blood pressure measurements, 2) the body mass index (BMI) for each firefighter, as indication for weight control, 3) cholesterol/HDL ratios, and 4) loss of work time due to sickness and injury. In

addition to these measurements, information from the infectious disease database was also analyzed.

Diastolic blood pressure is a strong predictor for the development of coronary artery disease and stroke. Since 1996, there has been a significant decrease ($p < .001$, i.e. probability of less than 1 in a thousand that the change occurred by chance) in the average blood pressure of Las Vegas firefighters. This should, at some point, be reflected by a decrease in the number of new cases of heart disease. The average diastolic blood pressure for Las Vegas firefighters in 1996 was 75.6 mm and in 1998 the average diastolic blood pressure was 74 mm. In 1996, 13% of Las Vegas firefighters had diastolic blood pressures higher than 90 mm and in 1998, 11% of the firefighters had diastolic blood pressures higher than 90 mm.

The body mass index (BMI) is a measure of body fat (weight in kilograms divided by height in meters squared). According to the National Institutes of Health Consensus Development Panel, values over 27 are associated with an increased risk for heart disease, diabetes, and premature death. Individuals with values over 30 are classified as clinically obese. The average BMI for the entire Las Vegas Fire Department has remained constant at 27.2 since 1996. In 1996 fifty percent (50%) of Las Vegas firefighters had BMI measurements of 27 or higher, while in 1998 forty-seven percent (47%) of firefighters had BMI measurements over 27. The distribution is normal and there are no more overweight individuals in the Las Vegas Fire Department than would be expected by chance alone.

The cholesterol/HDL ratio is a highly accurate predictor for the development of coronary artery disease. According to the American Heart Association, values greater than 4.5 in men (and 3.5 in premenopausal women) are associated with a greater risk for heart attack. The higher the ratio, the greater the risk. Values have fallen very significantly ($p < .001$, i.e. probability of

less than 1 in 1000 that the change is random), from a department average of 4.6 in 1996 to a department average of 3.8 in 1998. Not only has the average ratio for the department improved, but the percentage of the department with dangerously high values has dropped as well. In 1996, there were 43 individuals with ratios > 6, by the end of 1998 that number had been reduced to 10. This should, at some point, be reflected by a decrease in the number of new cases of heart disease.

An analysis of days of work missed due to on the job injuries revealed the following information listed in the table below:

Year	Days Missed	Light Duty Days	Injuries with Work Days Lost	Injuries with No Work Days Lost
1994	628	154	30	35
1995	278	427	32	24
1996	227	321	16	22
1997	20	70	5	6

The reduction of days missed due to injuries or illnesses may be any attributable the efforts of the Department's Health and Wellness Program. There may be other factors that can also account for this reduction. There was also a significant decrease in the number of injuries overall. Using the average hourly pay for a firefighter to estimate the cost for the days of work missed equated to \$605,724.28 dollars for the years 1994 through 1995. For the period between 1996 and 1997 the cost for the days of work missed was \$166,053.16 dollars. There was \$439,671.12 dollars saved through the reduction of on the job injuries. There were similar reductions noted in sick leave usage by Las Vegas firefighters. Comparing the years 1994 through 1995 and years 1996 through 1997, sick leave usage decreased by twenty-one percent (21%). In 1994 and 1995 there were 13,309 hours of sick leave used. In 1996 and 1997 there were 10,508.5 hours of sick leave used. Using the average pay for a Las Vegas firefighter, costs in the

1994/1995 time period for sick leave usage was \$372,252.73 dollars, while in 1996 and 1997 the cost of sick leave usage was \$293,922.7 dollars, a savings of \$78,329.98 dollars over the previous period. Disability retirement statistics indicate that eighteen (18) firefighters were retired due to medical conditions from 1986 through 1995. In the past three (3) years, since the Department physician has been conducting the medical examinations, nine (9) firefighters have disability retirements. In 1998 there was only one retirement due to medical conditions. The bulk of the retirements came in 1996, the first year the Department physician conducted firefighter physicals, with five (5) firefighters retiring.

Reviewing information from the Department's database for infectious disease exposure, it was noted that the number of exposures continues to decrease. In 1998 there were twenty-three (23) employees with exposures to infectious diseases. This was down by eighteen percent (18%) over the previous year. The majority of the exposures, fourteen (14), were to tuberculosis. The Department's efforts to provide infection control education have resulted in fewer exposures to infectious diseases to firefighters.

3. What is the satisfaction level of firefighters who are required to participate in the medical examination component of the Las Vegas Fire Department's Health and Wellness Program?

The answer to this question was ascertained through a survey sent to fire suppression personnel by email through the City's network. The fire suppression staff consists of approximately 375 employees. This researcher received 83 replies to the survey, or approximately a 22% return. A copy of the survey is included as the appendix 1. There were seven questions included in the survey.

Listed below are the results of the survey.

1. The overall quality of the medical examination process is:
Excellent: 42% Good: 47% Fair: 11% Poor: 0%
2. The scheduling of medical examinations off- duty is convenient:
Agree: 78% Disagree: 7% Neutral: 14%
3. The medical examination provided each year is comprehensive:
Agree: 80% Disagree: 8% Neutral: 12%
4. I am fully informed of the results of my medical examination:
Agree: 69% Disagree: 17% Neutral: 14%
5. Since my last medical examination, my overall health has:
Improved: 35% Worsened: 1% Stayed the Same: 64%
6. All results of my medical examination are kept confidential:
Agree: 72% Disagree: 11% Neutral: 17%
7. The current medical examination process is:
Better since hiring Dr. Karch: 84% Worse: 1% Same: 4% No answer: 11%

These numbers would indicate that the majority of firefighters are satisfied with the medical examination process. It is interesting to note that 35 percent of the individuals felt that their overall health had improved. Most of the firefighters (84%) agreed that the medical examination process is better since the hiring of a Department physician. It can be concluded that the medical examination component of the Las Vegas Fire Department's Health and Wellness program is successful.

DISCUSSION

The results of this study are similar to the findings of others with health and wellness programs. The Phoenix Fire Department's (PFD) twelve (12) year history of providing a comprehensive health and wellness program indicates significant reductions in the cost of disability retirements. Comparing the PFD's costs to other City of Phoenix employees indicates significant savings. The City of Phoenix spent \$100,000 dollars for disability retirements for firefighters and \$1,344,000 dollars for all the other city employees, including police officers (IAFF, 1997). The Las Vegas Fire Department's commitment to firefighter health and wellness has been only for the past three years and the Health and Wellness Program does not include all the components provided by the PFD. Although reviewing disability retirement records for Las Vegas firefighters does seem to indicate a decrease over the past two (2) years in disability retirements. Since hiring a Department physician, the Las Vegas Fire Department has reduced costs that were incurred from follow-up examinations. Every year some employees would have an abnormal indication on their EKG and would be sent to a cardiologist for specific testing. Some of these cardiac tests cost in excess of \$10,000 each. Usually the results of the follow-up testing were negative and the employee was returned to duty. In addition, to these costs, the employee was usually relieved of duty until the follow-up testing could be done, which in some cases was up to two weeks. This resulted in additional overtime costs to replace the employee. With a department physician on staff, these employees were not referred to cardiologists each year. The Department physician knew their medical history. Department physician also was able to get firefighters appointments for follow-up testing within one or two days further reducing the cost of overtime. The Department physician was also able to negotiate lower prices for laboratory tests. For example, the cost of the prostate specific antigen (PSA) to test for

prostate cancer was approximately forty dollars, the Department physician was able to get the same test for six dollars, those savings of thirty-four dollars per employee. There are several other examples, such as lower costs for vaccines, where the Department physician was able to reduce the costs of medical procedures or supplies to the Department. The literature indicates that several large private corporations have realized cost benefits through initiating or expanding wellness programs. AT&T, Union Pacific Railroad, Du Pont Chemical Corporation, and the Travelers Corporation extol returns of \$1.50 to \$3.40 for every dollar invested in wellness (IAFF, 1997).

The Las Vegas Fire Departments Health and Wellness Program compares well with The Fire Service Joint Labor Management Wellness-Fitness Initiative, especially in the area of medical examinations. The Department has in place the most essential components required for a comprehensive health and wellness program. These components would include the medical examination process, a commitment to fitness, a commitment to infection control, a commitment to behavioral health, a commitment to rehabilitation, and finally an understanding of the importance of data collection and research. The most comprehensive component that the Las Vegas Fire Department possesses is the medical examination program. This is noteworthy since medical screening and examinations are critical components of a wellness program (Malone, 1986; Pynes, 1996). The Department provides state-of-the-art fitness equipment, allows personnel to work out on duty, but does not provide an exercise specialist or any year trainers. The Department does not have in place a fitness committee and does not provide fitness evaluations, fitness assessments, or personalized exercise prescriptions. There is a rehabilitation program for injured employees coordinated through the Human Resource Department and the minimum requirements of the Initiative (1997) are met. The Department does not have a

medical liaison to coordinate rehabilitation activities and does not provide personalized exercise prescriptions. The Department does have an alternative duty program in place and attempts to utilize firefighters and temporary duty positions where they have skills or experience. In regards to behavioral health, the Department provides an Employee Assistance Program and a Critical Incident Stress Management program and employs a non-degreed individual to coordinate these programs, but provides very little in the area of health promotion activities or injury prevention programs. In the area data collection, the Department compares favorably although a fitness database does not exist. It is clear that the Las Vegas Fire Department has a significant amount of work required before it can claim that their Health and Wellness Program is comprehensive as defined by the Initiative (1997).

The objective outcome measurements identified in the study will be beneficial to the Fire Department senior staff as information indicating the effectiveness of the in-house medical examination program. The primary outcome measurements are the diastolic blood pressure, the body mass index for each firefighter, and the cholesterol/HDL levels. The data reviewed in this study indicates that the overall health of the Las Vegas firefighters is improving. The most significant improvement is in the area of cholesterol/HDL levels being reduced from 4.6 in 1996 to Department average of 3.8 in 1998. Realizing that the data reviewed is limited; it seems reasonable to attribute this improvement to the Department physician. The reductions in days of work missed due to on the job injuries were also significant. In 1997 only twenty days of work were missed, while in 1994 there were six hundred-twenty-eight days of work missed. Again, noting the limitation of only four years of data, this statistic is impressive.

The Initiative (1997) indicates that the relationship between management and labor improves with effective health and wellness programs in place. Based on the results of the

survey utilized for this study, the Las Vegas firefighters overall are satisfied with the medical examination component of the Department's Health and Wellness program. Eighty-seven percent (87%) rated the overall quality of the medical examination process as either excellent or good. Eighty percent (80%) of the Las Vegas firefighters felt the medical examination was comprehensive. It was interesting to note; that 35 percent of the firefighters surveyed felt their overall health had improved. The survey results indicate that the Department is on the right track with medical examinations and should work towards enhancing any weak areas identified.

RECOMMENDATIONS

1. Distribute the results of this applied research project to the members of the Las Vegas Fire Department's Health and Wellness Committee.
2. Use this study to list the components of a health and wellness program that are non-existent or need enhancements, prioritize those components, and develop an action plan, including projected budget submittals, for meeting the requirements of the Initiative.
3. Provide a written report to the City's Risk Manager and Human Resource Director highlighting the improvements in Las Vegas firefighter's overall health. Provide copies of this report to the City Managers Office and provide periodic updates.
4. Conduct a detailed cost analysis of the Department's medical examination program and identify those areas where costs have been decreased or controlled.
5. Continue to collect data regarding health and safety and attempt to expand those databases as suggested by the Initiative in order to quantify the medical and fitness history of the firefighter and qualify the impact of the wellness/fitness program.

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APPENDIX

If you are into fire suppression and receive a medical examination each year, please read an answer. Participation is totally involuntary and all replies will be kept confidential. I appreciate the assistance of those of you who choose to participate. I am completing a paper for a fire science class and need to conduct a survey. The survey is on firefighter satisfaction levels of medical examinations. Please reply as soon as possible, if you received medical exams before we hired Dr. Karch.

Please rate the following:

1. The overall quality of the medical examination process is:
 Excellent Good Fair Poor
2. The scheduling of medical examinations off-duty is convenient:
 Agree Disagree Neutral
3. The medical examination provided each year is comprehensive:
 Agree Disagree Neutral
4. I am fully informed of the results of my medical examination:
 Agree Disagree Neutral
5. Since my last medical examination, my overall health has:
 Improved Worsened Stayed the Same
6. All the results of my medical examinations are kept confidential:
 Agree Disagree Neutral

(Only answer this question if you received medical examinations prior to hiring Dr. Karch)

7. The current medical examination process is:
 Better since hiring Dr. Karch Worse since hiring Same as before Dr. Karch