

FLOWER MOUND FIRE DEPARTMENT STRATEGIC PLAN FOR
WELLNESS/FITNESS PROGRAM: EVALUATING PERSONNEL READINESS FOR
CHANGE

STRATEGIC MANAGEMENT OF CHANGE

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Appendix C Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

ABSTRACT

“At this point in history, we’ve pretty much figured out the science of getting physically fit...Suffice it to say, becoming physically fit is no longer a mystery” (Davis, 2000, p. 32). This research project was undertaken to develop an organizational strategy for implementing a Wellness-Fitness Program (WFP) in the Flower Mound Fire Department (FMFD) by evaluating the readiness of personnel to accept change. The problem was FMFD needed to implement a mandatory WFP in an environment resistive to change and lacking in support for a WFP. The purpose of this project was to identify implementation strategies that will result in the FMFD overcoming existing resistance in order to implement an effective wellness/fitness program. The author employed an action research methodology. The research questions answered were:

1. What are the elements of an effective WFP and what implementation strategies have been effective in other organizations?
2. What are the existing attitudes and perceptions of FMFD members as it relates to a mandatory WFP?
3. What strategies could enhance implementation of a mandatory WFP and FMFD?

A general literature review of subject matter pertinent to the research project was conducted. A survey instrument was employed to solicit attitudes and perceptions of FMFD members toward a mandatory WFP. The results indicate a need for increased education on the subject and training for company officers is warranted to alter perceptions, increase likelihood of participation and gain support for a WFP. A strategic plan for implementing a wellness and fitness program was developed and proposed for consideration.

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INTRODUCTION

The Flower Mound Fire Department (FMFD) is a young-growing department. However, this young-growing department also has an aging employee pool. Age can sometimes be a significant factor in occurrences of on the job injuries and illness, problems in health and wellness, and line of duty deaths. A counter-balance to this aging process is physical fitness. Wellness/Fitness Programs have shown to positively affect fitness levels, improve performance and reduce costs. “According to Pritchard and Potter, Fitness Systems,...reports reduced costs of from \$200 to \$600 for fit employees, lower absenteeism, and enhanced productivity” (LeCuyer, 2001 p.5).

Past attempts to implement physical fitness programs in FMFD have lacked sustained organizational support and have failed. In an effort to increase overall organizational acceptance for a WFP, and thus increase likelihood of program sustainability and success, this research project is undertaken to develop a strategy for implementing a WFP in FMFD. An effective WFP will provide positive benefits for the department and personnel.

The problem is FMFD needs to implement a mandatory WFP in an environment resistive to change and lacking support for a WFP. “What is needed to minimize the resistance to change is an organized process” (Turner, 1994 p.53). The purpose of this research is to identify employee attitudes and perceptions, and implementation strategies that will result in FMFD overcoming existing resistance in order to implement an effective WFP. Hopefully, completion of this research will satisfy the afore-mentioned need for an organized process to minimize resistance. This project employs action research methodology. The research questions are:

1. What are the elements of an effective WFP and what implementation strategies have been effective in other organizations?
2. What are the existing attitudes and perceptions of FMFD members as it relates to a mandatory WFP?
3. What strategies could enhance implementation of a mandatory WFP in FMFD?

BACKGROUND AND SIGNIFICANCE

The Flower Mound Fire Department is a young and growing department. However in terms of personnel, the number of older members is increasing as much as younger ones. In 1984, the department consisted of only six paid-professional firefighters and three staff members. In 2001, the department has fifty-seven members. The average age of members has increased from 33 years in 1984 to 36 years in 2001. The percentage of members over the age of 40 has increased from 11% in 1984 to 38% in 2001. Though age can be a significant factor in health and fitness, several more important factors generally account for one's health and fitness.

“Physical fitness is a critical component of health and performance. Without high levels of fitness, fire and rescue workers can't do their jobs either safely or well” (Pearson, Hayford, and Royer, 1995, p.6). This brings out the point that a fire fighters performance and safety are directly linked to their health and fitness levels.

Research exists relating fitness levels to job performance, injury rates, job related illnesses, and line of duty deaths. Commonly, age groups are sort criteria in these types of research. Likewise, similar research establishes that a persons' fitness level can be directly related to improved job performance, faster recover from injury, and extended

longevity. “A large body of scientific research supports this position.” (Pearson, et al., 1995, p.7). Pearson continues regarding aging and fitness,

Although aging is inevitable, there is great variability in the aging process.

Research has shown a direct relationship between physical fitness and the physiological changes that occur in the body due to aging. The rate of deterioration can be slowed by the maintenance of adequate fitness levels through regular physical activity (p.24).

In the past, the FMFD attempted to implement physical fitness programs much like many other departments. These early programs were punitive in nature, poorly planned, impossible to monitor and lacked any positive outcome. The history of physical fitness programs in FMFD follows a similar line as most other departments. It started with organized sport competitions like volleyball, basketball, and softball. Things weren't very different in 1973 in San Jose as reported by Captain Tom Scully, “In 1973, when I came to work for the San Jose (Calif.) Fire Department, physical fitness consisted of volleyball and basketball in the backyards of most stations and not much more” (Scully, 2000 p.34). In Flower Mound, when these activities became too overt, public perceptions put an end to them. Then came the edict from the Chief, that all members will meet the fitness performance standards as set out in the program--and will workout for one hour a shift. No facility or equipment was provided to accomplish such a directive and no standards were ever set. This was a very short-lived program. Then there was the contract with the YMCA allowing on-duty firefighters to work out at their facility. The program at the YMCA required shifting apparatus from one end of town to the other to maintain coverage, caused conflicts in scheduled activities, and was cumbersome to coordinate,

but it did make basketball the favored activity again. This program lasted approximately two years. But, it too (the basketball portion of the program) succumbed to outside perceptions.

Jumping forward several years finds the FMFD with 51 line personnel, three fire stations, 2 with completely outfitted physical fitness rooms, however, no formal, funded, or supported WFP exists. The importance of getting started on a WFP is clear. In this regard LeCuyer (2001) states, “fire departments that haven’t taken the initiative to introduce a program will in time recognize and respond to the need” (p 16). FMFD personnel are aging, call volume is increasing, risk exposure frequency is going up, and to forgo implementing a program is paying lip service to the idea that “our people are our greatest asset.” The time for implementation of such a program is now, but what should it look like, and how should it be implemented? NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, 1997 Edition and the Fire Service Joint Labor Management Initiative Wellness-Fitness Initiative, 2000, 2nd ed. offer organizations valuable reference sources toward this end.

The FMFD administration has always professed its support for physical fitness. In part, this is evidenced by two new fire stations completely outfitted with physical fitness equipment. The problem with past attempts at implementing a sustainable physical fitness program was rooted in the lack of a systematic and strategic analysis of the challenges posed by the implementation of a mandatory program. From an organizational perspective, this research project is just that. Its aim is to systematically analyze the challenges, seek out information on successful programs, and develop a strategic plan for implementing a WFP that is sustainable. “Maintenance of program

participation is of primary importance in workplace programs. The real benefit of health promotion programs; however, are realized only through long-term maintenance of healthful behaviors and environments” (Lovato and Green, 1990, p. 85). The key is the sustainability of the program. It is not good enough to just have a program, people must participate and they must commit to the long haul.

In summary, the FMFD must employ a mandatory WFP as a component of the overall employee benefit package to combat the effects of the increasing age of its members, reduce the number of on the job injuries, provide a vehicle for monitoring fitness levels and wellness of members, and reduce costs to the organization by prevention of line of duty deaths and disability retirement claims.

The significance of this project to the organization is that a systematic approach is being employed to identify the best way to implement such a program. Methodology of the Change Management Model as presented in the Strategic Management of Change (SMOC) course at the National Fire Academy is being employed in an effort to overcome past program failures. It is this researchers hope that this project will produce a program implementation strategy that will ensure a successful program with sustainability.

LITERATURE REVIEW

Wellness Fitness Program Elements

What are elements of an effective WFP? Two lead organizations for professional development in the fire service, the International Association of Fire Chiefs (IAFC) and the International Association of Fire Fighters (IAFF), in conjunction with a ten-city task force, have published a joint document outlining an effective WFP. *The Fire Service Joint Labor Management Wellness-Fitness Initiative* (Joint Initiative) details a

comprehensive WFP for fire service personnel. Consideration must be given to the components of a WFP and the various attributes or the workings of a WFP. Wherein this research is aimed primarily at identifying employee perceptions, readiness for change, and implementation strategies for the FMFD to institute a WFP, detail review of WFP components would be superfluous. “At this point in history, we’ve pretty much figured out the science of getting physically fit...Suffice it to say, becoming physically fit is no longer a mystery (Davis, 2000, p. 32).

The components of the Joint Initiative include: medical fitness, physical fitness, emotional fitness and access to rehabilitation as primary components of the program. The combined knowledge, expertise, monetary support, and effort of the organizations and individuals working together to develop the Joint Initiative lend the utmost credibility to the program. Pearson (1995) refers to fitness and wellness as any activity, behavior or attitude that improves quality of life. He goes on to add that physical fitness is an important component of wellness, as is nutrition and weight control, stress management, personal and occupational safety, substance abuse prevention and medical examinations and prevention of disease (p.23). Pearson seems to indicate some version of the four components of the Joint Initiative were already considered important in 1995. The challenge is to implement the Joint Initiative or any other WFP, be cost-effective, overcome initial program resistance, and promote continued participation once the program is in place.

Cost Effectiveness

The Joint Initiative makes the following statement on WFP program effectiveness, “An effective program should realize a significant cost savings in lost work

time, workers compensation, and disability” (IAFC/IAFF, 2000, p. iii). Looking at programs from a monetary prospective is universal among administrators, and rightfully so. Any program ultimately must withstand a cost-benefit analysis. Without a doubt, cost effectiveness of any program proposal will be a significant consideration for implementation in the FMFD.

Scully (2000) offers the following for cost-benefit consideration of a WFP as it relates to the San Jose Fire Department, “Over a four year period, from 1994 to 1998, lost work days decreased 22%, our incurred cost rate went down 12%, hospitalization payments fell 27% and indemnity payments diminished by 59%. In addition, we found that disability salary payments were 300% less for program participants than non-participants” (p. 36). Shelley (2001) finds the Phoenix Fire Department reporting reductions in injury frequency (down 26%), severity (down 42%) and re-injury (down 75%) over a ten year period (p. 46). These are examples of percentage reductions, but what about actual dollar value impact?

The city of Aurora, Colorado experienced substantial savings from their WFP. In an applied research project for the National Fire Academy, *Impact of the Aurora Fire Department Physical Fitness Program*, Bennett (1997) reports, “The average cost per year for a six year period for workers compensation was \$80,974.75. The average cost of the physical fitness program was \$5,000.00. The \$30,000 cost for the fitness program resulted in a \$181,464.00 savings in workers compensation costs” (p. 29). In another study, the City of Riverside, California, experienced similar savings with their WFP. “A wellness program instituted by the City of Riverside (Calif.) Fire Department showed a

23% reduction in medical cost...a 10% reduction in sick leave...a cost-benefit analysis revealed a \$104,664 savings over three years” (Ball, 1999, p. 66).

The Phoenix Fire Department demonstrates significant benefits in disability savings in an audit report of their program. Some ten to fifteen years into their fitness program Phoenix conducted an audit of their disability retirement program and the findings are cited by Riddle (1999), who points out the following,

“The annual cost for disability pensions for fire fighters was \$100,000 dollars; for police officers, with twice the employees it was \$721,000 dollars; and the pension costs for all city employees, with five times as many employees the cost was \$623,000 dollars” (p. 9).

There appears to be an associated benefit in retirement costs in large organizations or metropolitan areas with WFPs. Whether these types of savings can be forecast or implied of smaller communities the size of Flower Mound is unknown. Logic would indicate that they would to some degree.

Looking at programs from a monetary prospective is universal among administrators, and rightfully so. WFP are showing significant impacts to bottom line expenditures. Many departments across the country are just now beginning to implement WFP and other departments with longitudinal programs in place are starting to publish the cost-benefit analysis data. Loy (April, 2001) explains how a WFP can be so much more than just a fitness/exercise program.

Exercise programming is only one component in a comprehensive wellness program. Over the last several months, LAFD has hosted seminars from leading experts regarding breast and prostate cancer, bone density, blood cholesterol, and

heart disease. The wellness program has also enhanced the department's return to work program, and research will be conducted regarding workers' compensation issues and the cost effectiveness of the wellness program (p.32).

Any program must ultimately withstand a cost-benefit analysis. Starting a program utilizing the facts and figures from successes of others is justified. A considerable disadvantage facing FMFD for justification of program implementation is a lack of negative experience with regard to expenditures associated with not having a WFP. The challenge is to influence a decision based on others' experiences.

Program Resistance

Several ideas, factors, or reasons arise when considering why someone would not or does not want to participate in a WFP. Could it be ignorance--pronounced IGNORance (author's emphasis)? "It seems the prevailing health theory among firefighters is, "If I don't know anything is wrong, then I'm healthy—I am immortal"" (Loy, March, 2001, p. 29). The old cliché--what you don't know won't hurt you, is dead wrong. Paul O. Davis (2000) received a doctorate of exercise and physiology, is creator of the firefighter combat challenge, and an expert adviser to the IAFF and IAFC on the Joint Initiative task force, and offers the following excuses on why people resist exercise.

- 1) Intimidation. For many, exercise is perceived to be too complicated, too scientific, and the fact they're not fit is a self-fulfilling prophecy that they've already failed the course...
- 2) Impatience. ...You didn't get out of shape overnight and you're not going to get back in shape by next week...

- 3) Unrealistic expectations. ...Searching for the perfect body is a formula for failure. Fitness isn't about what you look like, it's about the patency of your coronary arteries...forget about the Adonis factor and be more concerned about whether or not you can walk up the stairs without collapsing.
- 4) Denial. ...You can walk against a traffic light blindfolded and make it safely, perhaps more than once. But making this a common practice is an invitation for a morbid event....
- 5) The stigma of exercise. Some people have psychological hang-ups...Exercise is associated with punishment..., or a reaction to their own inadequacies, or perceived inadequacies, of physical prowess...
- 6) Irrelevance. With so few requirements in today's society for brawn, why worry about a need to be physically fit? When was the last time your life depended on having to outrun a carnivore...(p.32-33).

Davis provides these as common reasons for not being active in a fitness program.

Without a doubt many of these attitudes or excuses are present in fire service departments across the country.

In addition to personal resistance, there is organizational resistance to a WFP.

Henson (1996), in *Overcoming Resistance to Change*, an applied research project for the National Fire Academy, expresses resistance to change in this manner,

Organizations are comprised of various groups and subdivisions, each with its own unique set of goals and responsibilities...the organization's goals should take precedence over goals of its component groups and subdivisions. This is not always the case however, and groups and subdivisions resist change because they

perceive change as a threat. Again fear and uncertainty are the key underlying causes for resistance to change (p. 25).

This description of organizational resistance to change is recognizable in many fire departments. Fire department organizations are fragmented in their organizational structure. Staff personnel and line personnel, segregation by station assignment, and cliques between shifts are examples of the fragmentation. The challenge to overcoming resistance is joining these groups and subdivisions and fostering a common vision.

Henson (1996) also states,

The key to overcoming resistance to change is to reduce, eliminate, or overpower this fear and uncertainty that generates resistance. Uncertainty can be reduced or eliminated through participation, education, communication...Fear through tolerance, support, encouragement...Loss through negotiation, compensation...and as a last resort, resistance can be overpowered through manipulation and coercion (p. 25).

In the context of change management, and resistance to change, the NFA 2001, *Strategic Management of Change*, Student Manual, (SMOCSM) describes four roles an executive must play in overcoming resistance to change, those roles are;

“communicator”, “collaborator”, “demonstrator”, and “educator” (p.SM1-5- SM1-6).

This research is an attempt to support the functions. Success of a WFP will depend on communication, education, collaboration, and demonstration.

Exercise Adherence (Perceptions and Attitudes)

Suppose everyone got on board with a WFP. That is still not enough to make it successful. Once started the key to a WFP is longevity and sustainability of participation.

Exercise adherence is manifested as a behavior. Behavior is akin to attitude. Arnlund (1999) in her award winning, Outstanding Applied Research, *Firefighters' Attitudes Toward Fire Prevention Activities*, cites works by Buckman (1995), Schiff (1970), and Abelson (1959) on theoretical aspects of attitudes and perceptions.

Buckman (1995) provides the following on attitudes,

Sometimes it's hard to convince people that the world they experience is a reflection of their attitude. They take the attitude that if only people would be nice to them, then they would be nice in return. They're like the person sitting in front of the cold stove waiting for the heat. Until he puts in the fuel, there won't be any heat. It's up to him to act first. It has to start somewhere. Let it begin with us (as cited in Arnlund, 1999).

Schiff (1970) explains that attitudes are learned and therefore can be changed.

...attitudes develop as a result of past experience. Attitudes are learned, and they may be acquired in the same way as anything else is learned—through classical and instrumental conditioning, through concept formation, through observing other people's attitudes and through being openly taught to hold certain attitudes (as cited in Arnlund, 1999).

Abelson (1959) summarizes three reasons why a person may have a particular set of attitudes:

(1) Factual—the attitudes help give meaning to many otherwise bits of information. These attitudes should be especially susceptible to change by exposing the individual to new facts... (2) Social—having the attitudes make it possible for a man to feel himself acceptable to the groups of people with whom

he wants to associate... (3) Personal—the attitudes provide a rationalization for an individual's shortcomings, and make it possible for him to face the world and himself...(as cited in Arnlund, 1999).

It is in the context of these citations that FMFD attitudes and perceptions for a WFP are being sought out. In order to change behavior, we must understand the underlying attitudes that manifest the behavior. The survey instrument used in this research project is a measure of FMFD member's behavior in some respects and in other respects a measure of attitudes.

Other scientific studies shed light on the dynamics of exercise program adherence. In a Dutch study of employee (police) fitness, judging attitude, self-efficacy expectation, and social support on program adherence, Lechner and De Vries, (1995) found that high adherence to an exercise program correlated with individual positive attitude, high self-efficacy and required little social support. These generally are not the employees you need to get into a fitness program. Robison and Rogers (1994) conducted a broad review of exercise program adherence and identified personal characteristics, environmental factors, and program factors as determinants for exercise adherence.

Obesity, lack of motivation, blue collar status, and smoking behavior are the most commonly identified personal characteristics directly related to decreased adherence to and increased dropout from exercise programs...Of the environmental factors studied,...social support obtained by program participants, particularly from family members, has been shown to be the most highly correlated with exercise adherence...in addition to perceived convenience of the exercise setting and its proximity to the home or the work place...(p.41).

Their research makes a point that those who need to participate in a fitness program are the least likely to and that to increase likelihood of participation exercise equipment must be conveniently located. Pearson (1995) includes, “lack of equipment or facility” as an obstacle to program development (p.19). These assertions would seem to follow logic and common sense.

For a WFP to be effective the targeted audience must participate. Without active participation a WFP is just another book on the shelf collecting dust, while everyone maintains the status quo. Physical fitness is lost over time. Likewise, fitness is gained back over time. How do you get firefighters to participate in something that does not provide immediate gratification? Firefighters are geared to respond to immediate feedback. Water on the fire- the fire goes out. You medicate a patient-the patient gets better. Someone has a problem—call 911; firefighters show up--problem solved. We want the same in a fitness program. We start exercising—were fit, right?

In their study on maintaining employee participation Lovato and Green (1990) explain it this way,

“Achieving high levels of participation in health promotion programs is most difficult with those recommended behaviors that are not immediately rewarding...behavioral changes recommended in workplace health promotion programs are experienced by participants as unrewarding because, for many individuals, the value attached to the change does not exceed the discomfort or the inconvenience of the change process. Such behaviors as smoking, alcohol and drug misuse, overeating, and sedentary living can become habituating, if not addicting. The unhealthful behavior can provide stimulation or comfort whereas

the healthful behavior recommended by the program often requires denial, sacrifice, withdrawal, fatigue or some combination of these. In the short term, giving up smoking, drinking, or overeating provides little that is immediately reinforcing...(p.74).

The real challenge is getting employees to participate and to continue. The real benefit to employee and company is only realized through long-term program participation and adherence to behavioral changes brought on by the program.

Again, Lovato and Green explain,

Immediate success might be gauged by enrollment, but ongoing employee participation is central to intermediate and long-term success of most programs. When the number of employees participating in a program begins to decline, the program itself may be threatened with extinction because the program loses administrative support. Thus, participation has consequences both for program justification and for the effective delivery of an intervention. In addition, continued participation and maintenance of behavioral changes are necessary for realization of the intended health benefits of most programs. Thus, the term “maintaining participation” applies to continued and regular attendance as well as long-term maintenance of health-related behavior beyond the duration of a program (p. 74).

Continued participation in a WFP is a challenge for all fire service organizations. Generally, new employees are fit and healthy. They have demonstrated their relative fitness level through the candidate physical ability test administered in the hiring process.

The challenge is to maintain that level of fitness and health through a 20 or 30 year career. Participating in a WFP is one way to possibly achieve that.

Strategies For Success

Mark Anders examines strategies for getting a program started in his article, in *Fire Chief*, April 2001. The Los Angeles County Fire Department, Miami-Dade County Fire Department, and Overland Park (Kansas) Fire Department are cited in the article. Paraphrasing the article, Anders emphasizes the need for a steering committee, peer fitness trainers, access to equipment and making time for participation. A steering committee should, at the least, have representatives from labor, management, an exercise specialist, and a fire department physician. Peer fitness trainers help manage the program at the station level. Access to equipment can be costly, but creativity and cooperation has a potential to reduce costs. Ultimately, time must be dedicated to participant in the program. While some departments may mandate 90 minutes of fitness activity, others may set aside as little as 30 minutes. The time required is department specific.

If funding is less of an obstacle, the LAFD approach may offer positive results. The LAFD collaborated with the Kinesiology Department at California State University, Northridge, to customize a program using the Joint Initiative as a foundation. The parameters were:

- Develop a comprehensive wellness program.
- Create a firefighter task-specific exercise program that used time efficiently and needed minimal equipment.
- Develop a periodic fitness evaluation that could be delivered effectively by station commanders.

- Stay as true as possible to the goals of the Wellness-Fitness Initiative.
- Operate on a shoestring budget. (Loy, April 2001)

In an interview with James R. Morrow Jr., Ph.D., conducted to investigate the possibility of duplicating the LAFD approach in a collaborative effort between the University of North Texas and the FMFD, topics of discussion included, program parameters, data sets and how measurements were to be collected and what reporting criteria was being sought. Dr. Morrow offered to take the information back to the kinesiology department at the university and present it for consideration to other colleagues. Dr. Morrow's response to the request included a commitment from UNT faculty to assist in program development by providing education in areas of exercise physiology, measurement research procedures, and sports psychology. UNT faculty offered graduate students as program monitors as part of their course of studies. This collaboration should set the stage for positive advancements.

PROCEDURES

Literature Review

The literature review began in the Learning Resource Center (LRC) at the National Emergency Training Center, Emmitsburg, Maryland. There Executive Fire Officer Applied Research Papers (EFOARP) were reviewed for specific data and bibliographic source material. Through a local library and the interlibrary loan program some EFOARP works were checked out of the LRC for extended review. The literature review also included a number of scientific studies obtained from Karen Conrad Ph.D., Associate Professor, University of Illinois at Chicago, on increasing exercise in the workplace, workplace exercise program adherence, psychological predictors of

participation, and tailoring work site programs for blue-collar workers. Finally, fire service publications and journals were used as additional material.

Survey Instrument

A survey instrument (Appendix A) designed to solicit attitudes and personal perceptions provided feedback from department members. The responses to the survey were tabulated using a marketing research tabulation software program (ABTAB). The results in total are included in Appendix B. The findings of the survey were used in conjunction with the literature review to develop an implementation strategy for the FMFD. The twenty-question survey designed to illicit personal perceptions and attitudes toward mandatory wellness and fitness programs was distributed to all Captains in the department at a monthly staff meeting with instruction to have personnel complete the surveys and return them by August 28, 2001. 51 surveys were distributed to line personnel by way of their supervising Captain and an additional 6 surveys were hand delivered to administration staff for a total of 57 surveys. The complete survey instrument can be found in Appendix A.

Interview

An interview with Dr. James Morrow, University of North Texas, Department of Kinesiology, Health Promotion, and Recreation, was conducted on September 20, 2001. Information on the collaborative effort between the Los Angeles Fire Department and the University of California Northridge was passed on to Dr. Morrow. A request was made to evaluate the possibility of entering into a similar joint effort between the University of North Texas and the Flower Mound Fire Department.

Limitations

This research project is limited in its scope and by the population surveyed. The intent to identify specific attitudes and perceptions of FMFD members warranted limited application of the survey instrument. Broader solicitation was not necessary because no attempt to compare findings with other populations was sought.

RESULTS

Research Question #1.

Literary review of effective elements of a WFP reveals what this researcher terms two categories of elements. One category is organizational and the other is beneficial. Organizational elements of a WFP include; development or oversight committee, peer training programs, budget support and other non-participatory functions which may or may not directly affect individual members. Organizational elements are intangibles in some respect. Beneficial elements are those that the member actively participates in as a course of being in a WFP. These elements are physical fitness programs, nutrition and behavior modification, medical screening, stress management and rehabilitation programs.

Implementation strategies varied from department to department but most successful programs shared commonalities. The commonalities of successful programs were; personnel input, development or over-site committee, peer pressure as a main motivator for participation, funded as part of a reoccurring budget, and they are unequivocally supported by administration. The main focus of implementation strategies is to be creative and find a way to make it work within specific parameters unique to the department.

Research Question #2.

Survey results tabulations are found in their entirety in Appendix C. Results detailed in this section provided specific data that supported findings.

Survey Question #1. This question was designed to solicit attitudes toward a range of factors regarding personal wellness and fitness. The measure was on an importance scale of 1 to 5 with 1 being least important and 5 being most important. The categories measured included; age, strength, endurance, flexibility, aerobic capacity, diet, life style, and exercise. The attitude of the respondents as demonstrated by the results is: age is the least important factor in personal wellness and fitness. The results also demonstrate the most important are endurance, exercise, and aerobic capacity. Table I shows the results for each category for responses in the more important, most important and combined.

Table I

Personal Wellness/Fitness factors as related to delivery of emergency service.

(Percent of respondents rating)

Category	% more important	% most important	% combined
Age < 40	13	3	16
Strength	61	21	82
Endurance	27	73	100
Flexibility	52	24	76
Aerobic Capacity	34	56	90
Age > 40	19	19	38
Diet	42	21	63
Life Style	39	18	57
Exercise	33	67	100

Survey Question #2. This question was designed to solicit perceptions and attitudes of FMFD personnel with regard to wellness and fitness program components. Again, an importance scale of 1 to 5 was used. The categories measured include; personnel input, administrative support, mandatory participation, voluntary participation, access to equipment, annual physical, bi-annual fitness test, life style/nutrition training, self-paced improvement, exercise instruction, health data tracking and annual funding. Table II details the combined findings for survey question 2. Based on the responses to this question, in a more to most important combined rating, mandatory participation rated the lowest (42%), and bi-annual fitness test second lowest (45%) while annual funding (94%) and access to equipment (97%) rated the highest. Again, combined ratings are a view of an overall increased level of importance for the category.

Table II
Importance of Wellness/Fitness Program Components

Percentages of responses

Category	% More Important	% Most Important	% Combined
Personnel Input	42	39	81
Administrative Support	24	61	85
Mandatory Participation	15	27	42
Voluntary Participation	33	30	63
Access to Equipment	24	73	97
Annual Physical	18	58	76
Bi-Annual Fitness Test	15	30	45
Life Style/ Nutrition	42	24	66

Table II con't.

Category	% More Important	% Most Important	% Combined
Self-Paced Improvement	48	21	69
Exercise Instruction	39	33	72
Health Data Tracking	52	21	73
Annual Funding	18	76	94

The real significance of the finds of question 2 is apparent when the combined ratings include those responses rating each category important “3 response”. Every category had a rating percentage of 80 or better when combining important, more important, and most important responses. The attitude toward mandatory verses voluntary participation all but disappears when viewed in this context: mandatory rated (81%) and voluntary rated (84%). The other categories also shifted to indomitable levels; personnel input (96%), administrative support (97%), access to equipment (97%), annual physicals (100%), bi-annual fitness test (81%), life style/nutrition (96%), self-paced improvement (93%), exercise instruction (93%), health data tracking, (94%), and annual funding (94%).

Survey Question #3. This question was designed to solicit the attitudes of FMFD members as related to the fitness levels of their peers based on their own perceptions of those fitness levels. No definitions were provided. There is no implied value to the actual fitness level of the department, only the perception of the members when rating their peers. Table III details the findings. The ratings are presented as a high and low value and the overall average for all responses.

Table III
Personnel Perceptions of Peer Fitness Levels

	Very Poor	Poor	Average	Above Average	Excellent
High Value	45	100	100	50	30
Low Value	0	0	0	0	0
Average	10	20	49	11	10

The results in Table III indicate a wide spread in perceptions. An understandable limitation of this question is the fragmentation of the shift assignments. Many members lack actual knowledge of an individual's performance and fitness level as a result of not working directly with them. Perceptions do not always mirror reality. A goal of a WFP would be to shift these values out of the very poor and poor toward the above average to excellent range.

Survey Question #4. This question was designed to correlate the responses of mandatory verses voluntary as an importance factor, with the likelihood of behavior as demonstrated by the responds to question 4. (53%) stated they would be more likely to participate if the program was mandatory, while (41%) stated they would be more likely to participate if the program were voluntary. A positive attitude toward participation is demonstrated when combined responses are considered. (91%) responded likely to more likely to participate in a WFP if the program were mandatory. (91%) also responded likely to more likely to participate in a WFP if the program were voluntary. These

responses indicate a (91%) desire to participate in a WFP whether mandatory or voluntary.

The remaining factors measured in question 4, funded annually, data tracking, easy access, individually based, annual physicals, competitive and required testing, measured within expected outcomes and can be view in the appendix. No single category presented any significant finding.

Survey Question #5. This question asked for respondents opinions as to whether or not a WFP should be: mandatory, voluntary, funded, self-paced, punitive, high priority, or low priority. Table IV shows the results.

Table IV

Personnel Opinions of Wellness/Fitness Program Components

	(Should a WFP be:)	
	YES	NO
Component:		
Mandatory	55	45
Voluntary	61	39
Funded	97	3
Self-Paced	94	4
Punitive	34	66
High Priority	88	13
Low Priority	10	90

These findings are not unexpected except for the disparity between mandatory and voluntary (YES) responses. It was expected that an inverse relationship would be found between these variables. Some respondents answered yes to both values.

Survey Question #6. This question asked for the respondent's opinion as to whom was responsible for an employee's health and wellness. (0%) No one answered the employer. (9%) 3 answered the employee, and (91%) answered both. Clearly, none of the respondents place the wellness and fitness responsibility solely on the employer. It is interesting that (9%) 3 employees placed the responsibility solely on the employee.

Survey Questions #7 and #8. These questions did not lend to the finding of this research. The questions were included for consideration in another forum.

Survey Question #9. This question identified the position held by the respondent. It was used to demonstrate the compliance (survey completion) rate for each rank. Table V shows the data in context of total number of positions in FMFD, number of respondents by position, percentage for that position, and percentage of total respondents.

Table V

Survey Completion rate by Position

	Firefighter	Officer	Chief Officer
Number of Positions	42	12	3
Number of Respondents	22	7	1
Percent of Position	52	58	33
Percent of Total Respondent	73	23	3

These results were disappointing. The population pool was a captive audience. Clear instruction was given as to the reason for the survey and the deadline for completion. The data indicate a level of apathy that must be addressed. Though this is a disappointing result, it identifies a clear need for a concentrated effort to educate many members of the department.

Survey Question #10. This question was designed to solicit the knowledge of members regarding the Joint Initiative. (90 %) of the line personnel in the department are members of the IAFF. Yet, (91%) of the respondents indicated they had little or no knowledge of the Joint Initiative. This would seem to indicate that the Flower Mound Professional Firefighters' Association (FMPFFA) is doing little to promote and advance firefighter wellness and fitness.

Survey Question #11. This question was asked to identify whether or not members were active in some sort of physical fitness activity. Only one respondent to the survey did not provide an answer in this question. Several respondents answered multiple activities. The significance of this question is not in the raw data values, but in the fact that members are doing something to maintain physical fitness.

Survey Question #12. This question establishes the relationship between what the respondents are doing for physical fitness and how often they are doing it. (15%) stated they participate in a fitness activity everyday. (48%) participate in an activity 3 to 5 times a week. (30%) responded they participate sometimes, and (6%) said they seldom participate in fitness activities.

Survey Question #13. This was an open-ended question asking for respondent opinions as to the most important issue concerning development of a WFP. Out of the 33

respondents (10) surveys had no answer for this question. 51 responses were tabulated for the open-ended question from the remaining 23 surveys. The researcher places equal value on any response offered, therefore, multiple answers to the open-end question were counted, even though, the question was for the most important (implies one response). The three answers most often given were; volunteer program-willingness to participate (7) 14%, mandatory workout will save lives (7) 14%, and administrative support (7) 14%. All responses are listed in the tabulated results for question (Q13) in Appendix B.

Survey Question #14, 15, 16, 17, 18, 19, and 20. These questions were all Yes or No answers. All the questions have importance in developing attitudinal perspectives of respondents based on responses. The attempt in this line of questioning is to determine if the respondents are currently participating in any physical fitness activity while on duty (Q14 &15), performance is tested and should it be tested (Q16 &17), and whether the respondent would be willing to participate in a WFP during the development of program. The results indicate 67% of the respondents stated they participate in organized workout routines on duty, while 91% stated other members participated in fitness activities on duty. 73% of respondents stated they have never had to pass a physical ability since being hired. However, when asked if testing should be required, 79% responded Yes. 64% said they would be willing to get a medical physical from their personal physician and allow the data to be part of a WFP. 97% stated they would be willing to participate in a WFP during its development. Finally, 97% stated they would be willing to participate in a WFP developed and promoted by the IAFF.

Research Question #3.

What strategies could enhance implementation of a mandatory WFP in FMFD? Literature review demonstrates varying strategies for implementation of a WFP. Strategies varied from department to department. Large metropolitan departments employed more participatory strategies, citing development committees, program coordinators and collaborative efforts between agencies. Smaller departments were more creative in terms of equipment procurement and to some degree what types of activities were allowed. The strategies most likely to enhance implementation of a WFP in FMFD include:

1. Development of a Steering Committee.
2. Evaluate alternative funding sources.
3. Training and education for Company Officers.
4. Annual physical ability testing.
5. Incentive and recognition of excellent performance.
6. Collaborative effort with University of North Texas Faculty.

DISCUSSION

Understanding the attitudes and perceptions of the personnel of the FMFD regarding implementation of a mandatory WFP is the predominate challenge of this research. Contrary to the presumed resistance for implementing a WFP, the results of those surveyed indicate a willingness to accept a change. Likewise, components of an effective WFP, thought to be ambiguous, are clearly defined through literature research. The development of the Joint Initiative is presumed to be an acceptable standard. And finally, implementation strategies vary from department to department, and thus FMFD

will have to find the right mix of strategies for FMFD. The real challenge in this aspect is having a program that members will gravitate to and willingly participate in.

Program Elements

As previously stated, the components of an effective WFP are not in question as much as, what is it that is going to get people to participate in the program. Paul O. Davis's (2000) makes the point that physical fitness is not a mystery. The IAFF/IAFC (2000) produced a recognized document specifically detailing a standard for wellness and fitness in the fire service. Wellness is accepted in a holistic term to include, physical, mental, medical and rehabilitative. The Joint Initiative addresses each. Even though there is little ground left to argue against this document, it certainly is not the only solution. Like many other fire departments the FMFD cannot fiscally commit to costs associated with 100% implementation of the Joint Initiative, and therefore some customization and a phased in implementation approach is a more probable choice of action. Loy (April, 2001) reports one of the largest fire service organizations in the country, the Los Angeles Fire Department, used the Joint Initiative as a framework for customizing their program. A prudent course of action for FMFD is to investigate the possibilities of a similar collaboration.

Cost Effectiveness

The one standard or benchmark a WFP will have to meet is cost effectiveness. The IAFF/IAFC (2000) includes this in their document to state that an effective program should deliver significant cost savings. These savings may be in the form of lower insurance pool premiums, or reduced on the job injuries, return to work cases resolved faster, less sick time usage or other measures. In fire service articles, Scully (2000) and

Shelley (2001) were able to make strong cases for the cost effectiveness of a WFP. Reductions in injury rates, injury severity, reduced hospitalizations, and indemnity payments fell as a result of participating in a WFP.

Documentation of program cost savings is critical for the advancement of WFPs in the fire service. Fire service organizations that have longitudinal WFP in place should publish their cost/benefit analysis figures. Loy (April, 2001) states, LAFD is soon to complete a cost effectiveness study of their WFP. Critical to the advancement of WFPs in the fire service is the documented success of others. Many tactical advances and technical advances that propelled the fire service to new heights can be traced to the documented success of other departments. Success breeds success. Duplication is the essence of retail franchising success (eg...McDonalds, Subway, WalMart). WFPs are successful in other departments. Though not a retail setting, duplication of a WFP in FMFD stands a reasonable chance at being a success.

Attitudes and Perceptions

In as much as this research project is an attempt to understand members' attitudes toward physical fitness and wellness and fitness program implementation, an understanding of an attitude is required. Arnlund (1999) in her EFOARP dealing with firefighter's attitudes toward fire prevention cited Schiff (1970), Abelson (1959), and Stittleburg (1993) for explanations that expound on attitudes.

Schiff (1970) states attitudes are an individual's "view of the world"...and...the only way to measure an individual's view of the world is through his behavior, including verbal behavior. Abelson (1959) in experiments, determined the behavior of the subjects were definitely affected by the different social conditions

of the experiment...showed that a person's opinions and attitudes are strongly influenced by the groups to which he belongs and wants to belong. Stittleburg (1993) refers to leaders in contexts of influence, by stating, leaders should be aware of their impact on attitudes of others...Leading by example required more than talk...People will perform as desired and react positively to direction only when their leaders demonstrate by example the importance of what is being requested of them (as cited in Arnlund 1999).

The above citations relate attitude to behavior. Behavior is a manifestation of attitude. If the intent is to change behavior (get members physically active) then the attitude held toward being physically active must be changed. The results of the survey indicate this may already be taking place. Many members (67%) are already working out on duty. Reports are that as much as (91%) of the department is aware of others working out. Peer pressure was found to be a motivator in successful WFP. Abelson refers to peer pressure as wanting to belong to a group. Shelley (2001), Anders (2001), and Loy (2001) concur with this and refer to peer-pressure and peer-training as a necessary component of a WFP.

The results of the survey reveal an environment ripe for positive change. Employees demonstrated a positive attitude (verbal behavior) toward change by their responses to the survey. The suspected environment of resistance is not consistent with the attitudes observed. A majority are participating in fitness activities, understand the importance of fitness, are willing to participate in the development of a program, and a majority view the development of and mandated participation in a WFP as high priorities.

Implementation Strategies

Attempts to implement physical fitness programs in FMFD have failed in the past. The reasons are many, but underlying most of them is the lack of a systematic approach to implementation, analysis of how other successful programs are doing, definitive cost/benefit values, and personnel feedback and empowerment in program development. In the literature review of successful programs Loy (April, 2001), Anders (2001), Shelley (2001), Scully (2000) all made references to development or oversight committees for the WFP. These committees are comprised of interested members of the department and bring the program directly to the firefighter level. The WFP must have the absolute support of all levels of the organization. The leaders of the department must be in the forefront lighting the path.

Stittleburg (1993) refers to leaders in contexts of influence, by stating, leaders should be aware of their impact on attitudes of others...Leading by example required more than talk...People will perform as desired and react positively to direction only when their leaders demonstrate by example the importance of what is being requested of them (as cited in Arnlund 1999).

Alternative implementation strategies identified in the literature review provide a framework for FMFD. Customization and use of different components of those strategies should make it possible for FMFD to succeed. The strategies most likely to enhance implementation of a WFP in FMFD include:

1. Development of a Steering Committee.
2. Evaluate alternative funding sources.
3. Training and education for Company Officers.

4. Annual physical ability testing.
5. Incentive and recognition of excellent performance.
6. Collaborative effort with University of North Texas Faculty.

The implementation strategy that will provide the greatest degree of success for FMFD is unknown. It is incumbent upon the leaders of the department to review this research project, consider the recommendations and make a decision that offers the greatest chance for success. The support for the program must come from the highest level, but, in development it must also be inclusive of the personnel impacted by implementation.

RECOMMENDATIONS

The overall purpose of this research was to develop a strategy for implementing a WFP in the FMFD. A clearer understanding of the many challenges in implementing a mandatory WFP mandates that the strategy to implementing one must be multi-faceted, planned and supported by the highest level of the department and Town. The program must be convenient for members to access, individualized in measure, non-punitive in application, rewarding, and cost effective. However, implementation of a comprehensive WFP may not be possible in the current fiscal condition, and as such, finding an alternative means of funding is a prudent objective.

The FMFD will continue to grow to meet the demands of providing services to the community. As the department continues to grow, and age, it will face longevity issues that other older departments have already experienced. The wellness/fitness movement was born out of the experiences of these older, wiser, departments. FMFD has an opportunity to get ahead of the curve in this area. The opportunity to get a program in

place, while it is the least expensive, and thus most cost-effective in terms of dollars invested to future savings, is now. Delaying implementation of a WFP until costs associated with on the job injuries, workers compensation claims, disability retirement costs, and catastrophic line of duty deaths, justify the start-up cost is nothing more than reactionary management. To this end, the following proposal is presented as the recommendation resulting from this research process, and is included separately as Appendix B.

The time has come for the FMFD to develop a comprehensive WFP to implement in an effort to sustain health and well being of its members. To do this will require the collaborative effort of many. The recommendation is to empanel a committee to spearhead this effort. This committee should consist of the Training Chief, a Captain, a paramedic, and a firefighter from each shift, providing each station a representative, a technical advisor from a local health/fitness facility, a representative from Human Resources, and if possible a liaison from the University of North Texas. The committee would then be charged to research further the feasibility and options available for customizing a WFP to meet the needs of the department. The committee should be prepared to submit an implementation plan to the Fire Chief for consideration and preparation of the FY2002/2003 budget. The parameters set for the committee should mirror those set by LAFD: (a) develop a comprehensive wellness program, (b) create a firefighter task specific exercise program that used time efficiently and needed minimal equipment, (c) develop a periodic fitness evaluation that could be delivered effectively by station commanders, (d) stay true as possible to the goals of the Wellness-Fitness Initiative, and (e) operate on a shoestring budget.

This is only the first step. The committee will have to identify alternative funding sources, develop and project budgetary concerns for inclusion in the five-year capital improvements plan and formulate data collection criteria to substantiate the cost/benefit as the program evolves. The fire service started putting out fires hundreds of years ago. It was a suppression organization. Nothing was done in the name of prevention. Today, the fire service is partnered in the effort to prevent fires from starting altogether. Not too long ago, the fire service started dealing with delivery of emergency medical services. We should now be starting to realize that prevention of illnesses is equally as important as fire prevention. Now the time has arrived when the fire service must partner with the efforts of preventative medicine. A Wellness/Fitness Program is preventative medicine.

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APPENDIX A

Wellness/Fitness Perceptions Survey

This survey is for the purpose of data collection to support completion of an Applied Research Project for the National Fire Academy, Executive Fire Officers Program. All responses to this survey will be held in the utmost of confidence.

Please answer the questions by circling a number or checking the appropriate box. Once completed please return to: Michael J. Tinsley, Captain, Flower Mound Fire Department, 3838 Forums Drive, Flower Mound, Texas 75028.

(Answer the following questions on a scale of 1 to 5 with 1 being least important and 5 being most important.)

1. Considering personal wellness and fitness as it relates to the delivery of emergency services rate how important you consider the following factors to be:

	least important					most important
a.) age < 40	1	2	3	4	5	
b.) strength	1	2	3	4	5	
c.) endurance	1	2	3	4	5	
d.) flexibility	1	2	3	4	5	
e.) aerobic capacity	1	2	3	4	5	
f.) age > 40	1	2	3	4	5	
g.) diet	1	2	3	4	5	
h.) life style	1	2	3	4	5	
i.) exercise	1	2	3	4	5	

2. Of the following factors, rate their importance when considering a Wellness and Fitness Program:

		least important					most important
a.) personnel input		1	2	3	4	5	
b.) administrative support	1	2	3	4	5		
c.) mandatory participation		1	2	3	4	5	
d.) voluntary participation		1	2	3	4	5	
e.) access to equipment		1	2	3	4	5	
f.) annual physical		1	2	3	4	5	
g.) bi-annual fitness test		1	2	3	4	5	
h.) life style/nutrition training		1	2	3	4	5	
i.) self-paced improvement		1	2	3	4	5	
j.) exercise instruction		1	2	3	4	5	
k.) health data tracking		1	2	3	4	5	
l.) annual funding		1	2	3	4	5	

3. In your opinion, how would you rate the fitness level of the personnel in your department (Answer in percentages %, and then indicate the number of total personnel in the department)?

Fitness Level Total Number Personnel _____

Very Poor _____
 Poor _____
 Average _____
 Above Average _____
 Excellent _____

4. Would you be more likely or less likely to participate in a Wellness and Fitness Program if it:

	less likely			more likely	
a.) was mandatory	1	2	3	4	5
b.) was voluntary	1	2	3	4	5
c.) was funded annually	1	2	3	4	5
d.) used data tracking	1	2	3	4	5
e.) was easy to access	1	2	3	4	5
f.) was individual based	1	2	3	4	5
g.) provided annual physicals	1	2	3	4	5
h.) competitive	1	2	3	4	5
i.) required testing	1	2	3	4	5

5. In your opinion, should a Wellness and Fitness Program be:

	YES	NO
a.) mandatory	<input type="checkbox"/>	<input type="checkbox"/>
b.) voluntary	<input type="checkbox"/>	<input type="checkbox"/>
c.) funded	<input type="checkbox"/>	<input type="checkbox"/>
d.) self-paced	<input type="checkbox"/>	<input type="checkbox"/>
e.) punitive	<input type="checkbox"/>	<input type="checkbox"/>
f.) high priority	<input type="checkbox"/>	<input type="checkbox"/>
g.) low priority	<input type="checkbox"/>	<input type="checkbox"/>

6. In your opinion, the responsibility for an employee's health and wellness falls on:

- a.) the employee
 b.) the employer
 c.) both

7. What is your departments' annual budget for apparatus (vehicle) maintenance? \$ _____

8. What is your departments' annual budget for a Wellness and Fitness Program? \$ _____

9. What is your position: Chief Officer
 Officer
 Firefighter

16. Have you ever had to pass a physical ability examination since being hired?
YES NO
17. Should a physical ability test be administered annually? YES NO
18. Would you be willing to get a medical physical from your personal physician and allow that data to be part of the Wellness-Fitness Program? YES NO
19. Would you be willing to participate in a Wellness and Fitness Program during its development? YES NO
20. Would you be willing to participate in the Wellness and Fitness Program developed and promoted by the International Association of Firefighters (IAFF)?
YES NO

APPENDIX B

FMFD Wellness/Fitness Program Development Proposal

The time has come for the FMFD to develop a comprehensive WFP to implement in an effort to sustain health and well being of its members. To do this will require the collaborative effort of many. It is the recommendation that the department empanel a committee to spearhead this effort. This committee should consist of the Training Chief, a Captain, a paramedic, and a firefighter from each shift, providing each station a representative, a technical advisor from a local health/fitness facility, a representative from Human Resources, and if possible a liaison from the University of North Texas. The committee would then be charged to research further the feasibility and options available for customizing a WFP to meet the needs of the department. The committee should be prepared to submit an implementation plan to the Fire Chief for consideration and preparation of the FY2002/2003 budget. The parameters set for the committee should mirror those set by LAFD: (a) develop a comprehensive wellness program, (b) create a firefighter task specific exercise program that used time efficiently and needed minimal equipment, (c) develop a periodic fitness evaluation that could be delivered effectively by station commanders, (d) stay true as possible to the goals of the Wellness-Fitness Initiative, and (e) operate on a shoestring budget.

This is only the first step. The committee will have to identify alternative funding sources, develop and project budgetary concerns for inclusion in the five-year capital improvements plan and formulate data collection criteria to substantiate the cost/benefit as the program evolves. The fire service started putting out fires hundreds of years ago. It was a suppression organization. Nothing was done in the name of prevention. Today, the

fire service is partnered in the effort to prevent fires from starting altogether. Not too long ago, the fire service started dealing with delivery of emergency medical services. We should now be starting to realize that prevention of illnesses is equally as important as fire prevention. Now the time has arrived when the fire service must partner with the efforts of preventative medicine. A Wellness/Fitness Program is preventative medicine.