# PEER FITNESS TRAINERS FOR THE PEORIA FIRE DEPARTMENT: FITNESS WITHOUT PUNISHMENT

### EXECUTIVE DEVELOPMENT

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#### **ABSTRACT**

It has been shown that firefighters are at high risk for job related accidents and stress related illnesses. The Peoria Fire Department provides exercise equipment and time while on duty for firefighters to exercise. The problem was that the Peoria Fire Department had no formal fitness program lead by trained certified peer fitness trainers. Action research was utilized to answer the following questions:

- 1. What cost effective programs are available to certify firefighters as peer fitness trainers?
- 2. Is there evidence available that shows the need for firefighters of the City of Peoria to increase their knowledge about nutrition and fitness?
- 3. What benefits would the City of Peoria and it's Firefighters receive by training some of it's members to be peer fitness trainers?

The procedures utilized for this research began with a review of literature from the LRC located at the National Fire Academy. The World Wide Web was utilized to investigate fitness trainer programs suitable for fire department needs. A survey was distributed to a random group of Peoria Firefighters.

Results of this research showed that there were programs available to train firefighters to become peer fitness trainers. National trends have been researched and survey results from a random group of Peoria Firefighters have been analyzed to reveal that Peoria Firefighters need to increase their overall fitness knowledge. It has been shown through research that Peoria Firefighters as well as the City would benefit from the use of peer fitness trainers.

It has been recommended by this research that the Peoria Fire Department initiate a peer fitness trainer program. Recommendations include tying the program to the budget, working with the union to select members for the program, having members select a program to become certified through, and finely charting progress of the program through record keeping.

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#### INTRODUCTION

The Peoria Fire Department is maturing in terms of its diversity as well as the average age of its members. Studies substantiate that fire fighting is one of the most physically demanding and hazardous occupations with a high incidence of injury and premature death associated with it. (Willford, Duey, Olson, Howard, and Wang, 1999, p. 1179). Studies also show the benefits firefighters receive health benefits from exercise and proper nutrition (Davis, 1997, p. 25).

The Fire Service Joint Labor Management Wellness Fitness
Initiative(2000) provides an acknowledgement of the need for
increased attention to wellness and fitness for firefighters.
The initiative also frames what labor and management see as
integral parts of what it will take to keep a healthy workforce.

At this time the Peoria fire department has Standard Operating Procedures (S.O.P.) that state that members are encouraged to participate in physical training a minimum of one hour per shift. The Peoria Fire department provides cardiovascular equipment as well as strength training equipment for its members at all stations. The problem is that most of the members have never received training in physical fitness and nutrition, thus, the need for peer fitness trainers is evident. The purpose of this research project was to substantiate the need for peer fitness trainers for the Peoria Fire Department

and identify options for training department members to fit this role.

Action research methodologies have been used to answer the research questions posed by the identified problem. The desired outcome of this research is to show the need for the Peoria Fire Department to develop and initiate a peer fitness trainer program and to identify avenues to train some members for this role.

## Research questions addressed:

- 1. Are there cost effective programs available to certify fire fighters as peer fitness trainers?
- 2. Is there evidence available that shows the need for firefighters of the City of Peoria to increase their knowledge about nutrition and exercise?
- 3. What benefits would the City of Peoria and it's fire fighters receive by training some of its members to be peer fitness trainers?

#### BACKGROUND AND SIGNIFICANCE

The City of Peoria has a population of approximately one hundred ten thousand residents and spans over one hundred fifty square miles. The City of Peoria is a suburb of Phoenix, Arizona. Over the past fifteen years Peoria has been experiencing rapid growth, increasing its population by ninety thousand during this period. In order to match this growth, the Peoria Fire Department has added over one hundred members to its ranks. The Peoria Fire Department is a member of the Computer Aided dispatch system (CAD), that responds to various communities in the Phoenix Metropolitan area. Thus, the potential population served by the Peoria fire department is actually in the hundreds of thousands. Units from the Peoria fire Department answered 11,543 calls for service in 1999 and that number has increased in 2000.

The Fire Department has five Paramedic Engine Companies one of which also has technical rescue capabilities, a technical rescue ladder company, two brush trucks, and a Battalion Chief running at all times. Peoria has the largest man made Lake in Arizona and it is manned with a Paramedic and EMT during the summer season and special events. The Fire Department uses a paramedic bike team at special events and will also utilize bikes at its northern most station to provide service for outdoor recreation areas and hiking paths. The Peoria Fire

Department is a young department existing as a fulltime professional department for only the last seventeen years. To date, the Fire Department has had only one voluntary retirement. The Department has suffered the loss of two of it's members who died from medical reasons(both were young men in there thirties). Forty six percent of the Peoria Fire Department is over forty years old.

It is well documented that fifty percent of all fire fighter fatalities are related to stress; more than two-thirds of stress related deaths occur in fire fighters over the age of forty (Lepere, 1997, p. 55). Unfortunately the Peoria Fire Department has never had an organized physical training program. The growing numbers of Peoria fire fighters reaching their forties, the fact that there is no organized physical training program, and qualified people to manage such a program is a time bomb waiting to explode.

The Fire Service Joint Labor Management Wellness/Fitness
Initiative (2000) defines the role of a peer trainer as one who
encourage others to participate in an exercise program in a safe
manner. The initiative encourages trainers to become
professionally certified to add credibility to their position
(p. 49). The trainer must work with the health center Doctors
and individual members as they seek to improve members' health
and well being. The trainer will be a fitness advocate keeping

important health issues in the department limelight. Finely, the trainer will help members reduce injuries and illnesses associated with one of the worlds most dangerous occupations. The Peer fitness trainer is the key to the success of the Fire Service Joint Labor Management Wellness-Fitness Initiative.

John P. Kotter explains that it is important for an organization to show employees how specific actions and attitudes have improved performance. If left on their own employees may not make the connection and inaccurate links are often created(1996, p. 45). The peer fitness trainer will serve as the Peoria Fire Departments agent to reinforce the benefits both to the city and it's fire fighters.

Initiating a peer fitness program in the City of Peoria will be made much easier by utilizing materials taught in the Executive Development block at The National Fire Academy. Unit seven addresses the dynamics that effect organizational culture. In order for a peer fitness program to work effectively and be a positive asset, the organizational culture of the Peoria Fire Department relating to health and fitness will have to be analyzed and the implementation of peer fitness trainers will need to fit into its culture. Once the Peer trainers are in place it will be their responsibility to help change the culture to encourage better physical fitness practices. The Fire Service Joint Labor Management Wellness-Fitness Initiative is intended

to be a positive individualized program that is not punitive (2000, p. 1).

Drawing from unit six of the Executive Development block, one finds that to keep good labor relations intact it is important that the Peoria Fire Fighters Association has input into the process of picking the peer fitness trainers. Labor and management should agree how individuals will be chosen for this important assignment whether it is by testing, education, past performance, or a combination of these. Unit four concerns managing creativity. For the best results, management will need to create an environment that fosters creativity. Unit four also lists and defines seven obstructions to organizational creativity that must also be considered. Finally, the concept of "best practices" was introduced during unit ten of the Executive Development curriculum. It would be beneficial to explore other fire departments throughout the United States and take the best of each program and apply it to the fitness program at the City of Peoria.

#### LITERATURE REVIEW

According to experts, "Fire suppression can result in injuries and loss of life in those individuals who aren't medically qualified or physically capable of performing at high metabolic work loads over long periods" (Davis and Gerkin,1997, p. 26). According to Willford et al., there is a tremendous amount of research that substantiates the fact that fire fighting is one of the most physically demanding as well as dangerous occupations an individual can have (1999, p. 1179). This information is confirmed by the work of Fellers who states, "The number one killer of fire fighters seems to be heart attacks due to stress which could be attributed to the lack of a structured physical fitness program in the fire service" (1997, p. 7).

According to Ostrow, the national annual accounting of firefighter deaths by the NFPA:

Confirms that firefighters are dying from heart-related problems more than any other occupational hazard. In 1995 . . . forty-two of ninety-five deaths, were due to heart attacks. Forty one of these forty two deaths were attributed to stress or overexertion (1997, p. 86).

"Overexertion is caused by a mismatch between the physical capabilities of the worker and the strength demands imposed by the job" (Carmean, 1997, p. 80). "In almost every year since 1977 the leading cause of death among firefighters has been stress with heart attack typically the leading nature of injury

and accounting for approximately half of the total firefighter deaths annually" (Ostrow, 1997, pg. 86). In 1999 heart attacks accounted for fifty six deaths, up from thirty eight in 1998 and thirty nine in 1977 (Casey and Slepicka, 1999, p. 1).

After assessing much of the same statistical information that is found above, Lepere (1997) concludes that:

The most significant engineering modification that will have an immediate effect on our work capacity is improved fitness levels. To achieve this organizations will need to demonstrate a continuous commitment to increase physical fitness and worker safety within the work force. Additional benefits will come in the form of reduced health care, worker's compensation and disability costs; decreased sick time; improved morale and self esteem; and increased flexibility, strength and endurance. The biggest roadblock will be how to get employees to do the things that they perceive as unpleasant (p. 55).

Fire Departments that have mandatory fitness programs such as the Range Complex Fire Department in Mercury, Nevada and The Tulsa Oklahoma Fire Department have had positive results with their programs. The Tulsa Fire Department states that they have had a 35.8 percent reduction in days lost to injury, medical payments were reduced by 59.2 percent, workers' compensation cases filed were reduced by 47.1 percent. The Tulsa report states that injuries increased by 20.7 percent but these were sustained during physical training and were not severe (Martin,1999 p. 12).

The Fire Service Joint labor Management wellness Fitness

Initiative (2000) describes the role of the Peer Fitness Trainer

as, "a person to encourage safety and participation in fitness

through guidance and supervision of uniformed personnel

exercise" (p. 49). The initiative recommends an integrated

multi-level approach in which:

A fitness professional trains and oversees multiple peer trainers. Peer trainers should enroll in a comprehensive personal training course and consider obtaining professional certification. Certification provides a broad scientific knowledge of exercise, a consistent competency level, and an understanding of proper exercise techniques (p. 49).

Further the Initiative outlines other areas where peer fitness trainers may benefit their departments by providing education to company officers as well as new hires, performing fitness evaluations, designing and testing new fitness equipment, and designing and supporting personalized fitness programs for uniformed personnel (p. 49). Graduates of the Oklahoma State University FireFit Peer fitness trainer program are described as:

Proactive leaders in their fire department on health, fitness, wellness, and safety issues. In addition they are provided with the knowledge, skills, and resources to provide advise to decision makers and to implement fitness/wellness programs within their departments and community (1998, p. 26).

The wellness initiative recommends three agencies that offer certifications for fitness trainers: 1) the National

Strength and Conditioning Association, 2) the American College of Sports Medicine and 3) the American Council on Exercise (p. 50). The National Strength and Conditioning Association offers two certifications: 1) the Certified Strength and Conditioning Certification and 2) the NSCA Certified Personal Trainer (NSCA-LIFT.ORG). The Certified Strength and Conditioning Certification requires the applicant to have a BS/BA Degree or be enrolled as a senior in an accredited college or university, or hold a degree in chiropractic medicine, and be CPR certified. The NSCA-Certified Personal Trainer requires CPR certification but does not require a BS/BA degree to get certified. The typical applicant would allow three to six months to prepare for an exam proctored by an independent agency (NSCA-LIFT.ORG).

The American College of Sports Medicine offers a Health Fitness Instructor Certification. The applicant must have an AA, BS, or Masters degree in a health related field from an accredited college or University or 900 hours of practical experience in a fitness setting. All certification applicants must be CPR certified (LWW.com). The American Council on Exercise (ACE) offers a certification as a personal trainer as well. The applicants must be a minimum of 18 and CPR certified in order to be eligible to take the certification exam (WWW.Acefitness.org).

Each organization offers their own set of study resources at varying prices. In Addition the cost of testing varies with each certifying agency (see appendix A). The Peoria Fire

Department is fortunate to be in close proximity to a community college that offers a peer fitness program specifically catered to fire fighters. The courses are designed so that fire fighters may take them one of two ways. They may take them with the regular student body one class at a time or in a special program for fire fighters that meets one day per week for eight hours for an entire semester. The students are awarded 13 credit hours upon successful completion of the courses. Courses are designed to ready students for the ACE certification exam for personal trainer in addition to preparing them to monitor the needs of individuals seeking to improve their level of fitness (WWW.GCC.edu).

#### **PROCEDURES**

Terms:

CPR - Cardiopulmonary Resuscitation

EMT - Emergency medical Technician

NFPA — The National Fire Protection Association. World leader in fire safety information and publishing.

Technical Rescue — Specially trained fire fighters that neutralize emergency responses that pertain to low and high angle rescue, swift water rescue, confined space, trench rescue, tree rescue, and other types of rescues indigenous to their region.

EMS - Emergency Medical Services

- A literature review was conducted through the Learning Resource Center located at the National Fire Academy Located at Emmitsburg Maryland.
- 2. The World Wide Web was searched and web sites were consulted for information on four certification programs for peer fitness trainers. Follow-up phone calls to these organizations were made when needed for information clarification.
- 3. A survey was distributed to one shift of the Peoria Fire

  Department. Only one shift was surveyed so that a true view

  of what was happening would be revealed. Information was

- broken down into percentages. Those surveyed were the members of C-shift present on October  $5^{\rm th}$  2000. Members present on the day of the survey were twenty.
- 4. The Phoenix Fire Department Health Center was visited and a copy of the Fire Service Joint Labor Management
  Wellness/Fitness Initiative was obtained and reviewed.
- 5. The assumption made for this research is that the Peoria Fire department is going to adopt the Fire Service Joint Labor Management Wellness/Fitness Initiative. Another assumption is that the Peoria Fire Department will adopt a mandatory fitness program for it's firefighters.
- 6. Limitations: The size of the sample would have been ideal if the entire population of the fire department was able to participate. Time was also a consideration in researching and paper preparation. Records pertaining to fire department employees were not readily available or non existent. The subject matter of peer fitness trainers is very new. The available research on this subject is very minimal.

#### RESULTS

Research Question One: Are there cost effective programs available to certify fire fighters as peer fitness trainers?

As shown above, there are three agencies that offer certifications for fitness trainers: 1) the National Strength and Conditioning Association, 2) the American College of Sports Medicine, and 3) the American Council on Exercise. The prerequisites and requirement of these organization are listed above as well as in Appendix B.

Glendale Community College also offers an affordable program that can readily be utilized by the members of the Peoria fire Department. As mentioned above, this program even has a variety of ways in which to attend the required classes. This expands the many options available to implement this program quickly and effectively.

The various pricing of the above programs are within the range of affordability of the Peoria Fire Department (see Appendix A). Any one of these options would be a viable option for the City of Peoria and the members of its Fire Department. Thus, this research question can confidently be answered in the affirmative.

Research Question Two: Is there evidence available that shows the need for firefighters of the City of Peoria to increase their knowledge about nutrition and exercise?

Through a review of national trends it has been shown that firefighters are suffering and dying from heart related illnesses at an alarming rate. Of the firefighters that have stress related problems on the job, Two thirds of them are over the age of forty. The demographics of Peoria Fire Department shows that forty six percent of its members are over the age of forty. There is no formal fitness program of any kind currently in place for the fire fighters of Peoria.

The Fire Service Joint labor Management Wellness/Fitness
Initiative calls for the development of non-punitive
wellness/fitness programs in all fire departments. The
initiative recommends the use of certified peer fitness trainers
to promote and encourage fitness and wellness among
firefighters. Studies have shown that mandatory fitness programs
have been beneficial to fire fighters (see Literature Review).
A survey sent to Peoria Firefighters revealed that none of those
answering had a basic knowledge of nutrition and exercise nor
any formal training in these areas(see appendix B).

The above survey was given to only one shift to prevent members from talking about it so a true idea of what members knew was gained. One hundred percent of respondents did not know

the amount of calories found in a gram of protein, fat, or carbohydrate. Only one respondent knew how to figure his/her target heart rate for aerobic conditioning. Eighty-five percent of respondents stated that they would utilize a personnel fitness trainer while on duty. All respondents stated that they would like to improve their physical conditioning. Seventy-five percent of respondents were thirty-five years old and older. This is an important fact when considering the future of the Peoria Fire Department and National surveys concerning fire department members and age and stress problems. Through a literature search and survey it has been shown that the need for Peoria Firefighters to learn more about wellness and fitness is evident.

Research Question Three: What benefits would the City of Peoria and it's fire fighters receive by training some of its members to be peer fitness trainers?

The City of Peoria should benefit from the use of peer fitness trainers in a variety of ways. The joint wellness/ fitness initiative calls for a fitness program that is non-punitive. Many fire departments and fitness experts have shown that fitness programs must be mandatory to have compliance. Programs have been shown to be beneficial in terms of reduction in days lost from injury, reduced medical payments, and a reduction in workman's compensation cases filed. One of the

main purposes of the peer fitness trainer is to promote wellness and fitness among the fire department and to assist fire administration with ordering equipment. Promoting fitness maybe the key to avoiding making programs mandatory. If a program becomes mandatory then non-compliance will naturally lead to punitive consequences

The Peoria Fire Department is no different than any other Fire Department in terms of the work we do. We respond to fires requiring members to go from a sound sleep to heavy work in a matter of minutes. We respond to technical rescue assignments as well as emergency medical calls. The fact is that technical rescue and EMS scenes requiring heavy lifting can be just as strenuous on a workers body. More recently the Peoria Fire Department has added a bike team, and our is responsible for a large lake and Marina.

In short the Peoria Fire Department does many strenuous activities that may lead to injury and death if its members are not ready mentally, emotionally, and physically. Periodically members are injured from work related activities that cost the City of Peoria time and money. These same injuries take a toll on the fire fighters and their families. Fire Departments that have mandatory fitness programs such as the Range Complex Fire Department in Mercury, Nevada and The Tulsa Oklahoma Fire Department have had positive results with their programs.

The Tulsa Fire Department states that they have had a 35.8 percent reduction in days lost to injury, medical payments were reduced by 59.2 percent, workers' compensation cases filed were reduced by 47.1 percent. The Tulsa report states that injuries increased by 20.7 percent but these were sustained during physical training and were not severe (Martin,1999 p. 12). There are many advocates for mandatory fitness programs for fire departments all over the country (Walterhouse,1996, pl.) states that "Individuals are not motivated to exercise on their own. It is, therefore important that physical fitness programs in the fire service be mandatory, and incentives for participation and goal attainment be considered" (Martin ,1999 p. 12).

The Fire Service Joint Labor Management Wellness/ Fitness Initiative calls for the development of a physical fitness and wellness program that is educational and rehabilitative and not punitive.(2000). If a program is mandatory then it only makes sense that non-compliance will eventually lead to punishment of some kind. The Peer fitness trainer will be the link to keep programs on the front burner without making them mandatory. When looking at the description of what is expected of a peer fitness trainer it is obvious that he/she will have a certain responsibility and accountability for the fitness and wellness of his or her peers. He/ she will assist company officers if needed, as well as health center physicians. McDonalds has

served over a billion hamburgers and still must market its products. With this in mind, and exercise not being what most people find fun to do, the Peoria Fire Department will need a strong marketer of wellness and fitness in the form of the peer fitness trainer to make this program work without making it mandatory and eventually punitive. The City of Peoria and its fire department will certainly benefit from this aspect of the peer fitness trainer.

#### DISCUSSION

This research sought to show the need for Peer fitness trainers for the Peoria fire Department. In addition research described where and how fitness trainers could be trained as well as described the benefits that peer fitness trainers would bring to the Fire Department and to the City.

Three organizations that offer peer fitness trainer certifications have been identified by the Fire Service Joint Labor Management Wellness-Fitness Initiative (2000). The American College of Sports Medicine Offers a certification that enables an individual with a minimum of a two year degree or significant fitness experience a chance to test for their certified personal trainer certification (LWW.com). The National Strength and Conditioning Association offers a self study program and written exam to those individuals possessing a BA/BS degree, a Chiropractic degree, or is a senior in an accredited College or University (NSCA@NSCA-lift.org). The American Council on Exercise offers a self study program with written exam to individuals eighteen and over (www.acefitness.org). All programs require applicants to be CPR certified.

Research has indicated that in the Peoria Area there is a community college with a program that prepares students to become personal fitness trainers and to pass the ACE

certification exam (www.nau.edu). The costs of the preparation materials and exam registrations range from about three hundred dollars to almost six hundred dollars.

Research has shown through the study of national trends that there are many reasons why the Peoria Fire Department could benefit from peer fitness trainers promoting the fitness and wellness of firefighters in the City of Peoria. Studies have exposed fire fighting as one of our nations most dangerous occupations including those done by (Fellers, 1997; Davis & Gerkin,1900; and Willford et. al. 1999). The City of Peoria answers fire calls, emergency medical calls, hazardous materials assignments, and a wide variety of technical rescue situations. The risk for Peoria Firefighters to get injured and or suffer medically on the job is just as great as anywhere in the country. Research showed that over two thirds of deaths in the fire service were caused by stress in fire fighters over the age of forty(Lepere,1900). The Peoria Fire Department is made up of a large group in that category.

The research shows that fire departments that have mandatory fitness programs experience improvement in lost injury days, medical payments, and workers compensation claims(Martin, 1999). The benefits the Peoria Fire department and the City would gain from an improved fitness program and member participation via the use of peer fitness trainers would

certainly mirror previous studies. The Fire Service Joint Labor Management Wellness Fitness Initiative calls for a non-punitive approach to fitness for firefighters. Educating members and monitoring their participation and progress through peer fitness trainers is viable option to a mandatory program.

#### RECOMMENDATIONS

The Peoria Fire Department should make a commitment to train members to become peer fitness trainers. I believe the process of identifying members, training them and getting them certified may take almost a year.

Peoria Fire Department Administration must tie the positions into the budget process so funds are available for training and certification of peer fitness trainers. The concept of technician pay must also be addressed at this time. Technician pay is recommended to add accountability to the positions and to compensate for off duty meetings and continuing education. Funds for continuing education must also be identified.

Fire Administration and the Peoria Firefighter Association should meet and discuss and then agree on selection criteria for peer fitness trainer selection. Some criteria that may be considered are education, experience, and time on department.

Once the peer fitness candidates are identified I recommend that they and the program manager choose a course of action for training and certification. The members will have more ownership of the program if the design and implementation is put into their hands.

Finely it is recommended that thorough confidential records be kept on each member to chart trends in the individuals fitness levels both good and bad. Records of the Fire Department as a whole need to be kept in terms of injuries, insurance claims, and lost days.

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# APPENDIX A

# Peer Fitness Trainer Certification Program

# Prerequisites and Cost Breakdown

Certifying	Study Materials	Prerequisites	Examination
Agency	And cost		costs
American	Manual, study	18 years of age	\$200.00
Council	guide, sample	CPR certified	
On Exercise	test		
American	ACSM guideline	2 year degree	\$270.00
Council	For exercise	in Health	
On Sports	testing \$29.95	Related Field	May attend
Medicine		or	workshop for
	ACSM resource	900 Hours of	additional
	Manual \$49.95	practical	\$300.00
		experience in	
	ACSM Health and	fitness setting	
	Fitness track		
	Study Guide	CPR certified	
	\$14.95		

National	Study Guide	BA/BS Degree in	\$225.00
Strength and	\$155.00	Related field	
Conditioning			
Association		Senior Standing	
		At accredited	
		University or	
		College	
		Degree in	
		Chiropractic	
		Medicine	
		CPR Certified	

#### APPENDIX B

#### Peoria Fire Department Fitness Survey

Age:	•
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Rank & Time on Peoria Fire Department:

Estimated years until retirement:

Body Weight when hired: Body weight at the time of survey:

I exercise: 0-1 2-3 4-5 5-6 7 times per week

1. I have had formal training in proper weight lifting techniques. (other than high school PE or sports.

Yes No

2. I know what my target heart rate is.

Yes No

- 3. Write down the formula to figure your target heart rate.
- 4. The amount of calories in a gram of fat is.
- 5. The amount of calories in a gram of protein is.\_\_\_\_\_
- 6. The amount of calories in a gram of carbohydrate is.\_\_\_\_\_
- 7. I often have questions concerning my health and fitness.

Yes No

8. I occasionally have fitness and nutrition questions.

Yes No

9. I seldom have fitness and nutrition questions

Yes No

10. If it were made easy, confidential and accessible I would check my body fat percentage on a regular basis.

Yes No

11. I would utilize the services of a peer fitness trainer while on duty at the fire station.

Yes No

12. I am interested in improving my physical condition

Yes No