

**REDUCING STATION DOWNTIME WITH THE REALLOCATION OF
PERSONNEL ON EMS CALLS**

By: Chris Theders
Station Supervisor
City of Fairfield Fire Department
375 Nilles Road, Fairfield, Ohio 45014

A proposed research project submitted to the Ohio Fire Executive Program

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

1. This paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

2. I have affirmed the use of proper spelling and grammar in this document by using the spell and grammar check functions of a word processing software program and correcting the errors as suggested by the program.

Signed: _____

Printed Name: Chris Theders

ABSTRACT

The City of Fairfield, Ohio, has operated a two-tiered emergency medical services (EMS) system for the last 22 years. Under this plan, a contracted paramedic service and a fire department ambulance were dispatched to all medical calls. The contract paramedics typically responded in non-transport units, while the fire department responded in transport ambulances. The problem arose when the contractor's agreement with the city and the city's minimum staffing policy did not grow with the city. This resulted in a station becoming empty due to a single emergency medical call and in turn, caused a delayed response with fire apparatus while that ambulance was on a call.

The problem this study will address is during minimum manning situations, a firehouse becomes empty due to the staffing assigned to a single EMS call. This causes a delayed response for additional emergencies in the busiest district in Fairfield.

The purpose of this study is if there is a need to restructure EMS response staffing to provide enhanced service to the community.

The paper used an evaluative method to answer the following research questions;

1. How many times in the last year has station two been left with no personnel due to a single EMS call?
2. How many times during this last year has station two received another call for service but was unable to respond due to lack of staffing?
3. What days and times has the lack of personnel at station two caused a delayed response?
4. Should the Fairfield, Ohio Fire Department pursue a reallocation of personnel to improve EMS delivery?

A total of 4,892 EMS reports in 2005 were reviewed for this paper. The information reviewed indicated to answer the questions this paper has proposed. Of the 4,892 reports reviewed, 1,299 were responses by squad two. The research revealed that 20.3% (264) of the calls were received during minimum staffing situations which resulted in the station in question to be unavailable for any further responses. Of the 264 times 11.4% (30) times another call was received for station two while squad two was completing an EMS call. Times of day these runs were dispatched had much more significance. The Fairfield Fire Department splits a 24 hour period into two shifts. A shift is from 0600-1800 hrs, and B shift is 1800-0600. Of the 30 calls involved, 26 were on A shift and only four on B shift.

Recommendations of the research revealed that because of contract constraints, the Fairfield system was over budget. Renegotiating the medic contract could fund improvements while adding to the department's budget. Additionally, by reallocating existing personnel, the department could significantly reduce the station closure issue and increase the amount of available apparatus and personnel to respond if necessary.

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INTRODUCTION

Statement of the Problem

During minimum staffing situations, station two, one of the busiest stations in the City of Fairfield, may be empty do to a single EMS call. The department is currently running a two-tiered EMS response to all medical calls; this response is a transport ambulance and a non-transport paramedic unit.

The Fairfield Fire Department has been stuck in the dark ages for too long. Since the city's inception in 1950, the Fire Department remained volunteer for over 40 years. In the 1970's and 1980's the department had an abundance of volunteers. In the late 1980's and early 1990's the volunteer pool dried up and the department moved toward part-time employees to fill the void. Part-time employees were first used only during the day and then when run volume increased, the department covered all stations 24 hours a day with part-time employees. The department opened a third station in 1991 which was used as headquarters. Due to the manning situation and contract with an outside agency one of the three stations was closed.

In 1993 the department's staffing had increased to six and all three stations were opened with 24 hour coverage with two personnel on duty at each station.

Since 1993 the city has grown by leaps and bounds. The run volume in 1993 was slightly over 1100 runs combined. In 2005 the department had over 4000 calls that required an ambulance or fire truck to respond. The staffing is now nine personnel minimum and 12 personnel maximum for the same three stations.

The problem this study will address is during minimum manning situations, a firehouse becomes empty due to the staffing assigned to a single EMS call. This causes a delayed response for additional emergencies in the busiest district in Fairfield.

The purpose of this study is if there is a need to restructure EMS response staffing to provide enhanced service to the City of Fairfield.

An evaluative research method was used to answer the following questions:

- 1. How many times in the last year has station two been left with no personnel due to a single EMS call?*
- 2. How many times during this last year has station two received another call for service but was unable to respond due to lack of staffing?*
- 3. What days and times has the lack of personnel at station 2 caused a delayed response?*
- 4. Should the Fairfield, Ohio Fire Department pursue a reallocation of personnel to improve EMS delivery?*

BACKGROUND AND SIGNIFICANCE

In 1984 the Fairfield Fire Department responded out of two stations, covered 21 square miles with a residential population of approximately 30,000 residents. Each station handled both fire and medical calls with a completely volunteer department. In 1984 two huge advancements were made in the fire department; a fulltime fire chief was hired and a community action group conducted a study and determined that the community needed paramedics on duty 24 hours a day. A local firefighter/paramedic from a neighboring department was contacted and developed a company to handle this problem. This was the time; Independent Specialized Paramedics Incorporated (ISPI) was formed.

Since the company's inception until approximately 1995, ISPI provided two certified paramedics who handled a non-transport paramedic unit within the city. In 1995 they negotiated a second unit and now provide the community with four certified paramedics 24 hours a day. Many of the paramedics hired by this company currently work for or are retired from the City of Cincinnati and City of Hamilton Fire Departments.

In July of 2001, nine of the fulltime firefighters from Fairfield graduated from paramedic school and began a blended response with ISPI. The City of Fairfield Fire Department currently has three stations which cover 21 square miles and a population of 47,000 residents. All three stations handle fire and EMS calls. The EMS staffing is as follows: station one (headquarters) – one fulltime firefighter/paramedic (FF-P), one part-time firefighter/emergency medical technician (PT FF/EMT) assigned to a basic life support (BLS) ambulance and two contract ISPI paramedics assigned to a non-transport paramedic unit. Station two has one fulltime FF/P, one PT FF/EMT assigned to a BLS transport ambulance, one fulltime FF/P and one contract ISPI paramedic assigned to a non-transport Paramedic unit. Station three has one fulltime FF/P and

one contract ISPI paramedic assigned to an advanced life support (ALS) transport ambulance. Station three, which is in the center of the city, does not have a non-transport paramedic unit. Therefore, when an EMS call is received, the district is split into two sections. Which side the EMS call is in, will determine which non-transport paramedic unit responds to the call.

When all three stations are dispatched on EMS calls with this response system, there are only three personnel available for a fire response (one firefighter at headquarters and two firefighters at station three). Station two would not have any personnel available to respond. Even though the schedule allows for staffing of twelve fire personnel, minimum staffing is set at nine, so no overtime is initiated until staffing drops below this mark. The staffing situation and the two tiered EMS response place tactical limitations on the fire suppression capabilities and the personnel available to respond to these types of calls.

The contract paramedics do not assist in any fire suppression activities. The four personnel assigned on a daily basis only provide paramedic service. An area of concern for the department is the contractor's medical director who also functions as our department's medical director. The medical director has the responsibility to determine who can dispense medication under his drug license. He has not allowed part-time personnel with paramedic certification to function as paramedics within the Fairfield Fire Department. There are many times that we have three to four part-time firefighter/paramedics on duty and we are unable to use their skills and knowledge on calls we respond to. These part-time firefighter/paramedics are counted into the departments daily staffing. Allowing these personnel to use their skills would not solve the station downtime issue, but may allow the department to provide additional paramedic rotations on the advanced life support units.

The main focus in this research is to evaluate the situation at station two during minimum staffing. During this time there are three firefighting personnel and one contract ISPI paramedic. When an EMS call is received at this station two suppression personnel are assigned to the ambulance and the third suppression personnel is assigned to the paramedic unit along with the one contract ISPI paramedic. This leaves the station empty! One EMS call empties a firehouse and the station is out of service until the ambulance returns.

This problem has become very serious. This study will investigate if by reallocating personnel that are already on duty we can enable them to assume a higher level of response; this should increase the safety for the department members and the people in the community.

If this research results in a solution to the problem, the residents and visitors of our community would benefit the most. The department would be able to provide a more efficient service which leaves more personnel available to assist or take further calls if needed.

LITERATURE REVIEW

The purpose of this literature review is to examine existing documentation relative to the staffing levels of not only EMS calls but remaining staffing and their availability within the City of Fairfield. Several applied research papers from the Learning Resource Center of the National Fire Academy were reviewed for this project. Numerous journal articles, periodicals, books and published standards were utilized to provide additional information to answer the research questions.

Carter (2001) stated “In the continuing saga of short –staffing tragedies comes to us from the Commonwealth of Massachusetts.” In January, 2001 a fire in Ipswich took the lives of a mother and her two children. What makes this story so difficult is the first unit that arrived at the fire was a ladder truck with a single firefighter on board. Carter stated, “It is situations like these that have led the many professional thinkers within the fire service to come together behind the concept of deployment standards. NFPA Standard 1710 is the Standard for the Organization and Deployment of Fire Suppression, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. Many groups are campaigning against this standard; they include the International City Manager’s Association and the League of Cities.

It is easy to see why the two groups listed above might protest the standard that specifies response times and staffing levels. They might actually have to hire enough fire personnel to staff a safe operation. And therein lays the single most important reason why response and deployment standards are so essential.” (Carter, 2001).

Finley (1999) wrote on a staffing study conducted by the Palm Beach County, Florida Fire Rescue Department. Different crews were evaluated on their performance while completing basic fire ground evolutions utilizing crews of varying size. In this study three to four personnel

groups were used. A total of four different evolutions were evaluated. The study showed that crews staffed with three firefighters required between 30 seconds and two minutes to complete the evolutions, 30 seconds longer than completing the same evolution as crews staffed with four personnel.

Bruno (1992), wrote in favor of the adoption of a minimum staffing standard arguing that understaffed fire companies, which he defined as three member companies, not only compromise the safety of the firefighters but also those who they must protect.

Carter (2002) describes how leaders direct or misdirect the capability levels within their departments. “We need to begin operating within our capability levels. The leaders of the fire service need to harness and better direct the enthusiastic response of our fire service personnel. It is truly a control issue. We must learn to be more realistic in what we promise to our politicians and to our citizens. If we can only provide six people’s worth of labor, then our politicians and administrators need to know that this all that they can expect from us.” (p. 2)

In an article for Firehouse Magazine, Gary Ludwig, 1999 states “Another requirement in the standard of NFPA 1710 is that all personnel dispatched to an ALS emergency should include a minimum of two people trained at the EMT-P level and two people trained at the EMT level.” The way these personnel arrive on scene is determined by the specific jurisdiction which the call is received. According to Ludwig (1999), “One thing is sure about the fire service – we have a variety of methods for delivering emergency medical care. One aspect is the increasing popularity of the Advanced Life Support or paramedic engine company concept.”

Alfred Whitehead makes a similar statement in an article for Fire Chief Magazine. He states “A dual-role fire/medic EMS system not only offers a substantial upgrade, but also can save municipalities money by eliminating the need for duplicating the capabilities of the fire

emergency response system through a costly third service or by paying a private contractor that must account for a profit.” (Whitehead, 1996 pg. 40).

45% of the nation’s pre-hospital care is provided by career fire departments, another 17% by volunteer fire departments, and 9% by a third service in which ambulances are operated by hospitals or municipal health departments. Private ambulance companies provide the remaining 28%. (Bruno, 1997 pg. 10).

According to Rubin (1997), Dothan, Alabama was able to replace three rescue apparatus by using paramedic engine companies. This increased the staffing on the engine companies and reduced the average response time by two minutes.

Whitehead agrees with Rubin, according to a study in 1990 by the *Annals of Emergency Medicine*, fire-based ALS systems logged an average response time of 5.5 minutes, compared to 7.3 minutes for non-fire-based ALS systems. (Whitehead, 1996)

Another benefit that the Dothan Fire Department realized from the introduction of the paramedic engine concept was department unity. Over the years, two classes of people had evolved, fire medics and suppression staff. By assuring that all members were cross-trained to participate with all aspects of the workload, the department unified (Rubin, 1997, p. 72).

Finley, 1999 references National Fire Protection Association 1500 and the Occupational Safety and Health Administration (OSHA), Respiratory Protection Standard (29 CFR 1910.134). In 1997, the NFPA issued the first edition of NFPA 1500, *Fire Service Occupational Safety and Health Program*. As a nationally recognized organization in fire related issues, NFPA 1500 was recognized as the first standard that addressed firefighter safety in a comprehensive way. In the appendix to NFPA 1500 was a recommendation that a minimum of four firefighters should respond or arrive with each engine or ladder company. The recommended number increases to 5

on an engine and six on a ladder in high risk areas. Unfortunately, since these recommendations are contained within the appendix to the standard, and not within the standard itself, they are considered just that, recommendations, not part of the requirements of the standard (Finley, 1999).

Finley also writes, on October 8, 1998, the Occupational Safety and Health Administration Respiratory Protection Standard (29 CFR 1910.134) took effect at the state level. This regulation, commonly referred to as “two in – two out” requires that when two members enter an atmosphere that is immediately dangerous to life and health, two members must remain outside to effect rescue if necessary. The only exception to this requirement of assembling four personnel prior to commencing operations is to effect rescue operations (Finley, 1999).

PROCEDURES

The desired outcome of this research project was to evaluate if there is a need to restructure the City of Fairfield Fire Departments EMS staffing to provide enhanced service to the community. The research project gathered and analyzed information which relates to the problem of a delayed response when one of the busiest stations becomes empty during an EMS call.

The research for this paper began with a literature review that was conducted by utilizing numerous periodical articles and Executive Fire Officer papers from the Learning Resource Center of the National Fire Academy. Additional information was obtained from periodicals reviewed at the City of Fairfield Lane Public Library and periodicals obtained online from various fire and EMS based publications.

Most if not all of the information required to answer the research questions was obtained from the City of Fairfield Emergency Reporting Database. The database is owned and updated by Reporting Systems Inc. The information tabulated started from January 1st, 2005 and end December 31, 2005. All data are public record and obtained through the internet based reporting website. Total population for this study will contain all EMS reports spanning the above date criteria.

Information compiled was very specific and required comparing data from individual run reports. Data collected compared daily staffing from the departments daily shift records with information in the emergency reporting database. No names or specific medical information was used in data analysis.

To answer question one; “How many times in the last year has station two been left with no personnel due to a single EMS call?” Using the above date criteria, each daily shift personnel

log was reviewed to see if personnel assigned at the affected station were at minimum staffing. Minimum staffing constitutes 3 fire department personnel and one ISPI personnel at station two. Daily shift personnel logs are maintained by the department on a database, available to all employees. The database is maintained on the system for 5 years and then stored to disk for storage.

Each monthly EMS log on Emergency Reporting was reviewed to determine how many times during minimum staffing an EMS call was received for that station. By analyzing this information the department will be able to track, if this staffing issue is actually an concern that happens week by week or day by day. This same database information was used to answer question two, "How many times during this last year has station two received another call for service but was unable to respond due to lack of staffing?" For this part of the data collection, a summary of all EMS calls in 2005 was reviewed. The mean out of service time from dispatch to back at station was 56 minutes. All EMS call times were calculated including calls which were no transports and calls which required transport out of the city. With that said, for clarity and ease of calculations, an EMS call reviewed in the context of this paper will be calculated as one hour from dispatch to back in-service at the station. This directly correlates to the purpose of this study, by determining how many times the station was empty due to an EMS call the department can decide if the current allocation of resources is adequate for the city and its residents.

To answer question three, "What days and times has the lack of personnel at station two caused a delayed response?" the same methodology will be used. First, by reviewing the department's daily shift personnel log it was determined what days station two was at minimum staffing. Then, for those days, each shift was broken down by the hour to determine when calls were received. This allowed the author to examine days and time of day when the station could

not make an emergency run. This type of analysis was done in order to look for trends or patterns when station two is not able to deliver emergency services. This information relates directly to the problem of this study, by determining date and times of a lack of personnel could directly effect the response times of other responding units (i.e. heavy traffic times and busy travel days). Question four is “Should the Fairfield, Ohio Fire Department pursue a reallocation of personnel to improve EMS delivery?” This question relies on the combined results of the data collected during the above review and the parameters under which the department operates. Once all data has been reviewed and calculated, a better understanding of a solution to this problem will be apparent.

There were several limitations to this research. First, the department has only used MBI Solutions Emergency Reporting Software since the beginning of 2005. Information obtained was limited to a one year period. The software also has only certain parameters which can be used for data collection. This limited the data which could be extracted from it.

Another limitation is that the department’s daily shift personnel logs may not have been accurate. That is data contained in the file is typically entered days before the shift has started. This information is based upon who is either assigned or signed up to work a specific shift. If personnel call off or are moved stations without the database being updated the information may not be accurate.

The author avoided using ambiguous terms and jargon throughout the paper, but some terms seemed to be confusing so they will be addressed here. “Daily shift personnel log” is a database developed and supported by the City of Fairfield Fire Department. The database is maintained by the shift supervisor and updated throughout the day if needed. The daily shift personnel log is available to all personnel; it not only shows station assignments but also lists

personnel assignment on each emergency vehicle. The EMS log is a data set maintained by Emergency Reporting. This log lists all EMS calls the department has responded too. The EMS log can be viewed daily, weekly, monthly, or yearly. For the purpose of this research the monthly data set was used to obtain information.

RESULTS

A total of 4,892 EMS reports generated by the City of Fairfield Fire Department over a period spanning January 1, 2005 to December 31, 2005 were reviewed for information to answer the research questions. Of the 4,892 reports reviewed, 1,299 were responses by squad two, which is located at station two and is the primary focus of this project. All results were obtained by electronic data which is available as public record.

Regarding question one, how many times in the last year has station two been left with no personnel due to a single EMS call? The research revealed that of the 1,299 calls squad two received during 2005, 20.3% (264) of the calls were received during minimum staffing situations. This resulted in station two being unavailable for any additional responses until the EMS unit returned. It is important to note the remaining 79.7% (1035) calls resulted in only one person being left back at the station to respond in a ladder truck if requested on another call (See Appendix A-1 for annual figures).

Question two, how many times during this last year has station two received another call for service but was unable to respond due to lack of staffing? The information pertaining to this question includes only EMS calls for service. Of the 264 times in 2005 when an EMS call was received during minimum staffing situations, 11.4% (30) times another call was received for station two while squad two was completing an EMS call. (See Appendix A-2 for annual figures).

Question three, was what days and times has the lack of personnel at station two caused a delayed response? Pertaining to the first part of the question the data revealed that there were 30 calls for service which were received while squad two was completing an EMS call. The breakdown of these calls are as follows; five calls on Sunday and Monday, three calls on

Tuesday, four calls on Wednesday, three on Thursday, four on Friday and three on Saturday. It is important to note that three of the above days had more than one call for service. In reviewing this data, it was noted that there was no significant relationship between the day of the week and the amount of calls received during minimum staffing situations (Appendix A-3 for annual comparison). Pertaining to the second part of this question, times of day these runs were dispatched appeared to have much more significance. The Fairfield Fire Department splits a 24 hour period into two shifts. A shift is from 0600-1800 hrs, and B shift is 1800-0600. Of the 30 calls mentioned earlier in this section, 26 were on A shift and only four on B shift. The most significant time period that calls were received and the station was unable to respond was between the hours of 1300-1600 hours. 17 of these calls were received during that period. (Appendix A-4 for annual comparison).

Question four, should the Fairfield, Ohio Fire Department pursue a reallocation of personnel to improve EMS delivery? Over 20% of the calls received at station two caused the station to be left empty. Using the average out of service time for a single EMS call (one hour), the station was left empty 264 hours. This period of time is equivalent to 11 days without any fire or EMS coverage for that district. Since there appears to be no particular day(s) of the week in which the station is left empty. Any reallocation solution should be consistent across the days of the week.

DISCUSSION

The information gathered through this research seems to emphasize three major points with regard to the questions for which answers were sought. First, there is direct correlation between staffing levels on EMS calls and the availability of remaining personnel to perform effectively on the fire ground. Second, there is a definitive relationship between cross trained personnel and a unified department. Lastly, Advanced Life Support (ALS) engine companies can efficiently keep more personnel available while keeping quality of care at a high standard. All three issues will be discussed in this section. Several incidents were discussed earlier in this paper in which staffing levels on apparatus, or perhaps lack of staffing, had a negative effect on fireground operations. Carter (2001) states, In January, 2001 a fire in Ipswich took the lives of a mother and her two children. What makes this story so difficult is the first unit that arrived at the fire was a ladder truck with a single firefighter on board. This point is extremely relevant since of the 1,299 EMS calls that S-2 received in 2005, 79.1% (1035) left only one personnel back at the station to respond on a ladder truck if needed. On the issue of minimum staffing standards Bruno (1992) wrote that understaffed fire companies, which he defined as three member companies, not only compromise the safety of the firefighters but also those who they must protect.

Much of the staffing issues many departments face are directly attributed to the lack of specific standards in NFPA 1500, and the OSHA (29 CFR 1910.134) Respiratory Protection Standard. Both documents allow exemptions, to the four person minimum, this includes interior firefighting and rescue operations. NFPA 1500 is the widely recognized standard on the issue of firefighter safety. However, it does not address the need for assembling a minimum of four personnel prior to commencing interior firefighting operations; it leaves the method for

assembling these personnel up to the individual department. OSHA's Respiratory Protection Standard, 29 CFR 1910.134, commonly referred to as two in-two out, also addresses the need for a minimum of four personnel to be assembled prior to commencing interior structural firefighting operations. However, much the same as NFPA 1500, the method of assembling these personnel is left up to the individual department.

Both of the NFPA and OSHA documents have exceptions to the four person minimum, for rescue operations. It is feasible that personnel could be faced with the extremely dangerous prospect of entering a building alone with no backup personnel in place.

With the use of the contractor within the City of Fairfield Fire Department, unity and morale of the department has many times been low. The contractor which provides only EMS functions limits the capabilities that the department can provide. Another discussion point is the contractor's relationship to the department as an employee. Many times the contractor personnel on duty do not assist with station details and upkeep on apparatus. This topic reinforces the point made by Rubin (1997) The Dothan Fire Department realized from the introduction of the paramedic engine concept was department unity. Over the years, two classes of people had evolved, fire medics and suppression staff. By assuring that all members were cross-trained to participate with all aspects of the workload, the department unified. (Rubin, 1997).

Looking at staffing levels from the perspective on how they are utilized within the department is a major discussion point in this paper. Ludwig (1999) states a requirement of the NFPA 1710 standard is that all personnel dispatched to an ALS emergency should include a minimum of two trained personnel at the EMT-P level and two people trained at the EMT level. The way these personnel arrive on scene is determined by the specific jurisdiction with the call is received. This author agrees with a statement made by Ludwig, we have a variety of methods of

delivering emergency medical care; one aspect is the increasing popularity of the Advanced Life Support or paramedic engine company concept.

Any reallocation recommendations would have a future impact in the community. Possible solutions to this issue are; the elimination of the two tiered emergency medical service (EMS) response within the department. Adding additional full-time and part-time personnel to supplement staffing and thus reduce station downtime, reduction or elimination of the contract paramedic service and even using a combination of these ideas. A possible scenario of personnel reallocation with existing staffing could be as follows: Station one (headquarters) has one fulltime FF/P, one contract IPSI paramedic assigned to an ALS transport ambulance, one contract ISPI paramedic supervisor assigned to a non-transport paramedic unit. Station two has one fulltime FF/P, and one contract ISPI paramedic assigned to an ALS transport ambulance. Station three has one fulltime FF/P and one contract ISPI paramedic assigned to an ALS transport ambulance.

This reallocation of personnel will have impact on the number of personnel available to respond with all three stations responding to EMS calls. (Two personnel at HQ, two personnel at station two and two personnel at station three). The personnel not assigned to an EMS unit could respond with their assigned fire apparatus to supply additional help on an EMS call or respond to a fire emergency in their respective districts. Such a reallocation of personnel would not cause the contract to lose any of their contract monies and would not cause the city any additional expense for personnel.

RECOMMENDATIONS

After completion of this applied research project, the author feels that the following recommendations should be implemented.

1. Gain approval for a total blended service between the ISPI contractor and the Fire Department.
2. Discontinue the two-tier EMS system with transport and non-transport EMS units.
3. Develop a standard operating procedure and implement the use of an ALS engine company.
4. Standardize and equip all ALS engine companies with 12 lead electro-cardiology equipment.
5. Allow part-time personnel with paramedic certification use their skills.
6. Re-negotiate or not renew the current contract between ISPI and the city.
7. Recommend attention to the staffing issue within the entire department.

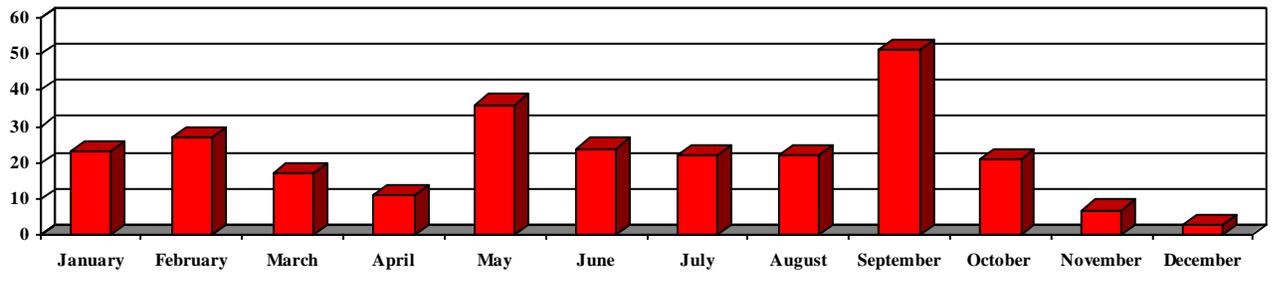
Accomplishment of these recommendations should provide all the citizens of Fairfield an improved emergency care system that has no adverse effects on the city's budget.

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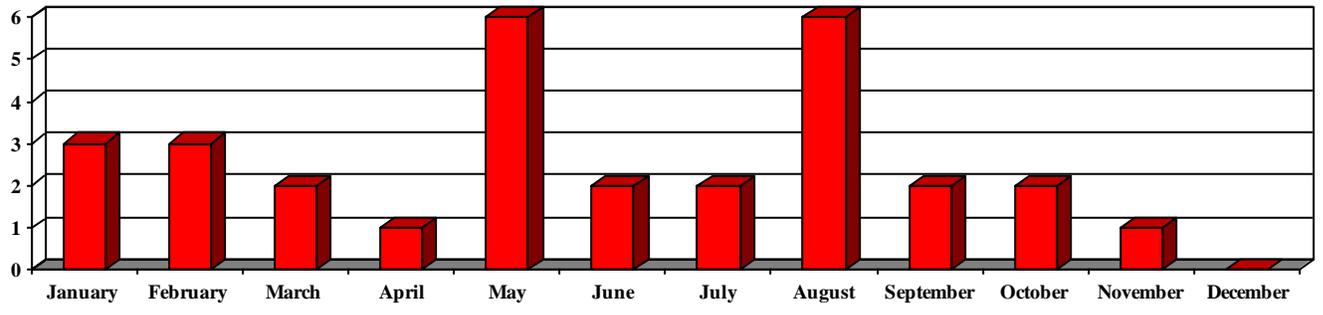
APPENDIX A-1

AMOUNT OF EMS CALLS RECEIVED DURING MINIMUM STAFFING



APPENDIX A-2

TIMES ANOTHER EMERGENCY CALL WAS RECEIVED AND STATION 2 WAS UNABLE TO RESPOND?

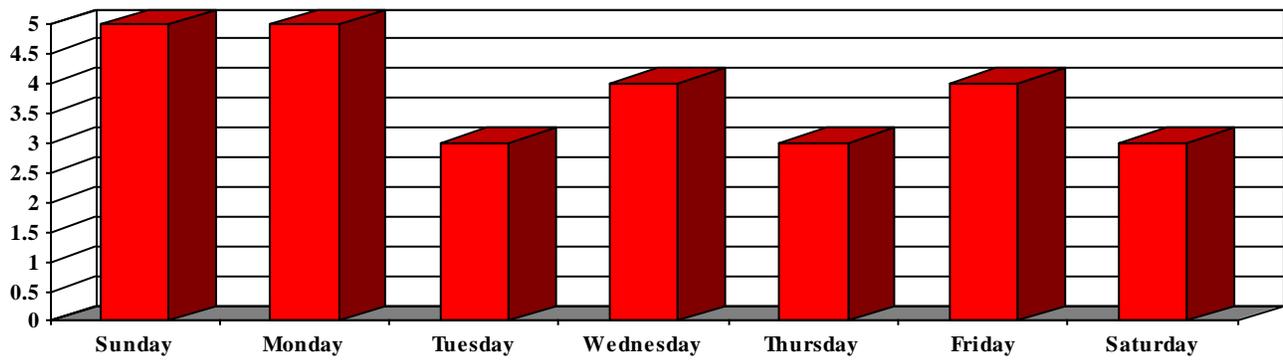


APPENDIX A-3

WHAT DAYS AND TIMES HAS THE LACK OF PERSONNEL AT THIS STATION

CAUSED A DELAYED RESPONSE?

DAYS OF THE WEEK

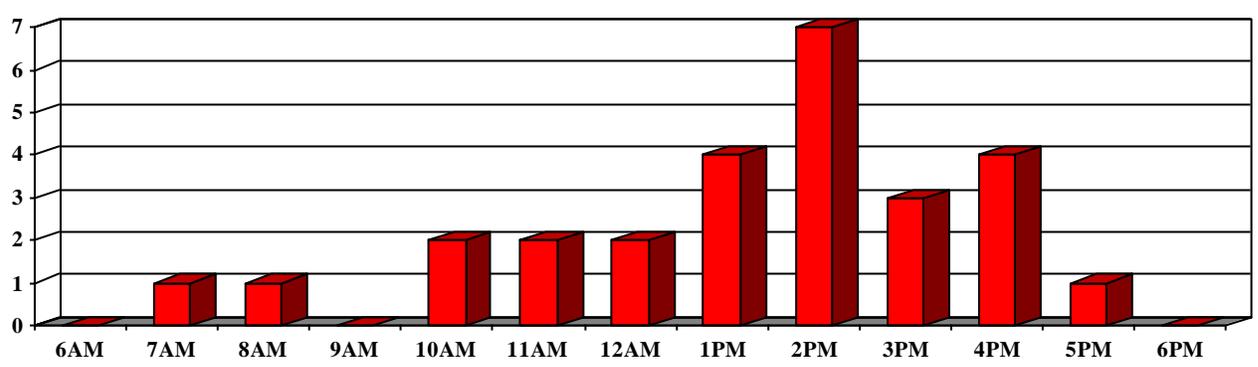


APPENDIX A-4

WHAT DAYS AND TIMES HAS THE LACK OF PERSONNEL AT THIS STATION

CAUSED A DELAYED RESPONSE?

TIMES OF THE DAY 6AM TO 6 PM



TIMES OF THE DAY 7PM TO 5AM

