NON-EMERGENT CALLS FOR MEDICAL SERVICES IN FAIRFIELD OHIO

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CERTIFICATION STATEMENT

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ABSTRACT

The City of Fairfield Fire Department (FFD) has experienced a twelve percent increase of emergency medical service (EMS) calls for service since 2012. While these calls for EMS have continued to rise, the number of staffing and emergency vehicles has remained unchanged since 1997.

The problem this study addressed was the impact of non-emergent requests for EMS in the City of Fairfield, Ohio. These non-emergent calls for service have contributed to an increase in operating costs for the City of Fairfield, its taxpayers and decreased training completed by the fire department. The purpose of this study was to identify and describe how the FFD can reduce the negative impact of non-emergent requests for emergency medical services.

Descriptive research was conducted to answer the questions as to how often these types of calls for service occur, what are if any, the impacts that these calls for service have on the Fairfield Fire Department and how other similar types of fire departments are responding to non-emergent calls for service.

Data collection for this study included a survey to collect data from other fire departments within the Southwest Ohio region, FFD internal records, and personal interviews with key players and available dispatch information from the City of Fairfield dispatch center.

A literature review revealed that EMS misuse was a nationwide problem. According to one of the departments surveyed, there are strategies in place to reduce the impact of non-emergent calls for service. Many EMS agencies outside Ohio have been combating these issues for years. According to three of the surveys conducted in this research, fire departments within the Southwest Ohio region have also initiated strategies to combat the impact of non-emergent requests for EMS.

The result of the research indicated that developing a community paramedicine program could provide relief from the negative effects of non-emergent calls for service and that calls for service need to be classified utilizing a Priority Dispatch program. Recommendations of the research contained in this project showed that developing a public education program, coupled with a community paramedicine program and a priority-dispatching program might provide relief from the negative effects of non-emergent requests for EMS.

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INTRODUCTION

The problem this study will address is the negative impact created by non-emergent requests for emergency medical services in the City of Fairfield, Ohio. These non-emergent requests were contributing to an increase in costs for the City of Fairfield, the taxpayers in Fairfield, and decreased training for the Fairfield Fire Department. These requests were causing Fairfield Fire Department response units to be tied up, requiring other agencies to care for Fairfield residents.

Donovan (2009) notes that the inappropriate use of emergency medical services (EMS) transport remains a growing problem in the United States. It also is a significant dilemma around the world, as socialized health care does not effectively discourage inappropriate ambulance use. Often patients who do not have true emergencies and have the ability to transport themselves to the hospital call 9-1-1 instead. Thus, inappropriate EMS transport is an expensive problem for society. Many patients repeatedly utilize EMS transport for non-emergencies and do so without penalty. Because of limitations on EMS providers' ability to triage patients at the scene, there is little choice but to transport these patients to the emergency department. Patients with critical traumatic injuries or serious medical problems may require immediate transport to the emergency department by appropriate-level EMS providers.

Misuse of EMS occurs when patients with non-urgent medical conditions utilize EMS transport or when these patients do not have alternate means of transportation to the emergency department. In these circumstances, fewer ambulance units are available to respond to true emergencies. To deny non-emergent and possibly emergent patients transport to the emergency department exposes the EMS provider to risk of malpractice. It also may put some patients at

medical risk if their emergent conditions are not recognized.

Purpose of the Study

The purpose of this study is to identify and describe, through descriptive research, how the Fairfield Fire Department can reduce the negative impact caused by non-emergent requests for EMS. Fairfield Firefighters have been asked to do more with the same amount of resources. The number of non-emergency medical calls for service continued to rise each year resulting in more patients being treated and transported to area hospitals for evaluation resulting in decreased training, increased financial strain, and increased response times.

Gordon Graham has stated, “If it’s predictable it’s preventable”. (LA incident lawyer, 2010). If the Fairfield Fire Department were able to predict and prevent some of these non-emergent calls for service by studying this information, the organization should be able to prevent some of these non-emergent calls from occurring.

The outcomes of this study will be used to develop strategies to reduce the number of non-emergent calls for service, a public education program, a new response policy for non-emergent calls for service and potentially develop a community paramedicine program to be presented to the FFD administration.

Research Questions

The following questions will be answered by this descriptive research:

1. How often do non-emergent requests for service occur in Fairfield, and what are the impacts of responding to non-emergent calls for service?
2. What criteria are similar communities using to respond to non-emergency calls?
3. What are the current capabilities of the Fairfield Fire Department's current data tracking system regarding non-emergent calls for service?
4. What strategies can be implemented by the FFD to reduce the impact of non-emergent EMS requests?

BACKGROUND AND SIGNIFICANCE

The Fairfield Fire Department (FFD) serves the City of Fairfield, Ohio located in Butler County in the southwestern region of Ohio. The city is 21.06 square miles. Fairfield was incorporated in 1952 and has a population of 42,510.

Fairfield has experienced growth with the increase of industrial properties. Within the last two years four new large manufacturing facilities have been developed within the city (http://www.fairfield-city.org). Emergency medical services are provided by the FFD and supplemented with mutual aid agreements with surrounding fire departments. Fairfield is home to Mercy Fairfield Hospital. A majority of patients transported by the FFD are transported to Mercy Fairfield. Fairfield also has numerous nursing homes and independent living facilities located within the department's response district. Fairfield Fire Chief Don Bennett advised that there is currently construction of a new senior living center that has 125 independent apartments within the response districts. (D. Bennett, personal communication, winter 2016).

Since 2002, department policy requires that all EMS calls for service are to be responded to with an emergent response. The department subcontracted its emergency medical services until 2006. In 2006, FFD took the responsibility of handling all EMS responses within the City of Fairfield. The staffing levels have remained the same for the past 12 years despite the increase in call volume.

FFD does not collect information regarding emergent or non-emergent responses every EMS service request. The response policy does not delineate between emergent or non-emergent calls for service. This potentially increases the safety risk of the employees of Fairfield Fire Department as well as residents and by-standards within the city limits of Fairfield.

The fire department's three EMS Lieutenants are responsible for reviewing patient care reports. These reports are reviewed for accuracy and not the cause of request for service. FFD utilizes the Emergency Reporting software program for run report completion and reporting. The patient's treatment received by the responding crew can be used to gauge the patient's need for EMS.

The increase in calls for emergency medical services must be analyzed to ensure the right approach is being applied. Over the last eight years, the FFD has experienced a steady increase in calls for emergency service. The medical calls for service were the largest component of the growth of calls. Although during the past two years that growth has begun to stabilize, the non-emergent calls have seemed to continue to grow. Medical calls in Fairfield have increased by approximately 12% since 2010 (www.fairfield-city.org, 2016).

The average response time by FFD paramedic units has increased over the past three years. The average response time in 2014 was four minutes and thirty seconds. The average response time in 2016 increased to five minutes and three seconds. The calls for service also increased from 5,830 in 2014 to 6012 in 2016. From the period of August 1, 2014 to August 1, 2017, FFD had made 11,610 EMS calls. Of those 11,610 calls, 498 were non-transport calls for service and 1,096 calls required no treatment by the responding crews (www.fairfield-city.org, 2016). Additionally, the fiscal costs of providing this service can have a negative impact of available funds for the fire department. FFD has needed to replace all three of its medic units within the past five years. Each medic unit has cost the City of Fairfield roughly $250,000 per unit to replace. Once the medic unit is dispatched, the firefighters are no longer able to make another run until they have cleared the scene or hospital and are back in service. During these non-emergent calls, should another emergent call for service arise, another response unit would

be sent from another district, creating a delay in patient care which could affect the outcome of the run (D. Bennett, personal communication, 2017).

There are emergency dispatch programs in Fairfield that are not being utilized for dispatching units in a non-emergent status. This program is called Emergency Medical Dispatch. According to the principles of Emergency Medical Dispatch, most systems are able to identify critical calls, such as cardiac arrest, airway problems, unconsciousness, severe trauma, hypovolemia and true obstetrical emergencies. The early identification of these life-threatening emergencies determines that an emergent response is sent. For the majority of other problems planners need to carefully consider a less than all-out response (Clawson & Dernocoeur, 2004).

There may be issues with responding non-emergent to calls for service. The public may expect that their call to 911 be met with a priority and that the fire department arrives urgently and quickly. There are calls that are dispatched as emergencies simply because the caller utilized the 911 service to communicate their request for services.

The potential impact this study could have on the FFD is a reduction in non-emergent run volume, reductions in operating costs, decreased and interruption in department trainings.

LITERATURE REVIEW

The literature reviewed for this research project included other authors' perspectives on misuse of the emergency medical system, the potential causes for this EMS misuses, potential solutions and data related to the Fairfield Fire Department and the EMS responses made.

In researching information about fire departments responding to non-emergent 9-1-1 medical calls for service, it became apparent that the fire service must work harder to educate the public about what is a true emergency and what is a non-emergent need. Through education and public outreach, the fire departments affected by non-emergent calls for service have the potential to become a prevention department and take a proactive approach to our community's needs. The word emergent is defined as arising unexpectedly or calling for prompt action. (Merriam-Webster, n.d.). When a 9-1-1 call is placed, it is assumed that firefighters and paramedics are responding to a call for service because of an emergency, which is not always the case.

A listing of non-emergency situations exists on the Blue Cross Insurance company website for customers to view. Non-emergencies were defined as follows: a cold or the flu, earache, sore throat, using the emergency room for your convenience and using the emergency room for conditions able to be treated in a Doctor's office during normal office hours. ("Examples of non-emergency care", 2011).

The United Kingdom has piloted a program to introduce a dedicated non-emergent phone number for patients to utilize as an alternative to calling 911. The pilot program has a different three-digit phone number and is designed to allow access to emergency information over the phone. Some of the information callers can access consists of afterhours health advice from

doctors, dentists, and pharmacists, to ask questions rather than going to the emergency room for this information (Littler, 2010).

In Upland, California the city and fire department are considering starting to charge the skilled nursing home facility for non-emergent calls for 9-1-1 emergent services. They had asked the facility to utilize private ambulance services to transport non-emergent patients as the department responds to emergency calls for EMS (Emerson, 2011).

Johnson and Musgrave (2014), bring to light some of the problems associated with EMS abuse in Lexington, Kentucky. Here, the cost of providing EMS far outweighs EMS billing collection. Consequently, the cost of workers, fuel, supplies and vehicle wear and tear used by non-billable, non-emergent calls for service resulted in a further burden to the city budget.

According to D. Bennett (personal communication, July 20, 2017), the average cost for a non-transport EMS call for service ranges between one-thousand and fifteen hundred dollars per call. This includes wear and tear on the vehicles, supplies used and employee wages. This cost can increase due to fuel costs, how many supplies were used and the amount of time spent on these types of calls.

According to WebMD Health News (Martin, Laura MD, 2011), one in three people do not understand when an ambulance is not necessary to deal with common medical situations. They conducted a survey and found that most people know when to call an ambulance for life-threatening medical emergencies like a heart attack, but many do not understand when an ambulance is not needed for less urgent situations like a woman going into early stages of labor. These results are based on an online survey of one-hundred- fifty adults in the U.K., but researchers suggest the findings may also apply to the U.S., where several previous studies have demonstrated that misuse of ambulance services is an issue. The participants were presented with

twelve common medical scenarios that may require urgent medical attention and asked to identify when they would call for an ambulance or take other action, such as seek medical advice, self-medicate, or do nothing. The study showed almost all could correctly identify that an ambulance was needed in at least three out of five medical emergencies. When it came to knowing when an ambulance was not needed, researchers found the results were not as promising. Most participants only correctly identified two out of seven non-urgent medical scenarios. The study also indicated that most people would have still called an ambulance for non-emergent situations such as; a woman going into the early stages of labor, a man with chronic back pain who has run out of painkillers, a drunk man being sick (but not unconscious), a 3-year-old with a piece of Lego stuck in his nose, a single episode of blood in the urine and a toddler with a bruise on his head

In researching who is making the 9-1-1 non-emergent medical calls the District of Columbia Fire Emergency Medical Services (DCFEMS) had dealt with a very similar problem. DCFEMS utilized their ambulance billing company to locate the top twenty-five high volume users of their 9-1-1 medical systems (Garza, 2008). Of all the calls for EMS generated it was estimated by the National Academies of Emergency Dispatch (NAED) that twenty five percent are classified as non-life threatening and do not require a paramedic or advanced life support (ALS). Many of these runs could be handled by less trained emergency medical technicians with basic life support (Clawson, 2008). In America, it is estimated that about six percent of 9-1-1 calls for emergency services are not in need of a true emergency response and/or transport. The remainders of these calls do require an ambulance and should call 9-1-1 (Clawson, 2008).

Between 2012 and 2050, the United States will experience considerable growth in its older population. In 2050, the population aged sixty-five and over is projected to be 83.7 million, almost double its estimated population of 43.1 million in 2012. The baby boomers are largely responsible for this increase in the older population, as they began turning sixty-five in 2011. By 2050, the surviving baby boomers will be over the age of eighty-five. The aging of the population will have wide-ranging implications for the country. By "aging" demographers often mean that the proportion of the population in the older ages increases. As the United States ages over the next several decades, its older population will become more racially and ethnically diverse. The projected growth of the older population in the United States will present challenges to policy makers and programs, such as Social Security and Medicare. It will also affect families, businesses, and health care providers (www.census.gov). The baby boomers are increasing their use of the emergency systems. One in five adults in America is over the age of sixty-five. This demographic is sixty-eight percent more likely to require the use of emergency services than other age groups. It is projected that non-fatal falls will increase by five times over the next twenty years due to the baby boomer ("Demand for paramedics", 2012).

In the early 1980's the Detroit Fire Department was overwhelmed with 9-1-1 calls for service. They ran an advertisement campaign "Do not call unless it is a true emergency". Upon review of the campaign, the run totals went up nearly six percent over the already overwhelming number prior to the campaign. The targeted individuals never considered that they were the very people whom the campaign was designed to help stop with the abuse in the 9-1-1 system (Clawson, 2008, para. 12).

Inappropriate use of EMS services is a costly problem for communities (Richards & Ferrall,1999). Most EMS systems will transport non-emergent patients to emergency departments with no penalty to the patient. While the ambulance transports non-emergent patients, the systems reliability must still allow for ambulance availability to the emergent call for services. This translates to higher costs for the community to staff the appropriate number of transport resources (Richards & Ferrall,1999).

Across the country, various attempts to limit non-essential ambulance transports have been tried with little success. These attempts include paramedics refusing transport to non-emergencies, nurse call screening, taxi vouchers, bus passes, and referral to physicians' offices (Bledsoe, 2011). One doctor's observation is the EMS system abuse is caused by poverty, homelessness, mental illness, substance abuse, domestic abuse, and lack of a primary care physician (Bledsoe,2011).

The City of Bangor, Maine is facing a similar problem that the City of Fairfield is facing. Last year, one Bangor resident called for emergency assistance one-hundred-seventy-one times. Another person called first responders to their home only to ask the firefighter to hand them an out-of-reach TV remote control. In response to a growing number of calls for aid, that Bangor's emergency responders say should not be necessary, the Fire Department wants the city to start charging fees to people or institutions who frequently call for help when no one needs to be taken to a hospital (McCrea,2016 p.2).

Among the most frequent calls for Bangor EMTs and firefighters are lift assists, which are situations in which an elderly or disabled person cannot get up or move from one location to another under their own power. “We want to do the right thing by these people, but when we’ve come twenty or thirty times, it gets to be a drain,” Higgins said. Under the proposal, an individual who requests help without being taken to the hospital between four and eight times in a year would be charged twenty-five dollars per vehicle that dealt with those calls. Once they exceed nine requests that would jump to one-hundred-twenty-five dollars per vehicle. Someone who requests emergency responders three or fewer times without an emergency would not be charged (McCrea, 2016). There would be larger fees for institutions, such as assisted living complexes, which would pay twenty-five dollars per responding vehicle up to the third nonemergency call in one year, and one-hundred-twenty-five dollars per vehicle after the fourth call. Some facilities have “no lift” policies, which bar employees from picking up people who have fallen or are struggling to move from one spot to another, usually for insurance reasons. That means when someone cannot get up, those institutions call Bangor firefighters for help. “If we get a call, we need to respond,” Higgins said, but deploying an ambulance and firetruck is costly. When a person is not taken to a hospital, the Fire Department cannot bill insurance or an individual for services and has to swallow the costs. This new fee would not be intended to drive revenue, however, Higgins said. He hopes the city would never have to leverage these fees against anyone. Instead, the fees are meant to be preventative. If someone is consistently having trouble getting around under their own power, they should be seeking alternative living arrangements where someone — whether it is a family member or staff person — is available to help them. Higgins and Patty Hamilton, director of Bangor Public Health, said they work together to try to ensure that individuals who frequently call on emergency personnel can find

access to better living arrangements and not rely as heavily on EMTs when there isn't an immediate health problem. "While a need does exist for assistance for those unable to perform certain tasks, the Fire Department is not always the appropriate institution to be filling that need," Higgins said. For example, the person who called dispatch services for help 171 times last year is now in an assisted living facility. Bangor City Council will review the proposed fees and may recommend changes before deciding whether to institute them (McCrea, 2016).

In researching how other fire departments have been dealing with non-emergency calls for service, the trend of increased 9-1-1 misuses is a widespread problem. Michael Morse explained how he sees the misuse of the 9-1-1 system. Ninety percent of 9-1-1 calls are for non-emergencies. Of that ninety percent, maybe half probably would benefit from some kind of professional medical evaluation and treatment, but could find the means to get them to the treatment they desire on their own. The other half would be just as safe if they opened their medicine cabinets and used peroxide, aspirin, Tylenol, or a Band-Aid (Morse, 2016). Of course, many believe that the government should provide these things. "The local pharmacy charges for Band-Aids, but 911 does not — unless you are dumb enough to pay the bill" (Morse, 2016).

One of the greatest challenges facing EMS systems across the country is how we will address increased demand for services when faced with a shrinking pool of available funds and qualified staff. Medic, the Mecklenburg County EMS agency, located in Charlotte, N.C., has spent the better part of the past two years evaluating a radical new approach for dealing with this emerging scenario. The goal is to create a truly patient-centered system of care that consistently delivers the right resources to the right place at the right time (Bagwell 2009 par. 1).

The organization's leadership team refers to this new approach as the "Omega Project," and it very well might change the way that Medic, and many other EMS systems around the world, respond to 9-1-1 calls in the future (Bagwell, 2009). The results they found were that many of these runs could be categorized as non-emergent. In 1993, Medic began employing the Advanced Medical Priority Dispatch System (AMPDS) developed by Jeff Clawson, MD, and the National Academies of Emergency Dispatch (NAED). The AMPDS protocol allows certified Emergency Medical Dispatchers (EMDs) to effectively evaluate a patient's condition over the phone and assign an appropriate response code to field personnel. It also enables EMDs to begin providing life-saving instruction to the bystander over the phone while they await the arrival of an EMS team (Bagwell, 2009).

AMPDS uses a detailed algorithm that walks the EMD through a series of qualifying questions, each leading to the next logical inquiry. This first triage filter provides enough information for the EMD to quickly ascertain if a given patient is acutely ill, injured or at risk of developing a life-threatening problem. With this information, the EMD can issue an appropriate alert to the paramedic teams in the field, having already determined the level of response required. As far as dispatching of calls, we dispatch them as quickly as possible and normally have the luxury of only one medic run call at a time. If they have multiple at the same time they will usually determine the priority based on the problem and dispatch accordingly then.

According to J. Meyer (personal communication August 22 2017), through Emergency Medical Dispatch (EMD) and the questions that we ask it actually assigns a Determinant Code. Those levels are from Omega (non-emergent call and very low priority), Alpha, Bravo, and Delta; Echo (Echo being your most serious calls). Through that, the EMD program has the ability to be set up to determine if CFFD should be running hot or cold to certain calls and what

units should respond. Fairfield dispatch uses this to determine the units but since the department policy states the fire department respond to all calls the same this is not utilized.

When people in the community are not sure where to turn for medical attention, they call 9-1-1. EMS systems throughout the country-spent years ingraining the "call 9-1-1" message into the hearts and minds of their residents, so these types of calls are to be expected. Instead of becoming frustrated with callers who need non-emergency medical attention, Medic officials are considering their role as helpful gate keepers and hope to be more useful to community members by directing them to the assistance they need (Bagwell, 2009).

FFD conducts daily fire and EMS trainings. According to Fire Training Captain Jeff Kenworthy, 63% of trainings are interrupted due to calls for service. Forty-seven percent of these calls can be considered non-emergent in nature (J. Kenworthy, personal communication, 2017).

Non-emergency medical calls are issue departments all across the world are dealing with. Some of these calls are from people using the system, such as a woman well known to Fort Worth, Texas, EMTs, who gets drunk every Friday and then calls 911 and asks to be taken to the hospital a few yards from her apartment (Auge, 2009). Then there are those who are just plain impatient, said Dr. David Ross, medical director of Colorado Springs AMR, which is that city's ambulance provider. "There are a small percentage of patients who will use the ambulance systems to try and get bumped up on the be-seen list" in the emergency room, Ross said (Auge, 2009).

However, many non-emergency calls are made out of frustration, said Dr. Christopher Colwell, interim director of emergency medicine at Denver Health and medical director of the paramedic division. "They have nowhere else to go," he said. "They deal and deal and deal until

it reaches a stage where they can't deal anymore, and they can't go anywhere else" (Auge, 2009).

In a 2010 article titled, *Are Most Emergency Room Visits Really Unnecessary,* Meisle and Pines argue that non-emergent emergency room (ER) visits are not the cause of increased health care costs and, in fact, only about twelve percent of ER patients are non-urgent. These points are in contrast to the other literature reviewed for this project.

The City of Monroe, Ohio has recently implemented a Community Paramedicine (CP) program. The Monroe Fire Department will be initiating a trial program for Community Paramedicine in June of 2018. Community Paramedicine was signed in to law by the Governor on June 30th of 2015, and was activated on October 1st. This was a change in the scope of practice for Ohio EMT's and Paramedics that will allow them to function in non-emergency roles in the communities they serve. By definition, Community Paramedicine is a new and evolving model of community-based health care in which Paramedics and EMT's function outside their customary emergency response and transport roles in ways that facilitate more appropriate use of emergency care resources and/or enhance access to primary care for medically underserved populations.

CP programs typically are designed to address specific local problems and to take advantage of locally developed linkages and collaborations between and among emergency medical services and other health care and social service providers. The Monroe program was developed through a partnership with the Mount Pleasant Retirement Community and will address issues involving our elderly residents. Specified target groups have been established and data will be gathered to determine how we can better serve our elderly community. The Community Paramedicine trial is one of several safety initiatives being developed in the City of

Monroe. In addition to the CP program, the City has committed to having one-hundred of its staff members trained in CPR & First Aid, providing AED's in all public buildings, and expanding our resident safety training programs with CPR Blitz Programs, additional Smoke Detector partnership programs, and Neighborhood Safety Blitz Projects. The Fire Department will also be heading an accreditation project through the Safe Communities Coalition of the National Safety Council (www.monroe-ohio.org, Nov. 2017)

The literature reviewed for this study confirmed that the non-emergent calls for service for EMS is a nationwide problem. Fire Departments across the country are facing the same problems that the FFD faced with patients calling 9-1-1 for non-emergent calls for EMS response. It is important that we effectively handle the non-emergent calls for service so that resources are available and able to handle the emergency calls. FFD transported these non-emergent calls for service with no penalty to the patient. While the ambulance transports non-emergent patients, the system must still allow ambulance availability to respond for emergent calls for service. This could translate to higher costs for the community for staffing and maintaining and purchasing new medic units.

In summary, it is clear that the literature available on the specific topic of non-emergent calls for service is abundant. The current literature shows that the findings and observations of others has led to many other fire department facing similar problems with non-emergent calls for service and many departments are developing programs such as community paramedicine, alternative dispatching programs and community education programs, showing an increase in operating costs is expected.

PROCEDURES

The desired outcome of this research project was to identify means in which to reduce the impact of non-emergent calls for service in the City of Fairfield. The research project started with the conduction of a literature review. These sources were obtained through numerous online documents and publications found on the subject, as well as previously written research papers found through the archives of the Ohio Fire Chief's Association and the Learning Resource Center of the National Fire Academy. Additional information was obtained through the FFD records and the City of Fairfield dispatch center. The FFD emergency response policy was reviewed and served as a baseline as to what the FFD uses for response criteria. The policy does not delineate emergent vs. non-emergent response guidelines. The response policy is available to view on the City of Fairfield's website. FFD annual reports from the years 2010-2016 were utilized to determine the amount of calls for service, including emergent and non-emergent calls for service can be viewed. A definition of a non-emergent call for service was developed for the purpose of this research. This definition was used to differentiate the number of non-emergent calls for service for the FFD.

To assist in answering the research questions and to identify the number of non-emergent calls a survey was distributed to surrounding fire departments to collect data on their non-emergent calls for service. The survey was used to determine what if any strategies were being used to counter the increased non-emergent calls for service. The questions included department data such as number of responding units, run volume, and any strategies developed to reduce the negative effects of non-emergent calls for EMS service.

The electronic survey was created on Survey Monkey to collect data from other Southwest Ohio fire departments. The survey was sent to twenty fire departments and twelve responses were received. The departments were selected by the following criteria; run volume per year, square miles covered, number of responding EMS units, and number of on duty personnel. These departments selected were within a two hundred annual run volume of FFD, within a thirty-mile distance from the FFD, within two responding EMS units of FFD, and within ten on duty personnel of the FFD. Survey questions included department specific data such as the number of transport vehicles, run call volume, and strategies used to reduce the negative impact of non-emergent calls for service. A copy of the survey instrument can be found in Appendix A. The focus of the survey was to identify the impacts departments experienced from non-emergent calls for service, run volume and strategies used to combat the negative impact from non-emergent calls.

Interviews were conducted with those in leadership roles to seek feedback from other agencies on their approach to their approach to non-emergent medical calls. An interview was conducted with Fairfield Fire Chief Don Bennett. A copy of the interview questions can be found in Appendix B. Chief Bennett was selected for an interview due to his significance within the FFD. He has been fire chief for over twenty-five years and he was responsible for creating guidelines and policies for the FFD. His input was collected as to other options for the non-emergency response, what he believes the impact of the non-emergency calls has on the department, and what strategies he believes would counteract the negative impact of non-emergent calls for service.

An interview was conducted with John Meyer, the lead dispatcher for the City of Fairfield. John was selected for an interview due to his significant role in developing the response guidelines for the fire department. John has over 15 years of lead dispatching experience in both fire and police departments. This interview was used to determine the present dispatch methods. The interview took place October 2, 2017 at the dispatch center and lasted approximately 60 minutes. A copy of the interview questions can be found in Appendix D. There was conclusion that the dispatch center was capable of determining what runs could potentially be dispatched as a non-emergency response.

An interview was also conducted with Hamilton Fire Department's EMS coordinator, Mark Mignery. A copy of the interview questions can be found in Appendix C. The Hamilton Fire Department was selected due to their close proximity, size and run volume to the FFD. The Hamilton Fire Department utilizes the FFD for mutual aid services almost daily. The Hamilton Fire Department is facing the same problem of non-emergent calls for EMS services. Input was received on how they have responded to this problem, how they are responding to these types of calls and any strategies they may have tried to implement. The interviews conducted discussed areas such as budgeting, staffing, public education, and possible forms of EMS prevention programs.

Definition of Terms

Non-emergent: For the purpose of this research, a non-emergent request for service was defined as: Emergency medical services requested on an emergency status for a chief complaint that does not require the immediate attention of emergency medical personnel or for a condition that could be managed without the need for medical transport or could have been prevented prior to utilizing EMS.

Community Paramedicine: According to the California EMS Authority, community paramedicine is defined as "community based health care in which paramedics function outside their customary emergency response and transport roles in ways that facilitate more appropriate use of emergency care resources and or enhance access to primary care for medically underprivileged populations". (http:\\www.emsa.ca.gov/Community_Paramedicine)

Limitations of the Study

There were several limitations to this research. The FFD has no devices or procedures in place to track or identify non-emergent requests for service. For the purpose of this research, non-emergent calls for service were selected by searching through several years of reports. By generating reports using the reporting software, generating consistent data was virtually impossible. There were gaps with missing run data due to software changes and upgrades. The non-emergent calls were defined by the patient care report assessments. The data cannot be exactly duplicated due to the change in reporting software utilized by the FFD.

Another limitation was that there are not many resources that have done specific research on non-emergent calls for service. The term "non-emergent" is also hard to define. Many fire departments do not have a specific definition for non-emergent calls for service.

The interviews conducted also presented a limitation. During the interview process, the person interviewing may show bias or express their opinion based on personal experience and not facts. The interviews did show that there are solutions to the problem that can be explored and researched.

The most significant limitation encountered was the fact that only 12 responses to the surveys were returned. This placed a significant strain on collecting specific data results that were measurable. Although, having few results to the survey reduced the ability to collect specific data, it did not seem to have a significant impact on identifying that a problem exists and that there are strategies available to combat the problem.

RESULTS

Information to answer each research question was gathered by key interviews, an external survey, as well as data obtained from the FFD records.

Research Question 1

How often do non-emergent requests for service occur in Fairfield, and what are the impacts of responding to non-emergent calls for service?

The research revealed that over a six-year period of 2010-2016, the FFD responded to 1,943 non-emergent calls for service. These types of calls included complaints such as flu like symptoms, headache, general illness, lift assistance, general weakness, abnormal labs and ill person. One of the impacts can be seen with the interruption of daily trainings. Sixty-three percent of the time trainings are interrupted by non-emergent calls for service.

During an interview with Fire Chief Don Bennett he stated that the non-emergent calls for service not only have a negative impact on daily trainings but the number of non-emergent calls for service has decreased the life expectancy of the medic units themselves due to the increased emergency responses. Chief Bennett estimated that the medic units are being replaced a year sooner than expected, at a cost of over $250,000 per unit. He explained that there are fire

departments that have taken a proactive approach in dealing with non-emergent calls for service. Chief Bennet explained how the number of nursing facilities within the city contributes greatly to the number of non-emergent calls for service. He suggested that a community education program with emphasis on the nursing homes could potentially lead to a reduction in the non-emergent calls for service to these facilities. He also expressed that the administration of the FFD expressed interested in the results of this study to better improve employee and citizen safety and better delivery of services (D. Bennett, personal communication, Oct. 3, 2017).

Research Question 2

What criteria are similar communities using to respond to non-emergency calls?

An interview was conducted with Mark Mignery, EMS Coordinator for the City of Hamilton Fire Department. Mr. Mignery stated that his department has responded to an ever-increasing number of calls for service over the past five years. Mr. Mignery estimated that 60% of the calls for service in the City of Hamilton are classified as non-emergent. The Hamilton Fire Department utilizes a tiered dispatching system. This allows the dispatch to determine if the call will be classified as emergent or non-emergent response. Mr. Mignery estimated that this has allowed for a 10% decrease on vehicle repairs and maintenance due to the decrease of emergency responses in the vehicles. Mr. Mignery also stated that his department has started to explore the addition of a community paramedicine program in order to reduce the number on non-emergent calls for service. He is also in the process of developing a non-emergency response guideline to be utilized on certain types of calls for service (M. Mignery, personal communication, Dec.1, 2017). The survey was used at the primary instrument to determine what similar communities are doing in response to non-emergent calls for service. The City of Hamilton was the only response that showed the community was developing a process in

response to non-emergent calls for service. No other survey responses showed a response to this question.

Research Question 3

What are the current capabilities of the Fairfield Fire Department's current data tracking system regarding non-emergent calls for service?

The Fairfield Fire Department does not track the types of calls for service. This researcher had to look through over 5,000 run reports to obtain the data on the type and frequency of non-emergent calls for service. There is no tracking program established as to the type of calls for service. Through an interview with the Fairfield lead dispatcher, John Meyer, the current dispatching program being used by the city does allow for calls for service to be classified as emergent or non-emergent. This is not being utilized by the fire department and all calls for service are sent as an emergent response regardless of the nature of the call. There is also no current tracking of frequent callers for service. (J. Meyer, personal communication, Aug. 22 2017). The FFD does not attempt to follow up on frequent users of the 9-1-1 system, nor does it follow up with frequent calls for non-emergent calls for service (D. Bennett, personal communication, Jan 3, 2018).

Research Question 4

What strategies can be implemented by the CFD to reduce the impact of non-emergent EMS requests?

Through the instruments used in this research there are several strategies that can be considered to reduce the impact of non-emergent EMS requests. Public education is an option that would allow the FFD to educate the public of the appropriate use of 9-1-1. This also presents the ability for the residents to become more aware of how the FFD operates. Another strategy would be reexamining the existing response policy of the FFD. This would allow the CFD to gather information from other fire departments and how they are handling non-emergent calls for EMS. A priority dispatch program could allow for a non-emergent response for EMS calls. This strategy was available but not being utilized at the time of this research. This would allow the FFD to classify calls as non-emergent enable the appropriate level of response.

Survey Results from surveymonkey.com

The survey distributed only yielded twelve results from the surrounding area fire departments a less than fifty percent return rate. Of these twelve results, all of the departments acknowledged that their respective agencies were dealing with the negative impact of non-emergent calls for service. Two of these individuals stated that they viewed the non-emergent responses as a way to educate the public through education. Five of the respondents reported that they were taking a strategic approach to these types of calls. They expressed the need for public education programs and outreach programs provided by their departments. These included suggestions such as referral services, refusal of the EMS unit to transport a non-emergent call, and possibly billing for these types of calls regardless of transporting the patient. The results and questions from this survey are seen below.

Survey Question 1 and results from 12 surveys returned: How many EMS calls for service does your department make per year?

Seventy-one percent of respondents stated that their departments make 4001-5000 or more run calls per year. Fifteen percent stated 2500-4000 EMS calls for service per year.

Survey Question 2 and results from 12 surveys returned: How many non-emergent calls for service does your department make per year?

Seventy-five percent of respondents stated 301-500 non-emergent calls for service per year. Twenty-five percent stated more than 500 non-emergent calls for service per year.

Survey Question 3 and results from 12 surveys returned: Do you have specific protocols for non-emergent calls for service?

Sixty-six percent of respondents stated that they do have specific protocols for non-emergent response. Thirty-three percent stated that they do not have specific protocols for non-emergent response.

Survey Question 4 and results from 12 surveys returned: Do non-emergent calls for service have a financial impact on your department?

Fifty percent of respondents stated YES, there is a financial impact on their department. Twenty-five percent stated that there was no financial impact, and twenty-five stated that they did not know if there was a financial impact of non-emergent calls for service on their department.

Survey question 5 and results from 12 surveys returned: What percentage of times are department trainings interrupted for non-emergent calls for service?

Twenty-five percent of respondents' stated zero to ten percent of trainings was interrupted, twenty-five stated that between twenty-six percent and forty percent of trainings are

interrupted, twenty-five percent stated that between forty-one and sixty percent of trainings were interrupted, and twenty-five percent answered “Other” for times that trainings were interrupted by non-emergent calls for service.

Survey question 6 and results from 12 respondents: Where are non-emergent calls for service originating from in your community?

Seventy-five percent of the respondents stated that these calls for service were originating from private residents. Twenty-five percent of the respondents stated the non-emergent calls for service were originating from nursing homes.

Survey question 7 and results from 12 respondents: Does your department have a program used to prevent non-emergent calls for service?

One-hundred percent of the respondents stated that their departments do not have a program in place to help prevent non-emergent calls for service.

Survey question 8 and results from 12 respondents: Does your dispatching center have the ability to distinguish and dispatch calls as a non-emergent response?

Thirty-three percent stated that their dispatch center does have the ability to dispatch a call as non-emergent. Sixty-six percent stated that their dispatch center does not have the ability to dispatch a call as non-emergent.

Survey question 9 and results from 12 respondents: Is your department currently exploring a Community Paramedicine program?

Sixty percent of the respondents stated that their department was not exploring a Community Paramedicine program. Forty percent of the respondents stated that their departments are currently exploring a Community Paramedicine program.

Survey question 10 and results from 12 respondents: Please describe the impact, other than financial, that non-emergent calls for service has on your department. This question only received one answer. This respondent stated that they have been experiencing some abuse of their department's lift assist service with people calling multiple times per day for services that were non-emergent in nature.

The results of the survey showed that most of the departments surveyed are facing some type of negative impact from the non-emergent calls for service. It appeared that the non-emergent calls for service is spread throughout Southwest Ohio. Most of the respondents stated that the non-emergent calls for service were originating from private residences. The departments surveyed all make nearly the same amount of total runs per year. Most of the departments responded that they make five-hundred or less non-emergent calls per year. The departments surveyed showed that most do not have specific protocols for responding to non-emergent calls for service; however, twenty reported that they explored a type of community paramedicine program. After compiling the data from the Fairfield Fire Department and comparing this information to other departments within the same geographic region, it was apparent that many of the same issues existed in surrounding communities.

DISCUSSION

In reviewing the results obtained through the surveys collected and interviews conducted, it appears that the FFD is similar with many other neighboring fire departments and many nationwide departments. Through the literature review it was apparent that non-emergent calls for service was a nationwide issue. This researcher had twelve of twenty-five surveys returned and more than half of the departments who responded indicated that the non-emergent calls for service have an impact on their department. The FFD does not track non-emergent calls for service therefore no specific numbers can accurately be documented on these types of calls. The literature review and research supports the idea that the non-emergent calls for service have a negative impact on many fire departments. The departments who returned the surveys all indicated that they do not currently have a program or plan do deal with the non-emergent calls for service. It is clear that there is an opportunity for the FFD to be a pioneer in the Community Paramedicine program. There will always be the need for pre-hospital response for non-emergent calls for service and it is clear that there are options to improve the delivery of services for the non-emergent need. These programs have been proven successful in reducing the number of non-emergent calls for service. MedStar, an EMS provider in Ft. Worth, TX developed and implemented a community paramedicine program. The program has reduced their non-emergent usage by seventy-seven percent (Mitchell, 2011). The FFD could possibly see the same benefit in reduction of non-emergent calls for service by utilizing this type of program. The research indicated that the need for emergency services would continue to rise due to the aging population. With this increase in calls for services both emergency and non-emergent calls for service will likely increase.

Any reduction in EMS run volume could translate to a reduction in operational costs. In turn, the costs saved may, in turn; result in a cost savings to the taxpayers through the fire department operational budget. The FFD changed the response guidelines in 2016 to better reflect the necessary resources to handle a given situation. "The addition of two advanced life support (ALS) units staffed by one paramedic, who respond on all EMS calls for service, allows for decreased wear and tear on the fire apparatus" (D.Bennett, personal communication, November 2, 2017).

Community Paramedicine will present additional costs. An entry level Firefighter/Paramedic has a base pay of $57,623 annually. This cost does not include additional benefits included in a career position (IAFF 4010, 2016), or additional costs of EMS equipment including a vehicle. All of these costs will need to be examined closely if this option is considered. However, the benefits of having a community paramedic could be numerous. For example, building relationships with other agencies that can assist patients with getting appropriate resources to these patients and creating programs for the community to understand how EMS is designed to work and providing a link to senior living and nursing centers.

There are other options besides creating an entirely new position for the community paramedic. The department could utilize one of its three EMS lieutenants on shift as the community paramedic while on duty as part as their daily responsibilities.

Although there are increased demands made upon the FFD due to the number of non-emergent calls for service, the FFD has not taken a serious look at the benefits of non-emergent response alternatives. This author feels that this is due to the traditions and values of the FFD. The public expects an urgent response to their calls for service. Neighboring fire departments

have experienced the same calls for non-emergent needs. Most departments realize that there are options available to combat these negative impacts but have yet to explore the available options.

RECOMMENDATIONS

As a result of research, it is recommended that the FFD take a proactive and multifaceted approach to reduce the impact of non-emergent calls for service.

First, the FFD needs to create both the definition of a non-emergent call for service and a means for identifying these requests. Utilizing a set of guidelines such as those set forth by a type of Priority Dispatch, would allow these types of calls for service to be identified as non-emergent verses emergent.

Secondly, the FFD needs to develop a way to track and record non-emergent calls for service. This would enable the department to track where and when these types of calls are occurring. This could lead to the development and implementation of a public education program explaining how the EMS system works and its intended purpose. This program could also explain to the public as to when calling 911 is appropriate. This information could be presented to local residents, nursing homes, rehab centers, schools and civic organizations.

Recommend the FFD create a database to track names and addresses of patients who frequently use the 911 system for non-emergent services. By reviewing this database, the fire department can provide the patients with additional resources and community programs that are available to meet their needs.

Recommend exploring the addition of Community Paramedicine to the FFD. Community Paramedicine allows for an expanded service to an underserved population. The program does not replace services provided by a health care provider, but fills gaps in coverage before and after service is provided. An example would be an elderly resident whom has a serious health condition and is transported frequently. The Community

Paramedics would schedule visits to evaluate and assist the resident and reduce the likelihood of a 9-1-1 transport through a proactive care plan. These visits will allow the fire department to evaluate additional needs and assist the resident into other service providers such as Council on Aging, senior services and Adult Protective Services. This will also allow the FFD to provide a home fire safety evaluation to participants during the visit. The public relationship with the fire department could expand greatly with this program. The costs of employing this position would have to be considered. The potential reduction in operating costs, potential reduction in non-emergent calls for service, and an increased awareness by the citizens of using the 9-1-1 service would benefit the fire department and the citizens it serves.

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APPENDIX A – SURVEY QUESTIONS

In an attempt to find other agencies that may be dealing with non-emergent calls for service, and to understand what measures others may have taken to combat this problem, the following questions were sent to selected agencies. This survey was conducted using www.surveymonkey.com.

1. How many requests for EMS services does your agency receive per year?
2. How many non-emergency calls for service does your department make per year?
3. Do you have specific protocols for non-emergent calls for service?
4. Does your agency collect data, or track non-emergent calls for service?
5. What percentage of times are department trainings interrupted for noon-emergent calls for service?
6. What steps has your agency taken, if any, to combat the negative effects of non-emergent calls for service?
7. Does your dispatching center have the ability to distinguish calls between emergent and non-emergent?
8. Are any other agencies in your area working to prevent, or counter the effects of, non-emergent calls for service? Please discuss.
9. Is your department currently exploring a Community Paramedicine program?
10. Please describe the impact, other than financial, that non-emergent calls for service has on your department.

APPENDIX B

INTERVIEW QUESTIONS WITH FIRE CHIEF DON BENNETT

1. How many incidents does your department respond to annually?
2. Do you have a policy for non-emergent calls for service?
3. What do you consider a non-emergent call for service?
4. How is your department affected by non-emergent calls for service?
5. Is there a financial impact from non-emergent calls for service?
6. Where do the non-emergent calls for service originate from?
7. Do you have any public outreach programs directed toward the proper use of EMS?
8. Is your department exploring options to combat non-emergent calls for service?
9. Do you see any benefit from a non-emergent response policy within your department?
10. What are your biggest concerns with the non-emergent calls for service in your department?
11. Do you have anything to add in regards to non-emergent calls for service?

APPENDIX C

INTERVIEW WITH MARK MIGNERY

1. How many calls for service does your department respond to per year?
2. How many of these calls do you consider non-emergent in nature?
3. Do you have a response policy for non-emergent calls for service?
4. What, if any are the impacts of non-emergent calls for service on your department?
5. Do you track all calls for service? Non-emergent verses emergent.
6. Do you have any type of public outreach program that addresses non-emergent calls for service?
7. Where are a majority of your non-emergent calls for service originating?
8. Is your department exploring or utilizing any alternatives to non-emergent calls for service?
9. Does your dispatch center use Emergency Medical Dispatch?
10. If not what type of dispatching is occurring for medical calls?
11. Do you have anything else to add in regards to non-emergent calls for service?

APPENDIX D

INTERVIEW WITH JOHN MEYER

1. What is the current method of dispatching calls; from 911 received to dispatching units?

2. What are the training requirements for a fire/EMS dispatcher?

3. Are we able to track frequent users and non-emergent calls for service?

4. Are we dispatching the Fairfield Fire Department in an appropriate manner? If not, what do you think we could do differently?

5. Please discuss any other options you believe are available to reduce the negative effects of non-emergent calls for service on the Fairfield Fire Department.