

Alternate Disposition of Emergency Medical Service Patients

Susan M. Chesnick

South Metro Fire Rescue Authority, Centennial, Colorado

Certification Statement

I hereby certify that 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.

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### Abstract

Alternate disposition of emergency medical service patients has been demonstrated to be a viable solution to reducing the increasing numbers of calls for emergency services. The problem that was identified in South Metro Fire Rescue Authority's (SMFRA) jurisdiction there is a significant fraction of responses that are non-emergent medical incidents that do not require urgent treatment but do require medical interventions. These responses lead to unnecessary transport of patients to hospitals; consumption of resources that may be vital to other true emergency calls; and, frustration, stress, and errors for responders presented with few choices that match the appropriate level of care. Therefore the purpose of this applied research project was to identify those emergency medical incidents that could have an alternate disposition and provide options to treatment modalities other than transport to the hospital. A descriptive method of research was utilized. The following research questions were analyzed:

1. What are the numbers of responses to emergencies that are determined to be non-emergent?
2. What mechanisms have been used to apply alternate response or treatment algorithms for non-emergent care?
3. What are the medical legal implications of alternate response and/or treatment algorithms?
4. What are the short-term and long-term organizational effects and outcomes from using alternate response and treatment algorithms?

The procedures utilized included survey of SMFRA's incident response data for 2011, literature review of mechanisms that have been used to apply alternate response and treatment, literature review of medical legal implications of alternate response and treatment, and literature review of

short-term or long-term organizational effects of alternate response and treatment. Finally, a second survey of attitudes, feelings and beliefs of alternate response and treatment was conducted. The results from all of the above research indicated alternate response and treatment should be pursued by SMFRA. Recommendations include the development of committees to plan, implement and review both alternate response and treatment algorithms to be pursued by SMFRA.

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Each year emergency medical services (EMS) are delivered to millions of Americans. The delivery of these services are provided by a variety of system designs that include fire department based, private agency (for profit) based, volunteer based, or some kind of public utility model based service. In South Metro Fire Rescue Authority's district, EMS is provided primarily by the fire department. Currently when a 9-1-1 call for service is received, South Metro Fire Rescue Authority sends a medic staffed with two personnel; with at least one being an Advanced Life Support (ALS) provider and a fire suppression unit that is staffed with a minimum of three Basic Life Support (BLS) providers. This level of service is sent regardless of the patient's chief complaint, irrespective of whether the complaint is for major trauma from an auto accident or a single cut finger. Therefore the problem identified is that in South Metro Fire Rescue Authority's jurisdiction there is a significant fraction of responses that are non-emergent medical incidents that do not require urgent treatment but do require medical interventions. These responses lead to unnecessary transport of patients to hospitals; consumption of resources that may be vital to other true emergency calls; and, frustration, stress, and errors for responders presented with few choices matching the appropriate level of care.

The purpose of this research is to identify those emergency medical incidents that could have an alternate disposition and provide options to treatment modalities other than transport to the hospital. A descriptive method of research was utilized to answer the following research questions: What are the numbers of responses to emergencies that are determined to be non-emergent? What mechanisms have been used to apply alternate response or treatment algorithms for non-emergent care? What are the medical legal implications of alternate response and/or treatment algorithms? What are the short-term and long-term organizational effects and outcomes from using alternate response and treatment algorithms?

### Background and Significance

The South Metro Fire Rescue Authority (SMFRA) is located in the southern portion of the Denver metropolitan area and serves approximately 176 square miles in portions of both Douglas and Arapahoe Counties in Colorado. Services are provided to the incorporated cities of Castle Pines, Centennial, Cherry Hills Village, Foxfield, Greenwood Village, Lone Tree, Louviers, and the Town of Parker. The overall makeup of the district ranges from high-density urban, to a suburban bedroom community to rural in nature.

In May 2008, the Parker Fire Protection District and South Metro Fire Rescue merged to form the South Metro Fire Rescue Authority, a special district that provides fire protection, emergency medical services, and special operations consisting of aircraft crash fire rescue, hazardous material operations, dive rescue and recovery, technical rescue and wildland urban interface firefighting to more than 198,000 full-time residents, which then rises to approximately 250,000 citizens during normal business hours. In 2011, SMFRA responded to approximately 15,758 incidents, of which 9104 are medical in nature.

SMFRA is a fully paid career department that services its citizens with seventeen stations; comprised of twelve engine companies, four tower companies and nine medics (ambulances staffed solely with firefighting personnel). SMFRA also has automatic aid agreements with the Cunningham Fire Protection District, Franktown Fire Protection District, Castle Rock Fire Rescue, West Douglas County Fire Protection District, West Metro Fire Protection District, Littleton Fire Rescue, and Englewood Fire Department. Mutual aid agreements are also in place with the Denver Fire Department and Aurora Fire Department, two adjacent municipal departments.

In order for SMFRA to communicate with their many partners, communications is provided by the Metropolitan Area Communications Center (MetCom). This dispatch center was established in January 2006 to provide service for South Metro Fire Rescue. In January 2008 the Parker Fire Protection District joined MetCom to consolidate communications. In 2009 MetCom began providing dispatch services to the West Douglas County Fire Protection District. To further augment communications efficiency MetCom established an Incident Dispatch Team in 2008 for communications support outside of the dispatch center (MetCom Metropolitan Area Communication Center website, 2012). This communications center allows for robust communications with all of SMFRA's neighboring agencies.

In 2011, SMFRA became an accredited organization by the Commission on Fire Accreditation International (CFAI). The CFAI accreditation process provides a well-defined, internationally recognized benchmark system to measure the quality of fire and emergency services (Center for Public Safety Excellence, 2012). Prior to this, both the Parker Fire Protection District and South Metro Fire Rescue were accredited organizations but due to the merger were required to re-submit an application for accreditation. One requirement of re-accreditation is the completion of a new Standard of Cover document. In the Executive Summary of the Standard of Cover, Chief Dan Qualman states, "The formation of this Standard of Cover has been a collaborative process where input was received from community and business stakeholders to find out the most important factors to consider in our delivery of emergency services" (South Metro Fire Rescue Authority [SMFRA], 2010, p. 5). The number one community service expectation was the provision of emergency medical services, closely followed by the provision of fire suppression services (SMFRA, 2010).



In the SMFRA Strategic Master Plan 2011 – 2015 there were several major recommendations listed. One of the priorities listed was the need to develop a more dynamic emergency response deployment model that accounts for the diversity of the various communities served and is adaptable to future changes (South Metro Fire Rescue Authority [SMFRA], 2010, p. 5). Some of these future changes generally include the increase in overall population of the two counties served and more specifically the population of those over age 65. The Douglas County Demographics Summary 2012 (The Community Planning and Sustainable Development Department, 2012, p. 1) states:

Between 2000 and 2010, the population of Douglas County increased 62.4%, which made Douglas County the fastest growing county in Colorado, and the 16<sup>th</sup> fastest growing county in the nation. The population age 65 and over increased 177.8% during the same time. Seniors now make up 7.1% of the population compared to 4.2% in 2000. By the year 2030, seniors are expected to be 20% of the total County population.

While Arapahoe County did not see as dramatic a change in overall or senior population from 2000 to 2010 the overall number of seniors in the county continues to rise. The changes in population and demographic makeup have also spurred an increase in the building of multiple occupancies that are for seniors only. These occupancies include assisted living facilities, skilled nursing facilities and rehabilitation facilities. What these facilities creates is an increase of call volume for the organization overall. The numbers of these types of occupancies have increased commensurate with increase of senior population in the district.

What is important regarding these findings and recommendations is to place these statements in the context of how SMFRA provides emergency medical service. The traditional model of response and treatment of patients has been a call to 9-1-1, deployment of a medic

(staffed with two firefighters that at minimum include one ALS provider and one BLS provider), and deployment of a fire suppression unit (staffed with a minimum of three BLS providers), then patient transport to a hospital based emergency department. This model has been in existence since July of 1994 for both Parker Fire Protection District and the old South Metro Fire Rescue. While the total number of medics available has changed over the years as the need for service has increased, there has been no appreciable change in the above described model of response or transport destination for the patients of SMFRA. This lack of change to the response model and transport destination for the patient is potentially no longer acceptable in today's environment of more responsible or responsive government and more focused or integrated healthcare.

In the past, when the organization was smaller the accepted model of response and transport was to do what neighboring departments did. A call for service was received, the model for response was as described above and then transport of the patient to the hospital. There appeared to be no need to delve into the world of making changes to the response model based on what the patient's complaint is or to take the patient anywhere other than the emergency department. However, times are changing and while this research cannot change the past, it encourages the organization to grow, adapt and thrive despite challenges present today and into the near future.

Presently, there is a method for the organization to match response to the acuity of the patient's complaint. This method is to utilize Medical Priority Dispatch System™ (MPDS) protocols in the communications center. These protocols assist in the assessment of a patient's complaint, assign a specific acuity determinant and then in turn can assist the organization in identifying the best emergency medical response to the patient's complaint. While SMFRA does utilize MPDS to assign a determinant to the incident, it does not however, change response to the

incident. This is in conflict with the organization's stated goals to develop a more dynamic emergency response deployment model that accounts for the diversity of the various communities served and is adaptable to future changes (SMFRA, 2010, p. 5). Therefore the present challenge needed is for an adaptive change to occur in the organization. The acceptance that it would be "okay" to respond differently than the neighboring organization, based on the needs of the citizen and not the organization needs to occur.

In the future, as community economics and changes to healthcare occur, SMFRA will need to be even more responsive to the needs of its community. Some of the research included in this paper may offer solutions to assist SMFRA in meeting the changing needs of the community.

In the coursework of the Executive Development class there were five course goals identified. One was applicable to this paper. The applicable course goal was to provide Executive Fire Officers (EFOs) with the opportunity to use research to solve real-world problems in their work environments (*Executive Development*, 2011, p. 13-3). The importance of this goal cannot be stressed enough in motivating, encouraging, pushing, or moving an organization to change. Change has frequently been resisted in the Fire Service. So, to utilize research as a tool to prove the need for change should encourage a stronger and potentially quicker adaptation by the organization.

Finally, the United States Fire Administration (USFA) lists five goals in its strategic plan. The fourth goal of the USFA strategic plan is to improve the fire and emergency services' professional status ("Strategic Plan," 2012). This research will attempt to prove that changing the organization to more quickly and efficiently respond to the needs of the citizens will improve upon its professional status. To improve the professional status of fire and emergency services,

the fire service may have to become more innovative in its approach to the delivery of emergency care. What is exciting to realize is the fire service itself can be the driver for this innovation and does not need to be reliant on outside forces to shape its definition of professional status.

### Literature Review

The purpose of this literature review is to allow the reader the ability to gain a broader understanding of the potential for alternate disposition of EMS patients. The review will focus on three categories impacting EMS and the potential for alternate disposition of patients. These categories are public safety, public health and healthcare. Further, this review will assist in encouraging the reader to discover why the current mentality of “You call, we haul” is outdated, inefficient and uncoordinated and is ripe for improvement. This literature review will begin in the past in order to give the reader a basis for understanding this needed change.

Currently, EMS in the United States plays a vital role in the nation’s emergency and trauma care system (Committee on the Future of Emergency Care in the United States Health System [Future of Emergency Care], 2007, p. 15). But recognizing EMS as a profession, equivalent of law enforcement or firefighting, has not always been so. The important and necessary role of EMS came to light with the publishing of a White Paper by the National Academy of Sciences – National Research Council in 1966 titled “Accidental Death and Disability: The Neglected Disease of Modern Society”. This report’s focus was that accidental death and disability are a neglected epidemic of modern society and this was a tragedy due to the thousands who otherwise could expect to live long and productive lives (Committee on Trauma and Committee on Shock, Division of Medical Sciences, National Academies of Sciences, National Research Council [NAS - NRC], 1966, p. 5, 8).

What this report did was to broadly state those recommendations upon which the framework of the modern EMS system could be built. The recommendations ranged from accident prevention education to improvement of first aid and medical care to the establishment of trauma registries and trauma research (NAS - NRC, 1966, p. 10-30). More importantly, from a patient perspective, the report focused on those changes that could most positively improve patient outcomes. One major factor that assisted in recognizing the needed change was the country's recent (time which report was written) experiences with the Korean and Vietnam conflicts. L.D. Heaton stated that (as cited in NAS – NRC, 1966 p. 12):

Excellence of initial first aid, efficiency of transportation, and energetic treatment of military casualties have proved to be major factors in the progressive decrease in death rates of battle casualties reaching medical facilities, from 8 percent in World War I, to 4.5 percent in World War II, to 2.5 percent in Korea, and to less than 2 percent in Vietnam.

This report helped to translate the experiences from the battlefield to Anywhere, USA. It recognized a system providing prompt communication, quality medical care, and efficient transportation to a qualified medical facility would all have potentially positive outcomes for patients. EMS, as a recognized and necessary service, was off and running.

As the country moved into the 1970's there was rapid expansion of regional EMS systems (Future of Emergency Care, 2007, p. 33). These regional systems were further funded by the EMS Systems Act of 1973 as established by Congress. As noted in the Future of Emergency Care (2007):

The EMS Systems Act helped guide the development of models of service delivery; informed system functions such as medical direction, triage protocols, communication,

and quality assurance; and set the tone of the EMS system's interaction with the larger health care and public health systems. (p. 34)

Unfortunately this act had an unintended consequence; it allowed for the formation of a patchwork quilt of systems to emerge due to being fundamentally driven by local needs, characteristics, and concerns (Future of Emergency Care, 2007, p. 34). Instead of EMS moving forward in a concerted, logical manner it was now being driven not by a focused effort such as the 1966 report brought, but was fractured along smaller and smaller local lines (Future of Emergency Care, 2007, p. 35).

In 1996, thirty years after the publishing of the NAS – NRC White Paper, EMS again had a document produced that would help re-focus the efforts to improve patient outcomes. This document was the EMS Agenda for the Future which was written through a partnership between the National Highway Transportation Safety Administration (NHTSA) and the Health Resources and Services Administration, Maternal and Child Health Bureau. The head of NHTSA at this time was an emergency physician by the name of Ricardo Martinez. Dr. Martinez had a vision to not only reduce injury and death in automobile accidents but also link with healthcare to again improve patient outcomes. Dr. Martinez and his team at NHTSA found no single voice for EMS in Washington, DC, and no single vision throughout the EMS community (Martinez, 1997, p. 316). So he brought together many players from throughout the EMS community including hospital administrators, EMS providers, EMS physicians, ambulance companies, payers and government officials and proceeded to print the EMS Agenda for the Future (Martinez, 1997, p. 316).

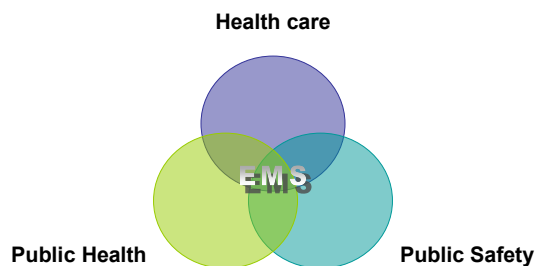
As the 1966 report focused on shifting the country's paradigm away from the acceptance of accidental death and disability as "normal" so too did the EMS Agenda for the Future. The

vision of the EMS Agenda for the Future (National Highway Safety Transportation Administration [NHTSA], 1996, p. iv) states:

Emergency medical services (EMS) of the future will be community-based health management that is fully integrated with the overall health care system. It will improve community health and result in more appropriate use of acute health care resources.

EMS will remain the public's emergency medical safety net.

The idea that EMS would be fully integrated into the overall healthcare system was revolutionary when contrasted against where the funding and development of EMS systems had been going since the early 1980's. A visualization of the concept of integration into the health care system can be seen in Figure 1 (Future of Emergency Care, 2007, p. 40).



**Figure 1** The overlapping roles and responsibilities of EMS.  
Source: NHTSA, 1996

Once again EMS had a direction more focused and more relevant than ever to its constituents.

### *Responses*

In reviewing the past influential literature that has affected the development and growth of EMS it is now necessary to review more current documentation to understand how the three components of EMS, public safety, public health and healthcare would impact alternate disposition of patients. First there is the need to ensure the understanding of “alternate disposition of patients”. Traditionally, as was put forth in the 1966 report, best patient care could

be achieved by responding quickly to a patient's needs, offering stabilizing medical care, and quick transport to an emergency room for further care. There was rarely, if ever, any change of destination of the patient transport. "Alternate disposition of patients" however, implies that not all patients should or need to be transported only to the emergency department. A working definition of "alternate disposition of patients" is best stated in The National EMS Advisory Council's interim advisory from May 2012. The draft states proactive EMS evaluation, treatment by EMS without transport to an ED, treat and refer to other health care providers by EMS and transportation to alternative destinations by EMS are viable options to safely care for the general public (Finance Committee, 2012, p. 1). This definition clarifies the meaning of "alternate disposition of patients".

Public safety refers to the welfare and protection of the general public ("Legal Definition," 2001 - 2013). As EMS is frequently provided by some form of local government this is why it is viewed as part of public safety. What all public safety entities require is the ability to communicate, not only amongst themselves but with the public in order to initiate the response to the call for service. Therefore communication centers, and by default dispatchers, are the first link in connecting a citizen's call for service to those providing EMS.

In the past, medical care for an EMS patient was thought to be only initiated or provided when EMS personnel had arrived on scene. However, in the mid-1970's Dr. Jeff Clawson, began to develop what is now known as Medical Priority Dispatching System™ (MPDS). MPDS is a system used in emergency medical dispatching (EMD) which results in a rational assignment of system resources tailored to the specific needs of the patient (Cady, 1999). This system then prioritizes calls for service into pre-determined categories: Omega (least emergent), Alpha, Bravo, Charlie, Delta, to Echo (most emergent). In one study that reviewed the process



of sending first responders non-emergent, it was found that there were no adverse outcomes as a result of dispatch protocol changes (Key, Pepe, Persse, & Calderon, 2003, p. 339). Additionally, this system then offers pre-arrival instructions to the caller in order to begin patient care prior to the arrival of EMS personnel. These pre-arrival instructions can range from how to initiate cardiopulmonary resuscitation (CPR) to offering aspirin to those potentially suffering a heart attack. The MPDS™ system has now been in use in over 3000 communication centers and further refined for the last thirty years ("About the Academy," n.d.). The utilization of MPDS will help to determine the numbers of responses to emergencies that could be non-emergent in nature.

### *Mechanisms*

In the literature review it was found there have been mechanisms created to apply alternate response or treatment algorithms for non-emergent care. Four of these mechanisms integrate into the categories of public health and/or healthcare and are not limited to just public safety. Some of these mechanisms have been in place for a number of years and others are less than a year old. All were formed with the intent of providing better care to patients.

One of these mechanisms found in the literature is the utilization of teletriage. Teletriage builds on the lower acuity categories of medical priority dispatch, such as Omega or Alpha, and then transfers these over to a secondary dispatcher. This secondary dispatcher is recommended to be a nurse who can then re-triage the call to further refine the level of service call (Heath, 2012). However, a review of the literature finds little if any evidence of this system in the public safety arena in use. The only references found were those in the Heath document and appeared to be sales material only.

The next mechanism found integrates into both public safety and the healthcare arm of EMS. This mechanism is the concept of the community health paramedic (CHP) or also potentially known as the advanced practice paramedic (APP). These programs are so new much of the literature review is only found in fire and EMS trade magazines. The purpose of these programs is to send advanced healthcare providers into the field to assess certain predetermined populations with high-acuity, low-frequency calls in an attempt to avoid overburdening EMS units and, most importantly, emergency departments (EDs) (Berry, 2012, p. 43). These programs have taken many shapes. The shape and content of the program has generally been driven by the needs of the community. For example in 2007 in Mesa, AZ an original partnership began by teaming a physician's assistant (PA) up with a paramedic from the fire department to answer low-level calls. This partnership was disbanded and reformed into a newer iteration which now involves teaming up a paramedic with a nurse practitioner (NP) to clear psychiatric patients in the field (Berry, 2012, p. 46). In contrast, a community health paramedic program has taken off in Eagle County, Colorado. As Berry notes, the central theme in Eagle County is to change what the paramedic does everyday without changing the scope of practice, which would include post-hospital discharge follow-up, fall prevention, blood draws and medication reconciliation (Berry, 2012, p. 47). These mechanisms have all been instituted with the intent of providing a better service to the citizen. The efficacy of these systems, whether in terms of dollars or patient outcomes, is yet to be proven.

The last mechanisms reviewed that have been used to apply alternate treatment algorithms, involve both public safety and public health. In 1976, Denver, (CO) CARES (Comprehensive Addictions Rehabilitation and Evaluation Services) came into existence. The purpose of this program was to establish a safe place (Social Detox) to take public inebriates

taking the burden off the emergency rooms and jails ("Denver CARES," 2012, p. 3). This program interacts with both Denver Health Paramedics and the Denver Police Department to identify, treat and transport those patients needing a place to sober up but not necessarily in a hospital. Annually, per the Denver CARES website, this program contacts up to 10,000 individuals

(<http://denverhealth.org/MedicalServices/MentalHealth/OurServices/DenverCARES.aspx>).

A second example of a public safety/public health alternate treatment program found in the literature was a program launched in Tucson, AZ in 2007. The purpose of this program was to redirect those frequent 9-1-1 callers who would call in nonemergency situations, to community-based health, social service, behavioral health, case management, and other services that can address their needs ("Referral Systems," 2010). This program allowed emergency service personnel to still address any emergent needs a patient might have but then to offer the patient access to the public health system as needed. This program did result in a decrease in the number of repeat calls by frequent callers. As a result of the literature review there have been found to be multiple mechanisms used to apply alternate response or treatment algorithms for non-emergent care.

### *Medical Legal*

The literature review did reveal challenges to implementing and fully understanding the implications of alternate response and/or treatment algorithms. Many of the programs found in the literature review are under two years old and have no peer-reviewed data yet to even research. One study was found in the U.K. that did explore the ability of paramedics trained with extended skills to deliver care. From a safety perspective the conclusion of Mason's (2008) study indicated:

Paramedics trained with the appropriate skills working in the community assessing and treating older people with minor acute conditions are doing so in a manner that is at least as safe as the standard care provided by EMS and the ED. (p. 612)

Uniquely, one current article argued when looking at the changing landscape of healthcare the concept of community paramedic programs is too early in its development to take on rules and regulations (Kirkwood, 2012). Another complicating factor when reviewing medical legal implications of alternate disposition of patients is the current EMS reimbursement model. EMS is paid to haul patients to hospital emergency departments and for the medical care it provides on scene. No transport equals no payment (Hagen, 2012, p. 60). This may require changes in federal law as far as funding is concerned which may impact the implementation of alternate response or treatment algorithms. This literature review demonstrates fully fleshing out the medical legal implications of alternate response and treatment algorithms is still on the horizon.

### *Organizational Effects*

In the review of the literature there is a lot of discussion of why there is the need for change to integrate EMS more fully into the health care system. But there is also the need to know what effects a change to alternate response and treatment may have on the organization itself. First, an organization must recognize whether it acts reactively within itself to see the need for change or can it look proactively and seek out the change. If an organization looks proactively at change this is best described as having “agility”. Agility can therefore be defined as the strategic management of uncertainty (Erich, 2012, p. 40). Proactively, seeking change to an alternate response and treatment modality will produce uncertainty or feelings of loss throughout an organization. This uncertainty or feelings of loss are hallmarks of adaptive change as opposed to technical change. As Heifetz and Linsky (2002) note, “You know you are

dealing with something more than a technical issue when people's hearts and minds need to change, and not just their preferences or routine behaviors" (p. 60). So in essence, an organization needs to have the understanding a change such as this may have cultural effects and be ready to address these.

Secondly, a change to include alternate response or treatment will impact an organization's training and education. This organizational impact may be both short and long term in nature. In 2000 the EMS Education Agenda for the Future: A Systems Approach was produced as a companion document to the 1996 EMS Agenda of the Future. This document envisions EMS education as high quality, emphasizing the integration of EMS within the overall health care system, and will teach not only acute emergency care but also, the treatment of chronic conditions, as well as community and public health (*EMS Education Agenda*, 2000, p. 1). The effects of changing training and education to include many more new requirements or competencies may impact the time available or resources necessary to accomplish this change. An organization will have to build in time, effort and energy in order to meet these new requirements.

Lastly, one of the long-term organizational effects of alternate response and treatment is financial. Currently, most EMS systems are funded by user fees, local tax subsidies, or for transportation of the patient only. The ambulance must transport the patient to a hospital emergency department (ED) to receive compensation from federal payers, and most commercial insurance companies (Finance Committee, 2012, p. 1). However, since the object of alternate response and treatment is to potentially not transport a patient there must be an alternative funding source, currently there are no types of these sources available. There is very current literature available describing a project which will create a template for reimbursement of

ambulance services by Medicare/Medicaid that does not necessarily involve transport of patients to the EDs (Smith, 2013, p. 1). However, this funding stream has an unknown implementation date, which again may impact an organization's ability to implement this change.

In summary, the purpose of this literature review was to review the literature as it relates to alternate disposition of patients. Much of the literature is so current in nature there was not a lot of current peer-reviewed articles found dealing with the medical legal implications or organizational effects of alternate disposition of patients. Finally, the published works reviewed have given the reader the reason why the current mentality of "You call, we haul" is outdated, inefficient and uncoordinated and is ripe for improvement.

#### Procedures

This applied research project used a descriptive research method in order to describe a current situation. Literature review and two surveys, one a survey of data and one a survey of attitudes, feelings and beliefs, were utilized to develop the final results. The data collection process for this research project began with an extensive literature review process. This literature review process utilized the Learning Resource Center at the National Fire Academy in Emmitsburg, MD, review of fire and EMS trade magazines received internally at the workplace, review of Wiley Online Library and a general internet review. The literature review was utilized as a jumping off point to formulate the overall strategy to further develop the applied research project.

The literature review process began with a review of previous applied research projects available in the Learning Resource Center. This review was then expanded and utilization of the Learning Resource Center's online library feature was more thoroughly utilized after physical access to the library was no longer an option. When reviewing the applied research projects

online, the NETC (National Emergency Training Center) WorldCat general topics feature was utilized. Both the general topics of Emergency Medical Services and Emergency Response were reviewed. This review was very general; many projects were read in order to gain an understanding of what information was available.

After completing the Learning Resource Center review, the Wiley Online Library and general internet review began. The Wiley Online Library was found at <http://onlinelibrary.wiley.com>. The Wiley Online Library database and the general internet review both utilized key words and phrases to further expand and drive the literature review process. The key words and phrases included emergency medical service(s), medical legal, dispatch, communications, alternate response, alternate treatment, alternate disposition, emergency medical technician (EMT), paramedic, funding, and reimbursement. Finally, trade magazines were reviewed. These specifically included: JEMS (Journal of Emergency Medical Services), EMSWorld, and Emergency Management. The information gathered from all of these searches was utilized in the literature review process.

There were two surveys utilized to gain more knowledge and answer the research questions. The first survey was a survey of the response data for 2011 from the South Metro Fire Rescue Authority's in-house records management system, The FireManager™ and the computer aided dispatch (CAD) data from the Metropolitan Area Communications Center (MetCom). Due to the size of the survey data (344 pages) Table 1 was developed to refine the data. The purpose of this survey was to ascertain the numbers of responses to calls for service that potentially could receive a non-emergent response. The survey was developed in consultation with Jeremy Manning, CAD Administrator of MetCom. The survey sample size selected was based on the most recent, complete year's worth of data available. As this research was primarily conducted

in 2012, 2011 was the most recent full year of data available. The survey was conducted or processed in September/October 2012. As this survey was a survey of data, there were no respondents to the survey. However, the total number of incidents reviewed was 15,758. The total number of emergency medical incidents was 7,560 separate incidents resulting in a transport of a patient.

The second survey conducted was Survey 1 - Fire and EMS Survey of 2012 (Appendix A). The purpose of this survey was to assess the attitudes, feelings or beliefs of emergency service personnel with respect to alternate disposition of patients. This twenty-one question survey was developed by utilizing the survey design software on the website SurveyMonkey©. The research questions developed in the applied research project and the literature review process were also utilized to develop the survey. The survey sample size was selected from the total number of line personnel at SMFRA (280) and the number of individuals in the Executive Development class of 2012 (24). The email to the line personnel at SMFRA utilized an email group named "Line Personnel". This was utilized to ensure that everyone in the group had an equal opportunity to respond to the survey. An email invitation was sent to the individual email addresses of the Executive Development class of 2012. This total population was selected to be reflective of a mix of various levels of certified EMS personnel. As stated above, this survey was created utilizing the survey design software of the website SurveyMonkey© found at [www.surveymonkey.com](http://www.surveymonkey.com). After creating the survey the groups listed above were invited to participate via an interdepartmental email with a customized link to the survey or an email invitation created from the software. The survey was opened November 23, 2012 and closed December 31, 2012. A total of 143 respondents completed the survey.



The total number of respondents to the survey was the one limitation noted. A feature available on the SurveyMonkey© website was not utilized to automatically create an email reminder to complete the survey or the ability to offer a reward if the survey was completed. Upon review both of these features should have been utilized to encourage participation.

### Results

*Research Question #1: What are the numbers of responses to emergencies that are determined to be non-emergent?*

To determine the numbers of non-emergent responses a review of the 2011 data from SMFRA's records management system and MetCom's CAD data was obtained. The data was refined into Table 1 – Medical Incident Type with Alpha Determinant in order to clarify the results as the raw data was 344 pages in unedited size. The first column, "CAD Problem", of Table 1 is the definition of the medical call type as assigned by the MetCom dispatcher. The second column, "Total # of Incident Type", is the total number of the specific incident type. After a dispatcher receives the call for service the information is categorized further by giving it a determinant code. This determinant code results from the series of questions the dispatcher asks while utilizing the Medical Priority Dispatch System™ (MPDS). Therefore column three, "Total # with Alpha Determinant", represents the total number of a specific incident type that received an "Alpha" coding. In medical priority dispatch an "Alpha" call is the second lowest level of response. For this table, an "Alpha" coding represents a non-emergent response by all EMS personnel. The last column, "Total # Transported by SMFRA", represents the number of "Alpha" incidents that were transported. The total number of responses to calls for services in 2011 was 7,559. Of this number, the total number of incidents coded as "Alpha" and receiving a non-emergent response is 1,179.

Table 1 – Medical Incident Type with Alpha Determinant

<b>CAD Problem</b>	<b>Total # of Incident Type</b>	<b>Total # w/Alpha Determinant</b>	<b>Total # Transported by SMFRA</b>
ABDOMINAL PAIN	184	88	78
ACCIDENT - BICYCLE	19	0	0
ALCOHOL EVALUATION	153	1	1
ALLERGIC REACTION	114	19	9
ANIMAL ATTACK	2	0	0
ANIMAL BITE	0	0	0
ASSAULT	120	0	0
BACK PAIN	54	39	35
BREATHING PROBLEMS	502	0	0
BURNS	7	2	2
CHEST PAIN	506	9	6
CHOKING	69	26	7
COLD EXPOSURE	2	0	0
CORE ZERO	101	0	0
DIABETIC PARTY	164	22	16
DROWNING MEDICAL	5	2	1
ELECTROCUTION	3	0	0
ENTRAPMENT	1	0	0
ENVENOMATION	4	2	0
EYE PROBLEM	8	3	1
FALL VICTIM	970	254	186
GUNSHOT WOUND	10	0	0
HEADACHE	43	7	7
HEART PROBLEMS	142	7	5
HEAT EXPOSURE	6	0	0
HEMORRHAGE	176	9	4
LABOR - CHILDBIRTH	19	0	0
LIFT ASSIST	220	45	2
MEDICAL ASSIST	352	0	0
MEDICAL HIGHWAY	28	0	0
MEDICAL UNKNOWN	92	0	0

OB EMERGENCY	6	1	1
OVERDOSE - POISONING	177	42	30
PSYCH PROBLEMS	83	5	4
RESCUE - ICE	2	0	0
RESCUE - LOW ANGLE	1	0	0
RESCUE - TRENCH	1	0	0
SEIZURES	424	78	61
SICK PARTY	799	295	222
STROKE	128	0	0
SUICIDAL PARTY	76	0	0
SUICIDE ATTEMPT	47	0	0
SYNCOPE	360	141	94
TRAUMATIC INJURIES	363	82	50
UNCONSCIOUS PARTY	398	0	0
<b>Totals</b>	<b>6941</b>	<b>1179</b>	<b>822</b>

*Research Question #2: What mechanisms have been used to apply alternate response or treatment algorithms for non-emergent care?*

The literature review was the best source of information regarding mechanisms having been used to apply alternate response or treatment algorithms for non-emergent care. As noted in the Procedures section, an online search of the internet and Wiley Online Library revealed the following mechanisms have been used in the alternate disposition of patients. These mechanisms include: teletriage, community health paramedic or advanced practice paramedic, partnerships between a fire-based paramedic and nurse practitioner and a partnership between EMS personnel and the local public health agencies. Teletriage has not gained wide acceptance potentially due to lack of efficacy. Potentially due to a lack of funding mechanisms, community health paramedic or the partnership between fire-based paramedic and nurse practitioner are still relatively young with little data available too. The partnership between EMS personnel and

public health, which in one situation is years old, seems to be the most successful because of its focus on a specific subset of EMS patients. Finally, the last mechanism used to apply alternate response is the utilization of medical priority dispatch. This system has been in service and used throughout the world for the last thirty years. The medical priority dispatch system has the ability to be fully accredited, which further enhances its ability to provide alternate response. Thus there are many mechanisms available to a system to implement alternate disposition of patients.

*Research Question #3: What are the medical legal implications of alternate response and/or treatment algorithms?*

Again, the literature review process was the best source of the limited information regarding the medical legal implications of alternate response and/or treatment algorithms. The literature review revealed mostly, due to the relatively young age of the mechanisms, there are unknown medical legal implications. There are potential changes to the laws that must occur and these are primarily related to how EMS would be funded if there was no transport of patients, but care was still rendered. So the full and complete answer to this research question is not known. A more full and complete answer will be forthcoming as the landscape of the healthcare continues to evolve.

*Research Question #4: What are the short-term and long-term organizational effects and outcomes from using alternate response and treatment algorithms?*

The short-term and long-term organizational effects and outcomes from using alternate response and treatment algorithms were answered by both the literature review and Survey 1 - Fire and EMS Survey 2012 (Appendix A). The literature review demonstrated the effects of alternate disposition of patients is not limited to only the short-term or long-term but

encompasses both. Short-term an organization needs to recognize it must become more agile to accept the rapid changes occurring in healthcare. Short and long term effects also include changes to an organization's training and education model. Long-term there are the potential effects of changes to the financial makeup of the organization due to changes in reimbursement.

Finally, in Survey 1, Fire and EMS Survey 2012, short and long term organizational effects were specifically discussed. The full survey with specific results can be found in Appendix A.

The first three questions of the survey dealt with establishing the demographic of the respondent, to include: name of fire department, years in the fire service, and level of EMS certification. Questions three - seven of the survey dealt with establishing how the respondent's department provides EMS in their community. Questions eight and nine dealt with what type of facility a patient could be transported to. Questions ten – thirteen dealt with the medical dispatch to EMS incidents. Questions fourteen through eighteen dealt with the respondent's attitudes, feelings or beliefs regarding alternate disposition of patients. Questions nineteen and twenty dealt specifically with if the respondent felt there could be any short-term or long-term organizational effects of alternate disposition of patients. Finally, question twenty-one allowed for the respondent to offer more personal information for any needed follow-up.

The results of question nineteen, "Do you think there could be any short term organizational effects or outcomes from utilizing alternative response or alternative transport destinations?" was reported as "Yes" from 65% of the respondents. Responses included, "change is always difficult", "cultural adjustment", "change in the billing process", and including "patient may get quicker or cheaper care". Interestingly, there were a slightly less number of respondents who felt there would be long-term organizational effects or outcomes in

question number twenty. In question twenty 61.8% of the respondents stated “Yes” when asked if there would be long-term effects or outcomes. Again, many of the respondents re-stated their same answers to question number nineteen, some however, also recognized the “public view of calling FD or 911 could change. This could alter the mission.”

Overall, the answers given reflect what is currently found in the literature. No one specifically knows what the short-term or long-term organization effects are of alternate disposition of patients as this is a new concept to the world of EMS.

### Discussion

The purpose of this research project is to identify those emergency medical incidents that could have an alternate disposition and provide options to treatment modalities other than transport to the hospital. As one of the five goals discussed in the Executive Development course, there is for the EFO, an opportunity to use research to solve real-world problems in their work environments (*Executive Development*, 2011, p. 13-3). This applied research project has provided the opportunity, utilizing research, to see if there were any emergency medical incidents that could have an alternate disposition and provide options for patient transport. The discussion following makes these opportunities clear.

In the research of the question, “What are the numbers of responses to emergencies that are determined to be non-emergent?” the answer is clear. A review of the data has determined that yes in fact there are responses to requests for service that can be made in a non-emergent manner by responding EMS personnel. The utilization of a medical priority dispatch system such as MPDS™ used in emergency medical dispatching (EMD), would result in a rational assignment of system resources tailored to the specific needs of the patient (Cady, 1999). The research of the data obtained from a review of The FireManager™ records management system

of SMFRA and CAD data from MetCom demonstrates in fact, upwards of 15% of the emergency medical incidents could be responded to in a non-emergent manner. The organizational implications for SMFRA are clear. Incorporating medical priority dispatch into the organization is necessary and possible and would result in the ability to provide an alternate response to certain calls for service. In order to utilize alternate treatment mechanisms however, the organization must develop some way to identify those calls for service that are non-emergent in nature. Utilization of a medical priority dispatching system is an answer.

The research work revealed there is the opportunity to utilize other mechanisms to alternate response or treatment algorithms. Again, utilizing medical priority dispatch is one method for alternate response. Treatment algorithms however, are also available but are more complex or not necessarily suitable for every organization. Teletriage, community health paramedic or advanced practice paramedic, partnerships between fire paramedic and nurse practitioner, partnerships between public health and public safety and finally referral systems utilizing public health and public safety were all mechanisms identified that could encourage an alternate disposition of patients.

Teletriage is the opportunity to use a secondary dispatcher to further refine those calls for service. This secondary dispatcher is recommended to be a nurse who can then re-triage the call to further refine the level of service call (Heath, 2012). However, as noted in the literature review little if any evidence of use of this type of system in the public safety arena exists. The only references found were those in the Heath document and appeared to be sales material only.

Community health paramedics or advanced practice paramedics are another mechanism that could be suitable to alternate disposition of patients. As noted in the literature review, these programs are so new much of the literature review is found in trade magazines and not peer-

reviewed articles. Since, the purpose of these programs is to send advanced healthcare providers into the field to assess certain predetermined populations with high-acuity, low-frequency calls in an attempt to avoid overburdening EMS units and, most importantly, emergency departments (EDs) (Berry, 2012, p. 43) these are mechanisms that could be used but with unknown success.

Partnerships between public safety and healthcare are another mechanism that could provide alternate disposition of patients. An iteration of the program now involves teaming up a paramedic with a nurse practitioner (NP) to clear psychiatric patients in the field (Berry, 2012, p. 46). Again, this program is so new it too has yet to be shown to be successful.

Partnerships between public health and public safety were examples of where alternate dispositions of patients have been tried in the past and in the present. The partnership between Denver Health Paramedics (public safety) and Denver CARES (public health) is an example of a system focused on one subset of patients, public inebriates, and transports them to another location besides an emergency department which results in taking the burden off the emergency rooms and jails ("Denver CARES," 2012, p. 3).

A final example of a mechanism involving alternate disposition of patients is again a partnership between public health and public safety. This program in Tucson, AZ has also only been in place since 2007. The purpose of this program was to redirect those frequent 9-1-1 callers who would call in nonemergency situations, to community-based health, social service, behavioral health, case management, and other services that can address their needs ("Referral Systems," 2010). This program also resulted in a reduction of repeat calls by frequent callers.

Recognizing there are mechanisms available to apply alternate response or treatment algorithms for non-emergent care is the first step an organization can take to implementing this into its system. The actual implementation of which mechanism should be pursued can only



occur after carefully identifying which patient group would best be served by implementation of alternate response or treatment. Additionally, due to the relative “newness” of some of the mechanisms, an organization must be prepared for some failure in the system and understand this will have to be acceptable.

The next point in the discussion of alternate disposition of patients is to recognize there may be medical legal implications of alternate response and/or treatment algorithms. Due to the recent innovations of alternate mechanisms some argue there should be no restrictions put in place until the systems have had a chance to ripen or evolve. As stated by Kirkwood ...the concept of community paramedic programs is too early in its development to take on rules and regulations (Kirkwood, 2012). However, that does not mean that any medical legal implications are summarily dismissed. It must be understood many EMS systems are funded by transportation of a patient. EMS is paid to haul patients to hospital emergency departments and for the medical care it provides on scene. No transport equals no payment (Hagen, 2012, p. 60). So organizationally, any changes an organization wants to make to alternate transport may require funding from within an organization until such time there would be a change in the law for a different kind of reimbursement.

The discussion must include identifying what are the short-term and long-term organizational effects and outcomes from using alternate response and treatment algorithms. In order for an organization to begin a project like alternate response or treatment, the organization must inherently be agile, or as Ehrlich notes, have agility, which he defines as the strategic management of uncertainty (Erich, 2012, p. 40). If an organization understands or accepts there may be some loss in funding, and is willing to accept this in order to better serve a greater number of citizens, and then the organization may be described as agile.

Training and education are also potentially a factor effecting organizational outcomes. The change to alternate response and treatment will require a change to the competencies currently defining acceptable EMS education. As noted in the 2000 EMS Education Agenda to the Future, EMS education is envisioned as high quality, emphasizing the integration of EMS within the overall health care system, and will teach not only acute emergency care but also, the treatment of chronic conditions, as well as community and public health (*EMS Education Agenda*, 2000, p. 1). An overhaul of the training and education concepts and practices will be required by the organization. Organizational acceptance of this change, in required training and education, will be required to implement alternate response and treatment.

Lastly, the discussion must include the financial implications of using alternate response and treatment algorithms. As noted above, the ambulance must transport the patient to a hospital emergency department (ED) to receive compensation from federal payers, and most commercial insurance companies (Finance Committee, 2012, p. 1). A short-term and long-term effect may be the organization accepts lesser compensation due to alternate response and treatment but in exchange offers a more integrated, more robust service to the citizens. An organization will have to determine how much it is worth for itself in the discussion of alternate response and treatment.

The discussion of alternate response and treatment has been determined to be worth instituting in an organization. As noted in the Background and Significance of this applied research project, the fourth goal of the USFA strategic plan is to improve the fire and emergency services' professional status ("Strategic Plan," 2012). The discussion of alternate response and treatment proves changing the organization to more quickly and efficiently respond to the needs of the citizens will improve upon its professional status. Therefore, this has been a worthwhile discussion.

### Recommendations

As noted in the SMFRA Strategic Master Plan 2011 – 2015 there were several major recommendations listed. One of the priorities listed was the need to develop a more dynamic emergency response deployment model that accounts for the diversity of the various communities served and is adaptable to future changes (South Metro Fire Rescue Authority [SMFRA], 2010, p. 5). The intent of the following recommendations is to assist the organization in planning and developing an alternate response and treatment model that works for SMFRA.

- Form a committee, comprised of the EMS Bureau, Operations and MetCom to plan the implementation of alternate response. Ensure the committee has the ability to plan for the timeframe of the implementation schedule.
- Work with MetCom to ensure there is adequate training of dispatchers regarding the change in operational response to non-emergent calls for service.
- Educate the members of SMFRA regarding the need for and the reasoning behind a change in response to non-emergent calls for service.
- Re-evaluate after one month, three months and six months the alternate response algorithm to ascertain if the changes have produced an alternate response to at least 15% of the incidents as determined in Table 1 – Medical Incident Type with Alpha Determinant that potentially could receive a non-emergent response.
- A reduction in the number of currently emergent responses to those calls for service that have been re-defined as a non-emergent response would be acceptable as an organizational benefit.
- Form a committee, comprised of the EMS Bureau, EMS Education, department medical director and Operations to plan for the implementation of the alternate

disposition of patient algorithm. Ensure the committee has the ability to decide which patient population would be most positively impacted by an alternate disposition algorithm.

- Implement an advanced practice paramedic program to address the needs of an alternate disposition of patients. Form a partnership with a nurse practitioner program to assist in the implementation of an advanced practice paramedic program.
- Ensure, with the help of EMS Education, the EMS personnel are adequately trained in the new competencies required by alternate disposition.
- The follow up evaluation of this program would involve the ability to review the data to see which patients were most positively impacted by alternate disposition.
- The organizational benefits expected from this program would be defined as the successful development of a more dynamic emergency response model as listed in the priorities in the SMFRA Strategic Plan 2011 -2015.

In conclusion, further research is necessary into the success of some of the mechanisms of alternate disposition of patients. This may have to be a function of time if an organization is not willing or able to take on this project without having acceptable internal funding. However, an organization willing to begin the discussion on alternate disposition of patients may already set the stage for future success.

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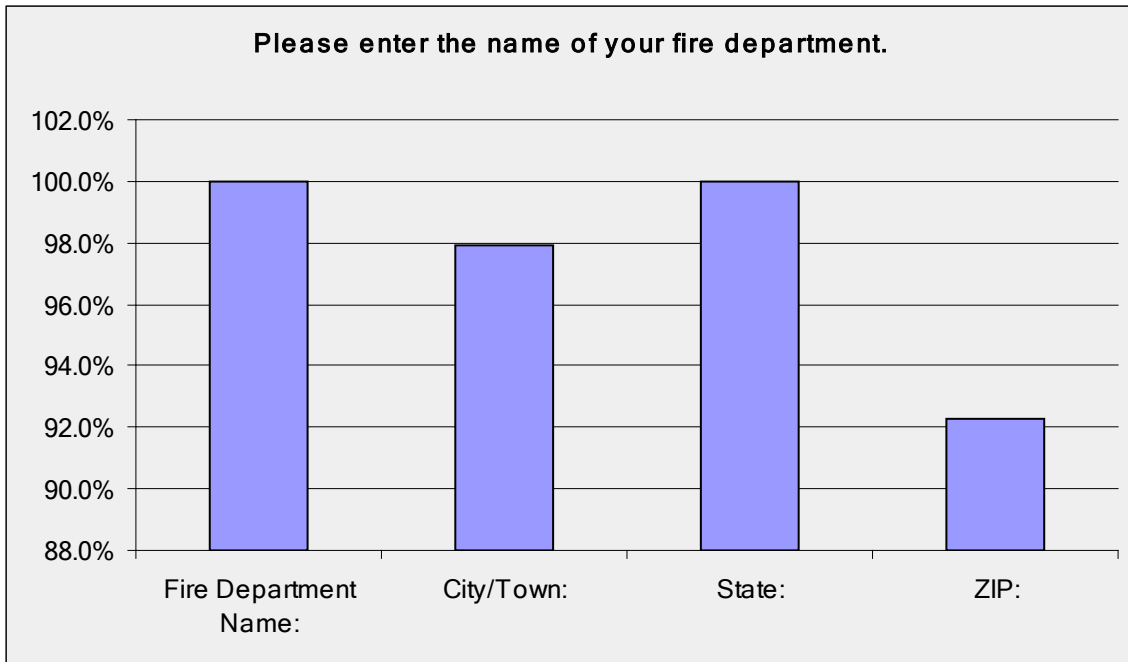
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Appendix A

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 1**

<b>Please enter the name of your fire department.</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Fire Department Name:	100.0%	143
City/Town:	97.9%	140
State:	100.0%	143
ZIP:	92.3%	132
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



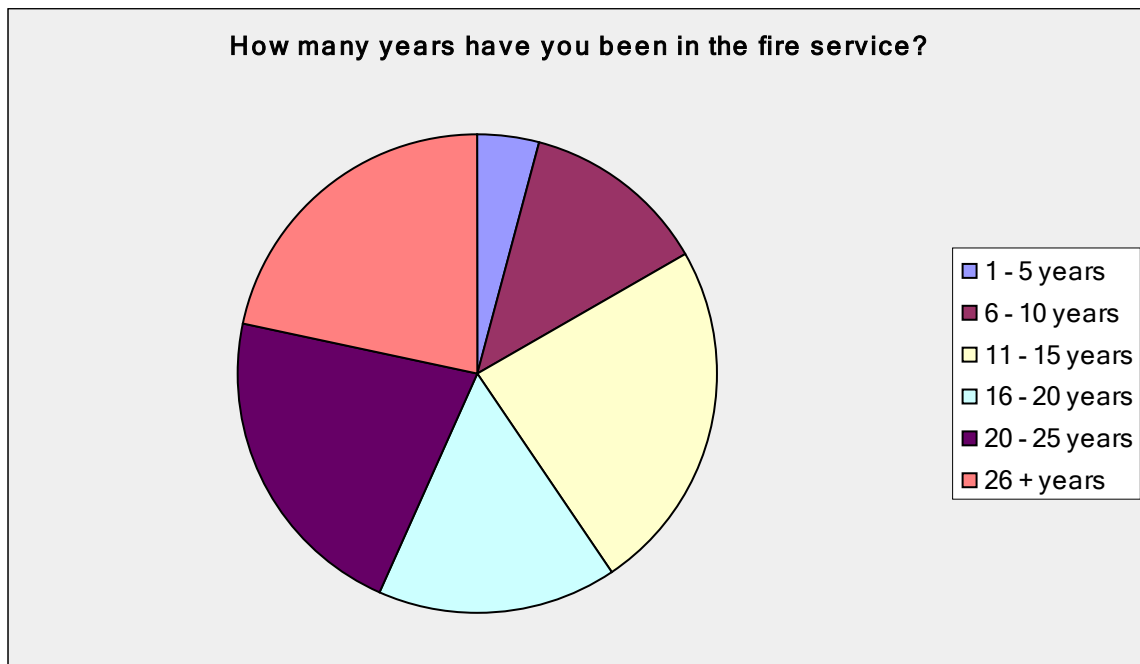


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 2**

<b>How many years have you been in the fire service?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
1 - 5 years	4.2%	6
6 - 10 years	12.6%	18
11 - 15 years	23.8%	34
16 - 20 years	16.1%	23
20 - 25 years	21.7%	31
26 + years	21.7%	31
<b><i>answered question</i></b>		<b>143</b>
<b><i>skipped question</i></b>		<b>0</b>

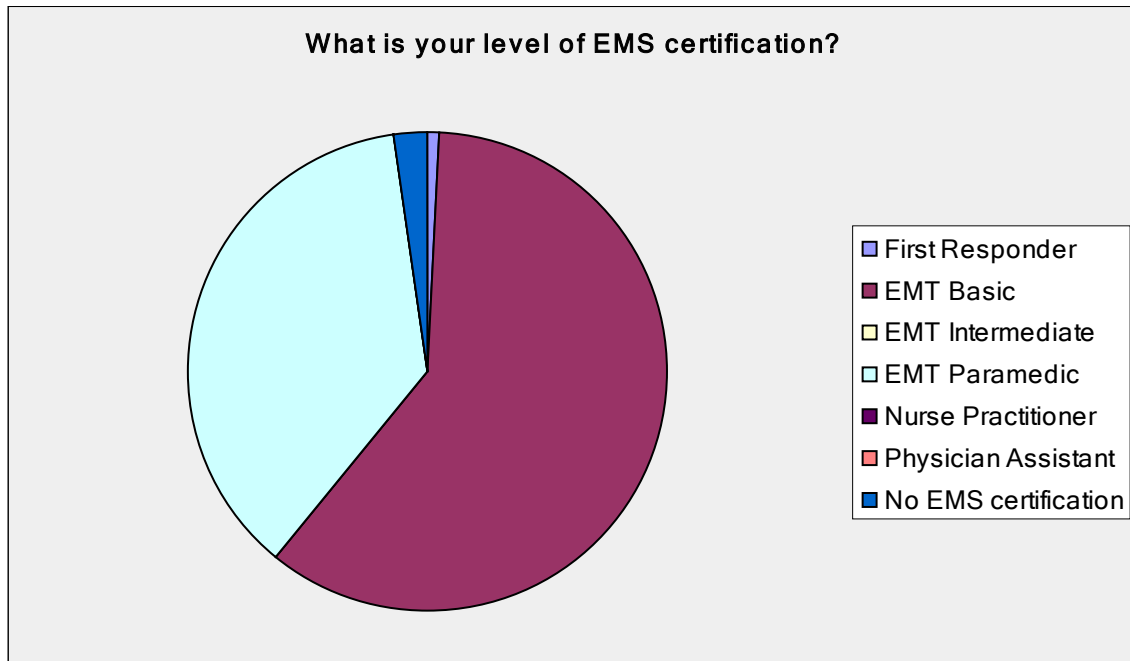


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 3**

<b>What is your level of EMS certification?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
First Responder	0.7%	1
EMT Basic	60.1%	86
EMT Intermediate	0.0%	0
EMT Paramedic	37.1%	53
Nurse Practitioner	0.0%	0
Physician Assistant	0.0%	0
No EMS certification	2.1%	3
<b><i>answered question</i></b>		<b>143</b>
<b><i>skipped question</i></b>		<b>0</b>

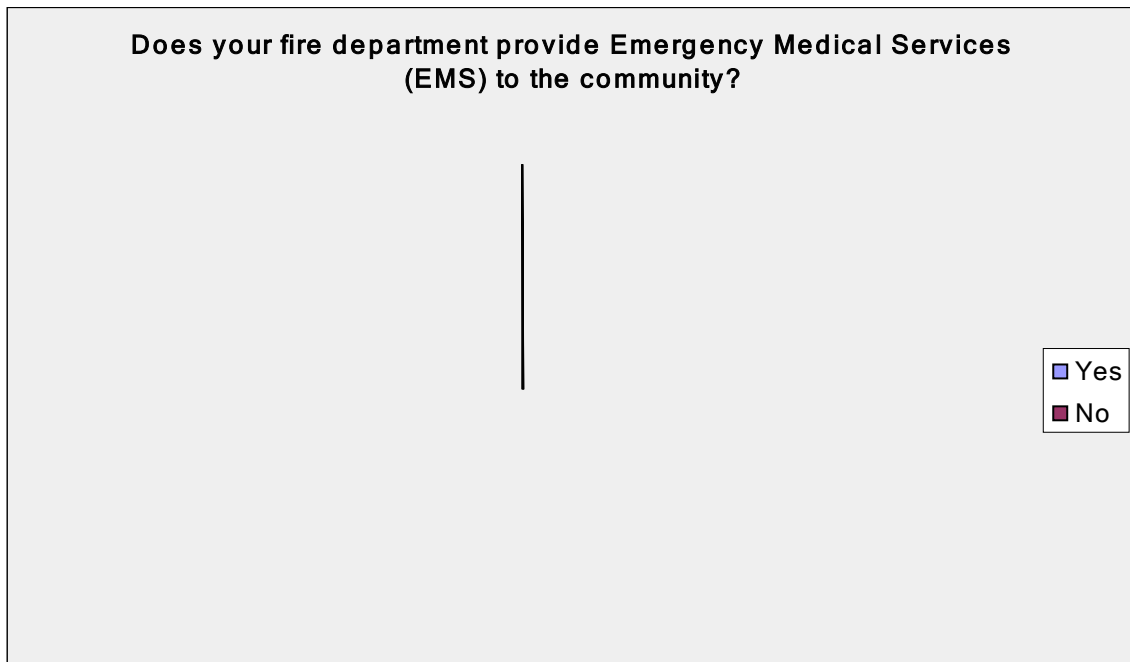


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 – Question 4**

<b>Does your fire department provide Emergency Medical Services (EMS) to the community?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes	100.0%	142
No	0.0%	0
<i>answered question</i>		<b>142</b>
<i>skipped question</i>		<b>1</b>

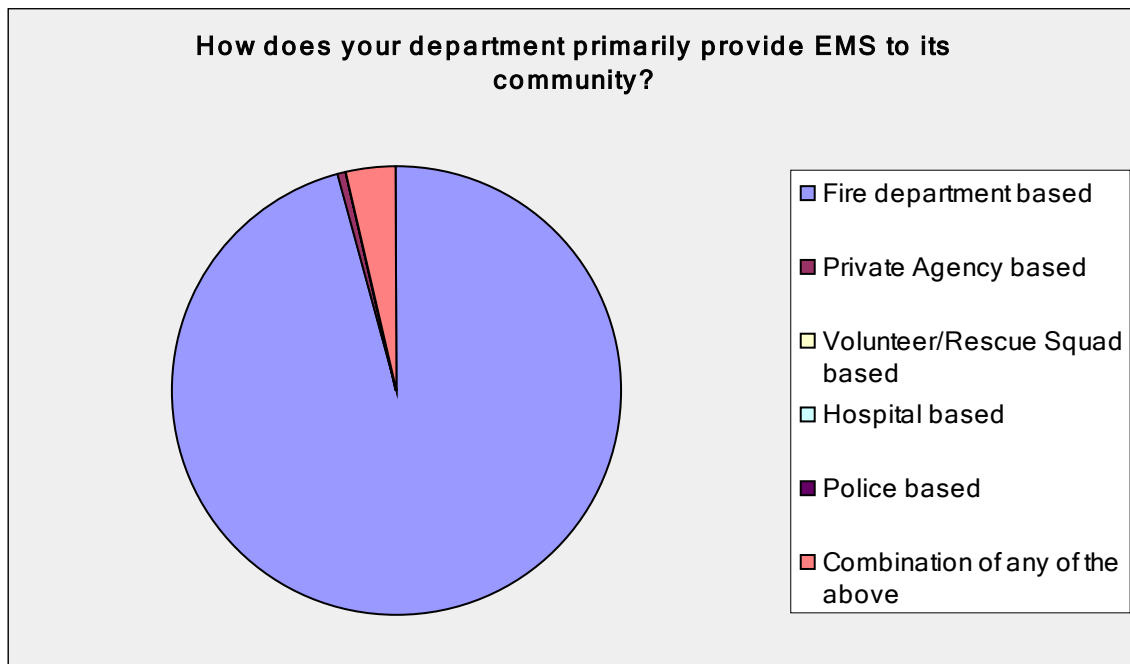


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 5**

<b>How does your department primarily provide EMS to its community?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Fire department based	95.8%	137
Private Agency based	0.7%	1
Volunteer/Rescue Squad based	0.0%	0
Hospital based	0.0%	0
Police based	0.0%	0
Combination of any of the above	3.5%	5
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



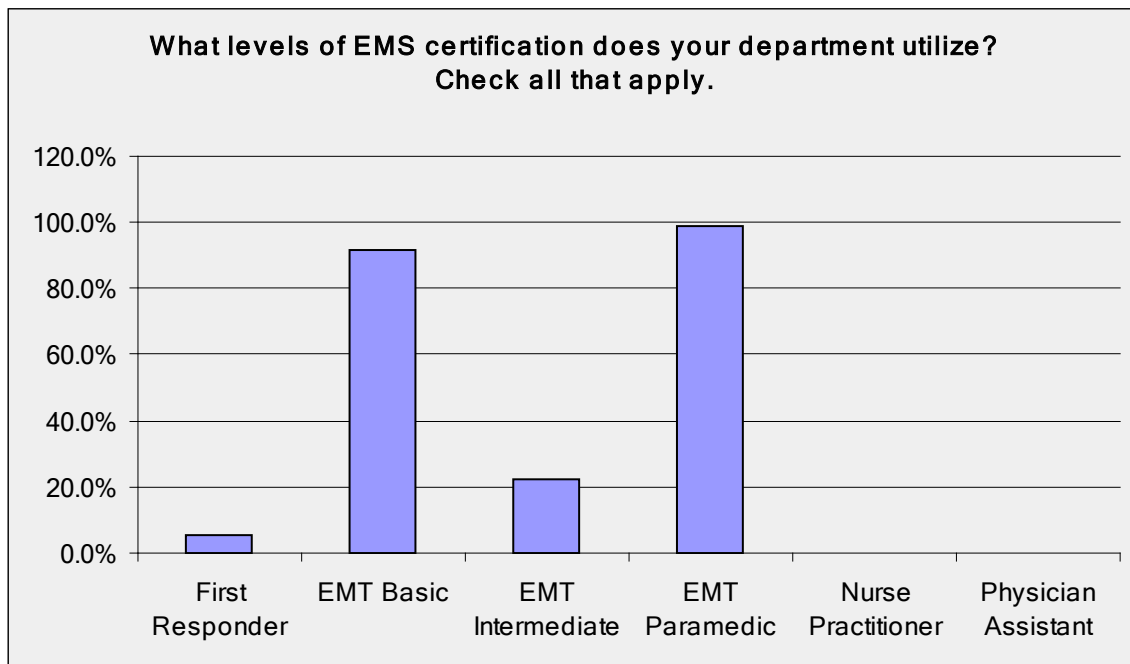
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 6**

**What levels of EMS certification does your department utilize? Check all that apply.**

<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
First Responder	5.6%	8
EMT Basic	91.6%	131
EMT Intermediate	22.4%	32
EMT Paramedic	98.6%	141
Nurse Practitioner	0.0%	0
Physician Assistant	0.0%	0
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>

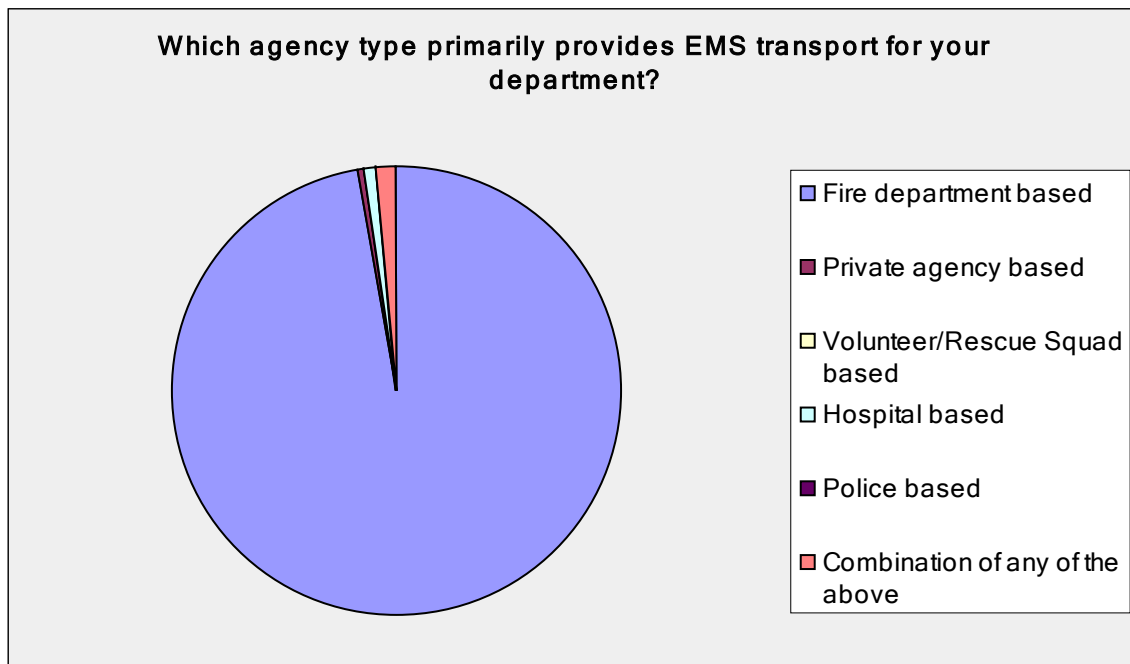


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 7**

<b>Which agency type primarily provides EMS transport for your department?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Fire department based	97.2%	139
Private agency based	0.7%	1
Volunteer/Rescue Squad based	0.0%	0
Hospital based	0.7%	1
Police based	0.0%	0
Combination of any of the above	1.4%	2
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>

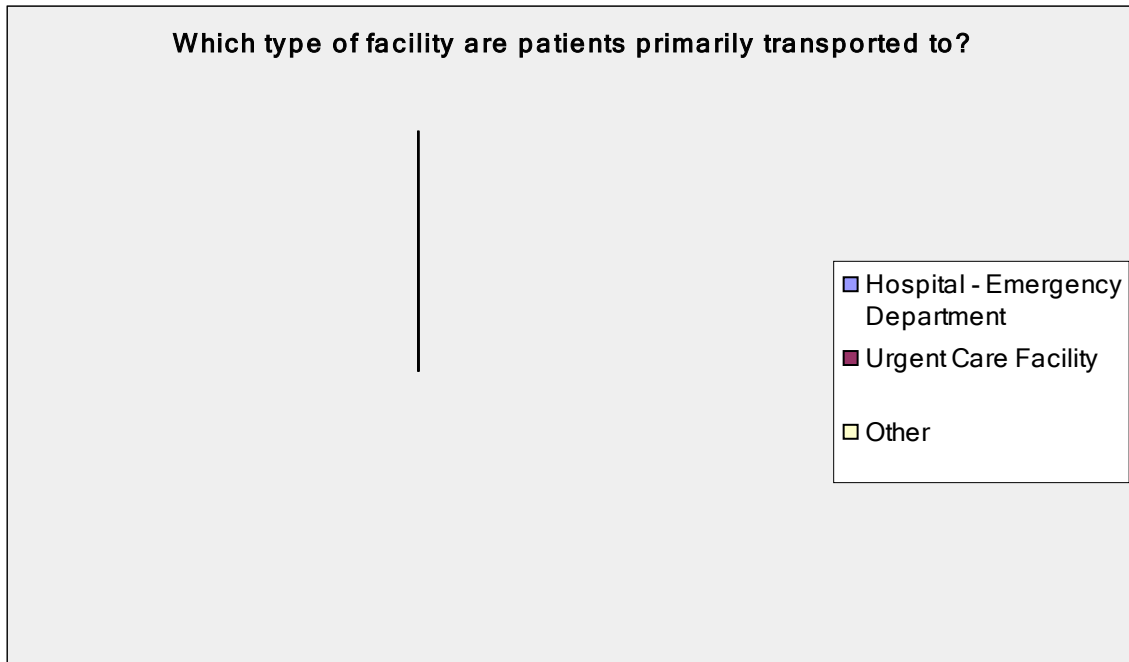


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 8**

<b>Which type of facility are patients primarily transported to?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Hospital - Emergency Department	100.0%	143
Urgent Care Facility	0.0%	0
Other	0.0%	0
If "Other" please describe:		0
<b><i>answered question</i></b>		<b>143</b>
<b><i>skipped question</i></b>		<b>0</b>

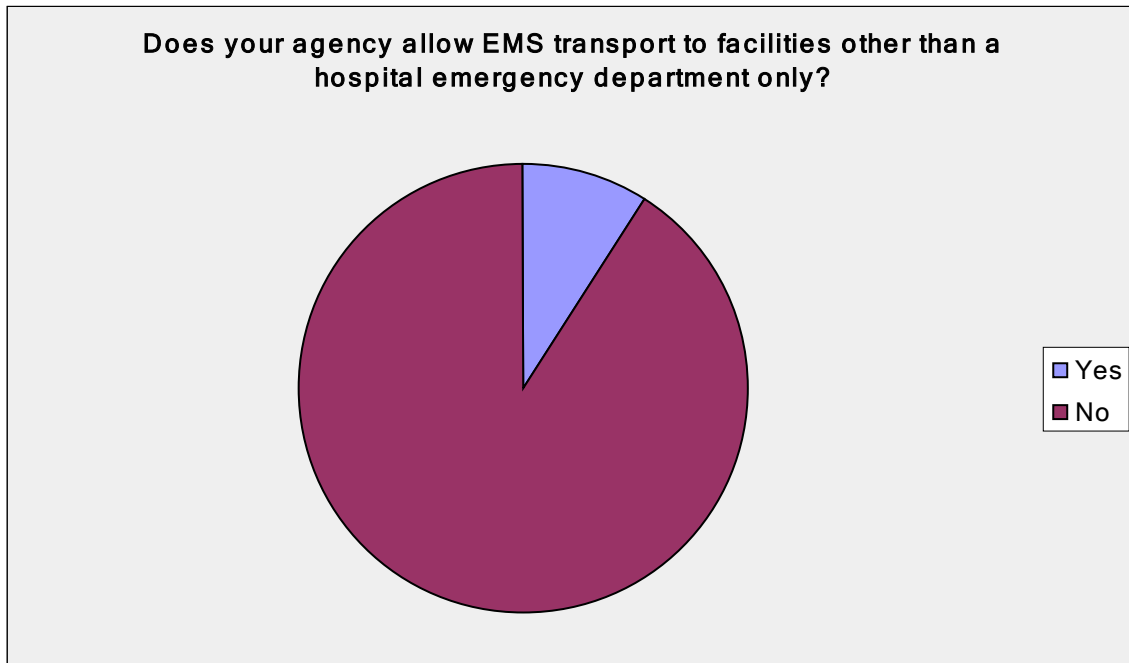


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 9**

<b>Does your agency allow EMS transport to facilities other than a hospital emergency department only?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes	9.2%	13
No	90.8%	129
If "Yes" please describe the facility transported to:		9
	<i>answered question</i>	<b>142</b>
	<i>skipped question</i>	<b>1</b>



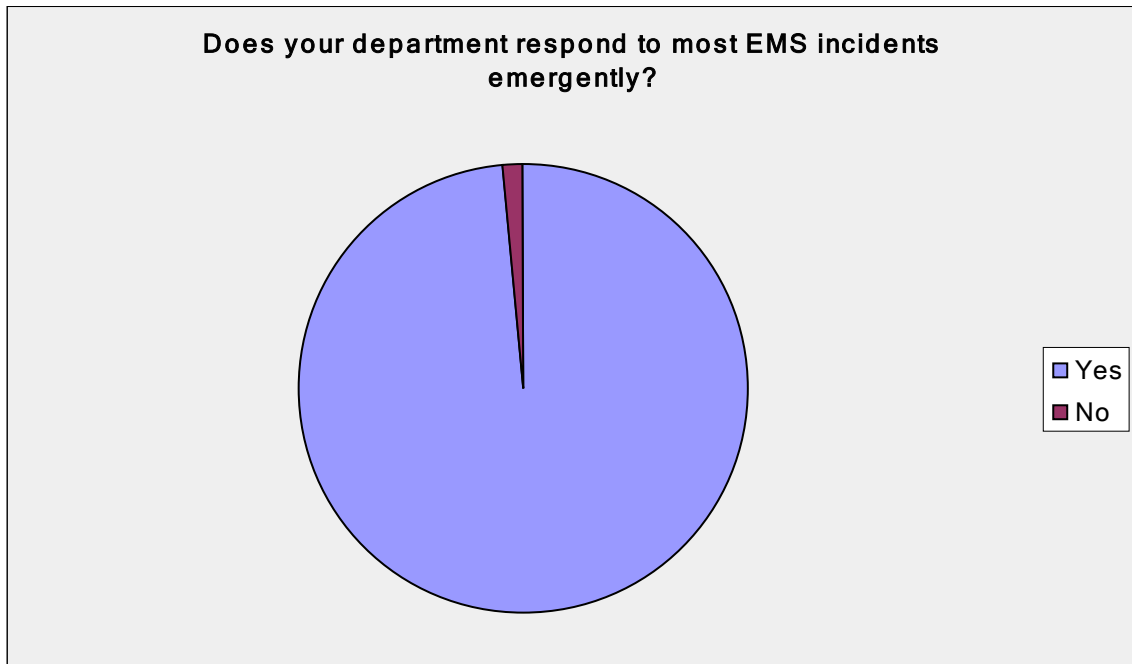


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 10**

<b>Does your department respond to most EMS incidents emergently?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes	98.6%	141
No	1.4%	2
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



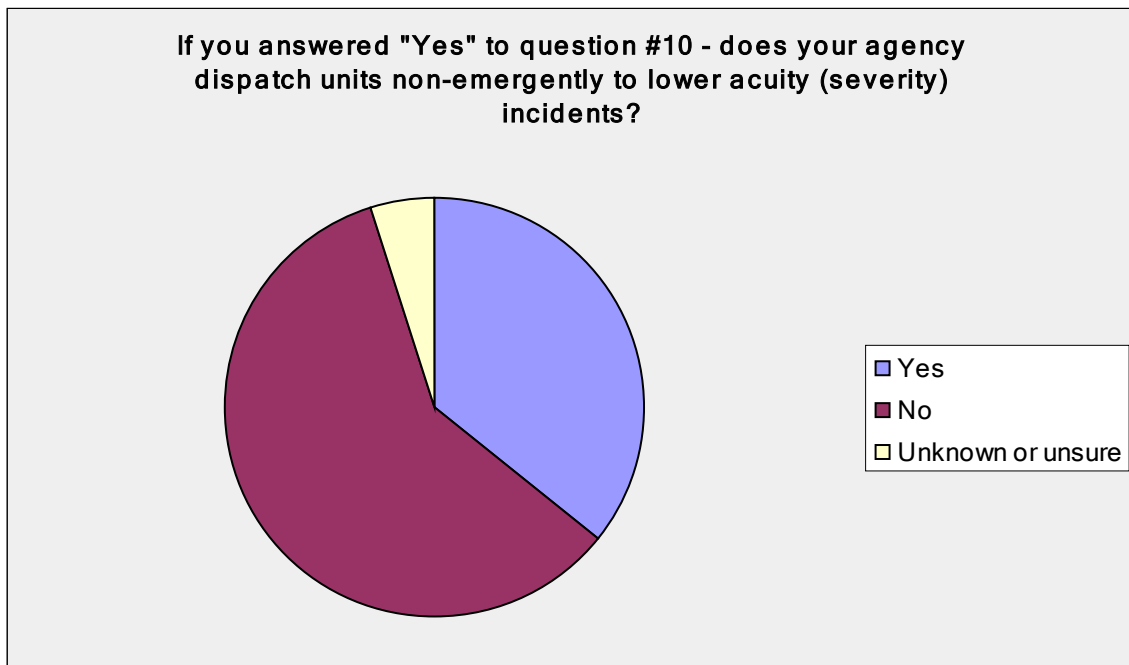
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 11**

**If you answered "Yes" to question #10 - does your agency dispatch units non-emergently to lower acuity (severity) incidents?**

Answer Options	Response Percent	Response Count
Yes	35.9%	51
No	59.2%	84
Unknown or unsure	4.9%	7
<i>answered question</i>		<b>142</b>
<i>skipped question</i>		<b>1</b>

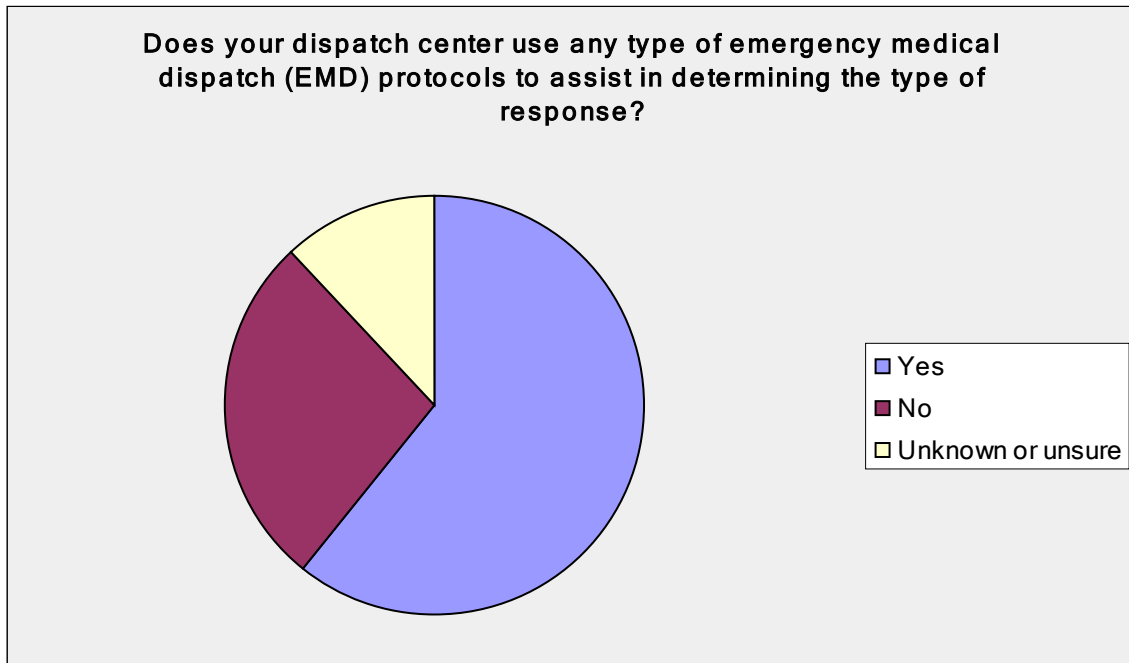


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 12**

<b>Does your dispatch center use any type of emergency medical dispatch (EMD) protocols to assist in determining the type of response?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes	60.8%	87
No	27.3%	39
Unknown or unsure	11.9%	17
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 13**

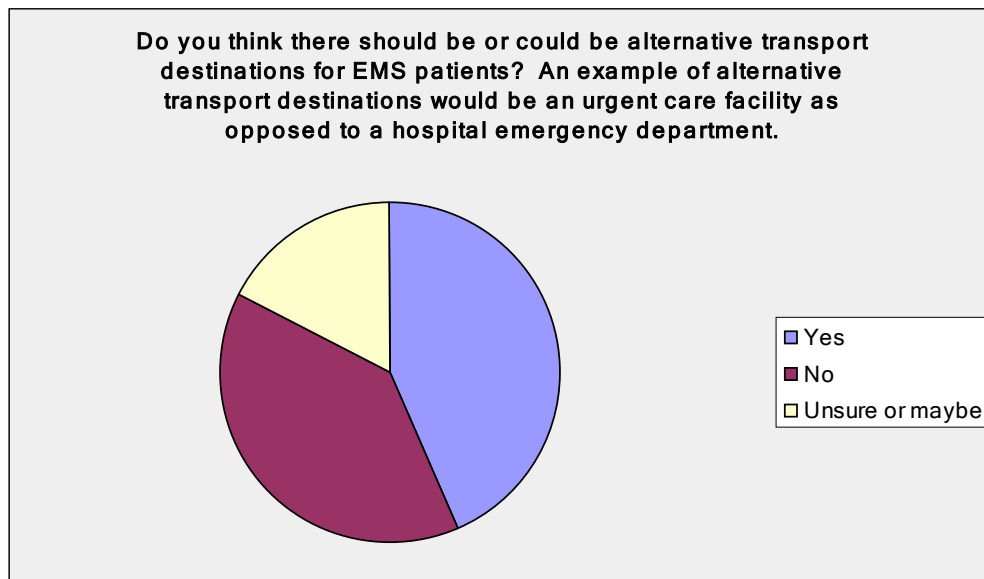
**If your department responds non-emergently to selected EMS incidents, have there been any negative experiences or outcomes with this type of response?**

Answer Options	Response Count
	59
<i>answered question</i>	<b>59</b>
<i>skipped question</i>	<b>84</b>

**Fire and EMS Survey 2012 - Question 14**

**Do you think there should be or could be alternative transport destinations for EMS patients? An example of alternative transport destinations would be an urgent care facility as opposed to a hospital emergency department.**

Answer Options	Response Percent	Response Count
Yes	43.4%	62
No	39.2%	56
Unsure or maybe	17.5%	25
Comments:		30
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



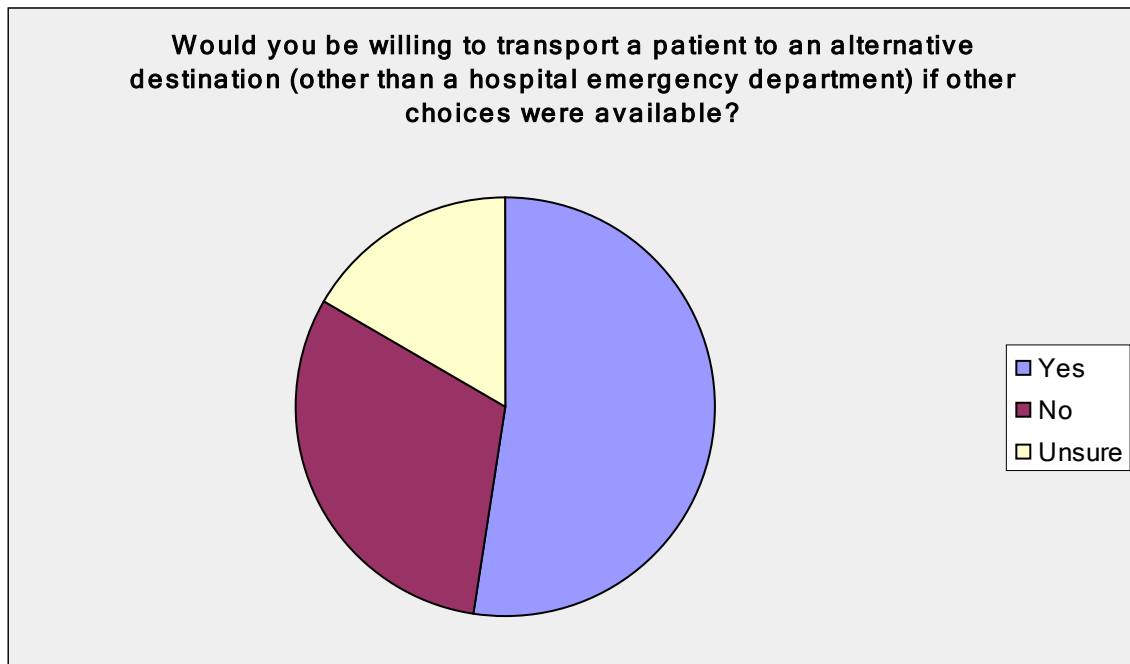
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 15**

**Would you be willing to transport a patient to an alternative destination (other than a hospital emergency department) if other choices were available?**

Answer Options	Response Percent	Response Count
Yes	52.4%	75
No	30.8%	44
Unsure	16.8%	24
Comments:		15
<i>answered question</i>		<b>143</b>
<i>skipped question</i>		<b>0</b>



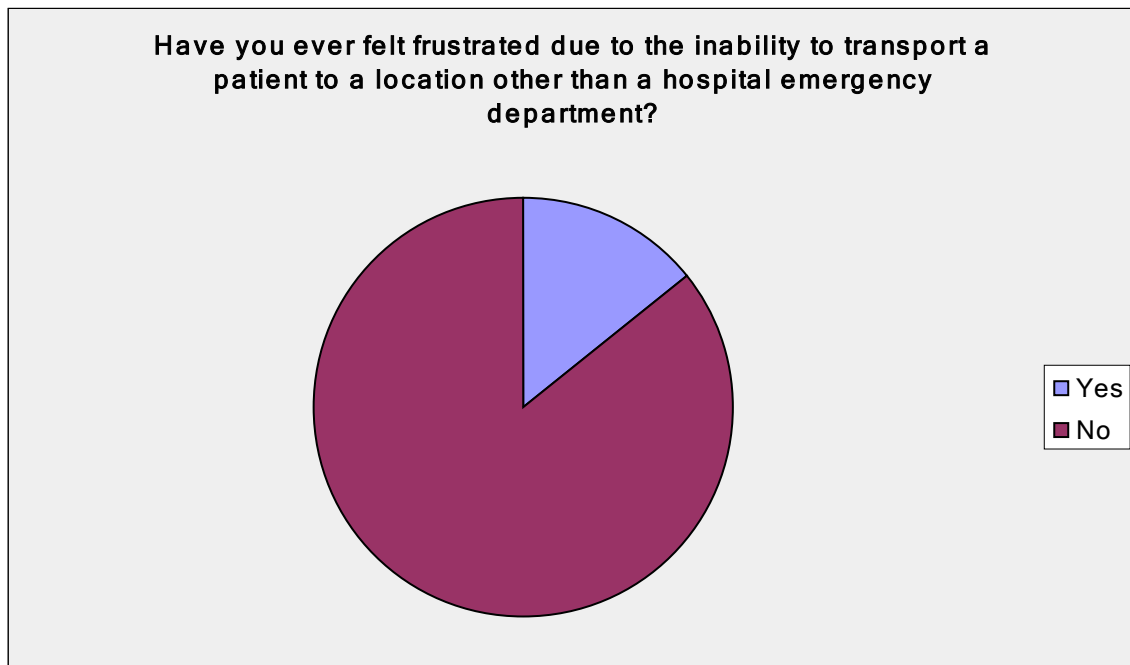
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 16**

**Have you ever felt frustrated due to the inability to transport a patient to a location other than a hospital emergency department?**

Answer Options	Response Percent	Response Count
Yes	14.1%	20
No	85.9%	122
If "Yes" describe why:		11
<i>answered question</i>		<b>142</b>
<i>skipped question</i>		<b>1</b>



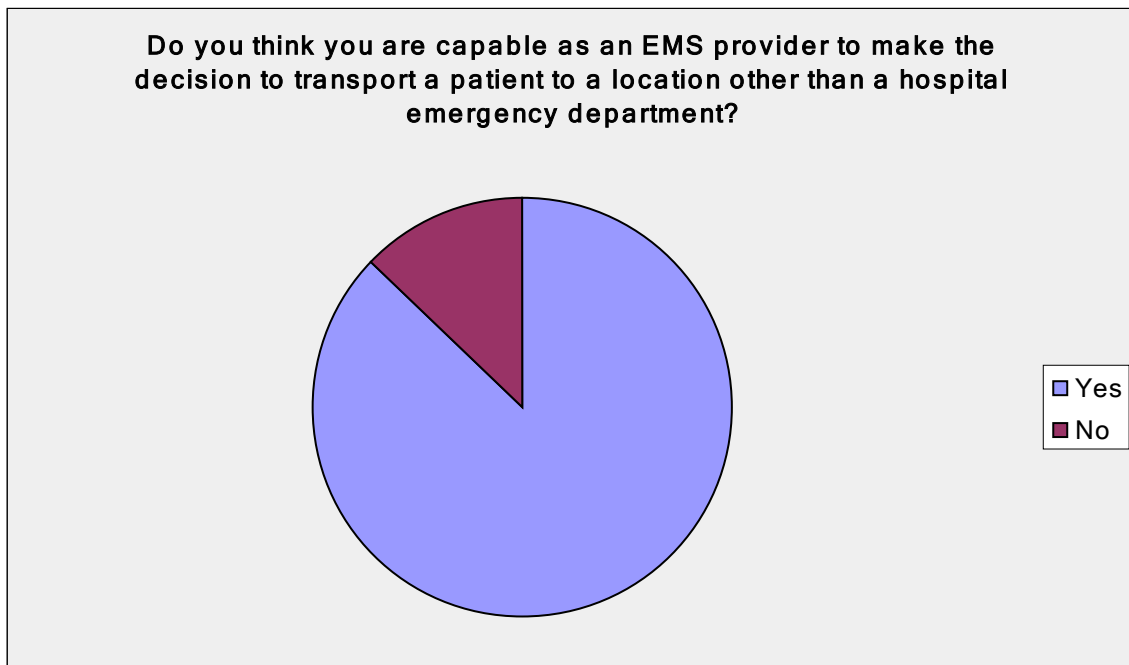
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 17**

**Do you think you are capable as an EMS provider to make the decision to transport a patient to a location other than a hospital emergency department?**

Answer Options	Response Percent	Response Count
Yes	87.2%	123
No	12.8%	18
<i>answered question</i>		<b>141</b>
<i>skipped question</i>		<b>2</b>

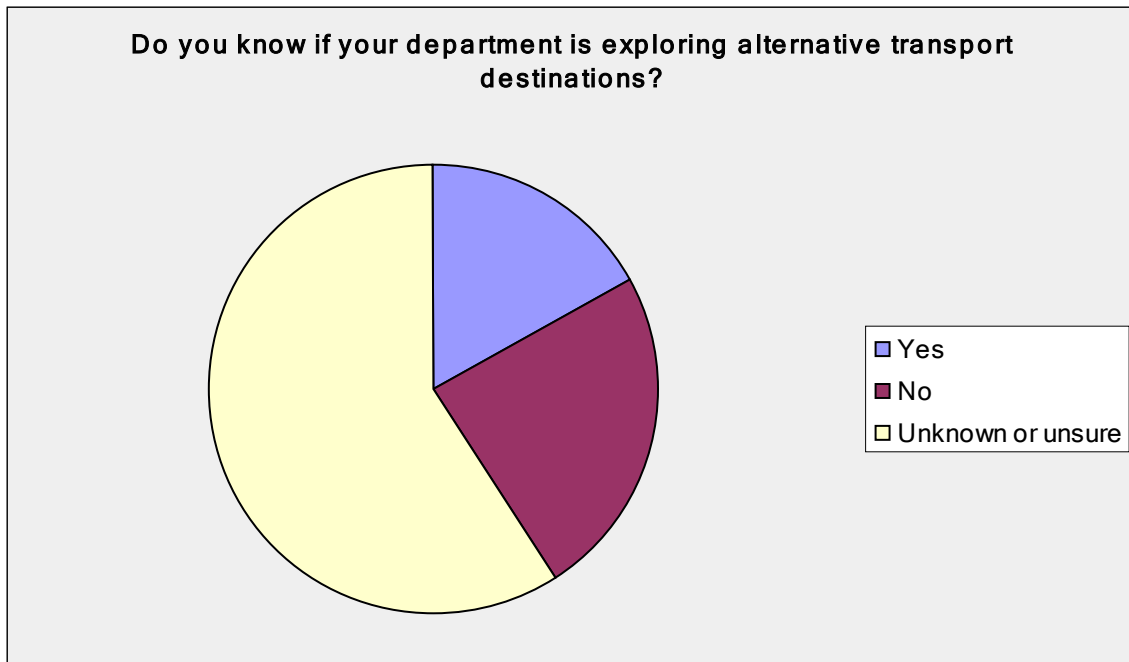


Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 18**

<b>Do you know if your department is exploring alternative transport destinations?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Yes	16.9%	24
No	23.9%	34
Unknown or unsure	59.2%	84
If "Yes" describe alternative destinations:		11
<i>answered question</i>		<b>142</b>
<i>skipped question</i>		<b>1</b>





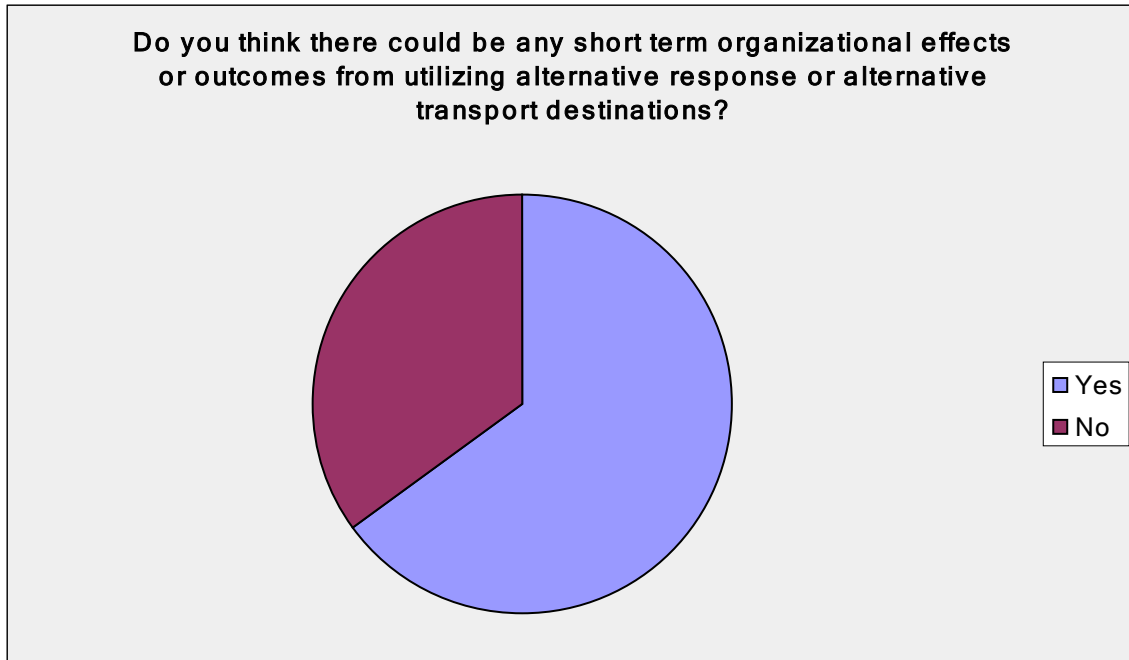
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 19**

**Do you think there could be any short term organizational effects or outcomes from utilizing alternative response or alternative transport destinations?**

Answer Options	Response Percent	Response Count
Yes	65.0%	91
No	35.0%	49
Comments:		45
<i>answered question</i>		<b>140</b>
<i>skipped question</i>		<b>3</b>



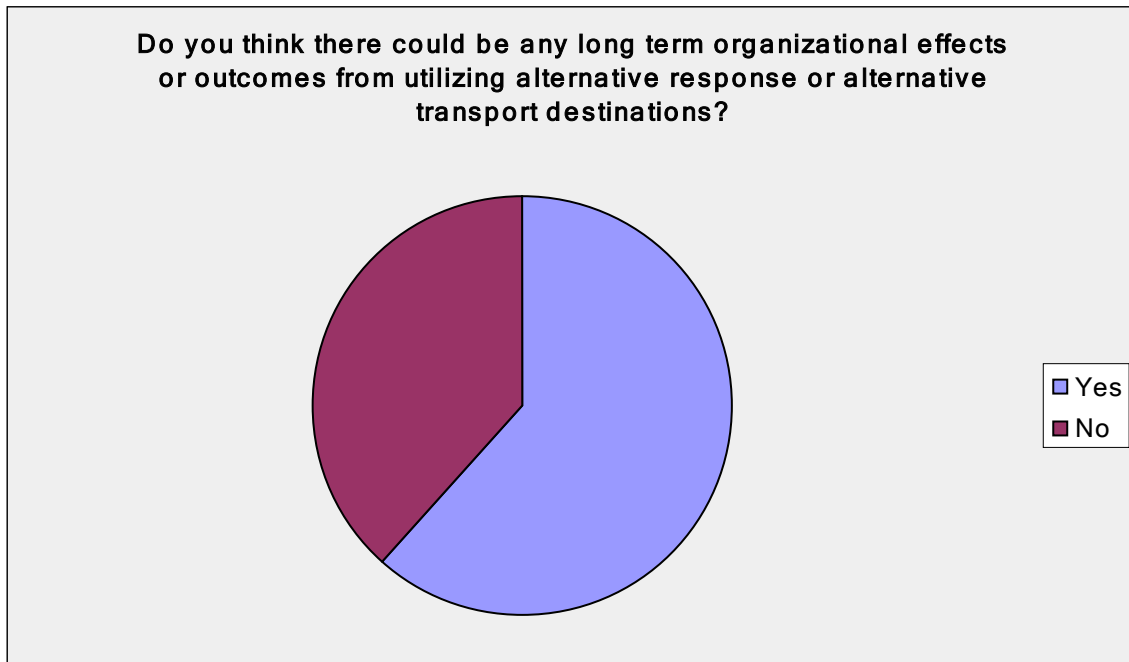
Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 20**

**Do you think there could be any long term organizational effects or outcomes from utilizing alternative response or alternative transport destinations?**

Answer Options	Response Percent	Response Count
Yes	61.8%	84
No	38.2%	52
Comments:		35
<i>answered question</i>		<b>136</b>
<i>skipped question</i>		<b>7</b>



Appendix A (continued)

Survey 1 – Fire and EMS Survey 2012

**Fire and EMS Survey 2012 - Question 21**

**If you are willing to participate in a brief follow up interview as part of this survey, fill out the information below and I will contact you. Thank You!**

<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Name:	100.0%	32
Email Address:	90.6%	29
Phone Number:	87.5%	28
<i>answered question</i>		<b>32</b>
<i>skipped question</i>		<b>111</b>

