

2019

## Recruiting Strategies for Increasing the Number of Emergency Medical Technician Personnel

Carolyn Denise Mack  
*Walden University*

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# Walden University

College of Management and Technology

This is to certify that the doctoral study by

Carolyn Denise Mack

has been found to be complete and satisfactory in all respects,  
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Walden University  
2019

Abstract

Recruiting Strategies for Increasing the Number of  
Emergency Medical Technician Personnel

by

Carolyn Denise Mack

MBA, Corban University, 2011

BS, University of South Carolina, 1988

Doctoral Study Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Business Administration

Walden University

June 2019

## Abstract

Demand for the emergency medical technician (EMT) is 2 times greater than that of all other occupations. Sustainability of ambulance services (AS) personnel is dependent upon the recruitment of EMTs into the industry. The purpose of this multiple case study was the exploration of the recruiting strategies that AS administrators used to increase the number of EMTs. Herzberg's 2-factor theory of motivation was the conceptual framework for this study. The data collection instrument included semistructured interviews with 6 AS company executives in southeastern New Mexico and southwestern Texas. Secondary data and document from each state's emergency medical services personnel and websites related to EMTs were reviewed. Data were analyzed using thematic analysis alignment between the recruiting strategies and the conceptual framework. Two key themes emerged: AS administrators have minimal data-driven recruitment tracking mechanisms and recruiting strategies for EMTs must align with the motivational aspects of growth, advancement, recognition, and responsibility in the AS business to entice people into the industry. The implications of this study for social change include the potential for AS executives to identify recruiting strategies they might use to increase the recruitment of EMTs to meet patient and community needs for medical transport while reducing the demand for EMTs nationwide.

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## Dedication

I dedicate this study to my children, Arielle and Benjamin, who made space in their lives so that I could pursue this dream. To Arielle, thank you for sharing your NCAA recruiting trips and airport travel time with me, the laptop, and the mountains of reading material while helping you decide on your next educational step. To Benjamin, thank you for allowing me to sit in the truck and read articles while you had your voice lessons and choir rehearsal. To my dear sister-friend Glennis Carter, thank you for being my personal cheerleader. You listened to me during my squirrel moments while talking through my study plans, the interview sessions, the dreaded change matrix, and while waiting for committee review. My family: I salute you.

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## Section 1: Foundation of the Study

Emergency medical services are an integral part of the health care delivery system. Hospital emergency department staff, along with public and private ambulance service company personnel, comprise the emergency services group. Emergency services care includes a variety of highly trained doctors, nurses, and periphery medical personnel (Manley, Martin, Jackson, & Wright, 2016). Ambulance services (AS) personnel provide prehospital services for patients that aid in prolonging life while providing patient-transport to a hospital emergency department (Simpson, 2013) where emergency room providers give further life-sustaining treatments. While AS are a crucial step in the healthcare delivery chain to enhance the survivability of patients experiencing trauma, the staffing of AS is not yet an area of significant focus among researchers.

### **Background of the Problem**

The healthcare employment industry is growing at a rate three times faster than the remaining economy (Henderson, 2015). Since inception in the 1960s, the AS industry has continued to grow (Mackenzie, 2018), and the rate of growth in the need for emergency medical technicians (EMTs) is two times greater than overall job growth (Bureau of Labor Statistics, 2017). While the EMT profession has gained a boost in popularity from television shows, the industry lags in the recruitment of qualified personnel (Brooks, Sayre, Spencer, & Archer, 2016). The introduction and promotion of prehospital, evidence-based guidelines for EMT education, while shoring up the educational structure of EMT services (Martin-Gill et al., 2016), have contributed to fluctuations in pass rates for EMT certification (Brooks et al., 2016). The fewer people

receiving EMT certification further escalates the increasing need for EMTs across the industry.

The demand for EMTs is outpacing the ability of AS executives to recruit individuals into the profession. Several factors contribute to the below average maintenance of an adequate workforce of EMT professionals, including (a) the increase in educational and certification requirements (Knox, Cullen, & Dunne, 2015); (b) dissatisfaction with pay or benefits (Cash, Crowe, Agarwal, Rodriguez, & Panchal, 2017); and (c) challenges in career progression (Chapman, Crowe, & Bentley, 2016). Managerial inability to mitigate these organizational factors can exacerbate recruitment efforts of EMTs into an already stressed industry. Other factors that influence the increasing need for EMTs are an aging populace (Jones et al., 2017), EMTs exiting the profession due to physical and mental burnout (Fragoso et al., 2016), and increased frequency and intensity of natural disasters (Kocak, Caliskan, Kaya, Yavuz, & Altintas, 2015). The occurrence of all these factors in tandem may strain the ability of AS executives to recruit individuals into the industry. The recruitment challenges experienced by AS executives indicate the need for exploration of successful recruiting strategies used by AS executives.

### **Problem Statement**

Prehospital ambulance service providers face a growing need for ambulance personnel resulting from expected growth in industry revenue to \$55 billion by 2024 (Henderson, 2015). The job growth rate of EMTs and paramedics through 2024 is expected to be 24% (Bureau of Labor Statistics, 2015). The general business problem

was that some ambulance company executives experience reduced revenue due to a shortage of qualified EMTs. The specific business problem was that some AS executives lack recruiting strategies to increase the number of EMT personnel.

### **Purpose Statement**

The purpose of this qualitative multiple case study was to explore the recruiting strategies some AS executives use to increase the number of EMT personnel. The targeted population consisted of six AS executives from four ambulance transport companies in both urban and rural areas of southwest Texas and southeastern New Mexico who have implemented successful recruitment strategies to increase the number of EMT personnel. The implications for positive social change include the potential for AS leaders to enhance the health of community members by improving out-of-hospital health care delivery and health responses through increased EMT recruitment, engagement, and retention. Additional social implications may include improved health outcomes for vulnerable populations through better accessibility to preventive health assistance and hospital discharge follow-up care. These improvements may reduce the level of hospital readmittance for the elderly and the impoverished through increased access to healthcare services using EMT staff and an out-of-hospital care model.

### **Nature of the Study**

Researchers use the qualitative method to explore human experiences to derive themes and contextual similarities among the participants' responses (Tarin, 2017). Isaacs (2014) discussed how qualitative research is useful in areas related to health in communities. The qualitative methodology was more appropriate option in conducting an

exploratory study on aspects of EMT recruiting. The quantitative method includes the use of variables within a study to examine how much, how many, or how often (Onen, 2016). Quantitative methodology was not appropriate for this study as I did not examine the relationships or differences among variables to explore strategies for increasing the number of EMTs. Researchers using a mixed method approach use both qualitative and quantitative elements to approach a question in a multidirectional way (McLaughlin, Bush, & Zeeman, 2016). A mixed method approach was not appropriate for this study because I did not examine relationships or differences among predetermined variables.

A case study design was appropriate for the exploration of successful EMT recruiting strategies because a case study allowed (a) data to be gathered from participants and (b) the observation of the natural themes that emerged. Choo, Garro, Ranney, Meisel, and Guthrie (2015) discussed how researchers use qualitative case studies to uncover additional data that are useful for providing a better understanding of the collected data. Researchers use a phenomenological design to explore the meanings of lived experiences of study participants (McCoy, 2017)—which was not the objective of this study. Researchers use an ethnographic design to explore the interactions of a specific cultural group of people with shared ethnicity (Trnka, 2017)—which was also not the objective of this study. A case study approach was appropriate for the exploration of recruiting strategies for increasing the number of EMT personnel.

### **Research Question**

What recruiting strategies do some ambulance services executives use to increase the number of EMT personnel?

### **Interview Questions**

1. What recruiting or motivational strategies do you use to increase the number of EMT personnel in your company?
2. How do you evaluate the effectiveness of your recruiting or motivational strategies to increase the number of EMT personnel?
3. What recruiting or motivational strategies were not effective for increasing the number of EMT personnel in your company?
4. What key barriers did you encounter to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?
5. How did you overcome these key barriers to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?
6. What additional information regarding recruiting or motivational strategies to increase the number of EMT personnel would you like to share that we have not already discussed?

### **Conceptual Framework**

Frederick Herzberg developed the two-factor theory (TF) of job satisfaction in 1959 (Boe, 1970). The theory (Herzberg, 1968) described factors in a work environment that contribute to employee satisfaction and dissatisfaction. The foundation of TF theory is Maslow's hierarchy of needs as related to job satisfaction (Alshmemri, Shahwan-Akl, & Maude, 2017). Alshmemri et al. identified the following motivation tenets of TF theory: achievement, recognition, responsibility, the work itself, and the possibility of growth. These principles relate to Maslow's theory, which identified a person's desire for

self-actualization. Savoy and Wood (2015) discussed the hygiene factors of collaboration, salary, policy, supervision, and working conditions and how these factors coincide with Maslow's base environmental needs of employees relevant to the work environment. Researchers have noted that motivating factors like recognition and the possibility of growth contribute more to the level of job satisfaction among employees (Dobre, Davides, & Issa Eid, 2017; Issa Eid, 2016). Conversely, the absence of hygiene or environmental factors of TF theory influence the mitigation or exacerbation of job dissatisfaction (Holmberg, Sobis, & Carlstrom, 2016). Because AS employees exhibit a level of altruism toward the work itself (Ross, Hannah, & Huizen, 2016), understanding other drivers that enhance recruitment of EMTs is crucial. I expected the TF theory motivation tenets of achievement, recognition, and possibility of growth to provide a possible framework and lens for exploring strategies for recruiting individuals into EMT services.

### **Operational Definitions**

*Community paramedicine:* Community paramedicine is a framework of health services where the needs of the community determine the services provided by emergency personnel (Bennett, Yuen, & Merrell, 2017).

*Emergency medical technician (EMT):* The Bureau of Labor and Statistics (BLS) (2017) defines an emergency medical technician as a person who performs emergency prehospital care and safely transports patients.

*Mobile integrated health (MIH):* Mobile integrated health is a health platform that combines multiple health resources and health professionals, including emergency

medical personnel, to address gaps in the delivery of health care to medically underserved populations (Clarke, Bourn, Skoufalos, Beck, & Castillo, 2017).

*Paramedic:* A paramedic is an allied health professional who provides advanced emergency medical care and services in support of public and community health (Caffrey et al., 2014; O'Meara, Furness, & Gleeson, 2017).

### **Assumptions, Limitations, and Delimitations**

Assumptions, limitations and delimitations set the presumptions of a researcher prior to conducting a study. Understanding the premises of a researcher in a qualitative study is necessary to understand the underlying viewpoint of the researcher (Saville Young, 2016). Establishing trustworthiness and rigor in qualitative research require that the researcher expose all assumptions, limitations, and delimitations at the beginning of the project.

#### **Assumptions**

Assumptions in research are informational to the mode of inference made by a researcher. Theories are assumptions applied in research (Rule & John, 2015) that frame the interpretation of the data collected (Wolgemuth, Hicks, & Agosto, 2017). An assumption is a philosophical ideation based on a person's viewpoint of the world (Farquhar, 2013). First, I assumed that the number of employees at an ambulance service is a depiction of successful recruiting efforts. Second, I assumed that AS with EMT training facilities (EMT schools) are also more successful in hiring EMT professionals. Third, I assumed that the location of the study may yield a more homogenous participant group, which may result in less generalizable results. Fourth, I assumed that ambulance

company presidents, chief executive officers, and hiring managers are aware of the recruiting needs of the EMT profession beyond the immediate needs of each organization.

### **Limitations**

Limitations in research are the blockages that occur when the selection of a theoretical framework for a study inserts an assumption about what the study will yield (Iloh, 2018). Limitations of the study regarding the recruiting strategies of EMT executives were the number of successful AS companies for the study. Another limitation of the study was defining what qualifies as a success among EMT presidents, chief executive officers, and hiring managers related to EMT recruitment. EMT personnel come from varying employment backgrounds (Chapman et al., 2016) and that made determining a definition of what constitutes successful EMT recruiting strategies difficult. The lack of an operational definition of success may have limited the effectiveness of the study.

### **Delimitations**

Delimitations describe the boundaries, in terms of things or locations, that the researcher will include as part of the study (Hancock, & Algozzine, 2016) One delimitation of my research was the location of interviewees in urban and rural areas of southwest Texas and southeastern New Mexico. Second, I included AS located only within a 75-mile radius of El Paso, Texas. Third, I included only those AS executives who have implemented successful recruitment strategies. Finally, ambulance agencies included in this study had to have a staff of at least 60% compensated EMTs.

### **Significance of the Study**

While researchers have examined the intentions of emergency services personnel to resign (Blau & Chapman, 2016; Cash et al., 2017), few scholars have studied the recruitment of EMTs from an entrance perspective (Chapman et al., 2016). Job satisfaction and work engagement are motivating factors that enhance retention of EMT staff members (Fragoso et al., 2016; Tarcan, Tarcan, & Top, 2017). Chapman et al. (2016) discussed how understanding the dynamics that enhance job satisfaction for EMTs might help AS executives in attracting personnel. While it is essential to know why EMTs leave the profession, AS executives require information on successful EMT recruitment strategies to match the increasing need for EMT personnel. Successful recruitment strategies would also mitigate the challenges of EMT attrition.

### **Contribution to Business Practice**

Increased demand for EMT services is due to several unrelated factors peaking at, or near, the same time. Members of the baby boomer generation—those individuals born post World War II through early 1960s—are entering retirement. This group of individuals is living longer due, in part, to advances in healthcare technology (Moody, 2017). Increased human longevity also increases the need for additional healthcare services, such as ambulance assistance (Chapman et al., 2016). The increasing severity of natural disasters also adds to the demand for emergency services (Talarico, Meisel, & Sorensen, 2015). The convergence of these phenomena is creating an increased need for EMT personnel (Bureau of Labor Statistics, 2015). The study is potentially significant because, with the growing need for EMTs, AS executives require an understanding of

strategies they can use to improve EMT recruitment to address future growth within the industry.

### **Implications for Social Change**

Implications for social change within this study were that AS executives can potentially increase EMT recruitment and impact communities through the implementation of mobile integrated health (MIH) or community paramedicine (CP). Mobile integrated health and CP are healthcare delivery platforms in which AS employees serve as CP staff members and fill unmet needs in the dispatch of traditional health services (Caffrey et al., 2014; O'Meara, Stirling, Ruest, & Martin, 2016). Understanding the recruiting strategies used by AS executives to increase the number of EMT personnel might support the development of MIH and CP programs. These programs may contribute to positive social change by (a) improving the quality of out-of-hospital health care delivery in the community, (b) enhancing preventative health and social services education, (c) expanding health care delivery to vulnerable populations, such as the elderly and homeless, (d) increasing EMT employment opportunities, and (e) decreasing unemployment in rural areas.

### **A Review of the Professional and Academic Literature**

The purpose of my literature exploration was to find out what articles related to my research on the study of emergency medical technicians (EMT) recruitment. The focus of my search was to determine what angles other researchers used in reviewing and researching the topic. Because AS was new to me, I began my literature review with a broad search of the AS industry to gain an understanding of the areas of research that

were relevant to the industry. This search strategy was to discover the thematic relationships that would be suggestive of future scholarly pursuits regarding the topic. Initially, the result of this extensive literature search on AS included thematic areas relevant to paramedics, the provision of medical services, ambulance response times and performance, perspectives on patient care, and how stress, trauma, and violence might affect ambulance workers' job satisfaction and motivation.

The organization of the literature review included a clarification of terms used across the literature, a brief overview of the inclusion criteria for the scholarly materials contained in the study, and key search terms used to identify relevant literary work. There were also themes emerging from the literature that pertained to the conceptual framework of my research. As an introduction to the literature, I provided a brief history of AS and educational requirements for AS personnel. The remaining sections of the literature review included discussions of (a) factors affecting AS performance and development, (b) job motivation, (c) job satisfaction among healthcare services workers, and (d) the conceptual framework for the study.

### **Literature Search Strategies, Databases, and Reference Material**

The search strategy for identifying literature relevant to my topic included a full search of ambulance articles, applying filters for full text, peer-reviewed works. I did not include date restrictions initially because I wanted to get an idea of the breadth of literature in the field. After noting the types of research for the whole of AS, I set the publication date filter for these articles to within 5 years of the anticipated approval date of my doctoral study program by the doctoral committee and Chief Academic Officer.

The date filter was set for 2015 and after. Literature associated with the conceptual framework did not consistently meet the date parameters of my study. I used 28 databases to collect 133 reference items for my literature review. There are 116 peer-reviewed articles (87%) of the 133 appearing in the literature review. Ninety-one percent (121) of the total number of references are peer-reviewed sources with a publication date of 5 years from the anticipated CAO approval date of 2019.

The keywords and phrases that I included in the search were *ambulance, emergency medical technician, EMT, recruit, recruitment, recruiting, staff, staffing, personnel, education, employ, employment, prehospital or pre hospital, prehospital, out of hospital, nonhospital, emergency medical services, EMS, prehospital service personnel, paramedic, employment, retention, leave intentions, burnout, violence, community paramedicine, and mobile integrated health*. The search criteria for locating literature based on the conceptual framework included searches for *Herzberg, dual-factor, theory, motivational theory, Maslow and hierarchy of needs, motivation theory, motivation, job satisfaction, needs theory, and theory of work adjustment*. I included articles in the literature review if the search word or phrase appeared in the literature title. This process limited the search results to items specific to the study objective.

I used the Walden University Library as the primary source for obtaining. Reference material was retrieved from 28 databases. Eighty percent of the articles (102) came from the following: Academic Search Complete, Business Source Complete, CINAHL Plus with Full Text, Complementary Index, Directory of Open Access Journals, Education Source, Expanded Academic ASAP, Journals@OVID, MEDLINE with Full

Text, PsycINFO, PubMed, Science Citation Index, Social Sciences Citation Index, and Supplemental Index. I did not include nonpeer-reviewed trade publications or ambulance consultancy scholarly material in the literature review because of possible conflicts of interest in reporting research results concerning AS.

### **Clarification of Terms**

*Prehospital care* refers to the administration of medical services provided by EMTs, paramedics and firefighters before hospital arrival via ambulance. The use of the terms *EMT* and *paramedics* happens interchangeably in some literature (Maguire, 2018) although the skillsets, experience, and education requirements of each occupation are different. *Emergency medical services (EMS)* refers to AS (Horberg, Jirwe, Kalen, Vincente, & Lindstrom, 2017; Weaver et al., 2015), and is also an umbrella term relating to the whole continuum of emergency care (Martin-Gill et al., 2016; Manley et al., 2016). Emergency care includes AS, law enforcement, firefighters, and emergency department physicians and nurses. *Community paramedicine (CP)* is a specialized healthcare delivery service that uses ambulance paramedics with enhanced skills to deliver primary care services outside of traditional care facilities (Martin, O'Meara, & Farmer, 2016). *Mobile integrated health (MIH)* is a platform of care that utilizes EMTs and paramedics to promote community wellness, provide aftercare for patients, and to provide social support in communities (Choi, Blumberg, & Williams, 2016). In some cases, use of CP and MIH is interchangeable; the differences are that CP serves rural communities and is a method of bridging patient healthcare gaps, while MIH employees offer a preventive

health platform using education to drive community change, and these staffers service both urban and rural areas.

### **Ambulance Services**

The AS industry is a vital part of the emergency healthcare delivery consortium and is an integral part of emergency medical services in the United States (U.S.) (MacKenzie, 2018). Much of the focus of AS relates to ambulance routing (Leknes, Aartun, Andersson, Christiansen, & Granberg, 2016; Nogueira, Pinto, & Silva, 2016; Sudtachat, Mayorga, & Mclay, 2015; van Barneveld, Bhulai, & vander Mei, 2015); and response time (McArthur, Gregersen, & Hagen, 2014); AS development around the world (Mantha et al., 2016; O'Meara, Wingrove, & Nolan, 2017; Zakariah et al., 2017); employee burnout (Larsson, Berglund, & Ohlsson, 2016; Schooley, Hikmet, Tarcan, & Yorgancioglu, 2016; Tunaligil, Dokucu, & Erdogan, 2016); and motivation (Ross et al., 2016). Although leave intentions are a concern for AS leaders (Blau & Chapman, 2016; Cash et al., 2017), few researchers have examined the recruiting phenomenon within ambulance companies.

Medical care advancements require the expansion of research to address new and emergent requirements for services, including a focus on improved healthcare delivery in emergency services (Breyer, 2015; Bromberg & Henderson, 2015; Manley et al., 2016; Paker, Dagar, Gunay, Cebeci, & Aksay, 2015). These needs include evidenced-based protocols of effectiveness (Martin-Gill et al., 2016), consistent, standardized oversight (Taymour et al., 2018), and increased appeals for care of vulnerable populations and people in rural locations (Debenham, Fuller, Stewart, & Price, 2017; Patterson,

Coulthard, Garberson, Wingrove, & Larson, 2016; Pennel, Tamayo, Wells, & Sunbury, 2016). The results of these studies are beginning to shift the focus of prehospital emergency care. Ambulance services are expanding from being a life-saving transportation service to incorporating a more nuanced approach to providing care in the field, while also using AS personnel as providers of community care.

The history of AS is modest notwithstanding its longevity. The earliest writings on ambulance protocols are from 1500 B.C. (Bass, 2015). The humble beginnings of this industry began with the wars that were occurring worldwide, including the United States, where horse-drawn carts facilitated removal of the injured from the battlefields (Bass, 2015). The term ambulance is the French word for hospital (Ginchereau, 2015). During World War I, a volunteer motor division of American Ambulance, the U.S. hospital in France, utilized motor cars that were much faster at moving the wounded from the battlefield to hospitals for care (Karsten, 2005). After the war, motorized transport services continued in the United States as nonstandardized organizations with varying styles of care (Simpson, 2013). A white paper outlining the growing public health concern about accidental death in the United States preceded the enactment of national education and training requirements for AS (Mackenzie, 2018). With the implementation of educational and operational procedures, AS continues to serve primarily as an emergency transport system.

As demand for services grows along with additional requirements for care, managers in the industry are aware of the necessity to increase ambulance personnel recruitment, expand skillsets, and enhance education delivery to meet these expanding

requirements of AS. The concept of the EMT and paramedic profession began with the idea of keeping a person alive until he or she arrives at a hospital for further care. EMT services now encompass more than CPR and transport, and the expansion in services similarly requires additional training and certification. In the United States, the basic, standardized EMT curriculum began in 1969 (Brooks et al., 2016). Current educational requirements are area-specific with program credentialing required at the paramedic level only (Bentley, Shoben, & Levine, 2016). Helikson and Gunderson (2015) identified the differences in the number of training hours required for each level of prehospital care providers. Smith (2017) noted how paramedicine stakeholders identified ways of integrating the expanding knowledge requirements of paramedics into its curricular requirements. Although stakeholders acknowledge the need for additional educational standards and curricular review, the areas that require immediate, sustained attention are up for debate. Within these educational standards component skills maintenance and professional development is also a challenge.

Continuous professional development (CPD) is necessary for many professionals and is mandatory in professions such as healthcare. Although health professions accrediting agencies require and monitor CPD in healthcare, the CPD requirement does not extend to prehospital providers such as EMTs and paramedics (Gent, 2016; Knox et al., 2015). Smith (2017) discussed the issues with determining and delivering a relevant technologically advanced curriculum for paramedics. The consensus among paramedics is that while CPD is a useful tool for continuing education, discrepancies exist regarding what type of training is necessary as part of the CPD process (Knox et al., 2015). The gap

in the provision of educational and professional development for EMTs and paramedics is an area in which more research is necessary to determine if the current level of CPD is enough to meet the accelerated educational requirements for EMT and paramedics in the industry.

### **Factors Affecting Ambulance Performance**

Leaders in paramedic services are adapting to changes in the healthcare industry. Leadership models in AS use a top-down, hierarchical structure (Mercer, Haddon, & Loughlin, 2018). Changes in the prehospital healthcare management model along with better understanding of leadership in the prehospital venue are precipitating variations in leadership styles (Mercer et al., 2018; O'Meara, Wingrove, & Nolan et al., 2017). Varying leadership styles and paramedic leadership skills education improves the nontechnical skills of paramedic employees (Mantha et al., 2016). The fragmentation of healthcare services and delivery is creating a need for a differentiated view of the delivery of healthcare leadership. Accordingly, new methods of care provision and performance measurements require an alternative viewpoint to ensure successful patient care.

Performance measurements for prehospital care require change. The operational scope of prehospital and emergency care along with increasing patient advocacy for health care quality necessitates a review of all aspects of EMS (Coster, Irving, Turner, Phung, & Siriwardena, 2018; Irving et al., 2018; Taymour et al., 2018). Coster et al. noted that prehospital care providers are expanding the AS practice scope to cover services that go beyond life support services and transport to the hospital. Related to the

expansion of practice scope is the consideration of what the patient believes is an appropriate measure of EMS performance (Irving et al.). Taymour et al. discussed the gaps in the literature related to EMS and oversight for better patient outcomes. Because patient outcomes are now driving results measures related to healthcare delivery, there is a necessity in EMS for executives and managers review and determine if these traditional assessments of AS performance provide an accurate measurement of the services rendered. Because patient-centered care is the new currency of healthcare service, any accountability valuation related to EMS and AS must include the patient experience.

The mission of AS is to respond to calls for emergency service quickly. Current performance measures in AS center around ambulance arrival times at the caller's location (Murphy, Wakai, Walsh, Cummins, & O'Sullivan, 2016). Leknes et al. (2016) and van Barneveld, vander Mei, and Bhulai (2017) researched the maximum expected coverage location problem while Murray (2016) studied the maximum coverage location problem. Researchers used predictive models and probabilities to determine the most optimal coverage for ambulance regions. The issue with the application of this information is that the research comes from countries outside the United States (Marcikic, Pejanovic, Sedlak, Radovanov, & Ciric, 2016; Nogueira et al., 2016). Theoretically, these coverage models are useful planning tools for locating ambulances but there are ambulance movements that researchers remove from consideration when addressing routing and compliance (van Barneveld, vander Mei, & Bhulai, 2017). McArthur et al. (2014) noted that the movement of ambulances from one station to another to enhance area coverage also adds to the cost of AS. Limiting the types of

ambulance calls allowed in the predictive models of ambulance routing research makes the tool less useful tool for business. The inability of the researchers to account for unpredictable AS calls in the performance model formula limits the delivery of an accurate, real-time model of performance. In addition, field-testing of the study results for validity did not occur. Because of such restrictions on call types and lack of field-testing for the models, the study results are impractical for real-world implementation.

Other challenges with researching ambulance performance relate to the human component of providing emergency services. Improving patient care in AS includes information related to patient perception of such services (Coster et al., 2018). Zaffar, Rajagopalan, Saydam, Mayorga, and Sharer (2016) stated how patient call volume also impacts AS response times. The patient aspect of AS is the most unpredictable, and yet largely unaccounted for, factor in response time and performance studies. If the goal of response time studies is to simulate authentic ambulance operations, the human element should factor into the response time dynamic.

### **Emergency Services Development**

Healthcare delivery, staffing, and strategic processes are challenging worldwide (Manley et al., 2016; Kroezen et al., 2015). Kroezen et al., (2015) noted how population changes impact AS staffing and exacerbate industry shortages while Manley et al. (2016) discussed how workforce recruitment in emergency care is decreasing because of increased patient workload. Researchers conducted studies in the areas of recruitment and retention across Europe (Kroezen et al., 2015), emergency care delivery gaps and bottlenecks in England (Manley et al., 2016), and collaboration between healthcare

professionals in the United States (Senot, Chandrasekaran, & Ward, 2016). The most prevalent commonality identified is the importance of the patient experience and satisfaction as a determinant of organizational health (Kroezen et al., 2015; Manley et al., 2016; Senot et al., 2016). These researchers found that the use of qualitative multiple case studies with semistructured interviews are helpful in complex industries like healthcare. This type of research is helpful in identifying thematic overlaps in AS.

Global development of AS appears to lag compared to other healthcare entities. Notably, in developing countries, prehospital workers lack sufficient training (Mantha et al., 2016), resources for equipment (Zakariah et al., 2017), and agencies have difficulty maintaining staff in rural areas (Belaid, Dagenais, Moha, & Ridde, 2017; Haskins, Phakathi, Grant, & Horwood, 2017; Sutton, Patrick, Maybery, & Eaton, 2016). Most AS in developing countries, while modelling the U.S. industry, lack the resources, infrastructure and personnel to grow AS for the region. The examination of AS growth and development from various research viewpoints seeks to find ways to stabilize the industry, improve health outcomes, and promote economic stability.

Ambulance services are an essential part of emergency healthcare delivery in the United States (MacKenzie, 2018). Ambulance staffers' delivery of patient care is vital to increasing the survival rate of people from critical incidents (Zaffar et al., 2016). The amount and variance of AS types is as numerous as there are public and private organizations within each state (Cannuscio et al., 2016; Taymour et al., 2018). Longer life spans in the populations also increase the number of calls to AS (McArthur et al., 2014). The estimated number of calls to emergency services is approximately a quarter of

a billion calls yearly (Crowe, Levine, Rodriguez, Larrimore, & Pirrallo, 2016). The inconsistency of AS delivery across states and the increasing call volume for services adds immense implications for the public health sector (Cannuscio et al., 2016). Emergency care in the United States is outgrowing its current focus of transport performance to increase survival rates. More research is necessary to identify and address the expanding role and requirements of prehospital care.

**Community paramedicine.** Community paramedicine (CP) is an alternative emergency care model used by EMTs and paramedics to bridge the healthcare gap of providing primary care health services to the community (Choi et al., 2016). The duties of a community paramedic include the skills necessary as an EMT or paramedic with additional specialized skills to encompass the other primary care skills that may be necessary (Caffrey et al., 2014). Combining the skills and abilities of the EMT/paramedics with added primary health skills is termed mobile integrated health (MIH) services (Caffrey et al., 2014; Choi et al., 2016). Martin et al. (2016) discussed promising results of their research from the patient perspective and noted improvement in community health initiatives and patient well-being resulting from the use of the community paramedic. Choi et al. (2016) observed a lessening of ambulance transports and fewer costs to Medicare resulting from CP. Though these outcomes are preliminary, if future findings show a statistically significant benefit to all stakeholders, they may help MIH become a permanent plan for mitigating the primary care gap in healthcare. Mobile integrated health, if fully implemented, is beneficial for EMT recruitment because the inclusion of a CP/MIH specialty extends the career track for EMTs beyond that of the

paramedic. One can theoretically conclude that the addition of a paramedic specialty career extension using CP/MIH may reduce EMT leave intentions.

Community paramedicine uses ambulance personnel as deliverers of intermediate community health care (Bennett et al., 2017; O'Meara et al., 2016; Steeps, Wilfong, Hubble, & Bercher, 2017). Community paramedicine utilizes specially educated paramedics to assist patients with health challenges in a home environment (Bennett et al., 2017; O'Meara et al., 2016). Healthcare stakeholders view CP programs as a way to address deficiencies in primary care programs while mitigating overcrowding in emergency rooms and overuse of emergency transport services (Bennett et al., 2017). Steeps et al. (2017) examined the attitudes among EMTs and paramedics relative to CP and their willingness to participate in a CP program. O'Meara et al. (2016) conducted an ethnographic study on a Canadian CP program to develop a theory that may facilitate the development of foundational concepts for standardization of CP. Bennett et al. (2017) examined the benefits and cost-effectiveness of a CP program in South Carolina. Community paramedicine, in combination with an integrated health system, provides patient support, social services and healthcare navigation for patients while expanding paramedic services uses (Bennett et al., 2017; O'Meara et al., 2016). The emergence and expansion of CP programs may serve as a strategy to enhance the career track of EMTs and paramedics, and to increase EMT recruitment.

**CP challenges.** The incorporation of CP into the scope of emergency services healthcare introduces challenges. Community paramedicine is beneficial in serving medically underserved rural areas (Breyer, 2015; Calderone, Brittain, Sirivar, & Kotani,

2017; Pearson & Shaler, 2017); reducing hospital readmission rates by patients (Pearson & Shaler, 2017); providing nonurgent healthcare needs (Breyer, 2015; Calderone et al., 2017); and, is helpful in providing public health education (Calderone et al.). Breyer noted that with all the advantages of CP, there are state and federal regulations that may limit the implementation of local CP programs. While the possible benefits of CP seem to outweigh barriers to application, additional research is required to ascertain if the outcomes are substantial enough to warrant a change. Some states are running or extending CP pilot programs to collect more data before making changes to existing laws.

Health services delivery and transportation limitations are perplexing areas to navigate for rural populations. Populations living in areas on the outskirts of major cities in Texas and New Mexico tend to be more disadvantaged than people within the city limits (Del Rio, Hargrove, Tomaka, & Korc, 2017; Patterson et al., 2016). These rural areas are also more likely to include more vulnerable residents such as the elderly, impoverished, greater uninsured, and minorities (Pennel et al., 2016). The combination of locality, increased health concerns, poverty, and lack of social necessities such as insurance and transportation increase the necessity for a health service delivery program to address the needs of the rural populace (Del Rio et al., 2017; Pennel et al., 2016). Community paramedicine assists in serving the rural community as an extended health care delivery service (Patterson et al., 2016). The benefits of CP are that these CP providers can supply health services to rural communities while also addressing other public health and social services needs of the patient. Community paramedicine also has the use of AS to assist in transporting patients should the need arise. Current literature

regarding CP and rural care delivery serves to inform the narrative on rural transportation and the challenge posed to the healthcare sector and specifically to AS. The focus on how CP services may fill gaps in the healthcare, public health, and social services arenas is an area that may have an affirmative social impact on rural communities and requires further research.

**Mobile integrated health.** Researchers are conducting trials of MIH programs in various states around the country. Mobile integrated health is a healthcare delivery platform used to fill voids in the health care system associated with patient care (American College of Emergency Physicians Board of Directors [ACEP-BoD], 2015; Siddle et al., 2018). Mobile integrated health teams partner with community program officials and collaborate with other community resources staff to deliver care and advocacy initiatives to the public (ACEP-BoD, 2015; Nejtek, Aryal, Talari, Wang, & O'Neill, 2017; Siddle et al., 2018). The design of the MIH platform is to help mitigate the use of emergency departments and AS for nonemergency ailments (Nejtek et al.). ACEP-BoD and Siddle et al. also noted that MIH is an easily adaptable plan because MIH uses an existing workforce of EMTs and paramedics.

EMTs operate MIH programs to serve the needs of the patients and to minimize the use of the emergency services for nonemergent health encounters. The advantage of MIH programs is that each program can be set up to deliver the available services that are most beneficial for a community's needs. Studies are currently underway to evaluate the efficacy of MIH programs and to determine if MIH use may indeed reduce ED visits.

### **Ambulance Services Employees**

Scholarly works that include ambulance personnel as a focal point of research emphasize the procedural and performance aspects of AS patient care (Paker et al., 2015). EMTs encounter and respond to health emergencies almost daily (Jones, 2017; Pek et al., 2016). While EMT workers are critical to the provision of emergency care services to all levels of patients, few research articles focus specifically on the EMT from a recruiting viewpoint. The research articles that do include EMT participants relate to personnel health, leave intentions, and healthcare service performance.

Ambulance staffers respond to events requiring AS, some routine and some traumatic, with fatalities. These events can cause a myriad of health concerns for EMTs that range from physical injuries (Dropkin, Moline, Power, & Kim, 2015; Pek et al., 2016) to mental challenges (Jones, 2017; Pek et al., 2016). While health concerns among employees for any organization are problematic, the daily work of emergency responders is possibly most impactful on the overall health of EMTs and other first responders (FR). Jones' literature search discovered several serious mental health issues attributed to FRs resulting from their work. These mental disparities include posttraumatic stress disorder, depression and suicidality, alcohol use, and sleep disturbances. Dropkin et al. and Pek et al. noted how improved physical fitness and reduced obesity are essential means of improving the health outcomes among EMTs. Implications from these studies indicate the need for executives and managers to have strategies to mitigate health challenges affecting their employees.

Paramedics in AS in the United States serve as senior personnel on ambulances. The paramedic has additional training and education beyond that of an EMT as directed by state entities (Brooks et al., 2016). Denmark mandates that ambulance personnel wait 3 years before attempting paramedic training (Malmberg-Lyngby & Betzer, 2015). In Australia, paramedic preparation is part of university coursework, and does not require EMT training as a first step (Brooks et al.; Ross et al., 2016). In the United States paramedic advancement is a continuation of the EMT level and requires advanced technical training and continuing education hours (Helikson & Gunderson, 2015). Brooks et al. (2016) also noted that U.S. paramedic training was too costly and time-intensive to implement. Canadian paramedic services operate similarly to the United States because the Canadian provinces mandate how AS operate (Bowles, van Beek, & Anderson, 2017). Becoming a paramedic is the final career attainment goal in AS. Impediments to reaching this level affect recruitment of personnel into this field.

### **Factors Impacting Healthcare Recruiting**

Healthcare human resources recruitment is crucial to acquiring adequate human talent to meet the demands present in health care systems. Human resource managers desire to hire personnel who are committed to the vision and mission of the organization. Individuals seek jobs that fulfil their needs. The challenge of recruiting human capital is developing and implementing strategies that benefit all stakeholders. The level of specificity related to healthcare jobs along with the demand for healthcare workers requires innovation and ingenuity in the recruiting process.

Recruitment of employees must begin with retention in mind (Block, 2016).

Recruitment is imperative, but retention is necessary to address the employee demands in healthcare (Block, 2016; Miller, 2015; Yeager, Wisniewski, Amos, & Bialek, 2015). The BLS (2015) noted that demand for EMTs through 2024 may outpace typical demand for all other occupations combined. This demand for healthcare workers is not new.

Recruitment and retention in this area of healthcare are paramount if AS supply is to keep up with the demand.

The goal of business recruiting executives is to develop a relationship between the employee and the organization that is conducive to organizational culture, financially satisfactory to all stakeholders, and is a benefit to patients (Block, 2016; Miller, 2015).

Yeager et al. (2015) also discussed the importance of having strategies in place for recruiting that allows human resource personnel to know what benefits might influence a candidate to accept a position within the organization. Block (2016), Miller (2015), and Yeager et al. (2015) each discussed the need to have the organization stakeholders included in the recruitment of staff to assess the characteristics of a candidate.

Stakeholder involvement is necessary to meet the needs of employees. This involvement may aid in the long-term retention of employees.

Group social interactions is another aspect of HR recruiting that requires attention (Shi, Dokshin, Genkin, & Brashears, 2017; Sutton et al., 2016). Shi et al. also discussed how social bonding and organizational networking provide incentives for a person to start at or remain with a company. Sutton et al. (2016) and Ramadevi, Gunasekaran, Roy, Rai, and Senthikumar (2016) mentioned how an emphasis on employee relations and

developing programs that enhance social exchanges within the organization are essential to future employees. More apparent in the healthcare industry is that while specific skill sets are required, the social characteristics of an organization are ranking higher in recruiting importance than in years prior.

**Stress.** The literature on the stress factors associated with EMT work and the effect on employee leave intentions is a determining factor in the development of my research question on the recruitment of EMTs. With this change in research focus came an awareness of how EMT burnout is a possible contributor to the shortage in EMT personnel in the United States (Gorgulu & Akilli, 2016; BLS, 2017). The change to EMT recruitment facilitated the narrowing of the scope of my literature search to staffing of EMT. The research on EMT staffing, personnel, and recruitment yielded additional articles on EMT stress, burnout, and leave intentions.

Paramedics experience stress and trauma as part of their daily work routine (Donnelly, Bradford, Davis, Hedges, & Klingel, 2016; Eroglu, & Arikan, 2016; Rybojad, Aftyka, Baran, & Rzonca, 2016). Donnelly et al. (2016), Eroglu and Arikan (2016), and Rybojad et al. (2016), identified critical incident stress (CIS) and organizational stress (OS) as factors that may lead to posttraumatic stress experienced by paramedics. Eroglu and Arikan noted that while the acute stress from dealing with multiple traumatic events is a contributor to post traumatic stress disorder (PTSD), it is more likely that OS in the work environment is a higher risk factor for a paramedic's propensity to develop PTSD. Donnelly et al. and Eroglu and Arikan also researched the coping skills as a mediating factor in the risk of PTSD. Study results indicated that social support of friends and

family is helpful in lessening the effects of CIS and OS on a paramedic (Donnelly et al., 2016). Eroglu and Arikan identified inconclusive results on the mediating role of coping strategies among paramedics. Rybojad et al., while not researching coping strategies related to CIS and OS, discussed how older, more educated paramedics fared better at coping with CIS and OS, which reduced the probability of PTSD. Understanding the types and roles of stress in emergency services may help ambulance executives develop strategies to address these challenges to create a work environment that is beneficial to the employees and helpful in the recruitment process.

**Job satisfaction and burnout.** Research on employee burnout in emergency work is prevalent because of the nature of emergency services. The body of literature on burnout includes research on participants that are first responders. First responder occupations include ambulance workers, law enforcement and firefighters along with emergency department physicians and nurses (Jones, 2017). Arsenault (2016) noted that a high-stress work environment is a precursor to burnout among employees. Studies also indicated that continual contact with high-stress situations may produce burnout (Deniz, Saygun, Eroglu, Ulger, & Azapoglu, 2016; Eroglu & Arikan, 2016; Larsson et al., 2016; Rybojad et al., 2016). In the healthcare industry, many workers thrive in the demanding, high stress yet rewarding environments. Researchers examining stress that accompanies prehospital and emergency care employees are seeking to understand if there are additional contributors to employee burnout.

The examination of the phenomenon of EMT burnout and engagement is a way of discovering what interventions would lessen the propensity for burnout (Fragoso et al.,

2016). Other factors of burnout examined by researchers related to job satisfaction are exhaustion and leave intentions (Deniz et al., 2016; Blau, & Chapman, 2016). Each perspective is relevant to EMT recruitment because burnout and leave intentions are disqualifiers to job commitment, job satisfaction and career progression (Blau & Chapman, 2016; Deniz et al., 2016; Fragoso et al., 2016). While the basic EMT job demands and its contribution to burnout are not likely to change, EMT recruiting managers must develop strategies to mitigate burnout effects on staff. More research is necessary to discover any additional factors relating to burnout.

How employees experience their jobs is indicative of satisfaction. Considering the job demands and the nature of emergency services, researchers have undertaken studies to assess factors that influence how EMS professionals respond to their work (Tarcin et al., 2017; Tunaligil et al., 2016). Cannuscio et al. (2016) researched the mental reactions of firefighters who find themselves responding to medical challenges through the 9-1-1 emergency system and not as many fire calls. Tunaligil et al. (2016), researched if differences in working environments contributed to job satisfaction and burnout of EMT work between public and private AS in Turkey. Tarcin et al. (2017) also focused on measuring various dimensions of burnout and job satisfaction among healthcare workers in Turkey. The firefighter study, though loosely associated with the other studies, still addressed job satisfaction among firefighters when they were doing their job specialization (Cannuscio et al., 2016; Tarcin et al., 2017). Each study uncovered a level of dissatisfaction with some aspect of their EMS duties that resulted in stress or burnout for the participant.

**Workplace violence.** The BLS personnel document workplace violence across all occupations in the United States. The definition of workplace violence is verbal or physical threats, intimidation, or abusive behavior toward employees (Hosseiniakia, Zarei, Kalyani, & Tahamtan, 2018; Maguire, 2018; Renker, Scribner, & Huff, 2015). The most significant percentage of workplace violence occurs in healthcare emergency services and is more than double that of other occupations (Bernaldo-De-Quiros, Piccini, Gomez, & Cerdeira, 2015; Maguire & O'Neill, 2017). Emergency services employees include law-enforcement, firefighters, and AS personnel (Larsson et al., 2016). The effect of violence in the workplace impacts aspects of employee motivation, psychological well-being, satisfaction, and leave intentions. The impact of workplace violence is predominant in the healthcare sector.

Prehospital or emergency care is a helpful, necessary and precarious service available to people in need of medical care. EMT and paramedics around the world perform these services (Maguire & O'Neill, 2017). EMTs administer prehospital care on-site at the patient's location and these patient encounters sometimes result in aggression toward the EMT. These violent events have a psychological impact on the employee and may lead to increased burnout and job dissatisfaction (Bernaldo-De-Quiros et al., 2015). Larsson et al. (2016) conducted a literature review to ascertain if the everyday stress of the job of FR, which includes EMTs, were antecedents to more debilitating stress problems like PTSD. The challenge with determining the extent of violence perpetrated on FR and the possibility of lingering psychological effects on employees is the underreporting of violent events by the employees (Maguire & O'Neill, 2017). The

effects of the violence are manifest in other forms such as burnout and depersonalization (Bernaldo-De-Quiros et al., 2015). The implications of these studies are that AS should acknowledge the possibility of violence to its personnel, while subsequently implementing or supplementing policies and procedures that will benefit the employees. These policies should also mitigate employee experiences of harm, burnout, and job dissatisfaction.

**Leave intentions and support.** Leave intentions of ambulance personnel relate, in part, to violence visited on the employee in the dispatch of his or her duties. Causes attributing to these violent events are proximity to patients during service call (Deniz et al., 2016), work environment (Gorgulu & Akilli, 2016), heavy workloads (Maguire & O'Neill, 2017), and mental exhaustion (Bernaldo-De-Quiros et al., 2015; Deniz et al., 2016). The nature and frequency of the violence in emergency services is shown to contribute to dissatisfaction and burnout among employees (Eroglu & Arikan, 2016). Researchers noted that psychological interventions are necessary for AS to assist employees in managing the effects of work-related violence (Bernaldo-de-Quiros et al., 2015; Eroglu & Arikan, 2016; Maguire & O'Neill, 2017; Rybojad et al., 2016). The authors also discussed a need for additional work to determine the best possible strategy for mitigation of the effects of violence on employees (Hosseini et al., 2018; Renker et al., 2015). Finding out what increases the probability of ambulance staff leaving EMS may assist executives in developing recruitment strategies that include plans to mitigate the challenges that burnout and violence cause in the workforce.

Research on EMT support may be helpful in determining future recruiting strategies for EMTs. Chapman et al. (2016) researched the demographics, expectations and items that attract EMTs to the occupation in the United States. Horberg et al. (2017) discussed areas of support that EMT employees identified as required or lacking in their initial years in the occupation. Finally, while burnout is a profound reason that EMT personnel leave the profession, personal stressors may intensify the feelings of exhaustion (Schooley et al., 2016). A supportive work environment is a critical factor for mitigating employee challenges across the occupation (Chapman et al., 2016; Horberg et al., 2017; Schooley et al., 2016). Although each study addressed a specific aspect of the challenges to EMT employees, these ideals layer upon each other and complicate the development of a successful recruitment process. The determinants of what makes an environment supportive vary among employees.

### **Herzberg's Two-Factor Theory**

Frederick Herzberg developed the TF model of job satisfaction, also called the motivation-hygiene or dual-factor theory. Herzberg's theory outlined motivating concepts that encourage an employee to work harder; and hygiene concepts, which are factors that include the work environment of an employee (Chaudhury, 2015; Issa Eid, 2016; Vijayakumar & Saxena, 2015). While each employees' top motivation may differ, Herzberg's TF theory identified categories in the theory that influence all employees. Vijayakumar and Saxena (2015) made a distinction that the top influencer of employees is not the same in all areas and cultures. Because of the impact of location, socio-economic and cultural differences, it is essential to understand and note the generalizable

limitations which the TF theory may impose on research using varying people groups and locations.

The basis of the development of Herzberg's TF theory is the concept of job satisfaction or dissatisfaction with specific factors categorized as motivators or hygiene items (Boe, 1970; Herzberg, 1968). Boe (1970) and Herzberg (1968) noted the two natures of a human being that are foundational to the development of the TF theory. The animal nature relates to the hygiene factors and the shunning of unpleasant environmental situations, while the human nature factors correspond to the motivator factors that promote internal growth in a person (Boe, 1970; Herzberg, 1968). Herzberg conducted several studies with accountants and engineers to examine job satisfaction. From these studies, several recurring themes emerged as items that produced job satisfaction and job dissatisfaction (Boe, 1970). Davis and Allen (1970) replicated the Herzberg study with 1014 bank employees to examine which, if any, of the Herzberg motivators or hygiene items, provided the most significant feeling of job satisfaction or dissatisfaction. Results of the Davis and Allen study indicated that the motivator factors offered the most significant range and higher amount of satisfaction and that the hygiene factors show greater lengths of low satisfaction or dissatisfaction.

Herzberg's theory comprised motivational and hygienic elements that help to determine the level of satisfaction or dissatisfaction that a person has with his or her work. This TF theory is an expansion of Maslow's hierarchy of needs as related to job satisfaction (Alshmemri et al., 2017; Herzberg, 1968). The motivation and hygiene tenets note multiple factors that make up each theoretical pillar. The motivation, or intrinsic

factors, is aspects of a job that develop or build the person (Alshmemri et al.; Holmberg et al., 2016; Savoy & Wood, 2015) and relate to Maslow's self-actualization section of the hierarchy of needs theory. The hygiene factors are those items related to the work environment (Alshmemri et al.). The hygiene items relate to Maslow's physiological, safety and relational needs that are inherent in individuals (Mangi, Kanasro, & Burdi, 2015). Each of these factors contributes to varying levels of job satisfaction or dissatisfaction in employees. Table 1 outlines the motivation and hygiene factors as discussed by various authors.

The following sections identify literature that uses Herzberg's tenets of dual-factor theory as they relate to healthcare employees. These articles indicated the factors that contribute to job satisfaction or dissatisfaction. The authors noted these TF theory elements, with minimal variation, indicated study participant preference.

Table 1

*Factors of Motivation and Hygiene as Outlined by Author*

	Alshmemri et al., 2017	Holmberg et al., 2016	Savoy & Wood, 2015
<b>Motivation</b>	Achievement Recognition Responsibility The work itself Possibility of growth	Sense of personal achievement Recognition Responsibility Challenging or stimulating work Opportunity for advancement Promotion Growth	Achievement Recognition Responsibility The work itself Advancement
<b>Hygiene</b>	Interpersonal relationships Salary Policies and administration Supervision Working conditions	Good interpersonal relations Salaries wages and benefits Company policy and administration Working conditions Status Job security Balance between work and life	Collaboration Salary Policy Supervision Working conditions

**Employee motivation.** Employee motivation, as identified by Herzberg, relates to the internal mechanisms in a person which causes a person to desire to do well at a given task (Issa Eid, 2016). Diefendorff and Chandler (2011) noted that motivation is an abstract, ever-changing, intangible, yet consequential, concept that is difficult to research. Hee and Kamaludin (2016) indicated both internal and external aspects of motivation play a role in work execution for nurses in Malaysia. Using Herzberg's motivation-

hygiene theory, these authors examined which elements of the theory most significantly and positively affect the job performance of nurses. Dobre et al. (2017) used the motivation-hygiene principles to examine leadership factors that contribute to motivation in Jordanian hospital employees, while Lavanya and Kalliath, (2015) researched a private company. Musinguzi et al. (2018) chose Ugandan health workers as participants, and Akintola and Chikoko (2016) studied motivation among healthcare supervisors. Using Herzberg's premise that intrinsic motivation is an influencing factor in job performance, each study was able to reinforce the integrity of the TF theory. Because each study examined employee motivation through a leadership lens addressing different business contexts, some difficulty exists in determining which TF theory tenets directly affect employee motivation.

There are several ways to identify influencers of motivation among health professionals. The examination of motivation among health employees includes the concept of how location influences motivation (Grujičić, Bata, Radjen, Novaković, & Grujičić, 2016) and how work motivation influences agency culture (Kjellström, Avby, Areskoug-Josefsson, Gare, & Back, 2017). Because location and company culture are hygiene factors in Herzberg's theory, it is a novel thought to use these items as determinants of motivation in employees. According to Herzberg the hygiene factors only lessen dissatisfaction but are not contributors to job satisfaction.

**Job satisfaction.** Another precept of Herzberg's theory is job satisfaction in employees. Job satisfaction results when the job requirements satisfy an employee's natural desires for achievement (Alshmemri et al., 2017). A review of job satisfaction in

the health arena focused on various employee groups within healthcare. The researchers examined the satisfaction among community or public health workers globally (Akintola, & Chikoko, 2016; Deriba, Sinke, Ereson, & Badacho, 2017; Hotchkiss, Banteyerga, & Tharaney, 2015; Noblet et al., 2017), hospital staff (Sanei & Poursalimi, 2018), social workers (Roh, Moon, Yang, & Jung, 2016), nursing staff (Holmberg et al., 2016), pharmacists (Ben Slimane, 2017), and radiation therapists (Savoy & Wood, 2015). Researchers examined job satisfaction determined by leadership styles (Sow, Murphy, & Osuoha, 2017; Yarbrough, Martin, & Alfred, 2017). Most articles quantitatively examined job satisfaction, with one article using the qualitative methodology to explore job satisfaction. Research results indicated that the prestige associated with the position and title was a determinant of job satisfaction even when the hygiene factors, such as salary, were less than adequate. When collectively considering the studies, the reader must consider the context and country of origination of the participants. Job satisfaction in developing countries appears to be less contingent on hygiene factors, such as salary and work environment, than in developed nations.

Researchers also examined whether job motivation is a precursor to job satisfaction. Hotchkiss et al. (2015) examined job satisfaction through a complex array of motivating factors for health workers in Ethiopia. Researchers studying motivating factors related to public service and emotional labor sought correlates to identify which elements were statistically significant influencers of job satisfaction (Roh et al., 2016). Roh et al. also discussed the concept of managing the well-being of another person while being responsible for the public trust as a motivating factor for public servants. Finally,

Sanei and Poursalimi, (2018) examined motivating factors from organizational attachment and the effect on job satisfaction. Hotchkiss noted two types of motivators in his study that align with the extrinsic and intrinsic values of the TF theory. The extrinsic agent is called the “can do”, and intrinsic force is the “will do”. These different influencers of job satisfaction relate to the social and cultural values of the participants. The study results indicated a need for more research on what guides motivation in individuals.

**Job dissatisfaction.** The second pillar of Herzberg’s dual-factor theory is that of job dissatisfaction. Job dissatisfaction elements are those parts of a job that influence the employee experience (Pugh, 2016). While the hygiene elements that may contribute to dissatisfaction are apparent in the theory, the existing challenge is in determining which conditions in TF theory lead to job dissatisfaction for any one employee (Vijayakumar & Saxena, 2015). Across the literature, the levels and number of mitigating factors that may contribute to job dissatisfaction for an employee are sometimes outside of the constraints of the theory. With the possibility of some contributing factors to dissatisfaction remaining outside of theory confines, it is necessary to conduct more research as a way of expanding the literary context of the TF theory.

Herzberg theorized that other contexts of a job might lead to dissatisfaction. These contexts, or hygiene factors in a job, are the areas beyond the absolute control of an employee. These factors include salary, leadership, work environment, corporate culture, and administration or supervision (Lazaroiu, 2015). While these items related to dissatisfaction pertain more to the work environment than any internal motivators (Issa

Eid, 2016), it is imperative that managers be aware of the role of hygiene items in the decision-making processes of employees. Leaders must become more aware of how work culture, environment and remuneration dynamics affect worker motivation and satisfaction.

### **Maslow's Hierarchy of Needs**

Maslow's hierarchy of needs is a foundational theory that undergirds Herzberg's TF theory. Maslow's theory noted that people must satisfy their basic life needs before aspiring to higher order self-realization goals (Salkind, 2008). The key diagram of the Maslow's hierarchy is a triangle with life needs at the base and with the self-actualization at the top of the triangle. Acevedo (2018) along with D'Souza and Gurin (2017) described the life sustaining needs as the deficient, or d-needs while the self-actualization needs are the being or b-needs. These d-needs for each person include food, water, shelter, safety, love and socialization (Kermally, 2005; Salkind, 2008). This theory espouses the building blocks of life attainment goals. Researchers encounter difficulty in locating a definitive delineation or determination of when a person reaches, and eclipses, one level to proceed to another.

A limitation of Maslow's theory is that the theory foundation has a predefined achievement order. D'Souza and Gurin (2017) challenged this assumption by outlining the personality types that skip levels and/or achieve the levels in random order. Acevedo (2018) also noted a potential bias in Maslow's theory that causes one to question the logic of the premise. In addition, because d-needs encompass the widest portion of the triangle, the implication is that one cannot move toward achieving b-needs until all parts

of the base are satisfied (Tichy, 2017). The theory does not allow for coinciding levels (Kermally, 2005) or changes in each level that may alter the needs and the attainment of each level (D'Souza & Gurin, 2016; Hindle, 2008). These theory limitations occur externally to the individual and factor into the internal drive of each person. While hierarchy of needs is a neat package of what an individual should desire in life, it does not offer any assurances of what causes a person to want to complete, or not, the higher levels with the goal being self-actualization.

### **Theory of Work Adjustment**

The theory of work adjustment (TWA) connects job satisfaction with the job tasks. TWA complements Herzberg's theory because it examines how a person interacts with the environmental factors of an occupation to achieve satisfaction (Dawis, 2000). TWA goes beyond TF theory because it describes how an employee reaches a satisfactory balance within a profession (Dawis, 2007) rather than merely identifying the contributors to job satisfaction or dissatisfaction. In the TWA context, the balance that produces satisfaction comes from an employee's ability to meet the demands of the work environment and the work environment, in turn, satisfying the employee's needs (Bayl-Smith & Griffin, 2015; Dawis, 2000). TWA identifies a balancing act that a person performs to manage the job and the work environment to create a satisfactory outcome for him/herself. The developers of TWA offer additional insight into how workers interact with the environment to achieve job satisfaction defined in the TF theory.

TWA identifies what interactions between person and environment which must occur for an individual to reach a level of satisfaction. The area, person, or environmental

element that is discordant, and contributing to dissatisfaction, must undergo an adjustment to reset the levels of satisfaction (Dawis, 2000). In TWA, this reset happens when the person seeking satisfaction engages in behavior designed to address and change the environmental factors to mitigate the feelings of dissatisfaction (Dahling & Librizzi, 2015; Dawis, 2007). While TF theory identified the contributors of satisfaction and dissatisfaction, TWA identified actions that move a person toward workplace satisfaction. TWA goes beyond the recognition of the factors contributing to either satisfaction or dissatisfaction and offers a formula for how an employee balances his or her work life to create a satisfactory experience.

The TWA may be an assistive model for defining recruiting strategies for EMT executives and is proving to be predictive of job retention rates (Dahling & Librizzi, 2015). By using TF theory to identify the motivators and dissatisfying factors and combining TWA features on how people interact with their work environment (Bayl-Smith & Griffin, 2015), managers in AS can develop recruitment strategies that may lead to longevity and career progression in the industry. Researchers studying TWA examined the motivation of an employee in the context of all the factors that influence and affect job performance and satisfaction. By recognizing and understanding the motivation and work environment dynamic, employers can better design recruiting strategies for EMTs.

### **Summary and Transition**

The purpose of this study was to gather an in-depth perspective of EMT recruiting strategies from the executives and managers in the industry. Considering all the factors that influence the work environment of ambulance personnel and the increasing demand

for EMT workers, it was appropriate to use the two-factor theory of motivation as the conceptual framework for the study of successful recruiting strategies of EMTs.. In Section 1, I identified a lack of information on the EMT recruiting process. I also included in the significance of the study, the necessity of understanding job motivation and satisfaction as related to EMT recruitment and how this study may inform AS business practices. The exhaustive literature review included factors that affect healthcare workers such as job satisfaction, dissatisfaction, motivation, burnout, corporate culture, leave intentions, stress, violence, and work innovations.

Section 2 includes, along with a restatement of the study purpose, the research methodology, identifying the role and ethical obligations of the researcher along with research methods and data collection design. I also describe how I ensured the reliability and validity of the research protocols by using peer-reviewed articles to ground each decision and procedure in the study.

In Section 3, I present the results of the study and the application of the results to professional practice. I present social change implications that may result from my study along with further research opportunities that may extend from this work.

## Section 2: The Project

This section of the study includes a description of, rationale for, and scholarly evidence for the design protocol of the research project exploring the recruiting strategies of ambulance executives. In this section, I describe the reasoning for conducting the study, provide a foundation on what the researcher's responsibility in securing interviewees for the research and outline the research methods, design, and participant consent protocol. I define the data collection instruments and techniques and also describe the data analysis plan.

### **Purpose Statement**

The purpose of this qualitative multiple case study was to explore the recruiting strategies some AS executives used to increase the number of EMT personnel. The targeted population consisted of six AS executives from four AS companies, in both urban and rural areas of southwest Texas and southeastern New Mexico, who have implemented successful recruitment strategies to increase the number of EMT personnel. The implications for positive social change included the potential for AS leaders to enhance the health of community members by improving out-of-hospital health care delivery and health responses through increased EMT recruitment, engagement, and retention. Additional social implications may include improved health outcomes for vulnerable populations through better accessibility to preventive health assistance and hospital discharge follow-up care. These improvements may reduce the level of hospital readmittance for the elderly and the impoverished through increased access to healthcare services using EMT staff and an out-of-hospital care model.

### **Role of the Researcher**

The purpose of a researcher in qualitative research is to be aware of his or her part in conducting ethical research while acting as the primary collection tool for gathering the data (Fleet, Burton, Reeves, & DasGupta, 2016; Råheim et al., 2016). Moon (2015) indicated the importance of a researcher in interpreting and providing context for the collected data. As an instrument of the data collection and conduct of the research protocol, another role of the researcher includes the development of operating procedures for managing interactions between participants and researchers and mitigating the introduction of bias from the researcher (Clark & Vealé, 2018; Goodell, Stage, & Cooke, 2016). The role of the researcher was an integral part of the advancement of the study protocol. It was imperative that I understood how my viewpoint and biases could have affected the investigation.

Before developing my study topic, I had no stake or formal contact with the ambulance industry. I chose this topic for my study because I am friends with an executive from one of the ambulance companies that I intended to include in my research. I also completed two Walden University doctoral course assignments with members of this organization. One task included interviewing a business leader and I chose my executive friend from the ambulance company. The second Walden University assignment was conducting a qualitative interview session. I decided to perform this session assignment with the ambulance supervisor and the human resources manager from the same friend's company. This executive is the only person with whom I had a personal relationship.

The ethics of conducting research and the role of the researcher include recognizing, divulging, and minimizing any suppositions, preconceived or newly developed, that may affect the collection, coding or interpretation of the gathered data (Clark & Vealé, 2018; Galdas, 2017). Concerning the *Belmont Report* on ethics, the researcher's role is to protect the participant by minimizing the dangers associated with the study and to respect each participant's ability to make knowledgeable decisions while fostering trust between the researcher and the investigated (*Belmont Report*, 1979; Miracle, 2016). As the researcher, I incorporated the three guiding principles of the Belmont study by respecting the participants in the research by providing all necessary information on the study so that each person was free to decide whether or not to take part in the research. I also included safeguards in data collection that maintained the confidentiality of the interviewees while seeking to ensure that I adhered to the concept of doing well by the study participants. The development of the study design provided minimal harm to the subjects resulting from the research protocol.

As the investigator, it was imperative that I reduced the amount of personal effect that I added to the research design and method that may have affected the study results. Galdas (2017) stated that qualitative research bias might occur from the structure of the interview questions, data collection style, and participant selection. By choosing a study topic about which I had no previous understanding or connection I minimized the bias in the interview question selection. Also, by documenting any perceived biases that I had, my study protocol (see Appendix B) included procedures that diminished biases in data collection.

I used an interview style convention for this qualitative study because I wished to explore the aspects of recruiting related to EMTs. Interview-design study protocols are more conducive to gathering intangible or nonquantifiable human characteristics in research (Carl & Ravitch, 2018; McCusker & Gunaydin, 2015; Rosenthal, 2016). To determine if TF theory motivation or hygiene factors played a role in AS recruiting, I employed semistructured interview questions to gather data related to the TF theory themes. Korlén, Essén, Lindgren, Amer-Wahlin, and Schwarz (2017) conducted an exploratory study using an interview protocol to inquire about motivational strategy and implementation among healthcare providers and management. Gathering information from AS executives on recruiting using interview questions seemed most appropriate for the exploration of the TF theory concepts in EMT recruitment.

### **Participants**

The participants in this study were ambulance company executives, managers, or human resources (HR) personnel. The eligibility requirement for the study subjects was that they were responsible for some aspect of administering, developing and implementing strategies for hiring EMTs for the company. I chose these members using purposive, homogenous sampling because of the similarity in the work experiences of the executives. Researchers who use purposive sampling are more likely to get participants with direct, in-depth knowledge of the topic under study (Elfil & Negida, 2017; Etikan, Musa, & Alkassim, 2016; Gentles, Charles, Ploeg, & McKibbon, 2015). I also implemented the snowball technique to ask for more AS recruiting experts to interview from the confirmed participants. Asking confirmed participants to recommend others for

inclusion in the study is the essence of the snowball technique (Elfil & Negida, 2017; Kirchherr & Charles, 2018; Wilson, 2014). The inclusion standard (see Appendix A) for participants was that they determined, developed, or reported on recruiting strategies for the company. The standard for success was that a company maintained at least 60% full-time equivalent (FTE) EMTs.

I used the snowball sampling technique by engaging an executive in the industry that was familiar to me. This executive and the associated company are not included as participants in the study. Using the snowball technique with an executive inside the industry to gain access to other managers helped me gain participant trust. After contacting the potential participants via phone, I introduced and explained the study concept. After explanation, I offered to e-mail the consent form for their review and possible agreement. Authors have noted that impersonal correspondence types, such as e-mail, may limit contact response (Fam & Ferrante, 2017; Marks, Wilkes, Blythe, & Griffiths, 2017; Raymond, Profetto-McGrath, Myrick, & Streat, 2018). For public ambulance companies and city agencies, use of the snowball technique was the most beneficial way of contacting company executives.

To establish a working relationship with possible study subjects, I provided explicit and transparent information on the study concept and the potential benefits to ambulance companies and management. I furnished detailed information and answered questions to help them become more comfortable with being a potential subject of the study. Scholars have discussed the necessity of explaining the research to potential participants before gaining consent (Coyne, Grafton, & Reid, 2016; Kelly, Margolis,

McCormack, LeBaron, & Chowdhury, 2017). I solicited the help of employees in the industry in gaining access to participants. Recruitment activity is most successful when the researcher obtains the support of a trusted person or group close to the target population to advocate for the project (Garcia, Zuniga, & Lagon, 2017; McDougall, Simpson, & Friend, 2015; Reifenstein & Asare, 2018). The vetting process for determining eligible subjects for this study included a brief questionnaire. Being mindful of a participant's time shows respect for the interviewee and adds validity to the research protocol (Marks et al., 2017; Moser & Korstjens, 2018; Raymond et al., 2018) The questionnaire developed had scripted questions to establish if the employee had information that was relevant to the research (see Appendix A).

After acquiring interviewees for the study, I created a working environment that was conducive to receiving data that would add to the results of the study. An interviewee must feel valued by the researcher (Garcia et al., 2017; Marks et al., 2017; O'Grady, 2016). I was candid with each interviewee about my minimal knowledge of the study topic as an assurance that I did not come to this research with any preconceived notions. My lack of knowledge and interest in the topic appeared to offer a level of comfort and excitement for the participants. As the investigator, it was imperative that I demonstrated a level of trust and respect toward each interviewee that espoused the ethics of the Belmont study. Researchers must convey to the participants that they are an integral part of the project (Burkett & Morris, 2015; McDougall et al., 2015; Reifenstein & Asare, 2018) and that the confidentiality of the interviewee's information is a priority (Amundsen, Msoroka, & Finsden, 2017; Fam & Ferrante, 2017; Petrova, Dewing, &

Camilleri, 2016). Gaining interviewee trust by the researcher was vital and demonstrated the ethical adherence to the respect for persons tenet of the *Belmont Report*. I maintained the respect of each person during the research by listening to the contributors and valuing their input as we progressed through the study events.

### **Research Method and Design**

Research methodology incorporates the epistemology of the investigator, the conceptual framework, and the procedures for conducting the study (Chu & Ke, 2017). Each area aids in creating a concise plan of action for guiding the research process. I used a qualitative case study to do my research. In this subsection, I described the rationale for selecting the specific research method and design for my study.

#### **Research Method**

I used the qualitative method to explore the recruiting strategies of AS executives because the qualitative approach was best for interacting with subjective topics for which a quantitative expression of the information would be difficult to derive (Levitt, 2016). Madill (2015) similarly noted that qualitative researchers gather descriptive data. Qualitative methodology also supports flexibility in data collection because this methodology foregoes the requirement of a hypothesized outcome before collecting data (Levitt, 2016). I used the qualitative method to gain insight into the foundational structures that drive strategic planning of recruitment in AS. The attributes of the qualitative method were useful in determining and defining successful recruiting strategies in AS. By using the qualitative method to explore the use of motivation and

hygiene factors of TF theory as related to EMT recruitment, I sought to uncover if these factors were underpinnings to successful recruiting strategies to employ EMTs.

Quantitative methodology, conversely, is research where researchers collect and count data. Quantitative research offers a measurable connotation of a research phenomenon (Goertzen ,2017; Rutberg & Bouikidis, 2018). Barnham (2015) noted that quantitative researchers offer numerically definitive answers to questions of what frequency does an event occur within a phenomenon. As I researched the recruiting strategies of AS executives, I explored the in-depth perceptions of the participants about the phenomenon. Through this in-depth awareness from the subjects, I looked to gain understanding of the research topic. The quantitative research method provides numerical analyzation and was not appropriate for this study.

Mixed methods research is a combination of quantitative and qualitative research methods. Using both styles of methodology adds synergy to the results of data collection, which then provides a more robust understanding of the subject (Almpanis, 2016; Palinkas et al., 2015). Mixed method research is purported to be a more substantial means of gathering data than the single use of a quantitative or qualitative style of research (Mayoh & Onwuegbuzie, 2015; McLaughlin et al., 2016; Palinkas et al., 2015). Mixed method research is useful if an exploratory tact is necessary to acquire foundational data for quantitative measurements (Kong, Yaacob, & Ariffin, 2018; Madill, 2015). Use of mixed method research was not appropriate for my study because quantitative studies require a hypothesis or variables for the investigation. My research did not include variables.

## **Research Design**

I used a multiple case study design to conduct my investigation. Case study researchers gather data from a representative group to explore events occurring at a point in time with a specific group of people (Atmowardoyo, 2018; Hancock & Algozzine, 2016; Ridder, 2017). Yin (2018) noted that researchers could use the case study design to help them explain topics using a past-to-present viewpoint of the individuals familiar with the subject. Akintola and Chikoko (2016) and Pennel et al. (2016) conducted research using qualitative case study designs across multiple organizations with community health workers and emergency medical service workers respectively as participants. Similarly, I used the case study design to explore how AS executives have recruited and will recruit EMTs in the southwest United States. The case study design was a better research tool for accomplishing this task.

I used a case study design to gather thoughts, emotions, and feelings from participants that are not easily quantifiable. Case study research design allows for interactions by the researcher with the participants that quantitative design is unable to provide (Aczel, 2016; Atmowardoyo, 2018; Stuckey, 2016). As the primary collection tool for the research, my interactions with the participants were part of the data collection process. Investigators use case study research as a form of active collaboration between parties investigating the research question (Carolan, Forbat, & Smith, 2016; Dresch, Lecerda, & Miguel, 2015; Houghton, Murphy, Shaw, & Casey, 2015). Researchers use the case study design to collect expansive responses to questions while quantitative studies reduce answers to data points. The collaboration between an investigator and the

subject along with rich data collection possibilities make case studies a preference of researchers to address literature gaps on a topic.

In contrast, phenomenology is a qualitative design that involves gathering data on the life experiences of persons who share similar circumstances (Alase, 2017; Willis, Sullivan-Bolyai, Knafl, & Cohen, 2016). Researchers use phenomenological studies to explore if there is a consensus-meaning dynamic that evolves from a group of people who have a shared social, emotional, or ethnic similarity (Alase, 2017; Hood, 2016). Using phenomenology, investigators attempt to gain an understanding of how others attach meaning to a unique life occurrence. Consequently, a phenomenological approach was not appropriate for this study because I was not exploring and ascribing meaning to the lived experiences of the participants.

Ethnographic study designs are similar to phenomenological studies because they each involve lived experiences. The lived experiences in ethnography relate to a social similarity and not cultural or ethnic similarities. Jamali (2018) and Plowman (2017) discussed the usefulness of ethnography in exploring reactions and responses of people in social environments such as neighborhoods or workplaces. Chu and Ke (2017) noted that ethnography research occurs in the natural environments of the participants. An ethnographic study was not appropriate for this research because I was not exploring the impact of an environment on people within the environment. I collected data about each participant and his or her perceptions of recruiting strategies for work.

The challenges of case study research relate to rigor and data saturation. Data saturation is the point at which no new information results from the data collection

method (Fusch & Ness, 2015; Lowe, Norris, Farris, & Babbage, 2018; Tran, Porcher, Falissard, & Ravaud, 2016). I ensured data saturation through member checking. Member checking is a follow-up procedure done with the study participants to validate the researcher's interpretation of the information provided during the data collection process (Birt, Scott, Cavers, Campbell, & Walter, 2016; Harvey, 2015; Madill & Sullivan, 2017). As an assurance that no additional themes arise in the research, member checking helps to confirm the researcher's interpretation of the information and validates theme identification. Researchers using member checking may also increase comparison capability across companies in a multicase project.

### **Population and Sampling**

Participants in this study included one or more executives from each of four ambulance agencies or city fire companies. For this study, executives included any person who is pertinent to the decision-making process for recruiting EMT personnel. These recruiting experts consisted of company executives, human resources personnel, company administrators, supervisors, or managers who design or implement hiring decisions within their respective ambulance companies. I sought to interview people with expertise in EMT recruitment because they were presumably the experts on the study topic. The interview setting for the research was in the organizations that employ EMTs.

The sampling style used in conducting this multiple case study was purposive sampling. Researchers use purposive or judgmental sampling to choose subjects who have features that are beneficial for the research topic (Elfil & Negida, 2017; Etikan et al., 2016; Malterud, Siersma, & Guassora, 2015). Purposive sampling minimizes the

necessity of having many participants and increases the generalizability of the data collection process (Etikan et al., 2016; Farquhar, 2013; Gentles et al., 2015). While purposive sampling allowed me to maximize the expertise level for the participants, it was not a sufficient strategy for attaining data saturation. I included the snowball sampling technique as a secondary sampling method to enhance the achievement of data saturation.

Snowball sampling recruiting technique allows a researcher to engage additional research participants by using current study enrollees (Kirchherr & Charles, 2018; Moser & Korstjens, 2018). Gentles et al. (2015) noted that snowball sampling is a way of finding typical representative sources to address the research topic. By using the snowball sampling technique, I was able to access additional subjects who were equally suited to provide direct information on the research subject. Using snowball sampling to increase the opportunity to gain a greater number of participants for the study increased the likelihood of data saturation.

Reaching data saturation using a purposive sample is not dependent on the number of participants but depends on the depth of the information that the research subjects offer to the investigator (Fusch & Ness, 2015; Malterud et al., 2015). Kirchherr and Charles (2018) offered that snowball sampling is dependent on the reference capability of the participant and may or may not produce a larger number of study subjects. Data saturation occurs more readily with interviewees who have experience in the area relevant to the study. I used the snowball sampling technique to increase the number of study participants which aided in achieving data saturation for the study.

### **Ethical Research**

The design of my research project included gaining consent from each participant. Lee (2018) noted that informed consent is a type of protection for the participant against possible unethical acts by the researcher. The consent form for this study clearly outlined the risks, benefits and ability to withdraw from the study at any time. Researchers must also provide a means for the study subjects to disengage freely from the study without culpability (Petrovic, 2017). A person was able to withdraw from this study via phone or e-mail, and the contact information was on the consent form. The e-mail response served as an affirmed copy of the consent form to each informant. I did not offer incentives to potential participants, and this explanation was also on the consent form.

I provided ethical protection of interviewees by ensuring that each person's identity remained confidential and that there was no identifying information included in the reported results from this study. The desire for confidentiality is a challenging but necessary component of qualitative research designs (Ngozwana, 2018). I stored and secured all data collected during this study and used a password-protected encrypted USB electronic storage device. I stored paper documentation and the USB device in a fire-proof combination lockbox in my home office. These items will remain stored for 5 years from the study completion date and CAO approval.

The identity of each participant is in a locked office drawer in a separate building away from the location of the collected data. Confidentiality is relevant to all research. Participant confidentiality is especially important when exploring socially sensitive subjects like illness or abuse along with criminal and deviant actions (Wilson, Kenny, &

Dickson-Swift, 2017). While this study did not include socially sensitive material, it was vital to maintain a level of confidentiality that was respectful of each participant and any information he or she provided. After the 5 years, all documentation, identifying information, and the electronic USB device will undergo incineration to destroy all data associated with this study. The Walden University Institutional Review Board (IRB) approval number for this study was 01-16-19-0720764.

### **Data Collection Instruments**

As the researcher in this study, I was the primary collection instrument conducting semistructured interviews with each participant. The interviewer is the main instrument and conduit through which data collection occurs (Clark & Vealé, 2018; Goodell et al., 2016; Levitt, 2016). Semistructured interviews allow the researcher to gather detailed information to gain further understanding of a specific topic from participants closely aligned with the matter (Akintola & Chikoko, 2016; Kjellström et al., 2017; Sayce, 2016). The benefit of audio recording is objectivity in the collection of data (Wilhoit & Kisselburgh, 2015), capturing information that the investigator may miss (Rinderknecht et al., 2017), and varying the types of data collection methods engages the participant in a personable and preferable way (Heath, Williamson, Williams, & Harcourt, 2018). I used audio recordings of the interviews to support my efforts to capture and review insights that I did not notice during the initial interview session.

In addition to the interview process to collect data, I also gathered brochures, posters, leaflets and any electronic information related to each company's recruiting strategy to further develop secondary sources of data. Secondary data consists of deposits

of information related to a study, yet not initially collected for the purposes of the study (Ellram & Tate, 2016; Trinh, 2018). Sun and Lipsitz (2018) purported that secondary data research is useful and can yield high-value results when handled properly. I included as a secondary source any public data information on EMTs from the state department of health services for each state included in this study. Also included as secondary sources were information derived from national EMT organization and federal agency websites that contained repositories of statistical reports and data related to the study topic.

Reliability of the data collection process occurred by using member checking during follow up reviews with the study participants. Member checking is a reliability tool for researchers to analyze their qualitative data by providing transcripts and thematic developments for the participants' corroboration and further input (Clark, Birkhead, Fernandez, & Egger, 2017; Cruz & Tantia, 2017; Harvey, 2015). I used member checking during the follow-up communications as designated in the informed consent document.

As a plan to enhance the validity of the study, I employed the triangulation of the multiple sources of data to include the interviews, participant documents, data from open-sourced electronic media, and reports and data files supplied by New Mexico and Texas state health department officials. Study validity is necessary to establish the probity of the data collection and to curtail the possibility of researcher bias (Lub, 2015; Noble & Smith, 2015). Johnson et al. (2017) suggested that triangulation substantiates the data collection process and aids the researcher in corroborating the collected information. By using multiple data collection styles, I enhanced the efficacy of the data gathering process.

### **Data Collection Technique**

There are numerous ways to gather data in qualitative research. Using the interview style of data collection is useful if the investigator desires to understand individuals' perceptions of a particular phenomenon under study (Carl & Ravitch, 2018; Castillo-Montoya, 2016). Rosenthal (2016) explained that the interview style of data collection allows an investigator to access participant awareness of the research subject. The advantage of the interview style of qualitative research is the flexibility in the ways to conduct the interview (Carl & Ravitch, 2018; Ellis, 2016). Weller et al. (2018) discussed how the interview style of data collection gives investigators options for administering the interview questions. The various styles and options for conducting interviews provided me the flexibility in the data collection which was conducive to accumulating the most useful information from the interview subjects.

Conversely, the disadvantage of interview style research is similar to its advantage. Because researchers using interviews collect the conversations and recollections from participants, the information collection is dependent on the interactions between the participant and the researcher (Ellis, 2016; Plakhotnik, 2017). Carl and Ravitch (2018) examined the influence dynamics that occur between the researcher and the researched. The disadvantage of having various ways to interview a person is the challenge of knowing if the interview approach is the best style for the interviewee. As a researcher using the interview protocol, I identified the research methodology and provided descriptions of the research process to each participant to mitigate the disadvantage of the interview style data collection technique.

I conducted the interviews in this study using semistructured questions. The interview questions and protocol are provided in Appendix B. The interview protocol included the interviewer script, the interview questions, tips for receiving feedback from the interviewee and possible follow-up questions to gain clarification of the information provided. I asked open-ended questions, posed follow-up clarification questions, and prepared notes on my interview interactions with participants. I did not conduct a pilot study prior to collecting data. I selected member checking as the validation plan for the data collection. Member checking serves as a validation method for the data collection protocol (Birt et al., 2016; Madill & Sullivan, 2017). By using member checking, I continued engagement with the interviewees and continued expanding my understanding of the study context from the participant's viewpoint. Harvey (2015) stated that the use of member checking is a way to verify the accuracy of the researcher's interpretation of the participant's presentation of information. Through member checking, I ensured the accuracy of my understanding of the context through which each participant provided his or her responses to the questions in the interview protocol (see Appendix B). Also, member checking afforded opportunities to gather additional information related to the study.

As part of the interview process, I requested from each interviewee a sample of any information used as part of the recruiting strategy for EMTs. Corti (2018) and Sherif (2018) discussed how reviewing previously gathered data from a perspective different from the original intent often produces new insight and understanding of the data. The use of secondary data collection is driving the adaptation of new methodological

opportunities for exploring in qualitative research (Levitt, 2016). Gathering secondary data in this manner does not require any significant cost, time or effort from the investigator or the participant. The minimization of research costs is a significant factor in secondary data use (Koo, 2016; Sun & Lipsitz, 2018; Trinh, 2018). The study participants had nominal physical recruitment strategy samples that would serve as secondary sources. The interviewees referred me to their organization websites or social media pages as a secondary source of information on their companies. A phone conversation with the potential participants is where each received additional information about the study and how the subjects asked questions to increase the comfort level with the concept and process of the interview. During the phone conversation I asked for, and received, an e-mail address to send the informed consent document. Once I received the informed consent, I arranged a time for the interview. Heath et al. (2018) noted the importance of interviewees relating to the researcher during the interview process. I conducted the data collection interview at each participant's work location. This arrangement was convenient and comfortable for each participant. Maitlis (2017) stated that observing individuals in their everyday settings provides the investigator with a necessary framework for understanding the area in question. The estimated time for each interview was 1 hour. I scheduled a follow-up interview with each interviewee at the end of each interview session. I supplied the member checking transcript via e-mail to each participant. Sending a preview of the member checking synthesis before the follow-up interview was beneficial in the advancing the time required for follow-up meeting. If the participant had no changes or additions to the member checking preview, then that

information was relayed via e-mail and no additional follow-up interviews were scheduled. Any follow-up meetings included additional member checking reviews for validity.

### **Data Organization Technique**

The organization of all collected data depended on the location of each case. Each research participant had a predetermined encrypted identifier. These identification numbers did not include any information that is traceable back to the participant. Each business had a numerical identifier for the company name and state related to each company's location. Storage of the personal information for the encrypted identifiers was separated from the collected data and is kept under lock and key accessible only by the researcher. As the researcher, I alone know the full identities of each participant and have securely stored this information for 5 years. After 5 years of safely storing the research data, I will destroy all identifying data and the encrypted storage device via incineration. I tracked each person's interview and identity using a three-way method of identifying each person. The interview protocol form (see Appendix B) served as the primary identifying document for each participant. Each interviewee received an identifier of P1, P2, etc., to maintain confidentiality in reporting the study results. I completed the interview document prior to each interview session and read the research identifier information for each subject into the recorded session for audio recording tracking purposes. I used a mini-recorder and the iPhone to record each interview. Deletion of the iPhone recordings occurred once the member checking phase of the data collection was completed. Deleting the recordings from the iPhone served as an additional step in

enhancing participant confidentiality during the study. I used a LiveScribe smart pen device and software application to take and maintain reflective notes during the session. Using a journal to record notes and reflexive information related to the collection of data by an interviewer is a traditional method for gathering descriptive material (Hellesø, Melby, & Hauge, 2015; Phillippi & Lauderdale, 2018). Yates and Leggett (2016) observed that journal notes allow the researcher to record observational contexts and detail events. By maintaining notes on each interview session, I detailed the themes of which I became aware and these notes helped to define a rich descriptive narrative of what occurred during the data collection phase of the interview.

### **Data Analysis**

I utilized methodological triangulation to analyze the study data. Triangulation in qualitative research allows the researcher to provide a complete picture of the data using two types of viewpoints for the data (Abdalla, Oliveira, Azevedo, & Gonzalez, 2018; Kern, 2018). Drouin, Stewart, and Van Gorder (2015) discussed how methodological triangulation usage compares slightly different viewpoints of a phenomenon. I used the transcribed data collected from executives in each organization in the multiple case study to create organizational triangulation. I then compared the notes taken while reviewing the audio recorded data along with secondary data gathered from each company to expand codes and themes. With codes derived from the interorganizational comparisons, I connected thematic similarities and differences between organizations then triangulated data for comparison with previous literature on TF theory to develop further thematic valuations.

I used Nvivo, a qualitative software program, for coding and development of themes derived from the participant interviews. Researchers use qualitative software to expand on the similarities and analyses of the items and coding to develop an integral understanding of the data using advanced search and query functions (Salmona & Kaczynski, 2016; Zhao, Li, Ross, & Dennis, 2016). Clark and Vealé (2018) described coding as the process between data collecting and scrutiny while also being a process for cataloguing themes. I identified the most commonly used phraseology and words from each participant per case. I then compared coding per organization and then across all organizations to decipher similarities or differences in the responses that may relate to the conceptual framework of the TF theory of motivation.

I incorporated literature on the conceptual framework for this study into the thematic coding that I performed. Thematic coding is predetermined before collecting data and relates to the question under study and the framework for the research (Blair, 2015; Vaughn & Turner, 2016). Theron (2015) also discussed the importance of analyzing qualitative data in a way that allows themes to emerge. The tenets related to the pillars of Herzberg's TF theory were the themes that I used for coding the interview data. I also included emergent coding as other phrasing similarities and words appeared in the data. The first coding pass included the data from all participants based on the interview questions. Once the question coding was completed, I compared and coded participant question responses in the same organization for common themes. I then examined the same question across all organizations to determine if any additional codes or themes materialized.

## Reliability and Validity

### Reliability

The purpose of research scholarship is to add value to the current scholarly landscape. Creating relevant research requires achieving reliability and dependability in the research protocol and the data that are collected. Dependability in research is the assurance that the research protocol is transparent and repeatable (Amankwaa, 2016; Korstjens & Moser, 2017). Morse (2015) stated that dependable qualitative research is predictable and incorporates multiple methods of data analysis. I ensured dependability in this study by note taking and journaling each step of the data collection process. I used reflexive journaling to detail any changes in protocol throughout the data collection and analysis process.

In addition to extensive journaling and note taking, I used member checking of the interpreted data from each interview. Member checking is a reliability tool for researchers to analyze their qualitative data (Harvey, 2015; Varpio, Ajjawi, Monrouxe, O'Brien, & Rees, 2017). Birt et al. (2016) discussed how member checking provides multiple ways to check qualitative research data collection to develop reliability. Member checking is helpful for increasing the trustworthiness of the investigation (Varpio et al., 2017). By incorporating a second, member checking interview into the research protocol (see Appendix B) and the informed consent document, I increased the reliability of the data collected during each participant's initial interview. This dependability tool also added credence to the research protocol.

## **Validity**

Triangulation is necessary for research to enhance the integrity of collected data and is beneficial for adding credibility to a study. The most common type of triangulation in qualitative research is methodological triangulation (Carter, Bryant-Lukosius, DiCenso, Blythe, & Nevelle, 2014; Joslin & Müller, 2016). I incorporated methodological triangulation by including text analysis and software analysis of interview material, company documents, and website information. Abdalla et al. (2018), Joslin and Müller (2016), and Kern (2018) discussed how methodological triangulation uses more than one method of data collection and analyzing it in a way that offers validity to the analysis method and gives a more all-inclusive view of the occurrence under study. Using triangulation with multiple participants lent credibility to the analysis of the data through varying viewpoints. This type of variation allowed for rich comparisons of the discovered themes.

Bolstering research credibility also happens through member checking. I included member checking using interview question synthesis in my study protocol as a participant review mechanism. Member checking enhances the data credibility by allowing the research participants' voice to be preeminent in the interpretation of the data by reviewing interview transcription or interview synthesis (Birt et al., 2016). Cruz and Tantia (2017) and Korstjens and Moser (2017) discussed the viability of member checking as a credibility tool in qualitative research. Increased credibility serves as a mitigating tool for researcher bias. Researchers achieve study confirmability through the reduction of personal bias in qualitative research studies. As a way of mitigating personal

bias, I kept a journal of decisions, notes, and reflections made on aspects of the data collection as the research progressed. Impartiality by the researcher in detailing the data collection process and displaying transparency gives the reader the best opportunity to confirm or authenticate the data collection process outlined in a study (Abdalla et al., 2018; Cruz & Tantia, 2017; Korstjens & Moser, 2017). Investigator neutrality and minimization of bias in research is imperative if the information contained in the study is to have any scholarly validity and generalizability. Researcher transparency in all steps of the research process allows the reader to assess the credibility of the research on the merits of the work and not the biases of the investigator.

Another measure of validity in research relates to the applicability of the research results to other situations. Reporting context and descriptive information from the research in addition to the data results helps with the transference of research outcomes to other settings (Korstjens & Moser, 2017; Morse, 2015). Abdalla et al. (2018) stated that while transferability is in the purview of the reader, it is imperative that the investigator be forthcoming in describing and defining their research results in a way that assists in generalizing the findings. I ensured transferability in this study by providing descriptions of the interview setting, atmosphere and other contextual information about the study location. I used reflexive journaling and note taking to capture the conditions associated with the data collection that, when detailed in the research results, will increase the possibility of transferability to the reader.

Research transferability is also dependent on the achievement of data saturation during the investigation. Data saturation is the point in the research where no new themes

or codes arise from any additional data collection (Fusch & Ness, 2015; Weller et al., 2018). Tran et al. (2016) noted a point of contention in qualitative research that there is no definitive way of determining data saturation. I attained data saturation by triangulating data from the coding of interviews, reviewing secondary data from each organization, and member checking. By coding, analyzing, and comparing the data from each of these resource areas, I built a consensus on new themes or codes that required review. For the identification of new themes, I contacted the participants via phone to supplement the member checking protocol in place. I outlined the possibility of this additional phone call in the informed consent form.

### **Summary and Transition**

In Section 2 of this document, I outlined the process used to conduct this study. I described the purpose of the study, my role as a researcher, and the type of research I conducted. I identified the participants, population and sampling methodology needed for the study while also describing the research methods, designs and the components of ethical research. Finally, I explained the data collection processes which included collection instruments, techniques, organization and analysis. For each process detailed within Section 2 there are scholarly or seminal works to ground each protocol or procedure.

Section 3 includes a summary of the data collection results and a discussion of coded and emerging themes resulting from the study. There is a discussion of the implications, limitations, and any generalizability of the information resulting from the research. Finally, I identify any impact on social change that may come from conducting

the study and present recommendations for action, further research, reflections on the study, and study conclusions.

### Section 3: Application to Professional Practice and Implications for Change

#### **Introduction**

In this section, I present findings from ambulance executive responses to the strategies utilized to recruit EMTs into their organizations. I explored the study data within the tenets of the conceptual framework of TF theory to identify themes and relationships between the literature and the data. This section includes the purpose statement, presentation of findings, discussion of the application of the study findings to ambulance practice, implication of the study results for social change, recommendations for future action, recommendations for further research to improve business practices, reflections on the research, and study conclusions.

#### **Purpose Statement**

The purpose of this qualitative multiple case study was to explore the recruiting strategies some AS executives used to increase the number of EMT personnel in context of the current high demand in the industry. I conducted semistructured interviews with six executives from four ambulance agencies located in the southwestern region of the United States. The thematic codes derived from two-factor theory (TF) related to the recruiting strategies used by AS executives include: (a) the work itself, (b) growth, advancement and promotion, (c) interpersonal relationships, (d) salary or wage benefits, and (e) working conditions/job security. The emergent themes derived from the data collection and analysis were: (a) minimal recruiting strategies, (b) a small EMT recruiting pool, (c) agency requirements define recruitment success, (d) minimal data-driven recruitment tracking mechanisms, and (e) slow elimination of ineffective recruiting

strategies. The study findings also revealed that all executives used a combination of seven recruiting strategies to recruit EMTs into their organizations. These themes may offer other ambulance company executives' insight into recruitment strategies and may improve EMT recruitment overall.

### **Presentation of the Findings**

The overarching research question for this study was: What recruiting strategies do some AS executives use to increase the number of EMT personnel? I collected data using semistructured interviews and analyzed the data using NVivo software. The themes identified related to the conceptual framework of TF theory include: (a) the work itself; (b), growth, advancement, and promotion; (c) interpersonal relationships; (d) salary, wages, and benefits; and (e) working conditions and job security. Emergent themes from the data collection and analysis were: (a) minimal recruiting strategies (b) A small EMT recruiting pool (c) agency requirements define recruitment success (d) minimal data-driven recruitment tracking mechanisms, and (e) slow elimination of ineffective recruiting strategies. By understanding the tenets of the conceptual framework for the study, I identified and assessed which recruiting strategy related to each of the coded themes.

I collected data from six AS executives in New Mexico and Texas. I also gathered study data from publicly available documents, agencies, and websites. I used the snowball sampling technique to identify candidates for the study. After receiving contact information for the candidates, I spoke to each via phone to discuss the context and design of the study. I answered any questions asked and requested e-mail addresses so

that I could pass along the IRB approved consent form for participation in the study. I sent follow-up e-mails on the initial consent e-mail if I did not hear from the recipients. If I did not receive a response within 3 days after sending the second e-mail, I made a follow-up phone call to ascertain continued interest in the study. I logged each contact attempt in the LiveScribe journal. Once consent was received by e-mail, I confirmed with each participant a date, time and location of each interview. One participant consented to the study and set up the interview logistics via phone after receiving the consent form via e-mail. I affirmed the logistical requirements of each meeting via phone, text or e-mail. I conducted each interview at the office of each participant as a matter of convenience. Each participant had an office or conference room available for holding a face-to-face meeting. I conducted the first semistructured interview 2 days after initial phone contact with the potential interviewees. I conducted six interviews in 5 days over 5 weeks.

The company locations for each participant contained similarities that I did not expect. Each ambulance company building was a nondescript warehouse type building with a fenced yard and vehicle bay areas for ambulance fleet maintenance. Each building's interior was quiet and had open areas with a few offices, a reception area with hardly any ambulance staff visible. Each participant had a private area, office or conference room in which to conduct the interview.

After completing each interview and interview transcription and synthesis, I conducted member checking of each interview via e-mail and phone. I e-mailed the synthesized information to each interviewee for review before scheduling a second meeting to discuss. If the participant agreed with the synthesized information supplied,

the participant could indicate agreement via e-mail or phone. I did one member checking session in person. The other study participants noted agreement with the member checking synthesis via e-mail or phone. Minor changes to the member checking synthesis were also completed via e-mail. Secondary data collection on EMT recruitment occurred primarily from websites. Some state agencies and educational facilities required phone and e-mail contact to facilitate the collection of data suitable for this study. Because the study focus was on EMTs in ambulance agencies, the Texas and New Mexico EMS agencies did not have premade reports or graphics for that specific subset of EMS personnel. Each agency provided data or statements with a breakdown of all EMS personnel from 2016 – 2019 year-to-date. The 2019 data from Texas was through March 15, 2019, and the New Mexico data is through March 25, 2019. For the New Mexico data, the EMT counts came from the last month of reporting for each full year of data received.

For the first quarter of 2019, 55% of the total licensed EMS personnel in Texas, were employed in ambulance companies across the state. Of this 55% of EMS personnel employed at ambulance companies, 19% have the rank of EMT. While the New Mexico EMS office does not monitor what types of organizations employ EMS personnel, the first quarter of 2019 showed that 40% of the licensed EMS staff are entry-level EMTs. The New Mexico percentage, while higher than Texas, is somewhat of an anomaly because of the disproportionate distribution of EMS personnel across the state. The University of New Mexico–Health Sciences Center (2018) noted that while some counties in New Mexico have numbers well above the benchmark of required EMS

personnel per 1000 people in the community, other counties are identified to have deficient EMT personnel levels that are well below the baseline benchmark.

The findings of the study indicated that the motivation tenets of the conceptual framework are not the prime factors in the recruiting strategies of EMTs. Table 2 indicates participant identification of recruiting strategies and percentage toward identifying the recruiting strategy of each company. Inclusion criteria for the recruiting strategies in thematic coding included plans that had a participant identification coding percentage of greater than 50%. Figure 1 illustrates the percentage of times each strategy was coded across all participants' interviews. Table 3 indicates how the themed TF theory tenets align with the recruiting strategies identified by the interviewees. The data analysis did not indicate a connection with the motivation tenets of achievement and responsibility or recognition, nor did it include the hygiene tenets of supervision, policy and administration or work and life balance.

Table 2

*Participant Identification of Recruiting Strategy*

	Participants	Percentage of participant identification of strategy
Bonuses	P1, P2, P3, P5, P6	83
Community Relationships	P1, P2, P3, P4, P6	83
Educational Institutions	P1, P2, P3, P4, P5, P6	100
Flyers & Brochures	P2, P3, P5, P6	67
Internet-Online Recruiting	P1, P2, P3, P4, P5	83
Ride-alongs	P1, P2, P3, P4, P5, P6	100
Training Reimbursement	P2, P3, P5, P6	67

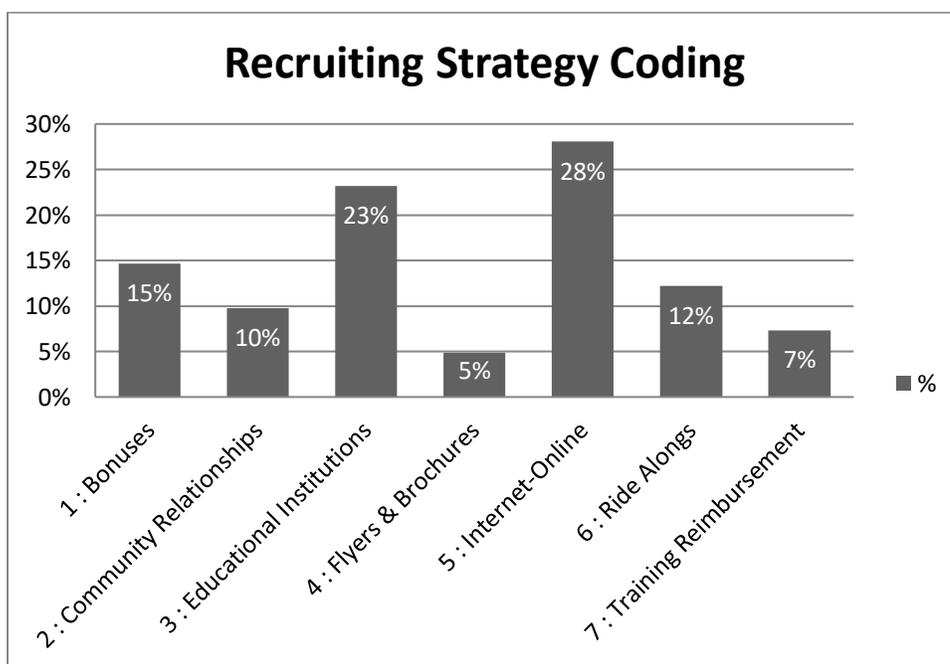
*Figure 1.* Recruiting strategy coding percentages.

Table 3

*Recruiting Strategy Alignment with Two-Factor Theory of Motivation*

	The work (M)	Growth advancement promotion (M)	Interpersonal relationships (H)	Salary/wages/benefits (H)	Working conditions / job security (H)
Bonuses				X	
Community relationships	X				
Educational institutions	X				
Flyers & brochures	X				
Internet-online recruiting	X			X	
Ride alongs	X		X		X
Training reimbursement	X	X		X	X

*Note.* X = recruiting strategy intersection with the conceptual framework tenets; M = motivation tenet; H = hygiene tenet

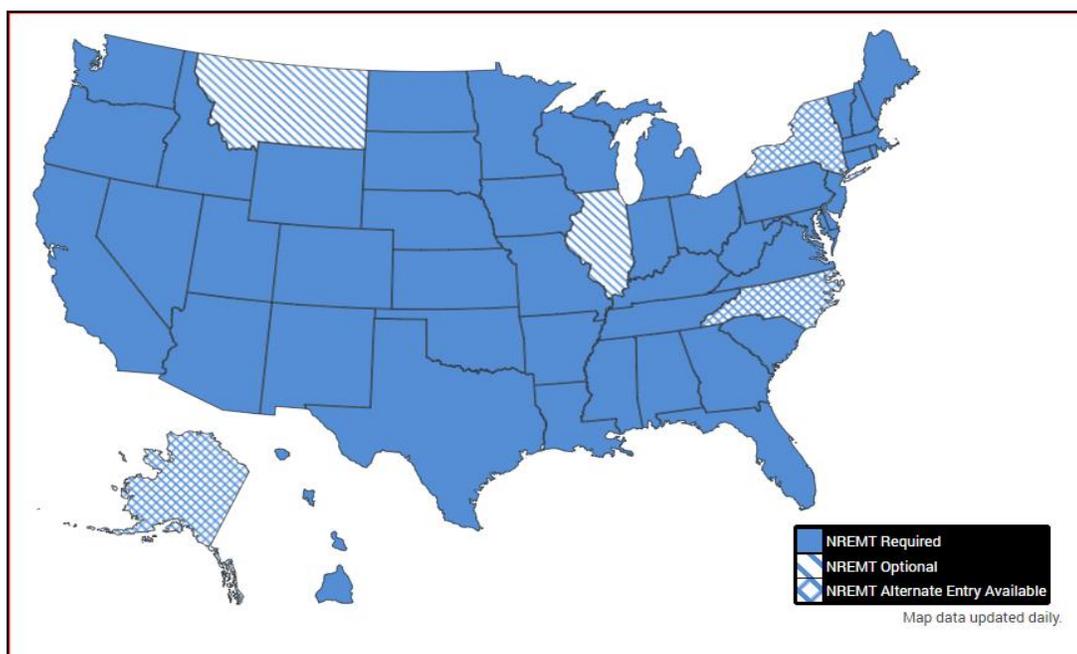
**Coded Themes**

The study results highlight how the recruiting strategies listed in Table 3 rely on the understanding by AS executives and managers that the EMT candidates desire to do the work itself of an EMT. This analysis corresponds with Roh et al. (2016) who explained how job motivation, or the desire to do the work itself, is sometimes enough of a motivator, especially in public service arenas, to draw people into the industry. While not explicitly articulated during the interviews, AS executives in this study seemed to rely heavily on this belief in the work itself as the prime reason for a person becoming an EMT.

The coded themes for this study included the motivation and hygiene factors identified in Herzberg's two-factor (TF) theory of motivation. I coded the recruiting strategies identified by the study participants based on how well each strategy definition fits within the TF theory tenets. Lavanya and Kalliath (2015) observed the difficulty in studying motivation from the leadership or recruiter perspective and not that of the recruited. Exploring how recruiting strategies incorporated with the tenets of TF theory may provide an understanding of how the recruiting strategies influence the supply of EMTs to the workforce.

**Theme 1: The work itself.** Six of the seven recruiting strategies identified in the data analysis of the interviews were coded to the TF theory tenet of the work itself. Roh et al. (2016) discussed the principle of the work as the most dominant satisfying factor that motivates a person to go into a public service occupation such as EMT. Although not explicitly identified by the interviewees as the reason for the strategies identified, the design of the recruiting processes of the AS agency executives places them in direct contact with students pursuing EMT studies or EMTs seeking employment. As stated by Diefendorff and Chandler (2011), motivation is an elusive concept to grasp but has a definitive impact on job satisfaction. Based on the recruiting strategies AS executives use, there is the belief that a person seeks employment at the ambulance agency for the opportunity to do the job of EMT. A person seeking to do the work itself of an EMT is commendable, yet the formal requirements necessary to become part of this elite occupation may be a contributor to the low numbers of EMTs entering the industry. Texas and New Mexico require all EMS personnel to receive certification through the

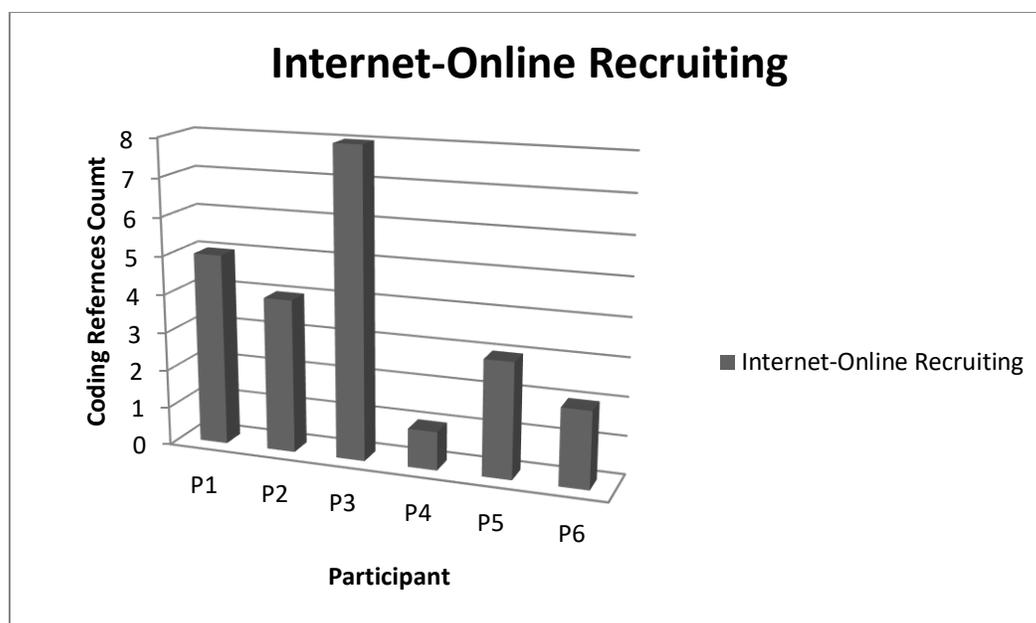
National Registry of Emergency Medical Technicians (NREMT). The NREMT certification and remediation process may influence the number of EMTs who enter the industry. Figure 2 displays states requiring NREMT certification.



*Figure 2.* 2018 NREMT certification map. In *The National Registry*. Map used with permission from The National Registry Data Dashboard. Retrieved from [www.nremt.org/rwd/public/data/maps](http://www.nremt.org/rwd/public/data/maps).

The work itself as a motivator is indicated in the use of the Internet-online job recruiting platforms mentioned by five of six participants as a recruiting strategy. There were varying opinions on how this strategy worked for each organization. The sense from the interviewees of Internet recruiting was that it was a necessary progression due to the technological advancements in information dissemination and could be useful. The use of the Internet strategy served to transition AS recruiting from traditional paper advertising to an electronic format. The participants have not determined how to harness or use online recruiting beneficially. Participant P1 noted, “The simple advertising on DOL

[Department of Labor], veteran's websites, putting out the 'We're hiring' notice in an online platform." P4 said, "We know that people use the Internet to search for jobs and those that are interested will use a search engine to look us up and apply." Figure 3 illustrates the number of references by participant for Internet use as a recruiting tool.



*Figure 3.* Count of coded references to Internet-Online recruiting by participant.

The use of online employment websites along with flyers and brochures at educational institutions for recruitment continued the philosophy that the motivation to do the work itself will bring potential employees to the agency. P3 stated,

Not necessarily do we track or are we recruiting people into the career, right? We are not trying. We never really focus on trying to get people to become EMTs or paramedics. We are trying to get EMTs and paramedics who are already licensed to come work for us.

P1 stated, “We try and focus on retention strategies then we do recruitment strategies.”

These comments revealed the understanding shared by the AS administrators that the people seeking employment in EMS want to do the work.

To gather secondary data on the Internet as a recruiting instrument, I conducted a job search for emergency medical technicians for southwest Texas and southeast New Mexico using the online platforms identified by the participants. Hinojosa, Walker and Payne (2015) identified a prerecruitment difficulty with people searching on the Internet for jobs because of the number of positions available for any given job title or skillset. Because of jobs overload on Internet sites, people have preconceived notions about the employment they are seeking. Preconceived ideas about the type of job desired, coupled with the volume of positions available online for a specific skillset, make the deliberative process for the individual seeking employment exponentially more difficult. A person seeking an EMT job with no previous contact with an ambulance company may overlook or dismiss an agency due to Internet jobs information overload.

When searching through the popular job websites identified by the participants, the search criteria of emergency medical technician returned numerous job postings for entry-level EMT skills-based positions that were not affiliated with traditional ambulance company jobs. Within those well-known job seeker sites were some company postings which redirected me to additional occupation-specific Internet sites with even more EMT skills-based jobs. The online recruiting advertisements by the ambulance organizations represented in the study were several pages into the Internet recruiting site search if the job advertisements were located at all. The challenges related to understanding the

requirements of successful online recruiting may severely limit the capability of this platform to be an effective recruitment strategy. The number of competing jobs requiring EMT skills may also factor in the erosion of EMTs away from ambulance companies.

The websites for the organizations represented in the study have simple information for applying for available EMT jobs. The company websites include cursory information about the organization and serve as an electronic bulletin board for the paper job application. One agency did have interactive components within the website platform that allowed for limited interaction with a potential applicant. The difficulty identified with applying for a job on the company websites was in locating the link for the job or application. While the use of internet recruitment is a technological advancement for companies and job seekers, the platform requires consistent maintenance, effort and review to be of use as a viable recruiting tool.

**Theme 2: Growth, advancement, and promotion.** There are preset advancement levels to which an EMT can rise in AS. Private ambulance companies' administrators incentivize this employee growth by paying for or reimbursing, the additional education required to get to the next level of advanced EMT and then to the level of a paramedic. Because AS executives in this study believed that paramedics are most in need for their agencies, and the position of EMT is an entry-level position, the focus of private ambulance companies is less on recruiting EMTs and more on retaining those EMTs while supporting them in reaching the level of paramedic. In other words, because AS executives know that each person starts as an EMT, the concern is less about

recruiting people as EMTs and more about having an EMT stay in the industry long enough to become a paramedic.

Ambulance services executives use the training reimbursement (TR) recruitment strategy as a motivational tool to assist EMTs in continuing their training to advance to upper career levels in ambulance companies. The training reimbursement serves as both a recruitment and retention strategy because the payment is a valuable benefit for EMTs advancing in the industry because it serves as a boost to the EMT wages. The training reimbursement incentive is also beneficial as an advancement plan for EMTs who want to progress in the occupation. This strategy of training reimbursement serves a dual role in the coded TF theory themes. The training reimbursement is a motivator tenet of growth and advancement while also encompassing dual hygiene tenets, including job security and salary or wage benefit. This strategy also presents a dichotomy of principles in Herzberg's theory. The strategy is a motivator tool, which according to Herzberg's theory, may add to the satisfaction of an employee (Savoy & Wood, 2015). As a hygiene principle, this same training reimbursement strategy may also serve to lessen or intensify the dissatisfaction that may occur with the salary imbalances for the area under study.

Figures 4 and 5 illustrate the changes in the number of licensed EMT personnel and paramedics for New Mexico and Texas from 2017-2019. The Texas licensure rate has a net decline of six percentage points between 2018 and the first quarter of 2019. New Mexico licensure rates, while displaying a modest increase in EMT licensing remains well below the BLS EMT demand percentage of 15% (BLS, 2019). Figure 5

indicates the change percentages in paramedics employment from 2017 - 2019. The direction of the paramedic employment path is like that of EMTs.

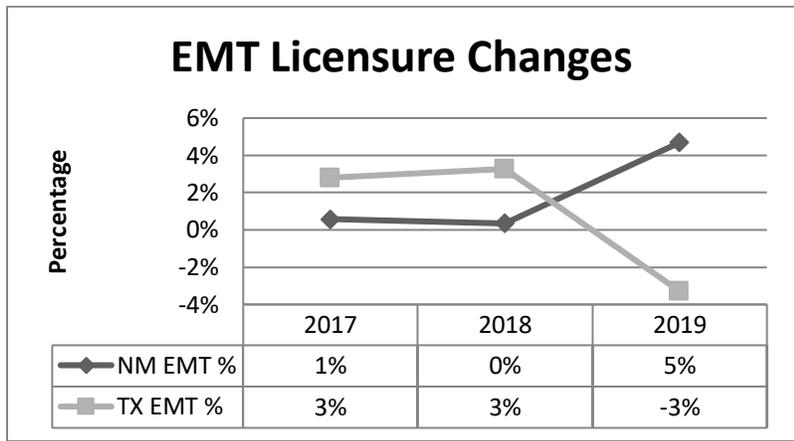


Figure 4. Comparison of NM and TX EMT percentage of licensure changes 2017-2019.

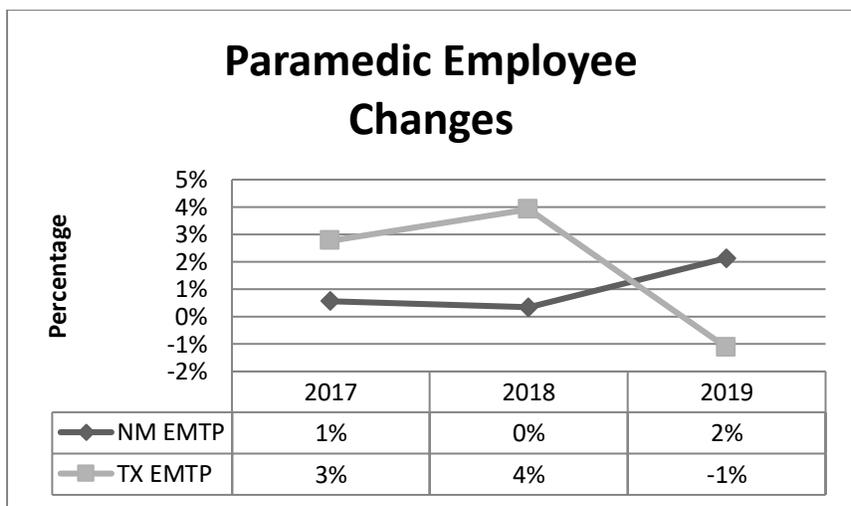


Figure 5. Comparison of NM and TX EMT paramedic percentage of licensure changes, 2017-2019.

The training reimbursement recruitment strategy has a second dual role in AS. The training reimbursement strategy used by AS administrators serves to promote the TF theory motivating tenet of growth and advancement of an EMT while simultaneously enhancing job security by keeping the EMT working in the organization. Keeping the

EMT in the organization is the retention aim of this blended recruitment strategy. P2 commented, “We’ll pay for you to go to paramedic school, you know, and we then generate our own paramedics internally from our own employees that it's helped out a lot.” P5 stated, “but if this individual goes out on their own to make it to a paramedic, we provide a one-time incentive or reimbursement for their becoming a paramedic.” P3 stated, “Look we will, after 2 years or year, we will send you to paramedic school as well, and so that becomes motivation for them to hopefully come to work for us.” Not readily identifiable from the data analysis was if the AS executives categorize this strategy as a motivator tenet or a hygiene tenet.

Another challenge with growing EMTs into paramedics is the niche factor. Private ambulance companies have unique transport niches within this small industry. These niches stratify the ambulance industry based on patient transport requirements. There is the emergency transport niche, which is the most well-known type of transport for consumers. Another role of ambulance transport is interfacility patient moves within the healthcare spectrum of services. Then there are the critical care transports for patient testing, or from hospitals to home or assisted living facilities, among others. The ambulance niches are another aspect of the TF theory motivator of the work itself that influences what type of EMT employee that a company may draw for employment.

Within these AS niches, most executives still designate the need for paramedics as a crucial position to fill. One company administrator in the study noted that paramedics are not an urgent problem for them. P1 stated,

I actually find myself without enough entry-level workers and more of the skilled workers, which doesn't necessarily work great because if I have two paramedics on a truck together, I end up with an expensive driver and an expensive guy in the back.

P4 said, "We're in the business of transferring patients as opposed to going responding to 911 calls. EMTs, especially when they are first starting, might be more interested in the emergency side of things." While P6 stated, "Some EMTs want to go play paramedic, and do the car accidents the major, you know, the chest pains and the 911 calls which we don't run many of them here. We are 95% transport." The niche factor may add to the employment challenge of recruiting EMTs into ambulance companies.

**Theme 3: Interpersonal relationships.** Another coded theme related to the recruiting strategies of AS is interpersonal relationships. The recruiting strategy most indicative of this theme is the ride-along. A ride-along is an educational requirement for all EMT students. The ride-along is a time when a student trainee is assigned by the educational facility to "ride along" with an AS agency to fulfil one of the clinical training requirements of the EMT coursework. Sanei and Poursalimi (2018) noted how organizational attachment could be a motivating factor associated with theme 1 of the work itself. When the student is doing a ride-along, the preceptor agent of the ambulance company can develop a relationship with the student. The participants extolled the ride-along recruiting strategy. P1 said,

Locating them while they are on our trucks is one of the best recruiting strategies that we have. Making them feel welcome and feel like this is a warm place to

come work once they become licensed. So, using that contact time to recruit is a big one.

P2 similarly said,

We work with our local college here in New Mexico we work with them to where all the students do their clinical hours with us, so all of them have exposure to us right out of the gate by doing their clinical rides with us on the ambulance.

While interpersonal relationships are a hygiene factor that does not contribute to job motivation or satisfaction, it serves as a mitigating factor in employee or job dissatisfaction.

The ride-along recruiting strategy coded as an interpersonal relationship because it exposes an AS company's reputation to the student EMT. This recruiting tool is useful to AS managers because it allows face-to-face interaction with those individuals who are motivated to do the work itself identified in theme 1. The concern with interpersonal relationships as a tenet of TF theory is that it is also an influencer of dissatisfaction. P2 said "they'll ride with the same preceptor as an intern and at that point they kind of our one on one case basis where we interact with them very personally...things like that." P4 observed,

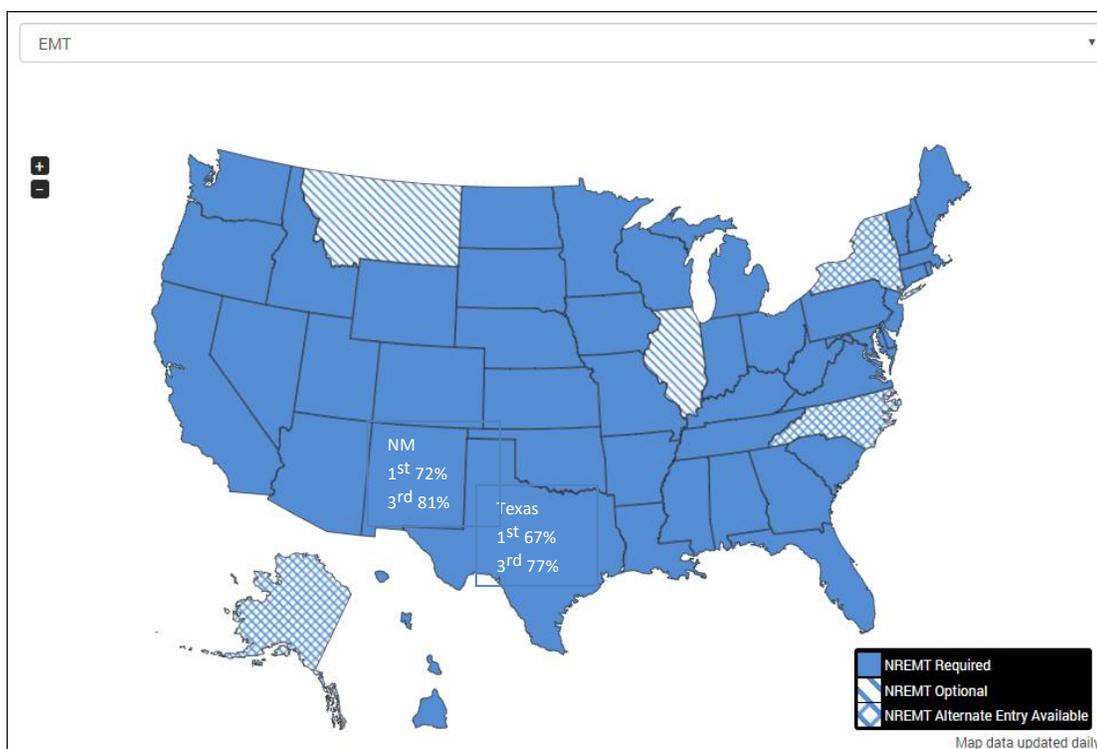
If you get a bad reputation as a bad employer that gets out very quickly so you can go to the class, and you can try to recruit the new students, but they're going to have already heard from their internships in their clinical rotations you know "nah you don't want to go to work there" or "yeah that's a good place to be" or yeah they're going to have heard that.

Kjellström et al. (2017) asserted that certain hygiene factors might influence motivation. The recruiting strategies that incorporate interpersonal relationships, a hygiene factor of TF theory, are in use by AS executives and is a primary influencer of EMT students' choice of an agency for employment.

The ride-along recruiting strategy exposed a barrier related to EMT entrance into the industry that may affect the recruitment strategies of AS executives. A review of secondary data related to educational facilities' websites indicated a significant challenge for the industry. Study participants identified relationships with educational facilities as an integral part of the recruiting strategies. Student enrollment caps for EMT programs in the study area ranges from 15–30 enrollees per semester. State educational institutions have two EMT classes per year. Determinants of enrollment at for-profit EMS academies depend on community interest in the need for a session. There is no guarantee that any of these EMT courses will contain the maximum allowable students on any given class start. The best possible scenario with a maximum student enrollment will only place  $\pm 45$  students into the pipeline as EMTs per semester with  $\pm 90$  per year. Even with the best scenario on enrollment in EMT courses does not guarantee that each student will complete the course. The uncertainty in determining how many students will be available to move on to test for NREMT certification creates difficulty in determining how many possible EMT candidates may be available for recruitment.

The small course enrollment of students available for EMT classes may encounter further reduction when students are unable to pass the NREMT certification exams. NREMT certification is necessary to obtain a license in New Mexico and Texas. These

pass rates for students may reduce the number of certified, licensed EMTs by up to one-third of course enrollment at the educational facilities. Small course enrollment caps along with reduced passing rates for certification and employment enticements to other organizations are barriers or challenges that may influence or limit the effects of the recruiting strategies of for EMTs by AS administrators. Figure 6 displays the pass rate for EMTs during 2018 for the states in this study as reported by NREMT.org.



*Figure 6.* 2018 NREMT certification map with EMT with NM and TX 1st and 3rd time Pass rates. Map used with permission from The National Registry Data Dashboard. Retrieved from [www.nremt.org/rwd/public/data/maps](http://www.nremt.org/rwd/public/data/maps).

**Theme 4: Salary, wages and benefits.** Each participant in this study noted the use of a financial incentive to lure potential employees to join their agencies. The use of bonuses serves as an enticement for current employees to bring other EMTs to the

ambulance agency. Only one interviewee noted the use of a sign-on bonus for a new EMT. The BLS (2019) indicated that the 2017 national median yearly salary for EMTs was \$33,380. The BLS (2017) data identified EMT incomes for southern Texas six percent below the national average and eastern New Mexico at 12% below the national average.

The bonuses recruiting strategy facilitate word-of-mouth advertising while also mitigating the salary lag identified for EMTs in the area under study. P6 said of bonuses, “we also have another employee incentive plan which is the employee referral program which of course is paying back our current employees who bring in employees they get a \$50 bonus.” P1 similarly commented, “We have done some recruiting bonuses, so if someone were to bring in someone they knew, they got hired and stayed for 6 months, that person would get X amount.” Because salary and wages are a TF theory hygiene tenet, the use of bonuses as a recruitment strategy may not have a positive impact on recruitment at the agency level.

When discussing why bonuses serve such a prominent role in AS recruiting strategies, the interviewees discussed the challenges with increasing wages. When talking about barriers to the implementation of recruiting strategies, the frustration with increasing wages for employees was palpable for the interviewees. I sensed the resignation of the executives as they lowered their voices and spoke in hushed tones when discussing the subject of wages. Comparison of the hourly wages beyond the EMT level of wages in southern Texas indicates a disproportionate gap in the national average of 13% below and New Mexico at 11% below respectively. The Texas wage gap

highlights a slower increase in the pay scale at the higher levels of AS than at the entry level of EMTs.

The following responses reveal the financial complications facing AS executives:

P1 stated,

I can charge more for an ambulance transport, but my biggest segment of payers won't adjust up to compensate for my wages. So, I don't have the elasticity in my pricing that I would like to. And it's been some time since there has been a significant Medicare or Medicaid reimbursement increase so trying to live within my margins is a little bit more difficult to umm be as attractive on wage scales because it's almost somewhat fixed on what I can do.

P4 similarly stated,

The reimbursement that we receive from the Texas and New Mexico Medicaid programs in Texas it has not changed in over 10 years or less there's been no increase in the Medicaid for I think any level of ambulance service except maybe air ambulance. The same thing is true in New Mexico and even Medicare does a cost evaluation of cost every year and they might change the reimbursement level but not Medicaid so yeah that's probably one of our biggest challenges

P6 said,

If we can push the level of pay for our [EMT] basics, intermediates and medics up and somehow get that approved that would help everything out. You got to think that the basics here are getting paid basically the same as people working at a fast

food joint and these are licensed professionals who went to school and in your worst hour, the people that are going to save you.

The common challenge expressed by the participants interviewed was the limits on improving the wage scale for their employees. Because of the challenges related to revenue generation, the executives displayed reluctant acceptance of the issues that inherently come along with the challenge of being unable to offer a higher wage and salary structure. Ambulance agency executives that have the benefit of corporate backing did not view the recruitment challenges from a financial viewpoint.

**Theme 5: Working conditions and job security.** The recruiting strategies that demonstrate the hygiene precept of working conditions and job security were the ride-alongs and training reimbursement. These strategies were placed in the hygiene tenet because they frame the AS employee's experience with the company. The ride-alongs, as a strategy, display a company's working conditions to a potential EMT candidate. The ride-alongs also appear in theme 1, the work itself and theme 3, interpersonal relationships. While embracing the work itself and showing the relationship qualities and reputation of a company, the ride-alongs recruiting tool also contribute to the TF theory hygiene principle of job security. P5 said,

because we want to provide that higher level of care to our community, so some of the strategies we do is we provide them with points in the promotional exam they get three additional points in the promotional exam for paramedic.

P3 observed,

EMTs and paramedics are going to work with are going to be tied to one of our preceptors [during ride-alongs] for months at a time, and so you usually walk away from here with us like begging you “Hey are you going to work for us?”

The TF theory motivation tenet of work itself in AS is guaranteed job security because of the shortage of personnel in the ambulance industry.

Training reimbursement, also identified in themes 1, 2 and 4 correspondingly, is a recruiting strategy that emphasizes hygiene theme of job security at an ambulance company. Job security with an ambulance company is absolute if the company contracts with an employee to provide the training reimbursement. The employee must then continue employment with that ambulance agency for a designated period after receiving the training. P6 stated, “we will help pay for their school, and they sign like a year contract with us to work with us after they get their license.” P5 said, “but if this individual goes out on their own to make it to a paramedic, we provide a one-time incentive or reimbursement for their becoming a paramedic.” Reimbursement for completing advanced training assumes that the person can pass the training and fulfil the contractual obligation with the company. Due to the lack of recruiting strategy tracking data, it is unclear what percentage of employees are unable to take advantage of the job security that the training reimbursement strategy creates and how that may affect employee satisfaction.

### **Emergent Themes**

The emergent themes derived from the study data analysis are the result of coding the remaining interview questions asked regarding strategy effectiveness or

ineffectiveness. The questions asked included processes for remedying poor strategies, barriers to strategy implementation, and final insights. Most notable in the responses to these questions by participants during the interview was the discordant nature between the value of the transport services provided and the challenges of managing recruitment in AS at the community level. These emergent themes include (a) minimal recruitment strategies (b) a small EMT recruiting pool, (c) agency requirements define recruitment success, (d) minimal data-driven recruitment tracking mechanisms, and (e) slow elimination of ineffective recruiting strategies.

**Emergent theme 1: Minimal recruitment strategies.** The design of the recruiting strategies by AS executives for EMTs focused on the educational facilities that provide EMT courses. Paper advertising, such as posters and flyers, along with the ride-alongs, are two recruiting strategies where EMT educational facilities are the impetus for attracting the EMT to the agency. The clinical ride-alongs with AS personnel incorporate the in-person interaction with student EMTs. The use of posters and flyers placed at the educational institutions are advertisements aimed to inform the student EMT of employment possibilities in AS companies. These interactions by AS administrators solidify the relationship between educational programs that are the source EMTs and AS organizations who require access to that talent pool.

Executives in AS collaborate with educational facility personnel to promote hosting opportunities for students completing internships. P5 summed up the educational relationship stating, “We work closely with our partners such as community college and other entities that provide EMTs and paramedics. We partner with them in such things as

internship programs and ride-along programs.” P6 described how paper advertising enhances educational relationships and take advantage of the pool of applicants this way: “... we have our clinical affiliations with the school and administration here. We send out e-mails. We have flyers that we post up in the different campuses letting them know when we are hiring or when we're short staffed.” The EMT profession is a specialty occupation, and by necessity, AS administrators must interact with the educational agencies which educate EMTs to locate individuals for recruitment into their companies.

The EMS conference is a recruiting strategy mentioned as an opportunity to connect with previously certified and licensed EMS personnel. This strategy, while not included in the TF theory tenets as a primary recruiting plan, is another area where executives in AS can attempt to recruit EMTs. P4 commented on the EMS conference, “And then those conferences also have vendor shows so frequently one of our recruiting things that we've done in the past is we've had a booth at those shows, and we hand out pens and pad things and applications.” P3’s perspective on conferences was less flattering:

Yes, we for many years we used to focus heavily on recruitment at EMS conferences. From my perspective, that does not work at all, and so we changed our focus away from spending a lot of money on trying to recruit at EMT conferences.

The challenges associated with AS executives engaging in the EMS conference recruitment strategy are staff availability to attend a conference, staff recruiting

preparedness, and scheduling requirements. These issues, separately or in tandem, may preclude an agency from active participation in EMS conferences.

The AS administrators have used the same recruiting strategies as a matter of precedence. P4 noted, "I think EMTs, paramedics and managers of them are creatures of habit a lot of times." Ambulance administrators limit their recruitment strategies to those plans that were historically proven to bring EMTs into each respective organization. P6 said in discussing recruiting strategy changes "The owner is pretty set in their ways on the way we do things" The implementation of online recruiting is a progression for AS executives from print ads to Internet advertising. P1 stated, "What is online now used to be maybe in print. We would take out an ad in an EMS publication or something like that. Or you know just kind of as the newspapers and publications been replaced with online." Similarly, P3 said, "our recruitment efforts are predominantly all online anymore." While some agency administrators are progressing toward more technological recruiting strategies, others still use a combination of the more traditional methods of recruiting along with online approaches. P6 said "we send out e-mails we have flyers that we post up in the different campuses," while P5 said "Yes so we actually do posting on in our website to promote the job or get the word out there for the posting, but specific posters we like locally we deliver them to places of business." The recruiting strategies for AS have legitimate limitations based on the specificity of the occupation, yet other reasons for limited recruitment plans appear to be habitual rather than evaluatively deduced.

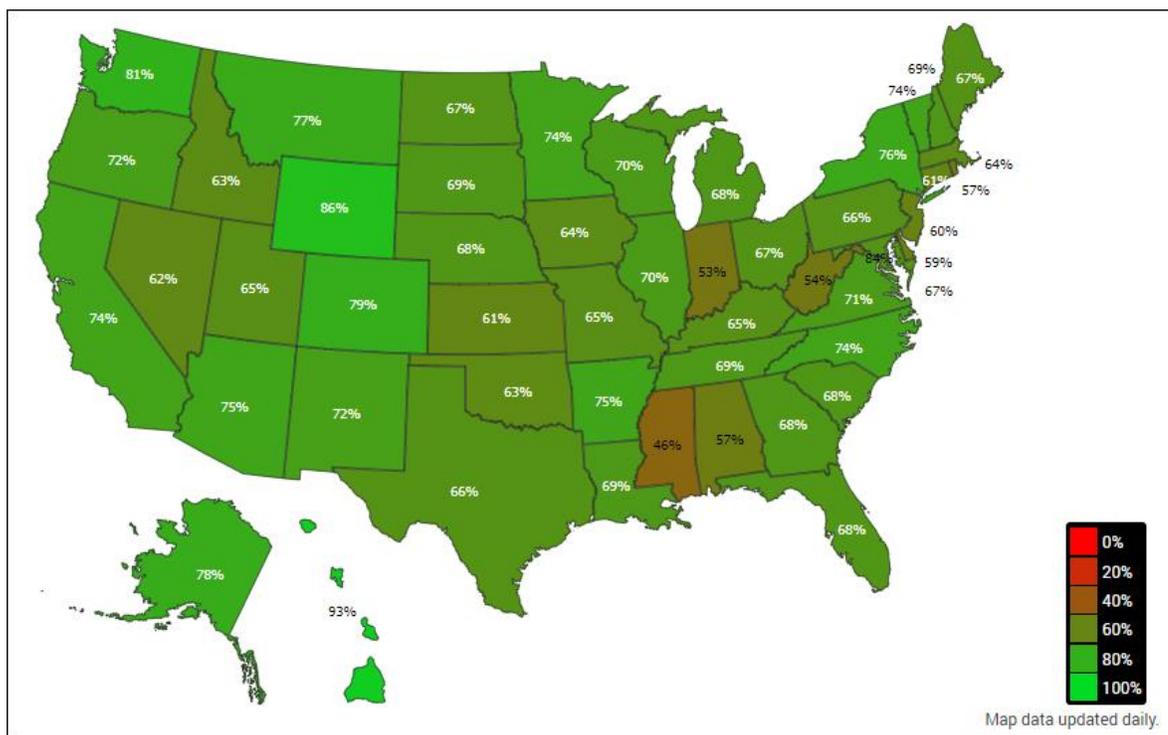
**Emergent theme 2: A small EMT recruiting pool.** Emergency medical services and AS administrators rely primarily on word of mouth to disseminate information related to EMT jobs. This emergent theme is stated by P6, “EMS is a small community, and everybody talks so basically everybody knows when everybody's hiring.” P2 stated, “We are only about 100 thousand people as our population, so it's a small pool to play from,” and P4 said, “I've been involved in have been in are AS that serve either in rural areas or small cities with limited pools of personnel on which to draw.” Ambulance company location, rural or urban, and AS niches may minimize the number of EMTs available for employment.

Company location, NREMT certification and AS specialty impact the number of EMTs available for employment. Rural company locations incur noticeable impact related to the populations available to become EMTs. On how to navigate the locational challenges related to EMT recruitment, P2 said, “we have the ability to reach out to our next door neighbor, City P, which has a million people and try and go there and do some work [in recruiting] and so that's kind of how we've done it.” P1 said,

We are here in the city, and there is a good supply of labor, we also have locations in City X, City Y, and City Z where we have to draw off a larger area, and we really have just had to increase our wages in those areas to attract workers, so the strategy is to just pay a premium to recruit.

The study participants, by necessity, must develop novel approaches to expand the pool of potential employees for their companies.

NREMT certification requirements also have a bearing on the recruiting pool of EMTs. The NREMT data is included in this study as a secondary source of information related to EMT recruitment. Due to the specificity of the requirements for the occupation of EMT, the parameters for certification testing and retesting impact the number of EMT candidates available for recruitment. Figure 7 indicates the percentage of EMTs that pass the certification exams on the first attempt for 2018. Third time EMT pass rates are higher.



*Figure 7.* 2018 NREMT certification map with EMT 1st time Pass rates by state. Map used with permission from The National Registry Data Dashboard. Retrieved from [www.nremt.org/rwd/public/data/maps](http://www.nremt.org/rwd/public/data/maps).

The niche aspect of AS companies, as identified in theme 2, also influences the size of the recruiting pool of EMTs for ambulance company administrators. The niche

factor of transport types in AS lessens the recruiting pool of available EMTs and may contribute to fewer EMTs who want to work the types of transports that an AS company may provide. The AS executives identified the concept of an ambulance niche as a barrier to recruitment. P4 said, “So, they don't want to come to work for a company that transfers patients because it's not exciting.” P6 added,

One of the barriers that we encounter since we are technically just a transport EMS company, we don't do 911 calls. They are going to get maybe one a month instead of four a day. So, they want to go work somewhere else that has these [911 calls].

These comments suggested that the transport roles of AS also serve to minimize the recruitment pool for AS executives.

**Emergent theme 3: Agency requirements define recruitment success.** This theme relates to the administrators' attitudes about successful recruitment. There is no singular determination of successful recruiting in AS while most AS executives have intrinsic metrics that anecdotally measure success. Two interviewees viewed successful recruiting as employee longevity with the company. P3 said, “One of the folks who went through that program because he was interested in it and it started him on to that track, and so if you look at it from the context of specific individuals, I'd say it was very successful.” P1 stated, “Are we getting folks that are viable 6 months to 1 year down the road.” Participants P4 and P6 identified success as the ability to fill the schedule and having a fully staffed fleet of ambulances. P4 commented, “If we are well staffed or not

anxious about filling our slots on our schedule, and we're just like OK we're doing pretty good." P6 said,

Basically, since I am the one who is doing the schedule, if I am not on the schedule, the recruitment plan is going just fine. But if I am having to put myself out on a truck during the day, then it is not working well.

EMT longevity and headcount were the primary metrics applied by the study participants as a determinant of successful recruiting strategies.

The second challenge in determining recruitment success is that the measure of success varies based on whom you speak with even within the same company. The difficulty of using longevity or headcount as a metric of successful recruiting is the lack of any measurement device to corroborate if an AS company is operating successfully. Without a defined measure of success within AS companies and across the industry, standardization of industry requirements for successful recruitment is less likely to occur.

**Emergent theme 4: Minimal data-driven recruitment tracking mechanisms.**

Company administrators acknowledged that while data on applicant referrals would be helpful, some administrators have no systematic way to capture such information. P1 stated, "I don't think we track were you referred by a friend, you know did you student ride with us so statistically and having data in front of me that say how do we get people? It is strictly anecdotal." P4 stated, "We're not currently using some sort of a regular measurement strategy where we are currently evaluating turnover headcount." P2 said, "one of the big things that we look at is during the application process. There's the typical blurb that were you referred by somebody or how did you find out about us." While some

AS companies have a process for capturing recruiting strategy metrics, the lack of an evaluative measure to review the recruiting information on how an EMT comes to an ambulance agency causes difficulty in determining what recruiting strategy is most useful to an organization. This inability to track strategy effectiveness also leads to the slow removal of ineffective recruiting plans that do not bring EMTs into the agency.

The lack of tracking mechanisms for evaluating recruiting strategy effectiveness may impact a company in different ways. One way is the financial impact. Ambulance services administrators without a tool to capture recruiting strategy usefulness encounter an economic impact because of the difficulty in determining if the recruiting plan is providing a return on investment. The return on investment in the case of AS is the production of potential employees for the company. P1 commented on a plan in place that did not produce “that engagement strategy failed slowly and failed expensively. Normally we try to fail fast, fail cheap, get the heck out of dodge.” P2 also commented on how the lack of tracking for recruiting strategies cause financial impact,

you just have a bunch of people come to your table, and you know you talk to 300 students, and you give away a ton of stuff, and you're like man we got a bunch of people this is going to be awesome and then you look at your you know your queue for how many people have applied for a job or a job posting and it's empty and you're like hmm interesting, right?

P3 observed: “it really took us saying we are spending a lot of money, and we're not really making any changes where we were usually coming away with absolutely zero folks.”

Another impact is the labor expended in reviewing or checking recruiting plans that yield unqualified applicants if the strategy provides any applicants at all. P4 commented on the online recruiting strategy “you get people applying that aren’t qualified, and that’s I think probably more annoying than you have to read through the applications.” Related to the plan for finding an appropriate applicant for AS, P3 said, “Really now [recruitment] is focused through social media and using social media to start really trying to target specific groups like EMTs.”

A final impact related to a lack of tracking mechanisms for recruiting strategies is the lost opportunities to improve current recruiting strategies. If an AS executive is unaware of how a recruiting strategy is performing, then there is difficulty in addressing why the tool is ineffective. The participants in this study employed varying styles for addressing strategy ineffectiveness that ranged from strategy cancellation to contracting an outside agency to review the recruiting challenges. Minimal or nonexistent recruiting tracking techniques highlight the difficulty in addressing the effectiveness of EMT recruiting plans at AS companies and may exacerbate to continued use of recruiting strategies that are ineffective or obsolete.

**Emergent theme 5: Slow elimination of ineffective recruiting strategies.** The interviewees identified using anecdotal inferences of the recruitment strategy as the mechanism for determining strategy effectiveness. The lack of definitive measurement plans related to recruiting plan effectiveness leads to the slow elimination of ineffective recruiting strategies. The interviewees described reactionary approaches to dealing with inadequate recruiting plans. P2 observed, “To be honest sometimes, unfortunately, were

reactive and we're like well what happened?" P3 also discussed the amount of time taken to eliminate an ineffective strategy stating, "Crushingly it took a very long time, and I'll tell you what part of that is that yeah I think EMTs, paramedics and managers of them are creatures of habit a lot of times." P5 commented, "We only took a good part of 4 years to realize that something was not right, so we needed to make some changes." While the interviewees acknowledged slow responses to bad recruiting strategies, it is uncertain if this emergent theme impedes successful recruiting at ambulance companies.

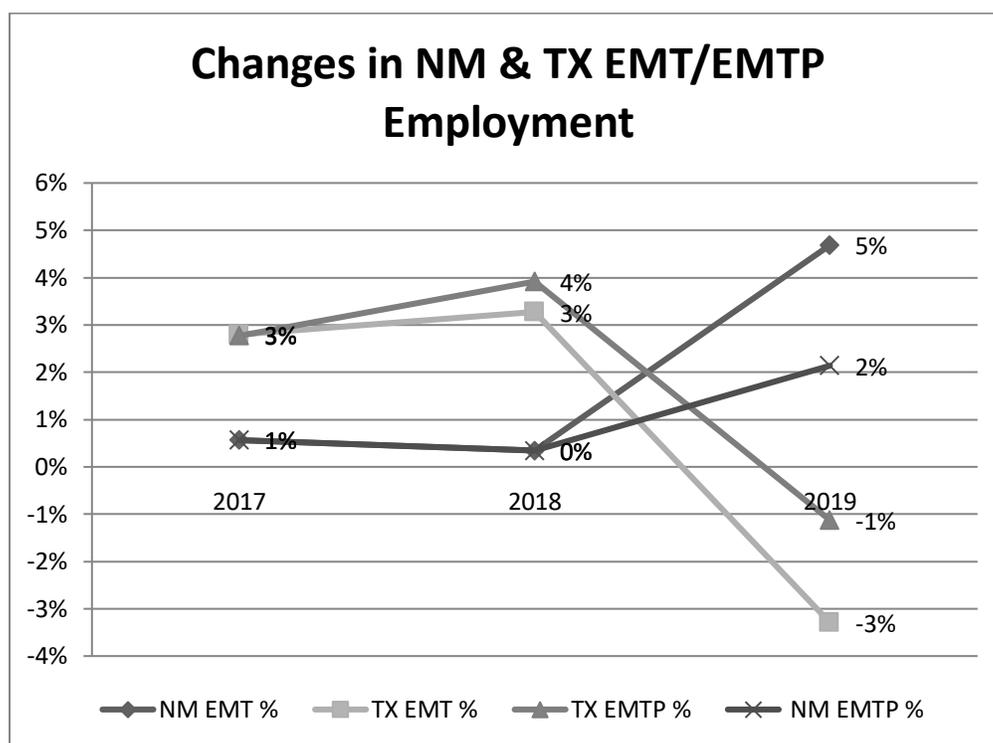
Because AS managers rely on subjective information to assess recruiting strategy effectiveness, the lack of data on recruiting design adequacy allows ineffective recruitment plans to remain in place beyond usefulness. These ineffective recruiting efforts do not seem to impede the ability of the AS administrators to hire EMTs in the short term. The long-term challenges of the ineffective recruiting strategies are financial losses in time and labor expended to continue participation in or use of unsuccessful recruiting efforts.

### **Applications to Professional Practice**

The purpose of this qualitative multiple case study was to explore what strategies do ambulance company executives use to recruit EMTs into their organizations. Study findings highlight how recruiting strategies used by AS executives aligned with motivation and hygiene tenets of TF theory. Successful recruitment strategies are useful for attracting EMTs to an ambulance agency. The information gathered from participant interviews, industry websites and state agencies tracking EMTs highlight dichotomy between the recruiting strategies used in AS and their alignment with TF theory tenets of

motivation and hygiene. The motivation tenets are the job requirements that provide internal satisfaction for an employee and contributes to job satisfaction (Hee & Kamaludin, 2016). The hygienic principles of TF theory are associated with job dissatisfaction because they do not relate to the work itself (Akintola & Chikoko, 2016). Six of the seven recruiting strategies identified in this study aligned with the motivational factor of the work itself or advancement. Three of the five TF theory tenets associated with the recruiting tools in this study have a basis in the hygienic components of the theory. The hygiene factors, like salary or organizational culture, may serve in the short-term as the draw for a potential employee, they only serve to minimize job dissatisfaction. While the recruiting strategies employed by AS executives are few, it is necessary to shift the focus of these strategies toward employee work recognition and increased opportunities for employee advancement. These added motivators are identified as factors that increase job satisfaction and may enhance an employee's sense of value to an organization (Deriba et al., 2017; Hee & Kamaludin, 2016).

Increasing an EMT's sense of value to the organization may increase longevity in the organization and enhance the employee's desire to promote to higher levels in AS. Emergency medical technicians are integral to the industry because EMT training is the first educational step to becoming a paramedic (Helikson & Gunderson, 2015). For the area under consideration in this study, Figure 8 illustrates the tandem movement between EMT and paramedics employment percentages.



*Figure 8.* Comparison of NM and TX EMT and paramedic percentage of licensure changes.

This similar employment trajectory between the EMS levels identified an interrelationship in growth or decline between the two EMS career titles. Without a process to bypass the EMT level to become a paramedic, AS executives may benefit from an expanded focus on new EMTs seeking employment at ambulance companies. This greater focus on EMTs may facilitate a larger pool of staffers contemplating future advancement in AS to the paramedic level.

The data collected from the interviews highlighted inadequate methods of tracking EMTs entering and exiting the occupation. Business leaders may use findings from this study to improve the effectiveness of their recruiting strategies by implementing processes to capture different aspects of the recruiting plans in use for the agency.

Obtaining data metrics related to recruitment plans may help to increase AS' recruiting strategy efficiency. Population changes are increasing the need for AS agencies and personnel (Kroezen et al., 2015). Growing the EMT base of employees is foundational for increasing AS employees at other levels. Tracking EMT employment entrance and exit information at organizational levels may assist identify reasons why EMTs do not continue in AS. If ambulance company executives collect information on employees relative to recruiting strategy effectiveness, such data may assist AS administrators in understanding which recruiting plans work best. The gathering of employee exit data may be useful to AS executives in identifying and mitigating the challenges of EMS personnel leaving the industry. Tracking leave intentions of EMS employees using exit interviews may provide information that may inform AS administrators on how to improve recruiting strategy effectiveness.

Study findings indicate that EMTs display self-motivated tendencies to do the work results in the other motivational factors for job satisfaction being less prevalent for attracting these employees into AS. The challenge for AS executives is in finding or developing creative ways to promote or advance the EMT so that he or she remains with an AS company long-term. The increasing number of calls for ambulances (McArthur et al., 2014) and the increasing lifespan of the population (Crowe et al., 2016) is creating the need for increased AS personnel. Cannuscio et al. (2016) noted the growing public health concern related to inconsistent AS delivery nationwide. Currently, the promotion plan used by AS administrators for EMTs includes tuition reimbursement for advanced training. Offering additional unique employee advancement opportunities within the

greater ambulance industry may incentivize EMTs to join and remain with an AS organization long-term.

### **Implications for Social Change**

Ambulance company executives strive to maintain sufficient staff to adequately do the public service work of prehospital care and transport. These ambulance service providers attempt to administer this critical service with shrinking budgets and vanishing personnel. The BLS (2017) noted that the growth in the need for EMTs is twice as much as national job growth for all occupations. The public health implications of the low levels of AS personnel impact communities and healthcare nationwide (Cannuscio et al., 2016). Especially impacted by this decline in personnel at all levels are the vulnerable and rural populations (Debenham et al., 2017; Pennel et al., 2016). While there is value in recruiting EMTs into the agency, it is equally valuable to keep them in the AS business and promote them to levels that add value to the prehospital experience for patients requiring AS assistance.

The study findings highlight material changes to address the challenges created by the types of recruiting strategies identified by the participants. Implementing processes to capture and track how potential employees find ambulance companies, why employees leave, and the effect of bonuses on retention would aid in the identification of the recruiting strategies that work best for AS agencies. Agency level understanding of where the employee recruitment challenges exist in each organization may inform city, county, state, and national EMS organizations and educational facilities of the pipeline needs for bringing more employees into the ambulance industry. Capturing data on the reasons why

AS employees leave EMS at the agency level may also offer significant insight for managers on improving retention opportunities that may motivate employees to remain in the industry. The implementation of tracking procedures for the recruitment strategies identified in this study may change the focus of where the employment need exists for the industry. The BLS (2017) reported demand for EMTs nationwide as twice that of other occupations, participant consensus is that the employment need is highest at the paramedic level.

Better tracking of the employee career trajectory and employment changes may minimize the use of recruiting strategies that perform poorly while informing the understanding of AS leaders as to which EMS level staffers are most in need by AS. Adjustments to the recruiting strategies may produce better employment results. Stabilization of employment staffing by understanding recruiting plans may increase the number of EMTs in AS and enhance the quality of care to patients and services to the community. Sharing staffing data with state and national health and ambulance organizations will contribute to developing and understanding trends in EMS employment. Understanding trends in EMT employee movement may help local, state and federal agencies grasp the breadth of possible public health implications related to the lag in AS employment of EMTs and the consequences of such a delay on career advancement in AS.

### **Recommendations for Action**

Ambulance service administrators may use the findings from this study as an aid for understanding their recruiting strategies. My recommendations for AS administrators

resulting from this study are: (a) implementation of a defined and measurable tracking system for employment applicants, (b) development of evaluation plans for the recruitment strategies based on the applicant employment tracking system, (c) development of mitigation tactics for ineffective recruitment strategies, and (d) development of career advancement paths for EMTs within the local organization and throughout the EMS industry. Application of these recommendations in AS agencies may help administrators gain knowledge of how effectively organization recruiting plans are performing.

The first recommendation from this study is for AS leaders to implement an applicant and employee tracking system to manage human resources within each organization. Ambulance company administrators should have a quantifiable tracking system for applicants and employees as a metric to assist in defining, measuring and maintaining appropriate staffing levels. Employee metrics are beneficial in the development, evaluation, and achievement of organizational recruitment goals. This tracking system may also be useful in tracking employee advancement and may assist in the management of employee bonus eligibility.

The second recommendation is the development of evaluation plans for company recruiting strategies. Evaluative tools for recruitment plans are necessary for determining strategy effectiveness. The study participants continued using unsuccessful recruiting strategies for many years because there were no evaluative methods in place to indicate when the recruitment strategy was in decline. The applicant and employee tracking system can serve as an evaluative tool for monitoring recruiting plans for effectiveness.

The third recommendation is for AS managers to develop tools to revise a declining recruiting strategy to minimize the impact that a declining recruiting plan may have on the organization. The study participants identified only a small number of recruiting strategies for EMTs. Because of the limited number of recruiting options, the AS executives must find ways and opportunities to revive poor performing strategies and keep them in use.

The final recommendation for action is the development of career advancement paths for EMTs within the organization and the industry. For most of the participants in the study, the main goal of advancement for an EMT was to the level of paramedic. Through the examination of state health data and industry documents related to the recruitment of EMTs, several career paths are available for EMTs within the ambulance industry. These alternative career paths may help keep EMTs in the industry while offering growth and advancement potential. While it may seem counterintuitive to offer an EMT a career advancement option that would remove them from AS, an alternate career path may potentially mitigate employee burnout and leave intentions among EMTs.

Recommendations and findings from this study are relevant to ambulance company administrators and executives responsible for the recruitment of ambulance personnel. I plan to publish this study via ProQuest to allow access to students and researchers studying this topic. The study participants will receive a summary of the study findings and recommendations for action. Dissemination of the study findings to various EMS leaders and educators will increase access to the information contained in

this study. I will pursue opportunities to present and discuss the results of the study to ambulance executives at professional EMS conferences, training events, and business conferences. I will also seek to publish my study findings in peer-reviewed journals.

### **Recommendations for Further Research**

For this study, I used a snowball sampling method to gather ambulance executives and administrators to interview. Analyzing data collected from semistructured interviews allowed me to align identified recruiting strategies with Herzberg's two-factor theory of motivation. Because the ambulance industry is not governed by federal laws to mandate dissemination of services, each state is responsible for legislating how AS companies operate. Expansion of this research to other states may add insight into similarities or differences in the recruitment styles of ambulance companies across the country. This type of research may assist in developing nationwide continuity in recruiting strategies.

To address the study limitation of the definition of success, research on AS executives' perceptions of success may be useful. For the current study, the idea of successful recruitment was as varied as the number of participants. Researching what determines recruiting success for AS executives may provide helpful insight for creating standards across the industry for AS operations. This type of research may help to develop a definition of successful AS that could align agencies across the country.

Recommendations for further study in AS and the challenges in recruiting EMTs include the exploration of the EMT employee perception of the recruiting styles of ambulance company administrators. Researchers could employ a qualitative study using focus groups of EMTs to discuss their experiences related to the recruitment styles

employed by ambulance agencies. Further research in this area could advance knowledge of employee perception of recruiting strategies. This type of research may be useful in influencing future recruiting practices.

Finally, an exploratory study of why or how EMS employees choose ambulance companies for employment may help AS administrators in the refinement of current recruiting strategies to attract EMTs into the industry. This type of study would relate to Hotchkiss et al. (2015) and Roh et al. (2016), who researched the motivating factors in public service that influence job satisfaction. This study could include semistructured interviews with EMTs. The questions would address how an employee decides on AS for a career and which tenets of TF theory are most prevalent in making such a decision.

### **Reflections**

The development of my research question for this study began because of convenience and expanded into the research of an essential public service agency with a small community footprint. Having no previous knowledge of the industry assisted in the minimization of any biases that being an industry insider might engender. The inherent biases uncovered related to myths or stereotypes of ambulance companies and the personnel. The time spent engaging with AS administrators increased my knowledge of the industry as well as the local organizations. The AS community is small and operates based on the relationships that each agency shares with other ambulance companies, the community and educational facilities. Because AS is a communal industry, using the snowball technique to gain participants was an advantageous exercise. What I learned

during the interviews was that each administrator, while competing for the same pool of talent, shared a similar passion for the industry.

Before receiving approval to begin data collection, I continually monitored my thoughts for potential bias that may have developed with the introduction of preconceived notions on how the interviews would proceed. I was also mindful of how being an overly eager outsider seeking to collect the data could potentially place the participants in a defensive posture. Interviewee opposition did not materialize as the participants were more eager to understand how I chose AS my study topic since I have no affiliation with the industry. The choice of a study topic not directly related to my industry affiliation for the completion of a doctorate study was both daunting and exciting. I have a new respect for the men and women of AS and the vital services that they provide to the community.

### **Conclusion**

The recruiting strategies used by AS executives to recruit EMTs into the industry in the context of the TF theory of motivation revealed that the recruiting tools in use skew toward the hygienic tenets of the theory. The hygiene factors of TF theory may minimize job dissatisfaction, yet these hygiene factors do little to enhance job satisfaction. Another notable revelation from this study is that the recruitment of EMTs is not a priority for AS administrators. The underlying understanding of AS executives is that any student entering the EMS occupation in ambulance services will necessarily start as an EMT. Ambulance company managers may not connect the understanding that the development of a paramedic requires the advancement of an employee from the level of EMT. This study identified similarities between the growth or decline of EMTs and paramedics in

the industry. Communities, cities, counties, and states will benefit from an increase in individuals entering EMS transport services at all levels. While paramedics in the industry are the top tier of AS care personnel, the recruiting of new EMTs into the industry is the foundation on which the career advancement to paramedic begins.

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### Appendix A: Leadership Recruitment Qualification Questions

1. Do you have a role in determining the recruitment needs of your organization?
2. Do you take part in developing strategic plans for EMT recruitment?
3. Do you develop, receive or create reports on EMT recruitment/retention/promotion?

## Appendix B: Ambulance Services Executives Interview Protocol

Interaction Protocol	Interviewer Script
<p>Please read the following highlighted section into the interview audio for transcription purposes.</p>	<p>The title of the research is: What recruiting strategies do some ambulance services executives use to increase the number of EMT personnel?  This is an interview with participant <u>Include de-identification number from participant sheet here.</u>  The Walden IRB protocol number is: 01-16-19-0720764  The date is: <u>Insert Today's Date Here.</u> The time is: <u>Insert Time here</u></p>
<p>Give the interviewee a chance to relax and become familiar with the equipment and set-up of the room.</p>	<p>First, thank you for allowing me an opportunity to speak with you about EMT recruiting with your organization. I am doing an exploratory study on the recruiting strategies of ambulance services executives. You were selected as a participant in this study because of your expertise in EMT recruitment. This interview is scheduled for one hour and I will attempt to stay within that time frame, while also allowing you time to give a thorough answer for each interview question.</p> <p>This is not a test. There are no right or wrong answers. I just want you to answer the questions as you see fit.</p> <p>Do you have any questions about the research or the research protocol that was not addressed in the informed consent document or any materials that was provided via e-mail, in-person or via phone about the study?  If there are no other general questions, our research time will begin with the first interview question</p>

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The researcher will begin the interview by asking the first question below and then proceeding through the follow-up questions addressing each question and follow-up question until complete.

The interviewer will do the following as necessary throughout the interview:

- Use minimal note taking.  
Remain engaged with the participant.
- Rephrase questions as necessary
- Watch for nonverbal cues.
- Probe further in areas where you detect hesitancy from the participant
- Ask follow-up questions as scripted.
- Ask any additional questions that arise from the participants responses to gather more detail.
- It is crucial to ask for additional people to add to the study prior to ending the interview.

- 1) What recruiting or motivational strategies do you use to increase the number of EMT personnel in your company?
    - a. What is the process for disseminating or getting this information out to potential candidates?
      - i. Are there samples of this recruiting information that I can take for use in this study?
    - b. Describe how your organization came to develop these strategies?
    - c. How long have these strategies been in use?
    - d. What are the results of these strategies?
      - i. What is your opinion of these strategy results?
  - 2) How do you evaluate the effectiveness of your recruiting or motivational strategies to increase the number of EMT personnel?
    - a. How often do you evaluate the effectiveness of your recruiting or motivational strategies?
    - b. If you discover that a strategy is ineffective, how do you go about changing it?
    - c. What process would you undertake to begin changing an ineffective recruiting strategy?
  - 3) What recruiting or motivational strategies were not effective for
-

- 
- increasing the number of EMT personnel in your company?
    - a. What happened to inform you that a strategy was not effective?
    - b. How long did it take to discover that the strategy was ineffective?
    - c. How long did it take to rebound from the ineffective strategy(ies)?
  - 4) What key barriers did you encounter to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?
  - 5) How did you overcome these key barriers to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?
  - 6) What additional information regarding recruiting or motivational strategies to increase the number of EMT personnel would you like to share that we have not already discussed?
    - a. Can you provide any contact information for other people who may have additional information to add to the discussion of recruiting EMTs?
    - b. Will you reach out to them on my behalf so that I may arrange a time to meet with them and gather their input?

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Finalize the interview with a thank you to the participant.

Thank you very much “Participant Name” for your time and insight into this topic. Your information is helpful in gathering

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	understanding of how EMT recruitment works.
Schedule a follow-up member checking interview to review the original interview data	I would like to schedule a brief follow-up interview with you in about a week for your review my understanding of the information that you provided in this interview. I will e-mail my summaries of your answers a few days before our next interview then when we meet we can address any changes or additions you wish to make.
Take some reflexive notes. Note all sensory data for the location such as sounds, smell, temperature, colors, plants etc. Note your own feelings related to the location and any passing thoughts on the interaction.	
Follow-Up Interview	
Prepare the stage for the follow-up	Thanks again for taking time to see me for a review of our previous interview. What I did after our meeting, I transcribed our conversation and then created a summary of your answers for each question.
After reading each question and synthesis ask <ul style="list-style-type: none"> <li>• Is there anything that I missed or misunderstood?</li> <li>• Is there anything you want to add?</li> <li>• Then address any probing ideas or questions that relate to the original theme of the study.</li> </ul>	<ol style="list-style-type: none"> <li>1) What recruiting or motivational strategies do you use to increase the number of EMT personnel in your company? <ol style="list-style-type: none"> <li>a. What is the process for disseminating or getting this information out to potential candidates? <ol style="list-style-type: none"> <li>i. Are there samples of this recruiting information that I can take for use in this study?</li> </ol> </li> <li>b. Describe how your organization came to develop these strategies?</li> <li>c. How long have these strategies been in use?</li> <li>d. What are the results of these strategies?</li> </ol> </li> </ol>

- 
- i. What is your opinion of these strategy results?

## Synthesis

- 2) How do you evaluate the effectiveness of your recruiting or motivational strategies to increase the number of EMT personnel?
  - a. How often do you evaluate the effectiveness of your recruiting or motivational strategies?
  - b. If you discover that a strategy is ineffective, how do you go about changing it?
  - c. What process would you undertake to begin changing an ineffective recruiting strategy?

## Synthesis

- 3) What recruiting or motivational strategies were not effective for increasing the number of EMT personnel in your company?
  - a. What happened to inform you that a strategy was not effective?
  - b. How long did it take to discover that the strategy was ineffective?
  - c. How long did it take to rebound from the ineffective strategy(ies)?

## Synthesis

- 4) What key barriers did you encounter to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?

Synthesis

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- 
- 5) How did you overcome these key barriers to the implementation of recruiting or motivational strategies to increase the number of EMT personnel?

Synthesis

- 6) What additional information regarding recruiting or motivational strategies to increase the number of EMT personnel would you like to share that we have not already discussed?
- a. Can you provide any contact information for other people who may have additional information to add to the discussion of recruiting EMTs?
  - b. Will you reach out to them on my behalf so that I may arrange a time to meet with them and gather their input?

---

Schedule another follow-up member checking interview to review any new material identified in the follow-up meeting.

I would like to schedule a brief follow-up interview with you in about a week for your review my understanding of the information that you provided in this interview. I will e-mail my summaries of your answers a few days before our next interview. Then during the follow-up meeting, we can address any changes or additions you wish to make.

---

Schedule the follow-up interview and end the encounter with a thank you to the participant.

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Thanks again for seeing me and reviewing the interview information and answering my other questions. The new material is insightful and adds to the data already collected.

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## Appendix C: Letter of Permission

XXXXXXXXXXXXXXXXXXXX@nremt.org>

Mon 4/15/2019 7:12 AM

□

Carolyn,

I'm not certain I fully understood your request. All information and data posted on the public portion of our website are freely available for anyone to use as long as it is cited appropriately. You are welcome to use the data displayed on our website, but generally in the academic setting you would not use the actual images. For publicly available information, you do not need permission to cite information or data that is paraphrased for scholarly work under the "fair use" concept as long as credit is given to the original author.

Best,

XXXXXX

□

**From:** Carolyn Mack XXXXXXXXXXXXXXX@waldenu.edu>

**Sent:** Saturday, April 13, 2019 8:56 PM

**To:** XXXXXXXX XXXXXXXXXXXXXXX@nremt.org>

**Subject:** Fw: Research question

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XXXXXXXX:

Thank you for answering my question related to using a graph in the LEADS fact sheet. Does this permission cover additional resources, maps and data in other sections of the NREMT website?

Thank you.

Carolyn D. Mack  
Doctoral Candidate  
Walden University

**From:** XXXXXXXX [REDACTED]@nremt.org>  
**Sent:** Friday, March 29, 2019 8:13 AM  
**To:** Carolyn Mack  
**Subject:** Research question

Dear Carolyn,

Thank you for reaching out the National Registry. I am one of the EMS Research Fellows in our research department. With proper citation, you are more than welcome to use the figure from the 2014 LEADS II Fact Sheet.

Let me know if you have any other questions or concerns.

Best,  
XXXXXXX

[REDACTED]  
[REDACTED]  
**National Registry of EMTs**  
P: [REDACTED]  
F: [REDACTED]  
W: [www.NREMT.org](http://www.NREMT.org) E: [REDACTED]@nremt.org

***Let's Write The Future Together***

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