2023

Promotion to Fire Officer: EMS is an Essential Component of Promotional Testing

Brenda Kay Farlow

Walden University

College of Health Sciences and Public Policy

This is to certify that the doctoral dissertation by

Brenda K. Farlow

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Ian Cole, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Glenn Starks, Committee Member,
Public Policy and Administration Faculty

Dr. Lori Demeter, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2023

Abstract

Promotion to Fire Officer: EMS is an Essential Component of Promotional Testing

by

Brenda K. Farlow

MA, American Military University, 2014

BS, Southern Illinois University, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy Administration

Walden University

February 2023

Abstract

For the past 25 years, the number of fire department responses to structure fires nationally has gone down. Structure fires now reflect less than ten percent of the responses of the fire service. In the same period, emergency medical services (EMS) have become the overwhelming activity of most fire departments. The problem is the promotional process focuses on firefighting knowledge and skills while ignoring the absolute need for EMS competencies, in some capacity, for a supervisory position. The lack of change in the promotional process is related to the organizational culture of the individual fire departments and the collective difficulty with change in the fire service. As it applies to public policy, punctuated equilibrium theory shows that change often comes in "fits and starts" bolstered by public opinion. This theory, along with organizational culture theory, provided the basis for why EMS remained viewed as a "lesser" activity in the fire service. This study determined what EMS competencies are essential and why those competencies are not included in firefighter promotional testing. This case study was qualitative, utilizing semi-structured interviews of participants. Existing data provided by a national database of fire department statistics and documents from individual participating fire departments showed that promotional requirements focused on firefighting alone. This study addressed an underdeveloped area of research in firefighter promotional testing, excluding EMS supervisory performance measures. Addressing this oversight will lead to more qualified supervisors able to meet the needs of a changing fire service, thereby providing positive social change for the communities they serve.

Promotion to Fire Officer: EMS is an Essential Component of Promotional Testing

by

Brenda K. Farlow

MA, American Military University, 2014

BS, Southern Illinois University, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy Administration

Walden University

February 2023

Dedication

This paper is dedicated to Chief Robert Hjelmgren (ret.), who gave me my first opportunity in the fire service. To my dad, who advocated on my behalf to the Chief when I was trying to get my foot in the door. To my mom, who says my children must be "better than me," her support and belief are hard to top. To my grandmothers, strong women who survived incredible trials and became successful in their own ways. To my large and wonderful family, Teresa, David, and Wesley, where we all stick together and help each other out. To JAM, thank you for waiting 20 years for me.

A special thanks to Fire Service Women of Illinois, which gave me the chance to serve on the board and meet other women firefighters of extraordinary talent. Finally, to my awesome shift mates Mike, Rob, and Dan who encouraged me. To Craig who loves to debate everything but makes for a good "devil's advocate." To Mike and Tracy, firm believers that I could finish this project and make things better. To all the firefighters who embrace EMS but are overshadowed by the fire and rescue side of things, may you all stay in the profession long enough to see EMS take its rightful and equal place in the fire service. Equality between firefighting and EMS does not mean the other loses value or becomes less important. I have always been a firefighter first, but the world needs more qualified healthcare workers to step up and help. The fire service is in a unique position to embrace both.

Acknowledgments

Finally, to my committee members Dr. Ian B. Cole (Chair) and Dr. Linda Day (ret.), Dr. Glenn Starks, and Dr. Lori Demeter; I am grateful for your dedication to the craft of mentoring, teaching, and your assistance in this important beginning.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

In the modern fire service, firefighters are often called upon to respond to fires, technical rescues, hazardous materials incidents, and emergency medical responses. A fire officer, commonly referred to as a Lieutenant or Captain, is a first-line supervisory position within the fire service. Fire officers in career departments are promoted from within the organization and begin as firefighters of that department. Department affiliation is a fundamental requirement of promotions, excluding Chief Officers. This requirement is found within every collective bargaining agreement in Western Cook County, Illinois (Associate Firefighters of Illinois, 2016).

Fire officers manage tasks and training of their assigned shift or company (truck company or engine company). A truck company refers to a group of firefighters plus an officer who responds on a ladder truck, likewise, an engine company responds on a fire engine. The two vehicles and their crews perform distinct functions at an emergency scene and often carry similar but different tools and equipment. In each case, fire department apparatus are required to carry EMS equipment. Therefore, personnel must be trained to a licensure level determined by their department and the EMS system with which they are affiliated (Illinois EMS Systems Act, 2014).

Prospective firefighters take entry-level examinations which are aptitude-based but not necessarily job-specific during the hiring process. Firefighter promotional testing is different; it is job-related and particular to the needs of that department, as well as to the fire service globally. Firefighter promotional testing determines the best candidate for

a first-line supervisory position. When a firefighter takes a promotional exam, it is typically and traditionally one-dimensional, testing performance measures related to structural firefighting only (AFFI, 2016). This is because fire departments see themselves as having the primary duty of fire protection.

Following the events of September 11, 2001 (9/11), fire departments across the U.S. trained to respond to weapons of mass destruction incidents involving chemical, biological, radiological, nuclear, and explosive (CBRNE) events. This training focuses on the recognition of threats related to large-scale destructive events, the use of specialized, scientific meters and personal protective equipment, and the decontamination of large groups of people (Kemp, 2014). Thus, fire departments began to take on greater responsibilities for a host of other types of emergencies beyond firefighting.

Since 2013, the focus of fire department training and response readiness has shifted to mass casualty events surrounding active shooter incidents (IAFF, 2013). In 2014 alone, the federal government spent 600 million dollars on weapons of mass destruction training, and local departments have focused many hours of training on this topic (Federal Emergency Management Agency, 2017a, 2017b; Wieczorek, 2014). Yet, according to statistics, most fire departments across the U.S. will never respond to this type of event.

This study addresses an underdeveloped area of research in firefighter promotional testing, which is the exclusion of emergency medical services (EMS) supervisory performance measures. For fire departments in the Midwestern U.S., EMS requests account for 63.7 percent of their annual responses (USFA, 2017). Firefighter

promotional exams fail to include an EMS component during testing. Effective and efficient use of resources must become a tested component of firefighter promotions as it relates to EMS responses. Effective use of resources is essential to providing the best possible outcomes for all EMS-related calls, including mass casualty incidents, active shooter events, disasters, and acts of terrorism. This study informspublic administrators about an opportunity for improvement in civil service testing. Testing procedures more in line with the current needs of the fire service will produce better training (the substance of which creates examination materials) and thus better officers. Quality officers, in turn, will provide better services to their respective communities. Stakeholders cannot pick their fire departments; they can, however, demand a service that is efficient and modern. The complexity of fire service testing, the incorporation of EMS within the fire service, current fire service policy, punctuated equilibrium theory, and organizational culture theory is discussed later in this chapter.

Background

Fire Department History and EMS

In 1971 a Federal Commission was formed to investigate fire department functions, training, technology, and other factors as they related to loss of life and property during a fire (USFA 1972). A fire department has more than one given responsibility: firefighting, rescue, hazardous material responses, and special operations are just a few. The America Burning Commission recognized that life safety medical

skills were an additional obligatory service requirement given to the fire service (USFA, 1972; National Academy of Sciences 1966).

The America Burning Commission (USFA,1972) concluded there were sound reasons for a fire department to provide EMS, namely the location of stations, dispatch ability, and cross-training of its staff. Many communities in the Western portion of Cook County, Illinois felt this was a needed enhancement of services; however, this was a nationwide change recommended as far back as 1966 (National Academy of Sciences, 1966). The past 40 years have reflected an extreme shift in responsibilities, whereas EMS now represents most fire department responses, not fires as it had been historically (Bruegman, 2014).

Fire Service Evolution

The number of fires decreased by 20 percent from 1975 to 1985 and an additional 22.7 percent between 2005 and 2014 (America Burning Revisited, 1987 & USFA, 2016). Structure fire-related responses now average a paltry 4.1 percent of annual fire department responses nationally (USFA, 2017). There is no exact formula for fire prediction as uniformity between department responses varies from region to region. Uncontrollable factors such as location and economy in each area influence the number of fires experienced in a jurisdiction (USFA, 2017).

Revolutionary changes in the fire service include a decrease in fire suppression-related requests with a sharp increase in EMS, hazardous materials incidents, and natural disaster responses, as well as competition for funding resources (America, 1987). While experts (e.g, Keisling, 2015 & Neyfakh, 2013) agree that the fire service will always need

to exist for purposes of fire suppression and rescue, it will have to change from its traditional single role to a more comprehensive skill set. This new paradigm shift is especially true, considering that EMS now accounts for 65 percent of all emergency responses by most fire departments, nationally (USFA, 2017).

Testing

Before the adoption of the Equal Employment Opportunity Act of 1974, promotions within the fire service were patronage appointments or based on seniority (i.e., time in service) (Riccucci & Ricardelli, 2015). These promotional strategies resulted in discriminatory practices and produced fire departments that were demographically different than the communities they serve. To deter court cases related to actual or alleged unfair promotional methods, the fire service in Illinois moved to a more formal and legalized process governing testing procedures and practices. Traditional and outdated collective bargaining agreements, not law, force fire departments to use written examinations that do not meet current job requirements. The written exams are supplemented with assessment center testing to justify the testing procedure (Riccucci & Ricardelli, 2015). However, municipal fire departments, in general, have a high degree of difficulty in creating either entry-level or promotional exams that meet the standard of job relevance (Roberts, 2010).

The Illinois Firefighters Promotional Act of 2003 allowed for subjective evaluation during the promotion process and could include oral interviews, tactical skill examination, and other testing components. Any such subjective evaluation, which can consist of the use of assessment centers and other evaluation systems, must be job-related

(Firefighter Promotional Act, 2003). One area not addressed in the literature is whether the concept of job relevance should relate to the frequency of the incident type. If so, it can be argued that current testing is no longer reflective of the job description of a firefighter paramedic.

Role of Officers

Mentler and Herczeg (2015) provided that incident commanders, often first-line supervisory fire officers, are responsible for command and control at emergency scenes. Fire officers are under pressure to prioritize tasks, assign crews, and efficiently and effectively using resources at times of potentially exceptional circumstances, such as large fires or mass casualty events (Mentler and Herczeg, 2015). Emotional factors and the stress of maintaining situational awareness can be challenging even for experienced fire officers. Thus, exposure to simulations and tactical assessments during training and testing becomes significant long before an actual event occurs. While this type of testing is recognized and established for fire-based scenarios, it has not yet been translated or crossed over to EMS-related events, as related to supervisory performance measures.

There is a lack of a systems-based approach to EMS. The literature gap clearly shows that the duties of EMS were absorbed into the fire service without policies and safeguards in place. Meaning, that paramedics were put in place within fire-based EMS systems and departments without thought to whom would supervise them or how that process would work. Additionally, personnel should not be given supervisory positions without a testing process that justifies the promotion. Existing literature fails to provide a clear path for a testing process. The limited research available for fire-based EMS

systems focuses on quality control, which is a limited portion of what a supervisor of paramedics is responsible for within the department and the daily activities of a fire officer. There is a gap in the literature concerning what performance measures a fire officer should have as related to the EMS portion of their responsibilities.

Problem Statement

Firefighter promotional testing does not support the needs of a modern fire service. Researchers have noted the support of assessment centers over written exams (International Taskforce, 2014) and the need for job-related testing (McFarland, Yun, Harold, Viera & Moore, 2005). The fire service has not adapted testing methods to include EMS performance measures, and the exact reason fire departments have not embraced current needs is unclear.

Court rulings and decisions related to past discriminatory practices, such as during initial hiring or promotion within the fire service, serve as the basis for current testing procedures. Therefore, the problem is that fire department responses have changed and now consist of mainly EMS responses, and testing is not reflective of that change. The question is, what are the necessary EMS performance competencies for a modern-day fire officer operating within a fire-based EMS system and why are performance competencies not a part of promotional tests.

Purpose of the Study

The purpose of this qualitative case study was to improve the understanding of which EMS performance measures should be included as a component of firefighter promotional testing for career fire departments operating in a fire-based EMS system in

the western portion of Cook County, Illinois. Secondly, this study explored why those performance measures have not been adopted as part of testing thus far. An assessment of necessary supervisory and operational performance measures requirements for various EMS-related responses (e.g., active shooter, mass casualty, death of a child, pandemics, police-involved shootings, etc.) was used in conjunction with interviews. Secondary data helped to develop an understanding of which EMS performance measures should be included in future testing procedures for firefighter promotional exams. Analyzing data from secondary sources provided the triangulation necessary to show relationships between EMS and modern fire service needs.

Research Questions

1. RQ-1- Qualitative: Which EMS operational and supervisory performance measures should be integrated into firefighter promotional testing for fire departments that provide fire-based EMS in the Western portion of Cook County, Illinois?
2. RQ-2- Qualitative: Why have EMS performance measures not been adopted in firefighter promotional testing in the Western portion of Cook County, Illinois?

Theoretical Foundation

The concept that stability and not a crisis is the underlying feature of public policy administration is not consistent with the realities of policy change and its processes. However, it is more comfortable for people to believe this (Sabatier & Weible, 2014). The existing policy seems to develop or metamorphize under two methods, either in small, not inconsequential ways or as significant, controversial acts, propagated by social

change or by sudden interest of stakeholders. In every institution, there exists a unique organizational culture and norms which affect internal stakeholders and provide limitations or boundaries on which policies must work. The fire service, in career departments, is beholden to the union, administration, boards of trustees, and commissioners, as well as the community members they serve. With those stakeholders in mind, there is also the constraint of public policy regulation and the socialized norms of organizational culture. Therefore, in the arena of public administration, attitudes of professionalism are suspended between a desire to change and caution (resistance) (Reddick & Demir, 2016).

Meanwhile, in a broader sense, an issue, policy agenda, or proposed change has only a limited period to come to fruition as attention on that issue is perishable. Therefore, policy change must occur by "striking while the iron is hot" and not when another problem has most of the focus. This type of thinking is seen over again when looking historically at significant policy changes in the fire service. Two significant issues associated with this are (1) changing testing procedures following several court case rulings against previous discriminatory practices and (2) change of focus to an all-hazard type of response following Hurricane Katrina and 9/11. Funding often drives change in the fire service as well. Examples of this include the threat of privatization of services based on the pension funding crisis (specifically in Illinois) and the mandate of being trained in the National Incident Management System (NIMS) to receive future federal grant money for preparedness activities (FEMA, 2017b).

Many of the policy changes that occur daily or ad hoc are the result of a public that has become more educated or increased their understanding of a given issue, making the subject more polarizing for them and their feelings on a status quo agenda. Nowhere is this more reflective of the special position and status within the community, which the fire service has been given since the time of antiquity, resulting in more freedom and less oversight for policy administrators (Reddick & Weible, 2016).

Punctuated Equilibrium Theory (PET) is a theory of governance that contradicts a previous theory, known as the Advocacy Coalition Framework, in which the political process is viewed as stable. In the Advocacy Coalition Framework theory changes, should they occur, happen over time and in manageable increments (Sabatier & Weible, 2014). PET finds that the public sector fails to take the small, measured steps necessary for stability in a changing world and instead lurches forward in "fits and starts" of policy change.

A measurement of this process is the idea of policy change. One justification of non-policy change is to reinforce current policy, perhaps using tradition as its reasoning (Sabatier & Weible, 2014). The fire service is steeped in tradition and thus can be reluctant to change in general. Uniformed services, such as the fire service, form organizational cultures that do not necessarily align with other organizations in society (USFA, 2015). McDonough and Polzer (2012) stated challenges to restructuring policy are often based on the defense of perceptions of the components of traditional public service. For the fire service, the traditional public service provided is firefighting.

Further, the concept of change and reform or restructuring was hampered or moderated by strong public employee unions and political action committees influencing legislators (Brewer & Kellough, 2016). Policy changes have caused EMS to insinuate itself into the fire service and be viewed as an additional, not a primary, duty of the fire service (National Academy, 1966). The evolution of the fire department and the services it provides will be further discussed in the literature review.

Nature of the Study

The nature of this study is qualitative. Qualitative research supports the development of an understanding of the complexities involved in policy creation and reform within the fire service. This study utilized a case study approach. The case study approach allows the researcher to understand a complex social phenomenon (Kohlbacher, 2006). Each fire department has a unique culture that shapes policy within the organization and adds to the overall fire service. Policy created or reformed in one department bleeds over into other fire departments or agencies. The promotional testing procedure has become a negotiated process in which labor unions and administration collectively agree upon components. When combined with data from a group of homogenous fire departments, a clearer picture of the promotional process within the fire service in western Cook County, Illinois, becomes available.

Research questions center on a group of fire departments and their collective-bargaining agreements. This study sought to understand how/why fire departments in Western Cook County, Illinois chose their requirements for promotions and the decision-making process behind testing requirements (specifically the inclusion of fire-related

skills over EMS skills). Secondly, the study sought to understand how a policy change will affect the future testing process (i.e., a separate written exam for EMS, simulations, or some other component not yet determined). A case study approach allowed for an in-depth review of participating departments' organizational cultures, viewed through the lens of fire department administration and labor. This method enabled greater detail and focused on the values of the fire department, mission, and vision for the future.

Objective, secondary data sources such as the National Fire Incident Reporting System (NFIRS), a federal database, and the Associated Firefighters of Illinois (AFFI) contract database were used to confirm promotional requirements, fire department responses, and provide other comparable data for analysis. Copies of contracts for each participating fire department were obtained through the AFFI database or Freedom of Information Act (FOIA) requests. Data was coded and analyzed using Excel software for analysis. Interview questions and responses were collected primarily through virtual face-to-face interviews with the union leadership of that department and a chief officer representing the administrative perspective.

Definitions

Active shooter: An individual actively engaged in killing or attempting to kill people in a populated area. Recent active shooter incidents have underscored the need for a coordinated response by law enforcement and others to save lives (Federal Bureau of Investigations, 2016).

Assessment center: Simulate real situations in the workplace and are used to identify individuals who have the abilities and skills to succeed in managerial and

executive jobs and to help guide the development of managerial skills and talent. The content of assessment centers varies across organizations, but some assessment exercises are widely used and convey the essential features of this method. For example, the Leaderless Group Discussion is often used to evaluate emergent leadership and social skills (The International Taskforce, 2014).

Blue Shirt: A term for a firefighter who is not an officer. Firefighters traditionally wear blue uniform shirts and officers wear white uniform shirts.

Emergency Medical Services: The full spectrum of emergency care from the recognition of the emergency, telephone access of the system, provision of prehospital care, through definitive care in the hospital (NHTSA, 2001). It often also includes the medical response to disasters, planning for and provision of medical coverage at mass gatherings, and inter-facility transfers of patients (NHTSA, 2001).

Emergency Medical Technician (EMT): Describes a person that has achieved one of several levels of medical certification or licensure, which includes an emergency first responder, emergency medical technician (EMT, or EMT-basic), advanced emergency medical technician, and paramedic. Certification shows that an individual has met an entry-level competency standard, state licensure; however, it is what gives the person the right to work in that capacity (NREMT, 2016).

Fire-Based EMS: A form of EMS system in which firefighters are cross-trained as EMTs or paramedics and respond to time-critical medical emergencies on the same rescue vehicles used to respond to fires. EMS, which is provided by a fire department through contracted paramedic services, also meets this definition (IAFF, 2016).

Fire Protection District: Special taxing districts in Illinois with a limited governmental purpose have only powers granted to them by the Illinois General Assembly (Illinois Association of Fire Protection Districts, 2016).

Incident Command System: A management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. The person "in charge" of the incident is referred to as the "Incident Commander" (FEMA, n.d.).

Lieutenant: A first-level, supervisory position within the fire service. This position is referred to as the promoted title and rank of Officer of the fire department. The Lieutenant has direct control over all members under his command (Northlake Fire Protection District Rules and Regulations, 2016).

Mutual Aid Box Alarm System: An Illinois-adopted, statewide fire department-related mutual aid system, which has been in existence since the late 1960's. MABAS is a unique organization in that every MABAS participant agency has signed the same contract with its 1,100 plus counterpart MABAS agencies. MABAS agencies agree to standards of operation, incident command, minimal equipment staffing, fire ground safety, and on-scene terminology (MABAS, 2016). A MABAS Division refers to a group of fire departments located in one geographic area that shares resources and personnel, based on a pre-determined set of guidelines, frequently.

Mass Casualty Incident (MCI): An event that overwhelms the local healthcare system, with many casualties that vastly exceed the local resources and capabilities in a short period (Ben-Ishay et al., 2016).

National Fire Incident Reporting System (NFIRS): A standard used by fire departments uniformly reports on the full range of their activities, from fire to Emergency Medical Services (EMS) to equipment involved in the response (USFA, 2016).

International Association of Fire Fighters (IAFF): An international trade union organization representing 85% of the firefighters protecting Canada and the United States of America (IAFF, 2016a).

Assumptions

The primary assumptions of this study are that both fire department administration and union officials were honest about their responses (Richarme and Rodgers, 2016 & Rothmeier, 2017). Rothmeier (2017) argued that there is an unquestioned bias in believing in the fire service culture as it stands. Further, in some cases, when challenged (forced to change), the fire department will self-censure; at worst, the silence on an issue is implied as an agreement (Rothmeier, 2017). Silence on matters includes perspectives of service levels, negotiation factors such as organizational culture, and other such influences. The questions were designed to be open-ended and allow for a more in-depth reflection of the organization's real motivations around policy decisions and promotional practices of the given fire department.

Fire departments vary, in Illinois, they are municipal, or they are fire protection districts. A municipal department falls under the city/town or village taxing structure. A

fire protection district, however, is a special taxing body that gets funding in a substantially different way. Either version of a fire department may be categorized as a career, volunteer, or combination department. Career departments can then be classified further as being represented by a union or as at-will employment. Each department, no matter how similar, has differences. One town may have a fire department with one station while another may have several. The variances in staffing levels, amount of equipment, rank structure, and services can add up, highlighting more of the differences than similarities. For that reason, the research sample group was designed to reflect a homogenous set of fire departments within a geographic area. Several factors, such as union representation of employees, the size of the department, EMS structure, and promotional procedures, as well as other comparable factors, were used as an inclusion criterion. Ensuring homogeneity of the fire departments removed some extraneous factors such as departments that do not have a formal promotional process or those that do not oversee the EMS services provided by their departments. These two factors are outside of the scope of this study. Departments were allowed to fact-check all information provided by secondary sources before conducting the study.

Scope and Delimitations

Fire departments were excluded if the department is not a full-time, union department, did not provide EMS, or if firefighters and officers had less than an emergency medical technician-basic license within Illinois. First, if a fire department is non-union, the promotion process is not negotiated. Often, in this case, a non-union department promotes personnel based on subjective factors such as likeability, nepotism,

or other such practices (DiSalvo, 2015). Second, the basis of this study is that firefighters (labor) and officers (supervisors) must actively participate in providing EMS-related services. Some fire departments do not provide EMS services, and therefore these departments were outside the scope of this study. Lastly, participants must have achieved a minimum level of EMS licensure to understand the intricacies and concepts involved in command and control of an EMS incident, especially a mass casualty event.

This study looked at the potential for a broad policy change concerning promotions, keeping in mind the collective bargaining process, which is considered an ever-changing document in as much as a contract evolves. There are incremental changes to the union boards and membership through internal elections and personnel changes which may result in a contract that is "in effect" but no longer reflects the current thinking of the union or fire department administration but cannot yet be changed (Chicago Tribune, 2015). For example, the ascertained merit section of a CBA may contain a list of OFSM certifications that will receive points on the promotional test. However, some of the titles of the certifications may have changed or been eliminated. If a CBA is in effect, they may have to have a joint labor-management agreement to accept the new and only certifications to accommodate the transition period.

Similarly, union executive board positions are staggered so that the entire board is not replaced or elected at the same time. These changes collectively can influence how strongly the local union may feel on a topic or may serve as a roadblock or impediment to affecting change in a timely fashion. Also, the study looked at one specific MABAS Division, and thus may not provide transferability outside of that group but will provide

generalizable themes within the fire service (Nowak, 2022). A fire department is specific to its formal charter (district or municipal department), local, state, and other such considerations making each organization unique. Therefore, the generalizability of the findings of this study to other organizations outside of this unique boundary area, including relationships, is not feasible except with broad strokes. Smith and Dejoy (2014) stated organizational climate provides the backdrop of expectations. Since all fire departments included in this study are from one geographical area, the study results may not be generalizable to all regions of the country (Smith and DeJoy, 2014). A MABAS Division is a geographically based system in which departments agree to share resources, including equipment and staffing within a given and mutually accepted response structure, to assist other towns (MABAS, 2016). The total population of departments within the studied MABAS Division is 10. The MABAS group will provide a targeted group of 10 departments, 7 of which are associated with one union, the International Association of Firefighters (IAFF), and the remaining four are associated with a different union, the Service Employees International Union (SEIU). Each department provides fire-based EMS, although methods vary, and fire officers supervise those activities.

Limitations

The limitations of the study are the generalizability of the information to the fire service. There are so many variations of service delivery throughout the U.S. that generalization is possible, but congruity with each department is not. Within the U.S., EMS is provided in several different models. Variations of service include county ambulances, separate EMS departments, hospital-based EMS, contracted services, and

volunteer organizations in addition to those services provided by fire departments, referred to as fire-based EMS. Other limitations include the inherent bias of individuals that were interviewed, and who have varying opinions as to whether they should have EMS duties or to what degree they should have those duties. To control inherent bias, the interview questions relied heavily on objective, not subjective information. Such as what language exists in the collective bargaining agreement (CBA) and what proposals have been set aside, rather than whether a given clause should be in CBA.

Significance of the Study

This research fills a gap in understanding by focusing on the importance of EMS performance measures as part of the promotional components/qualifications for future fire officers. There is a lack of literature that describes the knowledge required of a supervisor trained as a firefighter when it comes to their ability to manage a complex EMS scene. Furthermore, there is a lack of literature describing which performance measures EMS supervisors are expected to be proficient in. Existing research describes EMS performance measures in a single location or department, often a hospital-based ambulance service, and does not directly correlate to the geographic or political landscape of this study. Lastly, there has only begun to be a conversation within the literature regarding the mindset change required of providers when faced with mass shootings or mass casualty incidents. The significance of this necessitates a strong leader able to manage essential, and limited resources for the good of the group over any one individual.

Significance to Practice

For the past decade, fire officers in the western portion of Cook County, Illinois, have overseen both firefighting and EMS response. It is thus necessary to explore why fire departments have not added EMS supervisory and operational performance measures to the promotional process. An accepted responsibility with no checks and balances or forward-thinking is simply a recipe for disaster. Fire officers can make decisions that affect patient outcomes, fire department revenue, and allocation of resources. Without a vigorous program in place to mentor officers in aspects of EMS supervision, precious resources will be wasted, and revenue will go uncollected. Recognizing this aspect of a fire officer's job as an essential component that requires nurturing and therefore requires testing for competency is the first step toward better public policy.

Significance to Theory

Firefighter promotional testing is not reflective of current needs. Testing is a complex social problem that is believed to be in part an organizational cultural issue, as well as a simple lack of understanding on the part of fire department leadership—specifically, the realization of the complexities of EMS incidents as related to supervisory and operational skills. Fire-based EMS has reached a point in which it is well established within the fire service as the primary duty of firefighters as well as constituting most of the responses for the community annually (USFA, 2017). Policy changes, however, have not kept up with changing job duties, responsibilities, or complexities of incident command at large-scale EMS incidents. The fire service has reached the point at which a

significant revision of policy is appropriate and needed for the good of the fire service and the public.

Significance to Positive Social Change

This study is unique because it addresses an under-researched area of fire service promotional testing, the inclusion of EMS performance measures. These skills are essential to producing the best possible outcomes for an active shooter, mass casualty incident, terrorism, and disaster-related events. Improving the understanding of critical performance measures required of fire officers that manage EMS incidents daily will allow for better testing practices, which are more job relevant to the modern fire service and thus inspire positive social change.

Summary

The fire service has reluctantly but willingly accepted EMS as a part of its primary mission for the past 40 years. At the same time, EMS is viewed within the fire service culture as a separate and distinct service (Deardorff, 2012 and IAFF, 2016b). Therefore, the culture of the fire service has been to let EMS thrive or fail on its own (IAFF, 2016b). Emblematic of the concept of a separate service, many departments use contracted paramedic services, despite having the ability to provide the same quality care. Over the past two decades, though, a shift to cross-trained firefighter paramedics has resulted in a supervisory gap. A supervisory gap exists when fire officers manage employees with higher EMS certifications than they hold. Also, these same fire officers are tasked with an increased percentage of responses related to EMS, not fires. The fire service then set the officer up for failure by neither providing instruction, nor guidelines

with which to manage these responses. Finally, the fire service has not embraced the concept of EMS being a part of the promotional exams for a firefighter. This study sought to understand how embedded this cultural issue is and whether EMS supervisory performance measures should be a focus of promotional testing for future fire officers.

Chapter 2: Literature Review

Chapter Two

Introduction

Many theories and methods have been used to assess and test both entry-level and promotional candidates in the fire service, the goal of any test, no matter which method is to find the best-qualified person. Although the literature covers a wide variety of such theories (written exams, oral interviews, discrimination, and assessment centers), this review focuses on several themes discovered during a review of current literature. The topics are fire-based EMS, assessment center testing, modern fire service trends, and fire officer roles and responsibilities. The specific focus of this review is on public policy change and organizational culture as it relates to testing for the fire service. The current problem in the fire service is that firefighter promotional testing does not reflect the needs of modern fire service as it relates to EMS.

The relationship between the fire service and emergency medical services is well documented (National Academy of Sciences, 1966; Deardorff, 2012; IAFF, 2016b) as is the need for job-relevant testing for both entry-level and promotional exams (Fire Department, 2003; Kim, 2016; Riccucci & Saldivar, 2014; Roberts, 2010). There has been much debate over the form of tests, written, oral, or simulations often referred to as assessment centers (Rubin, 2017; Riccucci & Riccardelli, 2015; Max Weber, as cited in Sundell, 2014a; Boyd & Cannon, 2008). The debate centered around job relevance, and discrimination in testing practices, specifically which testing method would provide the best test while being gender and color-blind (Sibbernsen, 1975; Hoffman, Kennedy,

LoPilato, Monahan & Lance, 2015). The testing practices were debated by those representing ethnic minorities, women's groups, and, most recently, white males in reverse discrimination lawsuits (Roberts, 2010; Sibbernsen,1975; Rubin, 2017). No one size fits all types of testing exists. The Rubin (2017) article discussed job task analysis as a method of determining the best candidate but also listed other factors, none of which have any EMS correlation. O'Leary (2015), on the other hand, spoke of high-fidelity simulations as assessment tools, but does not discuss paramedics, only physicians, and is not related to promotions. Instead, the O'Leary (2015) study utilized simulations as a summative assessment before licensure. Currently, the testing format that has achieved consensus for most of the United States and has been upheld by the courts is the written exam for entry-level positions. The written exam is followed by an oral interview for entry-level positions, whereas for promotions, an assessment center combined with a written examination for promotions within the career sector of the fire service (Boyd & Cannon, 2008).

Many fire service-related studies in the past two decades have focused on written exams for entry-level positions, discrimination issues in hiring and promotion, and assessment center testing as it pertains to job relevance for promotion (Riccucci & Riccardelli, 2015; Roberts, 2010). Other studies have focused on emergency medical services, training, and simulation of skills, as a single-role paramedic (Tavares, Leblanc, Mausz, Sun & Eva, 2013). Following the September 11th, 2001, attacks and Hurricane Katrina response, studies have focused on emergency medical services as a vital

component of disaster preparedness and the health care system as a whole (Kemp, 2014; Schulz, Koenig, Whiteside & Murray, 2012).

To date, no study has examined whether EMS performance measures should be included in firefighter promotional exams. Current studies (2013-present) have focused on whether testing is job-relevant, what form of testing is appropriate (written exams, skills-based testing, etc.) and discrimination (reverse discrimination and gender-based discrimination) issues (Sartorfi & Ceshi, 2012; Roberts, 2010; Biddle & Biddle, 2013). Other studies have looked at professional development and credentialing for fire officers. All current studies focus on fire and rescue aspects of a fire officer's job; none speak to the element of EMS. No research has yet determined what those supervisory EMS performance measures should be; furthermore, no study has discussed the issue of fire officers managing people who have higher levels of EMS licensure. Some, such as Wenzel & Keeton (2006) and Barakey (2017), discussed fire officer leadership and human resource management attributes, which do carry over to EMS, as well as fire-related calls in some respects.

Current fire service-related literature focuses on mass casualty incidents, incident command, disaster preparedness, simulation training for emergency medical providers, and fire officer training (Bobrow, Vadenboncoeur, Stolz, Silver, Tobin, Crawford & Spaite, 2013; Dean, 2016; Casey, 2016). The review of supporting literature consists of searching in Walden University's online databases and Google Scholar for literature published between 2013 and the present day. Also, a limited number of seminal works

were utilized as supplemental sources. Inclusive in the literature review are two theoretical frameworks, Punctuated Equilibrium Theory and Organizational Culture Theory, which inform the public policy process that shapes testing within the fire service. The remainder of this literature review focuses on the literature search strategy of online database searches utilizing keywords and phrases such as promotion, assessment center, fire officer, etc. This same search strategy was then applied to organizational culture theory and punctuated equilibrium theoretical frameworks. The lens used for this study was the evolution of the American fire service over the past 60 years, fire-based EMS services, assessment center testing, the firefighter promotional process, and the role of fire officers as supervisors of EMS.

Literature Search Strategy

An exhaustive search of the literature was conducted. Walden University Online databases used for a literature search include ProQuest, Sage Journal, Political Science Complete, and the Homeland Security Digital Library Database were used. The Google Scholar search engine was also used to ensure the completeness of the search. Each database was searched using parameters from 2013 to the present date. ProQuest search utilized the following key terms: *((SU.exact ("ASSESSMENT CENTERS") OR SU.exact ("ASSESSMENT CENTERS 05038")) AND (SU.exact ("PERSONNEL SELECTION") OR SU.exact ("PERSONNEL SELECTION 00774") AND firefighters, punctuated equilibrium theory, organizational culture theory, performance appraisal simulation, firefighter AND personnel management procedure, firefighter AND promotion NOT medical, NOT health, organizational culture AND fire service, and organizational culture AND testing.* Sage

Journal search utilized the following key terms: *Fire officers, promotion, advancement, preference, testing, exams (ination), measurement, assessment center(s), collective bargaining, merit-based, negotiation, compromise, arbitration, paramedic, supervision, ems leadership, cross-trained firefighter, firefighter AND supervision, and punctuated equilibrium theory, organizational culture theory*. Political science complete database used the following terms: *Firefighter(s), paramedical, emergency management, emergency service(s) and supervisor, punctuated equilibrium theory, and organizational culture theory*. The Homeland Security Digital Library database search used the following terms: *fire-based EMS, cross-trained firefighter(s), fire officers, promotions, assessment centers, AND testing.* Google Scholar search engine used the following terms: *Fire-based EMS, emergency medical services, firefighters, supervision, assessment center(s), promotional testing, and supervision, punctuated equilibrium theory, and organizational culture theory.*

Theoretical Framework

The theoretical framework of this study is rooted in the organizational culture of the fire service in the United States. The key to this framework is the idea of policy change occurring either incrementally or through punctuated periods of drastic change. Additionally, organizational culture theory adds to understanding as the fire service is a unique public organization with a history steeped in tradition, much like the military. Tradition, and organizational culture, can sometimes get in the way of progress in these types of organizations.

Punctuated Equilibrium Theory

Origins

Punctuated Equilibrium Theory (PET) was first used outside of the public administration arena to describe the biological process of evolution theory (Gould & Eldredge, 1993). This theory then crossed into public administration and was then applied to policy change, some 20 years after its inception (Jones & Baumgartner, 2012). While most policy theory focuses on the macro-political institutions such as the federal government, this theory was designed to look at micro-political aspects of policy change, such as those found in local government (Jones & Baumgartner, 2012). Localism and local policy are not about treating every community the same; it is instead about assessing the needs of that one community (Halliday et al., 2012).

PET is a theory of governance that contradicts a previous theory, known as the Advocacy Coalition Framework (ACF) (Sabatier, 1988), in which the political process is viewed as stable. The ACF view of policy change theory means that changes, should they occur, happen over time and in manageable increments (Sabatier & Weible, 2014). Secondly, ACF focuses on the core beliefs of a given policy, whereas PET associates the attention span given to an issue with the ability to produce policy change (Jones & Baumgartner, 2012; Jenkins-Smith, Silva, Gupta & Ripberger, 2014). The ACF framework cannot fully explain the culture and climate of the fire service, firefighters, medics, and the disparity between each (Jenkins-Smith et al., 2014). PET finds that the public sector fails to take the small, measured steps necessary for stability in a changing world and instead lurches forward in “fits and starts” of policy change.

Rationale

For every policy and proposed change to a policy, there is a group of stakeholders that frame the issue. Framing groups compete to influence how policy is understood and defined, and therefore how policy is formed, altered, or enforced (Cairney, 2012). The attention span of the government is limited (Jones & Baumgartner,2012). Baumgartner and Jones (2009) furthered this argument by stating that any significant period of public attention focused on a policy followed by years of minimal attention. Sometimes policymakers cannot focus on a policy for pragmatic or ideological reasons. However, when an issue reaches a tipping point, then policymakers must act, resulting in a major change, rather than an incremental one (Cairney, 2012).

A measurement of the stability of the micro-institutional process, such as a fire department, is the idea of policy change. One justification for the lack of change is the circular logic, which reinforces a current policy, perhaps using tradition as its reasoning (Sabatier & Weible, 2014; Keisling, 2015). This type of justification was a significant argument against cross-training firefighters as paramedics. Firefighters' job descriptions and responsibilities have changed, but the local government structure and policies have not. Indeed, the systems have remained stagnant (Keisling, 2015; Halliday et al., 2012).

The fire service is steeped in tradition and thus can be reluctant to change in general. There is a fire department mentality that says we must have a certain number of firefighters on duty each day as a sort of safety net, "just in case" policy despite the overwhelming evidence the fire department responds to EMS calls a majority of the time

(Keisling, 2015). When pushed to the point of public questioning whether the fire service was worth the expense and having to justify salaries and staffing levels, the fire service acquiesced and adopted fire-based EMS. Adoption of EMS, through a policy change, either seen as gradual in some departments or as a sudden shift in others, resulted in what some see as the end of an era for single-role firefighters (Studlar & Cairney, 2014).

Jones and Baumgartner (2012) stated the theory of policy change and agenda-setting has always been concerned with the power of specialized communities of experts and the Degree to which they operate with autonomy and scrutiny. The concern, in this case, is the public-sector unions and the power they wield over policy change and adoption, which, if mismanaged by fire department administration, can cause the issue to be tied up in the court system for years. So, either a large-scale event (9/11 and the housing market crash) or cumulative events (such as an increase of pension fund liability in a jurisdiction) can precipitate change (Jones & Baumgartner, 2012).

Change then occurs when an issue reaches a tipping point in public opinion or, in other words, outside influences become too intense, requiring change (Jones& Baumgartner, 2012). Fluctuations of public interest in their attention span to any given issue and public demand for action toward resolving an issue. The fiscal crisis of the 2000s provided the punctuation needed to cause substantial change and was a significant catalyst for the fire service to absorb EMS as an additional duty. The elimination of contracted EMS staff was not only a reduction in expenditures but also served as an improved justification for the existence of the fire department (FEMA, 2012).

McDonough and Polzer (2012) and Schneider, Ehrhardt, and Macey (2013) stated challenges to restructuring policy utilize the defense of perceptions of the components of traditional public service. In this case, the "traditional" public service is firefighting, not EMS. Policy changes have caused EMS to insinuate itself into the fire service, and as a result, EMS is viewed as an additional, not a primary duty of the fire service (National Academy, 1966). It is this outdated policy that needs to be evaluated (Keisling, 2015; Neyfakh, 2013). When a policy is adjusted, one issue at a time, the policy can become disconnected from the overall mission statement and has a ripple effect from the top to the bottom of an organization (Jones & Baumgartner, 2012). This disconnection of policy and practice is exactly the issue with EMS in the fire service. The added service (EMS) was adopted by the fire service but did not have supportive policies in place for supervision and administration (Neyfakh, 2013).

Organizational Culture Theory

Origins

Cultural theory expresses itself in the understanding of how an individual sees themselves as being part of the group or collectivism within a faction or the organization itself (Jenkins-Smith et al., 2014). Cultural theory expresses itself in the understanding of how an individual sees themselves as being part of the group or collectivism within a faction or the organization itself (Jenkins-Smith et al., 2014). Traditions are a hallmark of the fire service. It is a culture steep in memories, policies, and procedures which forebears, founders, and stories of a better time. People who prefer a hierarchical method of organization and thus organizations that utilize this will tend to put immense value on

defined roles, procedures, authority, stability, and maintenance of the institution (Jenkins-Smith et al., 2014).

The organizational cultural theory explains the worldview, including the Degree to which an individual identifies with a bounded unit or social group (Ripberger, Gupta, Silva & Jenkins-Smith, 2014). Culture defines the structure of an individual's beliefs as related to perception, attitude, and in the public sector, their preference for public policy (Ripberger et al., 2014). Culture also includes the individual or organization's beliefs about the degree to which activities a unit of government should do to satisfy stakeholders, as well as who should be involved in the decision-making process, also how those collective decisions are made (Ripberger et al., 2014). The organizational cultural theory applies to those organizations that operate within a hierarchy, preferring strong group attachments and viewing a policy as always having to be for the good of the group. Within the hierarchical culture, there is a belief that experts, not the average person, should make decisions about controversial or technical issues (Ripberger et al., 2014).

Climate is synonymous with culture; within an organization, this is defined as shared perceptions that can be applied to the interpretation of rules, regulations, and policies as well as internal practices and acceptable behaviors exhibited by employees as well as what constitutes expectations (Schneider et al., 2013). The organizational culture of unions regulated by collective bargaining agreements (CBA), determines which aspects of the CBA are closely followed and which are more casually enforced, for some organizations (Schneider et al., 2013).

Organizational culture can be viewed as affecting a part of the organization or defined by the entire organization. At the national level, culture influences policy aimed at an entire group of similar organizations. At an individual, or organizational level, culture influences policy, which results in variations from place to place when compared with each other at a policy level (Schneider et al., 2013). Therefore, organizational culture engenders similarities amongst organizations nationally, but also boasts significant differences locally (Schneider et al., 2013). Besides, there are subcultures within an organization, especially the fire service, which are a function of seniority, level of education, and rank or position within the organizational structure that can be attributed to early decisions about structure and principles related to the organization (Schein, 1985). Thus, climate and culture are needed to explain the organization and fully describe or analyze it (Schein, 1985). The two influencers of climate and culture are leadership demands and the various life stages of a process, project, or the organization itself (Schneider et al., 2013). Schneider et al. (2013) also argued that building or changing the culture within an organization becomes filled with friction if the new paradigm conflicts with a foundational premise or deeply held belief. A recent example of this is the shift of focus from firefighting to EMS within the fire service. While adaptability is essential, employees will not always agree on the change as promoted or envisioned by supervisors and policymakers (Schneider et al., 2013).

The fire service, like the military, has a civilian component of oversight in its business and policy creation. However, the fire service runs autonomously with little influence from civilian control except for budgetary processes and large service-related

changes, such as requiring firefighters to be cross-trained as paramedics. The internal culture of any given fire department reflects those that work there, and the traditions of the past (Bruegman, 2014).

The concept of culture must be taken more seriously, argued Wankhade (2012), as a public service, old assumptions that are embedded must be recognized and revisited. There is a clear gap in research to understand the nature and role of culture in fire-based EMS (Wankhade, 2012). This point is further argued by Bruegman (2014), who stated, that the fire service is resistant to the change and refuses to fully embrace EMS, which includes allocating staff and resources to EMS and away from fire response.

When efficiency and effectiveness measures become the driving force behind policy change (as was the case with fire-based EMS), there is an elevated level of discomfort within the organization. Power and agenda drive some groups to try and maintain their privileged position by minimizing attention to the policy solutions which benefit them (Cairney, 2012). The feeling of unease related to change based on efficiency measures alone is because this type of management and influence is seen to go against deeply held beliefs of doing what is in the public interest and civic duty (McDonough & Polzer, 2012; Halliday et al., 2012). McLay and Moyorga (2010) showed that the focus of efficiency measures is based on time frames, not outcomes in the fire service. Whereas, in EMS, the opposite is true as policy change requires evidence-based reasoning. Therein lies a conflict between meeting benchmarks (time-based and fire-related) versus

outcome-based, such as successful endotracheal intubations (breathing tube insertion) in EMS.

Thus, McDonough and Polzer (2012) describe an organization's culture as "habitus," and habitus is simply a framework for standard practices. Conflict arises when a profession undergoes a significant change of policy or service-related change; at this point, "habitus" slows down the change process and embraces the new social condition (McDonough and Polzer, 2012). Such conflict places employees at odds with policies and leaves administrators fighting an uphill battle to change the organizational culture. The conflict, in this case, is the traditional role of firefighting, seen as masculine, and the role of EMS, which is often seen as a more feminine duty (much like nursing). The perceived de-masculinization of a fire officer by embracing the EMS side of the organization's service provides an organizational cultural barrier to change of policy and testing procedures within the fire service.

Dominant organization culture derives from the operational parts of the service (Murphy and Greenhalgh, 2013). Shouldis (2015) argued that the fire department must have a process for predicting strategic steps and perfecting proficiency based on incident activities. The limitation of the Shouldis (2015) paper was that it did not discuss the fire service directly. Shouldis (2015) argued that the sole purpose of the position of command is to coordinate all activities. Command as a position, provided by fire officers, is deficient in that the focus in training and even in practice is always related to fire-related

activities such as rescue and fire suppression, completely neglecting the most significant portion of annual responses, which are EMS incidents.

Schneider et al. (2013) asked when a change is needed within an organization, is the necessary ingredient to change the culture or the climate? Changing culture alone will fail or falter if the organization lacks a collective vision, which includes strategic goals. Goals must consist of processes and measurements (Schneider et al., 2013). Goal setting is where the fire service failed. The fire service adopted fire-based EMS, under financial duress, but provided no instruction or measurement system, instead it allowed the EMS system to monitor quality assurance. The primary goal of absorbing EMS duties within the fire service was portrayed as being about revenue (FEMA, 2012; Halliday et al., 2012).

Similarly, processes and goals will be undercut if there is not a cultural adaptation and acceptance of the change. Often, this centers around why a shift in policy is needed and the benefits of changing policy over the benefits of remaining the same. The ability to accept change comfortably is especially tricky if the change contradicts an engrained or deeply held belief, such as a traditional role or expectation (Schneider et al., 2013). The fallacy is that an organization can simply insert a new, more appropriate culture, by overwriting the current issues, argued Meek (1998). Kotter and Heskett (in Schneider et al., 2013), and Meek (1988) stated that adaptability is related to effectiveness in an organization. Whereas Meek (1988) also indicated that change of beliefs shapes behavior,

in part and whole of the organization. People do not just mirror the culture, the fire service specifically reinforces it, handing it down from person to person.

Rationale

There are two apparent aspects to this study. First, the fire service is paternal, and firefighting is considered a masculine activity for which not every person is qualified to participate. Second, EMS is regarded as a feminine job function, much like nursing, and the only reason it became associated as a duty of the fire service was to satisfy stakeholders' desire to have EMS and to prevent layoffs (punctuated equilibrium theory).

Adaptation does not equal acceptance. Elapsed time providing a service (e.g., EMS) does not bolster the idea of a policy change is necessary forever. Despite the hierarchical nature of the fire service, acceptance of change was left to propagate from the ground up. With junior members leading the way as if they had never known a fire service that had not been this way. The inability of organizational culture to keep up with the changing times opened the door to a lack of structure and guidance from the fire department administration, which in turn left fire officers supervising incidents and people that were out of their comfort zone or in some cases they were not qualified to handle. This gap in knowledge, skill and ability leaves the organization polarized with an "old school" culture of firefighting as the primary duty, and a new way of thinking in which the EMS portion is essential to the continued existence of the fire service (organizational culture theory).

Literature Review

The evolution of the fire service is evident. In the beginning, firefighters were hired through a system of patronage (before the Pendleton Act of 1883) (Kettl, 2015). Once a family was part of the fire service, their male children followed suit. There were limited or no educational requirements, although many firefighters were skilled tradesmen or learned one along the way. In the 1940s and 1950s, there was growing concern about hiring qualified people. During the 1960's civil rights movement, public sector unions gained membership and strength nationally. As union power grew, so did the struggle between patronage practices and hiring and promoting based on qualifications rather than patronage or seniority (Sundell, 2014b; Bearfield, 2014). Kettl (2015) argued that there is little planning to understand what qualifications are needed, even to this day. The issue comes down to providing community members with a level of service they expect while balancing the costs of those services (Kettl, 2015). Meanwhile, this system is described as rigid and complex (Sundell, 2014a).

Public safety personnel support the importance of job-related tasks that are meaningful to an employee, Battaglio and French (2016), as well as Houston (2011), as cited in Battaglio and French, shows that public service is intrinsically motivated. The motivation to work in public service comes from the desire to help their fellow humankind. Civil servants, especially firefighters, EMTs, and others, act as the face of their organization, dealing with the public during their unique moment of crisis (Battaglio & French, 2016). The public, therefore, expects the fire service to help and wants the fire

service employees to be qualified to do so. The definition of qualified falls short based on the current needs of the fire service and the expectations of the public.

The fire officer is a first-line supervisor of formerly single-role firefighters, and now firefighters and paramedics. A fire officer's job involves "complex behavior, excellent interpersonal skills, the ability to make decisions under pressure and a host of other necessary skills, none of which is easily measured by completing a written multiple-choice test" (Roberts, 2010). Wankhade (2012) stated that fire officers must work within a collaborative team that respects communication and trust amongst the teammates.

The America Burning Committee white paper (USFA, 1972) was the first national attempt to quantify what the fire service did and how bad the issue of structure fires was in America at the time. Also, the committee looked at education, hiring practices, and other components of the fire service. One recommendation made by the America Burning Revisited Committee (1987) was that fire officers receive continuing education as a priority. Secondly, efficiency and effectiveness measures should be implemented as revised operational priorities change. While the fire service must remain loyal to its traditional role of fire suppression, it must also embrace the dynamic changes to its operational priorities. The number one identified priority of the fire service by the America Burning Revisited Committee (USFA, 1987) was human resource development, specifically upgrading officer selection and development or training.

Fire Service Evolution

Fire suppression personnel and skills will always be needed for rescue and fires but will change from being a single role to a more comprehensive skill set (USFA,1987; Neyfakh, 2013). The term profession as it relates to the fire service began in antiquity when the Theodosian Code granted special status to specific occupations (Reddick & Demir, 2016). In public administration, attitudes toward professionalism have split between desire and caution (Reddick & Demir 2016). The fire service handles emergencies based on stakeholder expectations, not the opinions of policymakers. The fire service is always under pressure to justify their policies, which can include everything from whether they respond to hazardous materials incidents, to what level of EMS service they provide, and which hospitals they transport a patient to, among others (USFA, 1987; Morse, 2016).

If the fire service falls behind in justifying its existence, it will be treated with indifference by the public (USFA, 1987; Nefaky,2013; Keisling, 2015; Aman, 2018). Many times, this creates a false perception that the fire service can handle any emergency (USFA, 1987; Neyfakh, 2013). The firefighter must be effectively managed by his supervisor and is not simply a body filling a position (Rothmeier, 2017; Aman, 2018). In 1987, the America Burning Revisited Commission found that firefighter training quality varied widely. The Commission found several causes, budget expenditures for training were limited, a lack of opportunity for training, and the admission that clear consensus-based (national) training materials were not available or did not exist at the time (USFA, 1987).

EMS, at this point, was traditionally handled by single-role paramedics, usually through public-private contracts that supplied personnel who then responded from the fire station. Two paramedics managed EMS incidents on an ambulance, and rarely if ever did a fire engine or firefighters respond, the clear exceptions being motor vehicle crashes, rescues, or extra personnel requests. There exists pressure to privatize EMS (and the fire department); therefore, the fire service needed to become creative and innovative in expanding services (Bruegman, 2014). The switch to having a fire engine and firefighters respond to assist an ambulance on nearly every call has made the fire department, not the ambulance, more visibly engaged, at least in the public's perception.

Emergency Medical Services

Beginnings

In the beginning, EMS was rudimentary at best. Initially, doctors would make house calls for illnesses and injuries, often meeting people at the site of where their grievous injuries occurred. As the era of house-calls began to wane, and healthcare became more centralized and available, patients were then brought to the doctors and the hospitals. Once EMS became established, there was a shift from a Federally driven and regulated service to a very fragmented industry (EMS at the Crossroads, 2007). One recommendation by the National Academy of Sciences (1966) was to find a way and means of supporting and providing EMS at the local level based on the needs of that community and with strict supervision of those resources (EMS at the Crossroads, 2007). At the time, however, there were no generally accepted standards of competence, and EMS systems lacked standardization (National, 1966; Edgerly, 2013).

EMS began as a separate mission of the fire service (National, 1966). The "white paper" of 1966 recommended the integration of fire and EMS services to help neighboring communities, which is especially helpful during disasters and mass casualty incidents (MCI) (National Academy of Sciences, 1966). To this day, there remains a divide between EMS and fire, even in departments that provide both services (EMS at the Crossroads, 2007).

Modern Day EMS and EMS of the Future

The terrorist attacks of 9/11, followed by the anthrax scare and Ebola outbreak in Africa, have shown many fallacies regarding America's ability to provide medical care during a major event (EMS at the Crossroads, 2007). The recent and continuing healthcare crisis of opioid-induced overdoses and deaths is just one example of the essential need for paramedics (Davis, Ruiz, Glynn, Picariello & Walley, 2014). Paramedics and firefighters are called multiple times a month to narcotic overdoses that require fast-acting, life-saving medications. Other cases such as mental health emergencies with issues of potential violence to responders have resulted in lawsuits over in-custody deaths for police departments or lawsuits for EMS providers using medications such as Ketamine to chemically restrain patients (Bradberry, 2021 & Friese, 2021).

Currently, the Covid-19 pandemic has strained and stressed the fire service with life and death decisions being left to paramedics and their supervisors in the field, based on the availability of equipment and hospital beds. Urgent requests by staff, asking for

some sort of policy, and guidance were requested repeatedly by fire departments and their firefighters and paramedics (Mohammadi, 2021). Additionally, paramedics felt they deserved more supervision, as related to Covid-19, specifically for quality checks, providing feedback, and the safety of providers (Mohammadi,2021 & Hobbs et al, 2021).

The first change associated with the pandemic was to reduce exposure to potentially infected patients. This was done by minimizing the number of responders going to a call (Hollerbach & Janhke, 2021). Even as these changes were made, Mohammadi (2021) and Hobbs et. Al (2021) argued that many of the protocols were hospital-based and did not translate meaningfully to providers on the street. Both Cerles Dinh, MacMillan, Kemp, and Rush (2021) and Do, Furlong, Rietschlin, Leyenaar, Nolan, Poirier et al. (2018) agree that basic skills decline after initial training and quality relies on accuracy and consistency in treatment and sufficient protocols. To this point, paramedics felt that policies should be based on EMS and not other healthcare settings (Hobbs et al, 2021).

Simultaneously, Covid-19 made the opioid crisis worse, as people were suddenly out of work and forced into social isolation, which included closure of in person treatment centers (Cerles et al., 2021). Equally important, mental health treatment declined during the initial stages of the pandemic, which then strained the emergency medical services even more. The pandemic adds more mental strain on providers who were not only concerned for their safety but working under conditions that rapidly changed. Hylander, Saveman, Bjornstig et al. (2020) argued that a supervisor's job is

stress reduction by becoming an emotional support outlet for EMS providers. Stress reduction was needed for EMS providers who saw opioid overdose become the leading cause of death for people under 50 years old (Metcalf, Saunders, Moore, Walsh, Meier, Auty et al., 2022).

A significant challenge facing EMS is the ability to ensure stable and sufficient revenue to allow continued care in the pre-hospital environment. The definition of an urgent medical condition is one in which a person without medical training might anticipate causing severe impairment to their health. It is subjective and is treated as an emergency until proven otherwise (Becker, Gauche-Hill, Aswegan, Baker, Bookman & Bradley et al., 2013). Many EMS agencies argued that the failure of the healthcare system has resulted in an abuse of the 911 system. This failure results in many people using the emergency room as a means of primary medical care and the ambulance becomes an extension of the hospital (Axtell, 2020). It increases the rate of non-emergent ambulance rides when other options should be utilized.

Funding for EMS is provided through the transport of patients. The future goal of EMS is integration with home health care. Community paramedics, as it is known, will check on the "at-risk" population of people that are chronically ill, frequent fliers, or have problems following instructions for medication administration. There is no current method of funding for an enhanced service such as this, yet it is desperately needed as a stop-gap measure for people with socioeconomic problems (NASEMSO, 2017).

Enhanced services will prove to be yet another area in EMS, which requires robust oversight and leadership.

Table 1

Adapted from EMS at the Crossroads, 2007

Legacy EMS	Modern EMS	Future of EMS
Financed by individual Transport	Promotes Community Health through prevention	Community Paramedicine and Integrated with Home Health Care
Reacts to illness and injury	Continues to be Financed by Individual Transport	Allows alternate transport locations (other than ER)
Independent of other Health Services	Continues to be Independent of other Health Services	Receives Funding as an Essential Service

EMS Testing and Simulations

Developing leaders to handle high consequence, multi-faceted incidents such as active shooters, mass casualties, disasters, and terrorism incidents requires a focus on communications and providing a substantive decision-making experience through practice (simulations) (Powley & Taylor, 2014). Powley and Taylor (2014) go on to state

that analysis of leadership is best conducted through multiple perspectives and different evolutions in which the candidate can show proficiency or continue to develop these abilities. There is an adaptive capacity that must be developed within supervisors as they must demonstrate flexibility to manage obstacles and remain successful (Edgerly, 2013). The assumption of competence must never be based solely on time requirements (seniority or time in grade), skills and assessments are where proficiency must be proven and maintained (Pointer, 2001).

Failures in decision-making cause accidents and increase risk (Hagerman, 2012). That is one reason the medical field has adopted simulation training so readily. Behavioral consistency is the explanation for simulation training and assessment centers (Jansen, Melchers, Lievens, Kleinman, Brandl, Fraeful & Koening, 2013). Consistency in simulation training is what reflects predicted behavior. Regardless of whether a simulation is medical or fire-related, the similarities are important. In each case, the purpose is to provide experience through practice using critical thinking and adaptive ability to manage a dynamic scenario. This allows the healthcare provider to use previous experience and training to prove proficiency without the risk of actual harm if an error is made (Powley & Taylor, 2014).

Paramedics. Loss of motivation occurs when supervisors are not involved in daily tasks or show a lack of understanding. Lack of motivation results in staff that is not concerned with outcomes or improvements; therefore, quality of care suffers (Nordby, 2015). This perception may even begin when a new paramedic is hired, as paramedics are placed in a

position of autonomy. The firefighter, having become licensed as a paramedic or meeting an arbitrary time frame (such as six months of service), is autonomous as the system no longer supports growth, and the paramedic may lack oversight from a more experienced provider (Pointer, 2001).

Conversely, the fire officer that is also a paramedic may overstep their role, always second-guessing or becoming too involved in patient care, losing sight of the "big picture." Micromanaging a crew is equally detrimental to esprit de corps. Positive changes in attitude and knowledge affect the safety of not only subordinates but also the public (Hagerman, 2012).

Paramedics must monitor and manage resources, such as supplies and staff and prioritize actions, which becomes infinitely harder, the more extensive the incident or if a higher number of victims are involved. The intuitive decision-making of paramedics is best characterized by a rapid, non-conscious process that produces multifaceted judgments (Coget & Keller, 2010). The paramedic must remember the patient is looking for human interaction, not a technical one (Coget & Keller, 2010). The Coget and Keller (2010) study focused on EMS but not fire-based EMS, looking specifically at emergency room physicians. Coget and Keller (2010) argued the physician acts in the leader (manager) role for the team while providing patient care. Patient care is based on many factors, not the least of which is the intuition and experience of the provider. There is a correlation between a paramedic, the fire officer who is a paramedic, and the ER

physician. Each must assume the leadership role, but that role runs concurrently, not consecutively with patient care.

Disasters/MCI and Active Shooters

EMS providers are quite capable and accustomed to responding to scenes of violence, such as gunshot wounds, stabbings, and assaults (Kemp, 2016). One difficulty in switching to a disaster mindset, including mass care involving triage versus ordinary individual care which providers are most comfortable with (Becker et al., 2013). Recognition that significant events and disasters require fire, EMS, police, and community response; control of the EMS response must be incorporated into the command structure (National, 1966). Problems with the care of victims of MCI and other large-scale events are that these events differ significantly from taking care of a single individual (National, 1966). There is an unexpected expansion of rescue, treatment, and communications at significant events that challenge the skills of all rescuers (Kemp, 2016). Multidisciplinary groups such as the fire department and the EMS sector are best equipped to handle this due to the integration of resources (National, 1966). The multidisciplinary nature of these calls is yet another challenge for fire officers, especially those that are paramedics. Paramedics and fire officers who train for this type of scene find their training becomes very segmented. For example, an officer attending a train derailment drill with multiple casualties finds himself focusing on the fire or fuel spill, allowing the EMS group to fall to the wayside. Meanwhile, the paramedic in charge (based on riding position in the ambulance for that shift) may falter, not asking for

enough resources or not having command authority over fire crews, who are traditionally used as extra hands and to assist with patient movement in these scenes.

Active shooter incidents have a different patient flow than a usual EMS event. In a normal situation, the number of victims is known or ascertained in a short amount of time. Active shooter incidents are dynamic, and communications are a challenge, adding to this are the interoperability issues of radio frequencies between police and EMS as well as unrealized safety concerns of the incident itself (Stiles et al., 2016 & Kemp, 2016).

Stiles, Neal, Neglia, Cumberledge, Kiger, and Rice's (2016) study is on command at an active shooter incident. Active shooter incidents have become increasingly frequent in the US. In modern-day EMS, this is the focus of most mass casualty drills and training. Communications and command are difficult at best in an active shooter incident. Each discipline (EMS, Fire, and Police) is working on its own set of priorities. The lack of a single commander or command group with a clear insight of the big picture on-scene works against those with responsibilities in their area.

Stiles et al., (2016) and Kemp (2016) stated that the traditional incident command system does not work well for these types of incidents. Nordby (2014) noted that the idea of top-down management, common to police and fire services, results in less back and forth communication, leaving the command structure open to errors based on incomplete or incorrect information. Therefore, good incident command, preferably unified command, is essential. The

Kemp (2016) suggested utilizing a unified command structure, which is a command post established by whichever discipline (Police, Fire, or EMS) is available to staff it initially. The unified command system is a model in which leaders from each specialty form a group-like command structure. This structure is quite different from day-to-day operations but increases clarity and communication between disciplines. The adoption of a unified command structure must be accepted and institutionalized before practice can even begin. In theory, unified command requires all specialties to have some level of formal training on assuming control, which is a primary area of weakness found at EMS events. Control of large-scale incidents is a weakness for paramedics because EMS is used to a secondary role within the command structure. EMS is present at every scene, but most scenes are fire or rescue-based with a possibility of potentially injured people versus an event being strictly EMS-related. An example would be a shooting, with no firefighting or hazardous conditions. Paramedics are only minimally trained in managing small sectors or groups of people at a significant incident, not the entire event itself.

Fire-Based EMS

Fire-Based EMS refers to the provision of EMS services by a fire department. Fire-Based EMS can take many forms, such as cross-trained firefighters that are also paramedics or equally prevalent in the Midwest US, contracted paramedic services in which paramedics respond from the fire station but are not employees of the fire department. Medical emergencies have outnumbered fires since 1996 (Addo &

Brecher,2015; Braedley, 2015). The merger of fire and EMS services was born of necessity, and not without its own set of challenges within the fire service.

Mergers of Fire and EMS services within the FDNY, and other departments did not change the organizational structure or staffing (Addo & Brecher,2015). Absorption of staff and duties without restructuring results in inefficient use of resources and redundancy. Mergers can also lead to poor management and incomplete or disorganized, parallel organizational structures. Despite acknowledging that 75% of the annual calls in 2014 were EMS-related, EMS often finds itself second to the traditional firefighting and rescue services provided by departments (Addo & Brecher,2015; Wieczorek, 2014). Allocation of resources such as staffing, equipment purchases, and training expenses to fire-related responses still occurs when money should be reallocated to EMS with the additional merger of personnel (Addo & Brecher,2015). Despite the size of the community protected by any given fire department, the calls range from fires to EMS, and each potential incident should be equally provided for (Shouldis, 2015). In any case, there must be a management plan, stabilization of the emergency scene, allocation of resources, accountability of tasks, and safe return of responders (Shouldis, 2015).

The National Fire Protection Association (NFPA) Standard 450 (2017a.) stated the lead agency should have clear lines of accountability and a clear management structure. Virtually all communities have some version of EMS. For any one city, the components of the system and the level of service should be tailored to that community, and while unique, there are recognized standards (NFPA, 2017a). Yet, levels of

competency may be different because the current NFPA standards can be adopted in part or entirely. Further, the standards may not be a true reflection of the duties of any given officer at any given fire department as culture, and organizational makeup affects this.

The McCallion (2015) study looked at Detroit Fire Department following the merger of fire and EMS departments. The focus was on partnerships between fire department administration and the union, and a collaboration with a public-private partnership to make a successful transition for Detroit. The limitation of the McCallion (2015) study is the lack of in-depth discussion on EMS supervision and the integration of Fire and EMS operationally. Conversely, Braedley's (2015) study focused on how male firefighters now find themselves responding to medical calls while waiting for paramedics to arrive. This study shows the great divide that still exists between Fire and EMS, as well as highlighting the need for an organizational culture change to make such calls more palatable to the fire service.

Supervision Issues

EMS deals with non-routine situations, ill-structured problems, uncertain dynamic environments, shifting and competing goals, time stress, high stakes, multiple players and agencies, plus organizational goals, and norms (Harencarova, 2016, Coget & Keller, 2010). EMS incidents demand three types of behaviors: skill-based, rules-based, and knowledge-based, all of which require supervision (Harencarova, 2016). Fire officers are often, but not always, trained as paramedics. At the emergency scene, officers do not get directly involved with patient care except under extreme circumstances (Nordby, 2015).

Supervision of paramedics, in the moment of an emergency, must be done with limited dialogue due to time constraints and the urgency of the patient's condition (Nordby, 2014). The limited dialog could lead to the feeling of disconnect between an officer and his firefighter-paramedics. In the hospital setting, all levels of staff are encouraged to interact and even question direction and authority if it is in the best interest of the patient. Questioning of those with a higher rank or more experience is discouraged except for an imminent life-threatening hazard or an illegal or immoral order. Brandstorp, Kirkengen, Sterud, Haugland, and Halvorsen (2015) further argued that patient advocacy must circumvent the formal structure. Circumvention of the conventional structure potentially places the two supervisory structures (fire and EMS) at odds with each other.

Much of a supervisor’s thinking process revolves around recognition primed decision making, in which the supervisor relates the current problem and its solution to a previous similar incident (Harencarova, 2016). The skills that separate a novice from an expert are the situational assessment skills that are rooted in experience, and which lead to the ability to recognize and interpret a situation more quickly (Harencarova, 2016). Through experience, supervisors often look for an option that is good enough rather than perfect (Harencarova, 2016). The ability to adapt to a given situation is essential as a medic as partners on an ambulance can change daily, resulting in combinations of people with various levels of experience and competence (Harencarova, 2016).

An organization’s performance is dependent on the performance of the paramedic’s knowledge, skills, and abilities, as well as commitment (Wankhade, 2012).

Therefore, to function efficiently and effectively, a paramedic must be vigilant, prepared, and can learn and deal with the unexpected (Wankhade, 2012). EMS plays a vital role in the national healthcare system. EMS providers face ethical challenges as well as stressful situations (Becker et al., 2013). For example, an EMS provider may have to pass by a baby, not breathing, to attend to someone who is exsanguinating in a bombing incident. In this example, the baby is considered dead or expectant (meaning expected to die despite intervention). In contrast, a person with a massive hemorrhage is considered immediately life-threatening, but treatable and must be treated first. Provider judgment plays a significant role in the resolution of incidents. (Becker et al., 2013). Policy and protocol should manage these conflicts (Becker et al., 2013). EMS must balance patient autonomy with the system's overall responsibility to the community (Becker et al., 2013). For example, if a hospice patient requests transport to a facility outside of the department's typical facility list. This transport would place the ambulance for the community out of service longer than usual. Managers of EMS must be involved, and robust protocols should be written to remove some of the burdens of making decisions that are emotionally charged (Becker et al., 2013).

The command sequence is a series of steps to deciding a plan of action in an emergency incident. The command sequence is not used only for a strictly fire or rescue type of event. The command sequence cycle is vital for EMS calls as well (size up, need for resources, etc.), and this boils down to assessing the situation, actions to resolve the issue, and planning for changes in tactics and strategy (Holliday, 2011). Holliday's

(2011) study spent little time on the command of EMS incidents with much of the research focusing on the default comfort zone of fire-related events.

The emphasis for supervisory positions both in fire and EMS is always placed on experience. However, there are boundaries and voids at each level, and having good situational awareness alone does not always guarantee good outcomes (Pfaff, Klein, Drury, Moon, Liu & Entezari, 2012). Situational awareness is best defined as an ability to understand surroundings, events, and how they apply to the current incident or issue, allowing the person to process the information and maintain a measure of safety. When a problem is well defined, or familiar people can choose a plan of action more quickly (Pfaff et al., 2012). The Pfaff et al. (2012) study was on decision-making in general and not specifically geared toward the fire or EMS sector.

Industry-standard and benchmarks are often used to create performance measures (USFA, 2017). Difficulties exist in data analysis measures. They are multifaceted, ranging from coding of calls (NFIRS) to the selection of variables. The limitations of this study were the unwillingness to share a complete data set with the municipality for the total implementation over concerns of budgetary effects (USFA, 2017). Injuries and illness constitute a significant health problem with substantial financial considerations (National, 1966). An example of the need for EMS supervision is a discussion had between EMS and police regarding an abandoned baby law that Illinois instituted. When a child is dropped off at a safe haven, a legal term used to describe a place that is staffed 24 hours a day, (fire department, hospital, or police station) the EMS providers treat the

child as a patient, checking for injuries, etc... In contrast, police view the child and the circumstances as a potential crime scene.

Officer Roles and Responsibilities

Fire officers must prepare reports, evaluate performance, critique procedures, inspect properties, assign tasks, and allocate resources. At the same time, they must be ready to act as firefighters and EMTs providing fire suppression and medical care as needed (National Center for O*Net Development, 2017). Fire officers must have a process to predict strategic steps to perfect the proficiency of incident activities (Shouldis, 2015). Yet, they need a workable template to guard against oversights on a call (Shouldis, 2015). The sole purpose of the command position is to coordinate all activities, even though the response and incident vary from firefighting, EMS, hazmat, and technical rescue, or motor vehicle crashes (Shouldis, 2015).

The Shouldis (2015) study focuses only on the supervisory aspects of firefighting. Wisko (2011) similarly acknowledges that there are fewer fires and more medical calls, yet the research focuses only on firefighting operations. Wisko (2011) speaks to increasing officer training with topics such as policy and procedural review, tactics, strategies, and safety but fails to discuss any EMS-related officer training potential or even show relevance to these types of calls.

Fire officers need the capacity to anticipate the impact of a call on an organization, which is to know how to respond, as well as the ability to adapt to novel situations (Lalonde & Roux-Dufort, 2012). The capacity to make decisions under

pressure, communicate effectively, and take needed risks are fundamental requirements of supervisors in the fire service (Lalonde & Roux-Dufort, 2012). Fire officers motivate, guide, and direct their crews and are also in control of the promotion of organizational resilience, ethical and responsible behavior as well as a reflection on current practices for purposes of improvement (Lalonde & Roux-Dufort, 2012; Rothmeier, 2017; National Center, 2017). The task of motivation is complicated when an officer focuses on a tiny percentage of calls, fire, and rescue, while not addressing the vast majority, EMS.

Understanding the decision-making of emergency responders can inform training and improve safety because consequences of ineffective decision-making in the emergency setting can have repercussions such as injury or death of responders and the public (Cohen-Hatton, Butler & Honey, 2015& White, 2021). Errors in judgment could be mitigated by understanding the underlying factors that go into making a decision and, with training, assure responders have cognitive, social, and personal resources to make proper choices. (Cohen-Hatton et al., 2015).

Classes for an incident command position are taught as all hazards but focus on structure fires, with rare references to MVC and disasters (Holliday, 2011). Almost no time is spent on EMS, even though it is vital to connect the two services, as many officers are cross-trained and function in a dual role service (Holliday, 2011). FEMA (2011) and Carman (2015) address this very issue in the framework of the “Whole Community Approach” which promoted the idea of integration of resources, and a shared understanding of needs and capabilities.

In most professions, experiences gradually shape the development of higher-order and more complex skills and thinking (Cohen Hatton et al., 2015). Existing evaluation of candidates for leadership roles relies on experience, along with written and oral exams (Kundra & Cherian, 2015). However, this method is deficient in that it assumes practice in a classroom or exposure to a topic provides proficiency in a subject (Kundra & Cherian, 2015 & White, 2021). An obstacle to proficiency is, of course, the frequency of exposure to a given incident type, such as fires and disasters, for example, or the tenure of an officer (Cohen-Hatton et al., 2015). Another more sinister limit, though, is apathy toward the primary job duty, such as EMS. One limit to the Kundra and Cherian (2015) study is that it was based on in-hospital patient care and training, not fire-based EMS.

Incident commanders, and fire officers, tend to be reflexive and procedural and show signs of deliberate action (Cohen Hatton et al., 2015); this is important because procedures have been shown to reduce the rates of injury and death (Kundra & Cherian, 2015; Rothemeier, 2017). The fire service operates and survives on standard operating guidelines, as they provide who shall carry out a task, the preferred order of completion of a job, and the steps to performing a task. Standard operating guidelines reduce the time for decision-making for an officer by streamlining some processes and everyday tasks.

Time to decision making is of high interest to the fire service, and three parts finely tune this: accelerated information processing, focusing on the most critical information at hand, and shifting processing strategy (Keren, Bayouth, Franke & Goodby, 2013). Time to decision-making is significantly longer in low-stress situations

(Keren et al., 2013). At the end of an incident, there is an opportunity to reflect, formally or informally, on how well an event was handled and what improvements could be made.

Wisko (2011) argued that there are fewer fires, more medical runs, senior officers retiring, and a new generation of firefighters, which has led to a leadership vacuum. Topics such as leadership style, public image, communication, policy and procedures, firefighter safety, and operations are the focus of officer training (Wisko, 2011). Yet, each of these objectives remains fire suppression-centric and rarely crosses into its equivalency for an EMS incident.

"What is the fire officer's job?," asks McCaslin (2015) and Aman (2012), he does not provide patient care, but he is responsible for scene management. A fire officer's job in a fire or rescue situation is well defined, but that is not the case on EMS calls (see Table2-2). McCaslin (2015) stated that an officer's role in EMS calls comes down to either scene management or patient care quality checks. Scene management is standard for all emergency incidents. Scene management encompasses tasks such as allocating resources and completing objectives, whereas patient care quality checks are more individualized. Patient care quality checks are not standard on calls, this would include things like patient treatments, transport decisions, and transport destinations are left up to the paramedic in charge who is in some cases operating at a higher level of EMS licensure than the officer (McCaslin, 2015; Morse,2016). An example of this would be a fire officer who is licensed as an EMT, supervising paramedics (a higher licensure level).

McCaslin (2015) failed to look at the larger picture of customer service, reports, QA, and other issues on EMS calls, such as resource management or handling jump company situations. A “jump company” is a term used to describe a group of firefighters who respond with a different vehicle based on the type of incident. The most common “jump company” configuration in western Cook County, Illinois, is the dual roles the two firefighters who ride on the back seats of a fire engine for a fire-related incident have. These same two firefighters staff an ambulance for an EMS incident, thus “jumping” from one vehicle to another. We provide officers with training on expectations at a fire or rescue incident but provide next to no guidance on preparation for EMS calls as a supervisor (McCaslin, 2015).

Officers should not be directly involved with patient care at the task level; they are, in fact, responsible for overall care (McCaslin, 2015; Nordby, 2015). The officer is responsible for directing actions related to apparatus placement, safety equipment, scene lighting, requesting additional resources, and rescue (as needed) for a call involving a motor vehicle crash. At the same time, the officer is responsible for the medical care given to a patient even though the officer may never have been a part of that care. The job description of the officer mandates the responsibility for his subordinates and all their actions or inactions.

Table 2

Job Responsibilities adapted from NFPA 1021 and NFPA 450

Fire Officer Responsibilities	EMS Supervisor Responsibilities
Scene Management	Request Resources
Divide Duties by geography or function	Divide Duties by geography or function
Prioritize tasks	Determine Priorities for tasks or treatment
Elevate the Alarm level, request Resources	Determine Transport Destination
Assume Command of the overall incident	Assume Command of the medical section only
Must be trained to the level of the incident, i.e., technician or operations level	Inform Incident commander of progress, challenges
Rank, not licensure determines who is in command	The provider with the highest level of licensure assumes command

Then the question is, what EMS responsibilities are the officers? NFPA Standard 1710 (2016) stated there is a need for quality assurance and EMS supervision. At the same time, NFPA 1710 (2016) fails to make any reference as to the qualifications of an EMS supervisor and fails to determine the functions of incident command as it relates to EMS. This same standard does not provide guidance as to EMS licensure level

requirements for an incident commander for certain types of complex incidents such as technical rescues or hazardous materials incidents. The lack of direction is a significant departure from other NFPA standards, which elicit exact levels of training for designated section leaders, such as the phrase “the supervisor shall possess skills and knowledge commensurate with the operational level identified.” (NFPA 1670, 2017b, p 17.) Meaning the person in charge of safety during the entire incident must have a minimum qualification such as operations level or technician level certification. Anyone seeking to assume a formal incident command position is required to possess the skills as determined by the scale of difficulty (operational level) presented by the incident.

Not all EMS responsibilities are related to working at the scene of an incident. Documentation is a skill that all EMS providers and all officers are required to possess. Each day and for every call, the fire officer authors a report that documents the type of incidents they responded to, addresses, number of vehicles responding, actions taken on the scene, and others. For every fire, an officer’s documentation is even more demanding, asking about what burned, what was the first material ignited, and the human factors that may have caused the incident. Then the officer is expected to give an opinion as to the cause of the fire. EMS reports are similar in structure. A fire officer should be at minimum able to look over an EMS report for accuracy, grammar, and spelling. The more technical aspects such as appropriateness of care and adherence to standard operating procedures must be looked at by someone with equal or higher certification as the EMS provider.

Ramthun and Matkin (2014) conducted a study on military teams. They found these teams rely on each other to exhibit leadership when appropriate based on their knowledge, skills, abilities, and overall experience within the given situation. Many organizations employ the team concept to manage threats and challenges of dangerous situations (Ramthun & Matkin, 2014). Having good situational awareness does not always guarantee good outcomes (Pfaff et al., 2012). Checklists and pre-deployment training are an attempt to reduce danger (Ramthun & Matkin, 2014). Leaders can become distracted, fixated, or unable to perform (Ramthun & Matkin, 2014).

Society is complex, and the problems evolve, requiring innovative solutions (Van der Haar et al., 2017). People that must deal with these complex societal issues are firefighters and EMS workers, among others (Van der Haar et al., 2017). To do so requires cooperation and interdependence amongst responders to protect, mitigate, and learn from large-scale crises (Van der Haar, 2017). Large-scale crises often start as small-scale issues. Firefighters are intimately caught up in the complexities of the healthcare system, mental health failures, and social services overload. Each day firefighters and EMS workers navigate insurance billing, healthcare system failures, and neglect of socio-economically challenged citizens.

A formal leader must emerge and determine the structure of the team and coordinate actions (Van der Haar et al. 2017). This leadership position is subject to information overload and uncertainty, all while facing time pressures (Van der Haar et al., 2017). Even so, leadership focuses on tasks and is a directive form of leadership,

setting goals, organizing the workplace, and choosing acceptable outcomes (Van der Haar et al., 2017). The adjustment of the structure should come based on the situation and team evolution. Emergencies draw responses from many agencies; the more significant the incident, the more uncertainty there is (Van der Haar et al., 2017). Leaders should use constructive conflict resolution, which results in clarification, streamlining command, and decision making (Van der Haar et al., 2017). Team leaders should adapt their behavior to different phases of the emergency (Van der Haar et al., 2017).

Fire Service Testing

The assessment of candidates is nothing new. These evaluations are the equivalent of grading based on the positive and negative attributes or abilities of a candidate. In the fire service, the first assessment of a candidate is during the hiring process. The next evaluation occurs at the end of the firefighter's probationary period as they transition into what amounts to a journeyman status within the organization. The third evaluation occurs during the process of promotion (Sartori & Ceshi, 2012).

Moral considerations, as well as the law, require hiring requirements to be related to job performance (USFA, 1972). The America Burning Commission recommends hiring and promoting firefighters based on their level of skill. The Commission, however, does not define these skills or expand beyond fire-related capabilities. A notable exception is that when EMS is mentioned, it is at the first aid level, which was the commonly accepted competence level at the time of publication.

Assessment Center Testing

Assessment centers are one potential method of evaluation for organizations. An important feature of assessment centers is the multiple methods used to glean information about the candidate under evaluation (Sartori & Ceshi, 2012). Some of these methods include simulations, oral interviews, and administrative tasks (ITACG, 2014 & Sartori & Ceshi 2012). Sartori and Ceshi (2012) argued that assessment is only one component of evaluation, and that the development of the candidate is even more critical, as you cannot assess someone if they have not been developed (trained).

Tactical exercises are the most challenging in assessment centers (Prziborowski, 2011). The Prziborowski (2011) article focuses on the generalities of fires and does not discuss EMS-related exercises. Simulations are particularly relevant and useful, especially when they evoke surprise or uncertainty, and time pressure, excessive workload, and obstacles to these challenges cause growth and understanding (Lalonde & Roux-Dufort, 2013). Instructors, though, need to provide feedback. Simulations often require proficiency and knowledge of procedures and routines, which are well-defined, lacking surprises, obstacles, etc. (Lalonde & Roux-Dufort, 2013).

Mercer's (2016) article, in contrast to Prziborowski's (2011), is a study of medical-related simulation. The Mercer (2016) article, however, focuses on trauma teams, not individuals or paramedics specifically. In either medical or fire-related simulations, a candidate must be able to walk through a required action by providing the steps (verbally) needed to complete the task. A candidate who fails to prove or demonstrate their abilities fails based on one or several factors. These factors include a

lack of organization or planning in assigning tasks, time management issues, and commonly poor communication. The most recognizable failure is the inability to anticipate problems and plan for them (Przibórowski, 2011).

Mercer (2016) and Przibórowski (2011) argued traditional simulation setting allows the chance to facilitate standardized training and assessment with an opportunity to demonstrate knowledge and skills in a controlled environment. Benefits of the use of simulation in the medical field are the ability to have short scenarios, lasting 15 to 20 minutes, and providing immediate debriefing, which in turn provides correction and learning. Mercer (2016) further stated it could be considered unethical not to give a debriefing as this is where the real learning happens. Feedback is frequent in medical simulations but is often lacking in assessment center testing for firefighters as there are additional costs (International Association of Fire Chiefs, 2013).

Subjective evaluation can include oral interviews, tactical assessments, and other components. Any such evaluation, which can consist of assessment centers and evaluation systems, must be job-related (50 ILCS 742/50 & ITACG, 2014). Roberts (2010) argued that municipal fire departments have difficulty in developing entry-level and promotional selection instruments while trying to prove testing tools are job-related tasks and duties of firefighters.

The assessment center process measures the decision-making ability of each candidate individually. The decision maker's perceptual and cognitive skills lead to what is called option awareness (Pfaff et al., 2012). The relative desirability of available

options, as well as tradeoffs, underlying factors, and tipping points, push a person in one direction versus another (Pfaff et al., 2012). The selection of strategic and tactical plans is usually based on the candidate's experiences and knowledge base.

In Roberts (2010), I/O Solutions, an agency contracted to conduct promotional and entry-level testing, a representative stated the city never asked if an alternative method of testing might better measure the qualities of a successful fire officer. A fire officer's job involves complex behaviors, excellent interpersonal skills, the ability to make decisions under tremendous pressure, and a host of other abilities-none of which are easily measured by a written multiple-choice test (Roberts, 2010). To ignore results would require evidence that the exam does not determine the capacity of a candidate to do the job. Further, Justice Ginsburg argued that relying heavily on written tests to select firefighters is a questionable practice (Roberts, 2010).

Written tests cannot evaluate leadership skills, command presence, and other vital characteristics (Roberts, 2010). Biddle and Biddle (2013) suggested old testing practices, the use of fixed weights or percentages for written fire fighter promotional exams was antiquated and arbitrary. Based on case law, best practices show that written exam scores should be based on actual job analysis data or using current subject matter experts to establish not only the test, but the weight attached to it. In the fire service, there is no use for multiple alternatives to a problem (Coget and Keller, 2010). Firefighters tend to focus on a single feasible course of action based on matching it to a previous prototypical situation (Coget and Keller, 2010). Coget and Keller (2010) found three practices;

apprenticeship, regular peer review, and reflection on actions (as an individual not in a group) could yield potentially enhanced decision-making effectiveness.

Summary

The fire service has evolved since its meager beginnings. Fire departments and firefighters must be able to perform and respond to all hazards. The list of required technical knowledge and specialties increases each year. At the cost of efficiency, duties are often added to a fire department without funding and without reflection on how the new responsibility will affect the organizational structure. All hazard responses from the fire department are what the public expects.

Firefighters are promoted through the promotional process, which is unique to each jurisdiction but holds similarities nationally. Assessment centers and written testing are the most common types of promotional processes. The fire officer, having come up through the ranks of the department, has considerable jurisdictional knowledge based on experience and education. However, the fire officer may find themselves in the position of supervision of people with a higher level of licensure (medical) or certification (technical rescue and hazardous materials). Fire departments in the US have failed to determine how to train or test firefighters for the supervision of EMS incidents, which has been the largest growing sector of response for decades. The lack of guidance provided in training has left a gap in oversight for current officers and aspiring firefighters in the testing process. Outside of actual patient care, EMS supervision has no clear consensus on what type of performance measures are needed.

Chapter 3: Research Method

Research Methodology

The purpose of this qualitative case study is to improve the understanding of which EMS performance measures should be included as a component of firefighter promotional testing for career fire departments operating in a fire-based EMS system in the Western portion of Cook County, Illinois. Secondly, this study sought to explore why such EMS performance measures have not been adopted as part of testing thus far.

The case study approach of this study incorporates both a secondary data collection portion as well as in-person or telephonic interviews with leaders of each participating organization. I acted as an observer/investigator in the context of interviews. I am familiar with the organizations to be studied, which allowed a level of trust and openness about organizational culture that may not otherwise be afforded to the public. Lastly, this chapter includes a discussion on the study's design, how data was collected, secondary sources that were used, and how the data analysis occurred.

Research Design and Rationale

The promotion process in the Illinois fire service is guided by the Illinois Compiled Statutes for career departments. Negotiation between the local union of that department and its administration further defines the process. In general, refinement consists of determining which of the commonly available methods of assessment are chosen, such as a written exam, assessment center testing components, seniority point allotment, and ascertained merit, and to what percent and degree (or weight) they will be given.

All the previously discussed elements of the testing process assess a candidate through a single lens of the tasks and duties expected to be performed by a fire officer at a fire-related incident. That lens reflects the belief that only firefighting and rescue are of importance. This lens may be no longer an accurate method with which to determine the best candidate. Fires, of all types, have been on the decline for several decades. The apex of fire activity was during the 1970s. Currently, and for the past few decades, emergency medical services have been the largest segment of requests for assistance from the fire service. This study seeks to inform the fire service that EMS has been ignored or mistakenly discounted as a vital component for firefighter promotion.

The following two research questions were used to guide the study:

RQ-1: Which EMS operational and supervisory performance measures should be integrated into firefighter promotional testing for fire departments that provide fire-based EMS in the Western portion of Cook County, Illinois?

RQ-2: Why have EMS performance measures not been adopted in firefighter promotional testing in the Western portion of Cook County, Illinois?

To further define what is meant by a qualitative case study, I utilized the definition supplied by Seawright and Gerring (2008). A case study is defined as an "intensive analysis of a small number of cases, where the goal is to understand a larger class of similar cases" (Seawright and Gerring, 2008, p.296). There are many advantages to qualitative research and, more specifically, case studies. Baskarada (2014) and Seawright and Gerring (2008) stated that the case study approach gives the researcher a comprehensive look at the phenomenon or situation.

Role of the Researcher

I acted as the primary researcher and took on the role of observer/ investigator. The geographic area of study is where I hold a full-time job as a fire officer. I do not have any personal relationships with any of the potential participants I interviewed. Professionally speaking, I have limited, if any, interaction with the other departments and individuals that participated.

The results of the study will be provided to all participating members of the group of western Cook County, Illinois fire departments included in this study. There were no incentives for participation other than access to the final analysis of the data provided. There are no power differentials to be managed between participants and me as there is no formal or informal chain of command or disciplinary link between us.

Methodology

Participant Selection Logic

The population for this study comes from one MABAS division in western Cook County, Illinois. The total population is ten departments and twenty participants, consisting of one representative from the administrative side of the fire department and one from the union (labor) side of 10 fire departments in the MABAS division. The reason a MABAS division was selected is that it provides a semi-homogenous group of fire departments with known comparable attributes.

A MABAS division is a natural form of grouping within the fire service. Similar characteristics for this group would include structure as either a municipal fire department or a fire protection district, both of which are defined within the Illinois

Compiled Statutes. Utilizing a MABAS division as a method of determining population, also ensures that procedures from department to department are relatively constant as that is an underlying tenant of forming a division. Finally, a MABAS Division also provides a geographic area with which to focus, as nationally fire departments vary significantly. This factor, geography, seems simplistic but speaks to the homogeneity of call types from department to department. The population of fire departments meeting inclusion criteria is ten.

The final sample size was ten participants representing six departments that met the limitations and provided uniformity as previously described. Of those six departments, two people from each were interviewed whenever possible, one representing the administration, and the other representing labor. Rank had no bearing on inclusion or exclusion. Except for the chief officer, which was a Fire Chief position in each case, and represented the administrative participant. The labor representative participant has negotiated at least one collective bargaining agreement but was not limited by the length of service or rank within the fire department. Rank was not an essential qualifier or disqualifier, and length of service as a component of serving on an executive board of a union was not relevant to this study. This cross-section provided both viewpoints and thus a meaningful interpretation of the phenomenon of organizational culture and its effects on policy decisions.

The sampling strategy was purposeful and centered around the saturation of data retrieved from two basic models of staffing at fire departments. Mason (2010) stated that a single point of data is all that is required to explain a phenomenon. Further, Mason

(2010) and Baskarda (2014) argued that the frequency of the response does not increase awareness or understanding. Therefore, when selecting or determining a sample size it must be large enough to gather all viewpoints but not overly burdensome in terms of volume and quantity. Thus, the focus of the strategy was to understand the nature of promotions and testing elements within that department, as well as how organizational culture plays a role in choosing the various aspects of the test at that department.

In the first staffing model, the fire department outsources their EMS, meaning they contract staff (paramedics). This introduces a parallel chain of command. The first chain of command is through the company the paramedic works for, the second is the fire department to which they are assigned. In the second staffing model, the fire department has its employees who provide EMS services. These employees are cross-trained, firefighter paramedics. In this model, there is a single chain of command that employees follow. The difference between the two types is significant in that the fire officer supervising contracted paramedics works within their departmental disciplinary structure and chain of command but then also must work within the contracted paramedic's chain of command. Whereas the fire officer who supervises firefighters who are cross-trained as paramedics need only operate within a single chain of command structure making discipline and other employee-related matters more simplified. Other factors affecting sampling are career fire departments versus those that hire part-time staff, union versus non-union departments, and departments that provide ALS versus BLS level of medical care.

The ten participants representing six departments interviewed within the chosen MABAS Division represent career departments that provide ALS medical services. This was the purposeful sample group, which ensures an “apples to apples” comparison from department to department and limited other variables not addressed in this study. Finally, a significant factor in choosing the sample was the applicability of the Illinois Firefighter’s Promotion Act, which defines the procedures regarding promotion in the fire service within Illinois.

Departments are known to meet the criterion based on web searches of the department, self-identified characteristics such as “we provide ALS (paramedic) services.” Searches of union websites that list union departments within Illinois (AFFI, 2018). Finally, web searches of agency’s websites that provide contracted paramedic services as they contain which communities, they offer services to as a matter of marketing.

Participants were recruited via email. After initial contact and explanation of the study, I contacted each fire department’s chief officer and the president of that department’s union (or other union executive board members) to request their assistance and participation in the study. Through this conversation, I requested documents that were used for secondary data. These documents include the current collective bargaining agreement, Standard Operating Guidelines, Rules and Regulations, and documents related to contracted paramedic services if applicable. Any department not providing them through this manner received the freedom of information act (FOIA) request for those documents, which is a routine procedure for a document request. The final number

of participants was 10, which represented six departments and both labor and administration viewpoints. The ten participants proved robust answers and data saturation was achieved.

Instrumentation

One data collection instrument was a secondary data source commonly known as NFIRS data, which is collected by the United States Fire Administration annually. NFIRS data can be downloaded by researchers, free of charge, from the USFA website (USFA,2016 & 2017). This data provides information on 24,000 fire departments nationally. Supplemental documents titled The National Fire Incident Reporting System Version 5.0 Data Analysis Guidelines and Issues manual (2011 edition), as well as the Fire Data Analysis Handbook (second edition), and National Fire Incident Reporting System Complete Reference Guide (2015) were utilized the extrapolate pertinent data and provide context for the data.

Secondary data was also provided by obtaining documents related to each fire department identified in the sample group. The first document was the current, union collective bargaining agreements for that department. This document is unique to each fire department and outlines its procedure and weighing factors for components of the promotional process of that fire department. The next document was the Board of Fire and Police Commission (for municipal departments) or Board of Fire Commissioners (for fire protection districts) rules and regulations, which define the internal process of hiring, firing, and promotions. Lastly, the fire department's standard operating procedures and rules and regulations, in combination, describe the chain of command and outline

procedures that are followed at an emergency scene. Both documents were necessary to provide context to a fire officer's scope of responsibility and authority. Each of the previous materials was secured by asking the fire department fire chief and union president or through the FOIA process.

Lastly, semi-structured interviews were used to collect data related to organizational culture and change management within the participating organizations. Buraway (in Vila-Henninger, 2019) stated that semi-structured interviews expose hidden motivations and information about the participant's world. Yet, McMahon and Winch (2018) reported that data collection is based on the skill of the interviewer. McMahon and Winch further stated that a researcher ideally does it with socio-cultural understanding. The interview protocol was created based on my 27 years of experience in the fire service. Including experience on the negotiation committee for the collective bargaining unit, service on a union state EMS committee, and expertise in three fire departments that transitioned to in-house paramedic services with cross-trained firefighter-paramedics. I have created an interview protocol and interview question matrix based on the study's two research questions. Interview questions that were asked are:

Table 3

Interview Question Alignment

	Background Information	Awareness of Promotional Process	Understanding of EMS	Analyzing Cultural Organizational Influence on Policy
INTERVIEW QUESTIONS				
What type of EMS service does your department provide?	RQ 1			
Is your department Union or Non-Union? If Union, what Union represents your department?	RQ 1			
What is the structure of your department? FT/PT, Combination	RQ 1			
What is the rank of the lowest fire officer in your department? (I.e. Lieutenant or Captain)	RQ 1	RQ 1		
Is the lowest rank fire officer a promoted or appointed position?	RQ 1	RQ 1		
Does your department use contracted personnel to provide EMS?	RQ 1			
How many calls annually (for the past three years) are coded as EMS in your department? This would include 311,321,322,323,320, 371, 554, 661 and medical alarm activations? (NFIRS coding doc guidance)	RQ 1			
Under what circumstances, if any, does your fire engine and /or lieutenant respond to an EMS call?	RQ 1			
What is the minimum EMS level of licensure allowed for your fire officers?	RQ 1	RQ 1		
At any time, do your EMS providers have a higher level of EMS certification than your first-level fire officer?			RQ 1	
Is your EMS Coordinator position filled by an officer or EMS personnel?			RQ1,2	

Who does your EMS personnel report (who supervises them) to on the scene of an EMS call?		RQ 1	
What is your process if the fire officer disagrees with patient care given by the EMS provider?		RQ1,2	
Who is responsible for reviewing EMS reports?		RQ1,2	
Was that person chosen due to rank or other qualifications?		RQ1,2	
What are the three most common types of complaints related to the service that you receive at the department?			RQ1,2
If you have contracted paramedics, who will discipline them?			RQ1,2
If you have contracted paramedics and full-time members that are cross trained as paramedics who outranks who? Why?			RQ1,2
Why are your firefighters not paramedics?			RQ1,2
Do you give ascertained merit points or other points for promotion based on the applicant possessing a current paramedic license?	RQ1,2		RQ1,2
Why do you give those points?	RQ1,2		RQ1,2
Have you changed your hiring practices to require paramedic licensure?			RQ1,2
What are the components of your promotional exam?	RQ1,2		
How are those components chosen?	RQ1,2		RQ1,2
When was the last time any of those components were changed?			RQ1,2
Why were they changed?	RQ1,2		RQ1,2
If you have a tactical exercise, in general terms, what type of incident does it usually involve?	RQ1,2		
Have you ever had a tactical exercise that is primarily related to EMS instead of a rescue or fire incident?	RQ1,2		RQ1,2
What type of incident was that (if yes)?	RQ1,2		RQ1,2

If you could make up one promotional exam assessment related to EMS, what would that be?	RQ1,2	RQ1,2
What do you feel are operational competencies related to EMS that you expect a fire officer to have?	RQ1,2	RQ1,2
What supervisory skills related to EMS do you expect your fire officer to possess?	RQ1,2	RQ1,2
If you changed your tactical exercise to an EMS-based exercise, would that reflect more closely what the public expects of your department?	RQ1,2	RQ1,2
What is the most important service provided by your fire department?		RQ1,2
What do you think will be the most important service provided by fire departments in the next ten years?		RQ1,2
Do your officers receive any EMS supervision training? If so, what is it? IF not, why not?	RQ2	RQ2

Procedures for Recruitment, Participation, and Data Collection

The following data was collected: documents for triangulation purposes, semi-structured interview data, and consent forms.

Data were collected from semi-structured interviews with the fire chief and a member of the union executive board of each fire department in the sample. These interviews were conducted separately as everyone by virtue of their position (administration or labor) viewed the question, and therefore the answer, through a different lens. Secondary data was collected from documents previously named, such as collective bargaining agreements, rules and regulations, and standard operating

procedures of each department. Documents were acquired through the FOIA request process or informally through email. Lastly, data was collected from the USFA website, which provides annual NFIRS data on each fire department. I collected and compiled the data. Data was collected as soon as practical. FOIA requests were sent out for each department at the beginning of the study, following IRB/URR approval of the study. The collection of data relied on turnaround time for processing the FOIA request but was also dictated by the FOIA process, which sets time limitations for a response to requests. Interview data was collected as it occurred. The duration of data collection was determined based on the saturation of data points during analysis. Interviews were audio-recorded and then compiled using Microsoft Excel spreadsheets and Microsoft Word, in addition to tables provided by the USFA data download, which were converted to a usable analysis format in Excel.

There was a concern that if recruitment was low, in terms of semi-structured interviews, then the sample group would have been expanded to include initially non-union but career departments, followed by fire departments that provide BLS medical services, and lastly, departments staffed by part-time employees that provide ALS medical services. However, the sample size was sufficient to reach data saturation without expanding the sample group.

Participants were given consent forms that also explain voluntary withdrawal, without penalty, from the study. This applied only to the semi-structured interviews as data collected through FOIA requests are public access documents, protected by Federal law. Participants were asked to provide in-person or telephonic follow-up interviews if

further detail or clarification was needed based on the initial document search, initial interviews, or if conflicting data was presented. However, secondary interviews were not necessary.

Lastly, Kaiser (2014) recommended utilizing an end-of-interview confidentiality form to determine if there is any specific answer or data that the participant wants to keep strictly confidential. The form could be used for such things as a specific reference or quote, which could lead to identification issues for participants as individuals or the department. There is, of course, an assumption that participants want confidentiality, but at some level, a participant may want their responses recorded and reported exactly as stated. Reasons for this may include the desire to move an issue forward (Kaiser, 2014). Therefore, an end of the interview form allows the participant to select their level of comfortability related to data interpretation and use. While some researchers may be uncomfortable with letting participants exert this type of autonomy over the data, others feel that this gives validity to the data (Kaiser, 2014). Through discussions with my committee and IRB, the form was deemed unnecessary for this study. It was agreed that all participants would receive an executive summary at the conclusion of the study.

Data Analysis Plan

In qualitative studies, analysis of the data is usually carried out at the same time the researcher collects it (Walliman, 2006). As information is collected it receives a preliminary review and sorting by attributes of the data. I began my preliminary sorting as I received secondary data documents from participating departments. I sorted them by type of document, such as collective bargaining agreements, or NFIRS reports. Sorting

and preliminary review began to show me some themes in the data. In general, preliminary data was shown to support, not refute my initial theory that fire departments did not include EMS in promotional testing.

Identifiers for individuals and departments were masked. A unique code is given to each fire department randomly. The key to the code is on a password-protected Excel spreadsheet which is stored on an external hard drive. Microsoft Excel was used to analyze and organize data. This included multiple spreadsheets containing call volumes, items taken from policies, and other secondary documents.

Semi-structured interviews provide rich data sets and context far beyond that of numbers gathered from secondary data sets. Interviews provided the context needed to explain internal decisions. Microsoft Excel was used for analysis. The research question algorithm table shows the alignment of research questions with semi-structured interview questions. This shows what the interview question sought to answer globally such as background information, confirmation of data or organizational culture issues, etc. The table also shows the basis of the question in terms of which research question it sought to answer.

Following each interview. The audio recording was transcribed, and identifiers were coded for anonymity. Data analysis occurs best when the data is reduced argued Walliman (2006). So as analysis began, I began ordering the data by type and characteristics, such as was this a union leader or administration, did the department have ascertained merit and what were the categories. Ordering the data allowed me to reduce

the data by removing information which was not relevant to this study. I was careful to review and reduce data without altering or changing the data (Waliman, 2006).

There was no video recording. An audio recording was done on a digital recording device, which is secured, and will be stored for 5 years as required. None of the recordings has any name or identifiers on them. All documents received from participating departments were altered to remove identifying characteristics. Documents were then coded by number, FD7 or FD13 etc.

My single discrepant case was one department that was influx, negotiating their first contract. I had preliminary contract language at the start of the data collection process and received final approved contract language after all interviews were completed. I then reviewed the preliminary and final language to compare them and see if the data changed. There were no changes to the final data analysis.

Issues of Trustworthiness

Credibility

Congruency of data shows the alignment of the semi-structured interview questions and the purpose of the study (Montoya, 2016). Care was taken to remove any questions which were not pertinent, can be obtained through other methods, or did not provide value, as the perception of wasting a participant's time can have negative impacts on the level of trust between myself and the participant (Castillo, Montoya, 2016). Data saturation was achieved when no unique information was gleaned from continuation, and when data is sufficiently represented to the point where this study could be duplicated

(Fusch and Ness, 2015). Anything short of saturation would have resulted in an issue of validity, and the study would have to be expanded or reduced in scope.

Transferability

Transferability implies the ability to provide data that is useful in other contexts or settings to people or organizations with similar interests or concerns (Connelly, 2016). Data provided by this research is relevant to other fire departments, firefighter unions, assessment center staff, and a host of other people interested in the modernization of firefighter promotional testing. There is enough variability in participants that future researchers will find some measure of comparability to their unique inquiry or setting. Examples of this include the variation of the department make-up, such as union or non-union, municipal departments versus special taxing bodies, career versus part-time personnel and contracted personnel, and testing components which are unique to each department but have commonalities throughout the U.S. In addition, the detailed descriptions of the organizational culture of each participant organization provide context to the decision-making process.

Dependability

Triangulation occurred using secondary data collected by FOIA requests and open-source data provided by the United States Fire Administration (NFIRS data). This secondary data provided background, such as current policies and their evolution by looking at past revisions. Secondly, NFIRS data provided information that shows the tangible need and future opportunity for change. Secondary data supported or refuted claims made through the interview process and provided context to what the numbers

alone cannot show. Using multiple sources to draw conclusions, preferably using multiple methods of the collection was ideal and assisted with the depth and richness of data (Cope, 2014). I collected all process logs, and notes of all activities, including the decision-making process regarding the inclusion or exclusion of data, and will retain it securely for five years. After five years the data will be destroyed.

Confirmability

Connelly (2016) stated that confirmability is the degree to which findings are consistent and can be repeated in different studies or similar settings. Confirmability is larger than just repetition, though, and for it to be reproducible, there must be an exact recipe of how the study was "made" from the beginning. Therefore, Connelly (2016) goes on to state the audit trail is the crux of the study. The audit trail requires vigorous notes of procedures and analysis not only of data collection but also the methodology and the decision-making process regarding interpretation. One such method recommended is peer review, which is beyond simple discussion but also speaks to how data is viewed, through what lens, and interpretations based on that lens. Therefore, this study utilized a small peer group to discuss methodology, such as a pilot study and included people from outside the studied group.

Ethical Procedures

Following the good research practices and requirements of Walden University Institutional Review Board, an electronic consent agreement was used for this study. An informed consent and confidentiality agreement will be provided electronically (see IRB documents). Copies of participant consent are stored electronically.

Ethical concerns related to recruitment materials and processes

Berger (2015) strongly cautioned against undue familiarization in which I may influence responses by sharing in the participant's responses. Reducing influence on participant responses is further supported by Tosley, Lawley, and Meese (2014), who advocated for clean language during the interview of the participants so as not to affect data.

In some cases, Kaiser (2014) recommends a post-interview confidentiality form, allowing participants to limit the use of identifiable data based on the interview. These issues could include doing a study within one's work environment, conflict of interest or power differentials, and justification for using incentives. In response to conversations between Walden University URR and my committee, it was decided that a post-interview confidentiality form was not needed as data was sufficiently masked to prevent the identification of participants. Lastly, there were no penalties or adverse relationship issues related to anyone receiving an invitation and refusing to participate or withdrawing from the study. All participants were given verbal and written information on withdrawing or refusing participation as part of the informed consent documents. There were no expected or predictable adverse effects for those participating in this study.

Treatment of data and archiving process

Data is considered confidential as anonymity would have removed my ability to correlate interview context with secondary data. Correlation was a necessary step in providing an analysis of organizational culture, which is the basis of this research. Guarding against deductive disclosures required intense scrutiny of identifiable data

(Kaiser, 2014). Protecting against disclosure was especially true as participants may recognize each other through their responses (Kaiser, 2014).

Data is stored in password-protected cloud storage and a removable hard drive format. Hardcopy data and other confidential interview materials are kept in a secure home office for review upon request. No person other than my committee members has access to the data. Following the required timeline of 5 years of storage, the data will be destroyed.

Summary

The modern fire service has not adapted to its current service model when it comes to the promotion of firefighters. The fire service shows preference and higher status to firefighting and its associated responsibilities. This preference is contrary to the actual number of fires any one fire department responds to annually. This preference also disregards what is the greatest request for service, EMS. Subsequently, there is a lack of understanding of the supervisory responsibilities and opportunities needed in a fire officer.

A qualitative case study design utilizing source documents and semi-structured interviews will provide a rich data set for this study. While it is acknowledged that each organization formulates its own set of policies and requirements for promotion, they also share information and often are similar. While this study may not apply equally to every fire department in the U.S. it will produce results and themes that are generalizable.

While I have extensive experience in the fire service it will be important not to unwittingly seek confirmation bias while conducting this study. My experience is also an

asset for this study as the fire service is not apt to be as open with people outside the profession. Berger (2015) strongly cautioned against undue familiarization in which I may influence responses by sharing in the participant's responses. This is further supported by Tosley, Lawley, and Meese (2014), who advocated for clean language during the interview of the participants so as not to affect data. Therefore, I was wary of that in my interviews.

Data collection was done virtually, “in-person” and data is stored in a safe and secure platform that protects the confidentiality of the participants. Hand transcription also protects confidentiality because participants were masked and referred to by their code in all documents. Open coding and attribute coding are both appropriate methods for qualitative research and will allow flexibility to discover themes. Finally, data will be analyzed using Microsoft Excel as some source documents will be easily converted to this format for analysis.

Chapter four will provide insight as to actual data collected, including opportunities and challenges associated with recruitment, collection, and coding significant to this study. Chapter four will also show the data from secondary sources and how that compares to the perception of participants and the organizational culture of the participating fire departments.

Chapter 4: Results

Introduction

The purpose of this study was to improve understanding of which EMS performance measures should be included as a component of firefighter promotional testing for career fire departments operating in a fire-based EMS system in the western portion of Cook County, Illinois. Secondly, this study sought to explore why such EMS performance measures have not been adopted as part of promotional testing thus far.

The case study approach of this study utilized both secondary data collection as well as virtual and telephonic semi-structured interviews of union leaders and chief fire officers.

The two research questions that guided this study are:

1. RQ1- Qualitative: Which EMS operational and supervisory performance measures should be integrated into firefighter promotional testing for fire departments that provide fire-based EMS in the Western portion of Cook County, Illinois?
2. RQ2- Qualitative: Why have EMS performance measures not been adopted in firefighter promotional testing in the Western portion of Cook County, Illinois?

These research questions allowed for an in-depth analysis of culture and policy practice in several fire departments in one MABAS division. This chapter includes a discussion on the study's qualitative design, how data was collected, demographics of the

area studied, and fire department staffing models. Additionally, this chapter provides an analysis of the data collected and the results of that analysis.

Setting

The interviews for this study were conducted individually, without the knowledge of other participants, in informal settings. Due to the Covid-19 pandemic declaration and in keeping with best practices to reduce the spread of Covid-19, interviews were conducted over the phone or through Zoom as virtual interviews. I conducted these interviews in my home office or personal vehicle to work around participant schedules. The area was secured with only me present. An interview guide containing all the interview questions was printed and used by me for notetaking during the interviews. Notes such as keywords and phrases, the emphasis during responses, and nonverbal behaviors were written down as an audio recording of the interview was occurring. This was designed as a backup in case of a technological failure of the audio recording.

Demographics

Fire departments across the country are organized in different ways. There are many configurations beyond whether a given fire department is paid or staffed by volunteers. Not all fire departments provide EMS services. In some areas of the country, EMS is provided by a service separate from the fire department. In Illinois, there are municipal fire departments which are departments or “branches” of a city. There are also fire protection districts. Unlike municipal departments, fire protection districts do not

share city revenues; they are their special taxing district and their form of local government.

If a city/municipal department exists, then promotions are governed by a board of police and fire commissioners appointed by the mayor (65ILCS5/10-2.1.1). A fire protection district has two governing boards. The board of trustees, who are elected, and a board of fire commissioners, are appointed by the board of trustees. The board of trustees sets rules and regulations, authorizes expenditures, and levy taxes for the district; they also authorize the board of commissioners to hire personnel. The primary mission of the board of commissioners is the hiring, promotion, and discipline of firefighters.

In western Cook County, Illinois, fire departments provide EMS services as part of fire department duties. EMS staffing is, however, provided in diverse ways. EMS personnel may have BLS licensing or may be ALS licensed (paramedics). The staff may be provided with contract services, various forms of part-time personnel, or full-time (career) members. At every level, EMS personnel may or may not also have firefighting duties based on their department's policies and any collective bargaining agreements that might apply.

For this reason, this study examined fire departments (municipal or districts) that provide ALS, and fire-based EMS with staffing provided primarily by cross-trained career firefighters, in some cases supplemented by contract or part-time paramedics and EMT-basics. This provided for a homogenous group of fire departments in terms of staffing models.

Revenue and staffing levels are always a matter of discussion for all types of fire departments. The past eighteen months with the Covid-19 pandemic have proven the essential nature of EMS personnel beyond what was already known. Likewise, costs for PPE, time off due to exposure to Covid-19, and other issues have increased, straining most departments with an already tight budget.

For this study, four chief fire officers and six union representatives were interviewed from the selected MABAS division. All participants had negotiated a minimum of one collective bargaining agreement and chief officers had all conducted at least one promotional exam. All fire departments represented by the participants were career departments with cross-trained firefighter-paramedics represented by the IAFF union. FD7 also employed both part-time and contract firefighter paramedics to supplement their staffing (Table 5). FD7 career firefighter paramedics were represented by the IAFF; however, their contract and part-time paramedics were not represented by any union.

Data Collection

I received Walden University IRB approval (no. 04-07-21-0506068) on April 7, 2021. The approval is good through April 6, 2022. Data collection began with email requests sent to Fire Chiefs and Union Executive Board members in the area. I received ten affirmative consents of 14 that were sent out via email. Of the ten, all fit the criterion of this study.

Data collection spanned nearly 3 months. The first interview was conducted on April 13, 2021, and the last was completed on July 7, 2021. While most interviews were conducted in the first few weeks after approval, a few took time to match participant schedules. I conducted each semi-structured interview via telephone or Zoom software virtually. Additionally, before I started the interview, I read a prepared script explaining the study and then requested permission to record the interview. In every case, I was granted approval to audio record the interview. I expected that the interviews would last between 45 and 60 minutes. Since the interviews were semi-structured, the dialog flowed freely, and I gently guided the participant back to the questions without being rigid in the structure. The shortest interview lasted 38 minutes, with the longest-lasting just under 2 hours.

Audio recordings were captured and then downloaded to an external hard drive with password protection. Following the download, I attempted to hand transcribe the audio recording. Finding that this method took me three hours to hand transcribe seven minutes of audio, I opted to use transcription software. I found an online platform called OTTER.AI. The software is a monthly subscription.

I utilized Otter.AI, online software, to transcribe the recorded interviews. Otter.AI is not foolproof with voice recognition, so every transcript was double-checked, and hand corrected. Each audio recording was labeled via coding to maintain the confidentiality of the participant. Such coding consisted of the following: FD8UP, and FD8FC. This indicated the fire department (FD8) and the position of the participant in the fire

department (UP, meaning Union personnel, or FC indicating chief fire officer). I also took handwritten notes during each interview and made a list of themes for future research. Using Otter.AI, the audio was transcribed, and then I spent time replaying the audio while reading the transcript and making spelling or transcription error corrections. This took several days. Following transcription, I conducted an initial coding, matching up questions from my interview question list and the subsequent answers for them. This allowed for quick comparison and contrast of views from labor and fire department administration of the same issue/question. There were no deviations from the approved research plan.

Bias Control

To control bias, none of the participants had a personal relationship with me, and none were directly supervised by me. Interview questions relied heavily on what items were included in the collective bargaining agreement and why they were or were not included in negotiations. Opinions as to whether an item should or should not be a part of the promotional process were confined to perception of organizational culture and not opinion whenever possible.

Unusual Circumstances

At the time this study was conducted, many of the participating organizations were either in the process of contract negotiations or had just finalized their labor contracts. In some cases, union officers and Chief officers had changed. This led to a more in-depth search to find participants that had some experience with that department

and the negotiations process for that department's collective bargaining agreement. Similarly, many chief officers had been promoted within the last three to seven years. This meant that there were several that had only administered one or two promotional tests and had only negotiated one collective bargaining agreement.

In addition, the Covid-19 pandemic was still affecting the ability to have face-to-face interviews; therefore, phone and zoom meeting interviews were conducted. Covid-19 also skewed the number of responses for 2020, and for some fire departments, the number of EMS calls decreased; for others, the number of fires increased. This is an anomaly but should have minimal impact on the data analysis as it is not the focus of this study.

Data Analysis

Before collecting data all fire departments within the MABAS division were given a random number, such as FD 13. Therefore, as a document was received it was masked to associate with the FD number. During interviews, each participant was assigned a corresponding code, such as FD13CF indicating a chief officer (CF) was interviewed for fire department 13. Union participants (UP) were coded as well and associated with the department they represented, such as FD7UP. Gaps in numbers associated with fire departments in the studied MABAS division that either did not participate or did not meet inclusion criteria for this study.

Data analysis began with secondary documents. Secondary documents included the department's current collective bargaining agreement, Standard Operating Guidelines,

Rules and Regulations, and documents related to contracted paramedic services if applicable Each document's information was added to an Excel spreadsheet. I used this method to collect objective data on each fire department. The data was designed to provide unbiased information that could be used to compare against other departments. As the data was collected, the fire department that provided the data was masked to protect its identity. The key associated with the codes were kept separate from the data to maintain the integrity of the masking system.

Table 4

Fire Department Demographics

FD Code	*Type*	*FOIA Sent?*	*Union?*	*EXP of CBA*	*Job Description*	*Rules & Regulations*	*ALS/BLS*
FD6	FPD	Y	Y	2021	Y	Y	ALS
FD7	FPD	Y	Y	2021	Y	Y	ALS
FD8	FD	Y	Y	2017	Y	Y	ALS
FD10	FD	Y	Y	2024	Y	Y	ALS
FD12	FD	Y	Y	2025	Y	Y	ALS
FD13	FD	Y	Y	2020	Y	Y	ALS

FD= Municipal Fire Dept. FPD= Fire Protection District

In the above table (Table 4), the code FD signifies a municipal department, and the code FPD implies a fire protection district, which is a special taxing body within Illinois. I requested all documents from every participating department based on a predetermined inclusion criterion.

Table 5

Fire Department Paramedic Requirements

FD Code	Contract/PT Paramedics?	Career Paramedics?	Officers Required to be Paramedics?
FD6	NONE	Yes	ATTRITION
FD7	Have Both	Yes	ATTRITION
FD8	NONE	Yes	ATTRITION
FD10	NONE	Yes	ATTRITION
FD12	NONE	Yes	No
FD13	NONE	Yes	ATTRITION

Table 5 above describes the requirements for paramedic licensure in each department. The departments that did not employ contract or part-time paramedics, all except one, required firefighters to be licensed as paramedics throughout their careers. Most lieutenants were paramedics, and those that were not would be replaced by

paramedics through attrition. These remaining EMT-B Lieutenants were promoted before the requirement to become a paramedic to be hired at that fire department.

Data analysis of the semi-structured interviews began by uploading the voice recordings to Otter.AI, a paid subscription service that provides transcription. Before using Otter.AI, I attempted to hand transcribe the audio recordings. This method was extremely time-consuming, and subscription service was sought. I researched transcription software, and this one was one of the highest recommended services. As the transcriptions occurred, the codes for each participant were already in place; therefore, confidentiality was maintained. Following the Otter.AI transcription, I then double-checked each transcription by listening to each interview myself. This allowed me to verify the accuracy of the transcription and make corrections, as necessary.

The first level of coding was done before the collection of data and entailed assigning a number to each fire department in the geographic area. This was done randomly. Next, the answer to each question was placed on an Excel spreadsheet. The answers were copied and pasted in their entirety for each participant. Each fire department had two columns which allowed for the union personnel's responses and the chief fire officer's responses. Each fire department was kept separate to allow for the comparison of viewpoints from the members of that department. After entering data on the spreadsheet, I searched for themes and patterns of thinking. This applied to not only what was done at a department but why it was done.

Codes, Categories, and Themes

Data collected from interviews was analyzed in broad themes using Microsoft Excel. Each department in the geographic area was given a random code FD1-15. Not all codes were used in this study as not all departments participated. Union personnel were given the code UP followed by the number given their department, for example “UP7”. Chief Officers Quotes were transcribed from transcripts and placed under codes related to interview question numbers which were then further grouped by research question alignment. The relationship between interview questions and research questions can be seen in Table three.

Interview question responses from all participants were then grouped by question number and analyzed for themes. The theoretical frameworks of punctuated Equilibrium Theory and Organizational Culture Theory were also used for the creation of themes. Data saturation was achieved when no new, additional, significant variation of data was found in responses from participants.

Emerging themes showed all fire departments have many EMS calls annually when compared with other types of emergencies they respond to. This category was titled “background demographics” as seen in Appendix B, several interview questions helped to shape this category and provide triangulation with the secondary documents received from the participating departments. A vast majority of fire departments offer ALS care and transport. The exception is one department for whom transport times to the closest hospital are so minimal that providing ALS care would increase time on scene versus just

driving the patient to the hospital (FD3). This department was excluded from the study due to not meeting the criteria for providing ALS care.

Further, all participants recognize EMS as the most important service they provide to the public in terms of need. This category was called “Understanding EMS” and its IQ and RQ# alignment can be found in Appendix B. Each participant exhibited traditional thinking in trying to cling to the idea that fires were just as important, though, and we should not forget those. Responses such as these formed the basis of categories three “awareness of the promotional process” and four which was called “analyzing organizational culture on policy” and IQ and RQ# alignment can be found in Appendix B.

Evidence of Trustworthiness

Credibility

I received approval to conduct this research study through Walden University, a regionally accredited institution through the Higher Learning Commission. I worked closely with my dissertation Chairman, committee member, the University research reviewer, and Institutional Research Board. I gained approval at each step before I began data collection. I did not control who consented to participate.

My research questions and protocol were approved by my committee, IRB and URR. I also used Otter.AI, a digital audio recorder, cell phone, Zoom meetings software as well as notes taken during the interview.

Transferability

I used purposeful sampling for the selection process of this study. The participants all fell within the geographic area and met all inclusion criteria, such as providing ALS care through fire-based EMS in either a fire department (municipal) or fire protection district. EMS staffing was provided by career members, cross-trained as EMT-Bs or paramedics, and in some cases supplemented by contracted or part-time personnel paramedics. Therefore, I confirmed generalization across a similar fire department population. I interviewed 10 participants and collected rich, quality data that demonstrated saturation. The similarity of themes emerged in participant answers, at which point saturation was found to have occurred.

Dependability

The dependability of the study relies on the interpretation of the data, as well as the coding process. I used my committee to confirm my analytical thought process and interpretation of findings. Data drove the themes, controlling bias. The participants had a clear understanding of the purpose of the study. Interviews and secondary documents were stored securely on an external hard drive. The primary code key was stored separately, and each was password protected. The first step of data collection was to label each electronic file by the primary code, thereby masking identifiers even during analysis.

Confirmability

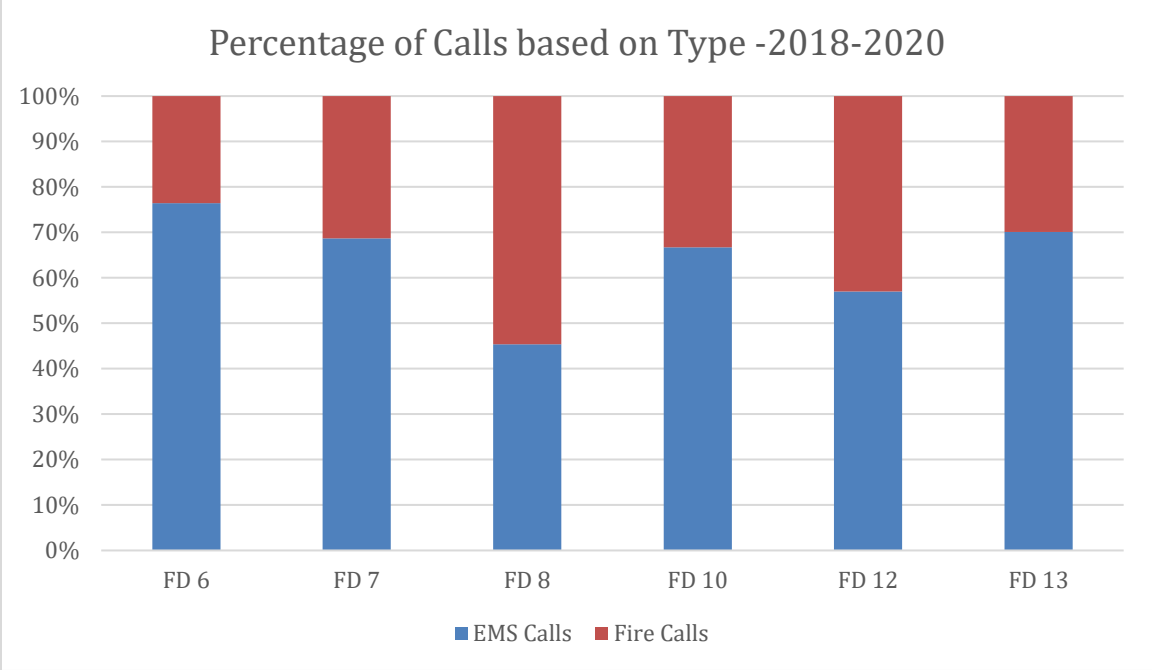
Throughout my study, I have kept relevant documents, including contacts, codes, FOIA requests, email consents, and other documentation, to form an audit trail. I have email documentation of research guidance and approvals. I also have email documentation of participants and non-participant invitations to participate in the study.

Results

Data analysis began with secondary documents. Secondary data collection took the form of requesting the current collective bargaining agreement sections that explained promotional procedures and requirements, Standard Operating Guidelines, Rules and Regulations, and documents related to contracted paramedic services, if applicable, of each participating fire department. These documents also provided the objective basis of how many calls they respond to annually and a breakdown of those calls as to whether they were fire or EMS related.

Figure 1

Number of EMS versus Fire Calls by Department



In a broad sense, the analysis was either a given number of fire/rescue calls or was categorized as an EMS call. To determine how to define things, the NFIRS coding document was used, whereas anything reported in the 300 series was coded as an EMS call. All other codes used for NFIRS were counted as fire/rescue calls. These documents further explained the nature of that fire department, precisely what form of staffing they had, and what services they offered. Once the current collective bargaining agreement, Standard Operating Guidelines, Rules and Regulations, and documents related to contracted paramedic services if applicable for each department were received, it was entered in the Excel spreadsheet using the FD code.

Building trust with participants in this study was especially important during the interview process. I had several participants who were concerned over voice recording, although each consented to the recording. I had the sense that they were concerned that the recording would be used either against them or the department if confidentiality were breached. I reassured each of them as to the security of the recordings and how they would be secured and handled. It often was indirectly said that they "did not want their department to look bad (FD 7,8,10,13)" or did not want to look bad themselves (FD 8,10).

Each interview was audio recorded as it happened and then transcribed by Otter.AI in the order it was completed. Transcriptions were labeled via established code to maintain the confidentiality of participants. Transcriptions were then hand-checked for accuracy and added to electronic file folders under each fire department. The spreadsheet was organized by the interview question number (IQ#) which was in turn referenced to its research question (RQ#) see Appendix B for alignment between Research questions and Interview questions.

I used inductive coding as a method to group data points from interviews. Inductive coding utilizes the responses from interviews to reveal groupings of answers which in turn form themes. Transcripts were reviewed individually, and significant statements were pulled and placed into an Excel spreadsheet organized by interview question number as recommended by Mohammadi et al., (2021). The answers were then compiled into groups by interview questions and then reduced to a research question that

each one aligned with (Table 3). I took each research question individually when looking at themes.

Themes for Research Question 1

RQ1 Qualitative: Which EMS operational and supervisory performance measures should be integrated into firefighter promotional testing for fire departments that provide fire-based EMS in the Western portion of Cook County, Illinois?

The first item discovered by a review of secondary documents is that every participating fire department requires firefighters to be paramedics when they are hired and to maintain that certification for the entirety of their career (FD 6,7,8,10,12, and 13). Through attrition and retirement, the remaining EMT-Bs will retire.

Second, every department still has at least one fire officer that is not a paramedic but will be replaced by a paramedic through attrition (FD 6,7,8,10,12,13). Currently, most of the chief fire officers interviewed held BLS licensure and were never paramedics (FD 6,7,8,10,12).

Third, every department utilizes an assessment center process for promotional testing. Assessment centers utilize a variety of scenarios to rank firefighter promotional candidates by skill. Components include a tactical scenario, a problem employee or citizen interaction/complaint scenario, and ascertained merit to name a few. It was found that every participating department uses a fire scenario for its tactical assessment (FD 6,7,8,10,12, and 13). It was also discovered that some departments have more than one tactical scenario, the first includes a fire scenario and the second varies between motor

vehicle accidents, hazardous materials incidents, or other such scenarios (FD10, FD13). To date, none have been an EMS-specific scenario such as an active shooter, mass casualty event, or another primarily EMS-related incident type (FD 6,7,8,10,12, and 13).

In terms of ascertained merit points toward promotion, as part of the promotional process, departments were remarkably similar in structure. Department 7, however, had no ascertained merit points as part of their promotional process. This is an unusual finding. Comparatively, FD 6, 8, 10, 12, and 13 had multiple items that could be counted toward ascertained merit points. The highest number of categories was FD 13, with 35 and the lowest was FD 10 with seven categories. These categories can be viewed as either fire, EMS, or formal education related. In general, most ascertained merit points fell into the category of formal education and then fire-related points. EMS had very few, if any, points available. Most departments gave zero ascertained merit points for EMS-specific classes and certifications (FD 6, 7, 10, 12). FD 13 had one item that was EMS-related for ascertained merit points. In the past, some fire departments (FD 6, 13) had a single EMS merit category for being certified as a paramedic. In some way, this was redundant in that almost all members of the department were required to be paramedics as a condition of employment.

Table 6

Ascertained Merit

Fire Dept Code	Total # of Ascertained Merit Items	Total # of Fire-related items	Total # of EMS items	Total # of educational items

FD6	14	6	2	6
FD7	0	0	0	0
FD8	17	6	7	4
FD10	7	3	0	4
FD12	8	2	0	6
FD13	35	30	1	4

When you compare each participating fire department for minimum requirements to take a promotional exam it was found that there were some similarities. There was a minimum number of years working at that fire department requirement, the lowest was 3 years (FD 10) and the highest was 8 years (FD 8, and 12). The most common number of years was 5 (FD 6, 13).

Table 7

Promotional Requirements by Department

Fire Department Code	Paramedic at Hire?	Paramedic Forever?	Paramedic Required for Officer?	To Take Test
FD6	NO	NO	NO	5yrs, FO1, FAE, NIMS 100,200,700,800
FD7	Yes	Yes	NO	4YRS, FO1, EMT, HAZ MAT OPS
FD8	Yes	Yes	NO	8YRS, FAE, FO1 CLASSES, FF3
FD10	Yes	Yes	Yes, except for one existing EMT	3YRS, FF3

FD12	Yes	Yes	Yes	8yrs, 240 hrs. of experience as an officer
FD13	Yes	Yes	Yes	5YRS, FO1, NIMS 300 AND 400
FD6	NO	NO	NO	5yrs, FO1, NIMS 1,2,7,8

In addition, a minimum level of certification was found to be required by all departments. Illinois state certification or completion of classes for Fire Officer One was the most common requirement (FD 6, 7, 8, and 13). The lowest certification requirement was firefighter 3, replaced by the advanced firefighter certification, which was required by FD 8, and 10. All departments, except FD 8 and 12, required a hazardous materials operations certification. A surprising requirement of some departments was that you had to be an EMT or paramedic (FD 6, and 7) which seems redundant as it is a requirement to be employed by those departments.

Interview Themes

All participants stated that a first-line officer was more likely to run a complicated EMS call than a fire incident. None could specifically articulate what EMS competencies should be included in promotional testing for firefighters. Each acknowledged the enormous number of calls related to EMS that each department responded to annually.

Each participant acknowledged that EMS was an important service provided by the fire department and that it was likely to remain so far into the future. When asked whether the scenario for the tactical portion of the assessment center could be changed to

an EMS-related event the participants were less clear. Conceptually many thought an EMS scenario would be more relevant, but many still believed the fire scenarios were more urgent in that fire scenes are more likely to result in death or major injury to a firefighter. Thus, fire scenarios were more important, mainly because they were so infrequent.

> Any officer at any time could experience any of those situations. And maybe it would be a good curveball thrown at them and say it is not going to be that (meaning a fire-based tactical). But it is the fire-side that needs more attention because those (calls) are the ones that kill you because you don't do it enough (FD8FC).

In every participating department, officers are placed in charge of "areas of responsibility" such as fire inspections, public education, supplies, training, etc. Officers often inherit areas vacated by their predecessors or are assigned areas by ranking officers based on talent and interest or certification level. For example, an officer that is certified as a fire inspector may be given that area of responsibility rather than another officer who does not have that level of certification. The principle behind that approach is that the officer has some knowledge of that topic. All participants agree that EMS is an area that requires oversight and is labor-intensive and complicated. Yet, all participants were willing to allow a firefighter to be placed in charge of that area.

EMS Coordinators act as the representatives of their department to their EMS systems and often function as the designated infection control officer, an OSHA-required

designated person, a HIPPA Compliance Officer, and a quality control and assurance person for the department.

The person or persons administratively in charge of EMS, holding the position of EMS Coordinator of a given department, tends to be younger in the studied geographic area. These same people are chosen because they show interest in EMS, and some may have experience in this position at previous jobs, such as contract paramedics. There is a feeling that the position does not need to be filled by an officer (FD 6,7,8,10,12, and 13).

> I don't think you need to be an officer, but it's kind of dependent on the person. It's a small department, and stuff falls on the blue shirts that would not (exist) in a bigger department. An officer is a good idea but maybe not realistic because there is just so much to do (FD10UP).

There is consensus that this position is least likely to be successful if assigned to someone. There is a feeling that a person selected in this role should be someone who "gets EMS." This person should embrace EMS and yet, not get too far out on a limb in terms of pushing EMS within the department. Therefore, interest determines success in the position.

> He was a firefighter when he originally took the position. After all, he was a natural fit because he liked doing it, and there wasn't a lot of interest in doing it (FD7FC).

There is also a sense that taking the less desirable job now will be seen as a positive for assignments and promotion in the future. It is also viewed as a large area of responsibility and authority, thus an indirect measure of leadership skills.

> I was told it's in my best interest to take the position by (a person of higher rank). It is generally something that gets handed to someone, and it's like, "Hey, you are in charge of this now" (FD13UP).

Among firefighters interviewed they viewed promotion as a way to do fewer EMS calls. This is because many departments do not require the fire engine to respond to all EMS calls. In those departments, they send only an ambulance unless specific situations are requiring more personnel (FD 6,10,12,13). Examples can include cardiac arrests, entrapment, childbirth, bariatric patients, and others. There is an entrenched mindset that EMS is something you survive so that you can do other things as an officer. Yet, every firefighter wants an officer that can lend a hand and maintain their skills, so they remain helpful on calls.

> I think it's funny. We all joke about dropping a paramedic (certification) as soon as possible. Realistically, it is not a good idea. Even when you are an officer, you're not on the ambulance as much as the ambulance crews are, but you still help out on calls. You have to know what drug to grab, you know, which equipment to grab. I mean we got rid of contract people and promised the residents they would have ALS care from full-time people, people that are vested in being here for an entire career (FD6UPa).

While rare, complaints related to the participating fire departments tend always to be EMS-related. Officers are given the responsibility of handling complaints, and then escalating the issue to a chief officer if needed. Common complaints expressed were lack of compassion/empathy toward the patient or family, EMS billing issues, and hospital transport choice.

> The few complaints we get are under, you know, a stressful situation. Most of the time it was a psychological issue. So, it was how a person was handled. So, the family views it as how their family member was treated. Our most common complaint is billing. That is pretty standard (FD8FC).

Themes for Research Question 2

RQ2 Qualitative: Why have EMS performance measures not been adopted in firefighter promotional testing in the Western portion of Cook County, Illinois?

Fires are the expectation of the firefighters in terms of their tactical test. There is consensus that changing this expectation would cause the fire chief grief with the Union. Although in many interviews, the union members stated they had no input on the test beyond how it was administered. In many cases, firefighters were willing to entertain the idea of changing the tactical but then do not ask for a change believing the Chief would not agree.

> I think it would be good to have an EMS scenario; it's 90 percent of what we do. The officer has to keep control of the scene, keep the crew safe and make sure the

> patient gets the care they need. It would need to be a challenging scenario, not a cardiac arrest, the officer would not have much to do. (FD10UP)

In other cases, the Chief officers believe the union membership would not agree to it. “Only fires. I wouldn’t be opposed to an EMS incident” (FD7FC). One chief officer acknowledged that they always do a structure fire-based tactical but also had never considered the idea of changing it to an EMS incident.

> We always do a fire (tactical event) because we feel like it’s the hardest thing to do. It’s the thing we always train for. You just enlightened me. In bigger places where the jobs (EMS and Fire) are separate, but we do both, so why aren’t we doing that? (FD13FC).

In either case, the issue has never been brought up during negotiations (FD 6, 7, 8, 12, 13). Fire department 10 is the sole department that traditionally has more than one tactical component, requiring a promotional candidate to navigate through different calls for service, although none are specifically EMS-related. “So, we always have a fire, but we have times where we do more than one practical, such as a tanker truck accident or motor vehicle accident on an expressway to manage in addition to the fire” (FD10FC).

Beyond the idea of fire versus EMS, the question is what does it take to make a department change its testing practices? Many chief officers said the only time test components change is when the state law changes, or state certifications change.

> A lot of it is changing because the state language is changing. The written portion of the test probably leans more heavily on the fire-side, but the portions we can

> control do not. The point is, where are you (getting your testing material) from? So, I have only seen one Lieutenant test. I was in the middle of one when I got hired (as a chief officer) and then I have done one more. So, unless someone says you have to do this and this, but I didn't know. You are often like; ok the company is handling that. (FD8FC)

The former is required to be lawful. Chief officers tend to be concerned about lawsuits regarding testing. There have been plenty of examples of entire results being thrown out or promotions being overturned when changes are made to the testing process. "I let the assessment center pick the components. It is a tactical (fire-related), problem employee (scenario), written exam, and resume" (FD7FC). There is this feeling that by having a third-party company choose the components, there is protection for the fire department and chief officer in terms of lawsuits.

The latter type of change is usually clean-up language for ascertained merit point allocation in the test process. For example, the name of the certification may change, but the content will be substantially the same. Roadway extrication technician is an old certification that has been replaced by vehicle machinery operations certification. Collective Bargaining Agreements tend to be updated for clarity during their normal negotiation cycle.

Finally, several participants mentioned that EMS is addressed in other testing components for promotion. The sense is that EMS does not rise to the level of a tactical scenario but is best covered in terms of the ability to follow a Standing Medical Order

completely. For example, a portion of a written test may ask for indications for a certain medication. The chief fire officer from FD10 stated, “I don’t think we need it. We incorporate EMS into our written exam”.

Discrepant Cases/Non-Conforming Data

First, in terms of the geographic area. If you include all the participating departments' total calls for service from 2018 through 2020 you will find that approximately 63.9 percent are EMS calls. However, this data is deceptive. One of the participating departments is an outlier in that they respond to an almost 50/50 split between fire and EMS calls annually. This is due to a range of factors which include, a large industrial area that generates many calls, a high number of fire alarm systems in their town which generate increased calls, especially during power outages and storms and this department responds to trouble alarms signaled by the fire alarm systems which is not the normal practice of this area. If you remove this department’s data in terms of call volume, the percentage of EMS calls increases. Removing that data EMS calls as a percentage of total responses rise to 68%, a four percent increase for the geographic area.

A second limitation of the data provided by departments is that EMS calls are categorized as the 300 series in the NFIRS reporting. However, in terms of other potential EMS-related calls. Multiple other categories could be used for reporting purposes. Such as invalid assists, assisting the disabled, medical alarm activations, Public Assistance-Other, and more (NFIRS, 2015). Therefore, one limitation is that the data provided reflects only the 300 series as EMS calls. There may be a considerable number of these

peripheral EMS “related” calls that are not counted in EMS and instead inflate the number of Fire calls reported.

It is important to bear in mind that when a department reports the number of Fire versus EMS calls to their residents the fire calls are not a reflection of the number of actual fires in that response area. They encompass calls such as electrical wires down, chemical spills, the smell of smoke, fire alarm activations, stuck elevators, and a host of other non-fire-related calls. In terms of the actual number of fires, 100 series coding in the NFIRS system, the number hovers between 1 and 3 percent annually and includes things like mulch fires, car fires, and appliance fires in addition to actual building fires (NFIRS, 2015).

Summary

The purpose of this study was to improve understanding of which EMS performance measures should be included as a component of firefighter promotional testing for career fire departments operating in a fire-based EMS system in the western portion of Cook County, Illinois. Secondly, this study sought to explore why such EMS performance measures have not been adopted as part of promotional testing thus far. The case study approach of this study utilized both secondary data collection and virtual and telephonic semi-structured interviews of union leaders and chief fire officers. The data shows that EMS performance measures are not part of promotional testing, largely because they are not well defined and due in large part to organizational culture of the fire service with respect to its view on the importance of EMS and firefighting. Secondly,

there is an inherent desire to maintain tradition despite a changing world. Chapter five will discuss the social implications of this study as well as limitations and recommendations based on current research as well as concepts for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to improve understanding of which EMS performance measures should be included as a component of firefighter promotional testing for career fire departments operating in a fire-based EMS system in the western portion of Cook County, Illinois. Secondly, this study sought to explore why such EMS performance measures have not been adopted as part of promotional testing thus far.

The study found that participants had difficulty visualizing the role of fire officers in a proposed EMS tactical assessment scenario for promotional testing. Some felt that smaller scenarios would not provide enough for an officer to do, and larger incidents would be managed by higher-level officers.

This chapter will discuss knowledge gained from this research such as the fact that EMS competencies are not included in a majority of promotional testing currently. Also discussed is the need to create an emphasis on determining what competencies are important for officers as a majority of calls are EMS-related. These changes will require a shift in organizational culture within the fire service, moving from a place where EMS is an additional duty to a place where EMS is at least equally important to the firefighters

and administration. Finally, this chapter will discuss the implications of changing the status quo and how that will positively affect the fire service and society.

Interpretation of the Findings

Knowledge Gained

Some participants felt there is not enough for an officer "to do" in an EMS scenario (FDUP6,7). The research found that there seems to be some minimal willingness to consider a change to the tactical assessment for the promotion of firefighters but in a minority of other departments EMS is addressed elsewhere in the testing process but only at the level of rote memorization of a medical order, which is a requirement of even the most junior of paramedics.

This study found that every participating fire department in this region required employees to be paramedics for their entire careers despite rank (Table 5). The exception would be those that were employees before the paramedic requirement. This small group of fewer than 10 individuals within all participating fire departments will be replaced with paramedics through attrition.

The geographic area of study is found to respond to a preponderance of EMS calls annually, over 60 percent, and less than three percent of their combined calls were classified as fires (Figure 1). Included in the percentage of fires reported are incidents such as brush fires, mulch fires, open burning, and car fires. Thus, the number of actual structure fires is less than 1 percent for most participating towns and in some cases, they had none for several years (Figure 1).

Participating fire departments were found to put a heavy emphasis on firefighting and classes, certifications, and formal education related to firefighting as part of their assessment for promotional potential (Table 6). Most fire chiefs in this area had never been a paramedic before their promotion to the position of fire chief. EMS Coordinators of each department were selected for the job, most often, due to their perceived interest in EMS rather than assigning EMS as a duty by rank as is common in other areas (equipment, station maintenance, and training). Participants all described the role as a less desirable one, but one that is necessary and looks good for future promotion potential. The sense is this person treads water, holding EMS activities steady, but not "pushing too hard" for change beyond EMS system requirements.

In terms of needs, the fire departments all recognize EMS as an essential service needed and expected by members of their community. They also stated that anytime there is a complaint about the fire department (however infrequent) it is almost always about EMS services.

The driving factors behind changing promotional assessment exams are threefold. First, change is not likely unless required by law. Second, each side thinks the other will not support change. Third, firefighting is still viewed culturally as the gold standard for promotion potential in the fire service (Table 6).

Theoretical Framework Implications

Punctuated Equilibrium Theory shows that change either occurs incrementally or through a drastic change. The Illinois Firefighter Promotional Act of 2005 was a dramatic change in testing procedures for firefighter promotions. Whereas the Illinois Office of the

State Fire Marshal occasionally changes the names of certifications in keeping with national trends set by the NFPA, these changes are more gradual or incremental.

Adoption of EMS was a policy change either gradual or sudden, depending on the department as described by Studlar and Cairney (2014). For one department, their board of Trustees passed an ordinance always requiring two paramedics to be on duty in their community (FD8). Job responsibilities have changed but politics has not (Keisling, 2015, Halliday et al., 2012). There have been no testing component changes in years, and no assessment components are related to EMS.

The circular logic of reinforcing current policy by use of tradition as its reasoning requires framing the issue to influence how a policy is viewed and formed. (Sabatier & Weible, 2014; Keisling, 2015). “This is the way we always do it” (fires) and this is what “the guys expect” (a fire for a tactical). “The union doesn’t want change” or” I am open, but the Chief won’t change” (FD7,8,10,13) is another common response to justifying the lack of change in testing procedures. 2008 national and state financial issues such as the housing market crash, and pension fund liability issues pushed fiscal changes to maintain staying in the “black” for budgets (Jones & Baum, 2012). When considering what services a given community wants, versus what they are willing to pay for, national trends show that a community is more likely to tolerate staffing reductions on a fire vehicle to allow for that same cross-trained firefighter paramedic to move over to the ambulance (FD 6,8,10 and13). The communities are speaking loud and clear that EMS is important to them.

Organizational Culture Theory expresses how an individual sees themselves as a part of the group (Jenkins-Smith, 2014). Organizational Culture Theory also defines an individual's belief about policy and about what activities we do to satisfy a stakeholder (Ripberger, 2014). Climate is synonymous with the organization's culture such as views on policy, expectations, and acceptable behavior within a group or organization (Schneider, 2013). As well as how vigorously collective bargaining agreement language in each contract clause is enforced (Schneider, 2013). Subcultures, such as seniority, level of education, and rank/position within the group can influence decisions (Schein, 1985).

Limitations of the Study

The limitations of this study are the generalizability of recommendations to the fire service as a whole. There are so many variations of service delivery in the United States of America, that congruity with every department is not possible. Secondly, larger departments often divide EMS from firefighting as a separate division of labor. This study looked at small departments, a majority of which had a single station with the remaining single participant having two open stations. The smaller the department the more "hats" a firefighter wears, in terms of departmental responsibilities.

Other limitations include the inherent bias of participants, such as their inherent belief as to whether EMS should be a part of their job. The prevailing organizational culture is that EMS is still a job that you must do to be able to do firefighting.

An unanticipated limitation was that a limited number of participants from both groups were paramedics (FD 6,7,8,10 and 12, Table 5). This may have skewed responses

to questions as the participants are unfamiliar with the administrative and supervisory responsibilities of paramedics and how those differ from that of an EMT.

A final limitation is that of command experience for paramedics. Kemp (2016) argued that EMS should be part of a unified command system. In a large event though, Kemp (2016) shows that EMS providers struggle to become the incident commander, even if the incident is EMS-centric because EMS is primarily given a secondary role in the command structure. The paramedic, therefore, has limited experience overseeing an incident, and the fire officer has little knowledge of what paramedics need in a large-scale incident. You can see this is the response; in a "smaller scenario, the officer would not have much to do (FD10UP)". Yet, everything a paramedic does just scales up or down based on the situation at hand, which is a keep principle of the incident command system. This disparity between experience as an incident commander and being a paramedic will self-correct through attrition of non-paramedic officers (FD 6,7,8,10,12 and 13).

Recommendations

Chief officers should meet with EMS coordinators of their department, find out what they do, and conduct a job analysis on it. During the job analysis, they should look to see what areas have high-risk consequences for the organization and begin building EMS training around those issues for all levels within the organization. Next, Chiefs should attend EMS meetings at their EMS system hospital to keep up on regulations, legislation, and changes to the policy. A fire chief's attendance at meetings gives EMS a level of perceived importance to the department. Next, all fire officers should be made to

participate in training and classes that pertain to EMS as its primary focus. Examples can include mass casualty drills, active shooter training, rescue task force, stop the bleed, and various EMS leadership courses available online through their union, the national fire academy, FEMA, USFA, or NAEMSE. Finally, professional development classes that focus on EMS leadership should be developed to include officers and officer candidates that are EMT-Basics and paramedics, reflecting on their roles during an EMS call and also how to provide quality assurance for the department.

Implications

Positive Social Change

If a department employs firefighter-paramedics, then at some level they understand and appreciate how important EMS is to the department. Especially when you require maintenance of that EMS level of licensure throughout their career. Further, if EMS is not significant for officers, in terms of duties, then why have they maintained that certification? Yet, it is still seen by union members as something you "want to get out of if you had the choice (FD6)". At the same time, union leaders concede it is not realistic for the good of the crew for an officer to not renew their paramedic license (FD7, FD13).

One fire chief was about to conduct a senior fire officer promotional exam, much like the firefighter promotional exam, this exam was to contain a tactical portion. The exam was held for firefighters who were already first-line fire officers, looking to be promoted to a higher rank. This chief immediately saw the benefit of using an EMS-based scenario for the tactical and subsequently changed that portion of the upcoming exam. One immediate positive social change is that upon follow up I was told by the

chief that all personnel that took the exam were surprised by the EMS scenario, but all did very well in managing the scenario. That chief felt changing the exam was worthwhile for that organization.

Implications of Social Change

The second most common lawsuit brought against fire departments and individual firefighters is an EMS call. Of these lawsuits, 90 percent are brought against the department, not the individual (Varone, n.d.). Varone (n.d.) also concluded that the best way to manage this liability risk is to focus on the top three reasons for lawsuits, of which EMS is one. Varone (n.d.) also stated the best defense is, among other things, good supervision. National EMS Management Association (NEMSMA) (2014) defines a supervising EMS officer as one who ensures daily operations are running smoothly and acts as the primary supervisor. Part of those job duties is coaching other shift members, including recognizing adverse effects of stress on performance. Lack of courtesy, empathy, and compassion, also known as compassion fatigue, relate directly to the types of complaints (FD or lawsuits fire departments face from EMS calls. Human resource skills such as de-escalation, defusing, and intervening are learned soft skills that should be a part of every supervisor's skill set.

Effective operation requires effective leadership (Imperatrice, 2021). Unlike police and fire, EMS is a new industry, only a few decades old (Axtell, 2020). A fatal error in EMS is that we do not identify and develop leaders (Axtell, 2020). Identification of actual statistics or qualities for EMS leadership does not exist. What does exist is task-based such as measuring patient outcomes and statistics of successful procedures (Axtell,

2020). Some will say that a senior person or officer has paid their dues and should spend more time on other things (FD6). Yet retaining the ability to perform a chore or a skill below your rank builds trust amongst team members.

Positive social impact from changing the process and acknowledging the importance and equality of EMS as a public service will be seen in the promotion of more well-rounded fire officers. In turn, a well-rounded officer can maximize resources by knowing what the EMS providers might need before they request it. The officer is trained in such a way that they will be able to fend off issues before they happen. This positive impact translates to higher quality EMS care for every community member.

Methodological and Theoretical Implications

It remains true that no one could articulate what EMS performance measures should be included in promotional testing. Sartorfi and Cheshi (2012), Roberts (2010), and Biddle and Biddle (2013) all studied testing in terms of job relevancy, appropriateness, and discrimination factors. This matches with statements of participants such as “it changes when the law does (FD10)”, or “the union/chief will fight it (FD6,7,10,13)”. Showing that despite the job relevancy of EMS performance measures, the main rebuke of changing testing is that a lawsuit may occur. Secondly, union leaders may be subject to ridicule or voted out of office as a member of the executive board for embracing EMS as being of equal importance as firefighting.

There is a lack of understanding of supervisory EMS performance measures outside of generic extensions of leadership and human resource management concepts (Wenzel & Keeton 2006 & Barakay, 2017) as most participants could only state, that they

wanted fire officers to maintain their EMS skills to help on calls. Yet Socrates, in Onday, 2016) argued that management's skill set was separate from "technical knowledge, pg.39003."

Recommendations for the Fire Service

A current issue in EMS facing the entire country is perceived or real EMS staff shortages (NREMT, 2016). One plausible reason for this is the perception that EMS is somehow less important, that there is a lack of promotion potential for people that prefer EMS, or that the organizational culture toward EMS in the fire services is toxic, or hostile.

Holding more than one tactical evolution for the assessment center might be a way to phase in EMS as having a significant role in officers' training, show how it is relevant to the job and how to prevent or curtail lawsuits. Get buy-in from the union to change the promotional assessment. One potential EMS tactical evolution could be an officer candidate having to manage an irate family member, or one that is interfering in EMS care. Van Erp, Gevers, Rispens and Demerouti (2018) stated that public service employees are having increased amounts of argumentative and aggressive bystanders that interfere in their ability to carry out their duties. These behaviors affect EMS workers' well-being and job satisfaction. This conflict resolution skill might be a good place to start with building supervisory skills.

List the job responsibilities for EMS coordinator positions so that people understand the role. Use these responsibilities to mentor and create a line of succession for the role. Offer reimbursement for training related to those responsibilities (Hobbs,

2021). Stop the practice of selecting people for the coordinator position because “they like EMS” and change the culture by creating meaningful positions for EMS within the organization.

Hobbs (2021) further suggests getting rid of cultures that embrace the idea of doing just enough to meet licensure requirements, meaning supervisors should have advanced knowledge. Good leaders are those seen as being able to “do the job” by providing actual assistance on a call as well as modeling good behaviors, such as conflict management on the scene (Huntsman & Greer, 2019). Changing the organizational culture results in the maximization of human capital and instills higher institutional values (Onday, 2016 & Huntsman & Greer, 2019).

Give EMS supervisory roles some definition and clarity, write down expectations, and add those areas to every fire officer’s responsibility. Reinforce that with courses on quality control, preceptor courses, and other classes that are suitable for all (EMT and Paramedic) licensure levels. Examples of some processes that can be controlled and therefore can be measured are the time to compressions during CPR, activation of a specialty service via telephone before arrival at the hospital, and choosing a correct hospital destination based on time, traffic, and patient conditions (Gerber, 2016).

Incorporate EMS in every training scenario until it becomes engrained in everyone that EMS is a fundamental responsibility of all members. Organizational culture can be a catalyst or a detriment to the organization's effectiveness, if not managed properly and constantly. The future may require reimbursement of ambulance transport to be tied to tangible outcomes, such as treatments, response times, or other benchmarks

(Gerber, 2016). EMS and therefore fire departments must embrace a culture of improvement to survive.

Conclusion

The fire service is slow at adapting to change when there is discretionary time to do so. Ironically, the fire service adapts to changes very quickly when discretionary time is limited for decisions to be made, such as at the scene of an emergency. Much of what holds the fire service back seems to be the perception of changing traditions of the fire service. In small departments throughout the country, firefighters cling to a nostalgic almost Saint-like status of firefighting. Meanwhile, EMS calls are viewed as parasites that take resources such as funding, and personnel from the perceived altruistic firefighting tasks.

When you study the fire service objectively you will see that firefighting is a small subset of calls that fire departments respond to annually. EMS is now and has been for some time a majority of the responses nationally. Cross-trained firefighter-paramedics are far more useful to a community for a whole host of reasons which include the ability to “change hats” during an incident and handle an evolving situation, community risk reduction through prevention activities both fire and EMS related, and the ability to take care of “brother” firefighters if they suffer a medical emergency during firefighting activities.

The greatest challenge is not completing both types of tasks, it is supervision and management of those resources. One such example is that of a motor vehicle incident where a victim is trapped. Cross-trained firefighters can extricate the patient and then

perform patient care and transport but often these tasks must be done simultaneously not consecutively. The officer must assign people to complete these tasks and understand why the tasks get done in the order they do. When left to their own devices' firefighter paramedics will often choose the more "glamorous" job of extricating the patient using "the jaws of life" rather than begin patient care. Good supervision requires making the correct, albeit tough, decisions. Comfort in making those decisions comes through training, experience, and a strong organizational culture that embraces EMS as an equal to firefighting.

Some of these growing pains may self-correct, the life cycle for paramedics in the participating departments shows that EMS at the ALS level is still in its infancy. EMS started as a secondary duty in most fire departments. Those that performed EMS work were certified as BLS providers and did enough on scene to provide care, and comfort to victims until the paramedics arrived. As EMS was absorbed into the fire service the paramedics were a separate category of employees, civilian paramedics that were contracted through private ambulance companies and assigned to a given fire department. Costs for this model became prohibitive and to retain a certain level of staffing in the fire department, cross-training of firefighters to be paramedics became the current staffing model.

The truth is, the fire service is only on the first generation of firefighter paramedics, therefore those that are currently in the officer positions were never paramedics and had no exposure managing paramedics. Early paramedics and leaders in EMS were put into the role with no formal credentials, leaning heavily on seniority

(Axtell, 2020). As more firefighter paramedics are promoted into the officer position they will write the next chapter, retrospectively, as to what supervision of paramedics looks like from the lens of a paramedic officer.

References

Addo, M., & Brecher, C. (2015). *Twenty Years Later*. Retrieved from: http://iaemsc.org/images/documents/REPORT_FDNY_12092015.pdf

Aman, C. (2018). *Company Officer Leadership: Advancing Fire-Based EMS*. Retrieved from: http://www.iafc.org/on-scene-article/company-officer-leadership-advancing-fire-based-ems

Associated Firefighters of Illinois. (2016). *Contract Database [webpage]*. Retrieved from: http://www.affi-iaff.org/documents.cfm?subdir=/Contracts

Axtell, D. (2020). Leadership mindset with an emphasis in EMS, part one. *Journal of Emergency Medical Services*. Retrieved from https://www.jems.com/administration-and-leadership/leadership-mindset-with-an-emphasis-in-ems-part-one/

Barakey, M. J. (2017). The fire department assessment center is here to stay. 53-55. Retrieved from https://www.fireengineering.com/articles/print/volume-170/issue-7/features/the-fire-department-assessment-center-is-here-to-stay.html.

Baskarada, S. (2014). Qualitative Case Study Guideline. *The Qualitative Report,19*(40), 1-18. Retrieved from: http://nsuworks.nova.edu/tqr/vol 19/iss40/3

Battaglio, R. P., & French, P. E. (2016). Public Service Motivation, Public Management Reform, and Organizational Socialization: Testing the Effects of Employment At-Will and Agency on PSM among Municipal Employees. *Public Personnel Management, 45*(2), 123-147. doi:10.1177/0091026016644623

Bearfield, D. A. (2014). It's Been a Long Time Comin.' *Review of Public Personnel Administration,34*(1), 59-74. doi:10.1177/0734371x13510380

Becker, T. K., Gausche-Hill, M., Aswegan, A. L., Baker, E. F., Bookman, K. J., Bradley, R. N., . . . Schoenwetter, D. J. (2013). Ethical Challenges in Emergency Medical Services: Controversies and Recommendations. *Prehospital and Disaster Medicine, 28*(05), 488-497. doi:10.1017/s1049023x13008728

Ben-Ishay, O., Mitaritonno, M., Catena, F., Sartelli, M., Ansaloni, L., & Kluger, Y. (2016). Mass casualty incidents - time to engage. *World Journal of Emergency Surgery: WJES*, *11*, 8. http://doi.org/10.1186/s13017-016-0064-7

Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research*, *15*(2), 219–234. https://doi.org/10.1177/1468794112468475

Biddle, R. E., & Biddle, D. A. (2013). What Public-Sector Employers Need to Know About Promotional Practices, Procedures, and Tests in Public Safety Promotional Processes: After Ricci v. DeStefano. *Public Personnel Management, 42*(2), 151-190. doi:10.1177/0091026013487046

Bobrow, B. J., Vadeboncoeur, T. F., Stolz, U., Silver, A. E., Tobin, J. M., Crawford, S. A., Spaite, D. W. (2013, July). The Influence of Scenario-Based Training and Real-Time Audiovisual Feedback on Out-of-Hospital Cardiopulmonary Resuscitation Quality and Survival from Out-of-Hospital Cardiac Arrest. *Annals of Emergency Medicine, 62*(1). doi: 10.1016/j.annemergmed.2012.12.020

Boyd, C., & Cannon, R. (2008). How to get the most out of hiring and promotional exams. *Fire Engineering, 161*(12), 77-84. Retrieved from https://www.fireengineering.com/articles/print/volume-161/issue-12/features/how-to-get-the-most-out-of-hiring-and-promotional-exams.html.

Braedley, S. (2015). Pulling men into the care economy: The case of Canadian firefighters. *Competition & Change, 19*(3), 264-278. doi:10.1177/1024529415580259

Brandstorp, H., Kirkengen, A. L., Sterud, B., Haugland, B., & Halvorsen, P. A. (2015). Leadership practice as interaction in primary care emergency team training. *Action Research, 13*(1), 84-101. doi:10.1177/1476750314566660

Brewer, G. A., & Kellough, J. E. (2016). Administrative Values and Public Personnel Management: Reflections on Civil Service Reform. *Public Personnel Management, 45*(2), 171-189. doi:10.1177/0091026016644626

Bruegman, R. (2014, July). ICMA: Leaders at the Core of Better Communities. Retrieved April 08, 2017, from http://icma.org/en/press/pm_magazine/article/104630

Cairney, P. (2012). Chapter 9/ Punctuated Equilibrium. In *Understanding public policy: theories and issues* (pp. 1-20). New York: Palgrave Macmillan.

Carman, K. (2015). Improving Outcomes for a High-Frequency, Low-Risk Patient Group. *Fire Engineering*. Retrieved from https://www.fireengineering.com/articles/print/volume-168/issue-

5/departments/fireems/improving-outcomes-for-a-high-frequency-low-risk-patient-group.html.

Casey, D. (2016, March). Learning leadership by observing. *Fire Engineering*, 141-145.

Castillo-Montoya, M. (2016). Preparing for Interview Research: The Interview Protocol Refinement Framework. *The Qualitative Report, 21*(5), 811-831.

Cerles, A. A., Dinh, N. N. L., MacMillan, L., Kemp, D. C., & Rush, M. A. (2021). Development of Novel Video-Based First Responder Opioid Hazard Refresher Training. *New Solutions: A Journal of Environmental and Occupational Health Policy, 31*(3), 298–306. https://doi.org/10.1177/10482911211038336

Coget, J., & Keller, E. (2010). The Critical Decision Vortex: Lessons from the Emergency Room. *Journal of Management Inquiry, 19*(1), 56-67. doi:10.1177/1056492609357009

Cohen-Hatton, S. R., Butler, P. C., & Honey, R. C. (2015). An Investigation of Operational Decision Making in Situ: Incident Command in the U.K. Fire and Rescue Service. Human Factors: *The Journal of the Human Factors and Ergonomics Society, 57*(5), 793-804. doi:10.1177/0018720815578266

Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing, 25*(6), 435-437.

Cope, D. G. (2014). Methods and Meanings: Credibility and Trustworthiness of Qualitative Research. *Oncology Nursing Forum,* (1), 89. https://doi-org.ezp.waldenulibrary.org/10.1188/14.ONF.89-91

Davis, C. S., Ruiz, S., Glynn, P., Picariello, G., & Walley, A. Y. (2014). Expanded Access to Naloxone Among Firefighters, Police Officers, and Emergency Medical Technicians in Massachusetts. *American Journal of Public Health,104*(8). doi:10.2105/ajph.2014.302062

Dean, A. (2016, October). Scene safety: Violence against firefighters. *Fire Engineering*, 40-46.

Deardorff, C. (2012). Fire service-based EMS made easier. *Fire Chief*, Retrieved from http://search.proquest.com.ezp.waldenulibrary.org/docview/1024796335?accountid=14872

DiSalvo, D. (Feb 2, 2015). The New spoils system. *The American Interest*. Retrieved from: https://www.the-american-interest.com/2015/02/02/the-new-spoils-system/

Do, M. T., Furlong, G., Rietschlin, M., Leyenaar, M., Nolan, M., Poirier, P., Field, B., & Thompson, W. (2018). What can paramedic data tell us about the opioid crisis in Canada? *Health Promotion and Chronic Disease Prevention in Canada Research Policy and Practice, 38*(9), 339–342. https://doi.org/10.24095/hpcdp.38.9.06

Edgerly, D. (2013). Birth of EMS: The history of the paramedic. *Journal of Emergency Medical Services, 38*(10). Retrieved from https://www.jems.com/articles/print/volume-38/issue-10/features/birth-ems-history-paramedic.html.

Emergency medical services at the crossroads. (2007). Washington, D.C.: National Academies Press. doi:10.17226/11629

Farlow, B.K. (2016). Preparation for Promotion to Fire Officer: Is it time to include EMS? [Document], Walden University.

Federal Emergency Management Agency (2017a). Assistance to Firefighters Grant Awards [webpage]. Retrieved from: https://www.fema.gov/assistance-firefighters-grant-awards

Federal Emergency Management Agency (2017b). National Incident Management System Implementation Objectives FY2009- FY2017. Retrieved from https://www.fema.gov/media-library-data/1492199069934-2a9248f2535e4fc902312b5d2b024902/NIMS_Implementation_Objectives_Chart_Current.pdf

Federal Emergency Management Agency (n.d.). Incident Command System Resources [webpage]. Retrieved from: https://www.fema.gov/incident-command-system-resources

Fire Department Promotions Act. 50 ILCS 742. (2003). Retrieved from: http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2457&ChapterID=11

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The qualitative report, 20*(9), 1408.degraff

Gerber, M. (2016). How to measure and improve EMS systems. EMS Compass is setting the profession on a path toward performance measurement and improvement. *EMS World*, *45*(1), 24.

Gould, J., & Eldredge, N. (1993). Punctuated Equilibrium comes of age. *Nature, 366*(6452), 223-227.

Halliday, J., Asthana, S., Hewson, P., & Gibson, A. (2012). Playing with fire: Limitations of the Big Society for an emergency service. *Public Policy and Administration, 28*(3), 290-305. doi:10.1177/0952076712456232

Harencarova, H. (2016). Managing Uncertainty in Paramedics Decision Making. Journal of Cognitive Engineering and Decision Making. doi:10.1177/1555343416674814

Hobbs, L., Devenish, S., Long, D., & Tippett, V. (2021). Facilitators, barriers, and motivators of paramedic continuing professional development. *Australasian Journal of Paramedicine, 18*. https://doi.org/10.33151/ajp.18.857aramedic continuing professional development. *Australasian Journal of Paramedicine, 18*. https://doi.org/10.33151/ajp.18.857

Hoffman, B. J., Kennedy, C. L., LoPilato, A. C., Monahan, E. L., & Lance, C. E. (2015). A review of the content, criterion-related, and construct-related validity of assessment center exercises. *Journal of Applied Psychology*, *100*(4), 1143.

Hollerbach, B. S., & Jahnke, S. A. (2021). COVID-19 Research Among Firefighters & EMS Personnel. *International Fire Service Journal of Leadership & Management*, 15, 59–65.

Holliday, S. C. (2011). Using fire suppression strategy and tactics for EMS. *Fire Engineering*, 26-28.

Huntsman, D., & Greer, A. (2019). Antecedents of Trust in Leadership: A Multilevel Perspective in the Fire Service. *International Fire Service Journal of Leadership & Management*, (13).

Hylander J, Saveman B, Björnstig U, *et al* (2020). Senior ambulance officers in Swedish emergency medical services: a qualitative study of perceptions and experiences of a new management role in challenging incidents *BMJ Open* 2020;10: e042072. doi: 10.1136/bmjopen-2020-042072

Illinois Association of Fire Protection Districts. (2016). Frequently Asked Questions [webpage]. Retrieved from: http://iafpd.org/FAQ.html

Illinois Emergency Medical Systems Act, Illinois State. §3.85 (2014).

Imperatrice, L. (2021). What Leaders need to understand about leadership in modern times. *Journal of Emergency Medical Services*.

International Association of Fire Chiefs. (2013). IAFC Position: Active Shooter and Mass Casualty Terrorist Events. Retrieved from: http://www.iafc.org/files/1ASSOC/IAFCPosition_ActiveShooterEvents.pdf

International Association of Fire Fighters. (2016a). About US [webpage]. Retrieved from: http://client.prod.iaff.org/#page=AboutUs

International Association of Fire Fighters (2016b). Emergency Medical Systems: A Guidebook for Fire-Based Systems 4th edition. Retrieved from: http://services.prod.iaff.org/ContentFile/Get/17080

Jansen, A., Melchers, K. G., Lievens, F., Kleinmann, M., Brändli, M., Fraefel, L., & König, C. J. (2013). Situation assessment as an ignored factor in the behavioral consistency paradigm underlying the validity of personnel selection procedures. *Journal of Applied Psychology, 98*(2), 326-341. doi:10.1037/a0031257

Jenkins-Smith, H., Silva, C. L., Gupta, K., & Ripberger, J. T. (2014). Belief System Continuity and Change in Policy Advocacy Coalitions: Using Cultural Theory to Specify Belief Systems, Coalitions, and Sources of Change. *Policy Studies Journal, 42*(4), 484-508. doi:10.1111/psj.12071

Jones, B. D., & Baumgartner, F. R. (2012). From There to Here: Punctuated Equilibrium to the General Punctuation Thesis to a Theory of Government Information Processing. *Policy Studies Journal, 40*(1), 1-20. doi:10.1111/j.1541-0072.2011.00431.x

Kaiser, K. (2012). Protecting Confidentiality. In J. F. Gubrium (Author), *The Sage handbook of interview research: The complexity of the craft* (pp. 457-464). Thousand Oaks, Calif: SAGE. doi:9781412981644

Keisling, P. (2015). Why we need to take the "fire" out of fire department. *Governing the States and Localities*. Retrieved from: http://www.governing.com/columns/smart-mgmt/col-fire-departments-rethink-delivery-emergency-medical-services.html

Kemp, M. (2014). EMS and homeland security. *Homeland Security Affairs, 10*(4), 1-7.

Kemp, M. (2016). Response to Atypical Incidents: New Demands for EMS. *EMS World*. Retrieved from https://www.emsworld.com/article/12165661/response-to-atypical-incidents-new-demands-for-ems.

Keren, N., Bayouth, S. T., Franke, W. D., & Godby, K. M. (2013). Examining the effect of level of stress on firefighters' time-to-decision in virtual reality. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 57*(1), 299-303. doi:10.1177/1541931213571066

Kettl, D. F. (2015). The Merit Principle in Crisis. *Governance, 28*(4), 421-424. doi:10.1111/gove.12165

Kim, J. (2016). Impact of performance appraisal justice on the effectiveness of pay-for-performance systems after civil service reform. *Public Personnel Management, 45*(2), 148-170. doi:10.1177/0091026016644625

Koenig K. L. (2018). The Opioid Crisis in America: Too much, too little, too late. *The western journal of emergency medicine, 19*(3), 557–558. https://doi.org/10.5811/westjem.2018.2.38087

Kohlbacher, F. (2006, January). The use of qualitative content analysis in case study research. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 7, No. 1).

Kundra, P., & Cherian, A. (2015). Simulations for "evaluation" and teaching "standard operating procedures." *Journal of Anaesthesiology Clinical Pharmacology, 31*(2), 270-271.

Lalonde, C., & Roux-Dufort, C. (2012). Challenges in Teaching Crisis Management: Connecting Theories, Skills, and Reflexivity. *Journal of Management Education, 37*(1), 21-50. doi:10.1177/1052562912456144

Mason, M. (2010). Sample Size and Saturation in Ph.D. Studies Using Qualitative Interviews [63 paragraphs]. *Forum Qualitative Social Research, 11*(3), Art. 8, http://nbn-resolving.de/urn:nbn:de:0114-fqs100387.

McCallion, T. (2015). Detroit's Efforts to Improve EMS Response Includes Dual-Role Fire/EMS. *Journal of Emergency Medical Services, 23*.

McCaslin, C. (2015, December). The officer's role in EMS. *Fire Engineering,* 28-31.

McDonough, P., & Polzer, J. (2012). Habitus, hysteresis, and organizational change in the public sector. *Canadian Journal of Sociology*, *37*(4), 357-379.

McFarland, L. A., Yun, G., Harold, C. M., Viera Jr., L., & Moore, L. G. (2005). An Examination of impression management use and effectiveness across assessment center exercises: The role of competency demands. *Personnel Psychology, 58*(4), 949-980. doi:10.1111/j.1744-6570.2005.00374.x

McLay, L. A., & Mayorga, M. E. (2010). Evaluating emergency medical service performance measures. *Health care management science, 13*(2), 124-136.

McMahon, S. A., & Winch, P. J. (2018). Systematic debriefing after qualitative encounters: an essential analysis step in applied qualitative research. *BMJ global health*, *3*(5).

Meek, V. L. (1988). Organizational Culture: Origins and Weaknesses. *Organization Studies, 9*(4), 453-473. doi:10.1177/017084068800900401

Mentler, T., & Herczeg, M. (2015). Interactive cognitive artifacts for enhancing situation awareness of incident commanders in mass casualty incidents. *Journal of Interaction Science, 3*(1).

Mercer, S. J. (2016). Using full immersive simulation to prepare trauma teams to work in a major trauma centre. Trauma. doi:10.1177/1460408616680384

Metcalf, S.A., Saunders, E.C., Moore, S.K., Walsh, O., Meier, A., Auty, S., Bessen, S.Y., & Marsch, L.A. (2022). Compassion, stigma, and professionalism among emergency personnel responding to the opioid crisis: An exploratory study in

New Hampshire, USA. *Journal of the American College of Emergency Physicians Open, 3*(1). https://doi.org/10.1002/emp2.12641

Mohammadi, F., Tehranineshat, B., Bijani, M., & Khaleghi, A. A. (2021). Management of COVID-19-related challenges faced by EMS personnel: a qualitative study. BMC Emergency Medicine, 21(1), 1–9. https://doi.org/10.1186/s12873-021-00489-1allenges faced by EMS personnel: a qualitative study. *BMC Emergency Medicine, 21*(1), 1–9. https://doi.org/10.1186/s12873-021-00489-1

Morse, M. (2016). Engine Company EMS: Keeping the Crew Motivated. *Fire Engineering*. Retrieved from https://www.fireengineering.com/articles/2016/09/engine-company-ems-keeping-the-crew-motivated.html.

Murphy, P., & Greenhalgh, K. (2013, April). Performance management in fire and rescue services. *Public Money & Management, 33*(3), 225-232. doi:10.1080/09540962.2013.785711

Mutual Aid Box Alarm System (2016). About MABAS [webpage]. Retrieved from: http://www.mabas-il.org/Pages/About-MABAS.aspx

National Academy of Sciences. (1966). *Accidental Death and Disability: The Neglected disease of modern society*. Retrieved from: http://www.ems.gov/pdf/1997-Reproduction-AccidentalDeathDissability.pdf

National EMS Management Association. (2014). *Nemsma seven pillars of National EMS Officer Competencies*. NEMSMA Seven Pillars of National EMS of Officer Competencies. Retrieved March 25, 2022, from

https://cdn.ymaws.com/www.nemsma.org/resource/resmgr/pdfs/credentialing/nemsma_seven_pillars_of_nati.pdf

National Fire Incident Reporting System Complete Reference ... (2015, January). Retrieved from https://www.usfa.fema.gov/downloads/pdf/nfirs/NFIRS_Complete_Reference_Guide_2015.pdf

National Fire Protection Agency (2016). NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (2016 ed.). Retrieved from: http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=1710

National Fire Protection Agency (2017a). NFPA 450: Guide for Emergency Medical Services and Systems. (2017 ed.). Retrieved April 09, 2017, from http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=450

National Fire Protection Agency (2017b). NFPA 1670: Standards on Operations and Training for Technical Search and Rescue Incidents. (2017 ed.). Retrieved June 12, 2020, from https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1670

National Registry of Emergency Medical Technicians (2016). Candidates [webpage]. Retrieved from: https://www.nremt.org/rwd/public/document/candidates

National Highway Traffic Safety Administration (2001). National EMS Research Agenda. Retrieved from: https://one.nhtsa.gov/people/INJURY/ems/ems-agenda/definition_of_ems.htm.

Neyfakh, L. (Sept 8, 2013). Plenty of firefighters, but where are the fires? *Boston Globe*. Retrieved from: https://www.bostonglobe.com/ideas/2013/09/07/plenty-firefighters-but-where-are-fires/isCPrIPauX078UKHdixu0K/story.html

Nordby, H. (2015). Experienced Challenges in Prehospital Management. *Journal of Health Management*,*17*(1), 98-117. doi:10.1177/0972063414560879

Nowak, T. (2022, January). *Comparable differences: Apples and oranges when comparing fire departments*. International Association of Fire Chiefs. Retrieved April 9, 2022, from https://www.iafc.org/iCHIEFS/iCHIEFS-article/comparable-differences-apples-and-oranges-when-comparing-fire-departments

Onday, O. (2016). organizational culture theory: from organizational culture of Schein to appreciative inquiry of Cooperrider & Whitney. *Elixir Organizational Behaviour*, *92*, 39002–39008.

O'Leary, F. (2015). Simulation as a high-stakes assessment tool in emergency medicine. *Emergency Medicine Australia, 27*, 173-175.

Pfaff, M. S., Klein, G. L., Drury, J. L., Moon, S. P., Liu, Y., & Entezari, S. O. (2012). Supporting Complex Decision Making Through Option Awareness. *Journal of Cognitive Engineering and Decision Making, 7*(2), 155-178. doi:10.1177/1555343412455799

Pointer, J. E., (2001). Experience and mentoring requirements for competence in new/inexperienced paramedics. *Prehospital Emergency Care, 5*(4), 379-383.

Powley, E. H., & Taylor, S. N. (2014). Pedagogical Approaches to Develop Critical Thinking and Crisis Leadership. *Journal of Management Education, 38*(4), 560-585. doi:10.1177/1052562913519081

Prziborowski, S. (2011, 02). Why candidates fail simulation exercises. *Firehouse, 36*, 111-113.

Ramthun, A. J., & Matkin, G. S. (2014). Leading Dangerously: A Case Study of Military Teams and Shared Leadership in Dangerous Environments. *Journal of Leadership & Organizational Studies, 21*(3), 244-256. doi:10.1177/1548051814529827

Riccucci, N., & Riccardelli, M. (2015). The Use of Written Exams in Police and Fire Departments: Implications for Social Diversity. *Review of Public Personnel Administration, 35*(4), 352-366.

Riccucci, N., & Saldivar, K. (2014). The Status of Employment Discrimination Suits in Police and Fire Departments Across the United States. *Review of Public Personnel Administration, 34*(3), 263-288.

Richarme, & M., Rodgers, F. (2016). The Honesty of Online Survey Respondents: Lessons Learned and Prescriptive Remedies. Decision Analyst. Retrieved from: https://www.decisionanalyst.com/whitepapers/onlinerespondents/

Ripberger, J. T., Gupta, K., Silva, C. L., & Jenkins-Smith, H. C. (2014). Cultural Theory and the Measurement of Deep Core Beliefs Within the Advocacy Coalition Framework. *Policy Studies Journal, 42*(4), 509-527. doi:10.1111/psj.12074

Roberts, R. N. (2010, July/August). Damned If You Do and Damned If You Don't: Title VII and Public Employee Promotion Disparate Treatment and Disparate Impact Litigation. *Public Administration Review, 70*(4), 582-590. doi:10.1111/j.1540-6210.2010.02179.x

Rothmeier, J. (2017). Challenging Tradition Barriers to cultural change in the fire service. *Fire Rescue Magazine, 12*(5). Retrieved from https://www.firerescuemagazine.com/articles/print/volume-12/issue-5/features/challenging-tradition.html.

Rubin, D. (2017). What is the best promotional system? *Fire Engineering, 170*(3). Retrieved from https://www.fireengineering.com/articles/print/volume-170/issue-3/features/what-is-the-best-promotional-system.html.

Sabatier, P. A. (1988). "An advocacy coalition framework of policy change and the role of policy-oriented learning therein." *Policy Sciences 21*(2): 129-168.

Sabatier, P., A., & Weible, C., M. eds. 2014. Theories of Policy Process, 3rd ed. Boulder, CO: Westview Press.

Sartori, R. & Ceschi, A. (2012). Assessment and development centers: Judgment biases and risks of using idiographic and nomothetic approaches to collecting information on people to be evaluated and trained in organizations. *Quality & Quantity*. . . 10.1007/s11135-012-9718-z.

Schein, E. H. (1985). *Organizational culture and leadership*. San Francisco: Jossey-Bass

Schneider, B., Ehrhart, M. G., & Macey, W. H. (2013). Organizational Climate and Culture. *Annual Review of Psychology, 64*(1), 361-388. doi:10.1146/annurev-psych-113011-143809

Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research. *Political Research Quarterly, 61*(2), 294-308. doi:10.1177/1065912907313077

Shouldis, W. (2015, May). Core command performance measures. *Fire Engineering*, 67-71.

Sibbernsen, R. D. (1975). A review of job and seniority structures in light of EEO liability. *Labor Law Journal*, 666-674.

Smith, T. D., & Dejoy, D. M. (2014). Safety climate, safety behaviors and line-of-duty injuries in the fire service. *International Journal of Emergency Services, 3*(1), 49-64. doi:10.1108/ijes-04-2013-0010

Stiles, K., Neal, D. J., Neglia, S., Cumberledge, G., Kiger, M., & Rice, J. (2016, June). Hostile act responses: Effective command of the warm zone. *Fire Engineering*, 24-29.

Studlar, D. T., & Cairney, P. (2014). Conceptualizing punctuated and non-punctuated policy change: tobacco control in comparative perspective. *International Review of Administrative Sciences, 80*(3), 513-531. doi:10.1177/0020852313517997

Sundell, A. (2014a). Are Formal Civil Service Examinations the Most Meritocratic Way to Recruit Civil Servants? Not In All Countries. *Public Administration, 92*(2), 440-457. doi:10.1111/padm.12077

Sundell, A. (2014b). Nepotism and meritocracy. *The Quality of Government Institute*. (16), pgs1-29.

Tavares, W., Leblanc, V. R., Mausz, J., Sun, V., & Eva, K. W. (2013, January). Simulation-based Assessment of Paramedics and Performance in Real Clinical Contexts. *Prehospital Emergency Care, 18*(1), 116-122. doi:10.3109/10903127.2013.818178

United States Fire Administration. (1972). *America Burning*. Retrieved from: https://www.usfa.fema.gov/downloads/pdf/publications/fa-264.pdf

United States Fire Administration. *America Burning Revisited*. (1987). Washington, D.C.

United States Fire Administration (2015). National Safety Culture Change Initiative. Retrieved from: https://www.usfa.fema.gov/downloads/pdf/publications/fa_342.pdf

United States Fire Administration. (2016). National Fire Incident Reporting System [database]. Retrieved from: https://www.nfirs.fema.gov/

United States Fire Administration. (2017). *Topical report series: Fire department overall run profile as reported to the National Fire Incident Reporting System (2014), 17*(8). Retrieved from: https://www.usfa.fema.gov/downloads/pdf/statistics/v17i8.pdf

Van der Haar, S., Koeslag-Kreunen, M., Euwe, E., & Segers, M. (2017). Team Leader Structuring for Team Effectiveness and Team Learning in Command-and-Control Teams. *Small Group Research, 48*(2), 215–248. http://doi.org/10.1177/1046496417689897

Van Erp, K.J.M., Gevers, J.M.P., Rispens, S., & Demerouti, E. (2018). Empowering public service workers to face bystander conflict: Enhancing resources through training intervention. *Journal of Occupational & Organizational Psychology, 91*(1), 84-109.

Varone, C. (n.d.). *Fire law: Incident-related liability - firehouse*. Fire-Law: Incident-Related Liability. Retrieved January 14, 2022, from https://www.firehouse.com/careers-education/article/21121815/fire-law-incidentrelated-liability

Vila-Henninger, L. A. (2019). Turning Talk into "Rationales": Using the Extended Case Method for the Coding and Analysis of Semi-Structured Interview Data in ATLAS.ti. *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique*, *143*(1), 28–52. https://doi.org/10.1177/0759106319852887

Wankhade, P. (2012). Different cultures of management and their relationships with organizational performance: Evidence from the UK ambulance service. *Public Money & Management, 32*(5), 381-388. doi:10.1080/09540962.2012.676312

Wenzel, B. J., & Keeton, C. (2006). Training Tips - The Leadership Tetrahedron. *Fire Engineering*. Retrieved from https://www.fireengineering.com/articles/2006/04/training-tips-the-leadership-tetrahedron.html.

White, J. (2021). When worlds collide: Unique safety challenges of EMS operations. *Professional Safety, 66*(1), 12–14.

Wieczorek, T. (2014, July). ICMA: No Cause for alarm: Sustainability in fire service depends on change. Retrieved April 08, 2017, from http://icma.org/en/Article/104673/No_Cause_for_Alarm

Wisko, M. (2011, July). Creating an officer development program. *Fire Engineering*, 83-86.

Appendix A: Consent Form

CONSENT FORM

You are invited to participate in a research study involving firefighter promotions and exclusion of EMS supervisory skills. The researcher is inviting firefighters working at departments within a MABAS Division, who provide EMS services and full-time members to be in the study. Some of the firefighters will be administrative such as Chief Officers, the other group will be current or past union executive board members. I obtained your name/contact info via an internet search of MABAS Division department websites. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Brenda Farlow, who is a doctoral student at Walden University. You might already know the researcher as a firefighter, but this study is separate from that role.

Background Information:
The purpose of this study is to improve the understanding of which EMS competencies should be included as a component of fire officer promotional testing for career fire departments operating in a fire-based EMS system. Secondly, there will be an assessment of why EMS competencies have not been included in testing. The purpose of these questions is to improve firefighter promotional testing in the future.

Procedures:
If you agree to be in this study, you will be asked to:

- Allow for a 60-minute phone or "Virtual face-to-face" interview with the researcher.
- This interview, if you consent, will be audio recorded for purposes of data collection. This audio recording will then be transcribed and not shared with anyone outside of this study.
- Following transcription, you will be asked to look over the notes for accuracy. This process should take no more than 30 minutes.

Here are some sample questions:

- At any time do your EMS providers have a higher level of EMS certification than your first-level fire officer?
- What is your process if the fire officer disagrees with patient care given by the EMS provider?
- What are the three most common types of complaints related to service that you receive at the department?

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Declining or discontinuing participation in the study will not negatively affect your relationship with the researcher and no one at any fire department will treat you differently. To withdraw from the study please simply notify the researcher.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as stress and reliving an uncomfortable memory such as a negative contract negotiation session. Your participation in this study would not pose risk to your safety or wellbeing.

The study will likely not be of benefit to you or your department directly. In the larger sense, the data and information collected will form the basis for future research which may lead to better-educated fire officers and thus better service to the public overall.

Payment:
Participants will receive no compensation for their time or participation.

Privacy:
Reports coming out of this study will not share the identities of individual participants. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your personal information for any purpose outside of this research project. Data will be kept secure by use of password protection and the use of codes in place of agency and individual names. The key to the identifiers will be kept separately from the data under a different password. Data will be kept for at least 5 years, as required by the university.

Contacts and Questions:
You may ask any questions you have now. Or if you have questions later, you may contact the researcher at XXXXX If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is **04-07-21-0506068 and** it expires on **April 6, 2022.**

Obtaining Your Consent

If you feel you understand the study well enough to make a decision about it, please indicate your consent by replying to this email with the words "I consent." You may print or save this consent form for your records.

Appendix B: Interview Question Alignment

Interview Question Alignment

	Background Information	Awareness of Promotional Process	Understanding of EMS	Analyzing Cultural Organizational Influence on Policy
RQ 1: Which operational and supervisory EMS competencies should be integrated into fire officer promotional testing for fire departments that provide fire-based EMS in the Western portion of Cook County Illinois?				
RQ 2: Why have EMS competencies not been adopted in fire officer promotional testing in the Western portion of Cook County Illinois?				
INTERVIEW QUESTIONS				
What type of EMS service does your department provide?	x			
Is your department Union or Non-Union? What Union represents your department?	x			
What is the structure of your department? FT/PT, Combination	x			
What is the rank of the lowest fire officer in your department? (Ie. Lieutenant or Captain)	x	x		

Is the lowest rank fire officer a promoted or appointed position?	x	x		
Does your department use contracted personnel to provide EMS?	x			
How many calls annually (for the past three years) are coded as EMS in your department? This would include 311,321,322,323,320, 371, 554, 661 and medical alarm activations? (NFIRS coding doc guidance)	x			
Under what circumstances if any does your fire engine and /or lieutenant respond to an EMS call?	x			
What is the minimum EMS level of licensure allowed for your fire officers?	x	x		
At any time do your EMS providers have a higher level of EMS certification than your first-level fire officer?			x	
Is your EMS Coordinator position filled by an officer or ems personnel?			x	
Who does your EMS personnel report (who supervises them) to on the scene of an EMS call?			x	
What is your process if the fire officer disagrees with patient care given by the EMS provider?			x	
Who is responsible for reviewing EMS reports?			x	
Was that person chosen due to rank or other qualifications?			x	

What are the three most common types of complaints related to service that you receive at the department?				x
If you have contracted paramedics, who discipline them?				x
If you have contracted paramedics and full-time members that are cross-trained as paramedics who outranks who? Why?				x
Why are your firefighters not paramedics?				x
Do you give ascertained merit points or other points for promotion based on the applicant possessing a current paramedic license?		x		x
Why do you give those points?		x		x
Have you changed your hiring practices to require paramedic licensure?				x
What are the components of your promotional exam?		x		
How are those components chosen?		x		x
When was the last time any of those components were changed?				x
Why were they changed?		x		x
If you have a tactical exercise, in general terms what type of incident does it normally involve?		x		
Have you ever had a tactical exercise that is primarily related to EMS instead of a rescue or fire incident?		x		x

what type of incident was that if yes?		x		x
If you could make up one promotional exam assessment related to EMS what would that be?			x	x
What do you feel are operational competencies related to EMS that you expect a fire officer to have?			x	x
What supervisory skills related to EMS do you expect your fire officer to possess?			x	x
If you changed your tactical exercise to an EMS-based exercise would that reflect more closely what the public expects of your department?			x	x
What is the most important service provided by your fire department?				x
What do you think will be the most important service provided by fire departments in the next ten years?				x