

**EVALUATING DUAL-ROLE FIREFIGHTER PARAMEDICS AND THE
EFFECTS ON MENTAL HEALTH, RECRUITMENT, AND RETENTION
WITHIN THE FIRE SERVICE.**

Research Presented in Partial Fulfillment
of the Requirements for the
Executive Fire Officer Program

by
Chad Costa

National Fire Academy

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Abstract

This study will examine whether transitioning dual-role firefighter paramedics to single-role paramedics within fire-based transport ambulance providers is effective. The study will explore the effects of a dual-role system versus a single-role system on agency employees and the public. A qualitative analysis will be conducted on agencies with dual and single-role systems in California to gather data that supports a paradigm switch in the fire service. This research aims to present positive findings that will assist the Petaluma Fire Department and other fire service agencies shift towards a single-role system, improving recruitment, retention, and employee mental health while providing a sustainable future for staffing and resiliency.

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My affiliation with the Petaluma Fire Department is provided as biographical information. No official sponsorship or endorsement of this Capstone Research Paper by the Petaluma Fire Department was provided or should be inferred.

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CHAPTER 1. INTRODUCTION

The Petaluma Fire Department is constantly changing its response model to meet the needs of its constituents. In the 1980s, the organization needed a reliable Advanced Life Support ambulance provider within Southern Sonoma County. In response, the Petaluma Fire Department started one of Northern California's first fire-based transport Advanced Life Support (ALS) ambulances. This initiative grew over the years and transformed into three transport ALS ambulances and one Basic Life Support (BLS) ambulance, all staffed by full-time firefighter dual-role paramedics. While this model is replicated throughout the state, new challenges have forced the department to reconsider this staffing model. Unfortunately, the decline in dual-role firefighter medic applications over the past decade has made it difficult for all transport ALS fire departments to maintain the supply and demand of paramedic firefighters, resulting in understaffing issues.

This research paper will evaluate separating fire-based agencies into single- and dual-role paramedics. This researcher will use qualitative research methods to explore recruitment and retention data, financial data, and perspectives from current paramedics within counties near Petaluma, CA. This researcher assumes that they will see the need for fire-based agencies to consider switching from a dual-role transport paramedic system to a single-role paramedic system. Nationally, the supply of firefighter paramedics needs to keep up with the demand, so separating dual-role and single-role will increase the supply chain for both professions. Individuals can choose the model that supports their desires and mental and physical health. In turn, it assists agencies with tackling staffing shortages as the demand for paramedic services increases. Due to this shortage, career fire departments experience increasing difficulties hiring paramedic-firefighters, known as firefighter-paramedics. Staffing challenges are a growing

problem for public safety because the fire service is the largest employer of Emergency Medical Services (EMS) workers (Byron, 2022). A new staffing model would support single-role paramedics working on the ambulances while dual-role firefighter paramedics work on the engines of ladder trucks. This separation could help attract and retain paramedics, as hiring and retaining dual-role paramedics is becoming increasingly difficult. This researcher has found that not all dual-role paramedics joined the fire service to become transport paramedics. Being assigned to an ambulance can impact their mental health and family life. By hiring single-role paramedics, fire-based transport ambulance agencies will expand their application pool and bring in people explicitly looking for ambulance work. Adapting to the current challenges is crucial for the fire service, and switching to a single-role paramedic program will help overcome the recruitment and retention issues.

Background

The nation's ability to be resilient during and after disasters significantly reduces community population risk. According to the United States Fire Administration (USFA, 2019), the most successful way to achieve disaster resiliency is through preparedness, including mitigation. Building a culture of preparedness within our communities and our governments will support a national effort to prepare for disasters at the individual, family, community, state, local, tribal, territorial, and federal levels. First responder staffing and service levels affect a community's resilience. By providing paramedic services through an agency adequately staffed for the risks and populations of their communities, resiliency will increase, and the population will see a reduced effect of the emergency or disaster.

According to “The Myth of the Perfect Model (2006)”, today's fire service vastly differs from the past. Modern firefighters are expected to be well-versed in various fields and be ready to respond to any situation. Training personnel as both EMS providers and firefighters enhances the versatility of the workforce, offers people variety in duties, and provides flexibility for management. Cross-trained personnel have the lowest attrition rate in the industry. While the number of calls received by fire departments has increased, most are medical emergencies.

As stated in the Center of Public Excellence Whitepaper (CPSE, 2020), “The 21 Century Fire and Emergency Services,” daily exposures in the fire and emergency services include sleep disruption and deprivation, the continual witnessing of tragic events, and exposure to toxic environments. These exposures are all contributing factors to the increased cancer rates in firefighters and their predisposition to many health-related issues and psychiatric disorders, including suicide.

The Petaluma Fire Department started its Transport ALS program in the 1980s to address the need for an increased level of care within the community and to improve the population's resiliency. The program trained firefighter paramedics in both firefighting and ambulance work, and this model has been booming nationwide for decades. However, the increasing call volume has affected the mental and physical health of firefighters who work multiple days in ambulances. This researcher confirmed that the Petaluma Fire Department had lost members to early medical retirement due to the stress related to the dual role job requirements; additionally, during exit interviews, it has been divulged from various members that they were choosing to leave for non-transporting agencies due to the opportunity to move away from a dual role system.

Advanced Life Support transport fire departments, in their pursuit of providing a high level of service, can benefit from a single-role system. This approach, which involves employing individuals solely interested in ambulance work and assigning dual-role paramedics to fire operational apparatus, can address the challenge of hiring dual-role paramedics who often prefer firefighting. By considering this shift, departments can ensure sustainability and maintain a high level of service.

Significance of the Study

Emergency Medical Services are an essential component of the services provided by the fire service in the United States. The American fire service is strategically and geographically well-positioned, and effective patient care to deliver time-critical response and effective patient care. As such, the fire service has become the first-line medical responder for critical illnesses and injuries in almost every community in the United States. Fire departments are held to standards established by the National Fire Protection Association (NFPA). The standard set expects the fire department to arrive at the scene within eight minutes for Basic Life Support (BLS) and four minutes for Advanced Life Support (ALS).

According to the International Association of Fire Chiefs (IAFC, 2023), models model models. United States Fire Service uses three primary system models for delivering emergency medical services. These models include fire departments using cross-trained/multi-role firefighters for EMS first response and ambulance transport; fire departments using firefighters for EMS first response and civilians for ambulance transport; and fire departments using firefighters for EMS first response and non-fire department organizations for ambulance

transport. The IAFC report highlights the model's unique advantages: fire departments use cross-trained/multi-role firefighters for EMS first response and ambulance transport.

Additional research and data are needed to ensure that the positives outweigh the negatives. A dual-role firefighter is cheaper since one person satisfies both modalities, but some impacts affect the workforce within both staffing models. Through discussions with firefighter paramedics, this researcher found that within a busy EMS system, there was a rise in burnout. Burnout in EMS may negatively impact the well-being of EMS professionals. The conservation of resources theory postulates that people experiencing exhaustion central to burnout will attempt to preserve remaining resources (Crowe, 2018). Burnout is an ongoing and significant problem in EMS. 60% of 2022 EMS trend survey respondents said they have “one or more symptoms of burnout.” A remarkable and distressing 9% stated, “I am completely burned out and need to seek help or make major changes.” (What Paramedics Want in 2022). Employers must continue to prevent and treat individuals with burnout through access to an employee assistance program, a peer support program, and other burnout countermeasures. Flawed and overburdened systems harm EMS providers, and those EMTs and paramedics are not to be blamed for those flaws. Instead, employers are responsible for finding and fixing the system's problems, causing burnout. (Friese, 2022). Staffing models should reflect efforts to reduce burnout, increase recruitment and retention, and ensure the highest service level. A single-role system must be critically evaluated for all agencies with transport ambulances.

Problem Statement

The problem is fire-based transport. Advanced Life Support agencies need help recruiting and retaining firefighter paramedics. With severe staffing shortages, agencies are being forced to mandate their employees to work astronomical hours, which is adding to the mental and physical health issues with employees. High stress and the emotional toll are causing a mass exodus of qualified firefighter paramedics to leave transport agencies and seek employment with an agency that does not transport. This study will evaluate the dual role model through qualitative data research to ensure the employees are supported, the constituents continue to be provided a high level of service, and the agency has a sustainable future.

Purpose Statement

This study aims to evaluate the Petaluma Fire Department's dual-role Paramedic Firefighter staffing on Advanced Life Support Ambulances. This research and evaluation will examine the effects of the dual-role system on firefighters' mental and physical health and the direct correlation to Petaluma and other dual-role agencies' recruitment and retention issues. In conclusion of the research, the researcher will show through qualitative research that Petaluma and all dual-role fire-based EMS agencies need to embrace a paradigm switch in the fire service and employ a single-role paramedic transport program while shifting the dual-role Paramedic Firefighters to fire-based staffing models. This paradigm switch will reduce recruitment and retention challenges, ensure the health and safety of our employees, and continue a high level of service to the community while providing a sustainable staffing model for the future.

Research Question(s) or Hypothesis

1. How does a single-role transport paramedic program address the issues related to fire service agencies' recruitment and retention challenges?
2. How does working as a firefighter paramedic on a transport ALS Ambulance impact the workforce's physical and mental health?
3. What are the potential benefits for the fire service transitioning from a dual-role transport paramedic system to a single-role transport paramedic system?
4. How does the presence or absence of ambulances in an agency influence firefighter paramedics' employment preferences and decisions?

Summary

Moving forward, Chapter 2 will provide an overview of the existing literature on the research topic, followed by Chapter 3, which will detail the methodological approach used to critically evaluate the cause and The Myth of the Perfect Model effect of a dual-role fire-based transport ambulance staffing model versus a single-role staffing model.

CHAPTER 2: LITERATURE REVIEW

Introduction

Recruiting and retaining dual-role firefighter paramedics is challenging beyond the City of Petaluma. This researcher has found that many nationwide departments need help recruiting and retaining firefighter paramedics. Recruitment challenges increase within agencies providing transport Advanced Life Support services. The reduction in staffing numbers is compounding and adding to the mental and physical health issues of employees. Using peer-reviewed literature found in the National Emergency Training Center Library, Columbia Southern University library, and by evaluating modern staffing models against traditional models as well as using qualitative data from current firefighter paramedics, the research will aim to guide Petaluma as well as other organizations to re-evaluate the normal and move to sustainable staffing and service models that will support organizational sustainability.

Existing Literature

For many years, fire service professionals have argued the pros and cons of combining the professions of firefighters and paramedics. Understanding the good and bad of each model is essential to appreciating what makes sense for your community.

What defines a quality EMS system is rooted in local experience. Who provides the services and how they do so may vary from place to place, but each of us has our opinion of the ideal model, shaped by our experiences and exposures. There is no one "ideal" system model but rather a whole host of local factors that determine the correct delivery method for a community (The Myth of the Perfect Model, 2006)

The Fire Service Model is a dedicated commitment to fire suppression; the fire service has a long history of providing emergency ambulance service. Many communities have yet to learn this model of delivery. Reasons have included performance, finances, and sustainability. Within fire-based EMS services, it is essential to distinguish between two sub-models: dual- and single-role. In dual-role systems, personnel are trained as firefighters, EMTs, or paramedics. Single-role systems have an EMS division or section, but their personnel, and often their management, are kept separate from fire suppression. Adding EMS into the fire department organizational structure provides advantages in the day-to-day management of both services. The need for parallel or different management and administration is eliminated with fire suppression and prehospital emergency care operations under one roof. While the advantages are proven, the unintended consequences create immense challenges for organizations with combined professions. Firefighters may want to avoid becoming paramedics but could feel like they must become one to secure a firefighting career. Those firefighters who become paramedics have a negative mindset regarding paramedicine and may leave transport agencies.

My department prides itself on its reputation as an aggressive, interior attack-based firefighting force. Fire does not stand a chance in my city; we are well-trained, motivated, and very good at what we do. We enjoy a rich history that dates to 1754, when townspeople established a volunteer fire department. One hundred years later, the nation's second paid department was established: the Providence (RI) Fire Department. I was part of that history from 1991 until 2016. Half of my time was spent in fire companies; the other half was on fire department-run EMS ambulances. Every second of every day, 24/7, I was a firefighter. I am still a firefighter and always will be. (Morse, 2021)

This mindset of prioritizing fire over EMS was also vetted through a survey published through multiple social media channels. A cumulation of qualitative questions was provided to modern-day transport ambulance firefighter paramedics. This data shows our current workforce's mindset, desires to work within each system, the transport system's effects on their mental and physical health, and longevity working within these organizations.

Crowe's dissertation (2018) concluded that increased burnout may negatively impact EMS professionals and agencies through increased sickness absence and turnover. Variations in burnout between agencies and the vital link between burnout and job characteristics suggest that burnout can be affected at the service level (Dual-Role and Single-Role Models) of the EMS agency. Increasing job resources may positively impact agencies, especially when job demands are high and not easily modified. Burnout in EMS negatively affects the well-being of EMS professionals and negatively influences the stability of the workforce. Employees may preserve resources by withdrawing from work through sickness absence or leaving the job. Previous research conducted among nationally certified EMS professionals has shown a significant association between burnout, sickness absence, and turnover intentions. EMS professionals experiencing work-related burnout demonstrated a two-fold increase in odds of reporting ten or more days of sickness absence in the past year and over a three-fold increase in odds of intending to leave the EMS profession (Crowe, 2018).

According to Hendricks et al. (2023), first responders (emergency medical services workers, firefighters, and law enforcement) are on the front lines of healthcare, public order, and disaster response in America. Despite significant improvements in prevention strategies and understanding over the past ten years, cardiovascular disease (CVD) remains the most prevalent cause of on-duty deaths among firefighters. Additionally, sudden cardiac events are estimated to

account for 7–22% of deaths among law enforcement officers, 17% among wildland firefighters, and 11% among emergency medical services workers. Reflective of the ongoing national burden of CVD among this worker population, the disproportionate burden of CVD among first responders can be related to exposure to many physical and psychological stressors unique to the occupation. For example, repeated exposure to high psychological stress stemming from traumatic events, increased workload, high responsibility, and slight psychological recovery are well-known exposures related to CVD, which is highly prevalent among first responders. Given the nature of their work, they are more likely to have repeated exposures to physical injury, mental health crises, and unpredictable work or sleep schedules (Hendricks et al., 2023). Overall, many firefighters reported sleep deprivation (59%), binge drinking behavior (58%), poor mental well-being (21%), current nicotine use (20%), hazardous drinking behavior (14%), depression (11%), poor physical well-being (8%), caffeine overuse (5%), or poor social bonding (4%) (Carey et al., 2011).

Synthesis of the Existing Literature

Transport Firefighter Paramedics have a stressful job that affects their mental and physical health. These effects were shown within the survey and are backed up by my literature review of the emotional and physical toll affecting our employees. Although the fire service dual role system is a desired model, due to financial and oversight purposes, the unintended consequences affect organizational success and sustainability. Studies have shown the adverse effects on the health and wellness of firefighters and the added effects on dual-role firefighters with paramedic responsibilities. The firefighting culture has stayed prevalent through multiple generations and still plagues today's fire service. Due to the stresses of the job and the mental and physical effects on our employees, modern fire department leaders are beginning to research

and adjust their models as recruitment and retention have suffered. The current models studied, and the completed survey has, and the completed survey has, and the completed survey has. The completed survey has shown a positive trend in employee wellness and increased recruitment and retention. More research is needed as the agencies reviewed have only implemented the single-role system for a limited time. Although initial findings and qualitative research say a paradigm shift is necessary, agencies must ensure that the adjustment is financially sound and that their administrative processes and oversight can support the model.

Summary

Literature review and qualitative data collection show that our profession affects our firefighter paramedics' mental and physical health. The day-in and day-out grind of running back-to-back emergencies, the lack of sleep, and the stress of people's lives in your hands have immense effects on individuals and organizations. This researcher has found that firefighter paramedics want agencies to explore modern staffing models that allow firefighters to work in a fire-based system while repurposing single-role paramedics to focus on our constituents' EMS transportation and long-term care. Although the dual role model has many advantages, the consequences outweigh them, and many organizations, including the Petaluma Fire Department, suffer from recruitment and retention as well as increases in leaves due to mental and physical injury and burnout. Seeing the effects of this career and hearing from those carrying out the dual role model will guide leadership decisions to explore a staffing model paradigm shift within the Petaluma Fire Department.

CHAPTER 3: METHODOLOGY

Research Design

Fire departments like Petaluma Fire, which provide paramedic transport services, have seen fewer candidates applying for vacant paramedic positions. The agencies are unique because they provide fire services and paramedic emergency medical services via fire response and ambulance medical response. The reduction in applicants, coupled with increases in vacancies due to separation from employment (i.e., retirements, transfers to non-transport agencies, and mental and physical injury), has compounded the issue, leaving many agencies understaffed and forcing employees to work extra days. The totality of this issue is threatening the sustainability of our current dual-role firefighter paramedic staffing model.

After researching multiple peer-reviewed documents and speaking to members of all ranks and ages within fire departments across the country, this researcher chose a generic qualitative approach to evaluate the need and quantify the effectiveness of the dual-role and single-role staffing models. Understanding the definition of qualitative research is necessary to know how the research for this project was conducted.

Qualitative research explores and understands the meaning individuals or groups ascribe to a social or human problem. The research process involves emerging questions and procedures, collecting data in the participants' setting, analyzing the data inductively, building from particulars to general themes, and interpreting the meaning of data. The final written report has a flexible writing structure.

(Creswell & Creswell, 2019, p. 250)

A qualitative survey focused on four transport paramedic fire-based agencies within the Northern Bay Area. This focused survey allowed data to be collected from people working in the same geographical area where similar geographics exist. (i.e., salary, population, and call volume) Retrieving qualitative data was the best fit for this research project because gathering paramedics' reflective feelings and emotions helps managers understand the impacts of our current and future staffing models. Understanding how staffing models affect our employees is imperative for our organizational staffing sustainability. The question surrounding evaluating the current dual-role model versus a single-role paramedic model was studied through a qualitative research approach. A qualitative research question central to the topic was designed (Creswell & Creswell, 2018):

1. Does the dual-role fire-based firefighter paramedic model contribute to the staffing shortages seen throughout the nation?

As such, the methodology that naturally fits this research is generic qualitative inquiry.

Generic qualitative inquiry is a method that only partially fits the boundaries of the three primary qualitative methodologies commonly used. The three common approaches to qualitative research are phenomenology, ethnography, and grounded theory; however, when the need to expand beyond the structure of these methodologies arises, a generic qualitative inquiry could be the most appropriate option (Kahlke, 2014). Surveys and expert opinions are crucial to addressing the research problem, which cannot be defined by the three primary qualitative research perspectives: phenomenology, ethnography, and grounded theory. Therefore, exploring other qualitative methodologies beyond the standard guidelines becomes necessary. Even though the case study approach is a part of qualitative research, it demands a distinct perspective.

By including firefighter paramedics within the selected agencies, the data will extract the pros and cons of both models and help guide agency administrators across the country with qualitative data to support their current model or transition to a different model. Combining this qualitative data and the provided research on our firefighters' mental health and wellness will be a measuring tool for decision-makers. Although each agency will have to weigh the financial implications of their model versus a potential adjustment, the core of this research will provide the personal or internal data for a decision versus an assumption that a change is needed or the way it is currently done is sufficient.

Population and Sample Size

The Petaluma Fire Department is in Southern Sonoma County, situated at the northern edge of the San Francisco Bay area. This region is renowned for its warmer climate and proximity to the Sierra Mountains and the Pacific Ocean. Due to its location and proximity to the affluent areas of Silicon Valley and Wine Country, this region offers a healthier wage than other areas in the state. With the competitive pay opportunities, firefighters with a paramedic certification can transfer between agencies quickly if desired.

Although this researcher has found a shortage of firefighters throughout the country, the sample size was focused on firefighters working within the Bay Area for agencies that have transported ALS ambulances. This focus area was chosen to provide comparable data for the Petaluma Fire Department with like agencies in size and geography. As Creswell & Creswell (2018) recommended, the fire departments chosen were purposely selected based on geography, size, population, and staffing model.

Sampling aims to approximate a larger population on characteristics relevant to the research question to be representative so that researchers can make inferences about the larger population (Kelly et al., 2003). For this reason, the study's primary objective was to sample two focus groups within each agency. The first group was comprised of firefighter paramedics who are currently working within one of these five agencies. The second group was firefighter paramedics who once worked within one of the five agencies but had since left for a non-transport fire agency. A minimum of one participant from each group per department was preferred; however, there were no participation cutoff numbers. The goal was to gather 10-15 participants for the survey.

The Petaluma Fire Department is an all-career department that protects a population of 59,776 across 14.52 square miles (United States Census Bureau, 2022). The department operates out of three stations and staffs fire apparatus and ALS ambulances with firefighter paramedics.

The Sonoma Valley Fire District provides all-risk fire, rescue, and paramedic-level emergency medical services to the communities of Agua Caliente, Boyes Hot Springs, City of Sonoma, Diamond-A, El Verano, Fetters Hot Springs, Glen Ellen, Mayacamas, Temelec, and Seven Flags. The district, including the city, serves an area of approximately 74 square miles with a resident population of roughly 48,000. The district also provides ambulance service to the greater Sonoma Valley, an area of approximately 100 square miles (Sonoma Valley Fire, 2023). The district is staffed with firefighter paramedics and is approximately 15 miles East of Petaluma.

The Sonoma County Fire District serves the Town of Windsor, Larkfield, Wikiup, Mark West, Mountain, Middle Rincon, Bennett Valley, Bellevue, Graton Casino, Fulton, Forestville, Guerneville, Rio Nio, Bodega Bay. The district serves a population of 100,000 and protects 250

square miles by staffing fire apparatus and ALS ambulances throughout 11 stations (Sonoma County Fire, 2023). The district resides within Sonoma County and is approximately 10 miles North of Petaluma.

Instrument(s)

This research focused on one main topic. That topic was identifying the strengths and weaknesses of a dual-role fire-based transport ambulance system versus a single-role fire-based transport ambulance system. The goal is to provide leadership in the City of Petaluma Fire and leadership across the country in making decisions about staffing models. This research offers mental human factors accomplished through peer-reviewed research and a Google survey of agencies with a dual-role fire-based transport system. The agencies selected were within the Northern California Bay Area.

Henceforth, the instrument used in this research consisted of a series of questions directed towards firefighter paramedics working within this dual role system to provide insight into their current job satisfaction and their mindset towards the model and its effects on their mental health. The instrument questions provide data collection that could produce a direction for agencies to evaluate staffing models. The questions were broad enough in perspective that the interviewees could answer from their state of mind without misleading the participants to a predetermined conclusion. An explanation was provided if the participant needed an explanation of any aspect of the instrument. The instrument was required to allow the interviewee to provide their own opinions and thoughts in answering the instrument's questions (Creswell & Creswell, 2018).

To begin the research, the instrument used a baseline of questions that gauged the participants' expertise, shared knowledge, and experience working in a dual-role system. Additionally, the instrument verified that the respondent worked within one of the selected agencies. The criterion for choosing participants was established, and their responses solidified this. The baseline questions also set the study's focus and gave participants a clear view of the research period. The subsequent questions aimed to elicit the participants' internal feelings about their career as a dual-role paramedic, stemming from their reasons for choosing this profession and the emotional effects the model and job have had on them throughout their careers. Finally, the questions focused on the response models to determine whether the participants believed the current model was sufficient and whether a single-role model was desirable or something their organization should consider. Once the instrument was designed, it needed to be tested.

To determine its effectiveness and appropriateness, two essential aspects of the instrument required a field test (Kallio et al., 2016). The instrument was reviewed by subject matter experts and firefighter paramedics who work outside the targeted agencies. Feedback was collected to ensure that the data extracted would provide clear guidance for organizational decision-makers. Based on the feedback received, the questions were deemed appropriate, and the data extracted would serve the purpose of the survey. The subject matter experts showed enthusiasm for the questions and topics, reinforcing the need for agencies to examine their staffing models to meet the needs of their internal and external customers. Additionally, an expert in research reviewed the methodology and confirmed that the instrument met the criteria of a generic qualitative inquiry.

This study aims to evaluate the Petaluma Fire Department's dual-role Paramedic Firefighter staffing on Advanced Life Support Ambulances. This research and evaluation will examine the

effects of the dual-role system on firefighters' mental health and the direct correlation to Petaluma and other dual-role agencies' recruitment and retention issues. In conclusion, the researcher will show through qualitative research that Petaluma and all dual-role fire-based EMS agencies should explore a single-role paramedic transport program while shifting the dual-role Paramedic Firefighters to fire-based staffing models. This exploration should evaluate whether a staffing model adjustment would reduce recruitment and retention challenges and ensure the health and safety of our employees while continuing to provide a high level of service to the community.

Research Question(s) or Hypothesis

1. How does a single-role transport paramedic program address the issues related to fire service agencies' recruitment and retention challenges?
2. In your opinion, how does working as a firefighter paramedic on a transport ALS Ambulance impact the workforce's mental health?
3. What are the potential benefits for the fire service transitioning from a dual-role transport paramedic system to a single-role transport paramedic system?
4. How does the presence or absence of ambulances in an agency influence firefighter paramedics' employment preferences and decisions?

The questions for the instrument/interview were as follows:

1. To what extent have you worked for one of the following agencies: the City of Petaluma Fire Department, Sonoma County Fire District, Sonoma Valley Fire District, or other agencies within the Northern Bay Area?

2. What is your career experience (background) working as a dual-role firefighter paramedic on an ALS transport ambulance?
3. In your opinion, what was your reason for becoming a paramedic?
4. In your opinion, how does your mental health directly relate, if at all, to your position?
5. In your opinion, would you prefer to work for a non-transport agency?
6. If your agency switched to a single-role transport system, could this, in your opinion, affect the level of service within your community?
7. Share your perspective about your role as a transport paramedic.

The instrument's questions were designed to be analyzed at a later stage. The data gathered from the instrument was utilized to determine if an apparent solution could be identified in the research. Merely requesting participants to answer the study's central question would not lead to a comprehensive solution analysis. The study provided an opportunity to obtain a solution to the identified gaps by asking participants a series of questions that focused on the overarching theme of the research period's central topic. It was critical to ensure that these questions were dependable and could provide the required data for the study to determine if a solution to the problem existed. The instrument's validity was field-tested by a subject matter expert in research and a subject matter expert within the fire industry subject matter expert to ensure that the collected data was deemed reliable in determining whether a solution to the research's central topic exists.

Research Process

In pursuit of our research objective, which aims to assess the mental health of paramedic firefighters operating within transport ALS fire-based systems, a Google form survey was employed. Crafted with precision, the survey encompassed inquiries into the sentiments of firefighter paramedics regarding their roles within the fire service and their perceptions of the advantages and drawbacks associated with both dual-role and single-role paramedic firefighter ALS systems. To determine the credibility and dependability of the survey questions, the survey was field tested by experts not affiliated with the study or any of the departments that participated. The experts reviewed the survey questions to ensure they portrayed the key concepts being studied and whether the questions aligned with the purpose statement. They also helped to ensure that questions were appropriately phrased and led (Northcentral University, 2018). The agencies selected were in a similar geographical area to Petaluma and provided fire-based services like those offered by Petaluma. The survey was then distributed to willing individuals who work within these systems through direct email and social media. Robust security protocols were implemented to fortify data integrity. These measures included data encryption, stringent access controls, and regular backups, mitigating the risk of unauthorized access or breaches. Integral to the research process was implementing robust security protocols to safeguard data integrity. Measures such as data encryption, stringent access controls, and regular backups were diligently enforced to mitigate the risks of unauthorized access or breaches, thus upholding the sanctity of our data.

Moreover, paramount attention was paid to data privacy and retention. Confidentiality agreements were established with survey participants to safeguard their personal information. At the same time, adherence to data retention policies ensured that research data would be securely

archived for a minimum of four years following the completion of the study. These measures uphold ethical standards and align with legal regulations governing data handling practices; by prioritizing data privacy, retention, and security, our research endeavors to and maintain the highest standards of integrity and protect the interests of all stakeholders involved.

Moving forward, further research is warranted to explore the long-term effects of the dual-role system on the mental health and well-being of paramedic firefighters. Additionally, investigations into the efficacy of support systems and interventions to mitigate the stressors associated with the profession would be invaluable. Furthermore, comparative studies between different firefighting agencies and regions could provide insights into variations in stress levels and coping mechanisms, contributing to the development of targeted interventions tailored to specific contexts. Ultimately, continued research in this area is essential to inform evidence-based policies and practices prioritizing paramedic firefighters' health and safety.

Ethical Considerations

Ethical considerations were meticulously addressed by opting for a qualitative research approach, explicitly employing a survey methodology. To ensure the protection and confidentiality of participants, the survey distributed did not require any demographic information and did not require the participant to divulge employer information. Ethical guidelines were strictly adhered to, emphasizing voluntary participation and the right to withdraw at any stage. Maintaining each participant's privacy helps ensure that no harm can come to the individual by participating in the research. This anonymity of the participants makes the study conform to proper ethical standards (Morina, 2020). However, there is some difficulty in maintaining this privacy in certain aspects of the research. For example, it was essential to

avoid naming the individual's department in the study, but it can be assumed that the contributor did work for one of the four agencies. This assumption that the contributing individual works or worked within one of the four agencies could not be avoided, but the specific agency and participating member names needed to be gathered within the research. The survey instrument was also designed sensitively to avoid intrusive or harmful inquiries.

Summary

To summarize the methodology of this research project, a generic qualitative research design was chosen that consisted of a combination of surveys to four agencies of similar size and population as the Petaluma Fire Department. By distributing the survey through direct email and social media, a goal was to gather information from at least two active firefighter paramedics within each agency. Additionally, outreach through social media was completed to collect information from at least one firefighter paramedic who had left each agency to work within a non-transport fire department. Strict procedures and policies were implemented to ensure the privacy of each contributing individual and the agency with which they were affiliated.

In addition to the Google survey, multiple sources were researched to fully understand the history behind the dual-role system, its pros, and cons regarding finances, and how each staff member affects the firefighter paramedics working within it. The method of research, accompanied by the information obtained, will support the hypothesis that fire-based agencies should consider transitioning from a dual-role system to a single-role system. This staffing adjustment will protect the health and safety of their firefighters and provide a pathway to organizational sustainability in the future.

CHAPTER 4: STUDY RESULTS

Introduction – Demographics of the Participants

This study proceeded after selecting appropriate participants who met the research criterion. This criterion included current transport dual-role firefighter paramedics who work for the four organizations selected for the study: Sonoma Valley Fire, Sonoma County Fire, and Petaluma Fire. The external entities were chosen based on their proximity, workforce, operational framework, and demographic characteristics, aligning with those of the Petaluma City Fire Department.

By selecting current dual-role transport paramedics, the research aimed to gather the personal, emotional, and physical effects and opinions of employees who work within a transport dual-role system. The study sought to gauge employees' thoughts on this current staffing model vs. the single-role staffing model that places firefighters on fire apparatus and paramedics on ambulances. Additionally, by evaluating the data from employees working in the system, the research aimed to prove that the dual-role system contributes to the recruitment and retention challenges. Data outputs can be validated by gathering data from employees in organizations like Petaluma Fire, as the organizational structure, demographics, and job duties coincide. The data sought to offer insights into the possible advantages and disadvantages of various staffing models, enabling managers at the Petaluma Fire Department and other entities to assess these as they contemplate moving from a dual role to a single-role staffing approach.

Table 4.1***Demographics of Participants***

<i>Participant #</i>	<i>Current FF/Paramedic</i>	<i>Affiliated with Focus Agencies</i>	<i>Years of Service</i>
Participant #1	YES	YES	10
Participant #2	YES	YES	10
Participant #3	YES	YES	10
Participant #4	YES	YES	10
Participant #5	YES	YES	15
Participant #6	YES	YES	10
Participant #7	YES	YES	20
Participant #8	YES	YES	20
Participant #9	YES	YES	15
Participant #10	YES	YES	5
Participant #11	YES	YES	15
Participant #12	YES	YES	10
Participant #13	YES	YES	20
Participant #14	YES	YES	5
Participant #15	YES	YES	5

Research Results

The study was completed using a generic qualitative inquiry that utilized a survey of participants working in a dual-role transport ALS system. The instrument used for the study asked a series of questions aimed at providing the answers to these questions. Survey questions were framed to address the research and allowed the participants to offer their perspectives on the physical and mental effects of working within a dual-role system. The inquiries also enable participants to express their reasons for joining the fire service and discuss whether this model impacts recruitment and retention within agencies implementing it.

Table 4.2

Statistics Developed from the Research

<i>Theme</i>	<i>Participant response</i>
Scope of Perspective	<ul style="list-style-type: none"> • 3 - Five Years • 5 – Ten Years • 3 – Fifteen Years • 3 – Twenty Years • 1 - Thirty Years
Current dual-role firefighters or paramedics were there at one time.	<ul style="list-style-type: none"> • 8 - Current FF/PM • 7 - Were an FF/PM at one time
Reasons for becoming a paramedic	<ul style="list-style-type: none"> • Enjoyed Paramedicine • Wanted to provide the highest level of medical care. • To get a job in the fire service
Does your mental health directly relate to your dual-role position?	<ul style="list-style-type: none"> • 11 – Yes • 4 - No
Would you prefer to work for a non-transporting agency?	<ul style="list-style-type: none"> • 4 – Yes • 11 - No
If your dual-role agency switched to a single-role, would this affect the level of service within your community?	<ul style="list-style-type: none"> • 10 – Yes • 5 - No
Do you enjoy being a transport paramedic?	<ul style="list-style-type: none"> • 10 – Yes • 5 - No

Should your agency switch from a dual-role system to a single-role system?

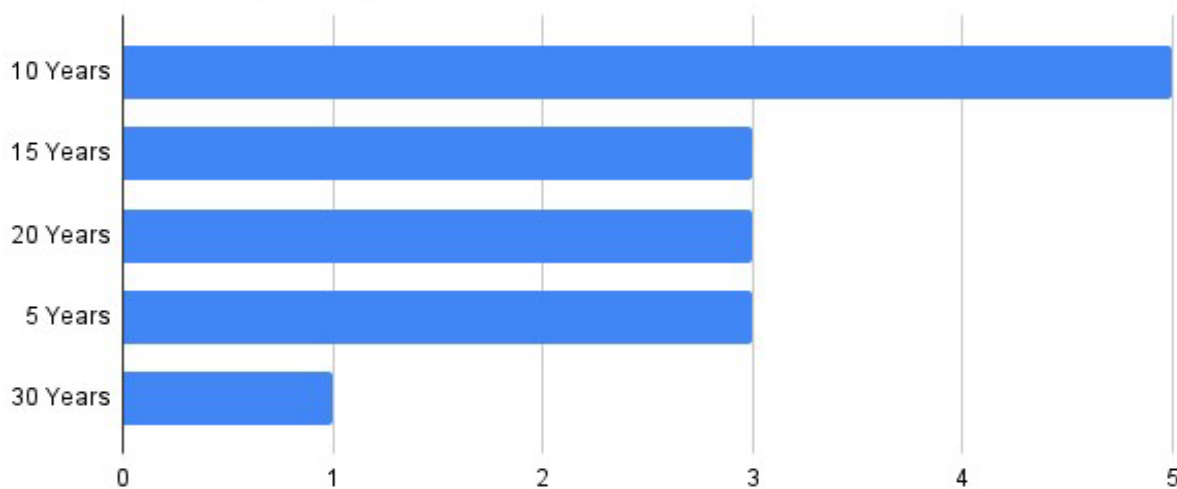
- 13 - Yes consider
- 2 - No

Theme #1

Fifteen people completed the survey, which targeted individuals with at least five years of experience in dual-role systems. This criterion ensured that respondents had sufficient time to form opinions based on their experiences working within such a system. Responses highlighted a broad range of experience among participants, from 5 to 30 years, indicating diverse perspectives on the dual-role model. This diverse perspective ensured that the feedback spanned across the demographics of any fire department across the United States.

Figure 1

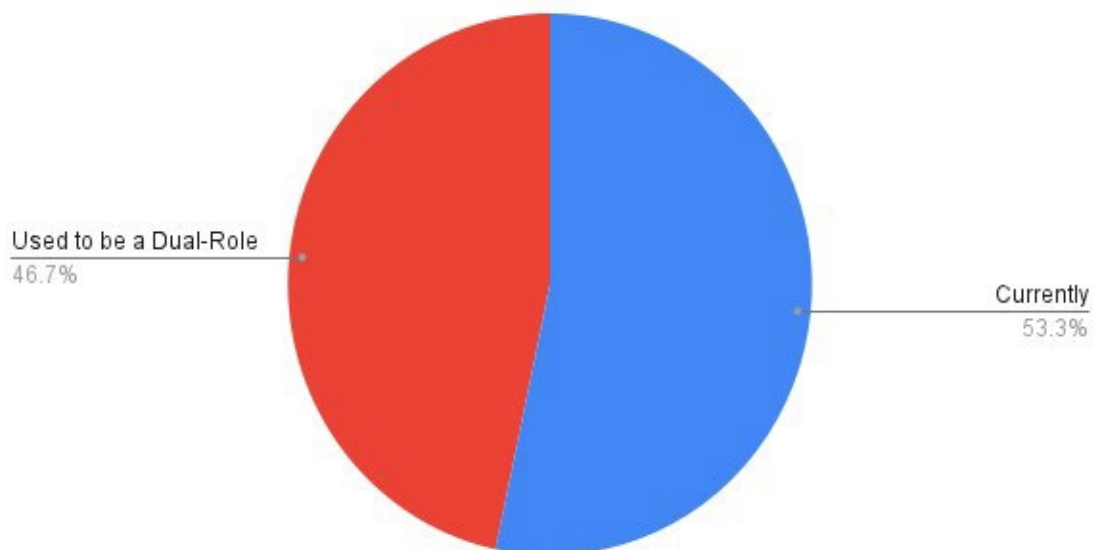
What is your career experience (background) working as a dual-role firefighter paramedic on an ALS transport ambulance?



Count of What is your career experience (background) working as a dual-role firefighter

Theme #2**Figure 2**

Participants currently work in a dual-role system or used to work as dual-role paramedic Firefighters.



Gaining perspectives from current firefighter paramedics and those who have left the dual-role staffing model allowed for a unique perspective from those currently working within the system and those who chose to move on to another system. When we often separate ourselves from a situation, it allows us to reflect and give a unique insight into how the prior environment affected us mentally and physically.

Theme #3

In your opinion, what was your reason for becoming a paramedic?

1. To get a job in the fire service. (9 Responses)
2. Enjoy paramedicine by providing the highest level of care. (5 Responses)
3. Enjoy helping people. (1 Response)

The primary reasons for becoming a paramedic among participants were the desire to work in the fire service, enjoyment of paramedicine, and the drive to help people. This suggests that career aspirations and altruistic motives play roles in individuals' decisions to enter this field. The participants have a deep passion for the job, allowing for honest and in-depth responses that department leadership should evaluate and take seriously.

Theme #4

In your opinion, how does your mental health directly relate, if at all, to your position?

1. Yes (11 Responses)
 - a. Lack of support from the department regarding staffing and resources
 - b. I am over the dual role system, as it wears you down.
 - c. Extended hospital wait times and not having two paramedics in an ambulance will burn you out.
 - d. It causes Post Traumatic Stress Disorder and affects home life.
 - e. Traumatic scenes stay with you and make you think about your family.
 - f. Ambulances ensure burnout, less sleep, depression, and reduce fire training time.
2. No (4 Responses)
 - a. It is what we signed up for.

- b. It is a great job and a good experience.
- c. It is a gratifying job to see care from arrival to transfer to the Emergency Department.

Most participants (11 out of 15) indicated that their mental health is directly related to their dual-role position, citing lack of support, burnout, PTSD, and the emotional toll of traumatic scenes as significant factors. This overwhelming response adds to organizations' need to evaluate their staffing models to ensure they provide an environment for employees to thrive.

Theme #5

In your opinion, would you prefer to work for a non-transport agency?

1. Yes (7 Responses)

- a. Better morals are not constantly being stuck on the ambulance training a new employee.
- b. A single-role system would allow more focus and training in firefighting skills and techniques.
- c. A non-transporting agency would have been more accessible in my life, sleep, etc.
- d. I enjoyed the dual role, but the high call volume in the dual role is demanding.
- e. A non-transporting role often allows more time for training in fire/rescue-related items at work.

2. No (8 Responses)

- a. Fire Departments with no transport capabilities tend to have sub-par Paramedics.
- b. Love the dual-role system.
- c. Less experience as a paramedic in a non-transport agency.

- d. There needs to be a higher quality of service in the dual role staffing model.
- e. I have had the option to leave for a non-transport agency. However, I still enjoy working in the ambulance from time to time.
- f. Having someone else be responsible for your initiated care is too cumbersome.

Opinions were divided, with 4 participants preferring to work for a non-transport agency.

In contrast, most (11) preferred not to switch, indicating satisfaction with the dual-role model or recognizing its benefits over non-transport models. Although there is a hesitation to switch models, further discussion and research need to occur, as there are multiple options for implementing a single-role system. Most participants are against the fire department turning control over to a private ambulance company for fear of control loss and reduced service perceived within the private transport business. When control is retained, and departments prioritize service, the anxiety regarding a model change is diminished.

Theme #6

If your agency switched to a single-role transport system, could this affect the level of service within your community?

1. Yes (10 Responses)
 - a. Fire EMS-based paramedicine provides much higher customer service and patient care.
 - b. Once you let a private transport company take your place, you will always have a different quality of care if you go with someone else.
 - c. Private medics need to have a higher level of professionalism.
 - d. The relationship between fire and EMS would decline over time.

- e. Due to our rural setting, our dual role is two out. We have 15 minutes before help arrives.
2. No (5 Responses)
- a. Shifting to single-role EMS would allow our Paramedics to focus on Paramedicine rather than juggling that with their firefighting competencies.
 - b. If the single-role program is managed effectively and the right people fill those roles, you could maintain excellent service.
 - c. Switching to single-role transport would not negatively affect the level of service.
 - d. The level of service could be maintained if the fire department controlled the ambulance.

Most participants (10 out of 15) believed that switching to a single-role model would affect the level of service provided to the community, highlighting concerns over the quality of care and professional standards. Agencies looking to switch to single-role should aggressively consider retaining control and providing a single-role service within the fire department. This model reduces the anxiety regarding a reduction of service within the community.

Theme #7

Share your perspective about your role as a transport paramedic.

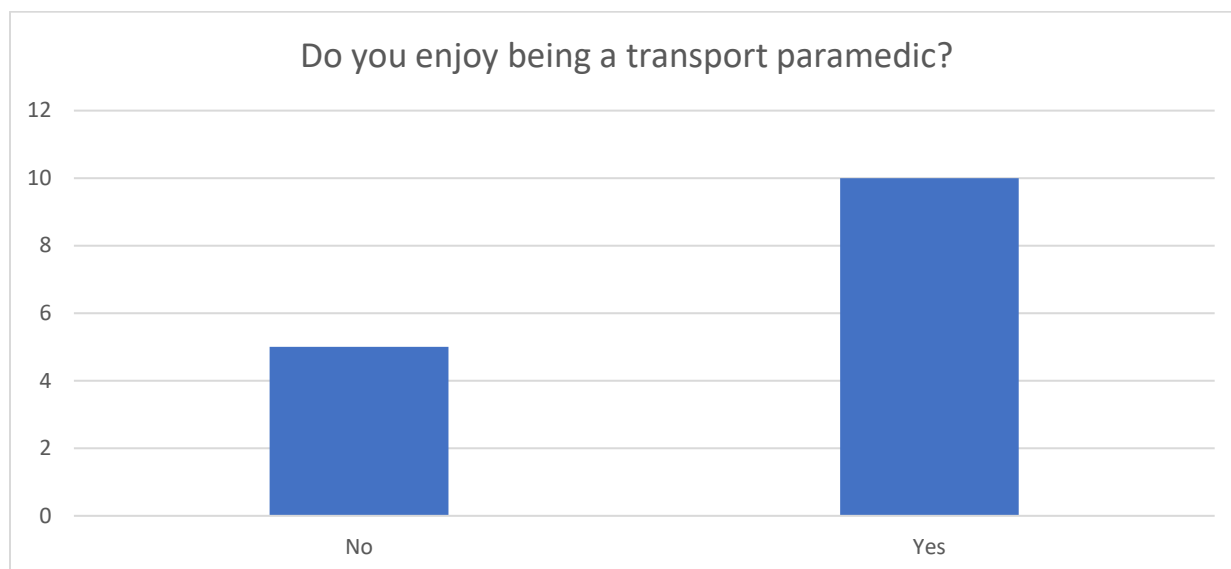
- 1. Burnout is high due to extended hospital wait times and high EMS system abuse.
- 2. It is rewarding that I can provide the best service to the community, utilizing both fire and medical skills, and it is incredibly frustrating knowing my department needs to adequately staff more resources that provide optimal safety to the community.
- 3. I thoroughly enjoyed being a transport paramedic but would only want to do it as part of my career.

4. Tired, broken off, irritated, depressed, burned out, always in pain, and hostile towards other people, but with all that baggage, there is still a feeling of gratification when you make a genuine difference on a call.
5. Ambulances in the firehouse provide more opportunities for teamwork and cohesiveness among the crews.
6. Most people (including myself) signed up as Firefighters, not career-transporting paramedics.

While 10 participants enjoyed their role as transport paramedics, five did not, indicating a variance in job satisfaction within the dual-role model. This further suggests the need for agencies to evaluate a single-role staffing model. Most firefighter paramedics love the job and enjoy providing a high level of service. However, when the pendulum swings to EMS, and a firefighter paramedic spends most of their time working within EMS, the data shows that job satisfaction reduces as they genuinely enjoy the firefighting side of the job as well.

Theme #8

Figure #3



Overwhelmingly, participants are interested in showing their love and passion for the dual-role system. However, there must be a balance between both roles. When the pendulum swings to EMS, resistance starts, and potential effects on mental and physical health populate. Agencies need to monitor the balance closely and adjust when there is a loss of balance.

Theme #9

Share your thoughts on an agency switching from a dual role to a single-role transport system.

1. It is something that should be considered.
2. Stay dual role.
3. It should be evaluated to determine if the pros outweigh the cons.
4. Avoid private ambulance companies, if possible, as they do not have the same pride and ownership.
5. It is good if evaluated and determined to be a positive change.
6. Fire departments should keep control and avoid private ambulance companies.
7. Dual roles provide a higher level of service.

Most participants (13 out of 15) suggested switching from a dual-role to a single-role system, indicating a significant interest in exploring the potential benefits of such a change. The participants empower the organization to evaluate current and potential staffing models. Gaining labor support in this endeavor is paramount, so leadership must ensure they have labor support before any explorative change.

Summary

The key findings of the study, presented objectively, focus on the participants' demographics, their responses to the survey, and the main themes identified by the research. Here are the most critical data points and themes highlighted:

- **Demographics of Participants:** The study involved 15 current or former dual-role firefighter/paramedics with years of service ranging from 5 to 20 years. All participants were affiliated with focus agencies like Sonoma Valley Fire, Sonoma County Fire, and Petaluma Fire.
- **Scope of Perspective:** The participants' years of service were distributed across different ranges, indicating various experiences within the dual-role system.
- **Current Role:** A split between current and former dual-role firefighter paramedics was observed, with eight currently in the role and seven moving on.
- **Reasons for Becoming a Paramedic:** Participants cited a desire to provide high-level medical care, get a fire service job, and enjoy paramedicine as their main reasons.
- **Mental Health:** A significant majority (11 out of 15) indicated that their mental health directly relates to their dual-role position, highlighting issues such as lack of support, burnout, and the emotional toll of traumatic experiences.
- **Preference for Non-Transporting Agency:** Participants were almost evenly split on whether they preferred working in a non-transporting agency or a dual-role system.
- **Impact of Switching to Single-Role on Service Level:** Most participants believed that switching to a single-role system would affect the level of service, with concerns about the quality of care and professional standards in private versus public services.

- **Enjoyment of Being a Transport Paramedic:** Participants were split, with a slight majority enjoying the role despite acknowledging high burnout rates and challenging work conditions.
- **Switching to Single-Role System:** A majority supported considering switching to a single-role system, though there were concerns about the potential impact on service quality and the importance of maintaining control within fire department operations rather than outsourcing to private companies.

The study results provide valuable insights into the experiences, challenges, and perspectives of dual-role firefighters/paramedics. The findings suggest that while there are benefits to the dual-role model, such as a broad scope of experience and a sense of satisfaction in providing comprehensive care, there are also significant challenges related to mental health, burnout, and the sustainability of this staffing model. Most participants' interest in switching to a single-role model indicates a potential openness within the field to explore staffing structures that better support the well-being of first responders and the quality of service provided to the community.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Summary of the Results

This study presents a comprehensive overview of the experiences and perspectives of dual-role firefighter paramedics across several themes. Key findings include the demographic profile of participants, their reasons for entering paramedicine, the impact of their roles on mental health, preferences regarding the dual-role system versus non-transporting agencies, and views on transitioning to a single-role system. These themes collectively highlight the challenges and complexities dual-role firefighter paramedics face, including recruitment, retention, service quality, and personal well-being. The data underscores the need to carefully consider staffing models within the fire service to balance service quality, employee satisfaction, and professional development. Every department has different value points to consider when evaluating staffing models. Many factors affect decisions on how agencies staff their department. However, the dual-role system has long-lasting effects on personnel. However, depending on each agency's situation, the dual-role system is highly valued by those who provide the service and those who call on the service in a time of need. Finding a perfect system may not be possible, but understanding and evaluating all aspects of a staffing model is imperative to make the best decision for the employees and the community.

Conclusions Based Upon Your Results

The research conducted on dual-role firefighter paramedics working within specific organizations offers several valuable insights for the field. The study highlights this staffing model's personal, emotional, and physical effects, contributing to the ongoing debate on the efficacy and impact of dual-role versus single-role staffing models in emergency services. By

analyzing the experiences and opinions of these professionals, the study underscores the challenges related to recruitment and retention, mental health, and job satisfaction.

The findings suggest that the dual-role model can significantly affect service delivery, employee well-being, and organizational effectiveness. This research is essential as it provides empirical data that can inform policy decisions, enhance recruitment and retention strategies, and potentially lead to adopting best practices that balance operational demands with personnel welfare. It underscores the need for supportive measures that address the unique stresses of the dual-role system, advocating for a reevaluation of staffing models to optimize both service quality and employee satisfaction.

This study adds to the profession's knowledge base by offering a detailed examination of the dual-role system's effects, thus providing a foundation for further research and practical improvements in emergency service operations. The dual-role system is highly valued by employees working within the system, as there is immense pride in providing the highest level of care to those in need. Providing that level of care is paramount, and agencies must carefully evaluate all aspects of their staffing model. Although switching to a single-role system may improve employee wellness and recruitment and retention, it can also create challenges with employee relations and potentially lower the level of service in your community. A thorough evaluation must occur to combat this, and all aspects of the staffing model change must be evaluated. As the research displays, keeping fire department control of the single-role system is the desired outcome, which can include single-role firefighter medics who work alongside dual-role paramedics for the same fire service agency. This model is preferred by those who participated in the study. Fire staffing is also critical, and agencies should avoid changing fire-based staffing to a single-role system.

Limitations

To understand the multifaceted experiences and perceptions of dual-role firefighter paramedics, this study embarked on a qualitative inquiry to capture the realities of the professionals working within the dual-role system. While the approach yielded valuable insights into their experiences, it is essential to acknowledge the inherent limitations that accompany this research methodology and design. These limitations pertain to the sample size and scope, methodological choices, geographical focus, subjectivity of responses, and time constraints. Each of these aspects plays a crucial role in shaping the context and applicability of its findings. By recognizing these limitations, agencies can make staffing decisions based on interpreting the results within the appropriate boundaries.

Sample Size and Scope

The study's reliance on a modest sample of 15 participants inherently restricts the scope of conclusions. Given the specific focus on a select group of agencies within a particular geographic area, the findings may hold different relevance for other dual-role firefighter paramedics or fire service organizations operating under various conditions. This limitation underscores the need for caution in examining the results beyond the immediate context of the research, highlighting a gap that future studies should aim to bridge.

Methodological Approach

The decision to utilize a generic qualitative inquiry, primarily through surveys, facilitated the exploration of participants' perceptions and experiences. However, this methodological choice comes with its own set of constraints. While valuable for

gathering subjective insights, it potentially limits the depth of understanding achieved through more comprehensive qualitative methods, such as in-depth interviews.

Additionally, the ability to generalize these findings across a broader population needs to be improved, calling attention to the method-specific boundaries of the research.

Geographical Limitations

Concentrating the study on organizations within a specific region inherently limits the findings' applicability to other areas. The unique characteristics of the chosen geographic location, including cultural, organizational, and operational factors, may not represent different settings. This geographical constraint suggests that the experiences and perceptions of dual-role firefighter-paramedics in the study might need to accurately reflect those in dissimilar contexts, thereby limiting the generalizability of conclusions.

Subjectivity of Responses

The reliance on survey data to capture the dual-role system's personal, emotional, and physical effects and opinions about it introduces subjectivity. Since individual experiences and perceptions shape participant responses, they may not fully or objectively represent the broader outcomes of the dual-role system. This aspect of the methodology underscores the subjective nature of the research findings, which may reflect personal biases or unique circumstances rather than a universally applicable truth.

Time Limitations

The research captures a snapshot of participants' experiences and opinions at a specific time. It does not account for changes that may influence the dual-role system, such as shifts in organizational policies, attitudes towards emergency services, or the evolution of professional roles within the fire service. This time limitation suggests a need for ongoing

research that can adapt to and reflect the dynamic nature of the field, thereby providing a more comprehensive understanding over time.

In conclusion, while this study offers valuable insights into the experiences of dual-role firefighter paramedics, these limitations highlight the need for a cautious interpretation of the findings. They delineate the boundaries within which conclusions are most applicable and suggest avenues for future research to expand upon the knowledge base within a staffing model.

Implications and Recommendations to the Field

This study highlights the consequences and advisories derived from research on how firefighter paramedics performing dual roles affect mental health and recruitment and retention in the fire service. Agencies with dual-role transport paramedics must evaluate a shift towards a single-role system to boost paramedic firefighters' recruitment, retention, and mental well-being. For agencies considering this staffing shift, it is crucial to maintain control over the staffing blueprint and implement an internal single-role structure. This approach helps to avoid conflicts between single and dual-role staff members and ensures the agency upholds superior service standards. These advisories aim to assist all organizations, including the Petaluma Fire Department, in leveraging these findings for enhancement, overcoming challenges, and championing a move to a single-role paramedic staffing model to better mental health, recruitment, and retention rates.

Difficulties in implementing these insights arise from resistance to change, budget constraints, and the need for a carefully planned strategy to facilitate a seamless transition. Suggestions for departments and the broader community encompass the following:

- **Enacting Supportive Initiatives:** Addressing the stresses of dual roles to foster mental well-being and job contentment. For agencies that continue to staff a dual-role system, actions must be taken to ensure employees are mentally and physically healthy. Shift hours call volume, including sleep studies, should be implemented to evaluate the effects of this staffing model. Internal peer support systems should be assessed and implemented to ensure triggers are recognized, and employees need the support.
- **Assessing Staffing Approaches:** Finding the proper equilibrium between service quality, employee contentment, and career advancement, tailored to the specific requirements of each department, is essential. Regardless of the staffing model adopted, compromises are inevitable. Nonetheless, an organization's fundamental principles will be critical in finalizing a staffing assessment. Ensuring that employees feel supported while delivering top-notch service is a crucial consideration in evaluating a staffing approach is vital.
- **Retaining Control:** To guarantee service quality and uphold professional standards in any single-role staffing model. There was great concern within the research regarding losing control of EMS, as a service reduction could occur. Additionally, participants shared an overwhelming concern regarding the level of service provided by private ambulance paramedics. By retaining control of the EMS program, departments can ensure a high quality of care is withheld. Instead of a single-role system within the fire department, some agencies may consider a contract for service with a private ambulance company where clear expectations and accountability occur within the service contract.
- **Promoting Continued Research and Innovation:** Encouraging additional investigation to understand the enduring effects of changes in staffing models on service quality and staff welfare. Continued research and evaluation are imperative to stay ahead of staffing

model challenges. Adjustments should occur based on data and employee and public feedback through surveys.

The research underscores the need for fire department leaders to consider these recommendations to improve operational efficiency, employee satisfaction, and the level of service provided to the community. A paradigm shift to single-role paramedics in the current fire service model is essential to secure a resilient staffing future and elevate the overall efficacy of services.

Recommendations for Future Research

Future studies should delve into areas that must be comprehensively addressed in the present project concerning dual role firefighter-paramedics. Recommended areas of exploration include:

- **Long-Term Effects:** Examine the long-term effects of single-role versus dual-role systems on paramedics' mental health and career longevity.
- **Comparative Analysis:** Investigate the effectiveness and efficiency of single-role and dual-role systems in various geographical regions or different sizes of fire departments to understand if findings in California can be generalized.
- **Financial Impacts:** Explore the economic implications of transitioning between dual-role and single-role systems, including cost-benefit analyses.
- **Public Safety and Service Delivery:** Assess how changes in staffing models impact response times, public safety outcomes, and patient care quality.
- **Work-Life Balance:** Study the impact of these roles on personal life, work-life balance, and job satisfaction among paramedics working within a dual-role system.

In summary, this research suggests future research directions to enhance understanding beyond this project's scope. A recommendation is given to explore the long-term mental health

effects and career impacts of dual versus single-role systems, conducting comparative analyses across different regions and fire department sizes, examining the financial implications of transitioning between systems, assessing the impact on public safety, response times, and patient care quality, and investigating the influence on work-life balance and job satisfaction. These areas aim to address existing gaps and contribute to a broader comprehension of the implications of dual-role versus single-role staffing models.

Conclusion

This research aimed to understand the personal, emotional, and physical effects of dual-role systems compared to single-role models, where firefighters and paramedics operate separately. To ensure a consistent comparison, the study's participants were drawn from Sonoma Valley Fire, Sonoma County Fire, Petaluma Fire, and similar organizations. By focusing on individuals currently working as dual-role transport paramedics, the study sought to capture insights into the staffing model's effects on recruitment, retention, and overall job satisfaction.

The demographics table highlights the uniform experience level among the participants, with a significant number having ten years of service, suggesting a seasoned group of respondents providing mature insights into the dual-role system's dynamics. Research results, presented through various themes and statistics, reveal a nuanced perspective on the dual-role model. While most participants appreciate the integration of firefighting and paramedic roles, concerns regarding mental health, burnout, and the desire for more focused roles within fire service emerge. Notably, the split in preference for working in a non-transporting agency underscores the complexity of this issue, with reasons ranging from the desire for more specialized training to concerns over the quality of care and service delivery. Themes related to

the reasons for becoming a paramedic and the impact on mental health highlight significant challenges within the dual-role model, including high stress, lack of support, and the emotional toll of the job. Despite these challenges, many participants remain firmly committed to the model, driven by a sense of duty and the desire to provide high-quality care and service. The discussion on switching to a single-role system reveals a general openness to considering changes, albeit with caution regarding the potential loss of quality and professionalism that might accompany such a shift. The concerns about private ambulance services taking over transport duties reflect a broader apprehension about the privatization of emergency medical services and its impact on patient care and service quality.

In conclusion, this study has highlighted the complex dynamics and effects of transitioning dual-role firefighters to single-role paramedics within fire-based transport ambulance providers. The comprehensive examination, rooted in qualitative analysis across selected agencies' dual and single-role systems, has emphasized the impact on recruitment, retention, and the mental health of agency employees. By showcasing the tangible benefits of adopting a single-role system, this research advocates for a paradigm shift within the Petaluma Fire Department and beyond and emphasizes the critical need for sustainable staffing models prioritizing employee well-being and service excellence. Looking back at the research process, the results offer valuable perspectives to the continuous conversation on enhancing fire service operations. This, in turn, secures a robust future for the profession and the communities it supports.

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TABLES

Demographics of Participants

Table A1

<i>Participant #</i>	<i>Current FF/Paramedic</i>	<i>Affiliated with Focus Agencies</i>	<i>Years of Service</i>
Participant #1	YES	YES	10
Participant #2	YES	YES	10
Participant #3	YES	YES	10
Participant #4	YES	YES	10
Participant #5	YES	YES	15
Participant #6	YES	YES	10
Participant #7	YES	YES	20
Participant #8	YES	YES	20
Participant #9	YES	YES	15
Participant #10	YES	YES	5
Participant #11	YES	YES	15
Participant #12	YES	YES	10
Participant #13	YES	YES	20
Participant #14	YES	YES	5
Participant #15	YES	YES	5

Table A2*Statistics Developed from the Research*

<i>Theme</i>	<i>Participant response</i>
Scope of Perspective	<ul style="list-style-type: none"> • 3 - Five Years • 5 – Ten Years • 3 – Fifteen Years • 3 – Twenty Years • 1 - Thirty Years
Current dual-role Firefighter Paramedics or were at one time.	<ul style="list-style-type: none"> • 8 - Current FF/PM • 7 - Were an FF/PM at one time
Reasons for becoming a paramedic	<ul style="list-style-type: none"> • Enjoyed Paramedicine • Wanted to provide the highest level of medical care. • To get a job in the fire service
Does your mental health directly relate to your dual-role position?	<ul style="list-style-type: none"> • 11 – Yes • 4 - No
Would you prefer to work for a non-transporting agency?	<ul style="list-style-type: none"> • 4 – Yes • 11 - No
If your dual-role agency switched to a single-role, would this affect the level of service within your community?	<ul style="list-style-type: none"> • 10 – Yes • 5 - No
Do you enjoy being a transport paramedic?	<ul style="list-style-type: none"> • 10 – Yes • 5 - No
Should your agency switch from a dual-role system to a single-role system?	<ul style="list-style-type: none"> • 13 - Yes consider • 2 - No

FIGURES

Figure 1

What is your career experience (background) working as a dual-role firefighter paramedic on an ALS transport ambulance?

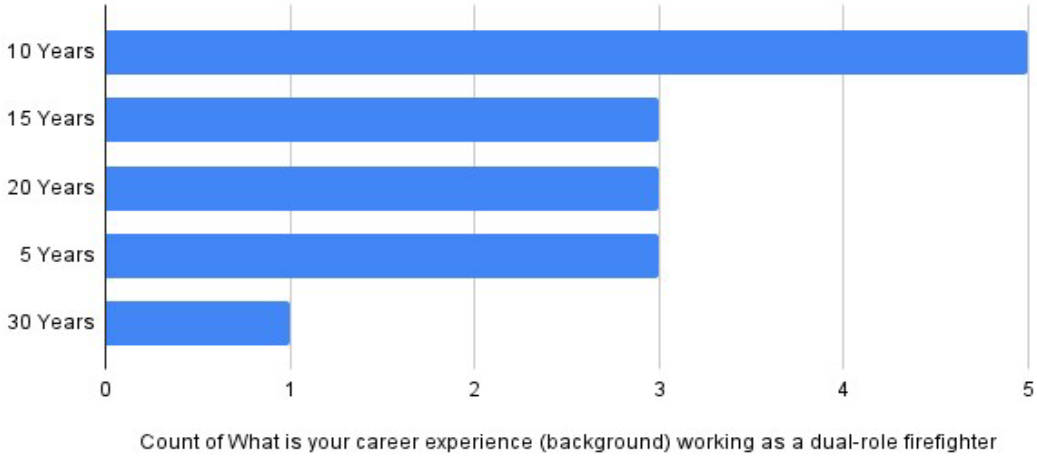


Figure 2

Participants currently work in a dual-role system or used to work as dual-role paramedic Firefighters.

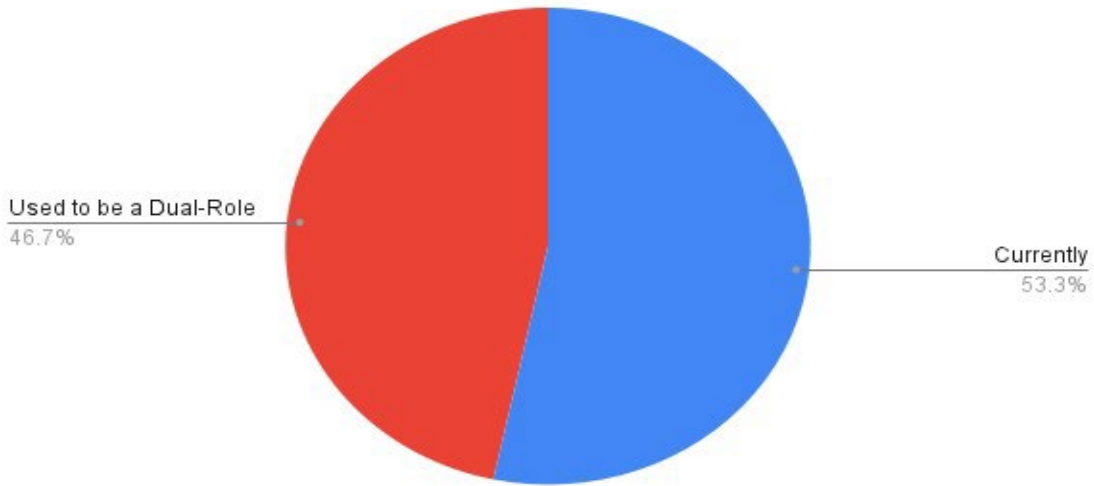
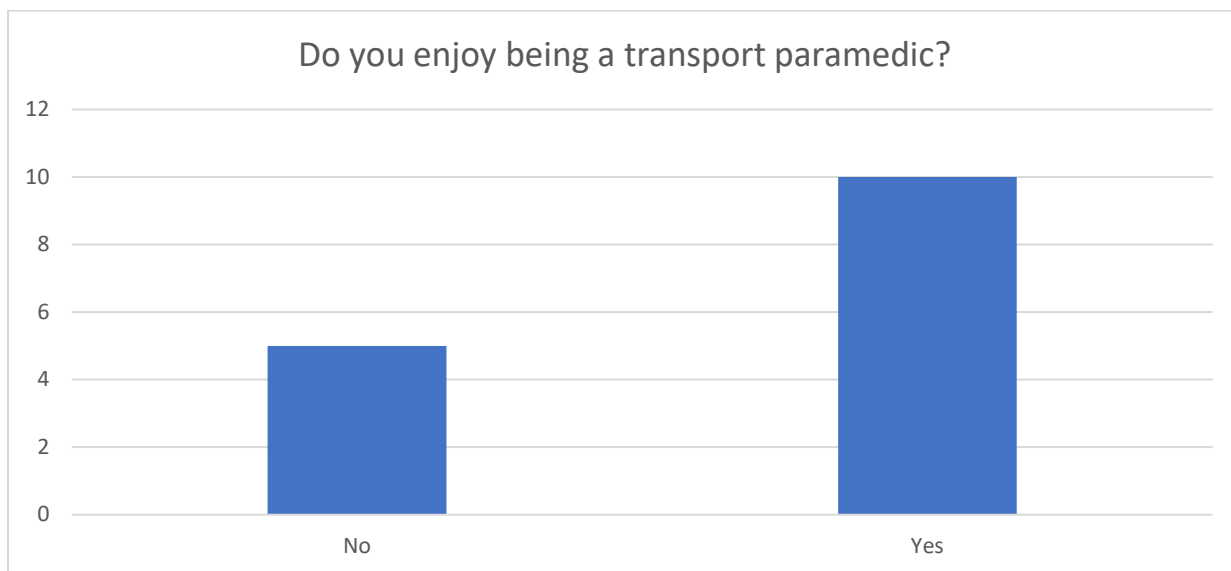


Figure 3



APPENDIX A: Survey Questions/Informed Consent

Transport ALS Firefighter Paramedic Survey: This research aims to determine if fire-based agencies with dual-role transport paramedics should consider switching to a single-role transport paramedic system. The questions within the survey will gain perspectives from dual-role Paramedics who work within similar systems near the City of Petaluma. By gaining the perspective of employees operating in the dual-role capacity, we can quantify the system's effects on our employees and gain insight into their perspectives on each staffing model.

Data collected in this survey will be used for a capstone research paper for the Executive Fire Officer Program at the National Fire Academy! Personal information will be kept from this survey.

Time Required: Participation in this study will require approximately 60 minutes.

Risks: The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life). The NFA, Columbia Southern University, and its contractors take no responsibility for the actions or outcomes of the research study.

Benefits: There are no direct benefits to the participant; however, information from this study may benefit you and other communities in the future.

Incentives: There are no incentives (financial or otherwise) associated with participation in this study.

If you have questions or concerns during the time of your participation in this study or after its completion, or you would like to receive a copy of the final aggregate results of this study, please contact:

If you have questions or concerns during the time of your participation in this study or after its completion, or you would like to receive a copy of the final aggregate results of this study, please contact:

Chad Costa – National Fire Academy Student - Captain108@gmail.com

Dr. Justin Heim – NFA Course Manager - Justin.Heim@columbiasouthern.edu

1. By acknowledging the below, you realize your participation is strictly voluntary and may stop answering the questions anytime. There will be no penalty, and your identity as a participant is confidential.

Acknowledgment Check box

2. To what extent have you worked for one of the following agencies: the City of Petaluma Fire Department, Sonoma County Fire District, Sonoma Valley Fire District, or other agencies within the Northern Bay Area?

Short Answer _____

3. What is your career experience (background) working as a dual-role firefighter paramedic on an ALS transport ambulance?

Paragraph Answer _____

4. In your opinion, what was your reason for becoming a paramedic?

Paragraph Answer _____

5. In your opinion, how does your mental health directly relate, if at all, to your position?

Paragraph Answer _____

6. In your opinion, would you prefer to work for a non-transport agency?

Paragraph Answer _____

7. If your agency switched to a single-role transport system, could this affect the level of service within your community?

Paragraph Answer _____

8. If your agency switched to a single-role transport system, could this affect the level of service within your community?

Paragraph Answer _____