

Faceless heroes: A content analysis of determinants for the recruitment, career development & retention of Emergency Medical Dispatchers in the United States of America

Tony McAleavy^{a,*}, Byunggi Choi^a, Sudha Arlikatti^b

^a Division of Engineering Technology, Oklahoma State University, USA

^b Faculty of Resilience, Rabdan Academy, Abu Dhabi, United Arab Emirates

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ABSTRACT

Emergency Medical Dispatchers (EMDs) provide life-critical telephone-based medical advice 24 h a day, 365 days a year. EMDs are the first point of contact but rarely, if ever, meet the public whom they serve. They are detached from the scene and less visible than their first responder colleagues, but subject to comparable levels of stress and secondary trauma: they are our *faceless heroes*. In recent years, recruitment and retention levels are falling: candidates are dropping out before completing their training due to early burnout. Despite their key role, scant attention has been paid to this area of research. This study aims to fill this gap by identifying contributory factors that affect recruitment, career development and retention of EMDs and suggesting improvements to practice.

Interpretivism underpinned 11 inductive interviews focused on EMD recruitment, career development and retention. The resultant qualitative data were transcribed verbatim, and then subjected to content analysis using the computer-assisted qualitative data analysis software Atlas.ti. Content analysis resulted in 20 thematic codes, which were refined into seven categories – recruitment, training and career development, required systemic enhancements, role stress, ideal EMD, esprit de corps and optimum skillset - articulated as the optimum skill-set theory. These informed one comprehensive network diagram and two tables to illustrate the links between the codes and categories, explicated by participant quotations. They also elaborate on the theoretical and practical contributions made by the study which provide critical insights for recruiters, in-career EMD and those interested in pursuing a career as an EMD.

1. Introduction

Emergency Medical Dispatchers (EMDs) monitor communication networks, such as 911 in the United States of America (USA), 999 in the United Kingdom (UK) and 000 in Australia. These telephony-based systems form part of the Emergency Medical Services (EMS) coordination system which is designed to effectively dispatch and monitor vital medical resources. During emergency calls, an EMD must establish an accurate picture of what is happening on-scene and provide life-saving advice. For example, they guide callers on Cardio-Pulmonary Resuscitation (CPR) and basic scene-management requirements such as opening the front door and collecting the patient's medication and personal effects to prepare the scene for the arrival of an EMS crew [1]. EMDs provide vital life-saving advice every day and receive hundreds of calls

per shift dealing with medical emergencies ranging from cardiac arrest, a stroke, choking, childbirth, violence or attempted suicide etc. and are required to remain calm, professional and focused throughout. The caller, whether they are the patient or calling on behalf of the patient, are likely having one of the worst days of their lives [2], making them frightened, incoherent, panicked, or abusive over the phone. In such situations, EMDs are the voice of reason, they provide a calming and reassuring influence that so often leads to a positive patient outcome and they stay on the line until help arrives. No matter the outcome of the call whether positive or negative, EMDs have to pick-up the next call with positivity and do it all over again.

EMDs are hidden professionals, unseen by the public, enduring high-levels of critical-incident stress on a daily basis from say, "*the voice of the frantic mother screaming, into the phone, that she has found her child*

* Corresponding author.

E-mail address: tony.mcaleavy@okstate.edu (T. McAleavy).

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hanging in the garage” [3]. Stress is exacerbated by unappreciative callers frustrated by the (life-critical) EMD question-schedule which they (the caller) often consider a waste of valuable time. Copious amounts of coffee is consumed to mitigate the long hours and graveyard shifts, often leading to questionable dietary choices resulting from the urgency, intensity and 24-hour nature of the role [4]. Dark humour, not always understood or indeed appreciated outside of the professional community forms a critical part of an EMD’s coping mechanism [5]. Exposure to visceral descriptions of medical trauma is an almost daily occurrence and oftentimes EMDs are the *last voice* for many a caller who is about to die [6]. Such cumulative stress, built-up over extended periods can diminish the efficacy of coping mechanisms [7] and an EMD’s mental health can suffer leading to depression, post-traumatic stress disorder and suicide [8].

Even though EMDs are the calming voice and a reassuring influence for callers during a medical emergency, they are rarely afforded the acknowledgement and recognition that their first responder colleagues in law enforcement, firefighting and paramedicine receive. Detached from the scene and located in remote Dispatch Centers, EMD can be left feeling helpless; this exposure to vicarious trauma can result in a high degree of acute and cumulative stress [9]. They are our *faceless heroes* and a critical element within the pre-hospital EMS system. Given the necessarily high standards, initial recruitment criteria are taxing and comprehensive and continuation training is required and provided. However, despite such sustained investments, EMDs continue to burnout and leave this career field prematurely [10]. The stark realities of the EMD career field demonstrate a clear research need. Accordingly, this study aims to contribute to improving recruitment, career development and retention of EMDs.

2. Literature review

2.1. The evolution of emergency medical dispatch

The concept of EMD, in a USA context, originated in Phoenix, Arizona, USA in 1975. Paramedic, Bill Tune, was in the Dispatch Center when a call from the mother of a non-breathing baby came in. Tune offered prearrival instructions which proved critical to the child’s survival [11]. Consequently, Phoenix Fire Chief, Allen Brunacini, initiated a Medical Self-Help program called Lifeline to routinely offer prearrival instructions. In the initial stages, these instructions were unplanned and unscripted with no supporting protocols.

Dr Jeff Clawson identified the need for more formalized protocols in 1977 establishing the basis of today’s EMD role. His Medical Priority Dispatching System consisted of three elements. First, a set of *key questions* designed to establish situational awareness, second, *telephone help* to facilitate prearrival instructions and third, *response determinants* to ensure the right resource was dispatched to the right place at the right time [12]. Other methods such as the 911 Medical Advisory Flipchart of 1977 and the Medical Dispatch Priority Card System of 1978 were also developed, as the value of EMD-type operations became more widely understood. In 1980, the Utah Emergency Medical Dispatcher training program was formally established and the Dallas Fire Department Nurse Screener program was initiated, building upon the successful New York City Nurse Screening program of 1972 [12,13].

2.2. The Pre-1970s era

Prior to the 1970s, the EMD system was informal. Recruitment criteria, training and standards were lacking as the career-field was in its infancy. Training options were limited, often consisting of a 1-hour program, and professional certification was decades away. This lack of formalized training and protocols led to patient categorization and intra and inter agency collaboration problems which triggered incremental capability growth [14]. The depth and rigor of contemporary EMD training and medical knowledge is a quantum leap from those early days

[15].

Meaningful state level investment in EMD training and development began in 1979 [16]. The systematic development of training and education programs, role-specific protocols and standard operating procedures introduced throughout the 1980s ushered in a period of significant capability development and professionalization through enhanced training and certification. Moreover, career development and oversight from physicians were introduced to enhance quality assurance. Increasing competence and capability resulted in a more effective service and enhanced patient outcomes [17,18].

The EMD role has developed incrementally and the career-field is now broadly recognized as a significant factor in patient survivability [19]. Despite this growth and increasing recognition, EMD welfare remains a significant concern. According to Ludick and Figley [20] long hours, unsociable shift patterns and high levels of direct caller and indirect scene related stress and exposure to trauma result in a highly demanding, albeit often rewarding, career. These factors can induce chronic physiological and psychological health issues which contribute to high turnover rates [20,21]. In the USA the average turnover rate of EMDs is 14–17% [22] which is significantly higher than the EMS rate of 10.7% [21]. Sadly, the attempted suicide rate amongst first responders is ten times higher than the national average [23], and the EMD Post Traumatic Stress Disorder (PTSD) rate is between 18 and 24% [10].

2.3. Emergency medical dispatch systems in the United States of America

EMD is a critical part of a modern EMS system: although, it is a comparatively new and emerging research field. Prior to the 1970s, EMDs were considered telecommunications professionals so little medical training was provided [24]. Dr Jeff Clawson, who created the Priority Dispatch System in 1977, argued that misconceptions of the EMD role hindered its development. False beliefs, such as *callers are too emotional to follow instructions* and are *unlikely to understand medical instructions*, perpetuated the view that EMD medical knowledge was of no consequence [14]. By the late 1970s the importance of prearrival instructions was becoming more recognized and they are now a common feature of modern EMD systems. Today, failure on the part of an EMD to provide adequate prearrival instructions may result in litigation [25].

EMD medical knowledge requirements have increased over time. Telecommunicators ill-equipped to provide medical advice are thankfully a thing of the past due to the development of training programs informed by guidelines and protocols [24,26]. Clawson’s 1977 Medical Priority Dispatch System evolved into the International Academies of Emergency Dispatch protocols [27]. The addition of Telephone-based Cardiopulmonary Resuscitation (TCPR) in the early 1980s enhanced the protocols and improved prehospital acute cardiac arrest patient outcomes [28]. These protocols afforded clear procedural direction, and some legal protection, demonstrating the incremental maturation of the EMD career field.

EMDs have actively engaged with professional organizations. The International Association of Public-Safety Communications Officials (APCO) was established in 1935, the National Emergency Number Association (NENA) in 1982, the International Academies of Emergency Dispatch (IAED) in 1988, and the National Emergency Communications Institute (NECI) in 1999. These organizations develop training and standards, and provide vital support and direction. Furthermore, the National Fire Protection Association (NFPA) developed its own set of codes to explicitly strengthen dispatcher medical communication skills. NFPA 1061: Standard for Public Safety Telecommunications Personnel Professional Qualifications was published in 2018 based on four previous versions: 1996, 2002, 2007 and 2014 respectively [29]. Despite these valuable initiatives, further development is needed in key areas such as recruitment, career development and retention of EMDs to mitigate chronic health issues and high turnover rates [30].

2.4. Recruitment

Effective emergency response is based on organic, systematic and cooperative operations by skilled-personnel both on-scene and within Dispatch Centers [31,32]. Skilled EMDs are a key element of quality service provision. Thus, it is imperative that recruitment policies, procedures and practices effectively identify recruits with the necessary abilities, skills and traits. National Standards for dispatcher staffing levels are a key-factor in recruiting suitably qualified personnel [30]. Similarly, recruiting in adequate numbers reduces the overtime burden affording staff more personal/family time promoting decompression and long-term stress management [33]. Moreover, the effective screening of applicants determines candidate suitability, maintains staffing-levels and helps to maximise retention by ensuring that only capable personnel are exposed to the stresses of EMD work [34].

EMDs in the USA do not require prior first responder experience; other countries, such as Denmark [35] and South Korea [36], require previous first responder experience or provide nurse or doctor oversight. Criteria for recruitment includes a high-school diploma and CPR certification. Initial certification requirements differ by state and can include weeks or months of on-the-job training [37,38]. Previous first responder experience affords knowledge, insight and prior-exposure to emergency-scenarios which can help stress management. However, the *boots-on-the-ground* law enforcement, fire fighter and EMT/paramedic roles, whilst complementary, are fundamentally different from the EMD role. This raises the question of whether prior first responder experience is necessary? Indeed, it could be argued that such prior experience may actually inhibit the EMD by adding a conflicting viewpoint of operational response over tactical dispatch.

2.5. Career development

The more effective the recruitment and training process, the better the on-the-job performance and retention [34]. Thus, ongoing training, career and personnel development can help maintain performance, develop and maintain professionalism and an esprit de corps (pride, fellowship and group loyalty). Ongoing training can identify strengths and weaknesses, providing opportunities to increase motivation and productivity [39]. Well-trained and productive EMD are critical to response efficacy as they are the first point of contact whenever an emergency occurs [40]. Similar to other first responder roles, a well-defined process for ongoing training and career development is important to maintain competence and motivation through knowledge acquisition, additional skills development and role advancement/promotion. Zachariah and Pepe [11] discuss how the 1970s national standards and curriculum were based on Clawson's Medical Priority Dispatching System. Which, in turn, are reflected within state-specific curricula that are adapted to local conditions. Thus, nationally standardized certification does not yet exist in the USA [41]. Consequently, some agencies provide significantly more training than others resulting in varying levels of service across states. Lack of training minimizes an EMD's preparedness and coping-capacity adding to chronic burden and poor retention rates [42].

2.6. Retention

On average, it costs approximately \$52,000 and six months to identify, recruit and train an EMD to be job ready [43]. Homes et al. [44] argues that research tends to favour employee turnover rather than job embeddedness (why people stay). This indicates that retention is a critical but multi-faceted human resource priority. EMD turnover-rate averages - 14%–17% - are slightly higher than that of the teaching and nursing professions which are well known high turnover occupations [33]. Many EMD recruits leave within two or three months of being hired causing significant budgetary and quality of service concerns [45]. Numerous stressors - fluctuating shift patterns, frequent overtime

requirements, constantly changing technologies, pressured decision-making and exposure to trauma - can affect an EMD's professional and personal relationships and well-being [46]. Secondary trauma induced by exposure to verbal descriptions of on-scene conditions, patient trauma, and continual dialogue under stressful emergency conditions is also a key stressor. It is no longer the case that trauma exposure is considered an on-scene first responder issue. EMDs can and do suffer physiological and psychological harm similar to their on-scene first responder colleagues [20,47]. As a consequence, personal resilience and stress management are important non-technical skills that EMDs need to possess [17,48–50].

Long work hours and rotating shifts disrupt sleep quality and patterns reducing levels of immunity [51]. Moreover, EMDs are required to sit in a chair monitoring several computer screens and communications systems for many hours. Although, regular breaks are scheduled, this high-level of alertness requires intense focus and concentration which is both physically and mentally demanding [52]. Charbotel and Croideu [53] found that the physical work environment is another major stressor for EMDs. Poor illumination, and ventilation and fluctuating temperature levels, lack of privacy in physical workspaces, the limited quality and timing of breaks, and small congested multiple occupancy break-rooms, all contribute to dissatisfaction, stress and high turnover rates. Evolving technologies add further stress. EMDs based in high-tech/high-budget Dispatch Centers need to learn and adapt to the latest technological advancements. Whereas, smaller-budget Dispatch Center EMDs are under pressure to maintain performance knowing that technology and capabilities are advancing but there is limited budget to fund upgrades [54]. These stressors collectively influence turnover rates. Thus, organizations need to develop focused strategies to reduce work-place stressors tailored to local conditions [46,55].

The review of pertinent literature demonstrates the incremental and needs-based development of the EMD-role. The research focus to date on operational response [9,24,56], protocols [57–59], service and systemic needs [60–62], does not readily address recruitment, career development and retention in a specific EMD-context. Moreover, the number of standards and professional bodies suggests that practices vary across jurisdictions. Thus, given the limited body of directly-relevant literature and evident research need, an inductive qualitative method was deemed appropriate for this exploratory study of determinants of EMD recruitment, career development and retention [63]. This approach, paired with content analysis, ensured that the research themes could be explored through the natural language of those serving as EMDs, permitting much needed theory generation [64,65].

3. Methodology

This study was informed by the interpretivist paradigm [66] and consisted of 11 qualitative interviews with serving EMD. The International Academies of Emergency Dispatch facilitated access to a municipal Dispatch Center located on the eastern coast of the USA which serves a population of over one million. An Early-Career Researcher Pump Priming Fund grant enabled the lead author to conduct the interviews face-to-face over a period of five days. The interviews were scheduled during the quieter pre-dawn hours of operation and lasted approximately 45–60 min. A small office, adjacent to the dispatch center, was used as it was relatively quiet, private and easy to access for both participants and the interviewer. This timing helped to ensure anonymity as senior leadership were not on the premises. Participation was voluntary and this was emphasized and clarified by reading the participant's rights and requesting him/her to sign on the consent form as per the Research & Ethics Committee requirements [67] prior to starting the interview. Participants simply excused themselves from the Dispatch Center at the agreed time, as they would, if they were taking one of their allocated breaks, so participation was not overt. This was approved in advance with the stipulation that the requisite staffing levels were maintained throughout the operational period. Please note,

as is the practice [68] participant demographics and the exact location of the Dispatch Center have been omitted to maintain anonymity and ensure confidentiality.

An open schedule of 14 questions focused on EMD perspectives on recruitment, skills and attributes, career development and retention. The questions included *describe your EMD experience?; what is the purpose of EMD?; describe the EMD dispatch system?; how did EMD develop?; what do you see as EMD best practice?; what criteria are used to recruit EMD; are they effective?; what skills are required to be an effective EMD? and what career development and maintenance options are available or needed?* A conversational, inductive and semi-structured approach in a location familiar to the participant ensured a timely rapport was established [69]. Data validity was maintained through joint construction of meaning as participants were able to interpret each question, direct the open conversation and clearly explain their views [70]. This minimized interviewer predetermination by generating thick rich description of the participant's views in their own words [71].

3.1. Analysis

The interview recordings were verbatim transcribed to enable immersion within the qualitative data corpus and, then subjected to computer-assisted content analysis using the Atlas. ti software [72]. Content analysis provided an insight as to the complexity of human thought via the natural language used by EMDs to express their views on the recruitment, retention and career development of fellow EMD. This closeness, to the data, allowed the researchers to alternate between specific categories and relationships, and to identify and connect codes, categories and themes using quotations drawn from the transcripts [73–75]. Moreover, the use of Atlas. ti facilitated efficient data organization and immersion and the visualization of cross-transcript thematic connectivity of human-identified quotes, categories and codes structure through network diagrams. These findings are presented within the comprehensive network diagram and two tables below.

4. Findings

Content analysis identified 20 codes linked to seven categories and three themes as shown by a comprehensive network diagram in Fig. 1. The dotted lines indicate the connections between codes and categories; whereas, the (red) dashed lines demonstrate the components of the Optimum Skillset theory. Furthermore, nine thematic network diagrams - created using the Atlas. ti software to illustrate the linkages between the codes, categories, themes and participant's quotations drawn from the qualitative corpus of data - were condensed into the two tables below. Table 1 illustrates the relationships between the codes, categories and themes which combine to form the posited Optimum Skillset theory. This (theory) is an amalgam of nine codes drawn from the six other categories: see Table 1. Table 2 connects each individual code with example quotations to demonstrate how the codes emerged from the

Table 1
Codes, categories and themes.

CODES	CATEGORIES	THEMES
- Previous Profession - Reason for Career Transition - Hiring Tool - PRIOR QUALIFICATIONS & ATTRIBUTES - Retention	1. Recruitment	RECRUITMENT • Recruitment criteria should focus on non-technical skills & personality not formal qualifications • Enhanced psychological & stress testing to maximise the likelihood of successful recruitment, training & performance • Clear understanding of the EMD role & requirements
- BASIC TRAINING CAREER DEVELOPMENT - Promotion Opportunities - Public Education - Integrated Operations System - QUALITY ASSURANCE - Retention - Bad Dispatcher - STRESS MANAGEMENT - PRIOR QUALIFICATIONS & ATTRIBUTES - Legal Concerns	2. Training & Career Development 3. Required Systemic Developments	CAREER DEVELOPMENT & RETENTION • Formal & informal mechanisms that support proactive management of chronic stress • An organizational culture that is conducive to proactive stress management • Appropriate career development opportunities & support mechanisms
- TECHNICAL SKILLS - Good Dispatcher - Bad Dispatcher - NON-TECHNICAL SKILLS - PRIDE - MIND OF SERVICE - Sense of Purpose	4. Role Stress 5. Ideal Emergency Medical Dispatcher 6. Esprit de Corps	
1. PRIOR QUALIFICATIONS & ATTRIBUTES 2. BASIC TRAINING 3. CAREER DEVELOPMENT 4. QUALITY ASSURANCE 5. STRESS MANAGEMENT 6. TECHNICAL SKILLS 7. NON-TECHNICAL SKILLS 8. PRIDE 9. MIND OF SERVICE	7. Optimum Skillsetx	OPTIMUM SKILLSET THEORY • Posited theory to enhance the recruitment, career development & retention of EMDs formed by the emboldened codes 1–9 drawn from the six other categories, see section 5.

corpus of data. The methodological design - which combined interpretivism, qualitative semi-structured interviews, verbatim transcription and computer-assisted content analysis - ensured transparency and a high-degree of descriptive, interpretative and theoretical validity, which is reflected in Tables 1 and 2 below [76].

5. Discussion

5.1. The optimum skillset theory

The seventh emergent category, Optimum Skillset (see Table 1), provides a conceptual link that connects and binds the other six identified categories. It builds upon nine codes identified within and drawn from the other six categories. Accordingly, this seventh category has been refined to further enhance the theoretical precepts of recruitment, career development and retention of EMDs, and as such represents the primary contribution of this study. The nine principal categories forming

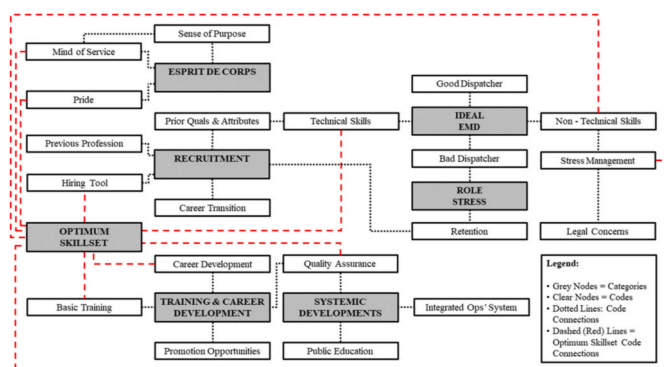


Fig. 1. Comprehensive network diagram.

Table 2
Code development.

No	CODES	EXAMPLE QUOTATIONS
1	Previous Profession	<ul style="list-style-type: none"> “Personally, I think people coming in from the street with no experience is the best way to go, because you can teach them the way that you want to teach them and they don’t have any bad habits” “I started as a police officer back in 1995. Um, started dispatching in the police environment, um, after I hurt my ankle at about 1997, um, at which point, uh, the dispatch center I worked in was combination police and fire only, no EMS, uh, but no EMD, no EPD”
2	Reason for Career Transition	<ul style="list-style-type: none"> “Because, from being a fireman it was I want ... I wanted to get the call as quickly as possible” “I want to um, if I want to be involved with something I want to understand all of it” “Getting beat up in the field”
3	Hiring Tool	<ul style="list-style-type: none"> “Software to test dispatcher and call-taker job applicants in job-related skills such as data entry, multi-tasking, decision making, position locating, and more”
4	Prior Qualifications & Attributes	<ul style="list-style-type: none"> “A dispatcher’s confidence goes over to the caller and it keeps them calm” “Have somebody talking in your ear while you’re having to type at the same time” “You have to be able to get along with the other personalities in the room, because you figure you’re spending 12 hours sitting next to that person, you can’t really get away from them, and you have to be able to work with them” “They wanted to be part of a team, and although they were, the job’s quite isolated, yes you’ve got your team around you, but even as a call taker, you’ve got your job to do, you’ve got to get, if you, you’ve got to get the right location, you’ve got to get the right protocols and you’ve got to live with it. And there was that, certainly, one of the guys really surprised me, because the first two weeks he was just awesome, um, and then the Monday of the third week, didn’t turn up, he’d handed in his notice. And went and decided to re-join the Army” “New EMDs and personally I think people coming in from the street with no experience is the best way to go, because you can teach them the way that you want to teach them and they don’t have any bad habits”
5	Retention	<ul style="list-style-type: none"> “I think what happens if we hire five, we end up either retaining three or two, out of the five” “It has a bit of a high turnover, whether it’s due to stress or, um- or other, you know, personal reasons” “Most people come in saying my job’s to save lives. They’re usually the people in two years that burnout”
6	Basic training	<ul style="list-style-type: none"> “We would do observation time, we come out, and spend a few hours watching the fire dispatcher, watching the city dispatcher, listening to calls, um, and we would do that. And, we did that for about two weeks and then we, um ... were assigned a trainer and the trainer took over from there, and it, then it really depended more on personal, your personal abilities, as to how quickly you progressed. It’s become a little bit more structured in the last six months” “We rank calls. They gave us calls, we typed it in, and ran calls, and gave instructions. And they wanted to see how we would answer the calls. See if we coded the call correctly. And we’d give instructions to make sure we gave the proper instructions for the actual nature of the problem. Uh, they then, we, we’d sit down, and they would, uh, we’d sit down with our QA, QI people”
7	Career Development	<ul style="list-style-type: none"> “Very receptive to any kind of, uh, suggestions for our continuing education” “There are some classes The National Academy offers, um, and right now we are able to take them,

Table 2 (continued)

No	CODES	EXAMPLE QUOTATIONS
		<ul style="list-style-type: none"> um, and then we can, uh, request for reimbursement because we have to pay for them out of pocket” “If you want to do it, you kind of have to go out and seek it on your own”
8	Promotion Opportunities	<ul style="list-style-type: none"> “There’s not really much of a ladder” “You know, there’s just not much room in this for branching out, you know. I don’t know if there’s really any, any room to, this is a pretty straightforward thing” “It’s there for the taking, if you want it. It’s um, it’s there for the taking. I think um, I took some leadership classes so I could um, get the supervisor position. I did it without, you know, letting the other guys know that I was doing it, because I wanted to be one jump ahead. You know, and boom (laughs)”.
9	Public Education	<ul style="list-style-type: none"> “As far as the social, I think it’s just educating the community a little bit better” “They were only starting to push out AEDs, and community first response programs, but I know they’ve, certainly, come along in the last six to eight years, they’re beginning out there, but there’s still is this fear of using AEDs or even compression”
10	Integrated Operations System	<ul style="list-style-type: none"> “They’re always constantly updating the writing to make it a little bit easier. Some things they still need to update” “They’re not, but what was happening was people were using their accent ... full word, using the dialect version of it, so it was okay if you from that area, but if you weren’t, you were fairly ...”
11	Quality Assurance	<ul style="list-style-type: none"> “The organization are willing to listen and develop things to support the staff” “More positive reinforcement from a trainer may, may uh, may boost someone’s ... esteem. A lot of people, ‘cause a lot of times, I think, people they come in here I think, they fail on what they have one bad call. I think they get down on themselves. So I think their self-esteem”
12	Bad Dispatcher	<ul style="list-style-type: none"> “Very emotional, we cannot be emotional” “Not flexible, they don’t pay attention” “Not taking feedback from your team”
13	Stress Management	<ul style="list-style-type: none"> “You know, hundreds of calls. It was just an emotional roller coaster” and “they end up drinking. Ah, with, here at medic, we have had, ah, two or three suicides in the past three years” “When I leave work, I don’t even think about work when I get home. That’s one thing I love about it is that” “I know our shift for sure, we talk about things after shift, we get, we vent, amongst ourselves during shift, so that at the end of the day we, you know, we’re able to leave it, go to sleep, refresh ourselves, go, go for another day”
14	Legal Concerns	<ul style="list-style-type: none"> “Come up with some of it and um, to help us not only be concise, and clear but to help us in legal situations as well. I mean we want to be protected, giving, uh, medical advice. Well it’s not really medical advice per se, but it is, you know, life, lifesaving, um, often times it isn’t”
15	Technical Skills	<ul style="list-style-type: none"> “You need to be able to type like a professional” “You need to be able to run through that computer program” “You absolutely cannot do this job without reading a map” “Quick and effective or quick and accurate data entry”
16	Good Dispatcher	<ul style="list-style-type: none"> “He’s always looking ten steps ahead. Um, he’s, he’s not looking away from his screen, he’s always watching, he’s always, um, making movement” “Very-very in control, um, but also very easy going, because you are beat up all the time, and if you let it get personal then it will eat at you”, “the ability to remain calm or at least portray a calm demeanor” “What makes a good EMS dispatcher? Well, attention to detail”.
17	Non-Technical Skills	

(continued on next page)

Table 2 (continued)

No	CODES	EXAMPLE QUOTATIONS
18	Pride	<ul style="list-style-type: none"> • <i>“Leadership, teamwork, comms, situational awareness, decision making, um, managing stress and managing fatigue”</i> • <i>“My ideal EMS dispatcher. That’s supposed to be an octopus ...”</i> • <i>“We always say we’re the first responders”</i> • <i>“Protocols and our cardiac survival rates are some of the best in the world, here, because of it. Because of how aggressive we are”</i>
19	Mind of Service	<ul style="list-style-type: none"> • <i>“Be patient with the callers”</i> • <i>“Treat people like you would your own family”</i> • <i>“Community service, provide the best medical care we can for our citizens and our fellow employees”</i> • <i>“Let’s treat them with dignity”</i>
20	Sense of Purpose	<ul style="list-style-type: none"> • <i>“Start the life-saving process, diffuse any, um, hysteria and excitability and to calm the situation down and maybe direct focus in the right, um, process and manner. And then, you know, to start patient care, honestly, to the best of our ability, and to get as much a- as much information as you can about what’s going on with the scene before, before the responders arrive, and being able to prioritize calls based on the ... based on the symptoms that the caller is giving us”</i>

the Optimum Skillset theory are outlined below:

1. **Prior Qualifications and Attributes:** Teamworking, interpersonal skills, multi-tasking and confidence are necessary traits. A recruit should be a hybrid able to work independently and as part of a team; preferably, with no related experience so they can be shaped and molded to fit the organization.

The ability to manage stress was also considered key: although, there was concern as to how this could be assessed during recruitment which supports Gardett et al.’s [24] call for more research into the human aspects of dispatching.

2. **Basic Training:** A high number of recruits leave during this critical period due to the stresses and demands, actual and perceived, of the role. This study found that greater focus on stress management using formal and informal mechanisms could improve trainee retention supporting the deliberative ruminations and stress management literature [3,4,7,46,77].

3. **Career Development:** An environment that is receptive to existing and emergent development opportunities supported by a reimbursement policy is not enough to maximise employee potential. Individual financial circumstances and a culture that does not fully embrace development can limit the take-up of opportunities. Also, perceived limited opportunities for promotion can reduce motivation towards career development as noted in the literature [39].

4. **Quality Assurance:** This vital organizational function underpins the effective selection and evaluation (formal and informal) of recruits, basic and ongoing training, certification and recertification. Quality Assurance (QA) connects the five codes within this category, a factor that is sometimes overlooked. Thus, ensuring that QA is broadly recognized and understood as an important daily function across the organization is critical.

5 **Stress Management:** The ability to effectively manage stress is a key attribute in an EMD. Nearly half of the new recruits leave before finishing their basic training as the requirements of the role and necessary standards can be overwhelming. The perceived isolation (by new recruits) of the role can be unsettling and stressful. Although, EMDs are supported by systematic protocols, the actual task of verbally conveying advice to callers that may be frightened, abusive, intoxicated, under the influence of narcotics or simply unable to speak English is psychologically burdensome, triggering high

levels of stress. The oversight and informal support provided by senior EMDs within the Dispatch Center to new recruits falls short of adequately mitigating these issues, leading to early withdrawal from training or probation. Consequently, expectation and stress management within new recruits is critical to their retention.

Participants readily discussed the nature and importance of between-call conversations within the Dispatch Center. These deliberate ruminations play a vital role in stress management. Being free to express feelings quickly and without judgement (actual or perceived) in an informal way can significantly reduce stress and the likelihood of PTSD [73]. Thus, both formal and informal decompression mechanisms should be developed, trained for and encouraged so that they become normalized and part of routine daily operations.

6. **Technical Skills:** Computer literacy, data entry/typing, mapping and radio usage were cited as requisite technical skills which aligns with the required EMD skillset and recruitment criteria [26,37,43].

7. **Non-Technical Skills:** Leadership, teamwork, communications, situational awareness, decision-making and the ability to manage both stress and fatigue were considered more important than technical proficiency in a recruitment context. The ability to manage stress, which is linked to the Prior Qualifications and Attributes code, was most notable. These findings support the non-technical skills literature [17,38,48–50].

8. **Pride:** Organizational pride linked to a well-developed sense and clarity of role was considered essential. Confidence is drawn from pride and was considered a key factor in retention and was linked to a clear need for rigorous and ongoing training.

9. **Mind of Service:** Aligned with pride, a strong sense of service mindedness based on a clear understanding of the EMD role, value and place within the EMS system and both first responder and local communities was considered essential. This should be promoted throughout the recruitment process, embedded during basic training and maintained throughout the EMD’s career through ongoing training and development.

5.2. Summary

Exposure to trauma has been researched though primarily in a first responder - law enforcement, fire and EMS - context [26,48]. The effects of stress and exposure to secondary trauma on EMD personnel, demonstrated herein, are a key determinant in retention. Chronic exposure to traumatic events and abusive callers requires well-developed stress management skills. Recruiting candidates with these skills is preferable to developing these abilities on the job, although additional focus on these in basic training would be beneficial. Military, firefighter and other first responder training includes simulated or controlled exposure to stress to test candidates and to develop personnel [78]. This can reduce the likelihood of early resignation due to candidate stress and becoming overwhelmed by the role. Moreover, deliberative ruminations within the Dispatch Center should be encouraged as they lessen the impact of stress as EMDs tend to express negative feelings and recount traumatic events to colleagues during shifts to decompress [77]. These informal social coping mechanisms should be more formally integrated within basic training and career development programs, culturally normalized within the organization and linked to formal personnel welfare initiatives to maximise impact. This aligns to police, fire and military efforts to develop formal and informal stress interventions [79].

The importance of both technical and non-technical skill-sets were stressed throughout. From a technical perspective, an effective EMD requires computer and electronic mapping skills and local geography, multi-tasking, resource and protocol familiarity. Key non-technical skills included leadership, teamwork, situational awareness, decision making, communication and confidence. Collectively, these traits inform the

posited Optimum Skill-set which can be used to inform role-specifications and recruitment criteria.

5.3. Limitations and future research

As with all research this study has its limitations. First, this study of 11 semi-structured interviews at one Dispatch Center within a single USA-based EMS organization is a comparatively small sample-frame. However, this is an exploratory study that reflects Patton's assertion that no specific rules apply for sample size as it "depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with the available time and resources" [80] p. 244]. Second, the findings are not generalizable to the EMD career field as a whole as they are construed within a USA context. However, Maxwell [76] argues that generalizability is more of an empirical and positivist concept that is inappropriate to qualitative inductive research. Third, the findings are a snapshot of the views at one location at a specific point in time.

Future studies could adopt a mixed methods approach to build upon these findings and posited theory. Using the same methodology, with an expanded sample of domestic and international EMD and more Dispatch Centers, would be the logical next step. A mixed-methods study using a quantitative survey to empirically determine patterns in recruitment, career development and retention with a much larger sample-frame of EMD and Dispatch Centers could inform a series of qualitative interviews. The corpus of empirical data could be explored and refined through interviews to develop more generalizable, rich and thick strategy recommendations. These approaches could also be applied to law enforcement, fire department and coastguard operations, individually or collectively. Moreover, there remains a clear need for research into the EMD role to ensure the sustainability of a vital career field.

6. Conclusion

This study consisted of 11 semi-structured interviews conducted face-to-face with the resultant qualitative corpus of data analysed using computer-assisted content analysis. The resultant 20 codes were refined into seven categories grounded in key themes drawn from the natural language of operational EMD. The resultant EMD Optimum Skillset integrates the findings into a logical framework that can inform EMD recruiters, in-career EMDs, new recruitments and those interested in an EMD career.

There are three practical takeaways from this study for recruiters, in-career EMDs and new recruits and a theoretical contribution to EMD recruitment:

- 1. Recruiters:** The posited framework advocates for a more rigorous and holistic recruitment criteria that focuses on non-technical skills and personality (Pride and Mind of Service) as opposed to solely formal qualifications. The need for enhanced psychological and stress testing to maximise the likelihood of successful recruitment, training and performance is also important.
- 2. In-career EMDs:** The findings illustrate the need to effectively and proactively manage chronic stress via formal and informal mechanisms. Moreover, to ensure acceptance of these mechanisms a conducive organizational culture is required.
- 3. New recruits:** For new recruits and those interested in a career in EMD the findings indicate a clear need for expectation management. A comprehensive understanding of the role and demands of the job reduces the stress burden and the likelihood of resignation so it is a critical aspect of recruitment and training. However, observation of working EMD is prohibited by the Health Insurance Portability and Accountability Act privacy requirements making this more challenging. Moreover, greater recognition that EMD combines both technical and non-technical skills, notably stress management linked to Pride and Mind of Service. Coupled with proactive development of

these traits before and during the recruitment process and throughout training will increase the likelihood of success and wellbeing in the short, medium and long-term. Finally, this study contributes to much needed theory on EMD recruitment, career development and retention to ensure that the *faceless heroes* who stand ready to assist 24 h a day remain ready and able to do their duty.

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Declaration of competing interest

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