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Research Article

### EMERGENCY MEDICAL TECHNICIANS (EMTS) ROLES AND SAFETY AT THE SCENE

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#### Abstract:

*Prehospital ambulance services are crucial components of emergency medical systems. Ambulance service paramedics promptly attend to requests for assistance from individuals who perceive a need for immediate medical evaluation, on-site treatment, and/or conveyance to a medical facility. EMTs have a crucial role in the care and treatment of emergency patients and their health outcomes. Understanding the clinical reasoning pattern in prehospital operations is crucial for developing an accurate clinical decision-making process in this population. Hence, the objective of this study was to elucidate the clinical functions of Emergency Medical Technicians (EMTs) and assess their level of safety at the incident site.*

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**INTRODUCTION:**

Emergency medical service (EMS) delivers patient treatment throughout a range of environments, spanning from tranquil to tumultuous. EMS providers often encounter difficulties in both accessing patients to administer care and extracting them from the scene for transportation. An instance of this is a motor vehicle collision, in which individuals frequently become ensnared in severely damaged automobiles. An example that may not be immediately apparent is the extraction of an obese patient from the dwelling of a compulsive hoarder or the retrieval of a person who has fallen into icy water. Various methods are employed to extricate patients from their confinement, with the specific methodology chosen based on the circumstances. Irrespective of the circumstances or location, the primary concern for EMS professionals is ensuring their own personal safety [1,2].

The objectives of EMS and police may deviate at any given moment while these professionals are present at the scene. Ensuring the safety of the scene is of utmost importance in the field of Emergency Medical Services (EMS). Upon arriving at the location of an emergency, EMS professionals are faced with an unfamiliar and sometimes volatile scenario. If a situation is deemed "safe," it indicates the absence of any evident potential dangers or hazards that could hinder the EMTs from carrying out their duties or pose a risk to their well-being. The potential risks encompass a wide range, including electrical hazards, active shooters, and disturbed patients. EMTs are instructed to prioritize several aspects upon entering a scene, following a precise sequence: 1) ensuring their own safety, 2) ensuring the safety of their partners or coworkers, and 3) providing care to the patient. Any obstacle or danger that arises hinders progress towards the subsequent stage.

It is crucial to acknowledge that the initial safety of a situation does not ensure its continued safety. Maybe a newcomer emerges and presents a danger. There is a possibility of a fire igniting. Irrespective of the origin of the novel peril, ensuring the safety of the surroundings is an ongoing process that necessitates regular reevaluation.

The emergency description and destination address are crucial pieces of information that are valuable for planning. Just as the communication of a cardiac arrest prompts responders to prepare for CPR, the notice of a motor vehicle accident should prompt thoughts about the need for police presence to regulate traffic. Similarly, the notification of a dispatch to a chemical plant should lead to evaluation of potential risks [3,4].

Having a thorough understanding of the community might also be advantageous. Full-time first responders are required to possess comprehensive knowledge of the geographical particulars encompassing their designated service region. Familiarity with regions renowned for elevated levels of criminality can prove advantageous in the context of safety preparedness. If emergency responders are informed that their intended location is an ongoing crime scene, it is imperative for law enforcement to ensure the safety of the area before allowing EMS personnel to enter [5].

Observation is an invaluable instrument when encountering an unfamiliar setting. Observing the behavior of onlookers in close proximity to the incident can provide indications or clues. For instance, if an individual hastily departs from the location upon the arrival of emergency medical services, it may indicate the presence of suspicious or criminal activity. The presence of large congregations poses a potential threat to the safety of first responders, particularly if the crowd exhibits signs of agitation. Observing the quantity of vehicles parked on the street or in the driveway may provide as an indication of the number of individuals present. The presence of broken windows or doors should elicit concerns [6].

Having knowledge of when a certain place will be designated as a crime scene will assist emergency medical services (EMS) personnel in determining the appropriate course of action. A crime scene is defined as any site where a criminal act has taken place or where potential evidence related to a criminal conduct can be discovered. This encompasses a wide range of activities, such as violent crimes, drug manufacture, and fires. EMS providers must exercise caution when identifying the sites of incidents that may seem to be clear cases of suicides or accidents as potential crime scenes. Law enforcement authorities must conduct investigations to verify reported incidents of self-inflicted or unintentional injury. It is important to handle these scenes with the same level of care as any other prospective crime scene in order to preserve and document evidence effectively [7].

**DISCUSSION:**

The World Health Organization (WHO) reports that road traffic injuries (RTIs) cause approximately 1.3 million deaths globally each year, making them the leading cause of mortality among those aged 15-29 years [8]. The death rate caused by RTIs is steadily rising in numerous nations, particularly in low- and middle-income countries (LMICs). It is worth noting that 93% of all RTI fatalities occur in these countries [9]. While fatal road traffic injuries (RTIs) might

happen at the incident site, during transportation of the patient, or at the hospital, the majority of deaths occur in the prehospital phase in low- and middle-income countries (LMICs), as indicated by several reports [10]. Prior research has demonstrated that 86% of fatalities connected to trauma occur before reaching the hospital, with around 39% of these deaths being avoidable. An organized strategy to managing RTIs, together with the provision of prehospital care with the goal of improving the quality of emergency care and reducing fatality rates, is crucial in effectively managing these deaths [9]. Furthermore, the careful selection of suitable solutions and accurate policy-making in such circumstances can potentially result in reduced mortality rates caused by respiratory tract infections in many nations [11,12].

Responders must consistently exercise caution when approaching the site, and any behavior that arouses suspicion should be given careful attention. A common recommendation is for first responders to position themselves to the side of the doorframe while knocking, in order to reduce their vulnerability as a potential target. First responders must maintain constant vigilance regarding their safety and remain prepared to take action at all times. Having a predetermined exit strategy is crucial. The precise whereabouts of various bystanders at a scene is vital information. If feasible, it is advisable to prevent them from overtaking first responders, so reducing the likelihood of an unexpected assault from the rear. It is imperative to prohibit bystanders from obstructing exits. First responders must have a predetermined plan for their own evacuation, if required [7].

Close surveillance of bystanders is also crucial for an additional rationale. Family members or other individuals residing in the household may engage in disruptive behavior that includes both verbal and physical interference with the provision of patient care. Being able to identify and interpret body language, as well as detecting any hidden items such as potential weapons, can help prevent potential dangers. For instance, an individual who is irritated or nervous may exhibit behaviors such as crossing their arms or pacing around the room.

Animals may also be present at the scene. Sizeable, nimble creatures might present a specific danger. Animal anxiety and imminent aggression might be indicated by growling, barking, and the presence of foam around the mouth. First responders should refrain from abrupt motions and withdraw to a secure distance [13].

Substances and equipment related to illicit substances are frequently encountered as additional risks. EMTs should strive to acquaint themselves with the visual characteristics of frequently encountered drugs in their localities. Particular care is required, particularly when dealing with unknown compounds, and the initial responders must remain vigilant regarding the potential for these agents to cause irritation or explosions. It is advisable to be cautious as there can be visible needles or other sharp objects in this particular situation [14].

Dangerous substances present unique difficulties. EMTs should endeavor to completely refrain from approaching a hazardous materials (hazmat) scene, if feasible. It is advisable to park the ambulance upwind, at a considerable distance from the incident, and inform the relevant authorities [15].

EMS practitioners may also encounter situations that are commonly regarded as "challenging environments" depending on their practice location. In a hilly region, the level of technical rescue abilities needed may vary based on the specific demands of the circumstance, hence increasing the inherent danger [16].

The aforementioned enumeration does not encompass all conceivable hazards that may jeopardize the well-being of first responders. Every person should be aware of their circumstances constantly. The primary objective of any surgery should be the secure retrieval and transportation of the patient to the intended location.

First responders in the prehospital setting encounter a more dynamic situation compared to their counterparts in the hospital. They must exercise constant vigilance over their personal safety. Acquiring and honing this vigilance requires guidance and training, although it is important to guarantee their well-being and capacity to deliver assistance in critical situations. The text is enclosed in the tags.

Inadequate handling of the accident site was another significant obstacle that impacted the avoidable fatalities in this study. In Iran, one of the present obstacles faced by RTIs is inadequate management. One of the obstacles that impacted fatalities associated with road traffic injuries in this study was the delayed availability of medical assistance to the victims. This component is influenced by variables such as congestion and the closure of the access route to the crash scene. The involvement of bystanders at the incident site might either enhance or hinder the

provision of preventive care in road traffic injuries [19]. The presence of the public at the collision scene, driven by personal interest, enthusiasm for humanitarian assistance, excitement, and urgency, leads to a congested accumulation of people and ineffective communication [20]. Administering primary emergency care at the crash site and during the victim's transportation to the hospital has the potential to enhance the victim's prognosis independently. The World Health Organization (WHO) advises prioritizing scene safety as the main course of action for assisting victims of traffic accidents [21]. Multiple agencies cooperate at the collision site with the shared objective of preserving the victim's life. The Red Crescent personnel are responsible for ensuring scene safety at the crash site prior to the arrival of EMS workers, and they are also trained in providing first aid. It is necessary to ready the individual for the provision of medical attention. In order to promptly administer therapeutic interventions to victims, it is crucial to arrange the collision scene in a manner that allows prehospital EMS technicians to quickly reach the patients. Prioritizing the arrival of Red Crescent staff at the crash scene before the EMS crew would enable the EMS staff to promptly reach the victims upon their arrival. Furthermore, certain studies have shown that the illogical and irrational gathering of the public at the crash site prolongs the process of providing care to the victims and decreases safety [23]. The crowd consumes valuable time that is necessary for immediate care, and it may even lead to additional harm and new injuries [24]. The present investigation identified lack of effective communication and coordination as a contributing factor to preventable deaths. Effective communication and coordination can enhance preparedness for delivering prehospital care [25]. The healthcare system's lack of coordination has resulted in the misallocation of budgetary resources and the denial of patients' access to sufficient care. There should be a harmonious equilibrium between the allocation of human resources and the utilization of communication equipment. The sufferer will receive the best possible care when there is effective communication and collaboration among all emergency care providers. The presence of the public at the crash scene exacerbates stress levels, resulting in decreased collaboration among EMS personnel and impeding the exchange of experiences necessary for administering therapeutic interventions to patients and managing the crash scene. An additional prerequisite for effective coordination between the EMS personnel and physician is the availability of suitable equipment. It is necessary to implement a comprehensive communication system, establish an efficient wireless

system, and ensure that all administrative and supervisory personnel at the collision scene operate on a standardized frequency. An absence of a standardized command structure is another contributing cause to the insufficient communication and coordination required for effective management of avoidable fatalities in road traffic incidents. In order to effectively handle the crash scene, it is necessary to establish a cohesive and authoritative system of command, considering the different types of injuries that may be involved and the multiple organizations that may be present. The accident commander should effectively oversee and control all traffic patterns during the duration of the accident until the situation is resolved and returns to its usual state. The police have been designated as the central element in overseeing road traffic incidents (RTIs) and the various aspects that impact the administration of collision scenes [26,27]. The individual responsible for managing the accident may differ based on the nature of the incident. However, it is crucial to note that the presence of many organizations allows for the selection of a commander based on the type of injury by establishing the necessary procedures and norms. An additional obstacle noted in this study was the absence of established guidelines and protocols, resulting in uncertainty among EMS personnel when providing care. This occasionally led to partial or repetitive interventions, as there were no checklists available to guide their activities. Furthermore, a notable obstacle in prehospital emergency care was the existence of varied guidelines and protocols that did not take into account clinical data. Having well-established norms and recommendations is considered essential for enhancing communication, improving clinical treatment, and ultimately reducing death rates associated with respiratory tract infections [28]. The absence of evidence-based protocols and recommendations can result in a lack of standardized clinical care and breakdown in communication and coordination during the management of a crash site. This can lead to a higher number of unnecessary deaths in road traffic incidents [22].

The delivery of prehospital emergency medical services (EMS) was dramatically impacted by COVID-19. Emergency medical technicians (EMTs), similar to other healthcare professionals, play crucial responsibilities in the administration of epidemics and disasters. Nevertheless, epidemics significantly increase their susceptibility to infection, bodily and psychological harm, and mortality [22]. During epidemics, the demand for healthcare services and the number of interactions with EMS dispatch centers considerably increase, leading to a substantial increase

in the workload of EMTs [25]. Furthermore, it is imperative for EMTs to operate in challenging, hazardous, and unpredictable environments seen in prehospital settings, including residences, public areas, as well as crime and accident scenes [12]. In contrast to care delivery in controlled environments like hospitals, care delivery in prehospital settings presents numerous issues and obstacles. These include the overcrowding of the environment, the necessity for quick decision-making, the need to take emergency measures without sufficient information, and difficulties related to patient transfer [26]. In addition, EMTs encounter moral anguish as a result of ethical dilemmas around obtaining informed consent, safeguarding patient confidentiality, delivering unfavorable news, and handling patients' rejection of treatments or transfer [27].

Prior research has indicated that during epidemics, healthcare providers encounter significant occupational strain and confront various challenges stemming from the elevated risk of infection, insufficient personal protective equipment, excessive workload, staff scarcity, uncertainties, bias, patients' adverse emotional responses, separation from loved ones, and job burnout. The COVID-19 pandemic has introduced additional difficulties with the prioritization and distribution of scarce resources, as well as medical decision-making in urgent situations [28]. These issues and difficulties can lead to physical and psychological health issues for EMTs, including stress, anxiety, sadness, insomnia, denial, wrath, and dread. Furthermore, mental health issues not only impair individuals' decision-making capacities, but can also lead to enduring physical and psychological health complications even after the conclusion of epidemics [29]. These issues and difficulties can impact the capacity of EMTs to deliver high-quality healthcare to patients who are believed to have COVID-19 [19].

EMTs are in the forefront of providing care to patients with COVID-19, making them very susceptible to contracting the disease. Consequently, individuals undergo profound trepidation and distress regarding the onset of the illness and its potential spread to their loved ones. The same finding has been reported in previous investigations [23,24]. Additional research findings revealed that EMTs faced significant exhaustion and a substantial workload as the primary obstacles in providing care during the COVID-19 outbreak. The abrupt surge in demand for healthcare services leads to strain in healthcare systems and places a substantial burden on healthcare providers [26]. Previous studies have demonstrated a substantial

surge in the workload of Emergency Medical Technicians (EMTs) during the H1N1 pandemic. In general, public health events, such as flu epidemics, place a significant burden on healthcare personnel and can result in them leaving their jobs [28,30].

### CONCLUSION:

Gaining a comprehensive understanding of the prehospital environment is highly advantageous for clinicians working in the emergency room. During a severe injury, the situation can be disordered and comprehending the patient's prior experiences before reaching the emergency department might enhance communication between the emergency department doctor and EMS, perhaps resulting in more effectiveness and enhanced care. The doctor must recognize that there are frequently time lags between the occurrence of an incident and the patient's arrival at the hospital. Having this comprehension is crucial in trauma resuscitation when time is extremely important. Extrication can be a distressing procedure in itself, further exacerbating the clinical situation. EMS delivers vital medical assistance in the prehospital environment. Ensuring the provision of care while upholding personal safety is crucial. EMTs and paramedics should possess a comprehensive comprehension of the significance of time in the context of a traumatic event. Access and extrication should be expedited with maximum efficiency while ensuring safety. The arrival of patients in the emergency department is ultimately dependent on the dedication and diligent efforts of EMS, who play a crucial role in extricating patients.

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