National Emergency Medical Services Advisory Council
DRAFT
Advisory and Recommendations

Title: **Strengthening Emergency Medical Services (EMS) and Hospital Relationships to Improve Efficiencies and Positively Impact Patient Outcomes**

As prepared by the Subcommittee on **Adaptability and Innovation**

A. Executive Summary

Across the nation, emergency departments (ED), hospitals and EMS systems are being pressured to do more with less. The provision of quality, timely and efficient patient care is complicated by prolonged patient offload times encountered when patients are transported to emergency departments by EMS. When the transfer of care from EMS to the ED staff is delayed, EMS units are not available to deal with other emergencies and the impact on communities can be significant. (Wolfberg and Wirth, 2021).

"The origins of the current crisis are multifaceted. High ED demand (much of it for non-emergency conditions), inadequate hospital staffing, poor hospital throughput and other root causes have all conspired to cause extended wait times as ambulance crews attempt to transfer their incoming patients to hospital beds" (Wolfberg and Wirth, 2021, ¶2).

The delays in the EMS providers' return to service in their communities trickle down to other EMS agencies, who through mutual aid compacts, help to cover calls in areas other than their own. These offload delays can cost EMS agencies tens or hundreds of thousands of dollars a year as EMS crews remain at the ED waiting to hand off their patients (Wolfberg and Wirth, 2021). In rural parts of the country, this situation may result in extended response times to critical calls or the complete lack of a responder available to answer the call. Patient offload delays may also result in frustration and contribute to conflict between EMS, hospital staff and patients.

The root causes of the issues outlined above vary from institution to institution and across states and regions. One solution will not universally solve this national problem.

Identification of root causes for patient offload delays in emergency departments could be achieved through convening a panel of subject matter experts (SME) representing both hospitals and the EMS community. Once these root causes are determined, the SMEs can then identify creative strategies to address them. Additionally, the SME panel will review patient offload times that are posted on EMS.gov. Through this review, the panel will develop a recommendation for a standardized acceptable patient offload time range. The results of this work would be shared with hospital systems and EMS agencies for consideration in resolving their particular issues. Additionally, developing more collaboration between ED and EMS would benefit everyone. The addition of an EMS liaison who would work in the ED would identify opportunities for increased efficiency in the hand-off of patient care and facilitate dialogue between the hospital staff and EMS providers.

B. Recommendations

Federal Interagency Committee on Emergency Medical Services

Recommendation 1:

NEMSAC recommends that NHTSA regularly compiles and posts EMS patient offload times on EMS.gov.

Recommendation 2:

NEMSAC recommends that FICEMS convene a panel of subject matter experts representing hospital systems and EMS agencies to identify issues related to EMS offload times and to develop strategies to increase patient throughput thereby reducing patient offload delays and ED overcrowding. The SME panel will review the patient offload times posted on EMS.gov to recommend an acceptable standardized patient offload time range. Results of this work will be shared with hospital administrators and EMS agencies at the federal, state, local, tribal, and territory levels. Including root causes and resolution strategies that directly address those root causes will provide hospitals and EMS agencies with strategies that they can tailor to their situations. Although no one size fits all approach will work, it is hoped that the results of this SME work will provide options or creative solutions for hospital systems and EMS agencies to implement.

Recommendation 3:

NEMSAC recommends that FICEMS work with HHS to consider the addition of a requirement in future Hospital Preparedness Program (HPP) cooperative agreements that each funding recipient designate an EMS Liaison, whose purpose would be to facilitate collaboration and communication with EMS agencies and to coordinate strategies to reduce EMS return to service delays.

C. Scope and Definition

The suspected causes related to patient offload delay have been described in several articles. According to Cooney et al., (2011), "Since the ability of an EMS unit to transfer a patient to an ED bed is determined by the availability of ED beds, which is determined by hospital throughput and availability of hospital beds, it follows that EMS unit availability is directly related to hospital throughput." Cooney et al., also noted that the consequences of patient offload delay can be broken down into two categories: consequences to the patient and consequences to the EMS system. Patient care is delayed, and EMS units remain for long periods in the ED awaiting the transfer of care. Cooney et al., cited a 2003 paper by Schull, et al., that noted that the search for a solution to offload delays should be focused on increasing the efficiency of the hospital to manage complex patients, not just get ambulatory patients to seek care elsewhere. A one size fits all approach will not work to solve the issues of patient offload delays, as the root causes may vary greatly from state to state and region to region.

The purpose of this advisory is not to solve the many problems that contribute to ED overcrowding, rather it is to encourage a collaborative effort between hospitals, hospital systems, and EMS agencies at all levels to develop and share successful strategies in mitigating the issues that create ambulance patient offload delays. Reducing the strain on an overburdened EMS and hospital system will allow for more collaboration between EMS and hospitals at local and state levels, as will the implementation of an EMS liaison in the emergency departments.

D. Analysis

The issues of ED overcrowding and ambulance patient offload delays are not new as noted in the literature. Researchers such as Lagoe and Jastremski studied the problems and attempted to alleviate overcrowding and long wait times in the ED by proposing different

solutions. Lagoe and Jastremski (1990) described a novel approach to reducing ED crowding by initiating ambulance diversion. In the study, ambulance diversion, where ambulances are diverted from the closest hospital or specialty center due to capacity issues, was originally thought to alleviate overcrowding and long wait times for patient care during transient increases in patient volume. In 2006, Pham et al., observed that the ambulance diversions were not seasonal or sporadic but had become the norm as much as 51% of the time. They acknowledged that ambulance diversion by itself was not the answer to overcrowding, as it created problems within the EMS systems such as longer transport times, extended out of service times, and often required more mutual aid coverage where available.

Extended Patient Offload Times

Extended ambulance patient offload times (APOT) resulting from overcrowded Emergency Departments represent delays in patient care and the ability of EMS units to return to service in the community (Cooney, 2013). Krause et al., (2019) noted that 100% of medical directors from large EMS systems who responded to their survey agreed that there's a potential for patient deterioration during the ambulance patient offload time, the period during which the patient is being removed from the ambulance to receiving care from the ED staff. Reducing the offload time is therefore critical to the patient's well-being.

In an early effort to collect data on patient offload delays in California, the state EMS agency established standardized methodology and definitions for data collection related to patient offload times. In 2017, the first year of data collection, EMS agencies voluntarily provided data to the state. Only 33 agencies, representing 37% of the state's population, provided data. In the analysis of the 2017 California data, "Offload times vary markedly by hospital as well as by region. Three-fourths of hospitals detained EMS crews more than one hour, 40% more than two hours, and one-third delayed EMS return to service by more than three hours" (Backer et al., 2019, p.1).

In December 2020, the California Emergency Services Authority, EMSA (CA), published data collected on offload delays in the state. This report analyzed the first two years of data collection from EMS agencies across the state. In the report, EMSA (CA) noted that the target for ambulance patient offload times as a maximum of 20 minutes. In Lee County, FL, the target for APOT is 30 minutes maximum 100% of the time (Cooney, 2013).

The extended wait times for EMS crews to give report and officially handoff the patient to the ED staff and return to service results in an exacerbation of the EMS shortages that agencies are already experiencing. The American Ambulance Association (AAA) created a Wall Time Toolkit and posted it on their website in January, 2022 to educate their members on the EMS crisis resulting from extended patient offload delays. The toolkit includes the major provisions review of the Emergency Medical Treatment and Labor Act (EMTALA) requirements for patient acceptance by hospital emergency departments and suggestions for improving the handoff time and collaboration with hospital leadership. The toolkit also provides EMS providers with the Centers for Medicare and Medicaid Services (CMS) 2006 memo on EMTALA requirements and a letter that can be used as a template to report EMTALA violations to state agencies.

The National Emergency Medical Services Information System (NEMSIS) collects and stores standardized data from EMS agencies nationwide. The data is then able to be used at the federal, state, local, tribal, and territory levels for review of care and process improvements (NEMSIS.org, n.d.). The use of the NEMSIS database as a national tracking and reporting mechanism for EMS patient offload times would aid in understanding the scope of the problem and developing standardized acceptable EMS patient offload times. Significant data points for achieving these goals include the "patient arrival time" and the "transfer of care time." The difference between these times provides the length of time that the EMS unit is unavailable for service due to continued responsibility for the patient.

EMS Staffing Shortages

Many EMS providers are experiencing staffing shortages, as seen in other areas of the patient care continuum. Rural and volunteer agencies have been experiencing staffing issues for several years according to a NEMSAC advisory (2020). In the advisory, it was noted that 57 million people live in rural areas of the U.S and the ability of rural and volunteer EMS providers to provide EMS practitioners has been shown to be inadequate and, in some cases, non-existent, resulting in prolonged response times in some jurisdictions (King et al., n.d.) as cited in NEMSAC (2020).

Paid EMS agencies are also feeling stretched to the limit. According to Josh Spencer of American Medical Response (AMR), it is not uncommon to utilize ambulances from other counties during periods of heavier call volume. The mutual aid concept, where EMS providers are pulled from their local area of service into another area, results in longer response times and patient care delays in both areas (Kousouris, 2022). In an attempt to

combat the staffing shortage, AMR has begun providing incentives and bonuses to prospective employees. They have also implemented an "Earn while you learn academy" to put candidates through EMT and medic programs in a few months (Kousouris, 2022).

Emergency Department Overcrowding

Emergency department overcrowding is not just a national issue, countries all over the world are experiencing the problem. According to McKenna et al., (2019 p.1) "ED overcrowding can be the result of poor ED department design and prolonged throughput due to staffing, ancillary service performance, and flow processes." Additionally, a broad body of literature demonstrates that hospital capacity leads to ED overcrowding due to patient boarding in the ED (Mc Kenna et al., 2019). In the United States, 11% of ED visits resulted in admission in 2012. "Overcrowding causes delays in care for all patients, including the critically ill, 10% of whom wait more than one hour to see a physician according to the Centers for Disease Control and Prevention" (McKenna et al., 2019, p.1).

Acute Care Nursing and Ancillary Services Shortage

"Currently, 20% of U.S. hospitals are experiencing "critical staffing shortages," and more are expected to face such shortages in the coming weeks, Rick Pollack, president of the American Hospital Association, noted (Firth, 2022). These shortages can lead to delays in patient care and medical complications down the line" (Firth, 2022, ¶ 5). Firth cited Detroit, MI, as an example of an area experiencing staffing shortages. As noted by Firth (2022), according to Wright Lassiter (n.d.), president and CEO of the Henry Ford Health System in Detroit, there are currently 75 beds closed due to staffing issues in their health system. Lassiter added that this was an improvement, as more than double that number were closed just three days prior (Firth, 2022).

Rural areas are also being hit hard by staffing issues. "Ruby Kirby, CEO of the West Tennessee Healthcare Bolivar and Camden Hospitals, as cited by Firth (2022), said that hospital staffing vacancy rates are anywhere from 33% to 50% in her area" (Firth, 2022, p.1). Firth also noted that Kirby (2022) described these results of staffing shortages as the worst she has seen in 22 years of working in rural health, as her hospitals have lost nurses, as well as over 50% of their respiratory therapists, to staffing agencies (Firth, 2022).

The nursing shortage is a national crisis and several organizations have decided to sponsor a nurse staffing think tank. The American Organization for Nursing Leadership (AONL) is

partnering with the American Nurses Association, the American Association of Critical-Care Nurses, the Healthcare Financial Management Association, and the Institute for Healthcare Improvement with the goal of developing "actionable short-term strategies" for acute and critical care practice settings. The group will also help launch a national nurse staffing task force in the first quarter of 2022 (Firth, 2022).

Skilled Nursing Facility and Rehab Unit Staffing Shortages

The issue of staffing shortages doesn't end with the acute care setting. Patients that need convalescent care or rehabilitation have few skilled nursing or rehab unit beds available to them. With no beds to go to, these patients remain in acute care facilities long after they should have been discharged, furthering the shortage of available acute care beds. The majority of nursing homes and assisted care facilities are facing staffing shortages. Fewer than 5 percent of them are fully staffed, and more than half of the facilities describe the shortages as high level. "The biggest obstacles to hiring new staff are a lack of qualified or interested candidates and a lack of unemployment benefits which discourages potential recruits" (Bailey, 2021, ¶8). According to LaPointe (2020, p.1) "Supply and demand for long-term care are moving in opposite directions, and, additionally, turnover is exacerbating the staffing issue. "Turnover in this sector is estimated to be between 4 and 66 percent. Research shows that one in four nursing assistants and one in five home health aides are actively seeking another job, while one in two workers leave home health jobs within 12 months" (LaPointe, 2020, ¶15).

EMS and ED Partnership

EMS and hospitals have traditionally had strong partnerships but more recently, some of those relationships have been strained. In some cases, there has been an "us versus them" mentality that has caused a lack of trust, understanding, and respect. Seeking opportunities to benefit EMS and hospitals can also positively affect patient outcomes.

Augustine (2021) inquired what the relationship should look like, going forward? EMS arrivals are increasing in 2021; a new trajectory over the last five years, with continued high acuity. At least 70 percent of hospital inpatients are processed in through the emergency department; the majority of those admissions arrive by EMS. However, he also pointed out that in recent months, boarded patients crowd out those who are just arriving, creating ambulance patient offload delays. The definition of EMS patient offload time is

the interval between arrival of an ambulance patient at the ED until the EMS and ED personnel transfer the patient to an ED stretcher and the ED staff assume the responsibility for care for the patient. A result is that EMS agencies are literally "out of ambulances" to respond to the next set of medical or trauma emergencies occurring in the community. This has had a negative effect causing EMS to feel underappreciated and hospital staff to feel overstressed causing added strain to that relationship.

Robert Frakes (2020), the coordinator for the Sisters of Charity of Leavenworth (SCL) Health System, offered several practical reasons, as well as tips, for improving the working relationship between hospital and EMS. He noted, it's not always recognized that EMS is one of a hospital's biggest clients and brings in a substantial amount of revenue. "Unless a patient specifically requests a certain facility, it is up to the EMS agency to pick the transport destination. Improving your relationship with your local EMS agencies should be viewed not as an expense but as an investment" (Frakes, 2020). He went on to list four steps for improvement: 1. Improve the feedback loop; 2. Make an efficient environment; 3. Optimize bedside handoff; and 4. Change the culture.

Opportunities: Increased collaboration should be encouraged between EMS and hospitals at the state and local levels. If EMS and hospitals partner together, beginning with the top leadership positions, they can create an atmosphere of mutual respect and understanding of each other's professions. Changing the mindset so that EMS and hospital staff begin to see each other as healthcare professionals and not as specific titles, will go a long way in building trust and respect. Considering EMS as a referring agency and offering timely access to patient outcomes not only highlights successes and areas for quality improvement but actively helps educate the team. Backer et al. (2019) noted that viewing final diagnosis and treatment can help EMS see if their impressions, field diagnosis, and course of treatment were accurate, and present opportunities to collaborate and determine training needs.

E. Strategic Vision

In many areas of the country, hospital throughput is being negatively impacted by a number of causes, including overcrowding, staffing shortages, and the use of the ED as a primary care provider. This advisory seeks to encourage the assessment of root causes of patient offload delays, collect and share successful strategies for mitigating those delays, and establish a recommendation for a standardized acceptable patient offload time range.

F. Strategic Goals

NEMSAC recommends that NHTSA regularly posts patient offload times on EMS.gov as soon as possible.

NEMSAC recommends that FICEMS begin recruiting SMEs from hospital systems and EMS agencies no later than 2024 and convene the group by the beginning of 2025.

NEMSAC recommends that FICEMS works with HHS to include funding of an EMS liaison in Emergency Departments in the next round of Public Health Emergency Fund (PHEF) allocations.

G. References

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H. Appendices