

Improving Stroke Recognition and Care in the Prehospital Setting

A perspective on the current state of emergency medical services systems and the challenges involved in standardizing prehospital stroke care.

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Early recognition of stroke symptomatology is imperative to maximize opportunities for early intervention. Emergency medical services (EMS) is often the patient's first contact with the health care system, and steps undertaken during this initial encounter can significantly affect the patient's ultimate outcome. Quickly identifying signs and symptoms, particularly those of large vessel occlusion, can alter treatment, transportation, and destination decisions. Education and training of EMS personnel to better identify and manage these patients comes with many difficulties. This article addresses the challenges of EMS systems and provides some insight into how increased standardization can enhance prehospital stroke care capabilities.

CHALLENGES OF EMS SYSTEMS

EMS Systems Are State Regulated

Because EMS systems are primarily a state function, they vary considerably from state to state. Educational requirements may be mandated by the state oversight body, but how education is provided to EMS personnel ranges from professional instruction to in-service training performed by the EMS system itself. Quality and depth of understanding may be lacking, especially in services that have limited training resources, and these services may be in a position to have the greatest impact on patient care, as they are often rural, have prolonged transfer times, and have limited experience with stroke patient identification.

Efforts to improve the consistency of EMS decision-making tools can be met with challenges as well. In states where mandated statewide protocols exist, the implementation of a new stroke screening tool may

simply require modification of the statewide protocol. However, many states do not have mandated protocols. Instead, each EMS medical director writes protocols for the service, and altering them necessitates an interaction with multiple medical directors and systems. Thus, establishing a common stroke screening tool, educational program, and/or destination guidelines requires the cooperation of many medical directors, training officers, and hospital systems.

Variability in EMS Medical Director Qualifications

An EMS medical director's qualifications, engagement, and progressiveness may widely vary. EMS medical directors are usually physicians who work in the local emergency department and whose oversight of EMS is a part of the managerial duties associated with the emergency department. These physicians often have varied backgrounds and training, ranging from family medicine physicians, internal medicine physicians, or surgeons who work in the emergency department to board-certified emergency medicine physicians who are full-time EMS medical directors. Additionally, the involvement level of these physicians ranges from those whose full-time practice is EMS to those who volunteer a small amount of time monthly. Less engaged physicians may have more challenges in keeping up to date with the practice of prehospital medicine and are more conservative in their approach to change.

No Standardized Screening Tools or Diversion Regulations

Currently, the use of stroke screening tools to help identify and stratify possible stroke patients is fairly com-

mon in EMS systems. Unfortunately, a wide variety of tools are available, and research has yet to identify a single tool that is easy to use, remember, and administer; has adequate sensitivity and specificity; and reliably identifies subsets of patients who may benefit from advanced therapies.

Even politics can influence EMS system operations. For example, ownership of the EMS system by a hospital is not as common as in the past, but the Emergency Medical Treatment and Labor Act regulations apply to each EMS vehicle as an outreach of that hospital. No such obligation is placed on EMS if it is provided as a government service, which is often based in the fire department. Recently, the use of contracted EMS providers has increased, and municipalities and other government agencies outsource these services. In areas where EMS resources are scarce, the directing agency may be reluctant to allow an ambulance to travel a great distance to deliver a patient to a specialty stroke center, because it takes the ambulance out of service for a longer period, leaving the area without services until the ambulance returns. Implementation of proper diversion decisions must consider the impact on the rest of the community.

Obtaining certification is a common way for hospitals to ensure quality, availability, and recognition. However, EMS personnel often do not appreciate or understand the distinctions between different designations. This is complicated by multiple entities that provide stroke certification and some inconsistencies in the various certifications.

WHAT'S NEXT FOR EMS SYSTEMS?

As we attempt to standardize, improve, and enhance prehospital capabilities, all of the aforementioned factors must be managed to make progress. An understanding of the structure of EMS in your state and region is necessary if the effectiveness of legislation, state administration, and the continuing education system is to be maximized. Most state EMS boards and ambulance associations consider cost of change in their deliberations. Legislation must be sensitive to the cost of implementation, the time and personnel required to complete the training, and the quality improvement processes to ensure completion. Certifications have great value, but EMS boards tend to think in terms of capabilities rather than certifications. Education that ties particular interventions and capabilities to the various disease states may be better understood and implemented by EMS personnel.

The EMS field is not one where "one size fits all" applies. Implementing changes may require many differ-

ent approaches, from educating the medical director to the providers themselves. Training officers, commercial suppliers of continuing education, and service directors must understand the impact and value of the training, and it must be delivered by those who understand the system, goals, and subtle ramifications of the change.

Continued research on the screening tools in use by EMS will result in a higher level of refinement and ultimately better decisions about patient care and destination. Of note, some hospitals may see the bypassing of their facility not as an opportunity to provide a stroke patient with a better outcome, but rather a loss of revenue to the bypassed hospital, a temporary shortage of EMS availability in the local area, and a removal of the patient from the local medical community.

SUMMARY

Challenges abound in the prehospital world. As the saying goes, "if you've seen one EMS system, you've seen one EMS system." In order to move the needle related to the identification, destination, and care of emergent stroke patients, many things have to happen. Understanding the basic configuration of your system will ensure that efforts are focused and productive. Establishing a relationship with the EMS medical director(s) will pave the way for protocol changes. The provision of high-quality instruction and education is vital and highly sought after in EMS. Offering education and training will provide EMS personnel with the complete understanding of the impact of their decisions and a greater appreciation for the need to make those decisions early. A system of care in your area that considers the potential financial impact on the hospitals that no longer receive the stroke patient will help ensure a smooth diversion and referral process. Providing accurate and consistent information about changes in capabilities, approaches, and treatment modalities is vital for the EMS provider. ■

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