

The National EMS Advisory Council

Final Advisory

Approved on December 13, 2011

Committee: Safety

Title: Emergency Vehicle Operator Education, Training, and Safety

Issue Synopsis

A: Problem Statement

Driving ambulances and other emergency vehicles is a necessary element of day-to-day Emergency Medical Services (EMS) care delivery. EMS agencies need to assure safe handling of ambulance vehicles that are by nature substantially different than personal automobiles. Crashes of emergency vehicles can occur at all speeds but risk is increased when driving at high-speeds, with lights and sirens, when overly fatigued, or while proceeding through an intersection against a red light, driving into oncoming lanes.¹ These are several examples of behaviors or actions by EMS vehicle operators that may lead to severe morbidity and mortality for patients and providers.

Recent data suggest that operator error accounts for a large proportion of ambulance crashes.² These data raise questions and concern for the type, amount, and format of emergency vehicle operator training and education and whether formal emergency vehicle operator education programs or other strategies might mitigate the risks to patients, medical staff, and the public. A comprehensive analysis of these issues is not easily identified. Safety of patients and providers may be threatened by a poor understanding of variation in operations and driver education requirements across EMS organizations and the relationship between operator training, vehicle operations, and crashes.

Existing and widely used Emergency Vehicle Operator Courses (EVOC) are an efficient method to expose future and current operators of emergency vehicles to the challenges associated with emergency vehicle operations and threats to safety. There is limited data that describes the common characteristics and variation in programs nationally. Our understanding of program effectiveness is incomplete. Research is needed to identify deficits in existing courses and determine the cost and effectiveness of EVOC on safety and performance outcomes.

B: References

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C: Crosswalk with other documents and past recommendations

There are several documents and resources that address emergency vehicle driver education and/or training. These include the Institute of Medicine's report, *Emergency*

Medical Services: At the Crossroads, which identifies emergency vehicle operation courses as an important first step in operator training.^{3(p.160)}

Standards for operator training and operations have been developed by organizations like the National Fire Protection Agency (NFPA 1451 & 1002). The Council on Accreditation of Ambulance Services (CAAS) and other accreditation organizations address vehicle operator education and training. The NHTSA DOT 1995 EVOC Instructor's Guide provides a framework for instructors of EVOC programs.

In 2009, the National Institute for Occupational Safety and Health (NIOSH) published the National Occupational Research Agenda (NORA) for occupational safety and health research practice in the U.S. public safety sector.⁴ The agenda proposes a series of goals for calendar years 2009 through 2015. These goals seek to impact safety of emergency vehicle operations and safety outcomes among EMS workers. Progress towards these goals is unknown.

Other resources for standardized driver training include the Federal Law Enforcement Training Center (FLETC). It is not well known if any one of these resources has been widely adopted by EMS organizations or EMS authorities nationwide.

D: Analysis

Based on available but limited data, the National EMS Advisory Council (NEMSAC) believes that safety and performance of emergency vehicle operations must improve by adopting a comprehensive systems approach to safety of emergency vehicle operations. This approach should include evaluation of formalized operator education programs, fatigue management programs, vehicle operations surveillance systems, and agency standards and operating procedures.

E: Committee Conclusions

The NEMSAC considers the following essential components of a systems approach to achieving an improved level of safety for patients and operators of emergency vehicles:

- **Increase Awareness of Risks and Safety:** Despite a lack of data, the NEMSAC believes that organizations involved in delivery of EMS should increase awareness of risk, safe practices, and policies that impact emergency vehicle operations. The NEMSAC believes organizations may reach increased awareness by requiring all employees involved in driving ambulances and other emergency vehicles to complete an education and training program that includes initial and reoccurring didactic (classroom-based) instruction and hands-on (behind the wheel) training.
- **Screen Employees to Identify At-Risk Driver / Operators:** Organizations involved in delivery of EMS should include pre-employment screening and annual review of convictions for felonies, DWI, reckless driving, speeding, and all

other moving offenses. Organizations should document why an employee with convictions for such offenses is eligible or ineligible to operate emergency vehicles.

- **Leverage Technology To Improve Safety:** There is growing evidence linking driver monitoring systems to improved safety.^{5,6} Organizations involved in delivery of EMS should consider adopting driver and vehicle performance monitoring systems. These systems may be used to identify threats to patient and provider safety among new and experienced emergency vehicle operators.
- **Create Opportunities for New Drivers to Gain Experience and Perform Regular Driver Evaluations:** Experience “behind the wheel” of emergency vehicle operators may impact performance and safety.⁷ Organizations should conduct planned evaluations of the relationship between experience, education, training and safety. Findings may be used to expose deficits and aid in the calibration of vehicle operator training and orientation.
- **Address Sleep and Fatigue:** There is mounting evidence of poor sleep and fatigue among a high proportion of prehospital emergency workers.⁸⁻¹⁰ Fatigue and poor sleep are associated with negative performance and poor safety outcomes, including motor vehicle crashes.¹⁰⁻¹⁶ Organizations involved in ground-based EMS delivery should develop or adopt a Safety Management System (SMS) that addresses the risk and management of fatigue as a key component to safety management. EMS organizations should ensure employees are educated on these risk and have knowledge of and access to the agency’s values and written policies related to rest and fatigue while on and off-duty.
- **Data Collection is Essential to Determining Problem Magnitude and Impact of Change in Policies and Procedures:** Organizations involved in ground-based EMS delivery should consider data collection fundamental for each of the above listed components. Leading national authorities in the delivery of prehospital emergency medicine should develop standards for data collection. Data may be used to identify deficits in any one of the above listed components and aid in the calibration of interventions to improve safety.

Recommended Actions or Strategies:

National Highway Traffic Safety Administration

Recommendation #1: The NHTSA should assess the status of emergency vehicle operator training programs (courses) throughout the U.S. This assessment should place special emphasis on ambulance operator training but not exclude programs involving training in operation of non-ambulance emergency vehicles.

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Recommendation #2: The NHTSA should conduct a study (or studies) that seek to determine the efficacy and/or effectiveness of emergency vehicle operator training program. Measures of efficacy or effectiveness may include, and are not limited to, individuals trained, ambulance crashes, patient or provider injury and mortality, and costs to individuals and organizations.

Recommendation #3: The NHTSA should produce an action plan for improving emergency vehicle operator education and training. This action plan should be informed by findings from the above recommended nationwide assessment and study or studies.