



## Safe Transport of Children by EMS: Interim Guidance

March 8, 2017

Establishing guidelines for safely transporting children in ambulances has been an endeavor undertaken by various individuals and organizations in recent years. Despite these efforts, this multi-faceted problem has not been easy to solve. While there have been resources developed, such as the *Working Group Best-Practice Recommendations for the Safe Transportation of Children in Emergency Ground Ambulances* (NHTSA 2012), there remain unanswered questions, primarily due to the lack of ambulance crash testing research specific to children.

The National Association of EMS State Officials (NASEMSO) is committed to advocating for the creation of evidence-based standards for safely transporting children by ambulance. Such standards would ensure a safer environment for the patients who rely on the EMS provider to act on their behalf. Developing standards will require large investments of both time and funding to conduct the required crash testing. If research were started today, it would require at least three years and hundreds of thousands of dollars to complete.

While NASEMSO collaborates with other organizations to bring these standards to reality, it recognizes the gap between that goal and the reality of the decisions that EMS providers face today will continue to be an issue of concern. The purpose of this interim guidance is to reduce that gap as much and as soon as possible, until evidence can be collected, analyzed, and used to develop standards specifically for children. Ultimately, pediatric restraint devices should be tested by the manufacturer to meet a new, yet-to-be developed standard.

NASEMSO recommends that this new standard include a pass/fail injury criteria comparable to that identified in FMVSS-213, which applies to child restraints in passenger vehicles. All testing should use the ambulance-specific crash pulses described in SAE [J3044](#), SAE [J2956](#), and SAE [J2917](#) respectively. Litters used in testing should meet the SAE [J3027](#) Integrity, Retention and Patient Restraint Specifications. Manufacturers should indicate to prospective purchasers whether their device(s) have met these requirements for the weight range indicated for the device.

It is the position of NASEMSO that:

- 1) Evidence-based standards for safely transporting children in ambulances should be developed and published by nationally recognized standards development organizations, such as the Society for Automotive Engineers (SAE);
- 2) Safe ambulance transport should be considered as a standard of care for the EMS system equivalent to maintaining an open airway, adequate ventilation and the maintenance of cardiovascular circulation; and
- 3) There are immediate actions that can be taken to improve pediatric safety in ambulances including, but not limited to:
  - a. All EMS agencies that transport children should develop specific policies and procedures that address, at minimum the following elements:
    - i. Methods, training (initial and continual), and equipment to secure children during transport in a way that reduces both forward motion and possible

- ejection. The primary focus should be to secure the torso, and provide support for the head, neck, and spine of the child, as indicated by the patient's condition;<sup>1</sup>
- ii. Considerations for the varied situations that a child who needs transport to a hospital or other point of care may present to the EMS professional. These include, but may not be limited to a child who is:
    - uninjured/not ill,
    - ill/injured, but requiring no intensive interventions or monitoring,
    - requiring intensive interventions or monitoring,
    - requiring spinal immobilization or supine transport, and
    - multiple patients;<sup>2</sup>
  - iii. Prohibits children from being transported unrestrained, e.g. held in arms or lap;<sup>3</sup>
  - iv. Provision for securing all equipment during a transport where a child is an occupant of the vehicle, with mounting systems tested in accordance with the requirements of SAE J3043;
  - v. Only use child restraint devices in the position for which they are designed and tested; and
- b. EMS agencies should have appropriately-sized child restraint system(s) readily available on all ambulances that may transport children. Additionally, personnel should be initially and recurrently evaluated and trained on the correct use of those restraint systems;
    - i. The device(s) should cover, at minimum, a weight range of between five (5) and 99 pounds (2.3 - 45 kg), ideally supporting the safest transport possible for all persons of any age or size;
    - ii. Only the manufacturer's recommendations for the weight/size of the patient should be considered when selecting the appropriate device for the specific child being transported; and
  - c. State EMS officials should act to put interim steps in place while evidence-based standards are developed and implemented, including, but not limited to:
    - i. Encourage and support EMS transport agencies to implement cost effective solutions to mitigate risk while transporting children in ambulances; and
    - ii. Work with other state EMS officials to create uniform approaches and policy language, including, but not limited to a network of information relating to ambulance crash-related injuries; and
- 4) NASEMSO does not recommend or endorse any particular product.

---

<sup>1</sup>[\*Working Group Best-Practice Recommendations for the Safe Transport of Children in Emergency Ground Ambulances\*, page 12.](#)

<sup>2</sup> *Ibid*, pages 12-15.

<sup>3</sup> [\*The Do's and Don'ts of Transporting Children in an Ambulance \(December 1999\)\*](#).

## Members of the NASEMSO Safe Transport of Children Ad Hoc Committee

### **NASEMSO Members**

Stephanie Busch, Vermont EMSC Program

Katherine Hert, Alabama EMSC Program

Eric Hicken, New Jersey EMSC Program

Brandon Kelley, Wyoming EMSC Program

Kjelsey Polzin, Minnesota EMSC Program

Carolina Roberts-Santana, Rhode Island EMSC Program

Katherine Schafer, New Mexico EMSC Program

Tom Winkler, Pennsylvania EMSC Program

Cyndy Wright-Johnson, Maryland EMSC Program

Steve McCoy, Director, Florida Office of EMS

Paul Phillips, Kentucky Board of EMS

Mary Hedges, NASEMSO Program Manager

### **Other**

Katrina Altenhofen, Paramedic, Washington County EMS, Iowa

Dr. Marilyn Bull, Riley Hospital for Children at Indiana University

Amy Haughn, Association of Air Medical Services (AAMS) Children Special Interest Group (KIDS SIG)

Matthew Maltese, Ph.D., University of Pennsylvania, Children's Hospital of Philadelphia

Teresa Merk, AAMS Critical Care Ground Special Interest Group (CCG SIG)

Brian Moore, MD, University of New Mexico

Manish I. Shah, MD, Baylor College of Medicine, Texas Children's Hospital

Elena Sierra, AAMS Membership Manager

Dan Sjoquist, AMD Seat and Restraint Committee Chair

Sailesh Tangirala, AMD and SAE Committee member

### **Federal Partners**

Dave Bryson, National Highway Traffic Safety Administration, Office of EMS

John McDonald, General Services Administration

Theresa Morrison-Quinata, Health Resources Service Administration

James Green, National Institute of Occupational Health and Safety

Alexander "Sandy" Sinclair, National Highway Traffic Safety Administration