



**FLORIDA EMERGENCY MEDICAL
SERVICES FOR CHILDREN**

Safe Transport

EMS for Children Florida



Background





Data



THE DO'S AND DON'TS OF TRANSPORTING CHILDREN IN AN AMBULANCE



Approximately six million children are transported by emergency medical services (EMS) vehicles each year in the United States. There are risks of injury associated with transport that can be minimized. An

ambulance is NOT a standard passenger vehicle. Unlike the well-developed and publicized child passenger safety standards and guidelines, specifications for the safe transport of ill and injured children in ambulances are still under development. Standard automotive safety practices and techniques cannot be applied directly to EMS vehicle environments due to biomechanical and practical differences. Caution is encouraged in the application of passenger vehicle principles to ambulances and in the utilization of new and unproven products.

The Emergency Medical Services for Children (EMSC) Program supports efforts to improve the safety of pediatric patients being transported in EMS vehicles. Through an EMSC grant, the Division of Pediatric Emergency Medicine at Johns Hopkins Children's Center is working to fill critical knowledge gaps and developing standards for pediatric EMS transport safety. Project results should be available in the year 2000.

A national consensus committee, sponsored by the EMSC Program, is reviewing current EMS child transportation safety practices. The group, which includes representatives from EMS national organizations, Federal government agencies, and transportation safety engineers, is developing preliminary recommendations for EMS providers until scientific research is completed.

There are certain practices that can significantly decrease the likelihood of a crash, and in the event of a crash or near collision, can

significantly decrease the potential for injury. These practices are listed below. Importantly, as is mandated in several states, the NHTSA Emergency Vehicle Operating Course (EVOC), National Standard Curriculum or its equivalent is an integral part of this transport safety enhancement.

Pending research and consensus outcomes, the following guidelines for good practice should be observed when transporting children in EMS vehicles.

DO's

- ✓ **DO** drive cautiously at safe speeds observing traffic laws.
- ✓ **DO** tightly secure all monitoring devices and other equipment.
- ✓ **DO** ensure available restraint systems are used by EMTs and other occupants, including the patient.
- ✓ **DO** transport children who are not patients, properly restrained, in an alternate passenger vehicle, whenever possible.
- ✓ **DO** encourage utilization of the DOT NHTSA Emergency Vehicle Operating Course (EVOC), National Standard Curriculum.

DON'Ts

- ✗ **DO NOT** drive at unsafe high speeds with rapid acceleration, decelerations, and turns.
- ✗ **DO NOT** leave monitoring devices and other equipment unsecured in moving EMS vehicles.
- ✗ **DO NOT** allow parents, caregivers, EMTs or other passengers to be unrestrained during transport.
- ✗ **DO NOT** have the child/infant held in the parent, caregiver, or EMT's arms or lap during transport.
- ✗ **DO NOT** allow emergency vehicles to be operated by persons who have not completed the DOT EVOC or equivalent.

Developmental Care



Neonate
0-28 days



Infant
29 days – 1 year



Toddler
One to Three
Years



Body level one
Body level two
Body level three

Product Options



Variety of Options

Determine which resources are best for your agency

For all sizes

ACR4 (Ambulance Child Restraint) Q-ACR4



ACR4 (Ambulance Child Restraint) Q-ACR4

- Breathable fabric maximizes airflow and meets infection control standards
- Allows rapid transition from sitting to flat in an emergency or to recovery position
- Padded for patient comfort and reduced risk of pressure sores during long transfers
- Can be used with stretcher back rest in raised position
- Quick release chest strap for medical intervention



ACR4 (Ambulance Child Restraint) Q-ACR4

- Weight range 4lbs - 100lbs
- Universally compatible with any cot
- Smart color coding for easy selection of 4 sizes
- Machine washable
- Compact storage bag
- Around \$1,000-\$1,200/set



Accessory for ACR

Around \$50/each



Infant Head Support

The innovative Infant Head Support is designed to reduce head movement and vibration during infant ambulance transport, lessening the potential occurrences of infant brain bleeds.

It has a compact flexible design. The Infant Head Support is compatible with the ACR4 (Ambulance Child Restraint) and other child restraint systems.



PRODUCT DATA SHEET



Features

- Easy to maintain wipe clean material
- Compatible with all infant child restraint systems.

Dimensions

Length	16.5 inches
Width	8 inches
Depth	2 inches
Weight	4.5 oz

Emergency Child Restraint





Emergency Child Restraint

Product Overview

Product Code: 1001-EMG_CR

The safest way to secure children during EMS transport

The revolutionary Emergency Child Restraint is designed to safely secure children during EMS transport in any emergency vehicle. Since it is not acceptable for a child to be transported unrestrained on a cot, whether it is a new-born or a teenager, the Emergency Child Restraint provides the perfect solution in all situations.

FITS ALL SIZE AND SHAPE CHILDREN

BIOSAFE WEBBING

CLINICAL ACCESS

FITS TO ANY COT

CRASH TESTED

QUICK REFERENCE COLOR SYSTEM

REDUCES VIBRATION

HEAD SUPPORT INCLUDED AS STANDARD

NO STITCHING



Fits children of any size and shape

The 3 color coded Emergency Child Restraint harnesses cover a weight range of between 4 and 110 lbs, offering the maximum protection available for children of any size and weight, while also exceeding the current NASEMSO guidelines.

SMALL

4-18lb
2-8kg

MEDIUM

13-46lb
6-21kg

LARGE

42-110lb
19-50kg



The Emergency Child Restraint has been crash tested under the strictest of environments. Its design has no stitching or velcro providing the ultimate protection and safety for you and your patient in every use/application.

Easy to maintain

The Emergency Child Restraint has bio-safe cot straps and restraint material which ensures 100% cleanability, preventing dangerous organisms.

EMS SOLUTIONS LLC,
263 MINEOLA BLVD, MINEOLA, NEW YORK 11501, USA
info@ems-sol.com

Emergency Child Restraint

Around
\$800-\$1,000/set



Ferno



Patients come in all shapes and sizes, and our smallest patients create unique challenges for patient transport. The **Pedi Mate[®]+**, **NeoMate[™]**, and **KangooFix[™]** provide quick and efficient ways to safely secure pediatric patients from 3.5-100 lb to almost any cot without having to purchase additional equipment or seats.

- **Each restraint is fully adjustable** with a five-point harness system that securely holds patients
- **Rolls compactly** for convenient storage and easy deployment
- **Vinyl construction** is nontoxic and easy-to-clean



Pedi Mate + safely secures patients ranging in size from 10-100 lb



NeoMate is designed to secured infants weighing 5-14 lb



KangooFix safely secures newborns weighing 3.5-11.1 lb to parent, maintaining close contact at all times

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Ferno- Pedi Mate

Around \$350-400/each



Pedi Mate +



The Pedi Mate + Pediatric Restraint System quickly adapts an ambulance cot for the safe transport of children ranging in size from 10-100 lb (4.5-43.5 kg).

- **Fully-adjustable**, five-point harness system securely holds patients, providing safe restraint for transport
- **Rolls compactly** for convenient storage and easy deployment
- **Vinyl construction** is nontoxic and easy-to-clean
- **Three restraint straps** easily attach to any cot

Ferno- Neo Mate

Around \$350-400/each



NeoMate



The NeoMate Pediatric Restraint System adapts an ambulance cot to safely transport children ranging in size from 5-14 lb (2.3-6 kg).

- **Halo Pad™** keeps infant's head stable
- **Fully-adjustable**, five-point harness system fits children firmly and provides safe restraint during transport
- **Three restraint straps** easily attach to any cot
- **Rolls up compactly** for efficient storage and deployment

Ferno- KangooFix

Around \$650-700/each



KangooFix



The KangooFix Neonatal Restraint System was developed to safely and effectively cradle and secure a newborn during non-critical ambulance transportation, allowing the baby to travel with their parent. Transport weight capacity ranges from 3.5-11.1 lb (1.6-5 kg)

- **EN 1789 compliant** for safety
- **Skull cap included** to help maintain baby's body heat
- **Quick release system** allows fast access for EMS professionals
- **"Face-up" mode** enables EMS professionals to quickly monitor newborn

NASEMSO pediatric transport recommendations call for all devices, or combination of devices, to cover a weight range of between 5 to 99 pounds (2.3 - 45 kg). Combining the KangooFix, NeoMate, and Pedi Mate + creates a covered weight range of 3.5-100 lb, supporting the safest transport possible for a wide range of ages and sizes.

Ferno- KangooFix



- *5-point outer harness attaches to the ambulance cot harness
- *Inner harness and heat cover are sewn in to enable secure fit
- *Snug cocoon design and integrated skull cap keeps baby warm and secure
- *Close contact between parent and baby is clinically proven to improve condition of both parent and baby during transfers
- *Lightweight and easy to store • Easy to clean



MTR Pediatric Restraint System

- Approx. 3-4 month old, 10lb child
- 65lb 8 year old child
- 5'2", 114lb small adult female.
- Around \$280-300/each



Deluxe Pediatric Child Restraint Seat System

- Around \$150/each



The RESPONDER AV Air Filled Child Restraint



- Meets or exceeds all FMVSS 213 and FAA standards
- Rated for children 20-40 pounds and less than 40" tall
- Five point restraint system with pelvic adjustment
- Front and rear cot harness to securely anchor seat
- Release valve ensure proper inflation
- Adjustable shoulder harness for varying children sizes
- Inflates and deflates with included 12v DC pump
- Fabric is stain resistant and can be hand washed and air dried
- Around \$850 each



Ambulance Captains Chair



- The ambulance's captain seat can be used for pediatric patients weighing between 20 to 50 lbs (9 to 23 kg)
- Who can sit upright unassisted
- Reliably maintain head control during the entire transport. This rules out infants since they are able to sit up unassisted for only a few minutes after about 8 months old.



NASEMSO Comprehensive list

https://nasemsso.org/wp-content/uploads/Pediatric-Transport-Products-for-Ground-Ambulances_v2.2.pdf

Putting into Practice

Protocol Example

Background

Estimates suggest that ground EMS responds to approximately 30 million emergency calls each year. Approximately 6.2 million patient transport ambulance trips occur annually, of which approximately 10 percent of those patients are children. Insurance companies report that approximately 10,000 ambulance crashes result in injury or death each year. Estimates suggest that up to 1,000 ambulance crashes involve pediatric patients each year.¹

_____ is committed to the goal of establishing an evidence-based policy for safely transporting children by ambulance. Such a policy would ensure a safer environment for the patients who rely on _____ to act on their behalf. Safe ambulance transport should be considered as a standard of care by _____ and equivalent to maintaining an open airway, adequate ventilation and the maintenance of cardiovascular circulation.²

Purpose

To ensure safe transport of ill and injured pediatric patients in the care of _____.

Policy

All pediatric patients shall be transported using a pediatric restraint device approved by the Medical Director. These include the following:

- *Insert agency specific product*

It is never appropriate to transport a pediatric patient in any of the following ways:

- Unrestrained
- On someone's lap (this includes babies born in the field);
- Only using horizontal stretcher straps if the patient does not fit in the shoulder straps;

1. Working Group Best-Practice Recommendations for the Safe Transport of Children in Emergency Ground Ambulances (NHTSA, September 2012). <https://staticfiles.nhtsa.gov/817577.pdf>
2. Safe Transport of Children by EMS: Interim Guidance (NAEMSO, March 2017). [naemso.org/wp-content/uploads/Safe-Transport-of-Children-by-EMS-InterimGuidance-03Mar2017.pdf](https://www.naemso.org/wp-content/uploads/Safe-Transport-of-Children-by-EMS-InterimGuidance-03Mar2017.pdf)



Resources

<https://nasmso.org/wp-content/uploads/Safe-Transport-of-Children-by-EMS-InterimGuidance-08Mar2017-FINAL.pdf>

<https://nasmso.org/wp-content/uploads/NHTSA-Safe-Transportation-of-Children-in-Ambulances-2012.pdf>

Thank You

