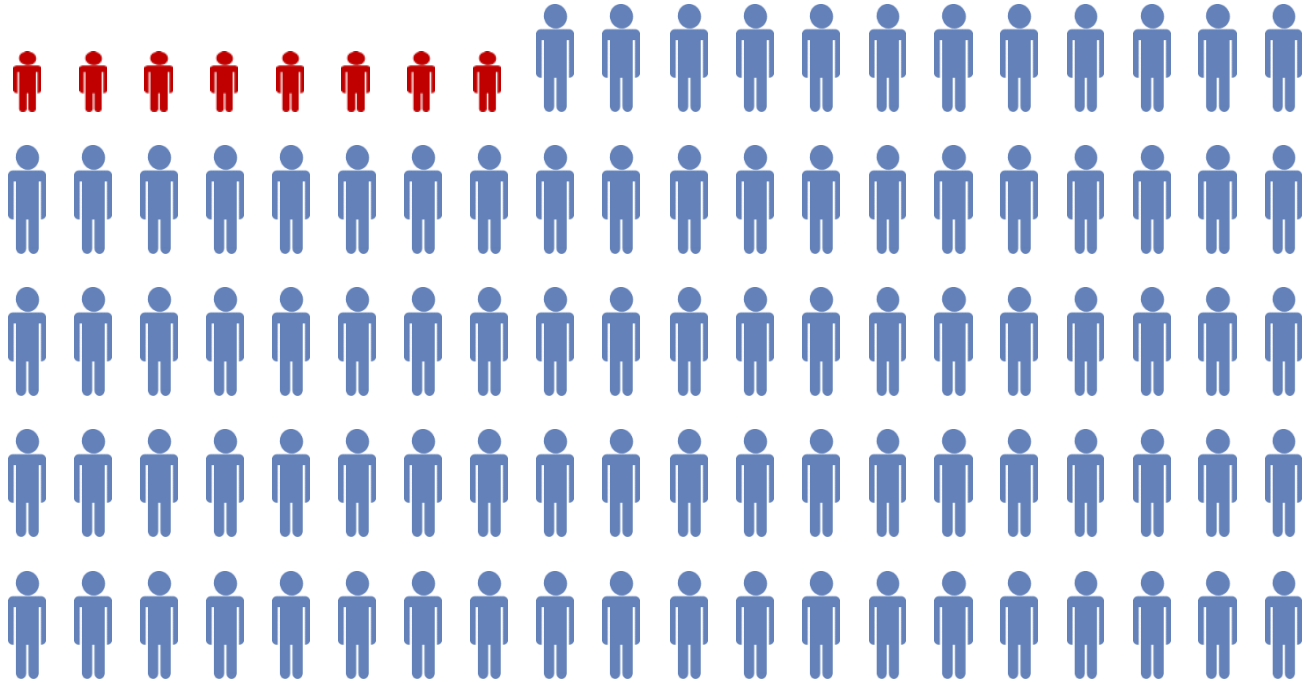
Pediatric Readiness in EMS

Morgan Scaggs

EMS - Chances of Treating a CHILD:



From the 2012 NEMSIS Database - http://www.nemsis.org/reportingTools/reports/nationalReports/createAReport.html

8 in 100 patients are children (ages 0 – 18, all causes)

Kentucky Board *of* Emergency Medical Services

2018 Pediatric Incidents

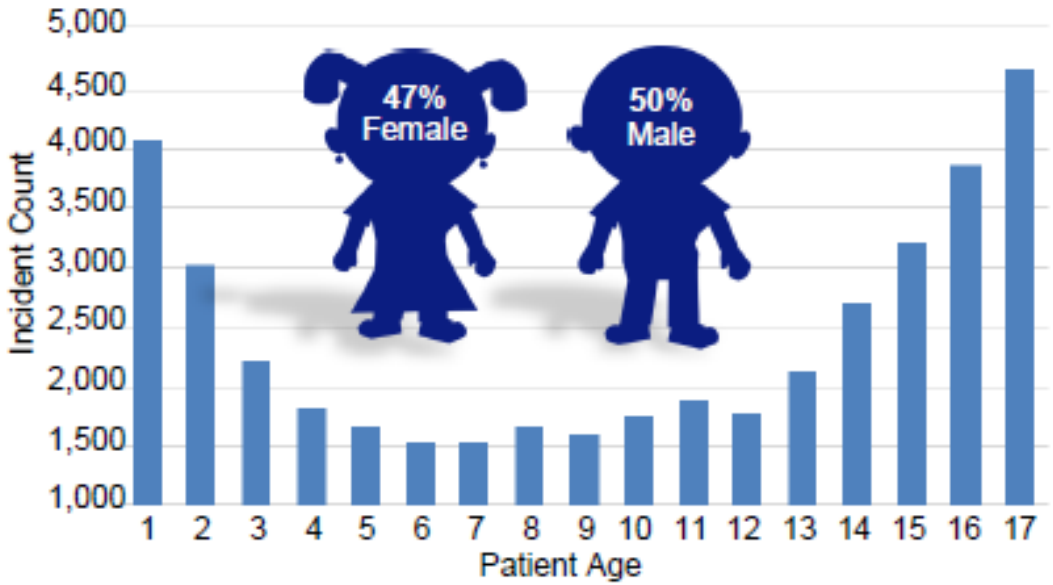
Patients 17 Years of Age + Under

EMSC for Children

41,137 Pediatric Incidents Reported to KSTARS

Accounting for **4.6%** of all 2018 Incidents.

Patient Demographics



Count of Incidents by Patient Age					
1	4,085	7	1,531	13	2,121
2	3,028	8	1,658	14	2,703
3	2,224	9	1,604	15	3,206
4	1,819	10	1,753	16	3,862
5	1,662	11	1,894	17	4,672
6	1,534	12	1,781		

Patient Gender: 47% Female, 50% Male, & 3% Not Applicable, Not Recorded, or Unknown.

KENTUCKY BOARD OF EMERGENCY MEDICAL SEVICES

2019 Pediatric Incidents

Patients Under 18 Years of Age

EMSC for Children

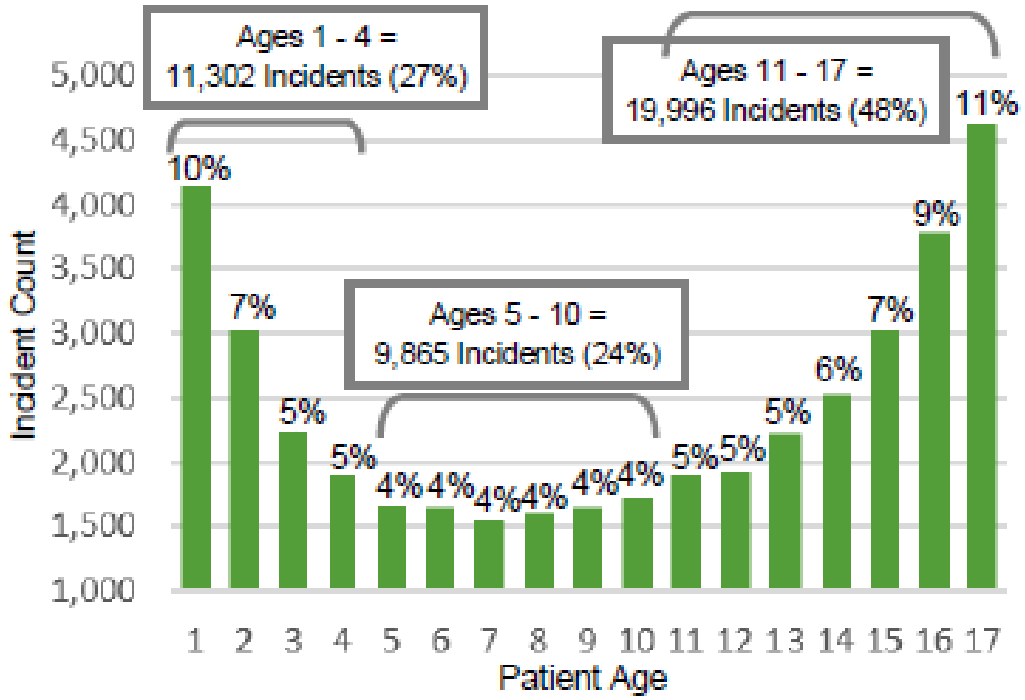
41,163 Pediatric Incidents Reported to KSTARS

Accounting for **4.6%** of all Incidents.

Patient Demographics

Count of Incidents by Patient Age					
1	4,144	7	1,554	13	2,221
2	3,019	8	1,610	14	2,525
3	2,236	9	1,654	15	3,015
4	1,903	10	1,730	16	3,787
5	1,670	11	1,900	17	4,622
6	1,647	12	1,926		

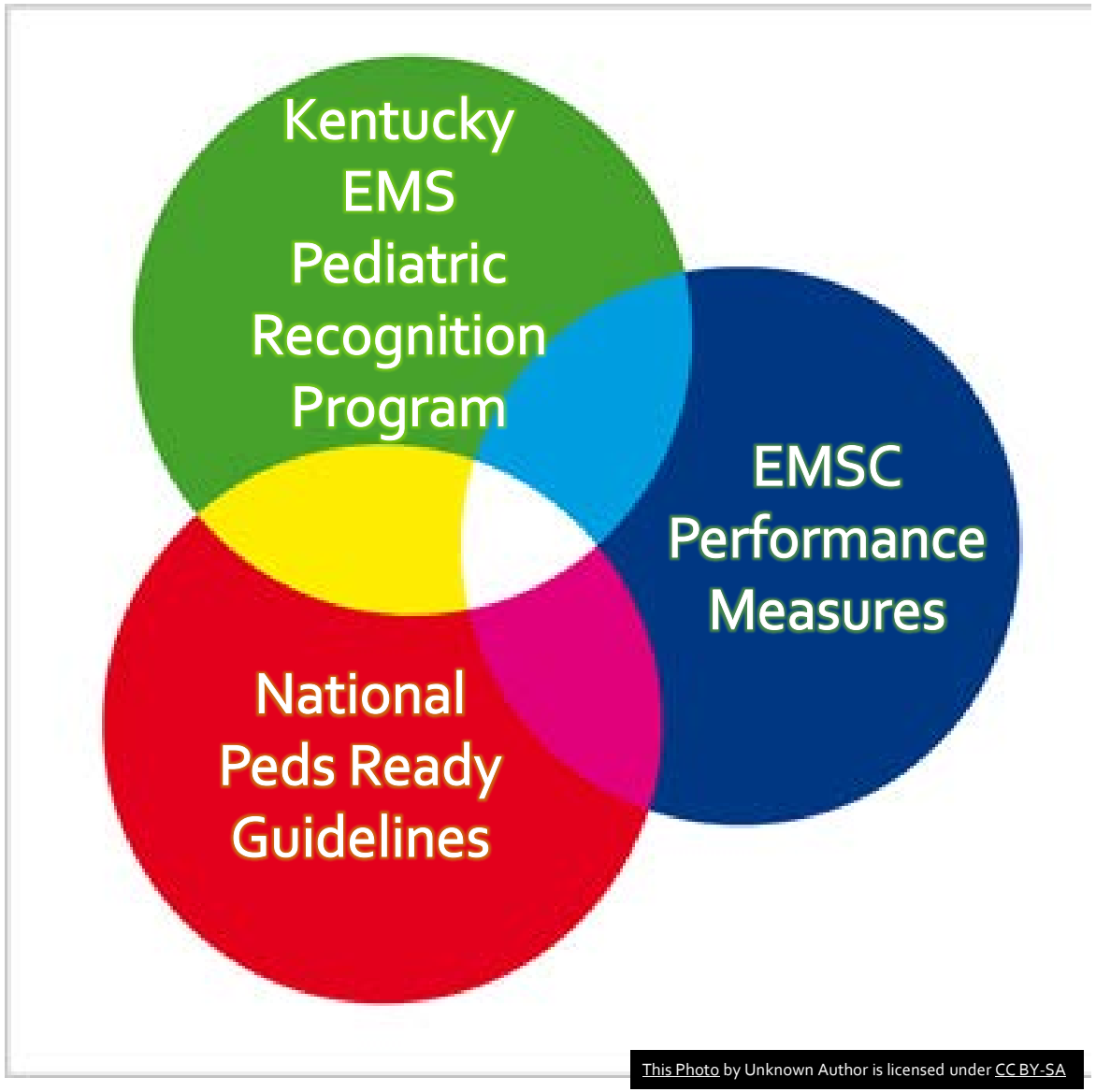
Patient Gender: 47% Female, 49% Male, & 4% Not Applicable, Not Recorded, or Unknown.



Low Exposure to Pediatric Patients

- Very low percentage of calls
  - Highly variable
  - Low acuity
  - Unique physical and developmental vulnerabilities
- Infrequency and need for care that is atypical compared to the adult patient means that pediatric specific skills and knowledge does not become “hard wired” or part of muscle memory
- Lack of confidence
- Perception of high risk, negative outcomes
- Limited educational opportunities
- Limited prehospital research

Different (inter-connected) Programs



POLICY STATEMENT Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

Pediatric Readiness i Medical Services Syst

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Kathleen Brown, MD, FAAP,[e,f] Marianne Gausche-Hill, MD, FACEP, FAAF
Kathleen Adelgais, MD, MPH, FAAP,[k] John Lyng, MD, FAEMS, FACEP, NF
Sally Snow, RN, BSN, CPEN, FAEN,[n] Cynthia Wright-Johnson, MSN, RN
ACADEMY OF PEDIATRICS COMMITTEE ON PEDIATRIC EMERGENCY MEDI
SUBCOMMITTEE, AMERICAN COLLEGE OF EMERGENCY PHYSICIANS EMERG
ASSOCIATION PEDIATRIC COMMITTEE, NATIONAL ASSOCIATION OF EMERG

TECHNICAL REPORT

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

Pediatric Readiness in Emergency Medical Services Systems

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Mary Fallat, MD, FACS, FAAP,[q] COMMITTEE ON PEDIATRIC EMERGENCY MEDICINE, SECTION ON EMERGENCY MEDICINE, EMS SUBCOMMITTEE, SECTION ON SURGERY

EMSC 02

PEDIATRIC EMERGENCY CARE COORDINATOR (PECC)

The percentage of EMS agencies in th
individual who coordinates pediatric

Goal for this measure is that by 202

Ninety percent of EMS agencies in the
who coordinates pediatric emergency

EMSC 03

USE OF PEDIATRIC-SPECIFIC EQUIPMENT

The percentage of EMS agencies in the state or territory that have a proces
requires EMS providers to physically demonstrate the correct use of pediat
specific equipment.

Goal for this measure is that by 2026:

Ninety percent of EMS agencies will have a process that requires EMS provid
physically demonstrate the correct use of pediatric-specific equipment.

Kentucky EMS for Children Program

2020 EMS Agency Survey Results

Kentucky Data Collection Numbers:

Number of Respondents: 132
Number Surveyed: 162
Response Rate: 81.5%

Number of Records in Dataset (after data cleaning)*: 131

*Data cleaning includes removing agencies that do not respond to 911 and duplicates, etc.

Performance Measures EMSC 02 and EMSC 03:

Number of Records Used in Performance Measure Calculation (see below): 131

Performance Measure Exclusions*:

Indian Health Services or Tribal Agencies Participating: 0, Military Facilities Participating: 0, Air-Only Agencies: 0, or Water-Only Agencies: 0.

* The agencies listed above are excluded from any final calculations related to the Performance Measures (see below). However, all states and/or territories were given the opportunity to survey these agencies for additional reporting based on state interest and need. Therefore, information from these agencies is included in all other data points.

Performance Measures EMSC 02 and EMSC 03:

Number of Records Used in Performance Measure Calculation (see below): 131

Performance Measure Exclusions*:

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* The agencies listed above are excluded from any final calculations related to the Performance Measures (see below). However, all states and/or territories were given the opportunity to survey these agencies for additional reporting based on state interest and need. Therefore, information from these agencies is included in all other data points.

Pediatric Emergency Care Coordinator (EMSC 02):

73.3%

(96/131)

(Exclusions See Above)

A respondent needed to answer YES to "Having a designated individual who coordinates pediatric emergency care" in the survey to meet this measure.

Use of Pediatric-Specific Equipment (EMSC 03):

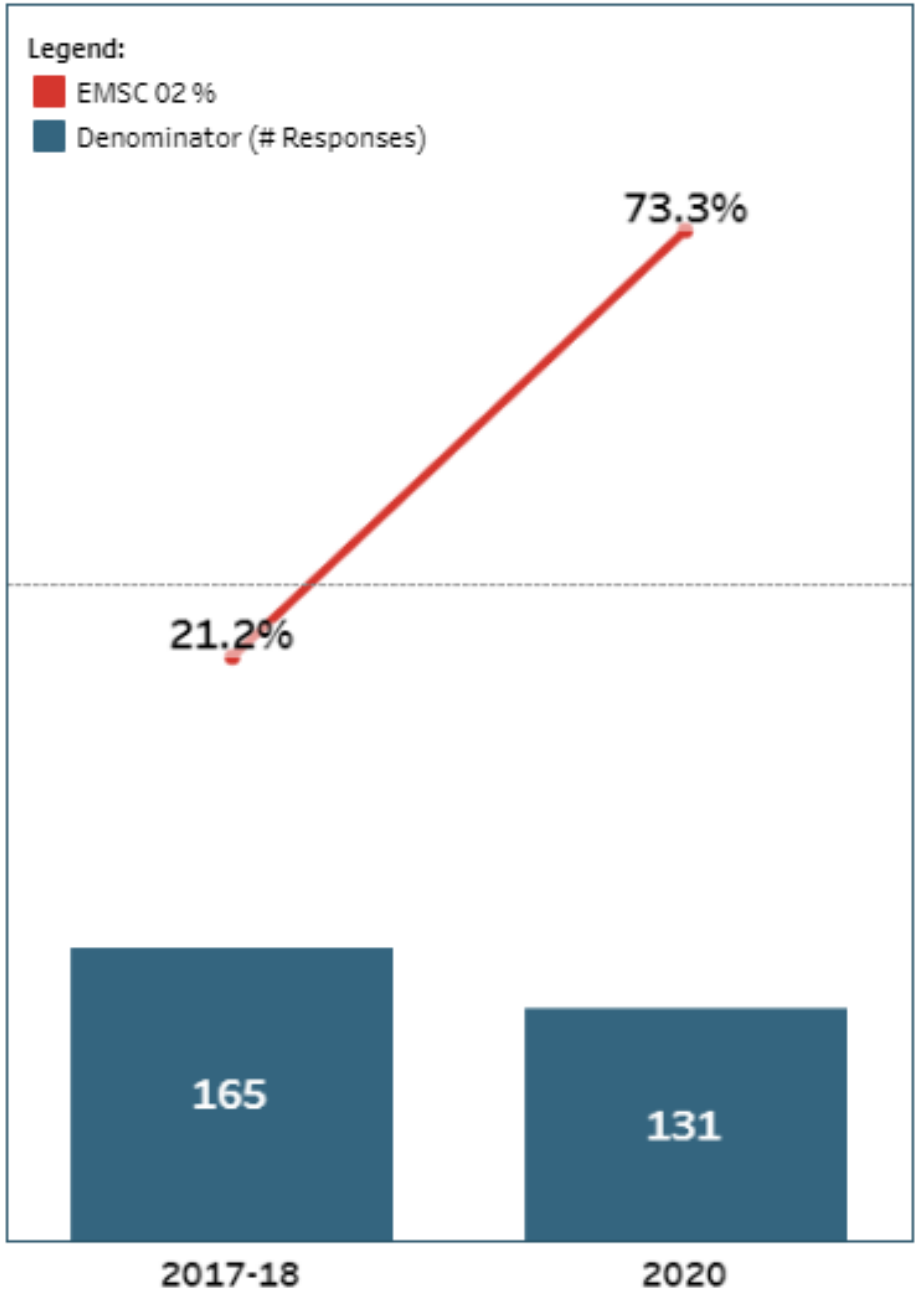
26.7%

(35/131)

(Exclusions See Above)

See pg. 35 in the "EMSC for Children Performance Measures, Implementation Manual for State Partnership Grantees, Effective March 1st, 2017" for an explanation of the scoring.

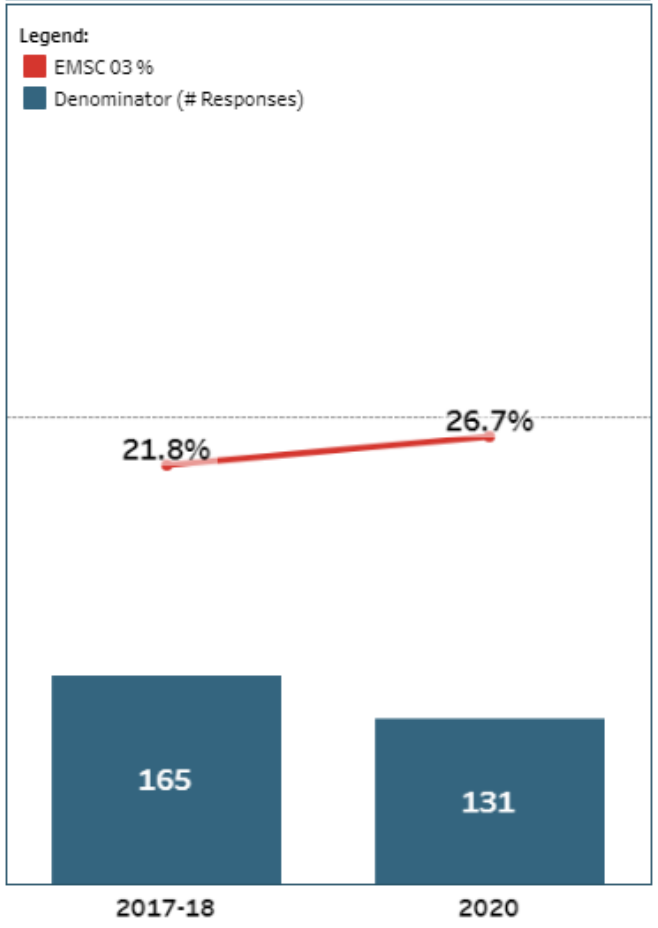
EMSC 02 Trend Over Time (EHB Num):



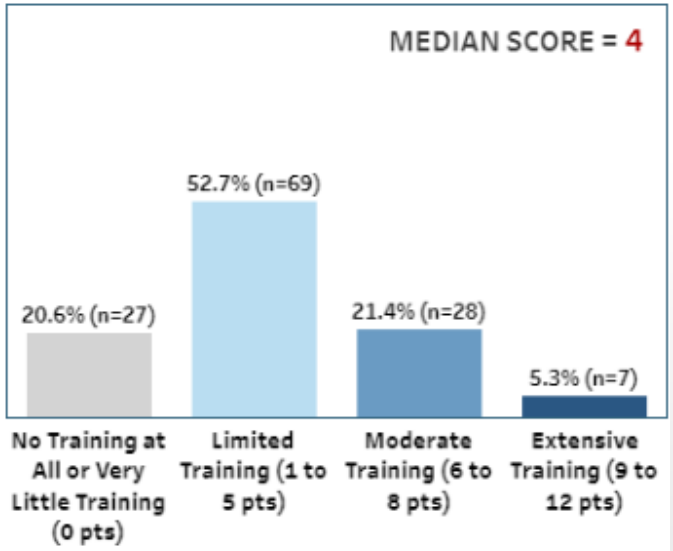
Agencies who Have a PECC - Reported PECC Duties:

Promotes pediatric continuing education opportunities	95.8%
Ensures that fellow providers follow pediatric clinical practice guidelines and/or protocols	94.8%
Ensures that the pediatric perspective is included in the development of EMS protocols	92.7%
Ensures the availability of pediatric medications, equipment, and supplies	90.6%
Oversees pediatric process improvement initiatives	86.5%
Promotes agency participation in pediatric prevention programs	76.0%
Promotes family-centered care	61.5%
Coordinates with the emergency department pediatric emergency care coordinator	56.3%
Promotes agency participation in pediatric research efforts	45.8%
Other Activities	33.3%

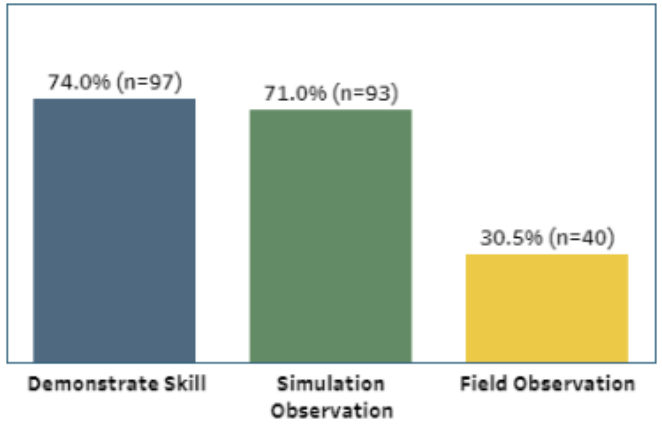
EMSC 03 Trend Over Time (EHB Num):



Breaking Down the Score = Frequency of Training:



Percent and Type/Method of Skill Checking Reported:



Agencies with a PECC →

Higher pediatric readiness scores

Greater compliance with national guidelines

More likely to have important policies in place and a quality improvement plan that addressed the needs of children

A Prehospital PECC

Does not need to be a full-time position

Personnel already in place, member of agency, familiar with day-to-day operations and agency needs

Paramedics (or EMTs) with the interest, knowledge, and skills necessary to deliver care to children

Education/training experience and credentials a plus but not required

PEDIATRIC TRAINING

Pediatric EMS encounters are often rare so there is little chance for providers to practice the needed skills in the field.

Studies have shown that specific clinical skills, of EMS providers, deteriorate over time when they are not practiced regularly in a training setting or actual patient encounter.[1]

[1]Lammers, R. L., et al. (2009). Simulation-based assessment of paramedic pediatric resuscitation skills. *Prehospital Emergency Care*, 13(3), 345–356

Skill Checking Methods

Performance of skills on actual patients

CE courses (PALS, PEPP, etc)

Simulation

Case scenarios

Skill stations

A recent study "found that the availability of a PECC in an agency is associated with increased frequency of pediatric psychomotor skills evaluations."

PECC = Pediatric Emergency Care Coordinator

Hilary A. Hewes, Michael Ely, Rachel Richards, Manish I. Shah, Stephanie Busch, Diane Pilkey, Katherine Dixon Hert & Lenora M. Olson (2018): Ready for Children: Assessing Pediatric Care Coordination and Psychomotor Skills Evaluation in the Prehospital Setting, Prehospital Emergency Care, DOI: 10.1080/10903127.2018.1542472

Get recognized for your commitment to improving pediatric emergency care!

The Pediatric Voluntary EMS Recognition Program

- Establish criteria beyond regulatory requirements
- Equipment*
- Education
- Safe transport
- PECC
- Community engagement
- Accepting initial applications now
- https://kbems.kctcs.edu/emsc/untitled.aspx

2020 Program Awardees

AMR Owensboro-Daviess County
Ballard County EMS
Baptist Health Louisville EMS
Bath County EMS
Buechel Fire Protection District
Burlington Fire Protection District
City of Pikeville Fire and EMS
Georgetown Scott County EMS
Hebron Fire Protection District
Henry County EMS
Hopkinsville Christian County EMS
Jessamine County EMS
Kings Daughters Medical Transport
Louisville Metro EMS
Madison County EMS
Marshall County EMS
Mayfield Graves Fire Department
Montgomery County EMS
Murray Calloway County Hospital Ambulance Service
Oldham County EMS
Somerset Pulaski County EMS
St. Matthews Fire Department
The Medical Center EMS
Woodford County EMS

2021 Application window
Jan 1 – Mar 15

The PECC Network

- Information dissemination
- Equipment and educational offerings will go to identified PECCs first
- Regular PECC meetings (in-person with online access) every other month, 2 hours, clinical presentations, instructor methodology, competency testing, QI, peer to peer sharing, etc.
- Annual EMS PECC symposium
- Regional collaboration
- Gathering and sharing resources

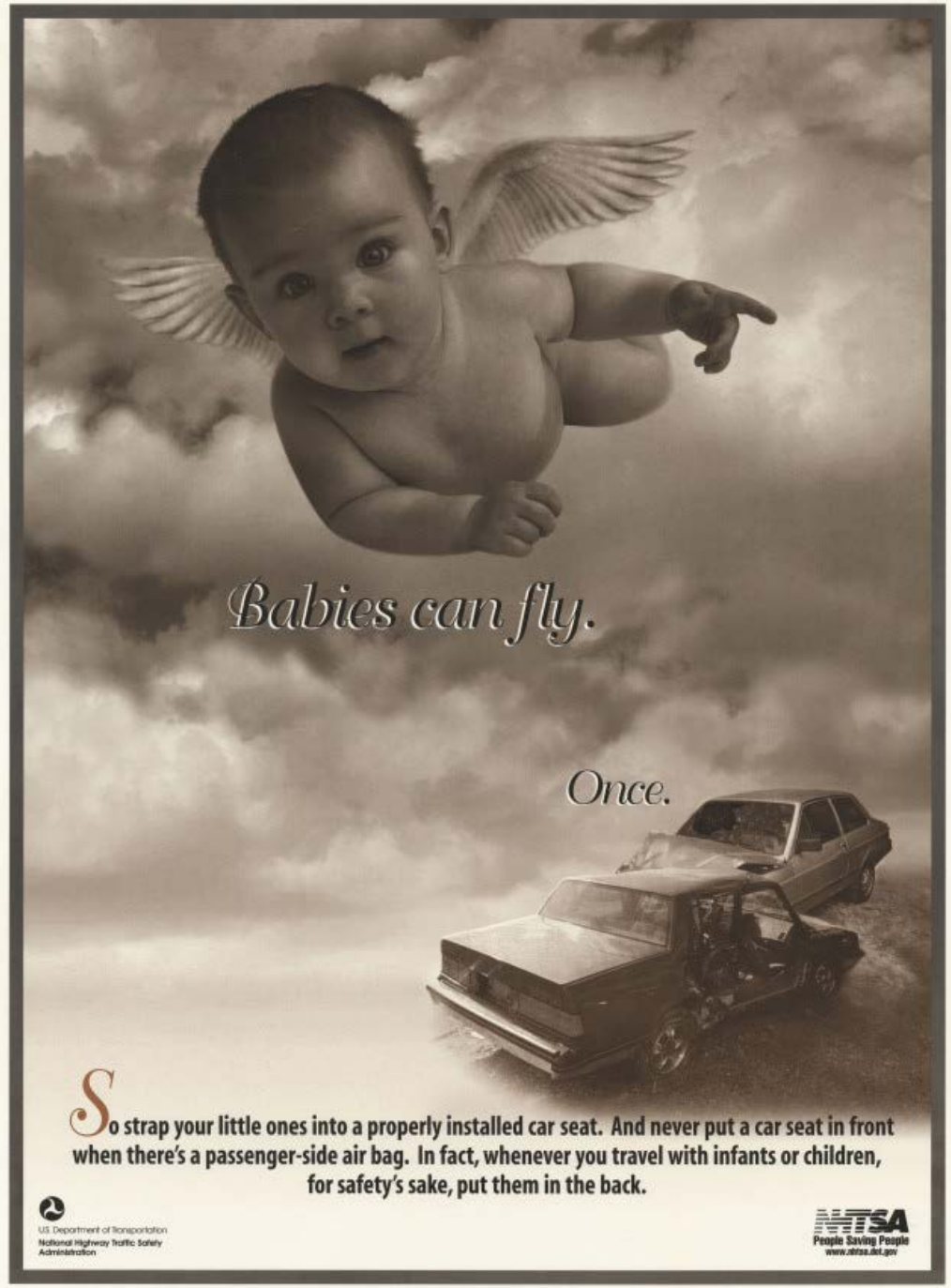
STOP

ALL CHILDREN MUST BE

RESTRAINED

HOLDING CHILDREN WHILE
IN TRANSPORT IS

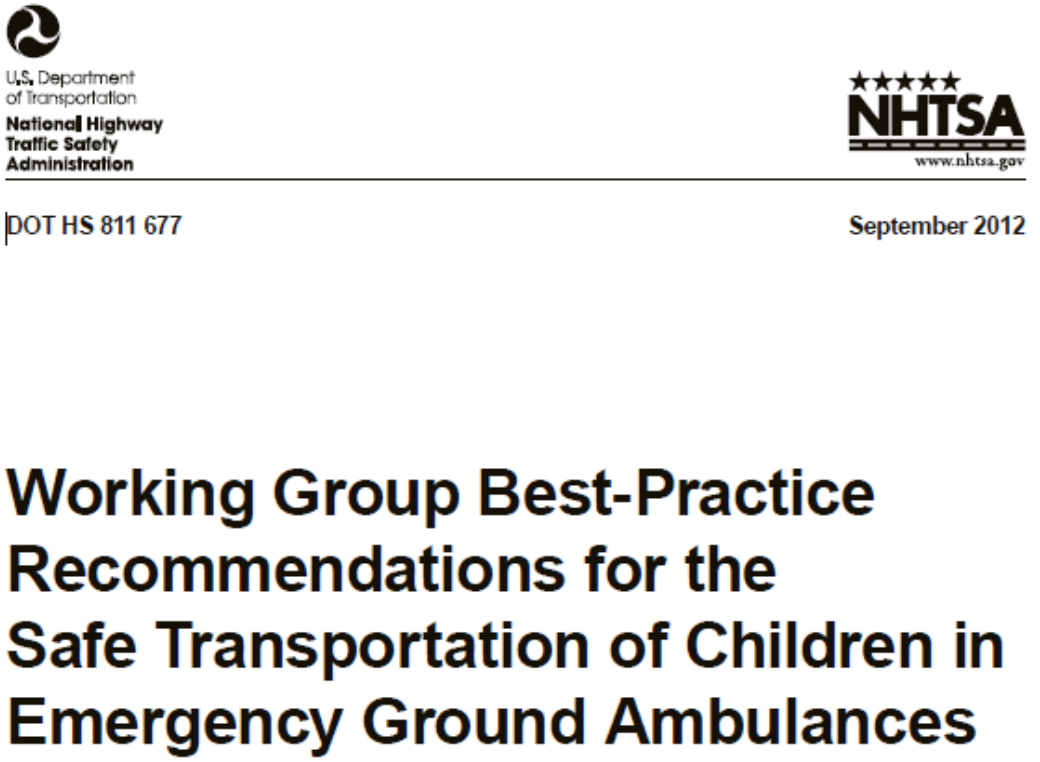
NOT PERMITTED!


Babies can fly.
Once.
So strap your little ones into a properly installed car seat. And never put a car seat in front when there's a passenger-side air bag. In fact, whenever you travel with infants or children, for safety's sake, put them in the back.
U.S. Department of Transportation
National Highway Traffic Safety Administration
NHTSA
People Saving People
www.nhtsa.dot.gov

NHTSA document

- 5 situations
  - Child is uninjured/not ill
  - Ill of injured but does not require continuous monitoring or interventions
  - Condition requires continuous monitoring and/or interventions
  - Condition requires spinal motion restriction and/or lying flat
  - Child who require transport as part of a multiple patient transport

https://www.nhtsa.gov/staticfiles/nti/pdf/811677.pdf



U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA
www.nhtsa.gov

DOT HS 811 677

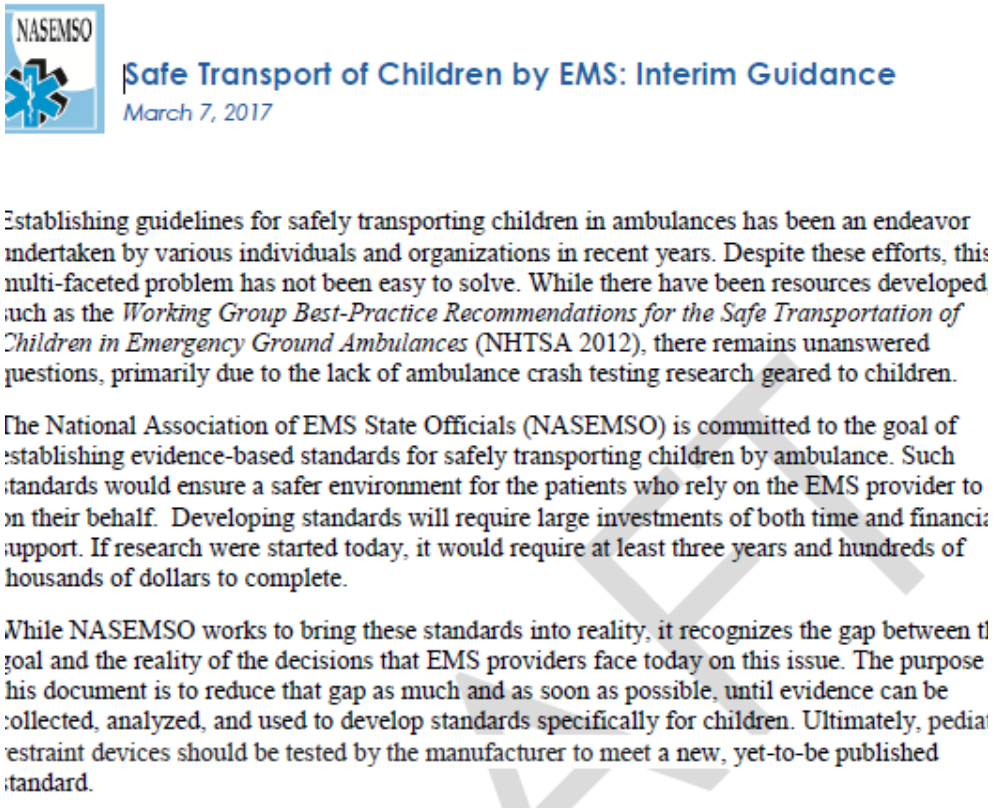
September 2012

Working Group Best-Practice Recommendations for the Safe Transportation of Children in Emergency Ground Ambulances

NASEMSO Interim Guidance

- Agencies should have specific policies and procedures
  - Methods of training, initial and ongoing
  - Equipment designed for pediatric transport
  - Covers the 5 situations
  - Prohibits child from being transported unrestrained
  - Securing equipment
- Appropriate equipment for children 5 – 99 lbs.

https://kbems.kctcs.edu/emsc/untitled.aspx



NASEMSO

Safe Transport of Children by EMS: Interim Guidance

March 7, 2017

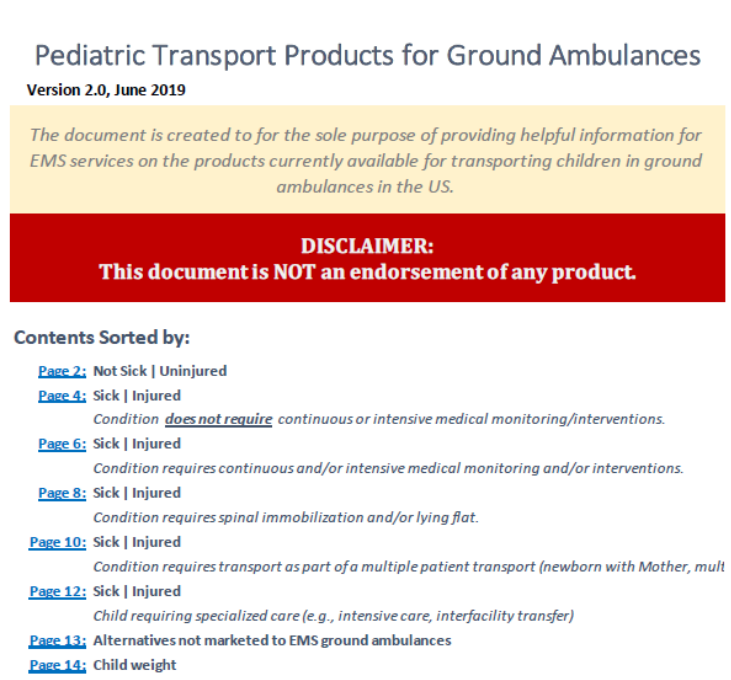
Establishing guidelines for safely transporting children in ambulances has been an endeavor undertaken by various individuals and organizations in recent years. Despite these efforts, this multi-faceted problem has not been easy to solve. While there have been resources developed such as the *Working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

The National Association of EMS State Officials (NASEMSO) is committed to the goal of establishing 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 on their behalf. Developing standards will require large investments of both time and financial support. If research were started today, it would require at least three years and hundreds of thousands of dollars to complete.

While NASEMSO works to bring these standards into reality, it recognizes the gap between the goal and the reality of the decisions that EMS providers face today on this issue. The purpose this document 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 published standard.

NASEMSO: Safe Transport Committee Pediatric Transport Products for Ground Ambulances

https://nasemso.org/wp-content/uploads/Pediatric-Transport-Products-for-Ground-Ambulances-v2.1.pdf



Pediatric Transport Products for Ground Ambulances

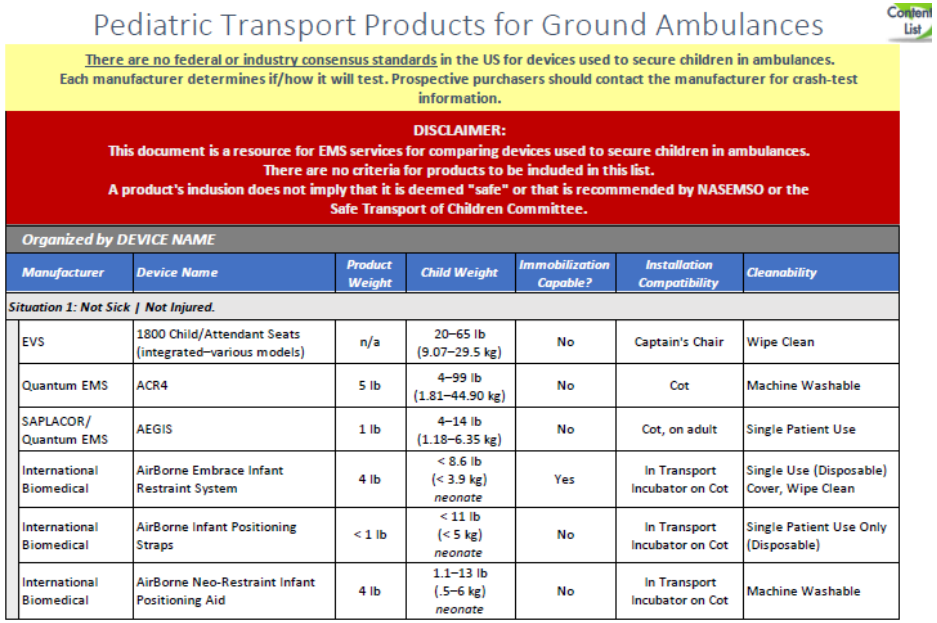
Version 2.0, June 2019

The document is created to for the sole purpose of providing helpful information for EMS services on the products currently available for transporting children in ground ambulances in the US.

DISCLAIMER:
This document is NOT an endorsement of any product.

Contents Sorted by:

Page 2: Not Sick | Uninjured
Page 4: Sick | Injured
*Condition **does not require** continuous or intensive medical monitoring/interventions.*
Page 6: Sick | Injured
Condition requires continuous and/or intensive medical monitoring and/or interventions.
Page 8: Sick | Injured
Condition requires spinal immobilization and/or lying flat.
Page 10: Sick | Injured
Condition requires transport as part of a multiple patient transport (newborn with Mother, mult
Page 12: Sick | Injured
Child requiring specialized care (e.g., intensive care, interfacility transfer)
Page 13: Alternatives not marketed to EMS ground ambulances
Page 14: Child weight



Pediatric Transport Products for Ground Ambulances

Content List

There are no federal or industry consensus standards in the US for devices used to secure children in ambulances.
Each manufacturer determines if/how it will test. Prospective purchasers should contact the manufacturer for crash-test information.

DISCLAIMER:
This document is a resource for EMS services for comparing devices used to secure children in ambulances.
There are no criteria for products to be included in this list.
A product's inclusion does not imply that it is deemed "safe" or that is recommended by NASEMSO or the Safe Transport of Children Committee.

Organized by DEVICE NAME

Manufacturer	Device Name	Product Weight	Child Weight	Immobilization Capable?	Installation Compatibility	Cleanability
Situation 1: Not Sick | Not Injured.						
EVS	1800 Child/Attendant Seats (integrated–various models)	n/a	20–65 lb (9.07–29.5 kg)	No	Captain's Chair	Wipe Clean
Quantum EMS	ACR4	5 lb	4–99 lb (1.81–44.90 kg)	No	Cot	Machine Washable
SAPLACOR/ Quantum EMS	AEGIS	1 lb	4–14 lb (1.18–6.35 kg)	No	Cot, on adult	Single Patient Use
International Biomedical	AirBorne Embrace Infant Restraint System	4 lb	< 8.6 lb (< 3.9 kg) *neonate*	Yes	In Transport Incubator on Cot	Single Use (Disposable) Cover, Wipe Clean
International Biomedical	AirBorne Infant Positioning Straps	< 1 lb	< 11 lb (< 5 kg) *neonate*	No	In Transport Incubator on Cot	Single Patient Use Only (Disposable)
International Biomedical	AirBorne Neo-Restraint Infant Positioning Aid	4 lb	1.1–13 lb (.5–6 kg) *neonate*	No	In Transport Incubator on Cot	Machine Washable

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