

# Get the Teddy Ready:

How Well Are We Preparing our EMS and EDs for Childhood Cases?



Peter Antevy, MD

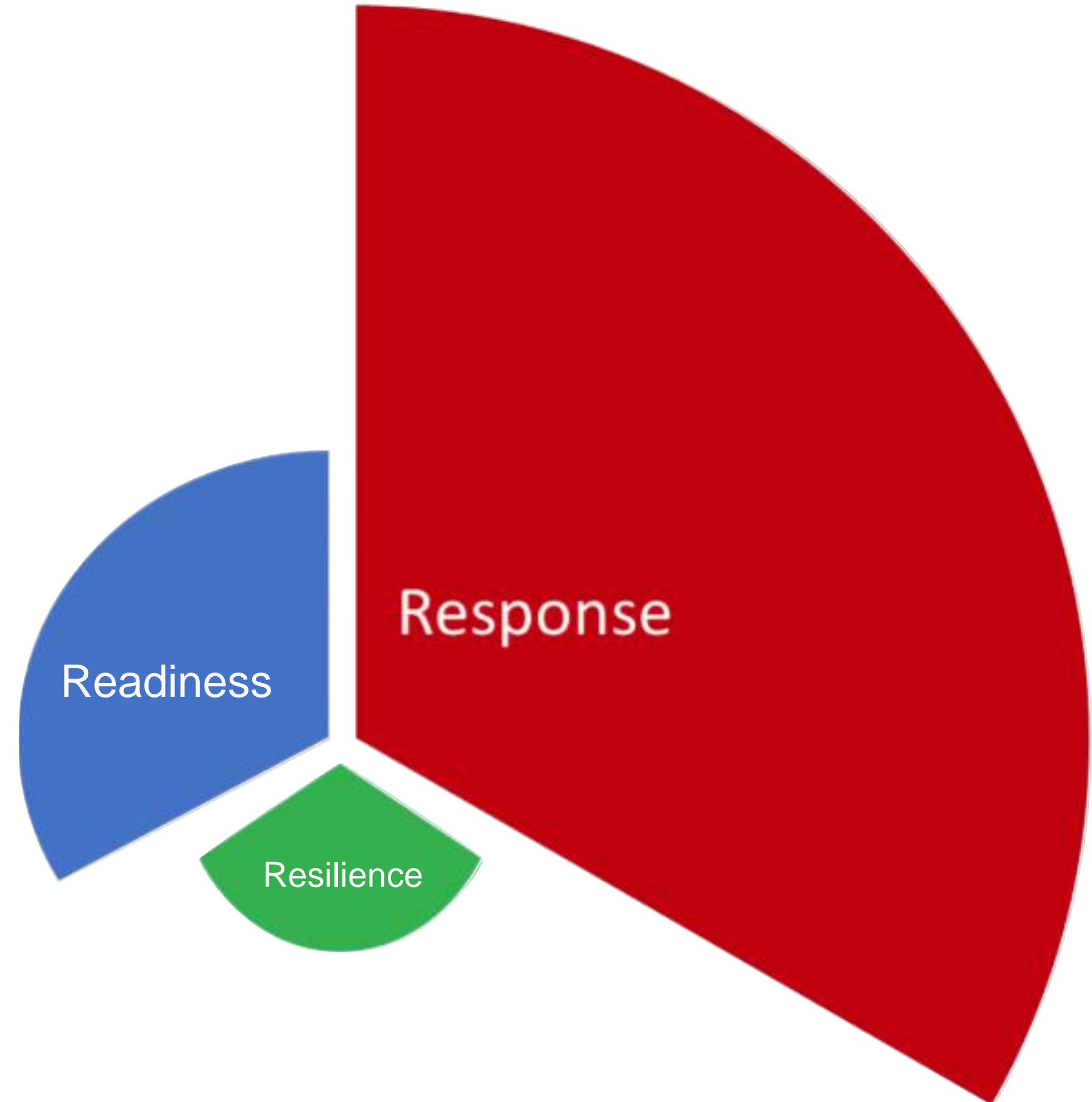
Eagles 2025



“Every battle is won  
**BEFORE**  
it is fought.”

Sun Tzu

Asst. Fire Chief Shaughn Maxwell





## EMERGENCY CARE FOR CHILDREN GROWING PAINS



# Institute of Medicine

Published in 2006

### Key Points

- Pediatric Care is Unique
- Significant Gaps Exist
- Need specialized Training
- Preparedness Must Improve
- Policies and Practice Must Improve
- Research and Innovation Needed
- Peds Equipment for EDs and EMS

18 YEARS AGO

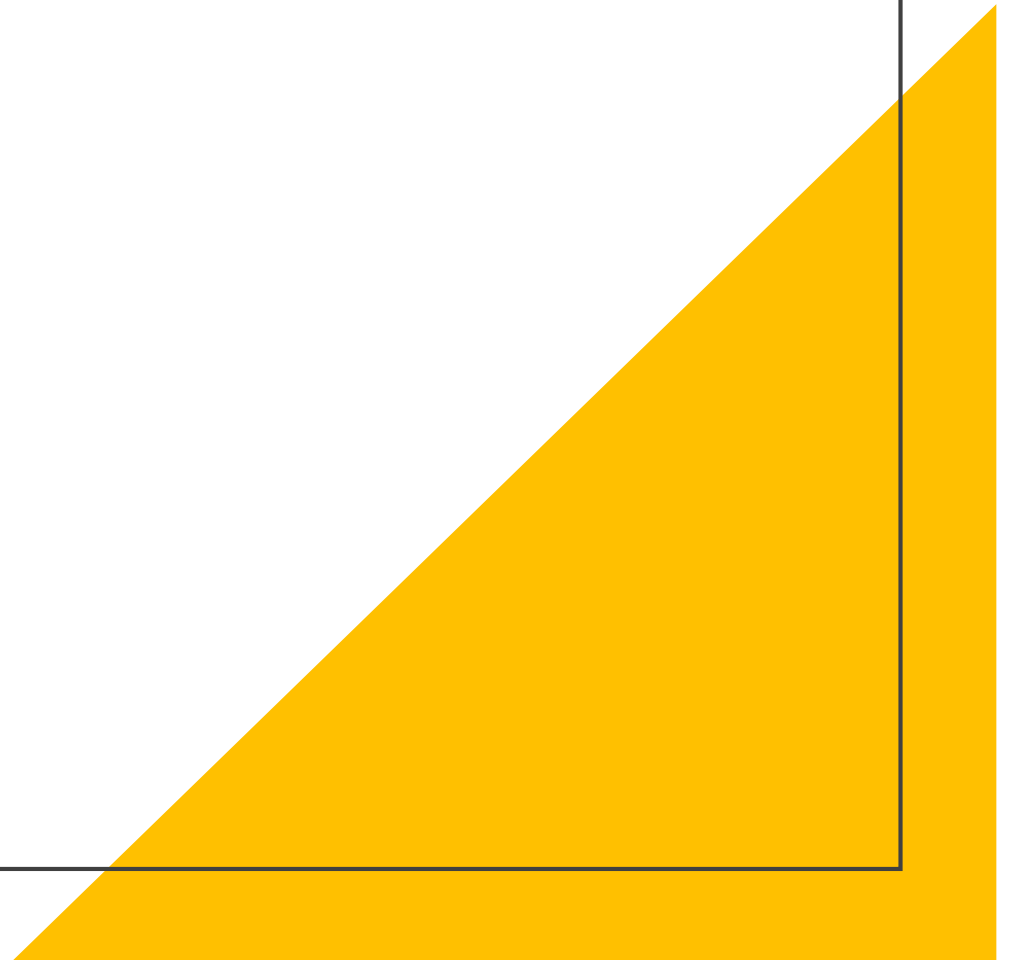




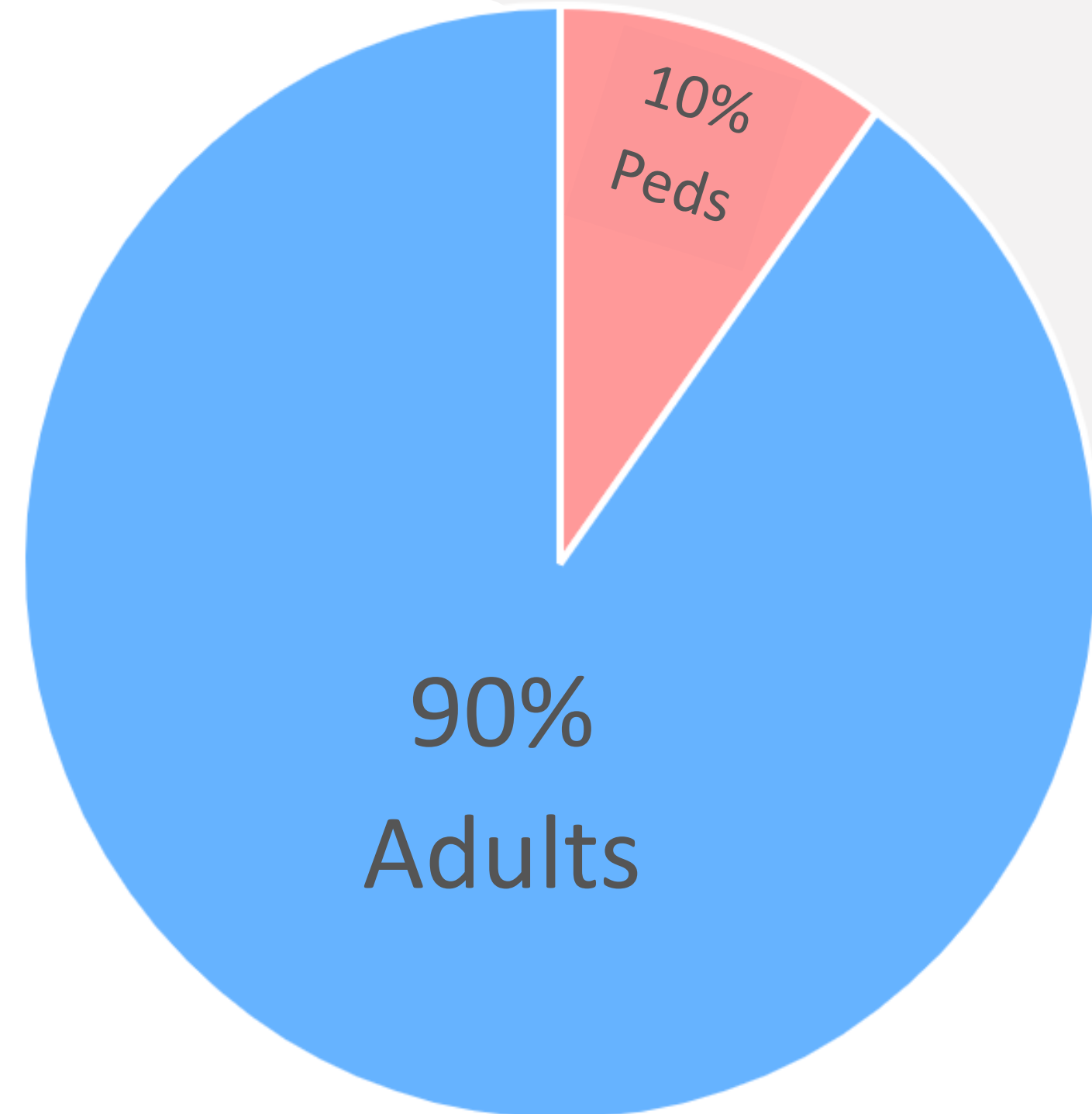




# Some Background Stats



# EMS Call Volume



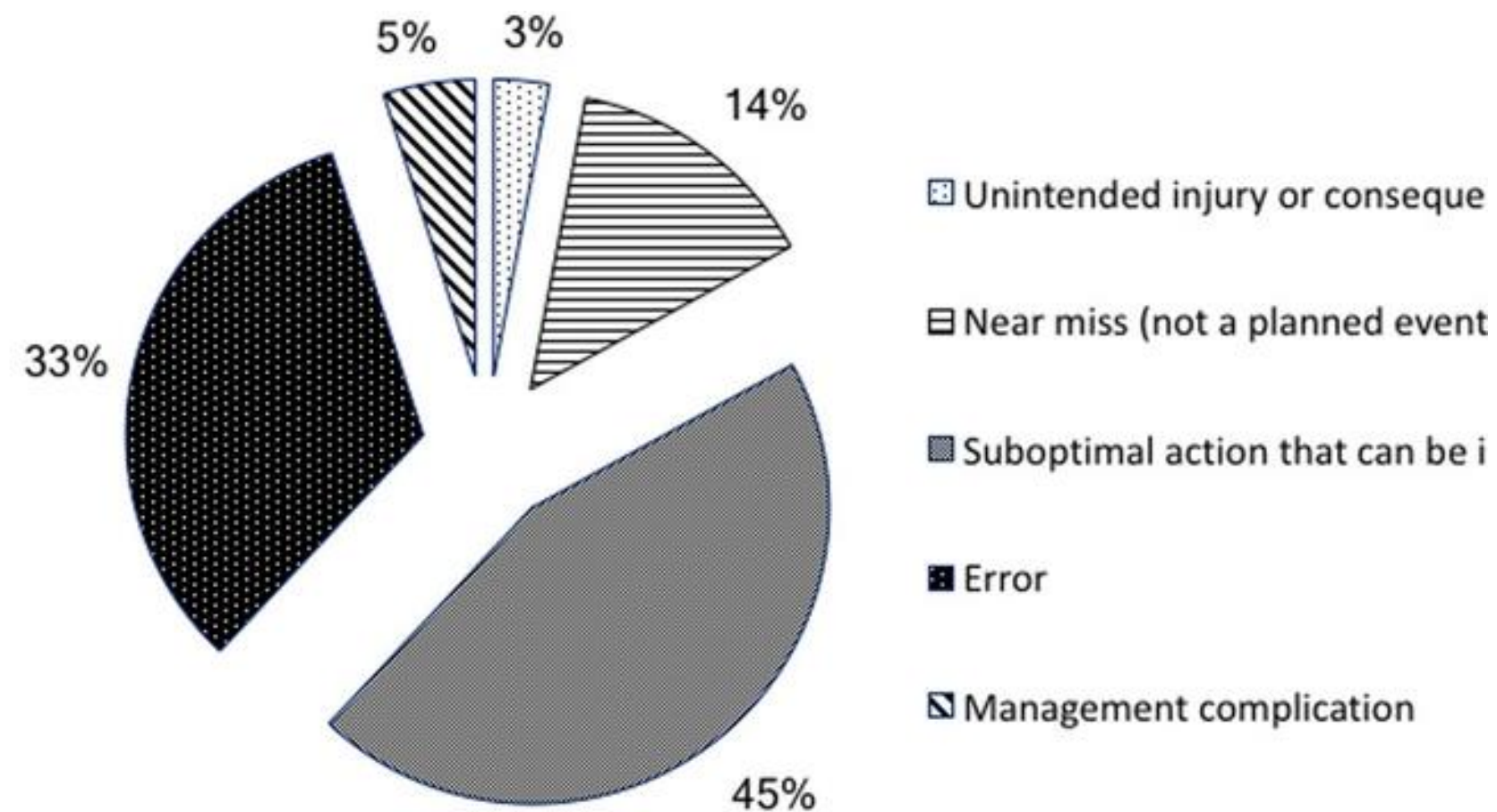
Organization	Adult Volume (%)	Pediatric Volume (%)
Coral Springs-Parkland Fire Dept.	9799 (90%)	1098 (10%)
Davie Fire Rescue	8977 (92%)	722 (8%)

# Reasons for dispatch by pediatric patient age group among 378 code-3 ambulance transports

Reason for Dispatch <sup>a</sup>	Age of patient					
	0-28 d n (%) <sup>b</sup>	29 d-11 m n (%) <sup>b</sup>	12 m-5 y n (%) <sup>b</sup>	6-11 y n (%) <sup>b</sup>	12-18 y n (%) <sup>b</sup>	Total 0-18 y n (%) <sup>c</sup>
Trauma	1 (0.6)	5 (3.2)	47 (29.8)	27 (17.1)	78 (49.4)	158 (41.8)
Seizure or ALOC	0 (0.0)	8 (8.2)	53 (55.8)	21 (22.1)	13 (13.7)	95 (25.1)
Respiratory distress	5 (11.4)	5 (11.4)	22 (50.0)	9 (20.4)	3 (6.8)	44 (11.6)
Cardio and/or respiratory arrest	5 (15.6)	18 (56.2)	4 (12.5)	1 (3.13)	4 (12.5)	32 (8.4)
Poisoning, ingestion, intoxication	0 (0.0)	0 (0.0)	8 (32.0)	2 (8.0)	15 (60.0)	25 (6.6)
Other (including birth or delivery)	4 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (33.3)	6 (1.6)
Pain (non-trauma)	0 (0.0)	0 (0.0)	1 (12.5)	0 (0.0)	7 (87.5)	8 (2.1)
Allergic reaction or anaphylaxis	1 (10.0)	3 (30.0)	3 (30.0)	1 (10.0)	2 (20.0)	10 (2.6)
Total	16	39	138	61	124	378



# Unintended injury or consequences, Near misses, Suboptimal actions, Errors, and Management complications (UNSEMs)



- 378 Code 3 Transports
- 456 UNSEMS

\* UNSEM = patient safety event involving: Unintended injury or consequence; Near miss; Suboptimal action; Error; or Managen

<sup>b</sup>A total of 445 UNSEMs were observed among 378 critical transports (some had multiple UNSEMs)

# Breakdown of UNSEMs by Domain

EMS Care Domain	Severe UNSEMs n (%) <sup>b</sup>	Mild UNSEMs n (%) <sup>b</sup>
Assessment, Impression/Diagnosis, and or clinical decision making	46 (9.4)	45 (9.1)
Resuscitation	41 (10.2)	34 (6.9)
Airway Management	32 (6.5)	26 (5.3)
Medications	27 (5.5)	46 (9.4)
Procedures	21 (4.2)	56 (11.4)
Equipment	9 (1.8)	13 (2.6)
System	8 (1.6)	14 (2.9)
Fluids	8 (1.6)	15 (3.1)
Environment	2 (0.04)	13 (2.6)
Total	194	262

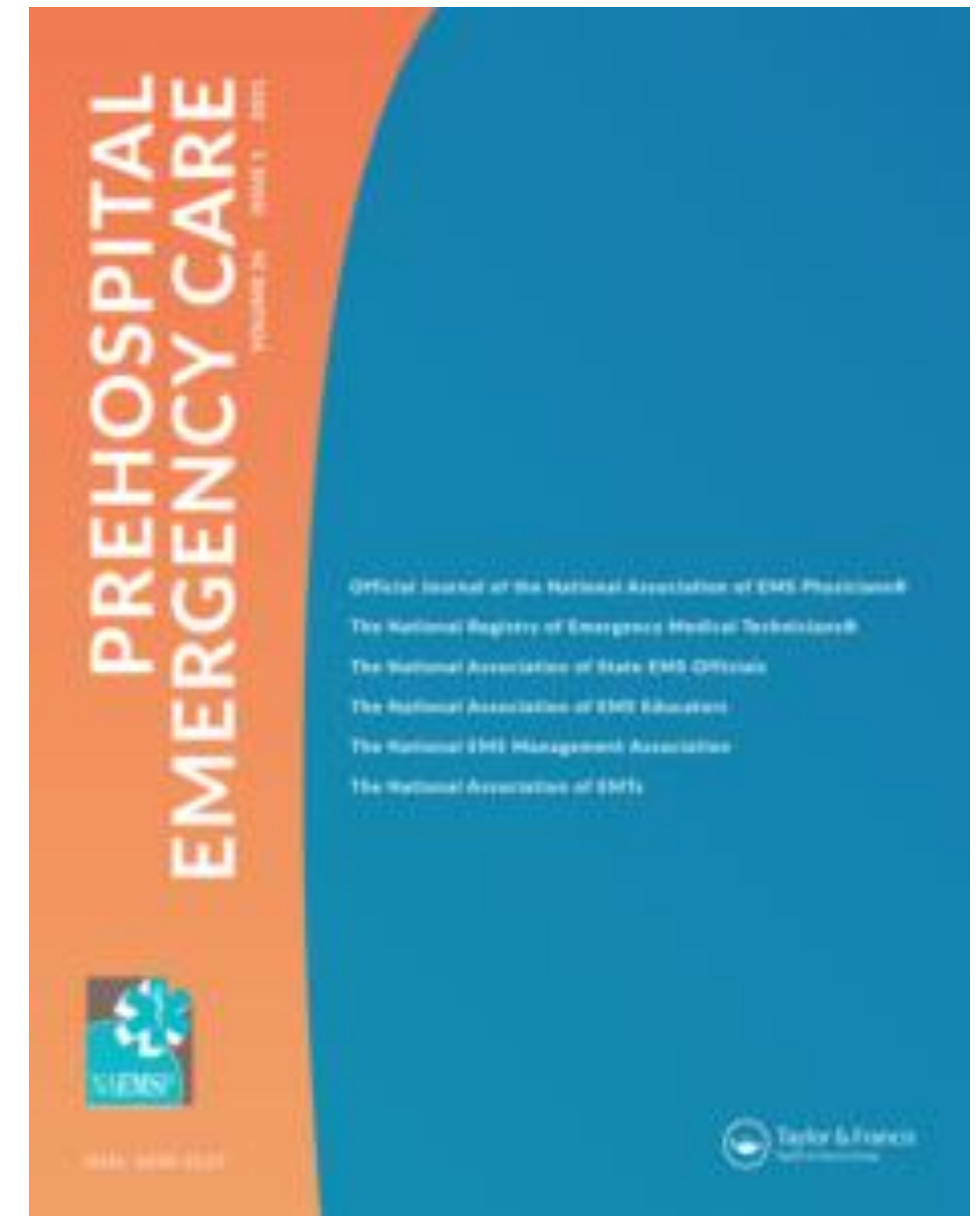


# MEDICATION DOSING ERRORS IN PEDIATRIC PATIENTS TREATED BY EMERGENCY MEDICAL SERVICES

John D. Hoyle, Jr., MD, Alan T. Davis, PhD, Kevin K. Putman, EMT-P, Jeff A. Trytko, MS,  
William D. Fales, MD

- 5,547 children aged  $\leq 11$  years
- 230 (4.1%) received drugs and had a documented weight
- 360 medication administrations

Medication dosing errors occurred in  
125 of the 360 drug administrations  
(34.7%)



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

January 2020

American Academy  
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

## Pediatric Readiness in Emergency Medical Services Systems

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Kathleen Adelgais, MD, MPH, FAAP,<sup>k</sup> John Lyng, MD, FAEMS, FACEP, NRP,<sup>l</sup> Lara Rappaport, MD, MPH, FAAP,<sup>m</sup>  
Sally Snow, RN, BSN, CPEN, FAEN,<sup>n</sup> Cynthia Wright-Johnson, MSN, RNC,<sup>o</sup> Julie C. Leonard, MD, MPH, FAAP,<sup>p</sup> and the AMERICAN  
ACADEMY OF PEDIATRICS COMMITTEE ON PEDIATRIC EMERGENCY MEDICINE AND SECTION ON EMERGENCY MEDICINE EMS  
SUBCOMMITTEE, AMERICAN COLLEGE OF EMERGENCY PHYSICIANS EMERGENCY MEDICAL SERVICES COMMITTEE, EMERGENCY NURSES  
ASSOCIATION PEDIATRIC COMMITTEE, NATIONAL ASSOCIATION OF EMERGENCY MEDICAL SERVICES PHYSICIANS STANDARDS AND  
CLINICAL PRACTICE COMMITTEE, NATIONAL ASSOCIATION OF EMERGENCY MEDICAL TECHNICIANS EMERGENCY PEDIATRIC CARE  
COMMITTEE

# 16 Recommendations

American College of Emergency Physicians, Emergency Nurses Association,  
National Association of Emergency Medical Services Physicians, and National  
Association of Emergency Medical Technicians on pediatric readiness in  
emergency medical services systems.

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Medical Services, Department of Pediatrics and Emergency  
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Hospital of Pittsburgh, Pittsburgh, Pennsylvania; <sup>d</sup>Department of  
Emergency Medicine, Children's Hospital New Orleans, and Louisiana



Include pediatric considerations in EMS planning and the development of pediatric EMS dispatch protocols, operations, and physician oversight.	Develop processes for delivering comprehensive, ongoing, pediatric specific education and evaluating pediatric-specific psychomotor and cognitive competencies.	Submit data to a statewide database that is compliant with the most recent version of NEMSIS and track pediatric patient centered outcomes across the continuum of care.
Collaborate with medical professionals with significant experience or expertise in pediatric emergency care, public health experts, and family advocates.	Promote education and awareness among EMS providers about the unique physical characteristics, physiologic responses, and psychosocial needs of children with an illness or injury	Develop, maintain, and locally enforce policies for the safe transport of children in emergency vehicles.
Integrate evidence-based, pediatric-specific elements into the direct and indirect oversight that constitute the global EMS oversight structure.	Implement practices to reduce pediatric medication errors.	Develop protocols for the destination of pediatric patients. Promote overall patient- and family-centered care.
Have pediatric-specific equipment and supplies available and verify that EMS providers are competent in using them.	Include pediatric-specific measures in performance improvement practices that address morbidity and mortality.	Collaborate with receiving emergency departments.
Include emergency preparedness planning and exercises, including the care and tracking of unaccompanied children and timely family reunification.	Policies and procedures to allow a family member or guardian to accompany a pediatric patient during transport when appropriate and feasible.	Consider using resources compiled by the EMSC program when implementing the recommendations noted here.

Think of the Kids	Education + C/P Competency	Submit Data to Registry (NEMSIS)
Engage Experts	Teach Why Kids are Unique	Safe Transport Policies
Integrate Kids (Just like Adults)	Reduce Med Errors	Destination Protocols Family Centered Care
Peds Equipment + Competency	Peds Performance Improvement	Collaborate with Receiving EDs
Disaster Planning	Transport Policies	Use EMSC Resources





## Welcome to the PPRP Assessment!

**We are excited for your EMS/fire-rescue agency to participate in the PPRP Assessment.**

**Click the "Start the Assessment>>" button on the right to begin.**

**Start the Assessment >>**

You may want to print a copy of the assessment ([English version](#) or [Spanish version](#)) and review it with your agency administrator and/or pediatric emergency care coordinator (PECC)/pediatric champion to become familiar with the questions. You will then need to return here to complete the assessment online. Once the assessment is completed, **a gap**

## EMS Agency

1. Name of your Agency: \_\_\_\_\_

2. Address of your Agency: \_\_\_\_\_

3. City your Agency is located in: \_\_\_\_\_

4. Zip code of your Agency: \_\_\_\_\_

5. Does your EMS agency respond to 9-1-1 emergency medical calls (or emergency medical calls placed through other emergency access numbers if used in your region)?

☐ Yes

————→ **Go to 6**

☐ No



***If your EMS agency DOES NOT respond to 911 calls, you are finished with the assessment. Thank you for your time.***

Note: PDF Version will flow differently than the online assessment (uses logic)

## EDUCATION AND COMPETENCIES FOR PROVIDERS

*In the next set of questions, we are asking about the process that your agency uses to evaluate your EMS providers' skills using pediatric-specific equipment (i.e. airway adjunct use/ventilation, child safety restraint vehicle installation for pediatric patient restraint, IV/IO insertion and administration of fluids, etc.).*


*While individual providers in your agency may take PEPP or PALS or other national training courses in pediatric emergency care, we are interested in learning more about the process that your agency uses to*



# Use the PPRP Toolkit

- Address gaps identified by the PPRP Assessment
- Curated by a comprehensive team of subject matter experts.
- Organized by the seven categories outlined in the corresponding checklist.

## Toolkit



- Prehospital Pediatric Readiness
- Background
- Checklist
- Toolkit**
- Assessment
- Key Publications
- Spread the Word
- FAQs

### Address gaps in your agency's pediatric readiness.

Use the Prehospital Pediatric Readiness Toolkit content to address gaps identified by the Prehospital Pediatric Readiness [Checklist](#) or [Assessment](#).


The toolkit is organized by the seven categories outlined in the corresponding [checklist](#). Both resources align with the [joint policy statement and technical report](#).


The resources in this toolkit have been curated by a comprehensive team of subject matter experts. Every three months, one or two sections of the toolkit are reviewed by project experts. Existing resources are reviewed for currency and new materials are added.


Enter topic to search all Prehospital Pediatric Readiness Toolkit resources

#### Missing resource?


Contact us if you have ideas for additional resources that could be useful in the toolkit.

Email us 







Education & Competencies




Equipment & Supplies




Patient & Medication Safety




Patient- & Family-Centered Care



Policies, Procedures, & Protocols (to include Medical Oversight)



Quality & Process Improvement



Interactions with Systems of Care

# Education and Competencies

- What processes do you use to evaluate your EMS providers' skills using pediatric specific equipment
  - At a skill station
  - Within a simulated event
  - During an actual encounter
- How often are you doing this?
- Which skills are being tested?
- How is Cognitive education provided?

Education & Competencies

Equipment & Supplies

Patient & Medication Safety

Patient & Family Centered  
Care

Policies | Procedures |  
Protocols

Quality & Performance  
Improvement

Interactions with Systems of  
Care

Coordination of Pediatric  
Emergency Care



# Equipment and Supplies

Education & Competencies

Equipment & Supplies

Patient & Medication Safety

Patient & Family Centered  
Care

Policies | Procedures |  
Protocols

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Improvement

Interactions with Systems of  
Care

Coordination of Pediatric  
Emergency Care

PREHOSPITAL EMERGENCY CARE  
2021, VOL. 25, NO. 3, 451-459  
<https://doi.org/10.1080/10903127.2021.1886382>



## **Recommended Essential Equipment for Basic Life Support and Advanced Life Support Ground Ambulances 2020: A Joint Position Statement**

John Lyng, MD, NRP, Kathleen Adelgais, MD, MPH, Rachael Alter, BA, Justin Beal, PHRN, Bruce Chung, MD, Toni Gross, MD, Marc Minkler, BS, NRP, Brian Moore, MD, Tim Stebbins, MD, Sam Vance, MHA, EMT-P, Ken Williams, MD, and Allen Yee, MD

### **ABSTRACT**

In continued support of establishing and maintaining a foundation for standards of care, our organizations remain committed to periodic review and revision of this position statement. This latest revision was created based on a structured review of the *National Model EMS Clinical Guidelines Version 2.2* in order to identify the equipment items necessary to deliver the care defined by those guidelines. In addition, in order to ensure congruity with national definitions of provider scope of practice, the list is differentiated into BLS and ALS levels of service utilizing the National Scope of Practice-defined levels of Emergency Medical Responder (EMR) and Emergency Medical Technician (EMT) as BLS, and Advanced EMT (AEMT) and Paramedic as ALS. Equipment items listed within each category were cross-checked against recommended scopes of practice for each level in order to ensure they were appropriately dichotomized to BLS or ALS levels of care. Some items may be considered optional at the local level as determined by agency-defined scope of practice and applicable clinical guidelines. In addition to the items included in this position statement our organizations agree that all EMS service programs should carry equipment and supplies in quantities as determined by the medical director and appropriate to the agency's level of care and available certified EMS personnel and as established in the agency's approved protocols.

# Patient & Medication Safety

- Do you have a LBT? Volumetric Dosing?
- How do you identify potential dosing errors?
- Which medications do you review?
- Proper child restraint policy? Device?



Education & Competencies

Equipment & Supplies

Patient & Medication Safety

Patient & Family Centered  
Care

Policies | Procedures |  
Protocols

Quality & Performance  
Improvement

Interactions with Systems of  
Care

Coordination of Pediatric  
Emergency Care

# Interactions with Systems of Care

- How do you engage with the hospital or ED staff to promote pediatric care in your region?
  - Protocols & Policies
  - Regional surge capacity planning
  - Education
  - Clinical feedback
  - Promoting injury prevention
  - Promoting research
  - Promoting family centered care
- Disaster Preparedness

Education & Competencies

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# Pediatric Disaster Preparedness Questions

***Does your EMS agency have a disaster preparedness policy that addresses . . . ?***

(Check Yes or No for each of the following questions)

**72. Use of a pediatric disaster triage tool?**

☐ Yes

☐ No

**73. Use of antidotes for pediatric patients?**

☐ Yes

☐ No

Pa

*2024 PPRP Assessment – May-July website version*

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*Finalized 5/14/2024*

**74. Mass transport of pediatric patients?**

☐ Yes

☐ No

**75. Tracking of unaccompanied children?**

☐ Yes

☐ No

**76. Family reunification?**

☐ Yes

☐ No

**77. Mechanisms to address pediatric mental health emergencies?**

☐ Yes

☐ No

# Coordination of Peds Emerg Care

- Pediatric Emergency Care Coordinator
  - Who is it?
  - Credentials?
- What does this person do?
- Protocol for destination decision making?
- Policy for handoffs in the ED



Education & Competencies

Equipment & Supplies

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## PECC Roles/Job Descriptions

This section includes job descriptions, roles & responsibilities, and recruitment materials created by EMS for Children State Partnership Programs.


*(Last updated: December 22, 2021)*

[Return to Interactions with Systems of Care Menu](#)

### AUDIENCE

 EMS clinicians 11

### MEDIA TYPE

 Document 10

### SORT ORDER

 **Most Recent**

Search...

Search

11 Results

 Document

**Establish a PECC for your agency**

1 page flyer

 Details

 Document

**What's a PECC? And Why Do We  
Need One?**

1 page flyer

 Details



# Patient & Family Centered Care

- Family presence during resuscitation
- Cultural competencies
- Countering Implicit bias
- Communication with non-verbal patients
- Using lay terms
- Narrating actions before performing interventions

Education & Competencies

Equipment & Supplies

Patient & Medication Safety

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Protocols

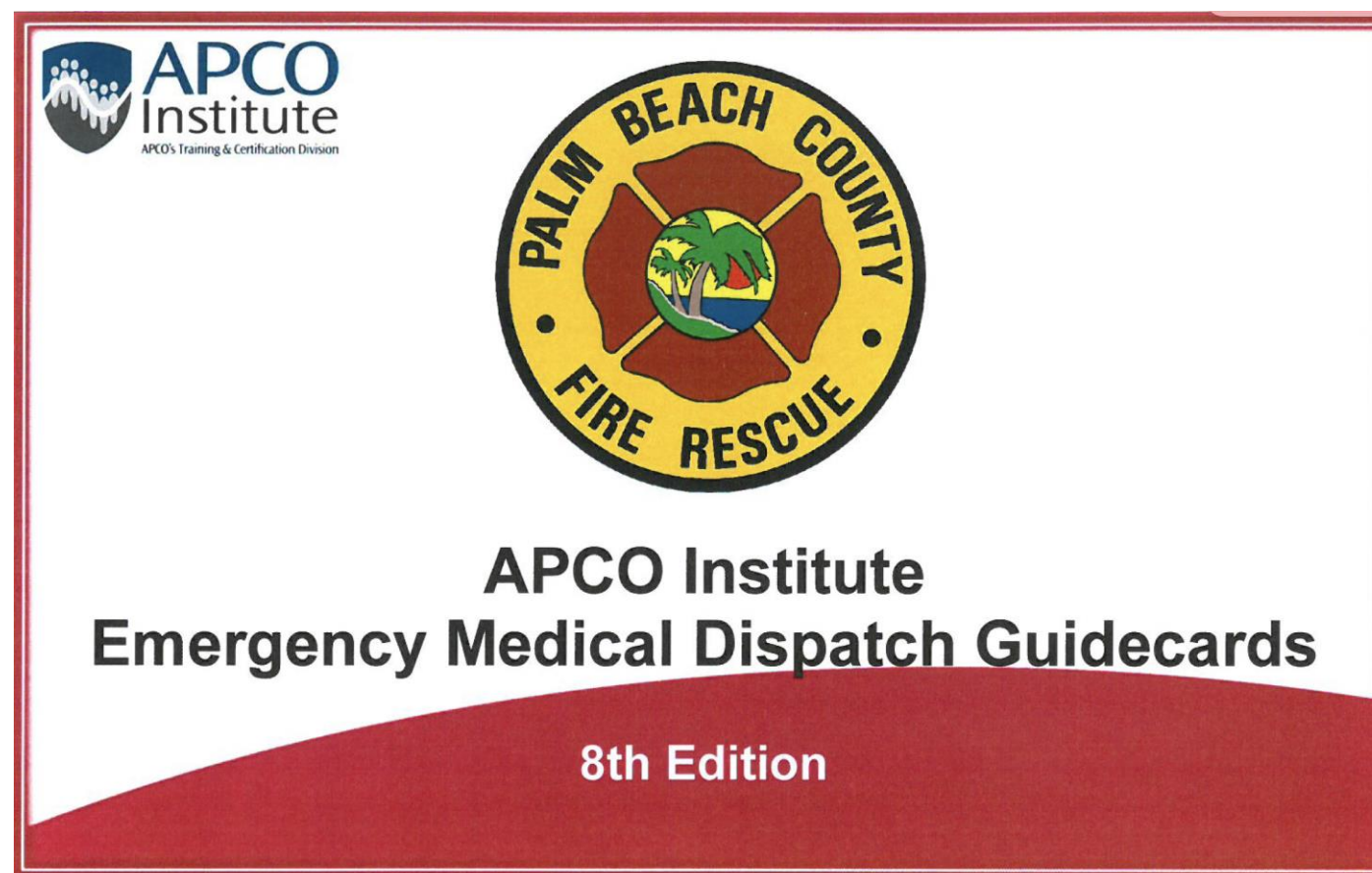
Quality & Performance  
Improvement

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# Policies | Procedures | Protocols

- Dispatch Protocols for pediatrics?
- 24/7 Access to a Pediatric Physician?
- Protocols Updated at least every 2 years?



Education & Competencies

Equipment & Supplies

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# Quality & Performance Improvement

- Pediatric Chart Reviews?
- What frequency?
- What call types?
- Do you share feedback with personnel?
- Do you integrate findings into training?
- Do you track patient level data?
- Do you submit data (NEMESIS)
- Hospital data retrieved?

Education & Competencies

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*Pediatric Readiness Project*  
Ensuring Emergency Care for All Children

**Let's Get Started** ➤



# Quartiles of Readiness

★  
First quartile: 0-58

★★  
Second quartile: 59-72

★★★  
Third quartile: 73-87

★★★★  
Fourth quartile: 88-100



**B** Medically ill

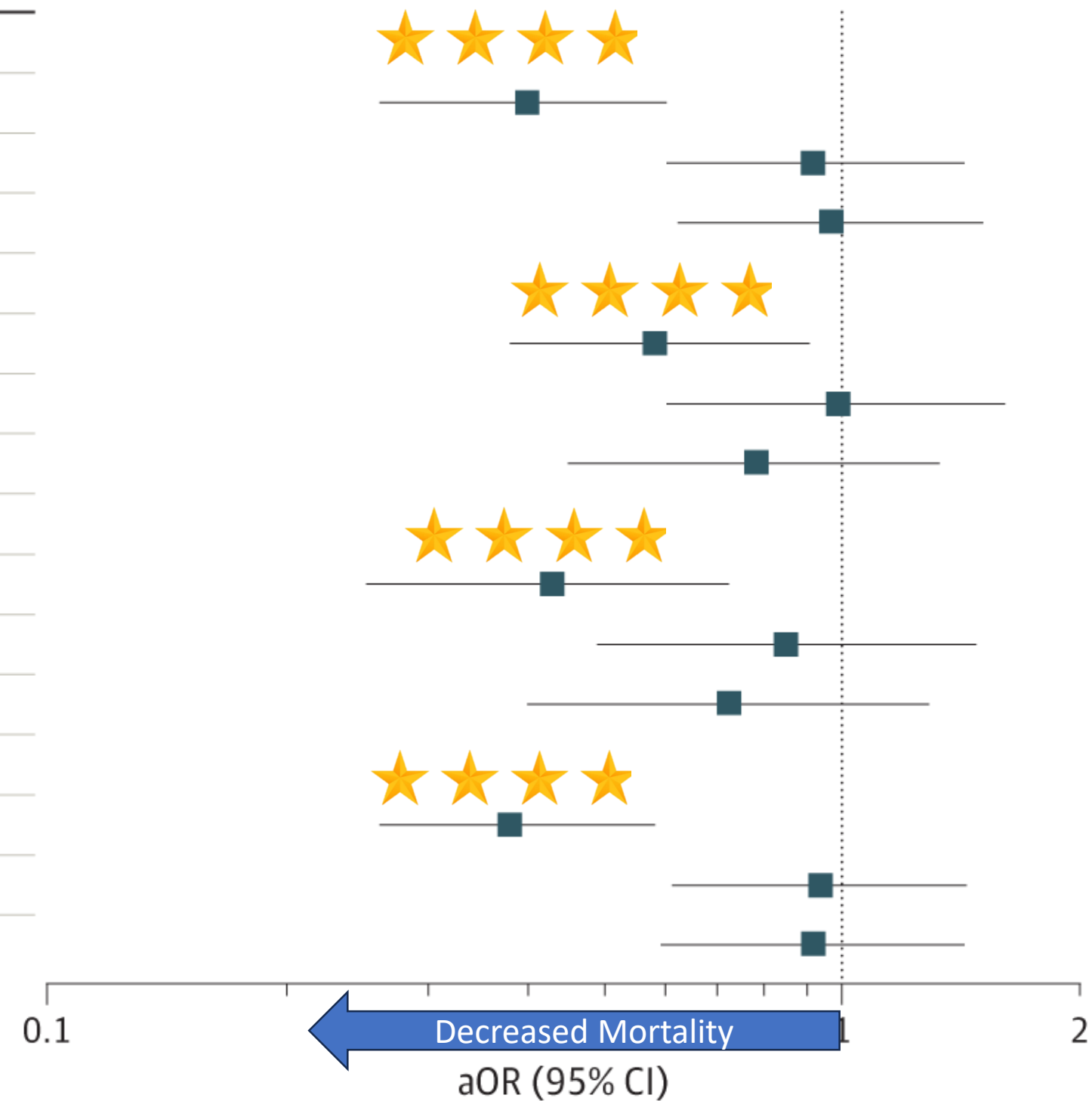
Subgroup and ED readiness	aOR (95% CI)
Medically ill patients (n = 705 974)	
Fourth quartile	0.24 (0.17-0.34)
Third quartile	0.68 (0.48-0.95)
Second quartile	0.94 (0.67-1.32)
Severity score $\geq 4$ (n = 377 574)	
Fourth quartile	0.28 (0.19-0.40)
Third quartile	0.73 (0.51-1.04)
Second quartile	0.96 (0.68-1.37)
Respiratory diagnosis (n = 292 508)	
Fourth quartile	0.35 (0.24-0.51)
Third quartile	0.69 (0.47-1.03)
Second quartile	0.73 (0.49-1.09)
Neurologic diagnosis (n = 89 058)	
Fourth quartile	0.24 (0.16-0.37)
Third quartile	0.61 (0.40-0.94)
Second quartile	0.77 (0.50-1.19)
Cardiovascular diagnosis (n = 64 219)	
Fourth quartile	0.21 (0.15-0.30)
Third quartile	0.69 (0.48-0.99)
Second quartile	0.78 (0.54-1.13)





**A** Injured

Subgroup and ED readiness	aOR (95% CI)
Injured patients (n = 90 963)	
Fourth quartile	0.40 (0.26-0.60)
Third quartile	0.92 (0.60-1.43)
Second quartile	0.97 (0.62-1.51)
ISS ≥16 (n = 6577)	
Fourth quartile	0.58 (0.38-0.91)
Third quartile	0.99 (0.60-1.61)
Second quartile	0.78 (0.45-1.33)
Head AIS ≥3 (n = 12 959)	
Fourth quartile	0.43 (0.25-0.72)
Third quartile	0.85 (0.49-1.48)
Second quartile	0.72 (0.40-1.29)
Severity score ≥4 (n = 46 262)	
Fourth quartile	0.38 (0.26-0.58)
Third quartile	0.94 (0.61-1.45)
Second quartile	0.92 (0.59-1.43)



# Mortality by Quartile



First quartile: 11.1%



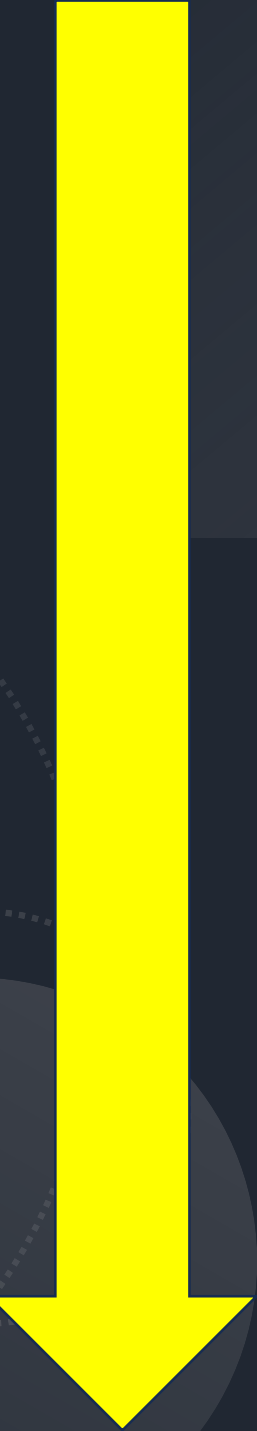
Second quartile: 5.4%



Third quartile: 4.9%



Fourth quartile: 3.4%



**HOUSE OF REPRESENTATIVES STAFF ANALYSIS**

**BILL #:** CS/HB 1343 Health Care Patient Protection  
**SPONSOR(S):** Select Committee on Health Innovation, Altman  
**TIED BILLS:** **IDEN./SIM. BILLS:** SB 1418

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Select Committee on Health Innovation	11 Y, 0 N, As CS	Guzzo	Calamas
2) Health & Human Services Committee			

**SUMMARY ANALYSIS**

General hospital EDs (nonchildren’s hospitals) primarily treat adults and may not be prepared to treat children because of low pediatric patient volume. More than 97 percent of EDs caring for children are general hospital EDs, accounting for 82 percent of pediatric ED visits. Currently, Florida laws do not require hospital EDs to meet minimum standards of care for pediatric patients.

The National Pediatric Readiness Project (NPRP) is a quality improvement initiative to empower all EDs to provide effective emergency care to children. The NPRP developed an assessment to measure a hospital ED’s pediatric readiness. The NPRP Assessment is voluntary and is conducted every five years. Recent studies prove that hospital EDs with high pediatric readiness scores have lower mortality rates among children.





# **Pediatric Cardiac Arrest** *Transition of Care into the Hospital*







# Putting the Pressure On: Implementing Pediatric CPAP at your Agency

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**Peter Antevy, MD**

**All Credit to:**



Kyle Goodknight, EMT-P, RRT

Chelsea Kadish, MD

Rob Lowe, MD





# Questions

- Does CPAP work in children?
- Should EMS begin using CPAP in children?
- What do you need to purchase to get CPAP started?

# Kyle's Story



- 6 YO Female
- Severe Resp. Distress
- Pale, Sleepy, SpO2 86%
- Urgent Care Called 911
- Admitted to Resus Bay



# Background

- Respiratory complaints ~ 1/3 of ED visits
- Respiratory illness ~ 20% of hospitalizations & 3-5% of deaths
- Children are more likely to **arrest from respiratory failure rather than cardiac causes**

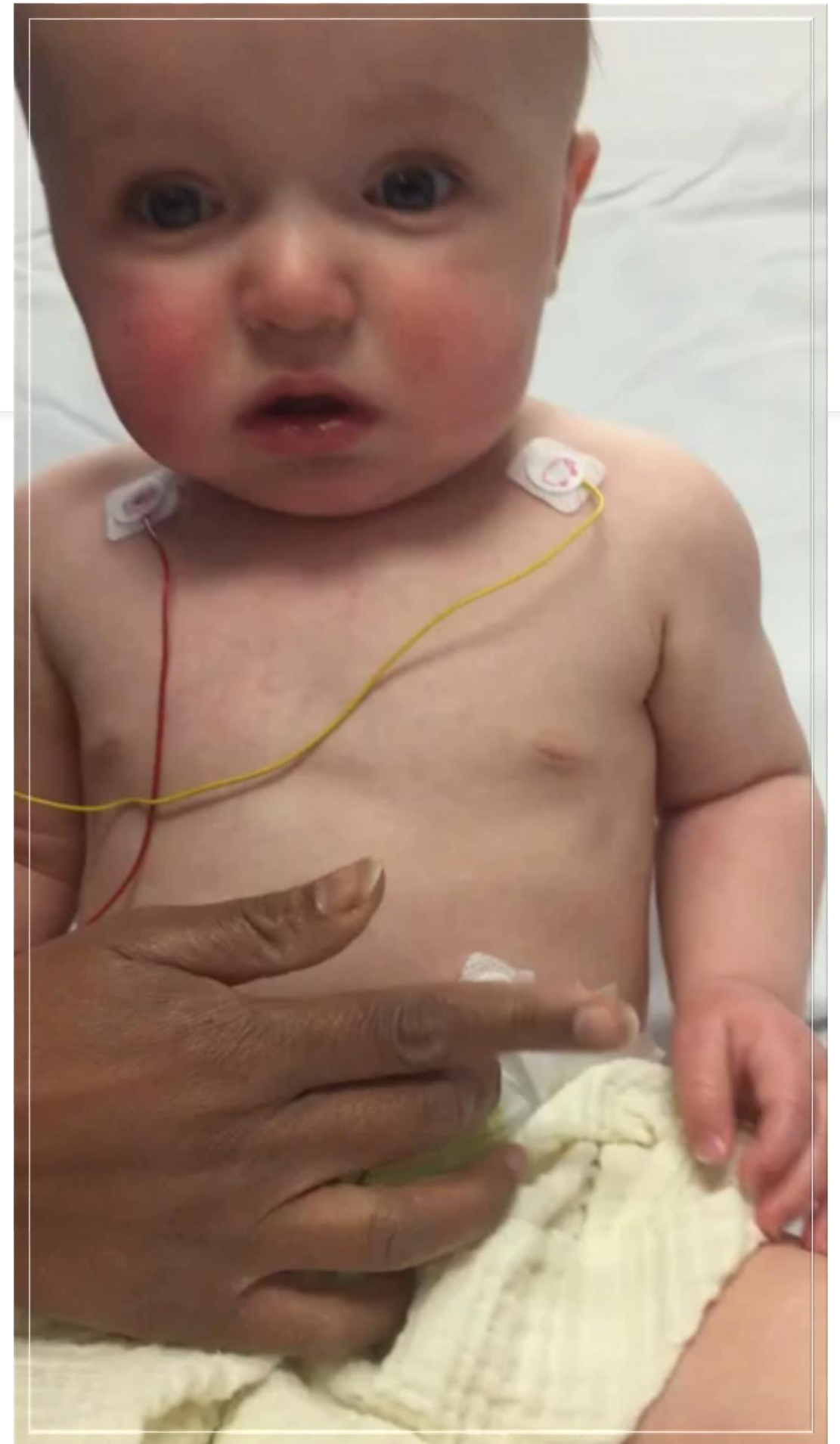


# Which Kids Can Get CPAP?

- Impending respiratory failure or severe respiratory distress
- Any age child- Mask must fit
- Conditions:
  - Asthma
  - Bronchiolitis
  - Pneumonia
  - Pulmonary edema
  - Croup
  - Drowning/Submersion



# Grunting w/Retractions



# Asthma: Belly Breathing w/Retractions





# Which Kids Should NOT Get CPAP?



## Contraindications

- Anyone who's not breathing
- Altered mental status (GCS <8)
- Need for airway protection (anaphylaxis, airway burns)
- Facial trauma
- Untreated pneumothorax
- Unable to get a good mask seal



## Prehospital Emergency Care

ISSN: 1090-3127 (Print) 1545-0066 (Online) Journal homepage: [www.tandfonline.com/journals/ipeec20](http://www.tandfonline.com/journals/ipeec20)

- “EMS agencies should emphasize noninvasive positive pressure ventilation”
- “There is growing support for the feasibility of NIPPV use by EMS clinicians in the pediatric critical care setting”
- “EMS agencies should consider the use of noninvasive ventilation strategies in children to reduce the need for invasive measures, and to do so within the educational and operational confines specific to their systems.”



# CPAP Logistics: How to Implement

- Change the Mindset of what is happening in Pediatric Respiratory Distress
- Choose the Best Equipment
- Protocol Change
- Training



# Cincinnati EMS CPAP protocol

## Pediatric Respiratory Distress

If at any time patient becomes pulseless/apenic, go to **Pediatric Cardiac Arrest**

If at any time patient requires airway intervention (Fatigue, /active or pending respiratory failure or arrest), go to Pediatric Airway Management

### Pediatric Universal Care

**Oxygen** to maintain SpO<sub>2</sub> >92%  
If patient is 12 months or older,  
Consider **CPAP** Starting pressure 5 cmH<sub>2</sub>O, choose appropriate sized mask (XS, SM, or LG)

### Wheezing/Asthma/Acute Bronchospasm

For Severe Respiratory Distress  
**Epinephrine 1:1,000**  
0.01 mg/kg IM  
Maximum 0.3 mg or refer to HandTevy

**Albuterol (Proventil)**  
2.5 mg NEB in 3 mL NS  
**Ipratropium (Atrovent)**  
0.5 mg NEB in 3 mL NS  
Repeat albuterol and atrovent as needed for ongoing distress

### Pediatric IV/IO

Consider **Magnesium Sulfate**  
50 mg/kg IV infusion Mix in 100 mL NS or 250 mL NS over 20 minutes  
Maximum 2 gm (2,000 mg)  
or refer to HandTevy

### Croup

**Racemic Epinephrine 2.25%**  
0.5 mL NEB mixed with 3 mL NS  
Repeat in 15 minutes x1  
OR  
**Epinephrine 1:1,000**  
2.5 - 5 mg NEB

**Dexamethasone (Decadron)**  
0.6 mg/kg PO, IVP Maximum 10 mg  
OR  
**Methylprednisolone (Solu-Medrol)**  
3 mg/kg IVP If unresponsive place IO  
Maximum 125 mg  
or HandTevy

**Oxygen** to maintain SpO<sub>2</sub> >92%

If patient is 12 months or older,  
Consider **CPAP** Starting pressure 5 cmH<sub>2</sub>O, choose appropriate sized mask (XS, SM, or LG)

# Using CPAP in Kids

**Start at 5 cm H<sub>2</sub>O**  
and titrate up to  
**10 cm H<sub>2</sub>O** if needed



Full face CPAP mask

PEEP dial

To oxygen source



Port to attach nebulizer chamber

50 psi

# Equipment : CPAP Generator

- Some Common Disposable CPAP Generators
- O2 Max Pulmodyne





# Equipment : CPAP Generator

- Some Common Disposable CPAP Generators
- Adult generators with Pedi mask
- Go Pap Pulmodyne

10 L/min



# Equipment : CPAP Generator

- Some Common Disposable CPAP Generators
- Adult generators with pedi mask
- Flow Max II Mercury Medical



# Equipment

- The Mask is the key to why this works in Peds
  - Tolerated well- not claustrophobic
  - No leak – mouth and nose are covered





# Equipment : Masks

- Full Face Is Key for Peds
- Adult Small
  - Pulmodyne (Boundtree)
  - Philips



# Equipment Masks

- Full Face Is Key for Peds
- Pediatric XS
  - Pulmodyne
  - Philips



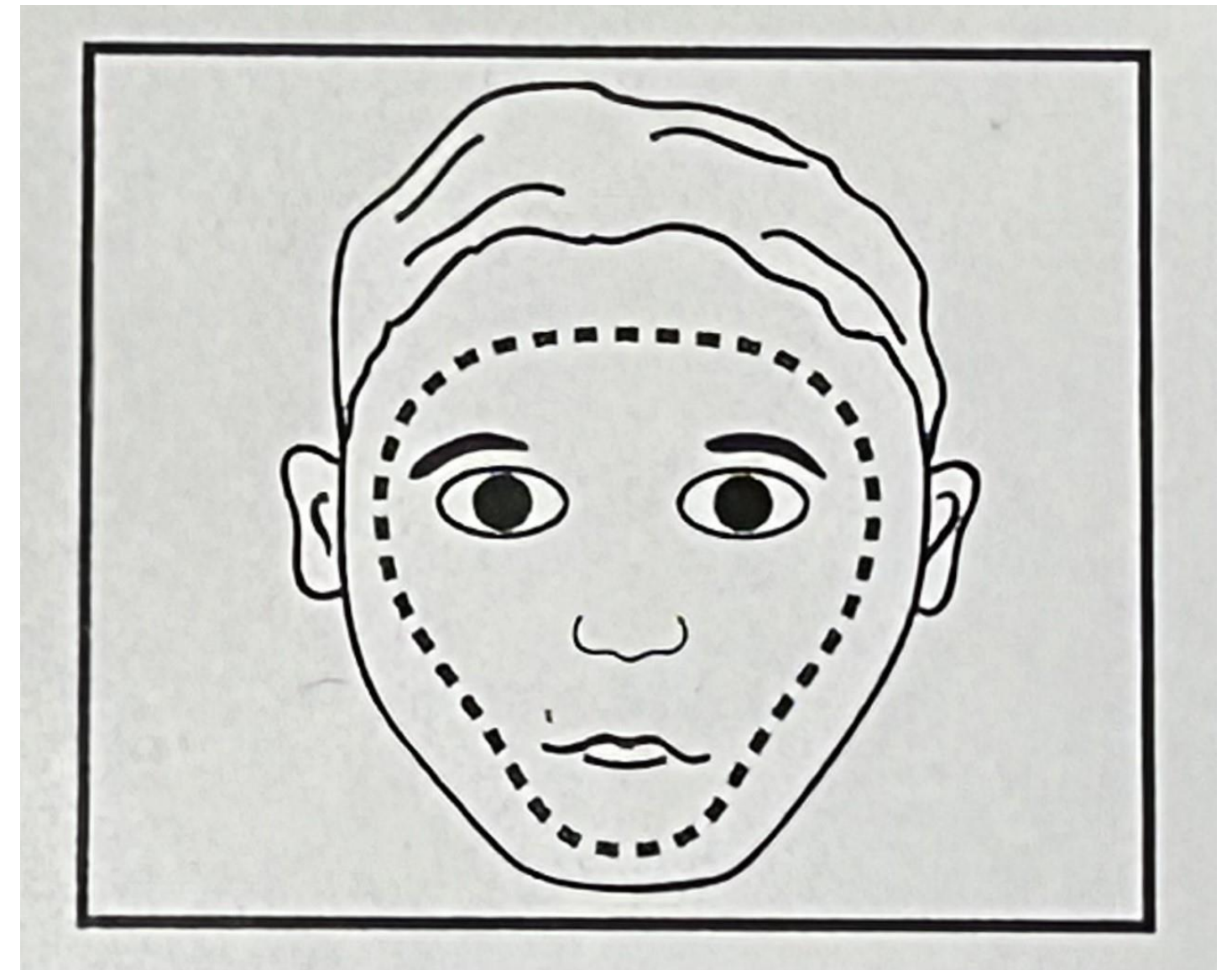
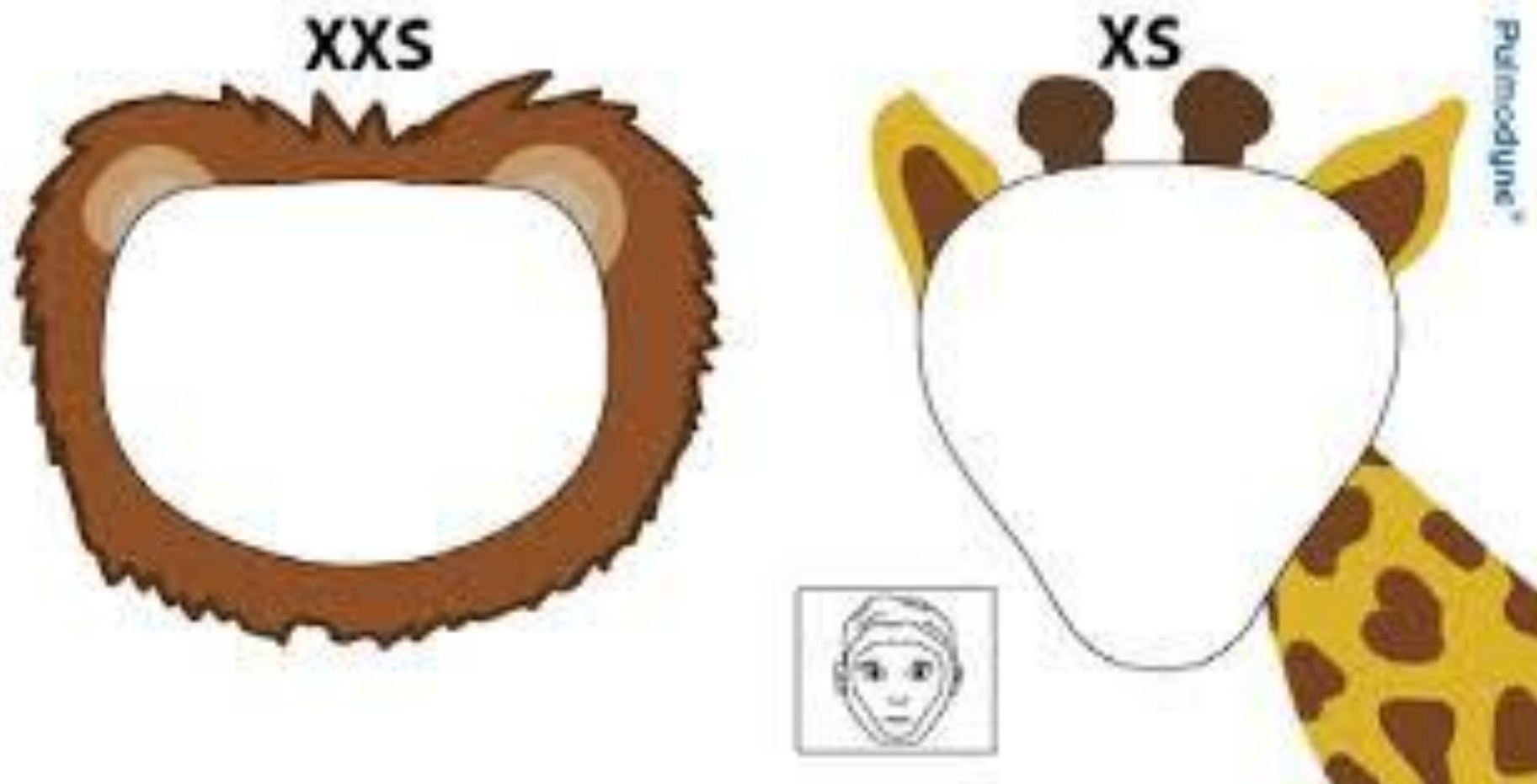
# Equipment Masks

- Full Face Is Key for Peds
- Pediatric XXS
  - Pulmodyne
  - Philips





# Equipment Sizing Template (xxs and xs)



# Kids Like This Mask Type





# Equipment : Connectors

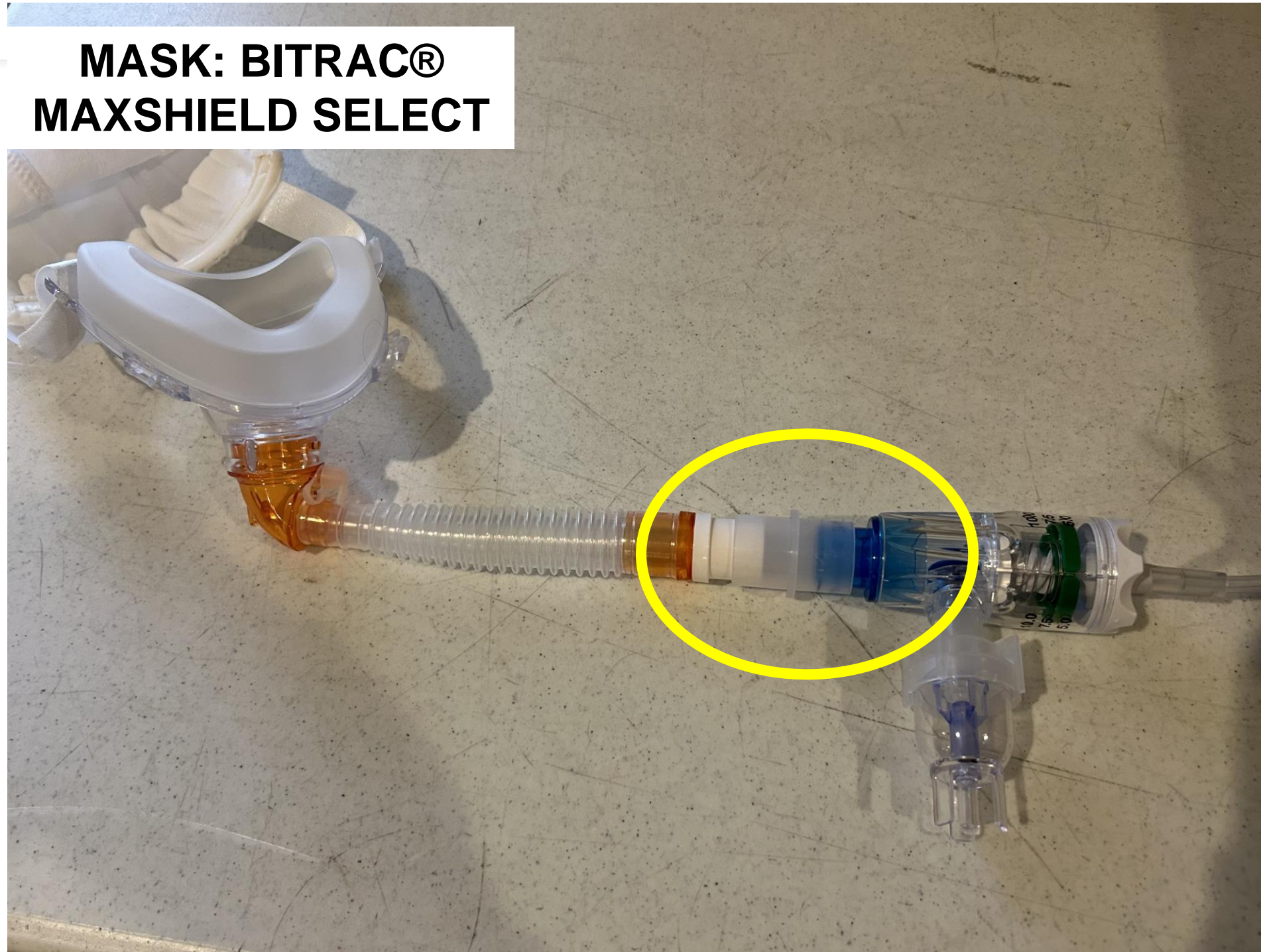
- Adapters





# Equipment

**MASK: BITRAC®  
MAXSHIELD SELECT**







# Thank You!

R&D both my talks



# CPAP Product Links

Bitrac Maxshield Select Pediatric XS w/Anti-Asphyxia w/Leak Elbow 10/ea/bx

<https://www.boundtree.com/oxygen-equipment-respiratory/cpap-accessories/bitrac-maxshield-select-w-anti-asphyxia-leak-elbow-pediatric-xs/p/313-9527EA?searchText=313-9527>

Bitrac Maxshield Select Pediatric XXS w/Anti-Asphyxia w/Leak Elbow 10ea/bx

<https://www.boundtree.com/oxygen-equipment-respiratory/cpap-accessories/bitrac-maxshield-select-pediatric-w-anti-asphyxia-w-leak-elbow-xxs/p/313-9526EA?searchText=313-9526EA>

Full Face Mask Blue Adapter for Go-PAP Connection 1/EA 50EA/CS

<https://www.boundtree.com/oxygen-equipment-respiratory/cpap-accessories/15mmf-30mmm-blue-adapter/p/313-8184EA?searchText=313-8184EA>

22mmF x 22mmF CONNECTOR KIT 50EA/BX

<https://www.boundtree.com/oxygen-equipment-respiratory/cpap-accessories/connector-kit-22mmf-x-22mmf/p/313-5007EA?searchText=313-5007EA>

BiTrac MaxShield ED Mask and Head Strap, SM Adult 10ea/cs

<https://www.boundtree.com/oxygen-equipment-respiratory/cpap-accessories/bitrac-maxshield-ed-mask-and-head-strap/p/group004050?searchText=313-7054EA>