

NEMESIS Pediatric Dashboards for EMSC

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2023 ALL-GRANTEE MEETING

CULTIVATING COMMUNITY GROWING COLLABORATION

Speaker Disclosure

This educational activity is being presented without the provision of commercial support and without bias or conflict of interest from the planners, presenters, or reviewers.

I am not Clay Mann/do not work at NEMSIS!



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Project Goal



- Develop a **NEMESIS pediatric dashboard** that can help drive performance improvement in pediatric prehospital emergency care
- The dashboard will integrate
 - EMS agency and state level data
 - Prehospital Pediatric Readiness Project (PPRP) Assessment
 - Up to date evidence based guidelines for key conditions



What is NEMSIS?



- The National EMS Information System (NEMSIS) provides the framework for **collecting**, **storing**, and **sharing** standardized EMS data from states and territories nationwide

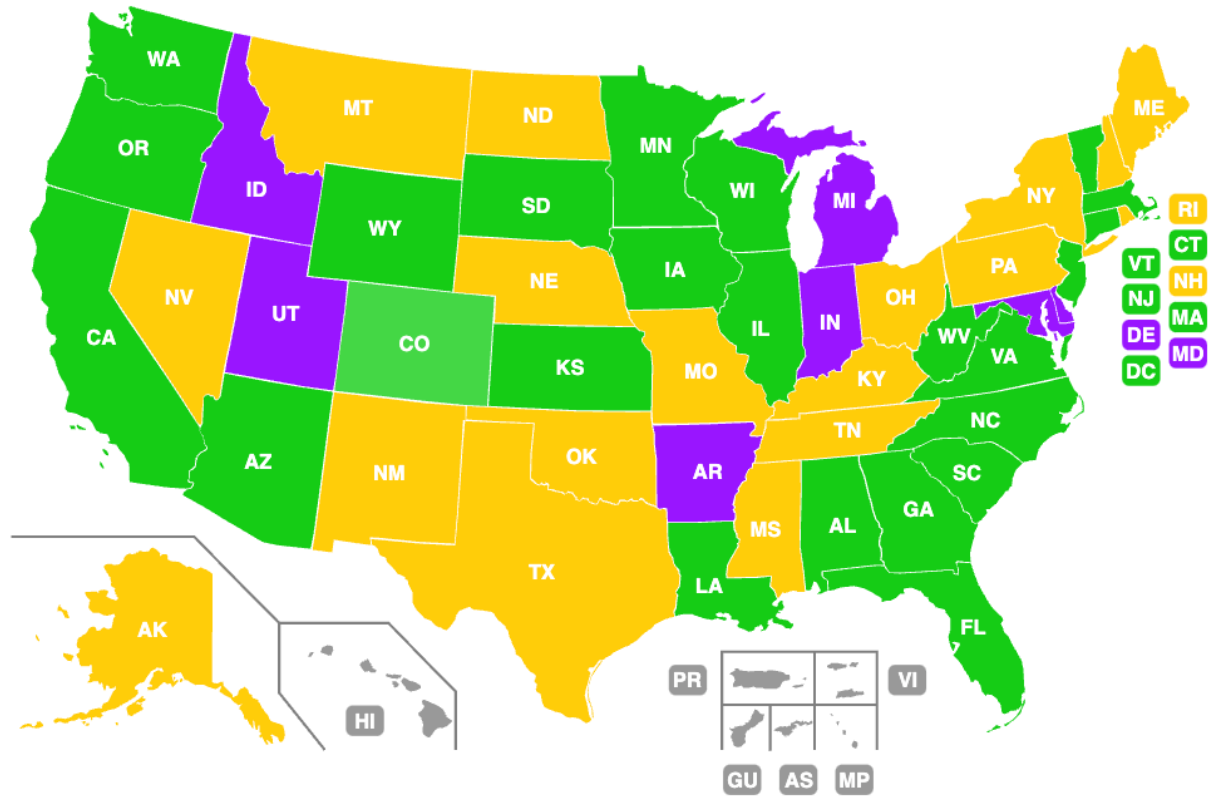


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<https://nemsis.org>

NEMESIS v3.5 Data

■ Submitting v3.5 Data ■ v3.5 Documents Available ■ v3.5 Implementation Plan ■ No Transition Plan



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Why a Dashboard?

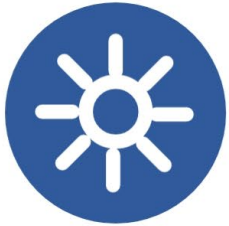


**51 million EMS
activations (2022)**



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NEMESIS Dashboards



HEAT ILLNESS



OPIOID OVERDOSE



STEMI



CHIEF COMPLAINTS



MVC



PERFORMANCE MEASURES



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NEMESIS Dashboards



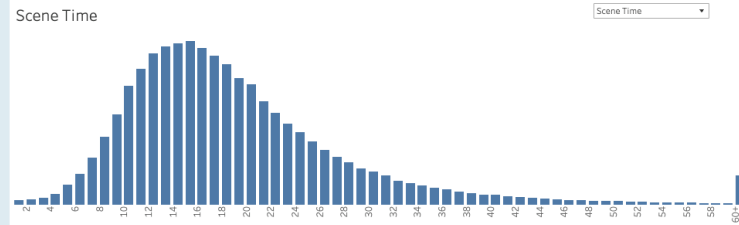
STEMI

NEMESIS STEMI Dashboard



Dispatch Date Range: 1/1/2017 to 4/29/2022

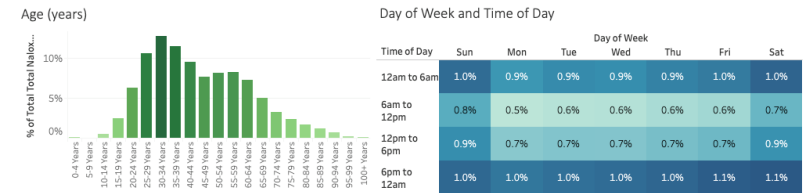
Demographics	Patient Age & Gender		Dispatch Complaint	Responding Agency Level of Service
	Female	Male		
30-34 Years	0.7%	1.4%	Chest Pain (Non-Traumat...	2009 Paramedic
35-39 Years	1.4%	2.4%	Transfer/Interfacility/Pall...	43.7%
40-44 Years	2.3%	4.4%	Breathing Problem	9.6%
45-49 Years	4.4%	7.0%	Sick Person	8.2%
50-54 Years	6.9%	10.2%	Heart Problems/AICD	5.4%
55-59 Years	9.7%	13.8%	Unconscious/Fainting/Ne...	5.0%
60-64 Years	11.5%	15.3%	No Other Appropriate Cho...	4.3%
65-69 Years	12.3%	13.9%	Cardiac Arrest/Death	3.0%
70-74 Years	12.7%	11.6%	Airmedical Transport	2.0%
75-79 Years	11.9%	8.6%	Falls	1.9%
80-84 Years	10.3%	5.8%		
85-89 Years	8.4%	3.6%		
90-94 Years	5.0%	1.6%		
95-99 Years	1.7%	0.4%		
100+ Years	0.3%	0.1%		



OPIOID OVERDOSE

NEMESIS
Powered by NETS/A's Office of EMS

WHAT IS NEMESIS USING EMS DATA VIEW REPORTS CALLS AND TRAININGS TECHNICAL RESOURCES SUPPORT



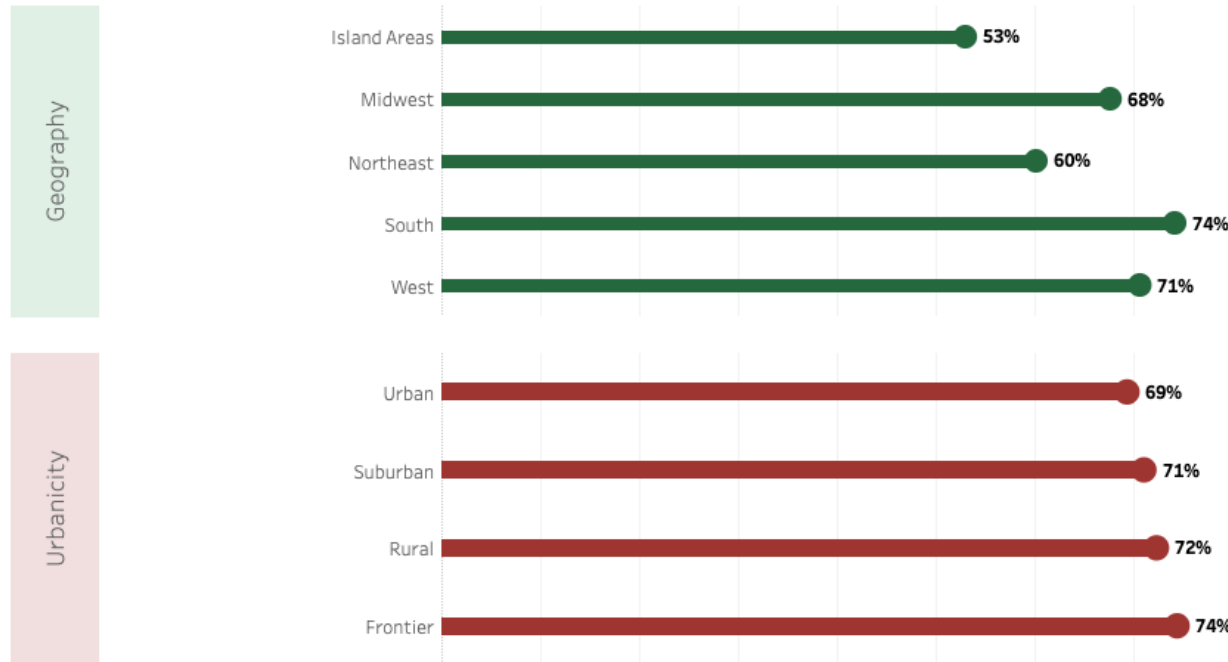
Clinical Measures

Top 15 Complaints	Top 15 Impressions	Number of Naloxone Administrations and Average per Record
Overdose/Poisoning/Inge.. 27.6%	Change in mental status 15.3%	<p>1.13</p>
Unconscious/Fainting/Ne.. 21.7%	Poisoning by unspecified drugs 14.6%	
Cardiac Arrest/Death 14.1%	Opioid abuse 12.5%	<p>Was Naloxone Administered Prior to EMS Arrival?</p>
Unknown Problem/Person Down 8.7%	Cardiac arrest 10.0%	
Sick Person 6.7%	Poisoning by other opioids, undetermined 6.1%	
No Other Appropriate Choice 4.1%	Unknown 4.8%	
Breathing Problem 3.9%	Other psychoactive substance 4.5%	
Convulsions/Seizure 3.3%	Unconsciousness 3.7%	
Traffic/Transportation Incident 1.7%	Poisoning by other drugs, medicaments and 3.3%	
Falls 1.6%	Respiratory failure/disorder 1.9%	
Stroke/CVA 1.2%	Transient alteration of awareness 1.6%	
Psychiatric Problem/Abnormal Behav.. 1.1%	Sedative use related 1.5%	
Diabetic Problem 0.9%	Fainting/Light headed 1.5%	
Transfer/Interfacility/Palliative Care 0.6%	Alcohol abuse 1.4%	
Chest Pain (Non-Traumatic) 0.5%	Poisoning by, adverse effect of and underdosing.. 1.0%	



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NEMESIS Dashboards



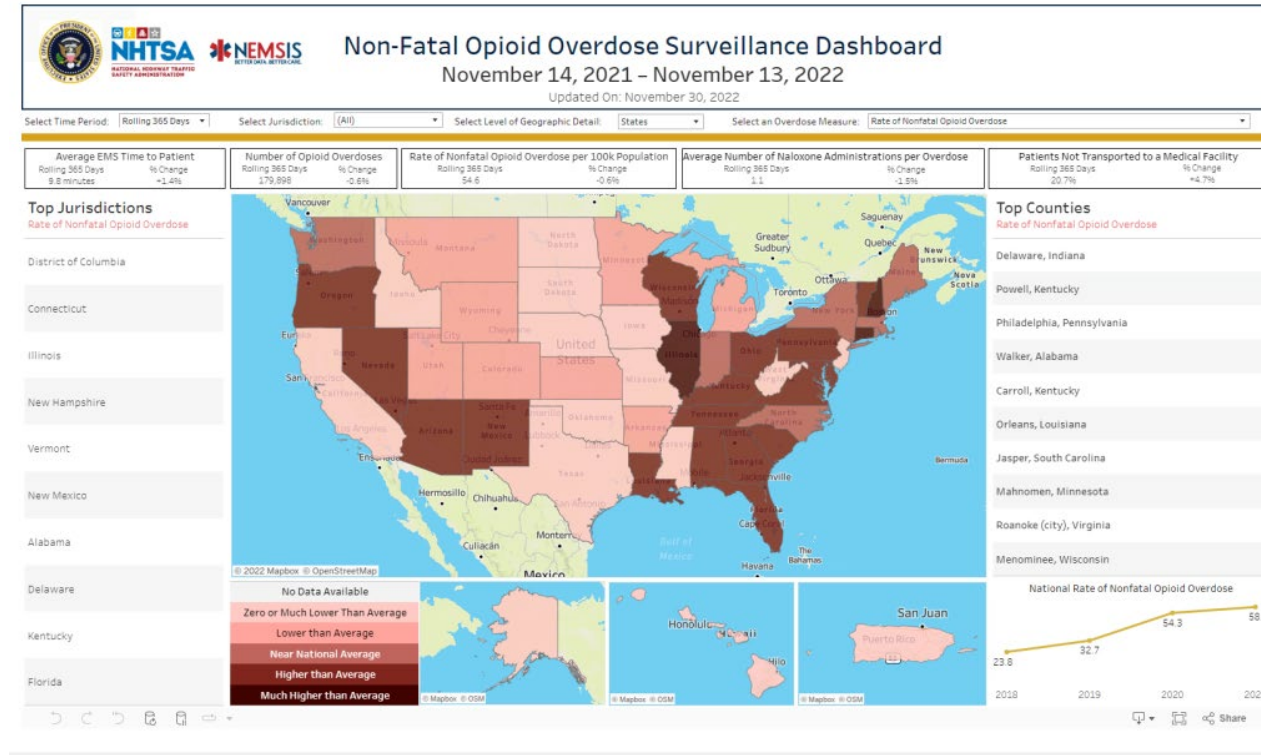
FILTERS

- Geography
- Urbanicity
- Organizational status
- Organizational type
- Annual patient volume
- Level of care
- PPRP score



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NEMSIS Dashboards

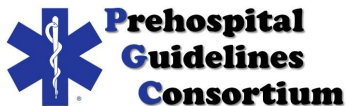
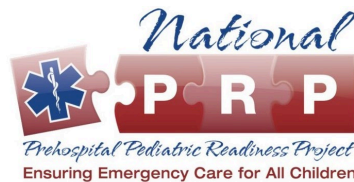


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Institutional Partners



Technical Expert Panel



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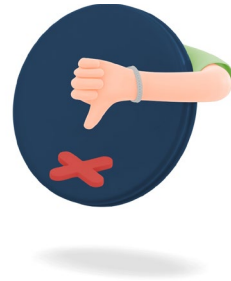
Process



Convene Technical Expert Panel



Generate list of candidate measures



Sequential rounds of voting



Technical build of dashboard



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Finding Candidate Measures



Prehospital
Guidelines
Consortium

National EMS
Quality Alliance
(NEMSQA)

Prehospital
Pediatric
Readiness
Project (PPRP)

Other



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Finding Candidate Measures



Prehospital
Guidelines
Consortium

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Prehospital
Pediatric
Readiness
Project (PPRP)

Other

e.g. Patients with seizure & hypoglycemia should be transported to an ED
(EBG – Shah, 2014, *Prehospital Emergency Care*)



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Finding Candidate Measures



Prehospital
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Consortium

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Prehospital
Pediatric
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Project (PPRP)

Other



e.g. Stroke assessment performed for patients with suspected stroke
(*NEMSQA Stroke-01*)



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Finding Candidate Measures



Prehospital
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Consortium

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Quality Alliance
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Prehospital
Pediatric
Readiness
Project (PPRP)

Other



e.g. Trauma patients are transported to a trauma center
(*PPRP checklist & NEMSQA Trauma-04*)



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Finding Candidate Measures



Prehospital
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National EMS
Quality Alliance
(NEMSQA)

Prehospital
Pediatric
Readiness
Project (PPRP)

Other



e.g. Children are transported by EMS with age-appropriate restraints
(FAIR Safety-04)



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Defining “Important” Measures

Is this measure relevant to PEDIATRIC prehospital care?



Is this measure based on EVIDENCE?



Is this a PATIENT CENTERED measure?



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Proposed Dashboard Measures

-  Airway Management X 5
-  Trauma X 4
-  Pain Control X 3
-  Respiratory (asthma) X 3
-  Cardiac Arrest X 2
-  Other X 7



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Proposed Dashboard Measures

 Airway Management X 5

 Trauma X 4

 Pain Control X 3

 Respiratory (asthma) X 3

 Cardiac Arrest X 2

 Other X 7

1. Advanced airway placed on first attempt without hypoxia or hypotension
2. Oxygen saturation documented during placement of advanced airway
3. Correction of hypoxia prior to placement of advanced airway
4. Use of waveform capnography during placement of advanced airway
5. Use of end-tidal CO2 verification of advanced airway placement



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Proposed Dashboard Measures

 Airway Management X 5

 **Trauma X 4**

 Pain Control X 3

 Respiratory (asthma) X 3

 Cardiac Arrest X 2

 Other X 7

1. Documentation of GCS, BP and respiratory rate in patients with trauma
2. Documentation of BP, oxygen saturation and end-tidal CO₂ for patients with traumatic brain injury
3. Patients meeting CDC Step 1 & 2 field triage criteria have a trauma alert
4. Patients meeting CDC Step 1 & 2 field triage criteria are transported to a trauma center



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Proposed Dashboard Measures

 Airway Management X 5

 Trauma X 4

 Pain Control X 3

 Respiratory (asthma) X 3

 Cardiac Arrest X 2

 Other X 7

1. Injured patients have a pain assessment completed
2. Injured patients with pain have analgesia administered
3. Injured patients with pain have a reduction in pain level during transport



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Proposed Dashboard Measures

 Airway Management X 5

 Trauma X 4

 Pain Control X 3

 **Respiratory (asthma) X 3**

 Cardiac Arrest X 2

 Other X 7

1. Patients with a respiratory chief complaint/impression have a documented assessment
2. Patients with asthma exacerbation receive a beta-agonist
3. Patients with hypoxia receive oxygen



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Proposed Dashboard Measures

 Airway Management X 5

 Trauma X 4

 Pain Control X 3

 Respiratory (asthma) X 3

 **Cardiac Arrest X 2**

 Other X 7

1. IV or IO access obtained for patients in cardiac arrest
2. Scene time for patients in cardiac arrest is > 10 minutes



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Proposed Dashboard Measures

 Airway Management X 5

 Trauma X 4

 Pain Control X 3

 Respiratory (asthma) X 3

 Cardiac Arrest X 2

 Other X 7

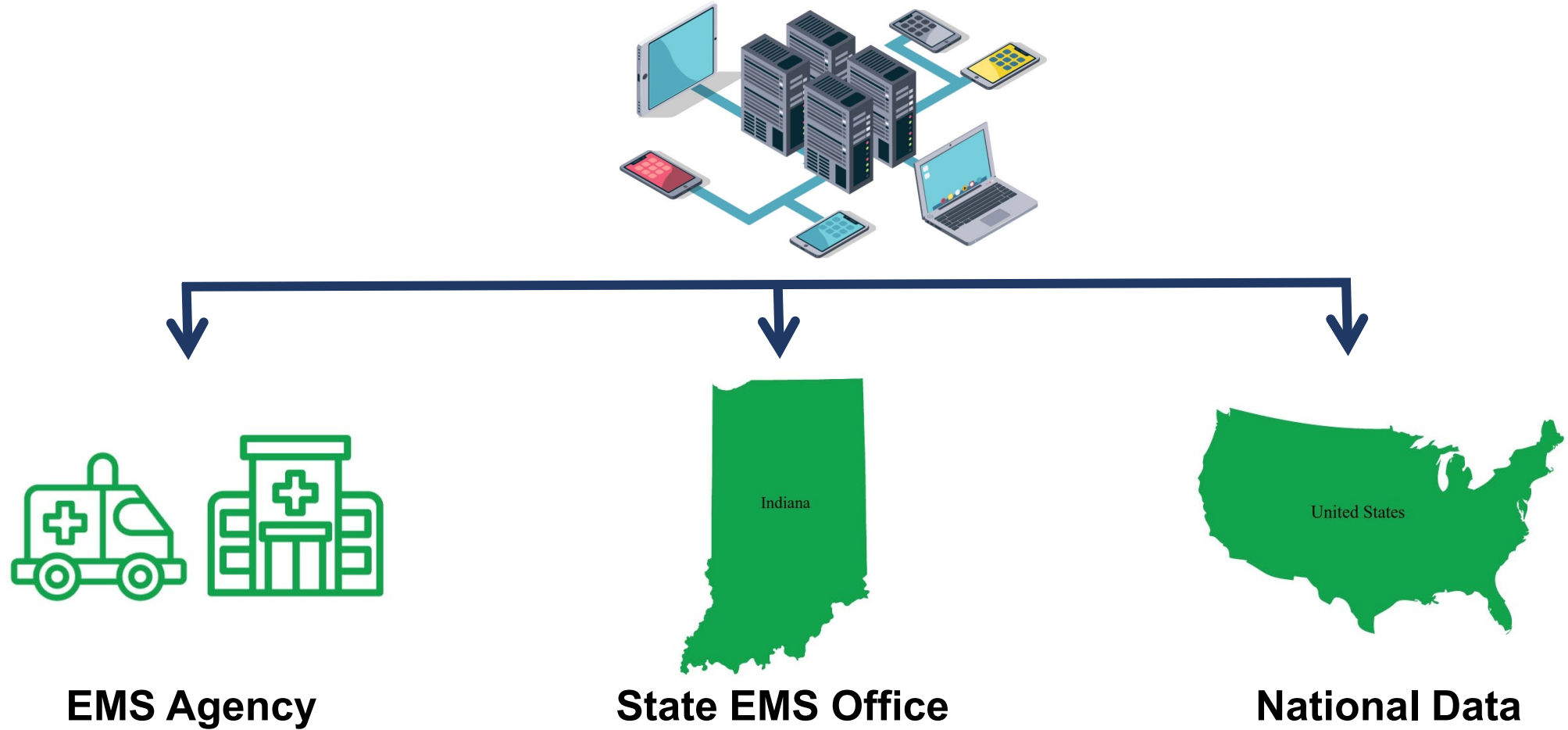
1. Patients in anaphylaxis receive epinephrine
2. Patients in shock receive IV fluids
3. Patients in status epilepticus receive benzodiazepines
4. Hypoglycemia is treated
5. Newborn babies have a heart rate and respiratory rate documented
6. Complete vital signs documented for children not transported by EMS
7. Use of lights and sirens during transport

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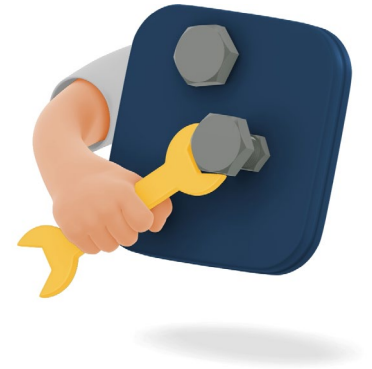
Data Access

NEMSIS Pediatric Dashboard



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Assessing Prototype



- Is the dashboard interface **user friendly**?
- Is there the right **amount** of information?
- Are some of the measures **duplicative**?
- How much **missing data** is there (and does that matter)?
- Does the measure have **variability** between agencies?
- Are some of these measures relevant to **BLS** teams?



Conclusions

- **NEMESIS Pediatric Dashboard launching 2024**
- **Facilitate system level performance improvement in pediatric EMS care**
- **National Prehospital Pediatric Readiness Project (NPPRP) will be integrated into the dashboard**



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Technical Expert Panel

Kathleen Adelgais

Jane Brice

Kathleen Brown (Chair)

Eric Chaney

Tabitha Cheng

Mark Cicero

Ann Dietrich

Julianne Ehlers

Pat Frost

Andrea Genovesi

Matt Hansen

Hilary Hewes

Eric Hicken

Lindsey Jaeger

Kathryn Kothari

Clay Mann

Christian Martin-Gill

Tom McGinnis

Sheree Murphy

Katherine Remick

Jason Rhodes

Sam Vance

Theresa Walls

Caleb Ward (Chair)



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Questions & Suggestions



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