

**BENCHMARKING EMS COMPASS  
PERFORMANCE MEASURES USING A  
NATIONAL DATASET: PEDIATRIC CARE**

Jeffrey L. Jarvis, MD, MS, EMT-P<sup>1,2</sup>;  
Dustin Barton, MBA, EMT-P<sup>4</sup>; Lauren Sager, MS<sup>2</sup>;  
Nikiah Nudell, MS, NRP, FACPE<sup>4</sup>

<sup>1</sup>Williamson County EMS <sup>2</sup>Baylor Scott & White Health <sup>3</sup>ESO <sup>4</sup>UCHealth EMS



---

---

---

---

---

---

---

---

**DISCLOSURES**

- No disclosures

---

---

---

---

---

---

---

---

**BACKGROUND**

- 10% of all EMS transports
- Airway complaints are common
- Medications are often weight based
- EMS Compass Performance Measures
- Actual performance of these measures is unknown

---

---

---

---

---

---

---

---

STUDY AIM(S) / HYPOTHESES

- Using a large, national dataset, calculate actual performance (as documented) on proportion of 911 transports < 15 y/o:
  - With documented weight
  - => 1 documented SpO2 and RR for those with respiratory impression
  - => 1 dose of beta-agonist for those with impression of asthma
  - => 1 dose of beta-agonist for those with impression of asthma AND SpO2 < 90%

---

---

---

---

---

---

---

---

METHODS

- 941 ESO consenting customers
- 6 1/2 years of data
- Blinded to patient or agency-identifying data
- For measures requiring medication administration, only looked at ALS agencies.

---

---

---

---

---

---

---

---

METHODS

- Calculation done using documented fields only (no chart review)
- Calculated proportion meeting metric and 95% CI
- Graphically calculated "high" and "low" performing agencies
  - 95% CI completely above/below mean proportion

---

---

---

---

---

---

---

---

RESULTS

Proportion of children with a documented weight

287,719/524,856  
54.8% (95%CI 54.7 to 55.0%)

---

---

---

---

---

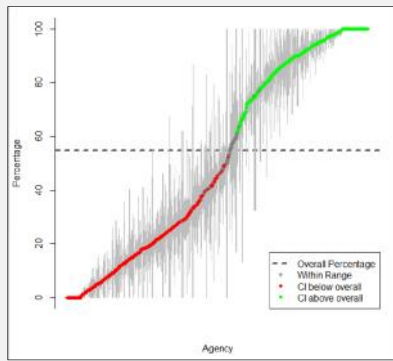
---

---

---

Results

Proportion of children with a documented weight



---

---

---

---

---

---

---

---

RESULTS

Proportion of children with a primary impression of a respiratory complaint with at least one SpO2 and RR documented.

37,689 / 43,067  
87.5% (95%CI 87.2 to 87.8%)

---

---

---

---

---

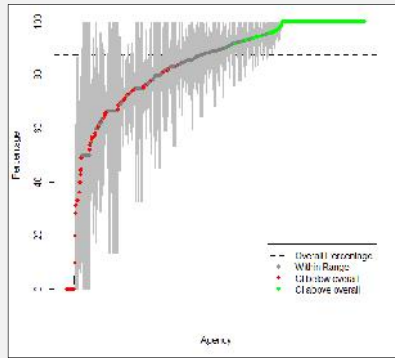
---

---

---

### Results

Proportion of children with a primary impression of a respiratory complaint with at least one SpO2 and RR documented.



---

---

---

---

---

---

---

---

### RESULTS

Proportion of children with a primary impression of asthma with at least one dose of a beta-agonist documented.

4,336 / 6,202  
69.9% (95%CI 68.8 to 71.1%)

---

---

---

---

---

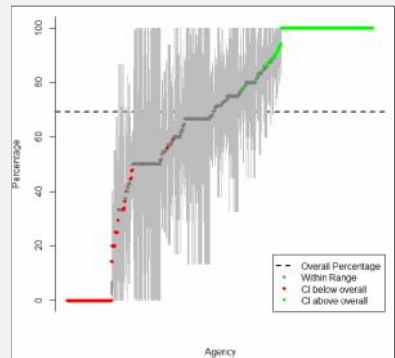
---

---

---

### Results

Proportion of children with a primary impression of asthma with at least one dose of a beta-agonist documented.



---

---

---

---

---

---

---

---

RESULTS

Proportion of children with a primary impression of asthma AND an SpO2 < 90% with at least one dose of a beta-agonist documented.

4,336 / 6,202  
69.9% (95%CI 68.8 to 71.1%)

---

---

---

---

---

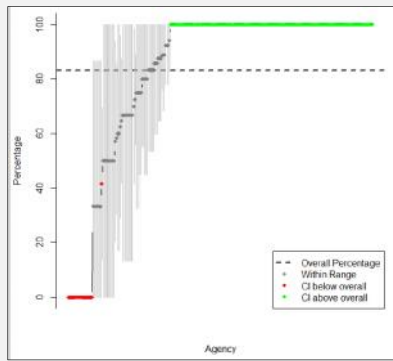
---

---

---

Results

Proportion of children with a primary impression of asthma AND an SpO2 < 90% with at least one dose of a beta-agonist documented.



---

---

---

---

---

---

---

---

DISCUSSION

- Current performance on pediatric EMS Compass measures is unknown.
- We provide first estimates on real-world performance.
- Performance varied with agency
- Improvement is needed on these measures
- Common "metric-centric" documentation standard could help documentation better reflect presumed actual performance
- Impression of Asthma alone may need to be more specific.

---

---

---

---

---

---

---

---

LIMITATIONS

- Retrospective electronic chart audit
- No common documentation standard
- Documentation not done with metrics in mind
- No universal data validation rules
- Patients not getting medication may be different than those that do
- Not all patients with asthma need a beta-agonist

---

---

---

---

---

---

---

---

CONCLUSIONS

- Performance measures can help provide benchmarks
- These results are 'starting point', not 'final word'
- Improvement need in both measures and performance
- Common documentation standards are needed
- ePCR platforms with common data validation rules could improve performance

---

---

---

---

---

---

---

---