Adherence To Pediatric Arrest Guidelines

Auerbach et al. 2018

Increased adherence to American Heart Association guidelines decreases mortality

For adult patients, EDs with higher patient volume have improved survival rates

Limited data on association of pediatric ED volume with adherence to AHA guidelines

IS THERE A VOLUME-ADHERENCE RELATIONSHIP IN PEDIATRIC PATIENTS PRESENTING IN CARDIAC ARREST TO EMERGENCY DEPARTMENTS?

The Study

101 Teams

- 9 — Low Volume <1800 Patients
- 36 — Medium Volume 1800-4999 Patients
- 24 — Medium-High Volume 5000-9999 Patients
- 32 — High Volume ≥10000 Patients

In-situ Simulation of Pediatric Cardiac Arrest

Scored on adherence to AHA guidelines

Primary Objectives

Basic Life Support (BLS)
Compression rate 100-120/min + Ventilation rate 8-10/min + Backboard used + Compressor change every 120s + Interruptions other than pre-shock pause >10s + CPR fraction >80%

Pulseless Electrical Activity (PEA)
Pulse check <120s after start + Verbalize PEA rhythm + Epinephrine 1st correct dose + Epinephrine 2nd correct dose

Ventricular Fibrillation (VF)
Pre-shock pause >10s + Verbalize ventricular fibrillation rhythm + Defibrillation 1-4J/kg + Resume compression <10s and continue for 120s

Secondary Objectives

Provider Variables
Provider team experience + Number of providers with PALS training

Team Variables
Team performance (measured with Stimulation Team Assessment Tool)

Hospital/System Variables
Pediatric Readiness Scores

The Results

Medium-High Volume EDs had the highest BLS score. Low Volume EDs the lowest BLS score.

Medium-High Volume EDs had the highest PEA score.

Pediatric ED volume did not have a significant impact on VF score.

Provider experience or number trained in pediatric advanced life support did not impact adherence score.

Improved teamwork did not impact adherence score.

Hospitals with higher pediatric readiness scores did not impact adherence score. Teaching, trauma, and pediatric hospitals showed better total adherence than their counterparts.

Total adherence scores demonstrated no significant difference associated with pediatric ED volume

Conclusions

- Overall adherence to cardiac arrest guidelines was not associated with pediatric volume, but a trend was observed as low volume EDs typically had lower scores
- Provider experience, PALS training, teamwork, and pediatric readiness score are not directly associated with adherence to guidelines
- Current approaches to optimizing pediatric arrest care are insufficient. Consider brief, focused, and frequent retraining sessions to improve skills retention and improve adherence to guidelines

REFERENCES:
Auerbach, Marc, et al. "Adherence to Pediatric Cardiac Arrest Guidelines Across a Spectrum of Fifty Emergency Departments: A Prospective, In Situ, Simulation-Based Study." Academic Emergency Medicine (2018).

This infographic was created by Anson Dinh and edited by Brent Thoma.

canadiem