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

**In-situ Simulation of Pediatric Cardiac Arrest**

- **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%
  - Pulse check: <120s after start + Verbalize PEA rhythm + Epinephrine 1st correct dose

- **Pulseless Electrical Activity (PEA):**
  - Pre-shock pause: >10s + Verbalize ventricular fibrillation rhythm + Defibrillation: 1-4J/kg + Resume compression: <10s and continue for 120s

- **Ventricular Fibrillation (VF):**
  - Provider team experience + Number of providers with PALS training

- **Team performance (measured with Stimulation Team Assessment Tool)**

- **Pediatric Readiness Scores**

Primary Objectives:

- Medium-High Volume EDs had the highest BLS score.
- Medium-High Volume EDs had the highest PEA score.
- Infant ED volume did not have a significant impact on VF score.

Secondary Objectives:

- 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.

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:**


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