PEDIATRIC EMERGENCY CLINICIANS ARE RARELY EXPOSED TO NON-AIRWAY CRITICAL PROCEDURES

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Background

- Pediatric emergency physicians have low exposure to critically ill children.1,2
- This low exposure has led to concerns regarding maintenance of critical airway and non-airway procedural skills.3,4
- Endotracheal intubation – by far the most common critical procedure - occurs approximately once per 1,000 paediatric ED presentations in large tertiary centers.5 Rates of non-airway critical procedures are presumably much lower, however, accurate data on their frequency is lacking.
- It is unknown how often critical non-airway procedures such as chest decompression, CPR, ED thoracotomy, defibrillation, pacing, and advanced vascular access techniques are performed by pediatric emergency clinicians.

Objectives

- To determine the recent performance or supervision, and confidence for various pediatric critical non-airway procedures by senior pediatric emergency clinicians.

Methods

The PERN Critical Procedures Survey

Multicenter cross-sectional survey of senior pediatric emergency clinicians working in 101 emergency departments affiliated with the Pediatric Emergency Research Network (PERN) between August 2015 and July 2016.
- Each of the six networks contributing to PERN had at least one study investigator, who invited hospitals within their network to participate in the study.
- Information about the study and an invitation to participate was emailed to a nominated researcher at each hospital. If the site was able to participate, the researcher distributed a “clinician survey” to eligible staff at their hospital.

Inclusion criteria

- Doctors who would be considered to be working in a supervisory / “senior” capacity in the ED at any time during their usual working week.
  - All attending / specialist staff
  - Trainees / residents working night shift without more senior supervision.

Survey content

- Demographics, Training experience, Hours of work
- Current clinical exposure to pediatric emergency medicine practice
- Most recent performance or supervision of non-airway critical procedures.
  - <3 months, <6 months, <12 months (less than one year), <5 years, more than 5 years, never.
- Procedural confidence for non-airway critical procedures.
  - 5-point Likert scale (1=not at all confident, 3=somewhat confident, 5=confident)

Survey distribution

- Initial email, then weekly reminders for two weeks.

Results

The survey was distributed to 2446 clinicians at 101 hospitals.
- 1602 (65%) completed at least demographic details.
- 1503 (61%) provided information on suggested frequency of practice and preferred learning modalities for the listed critical procedures.

Response rate by region

- Australia / New Zealand: 184/283 (65%)
- England / Northern Ireland / Scotland / Wales: 407/573 (71%)
- United States of America: 613/1062 (58%)
- Canada: 151/253 (60%)
- Europe: 114/195 (58%)
- South America: 34/80 (43%)
- Overall: 1503/2446 (61%)

Demographic details

- 55% female
- Specialist qualifications: 38% Pediatrics and PEM; 16% Pediatrics alone; 10% Emergency Medicine alone; 15% no specialist qualification; 5% PEM alone
- Median of 25 (IQR 12-32) clinical hours per week
- 53% worked in PEM 100% of clinical hours

Conclusion

- Intraosseous line and CPR are the most frequently performed non-airway critical procedures in children, with more than half of the pediatric emergency clinicians surveyed performing these skills within the last 12 months.
- Procedural confidence is higher for more frequently-performed procedures, while less common procedures are associated with less procedural confidence.
- Procedural confidence appears to increase with age of the child for central lines and arterial lines.

References