Paediatric emergency clinicians are rarely exposed to non-airway critical procedures. A PREDICT/PERN study.

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Background Recent studies suggest that approximately one per thousand paediatric ED attendances may require some sort of critical procedure, with intubation being by far the most common. 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 paediatric emergency clinicians.

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

Design/methods Web based survey of senior paediatric emergency clinicians regarding performance, supervision, and confidence relating to critical non-airway procedures in children aged 0–18 years. The survey was distributed through Paediatric Emergency Research Networks (PERN) in the UK and Ireland, USA, Canada, Europe, South America, Australia and New Zealand.

Results 1602 clinicians responded to the survey, with an overall response rate of 65%. 1508 (94%) respondents reported their most recent non-airway procedural experience. In the last 12 months, 979 (64%) had personally inserted an intraosseous line, 283 (19%) a central venous line, and 265 (18%) an arterial line. In the same time period, 962 (64%) had performed CPR, 190 (13%) had performed needle thoracostomy, 245 (16%) had performed tube thoracostomy, 380 (25%) had performed DC cardioversion or defibrillation, and 57 (4%) had performed transcutaneous pacing. 18 (1%) had performed pericardiocentesis, 19 (1%) a venous cutdown, and 21 (1%) ED thoracotomy.

More than 70% of respondents had never supervised or performed pacing, pericardiocentesis, venous cutdown or ED thoracotomy. 332 (22%) and 348 (23%) had never performed or supervised insertion of a central venous line or arterial line respectively.

Procedural confidence for intraosseous lines and CPR was high, while confidence increased with increasing patient age for central venous access and arterial lines. ED thoracotomy, pericardiocentesis and venous cutdown had the lowest frequency of respondents reporting confidence in performing the procedure.

Conclusions More than half of the paediatric emergency clinicians surveyed had performed CPR and inserted an intraosseous needle within the last 12 months. Performance of other non-airway critical procedures was less common, and associated with less procedural confidence.