

BACKGROUND

- Pediatric Emergency Medicine (PEM) fellows must learn to perform a large number and variety of procedures during fellowship training
- Previous studies have shown trainees do not gain experience in all procedures listed on ACGME program requirements
- Programs do not utilize a standardized method for tracking procedural experience
- Current methods for tracking trainee procedural experience include
 - Procedure logs maintained by trainees
 - Data extraction from Electronic Medical Record (EMR)
- How comprehensive and accurate methods for trainee procedural tracking remain unclear

PURPOSE

- To describe the number and types of procedures fellows experience at U.S. based PEM fellowship programs
- To describe current methods utilized by PEM fellowship programs to document fellows' procedural experiences
- To explore standardization of procedural documentation for PEM fellows across institutions

METHODS

Study Design Retrospective descriptive study 2017-2020

Study Setting US-based PEM fellowship programs

Inclusion Criteria ACGME-accredited PEM fellowship programs who attained IRB approval at their institutions to participate in this study

Data Collection and Analysis

- Electronic surveys completed by fellowship program directors/site principal investigators to provide
 - Program and fellow demographic data
 - Fellows' procedural experiences
 - Method utilized to track fellow procedural experience
- Procedural data from all programs analyzed to categorize procedural experiences and to standardize descriptions of documented procedures

Outcomes Measures

- Types of procedures that fellows/programs report as being experienced by fellows during this period
- Number of procedures documented by fellows or obtained from EMR
- Methods programs are utilizing to track fellows' procedural experience

RESULTS

Table 1. Fellow Demographics

Demographic		Percentage of Respondents
Gender	Male	29%
	Female	71%
Ethnicity	Hispanic/Latino	8%
	American Indian/Alaskan Native	0%
	Asian	16%
	Black/African American	9%
	Native Hawaiian/Pacific Islander	0%
	White/Caucasian	67%
Residency specialty	Pediatrics	98%
	Emergency Medicine	1%
Year of training	First	33%
	Second	33%
	Third	33%

Table 2. Program Demographics

Sample size		Total
Number of participating sites		10
Number of fellows		93
Number of clinical hours		Mean
First Year		869
Second Year		868
Third Year		805
Demographic		Percentage of Respondents
ED location	Free-standing children's hospital	80%
	Pediatric ward in general hospital	20%
Annual patient volume in thousands	25-60	30%
	50-75	50%
	75-100	10%
	>100	10%
	3 years	50%
Length of program	Both 2- and 3-year tracks	50%
	Self report	90%
Current method of logging	Both self report and EMR	10%
	Required to log procedures	80%
Requirements and assessments	Required to log non-PEM procedures	100%
	Required to log simulations	80%
	Procedure assessments	50%

Table 3. Number of Procedures via Self-Report & EMR

Procedure	Self-Report		EMR	
	Median	(Range)	Median	(Range)
Intubation	30	(0-96)	8	(0-24)
Laceration Repair	27	(0-130)	49	(9-145)
Procedural Sedation	23	(0-151)	63	(13-116)
Pediatric Medical and Trauma Resuscitation	17	(0-246)	1	(0-41)
Lumbar Puncture	10	(0-119)	12	(1-33)
Artificial Ventilation	9	(0-86)	0	(0-5)
Vascular Access	7	(0-76)	0	(0-4)
Incision & Drainage	4	(0-70)	5	(0-14)
Regional Anesthesia	4	(0-47)	1	(0-6)
Supraglottic Airway	3	(0-49)	0	(0-5)
Chest Tube Placement/Needle Decompression	2	(0-12)	0	(0-3)
Dislocation Reduction	2	(0-42)	0	(0-37)
Foreign Body Removal	2	(0-39)	4	(0-12)
Splint/Cast	2	(0-129)	2	(0-24)
Gastrostomy Tube Replacement	1	(0-21)	5	(0-21)
Intraosseous Access	1	(0-13)	0	(0-8)
Airway Maneuver	0	(0-38)	0	(0-0)
Cardiac Pacing	0	(0-4)	0	(0-0)
Arthrocentesis	0	(0-14)	0	(0-1)
Cardioversion/Defibrillation	0	(0-9)	0	(0-2)
Cricothyrotomy	0	(0-7)	0	(0-0)
Fracture Reduction	0	(0-22)	0	(0-37)
Reduction NOS	0	(0-13)	6	(0-39)
Management of Thermal/Burn Injuries	0	(0-10)	0	(0-2)
Nasal Packing for Nosebleeds	0	(0-2)	0	(0-0)
Ophthalmologic Procedure	0	(0-20)	0	(0-9)
Other	0	(0-88)	0	(0-19)
Point of Care Ultrasound	0	(0-164)	0	(0-1)
Tracheostomy Tube Replacement	0	(0-3)	0	(0-0)
Vaginal Delivery	0	(0-12)	0	(0-0)



Fig 1. Locations of Participating Sites



CONCLUSIONS

- Participating programs represented all geographic regions within the US and the number of fellows at each ranged from 6-18
- Frequency of procedures PEM fellows experience during fellowship training were described
 - Procedures experienced with high frequency include intubation, laceration repair, resuscitation, and procedural sedation
 - Procedures not experienced or experienced at low frequencies include cardiac pacing, pericardiocentesis, and vaginal delivery
- How programs track and describe fellows' procedural experiences varied widely
- Some programs document simulated procedures as procedures experienced by fellows
- Two programs extracted fellows' procedural experiences from the EMR

LIMITATIONS

- Limited sample size but participating sites represent diverse geographic locations and program sizes
- Self-reported procedure logs rely on trainees to keep track of their procedures and may not accurately reflect their actual procedural experiences
- Issues related to data extraction from the EMR include potential for missed procedures or incomplete documentation
- Number of procedures performed does not always correlate with procedural competency; competency assessment data was not collected in this study

REFERENCES

- Al-Eissa, M. et. al. Self-reported experience and competence in core procedures among Canadian emergency medicine fellowship trainees. *CJEM*. 2008;10(6):533-8.
- ACGME Program Requirements for Graduate Medical Education in Pediatric Emergency Medicine (Subspecialty of Emergency Medicine or Pediatrics). ACGME. Feb 2019.