

The First Ten Minutes: Emergency Preparedness in the Outpatient Pediatric Office

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BACKGROUND

Simulation-based training of medical trainees is an evolving tool with widespread implementation in the inpatient and critical care settings. Despite the relatively few pediatric emergencies in the outpatient setting, it is critical that providers are competent at managing these patients and appropriately escalating care (1).

There is limited literature reviewing outpatient pediatric emergency preparedness. One survey of pediatric faculty in a metropolitan area suggested an overall lack of comfort with various facets of emergency management, including use of equipment and awareness of policy guidelines (2). Targeted educational curriculum was developed and successfully established at Wake Forest School of Medicine (3). This curriculum served as a starting point in the development of our clinical scenarios.

OBJECTIVE

We used low fidelity simulation of 8 pediatric scenarios to prepare our trainees to triage children in need of acute care and/or begin treatment or escalate care.

METHODS

- Simulated cases were presented 1-2 times monthly to junior residents and students during the acute care rotation in the general pediatrics office.
- Trainees engaged in the scenarios and senior residents on the 'Teach' rotation provided the debrief and instruction.
- Pre- and post-simulation surveys were used to assess comfort level in management of the scenarios and the use of equipment available in a primary office setting.
- The anonymous survey contained questions with 5 different comfort levels ranging from extremely uncomfortable to extremely comfortable for each case scenario.
- Comfort in participation, leadership, teamwork and feedback was also measured.
- Data was collected via Qualtrics survey tool.
- Aggregate results from pre- and post-simulation surveys were compared.

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RESULTS

Completed scenarios covered lower respiratory tract illness, upper respiratory tract illness, febrile seizure, anaphylaxis, mental status change, and severe dehydration. Thirty-three participants completed the pre-survey, and 18 participants completed the post-survey, with similar distribution of educational levels in both groups (Table 1). Only 6 participants completed both surveys. Prior to their participation, more than half (51.5%) of the trainees had no exposure to emergency scenarios in the outpatient setting. There were improvements in the percentage of trainees reporting feeling somewhat/extremely comfortable managing the following scenarios: lower respiratory tract illness, febrile seizure, mental status change, and severe dehydration. (Table 2). There were improvements in related clinical skills: administering oxygen, positioning a seizing child, giving intramuscular epinephrine, and giving Narcan. (Table 3). Comfort with participation in scenarios increased from 45.5% to 77.8%; similarly, comfort in receiving feedback rose from 84.8% to 94.4%. When surveyed after, all the participants (100%) were somewhat or very comfortable with the scenario that they had participated in and 75% reported comfort with the associated clinical skill.

Table 1: Educational levels of simulation scenario participants

	Participants in pre-survey, % (n)	Participants in post-survey, % (n)
Medical student	9.1% (3)	22.2% (4)
PGY-1 resident	60.6% (20)	55.6% (10)
PGY-2 resident	30.3% (10)	22.2% (4)
Total	100.0% (33)	100.0% (18)

Table 2: Percentage of participants reporting feeling somewhat or extremely comfortable with managing clinical scenarios, pre- vs post- simulation session

	Pre-simulation, % (n) Total n = 33	Post-simulation, % (n) Total n = 18
Lower airway	72.7% (24)	77.8.0% (14)
Upper airway	60.6% (20)	55.6% (10)
Febrile seizure	39.4% (13)	55.6% (10)
Anaphylaxis	39.4% (13)	38.9% (7)
Mental status change	18.2% (6)	44.4% (8)
Severe dehydration	48.5% (16)	50.0% (9)

Table 3: Percentage of participants reporting feeling somewhat or extremely comfortable with related clinical skills, pre- vs post- simulation session

	Pre-simulation, % (n) Total n = 33	Post-simulation, % (n) Total n = 18
Giving oxygen through cannula or mask	63.6% (21)	72.2% (13)
Positioning a child who is seizing	42.4% (14)	55.6% (10)
Giving an IM injection of epinephrine	36.4% (12)	66.7% (12)
Administering Narcan	33.3% (11)	38.9% (7)
Giving an albuterol treatment	66.7% (22)	66.7% (12)
Giving positive pressure ventilation	24.2% (8)	22.2% (4)

DISCUSSION

Preparing pediatric providers to be able to triage and manage acute emergencies in their office is important for the safety of patients. A recent study measuring adherence to the American Academy of Pediatrics guidelines for office preparedness demonstrated that there is ample room to improve in most settings, particularly those in smaller offices (4). Our project attempts to augment the knowledge and skills of trainees before they go into the office setting. Learners did become more comfortable with emergency scenarios and the equipment found in outpatient offices, especially as they correlated to the scenario that they had participated in. Data-gathering is on-going and we hope to do a full statistical analysis as we make progress. Anecdotally, we have received positive feedback from the trainees as they participate in the learning sessions. After participating, most also demonstrated comfort in the act of participation, as well as comfort in asking for help when needed, and receiving feedback, all of which we hope will contribute to greater teamwork in the clinical setting. With enhanced knowledge, skill and teamwork, providers in pediatric offices will better be able to care for acutely ill or injured children.

REFERENCES

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