Posters

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Ultrasound Guided Peripheral IV Access Curriculum for the Pediatric Emergency Department: A Pilot Study.

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Background

Up to 50% of children have difficult venous access. Studies in the pediatric emergency department (PED) have shown that ultrasound guided peripheral IV (USGPIV) access has decreased IV access time and ED length of stay. Barriers for use include lack of training and comfort with the procedure.

Objectives

Pilot and evaluate USGPIV training for Pediatric Emergency Medicine (PEM) physicians and nurses.

Methods

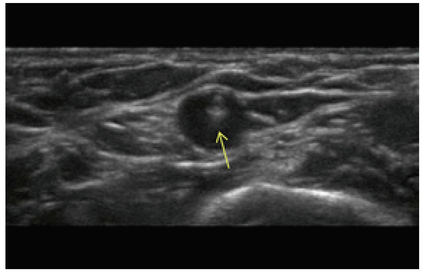
The 4-hour, course included:

- Hands-on session USGPIV training
- Used blue phantom task trainer
- Instruction with the Vascular Access Team (VAT) for PEM physicians and nurses.
- Background data collection included discipline, prior IV or ultrasound experience.

Evaluation methods included:

- Participants' skills were accessed in 2 ways:
  - 1. Consensus-based stepwise checklist (345-460 Excellent, 230-344 Good, 229-116 Fair, 0-115 Poor)
  - 2. Global assessment of performance (1=Novice to 5= Expert).
- Participant confidence was collected pre and post 3 months after training.
- Pre-post confidence mean scores were compared using a paired t-test (p value of <.05).
- Course questions included Good use of time, recommended to colleagues, and if it would be utilized in future practice.

Blue Phantom USGPIV Trainer



Needle tip (arrow) in vessel on transverse orientation

Results

23 providers trained, 65% PEM physicians, 35% nurses.

•Skills; Table 1: participants scored an excellent rating (mean of 439), global ratings frequently indicated competent trainees.
•Confidence; Table 2: The increase in self-reported confidence in USGPIV placement post training was statistically significant ($p < 0.0003$). Three months post confidence in skills significantly decreased.
•Course questions; Table 3: Learners recommend training to other providers, thought it was a good use of their time, and agreed they would utilize USGPIV in the ED.

Table 1	Objective scoring	Global
	439 (18) Excellent Rating	2.04; Competent
Excellent/Expert	23	0
Good/Proficient	0	4
Fair/Competent	0	16
Poor/Novice	0	3

Table 1: Composite Skills Checklist Mean scoring (SD). Objective: 345-460 Excellent, 230-344 Good, 229-116 Fair, 0-115 Poor Global: 1=Novice, 4=Expert

Results (continued)

Table 2	Pre	Post	p value Paired t-test	3-month Post test	p value Paired t-test
Perceived Confidence	1.47 (1.03)	3.86 (0.62)	<0.0003	2.81 (0.76)	<0.01

Table 2: Composite Self-assessment of Mean scores Pre, Post and 3- month Post Intervention (SD. Perceived Confidence in USGPIV (1=Not Very Confident, 5=Very Confident)

Table 3	Mean	SD
Any Ultrasound Experience?	1.81	0.71
Any Peripheral IV Experience?	2.86	1.22
Frequency of USGPIV use?	1.13	0.34
Would you utilize USGPIV in your future practice?	4.68	0.46
Was the training a good use of your time?	4.15	0.59
Was the training an appropriate coverage of material?	4.63	0.48
Would you recommend the training?	4.95	0.21

Table 3: Experience and Course Survey Questions. All Questions answered with 5-point Likert scale (eg; 1=Novice-5=Expert, 1=Definitely would not recommend-5=Definitely would recommend)

Conclusion

The training to date has shown acceptability, perceived increase in confidence, and excellent scores on training evaluations. Confidence decreased 3 months post training. Future steps include utilizing USGPIV to decrease time to IV access in difficult access patients.

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