

Conclusion: In our prospective observational study, US significantly reduced time to confirmation of correct CVL placement. In addition, there was no significant difference in complication assessment when compared with standard CXR. We question if the routine use of CXR is necessary to confirm placement of CVLs.

Comparison	Mean Difference	P-Value	95% Confidence Interval (CI)
POCUS vs CXR capture	49 minutes	p<0.001	32.9-65.1
POCUS vs CXR confirmation	93 minutes	p<0.001	73.3-112.4

Image/Table 1

63 Low-Cost, Reusable, Three-Dimensional-Printed Phantoms for Resident Training in Ultrasound-Guided IV Access

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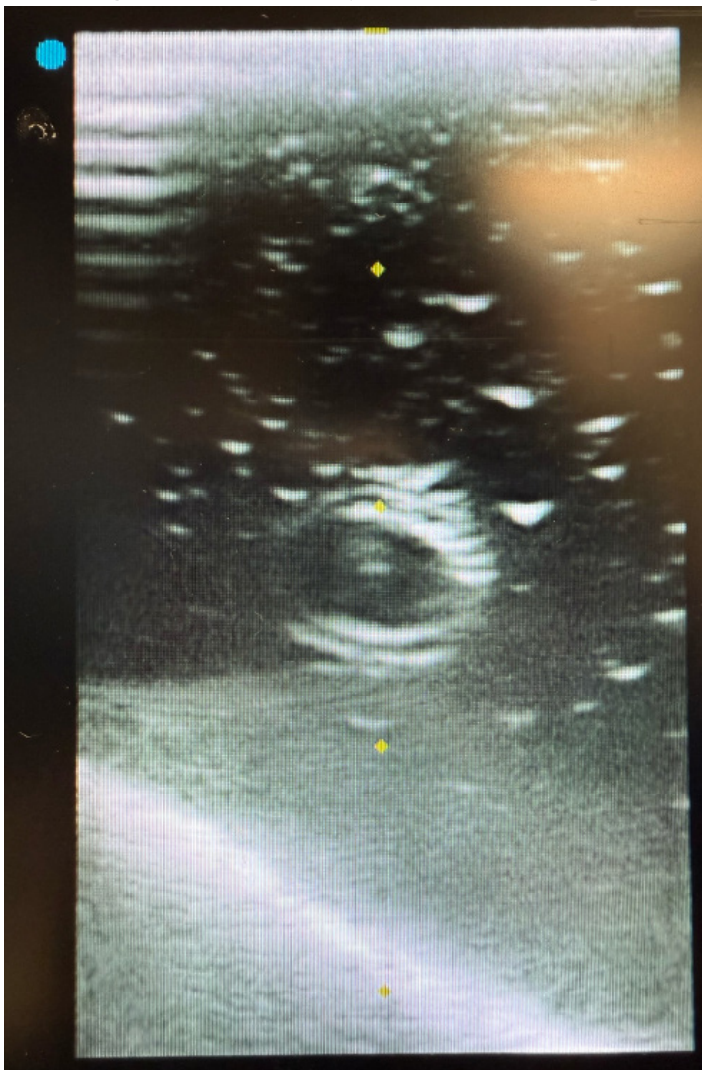
Background: Commercially available simulation phantoms

are prohibitively expensive and unaffordable for most training programs. Low-cost, reusable, three-dimensional (3D)-printed simulation models may bridge this gap by enabling learners to practice performing ultrasound (US)-guided procedures.

Objectives: This study evaluated the feasibility and educational value of a 3D-printed US-guided peripheral intravenous (PIV) simulation model for point-of-care ultrasound (POCUS) education.

Methods: Emergency medicine (EM) residents received a demonstration on model use and performed a single US-guided PIV insertion attempt on the 3D-printed phantom. US trained faculty observed and graded residents on several performance metrics. Time to completion was recorded, and residents then completed a survey assessing ease of use, realism, and confidence improvement.

Results: A total of 20 EM residents tested this model. 18 residents (90%; 95% CI 68–98) completed the procedure within 2 minutes and 19 residents (95%; 95% CI 75–99) achieved successful cannulation. The median procedure time was 52 seconds. Residents rated the phantom positively. Anatomic realism received a mean score of 8.01 on a 10 cm likert scale (95% CI 7.23–8.79). US image quality was rated 8.84 (95% CI 8.25–9.42). The phantom’s impact on improved



procedural confidence averaged 8.65 (95% CI 7.97–9.33). The model was low-cost and highly usable. The 3D-printed mold costs approximately \$35 to make. Based on materials used, we expect it to allow indefinite reuse. The estimated cost of materials per model was \$7.11. Each model can be used at least 32 times before degradation of image quality.

Conclusion: This low-cost, reusable 3D-printed ultrasound-guided PIV phantom was effective, realistic, and feasible for resident training. The high success rate and short procedure times suggest that affordable 3D-printed models can provide a sustainable alternative to commercial simulators, expanding access to PIV training across diverse educational settings.

64 Empowering Residents: A Learner-Driven Workshop to Enhance Feedback Engagement in Emergency Medicine

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Objectives: Feedback is fundamental to Emergency Medicine (EM) education; however, residents frequently encounter obstacles when attempting to obtain and implement it. Learner-driven feedback strategies may improve feedback culture but approaches to promote feedback literacy are underexplored. We developed and evaluated a workshop to prepare EM residents to actively engage in the feedback process.

Methods: A prospective pre-post survey was conducted at a single academic EM residency. PGY1–PGY3 residents attended a workshop covering clarifying expectations, goal setting, and receiving feedback. Residents completed pre- and post-surveys using a 5-point Likert scale to assess comfort. Knowledge retention was assessed one week with a 15 question assessment. Pre and post-surveys were evaluated by paired t-test analysis.

Results: Thirty-one residents completed the pre-survey, and 30 completed both the post-survey and the knowledge assessment. Statistically significant improvements were observed in: clarifying expectations ($\Delta = 0.67$; $p < 0.001$), creating SMART goals ($\Delta = 0.90$; $p < 0.001$), comfort receiving feedback ($\Delta = 0.33$; $P = 0.01$), seeking feedback ($\Delta = 0.40$; $p = 0.02$), creating feedback action plans ($\Delta = 1.70$; $P < 0.001$), reflecting on and implementing feedback ($\Delta = 0.40$; $p < 0.001$), and recognizing feedback as the learner’s responsibility ($\Delta = 0.53$; $p = 0.002$) (Table 1). Perceptions of feedback’s importance and impact on patient care remained high and unchanged (Table 1). Knowledge retention averaged 91.1%, with highest scores in Expectations and SMART Goals (96.7%) and lowest in Feedback domains (81.1%) (Table 2).

Conclusion: A structured workshop significantly improved EM residents’ comfort, knowledge, and skills in engaging with feedback. Early introduction of learner-driven

strategies may strengthen feedback culture and support professional development. Further research is needed to assess long-term retention, clinical application, and the role of faculty development.

Table 1. Pre- and post-workshop survey scores by item (N = 30, 1- Strongly Disagree to 5- Strongly Agree).

Survey Item	Pre Mean (SD)	Post Mean (SD)	Δ (Post-Pre)	t	p-value
Clarify expectations from feedback	3.87 (0.68)	4.53 (0.51)	+0.67	-5.53	< 0.001 *
Define SMART goals	3.80 (0.71)	4.70 (0.47)	+0.90	-6.92	< 0.001 *
Open to receiving constructive feedback	3.03 (1.16)	3.27 (1.36)	+0.23	-1.19	0.243
Comfortable asking for feedback	4.00 (0.64)	4.33 (0.55)	+0.33	-2.76	0.010 *
Proactively seeks feedback	3.77 (0.94)	4.17 (0.59)	+0.40	-2.56	0.016 *
Uses a feedback plan	2.83 (0.87)	4.53 (0.57)	+1.70	-9.43	< 0.001 *
Reflects and applies feedback	4.13 (0.57)	4.53 (0.51)	+0.40	-3.89	< 0.001 *
Feedback supports professional growth	4.60 (0.56)	4.80 (0.41)	+0.20	-1.99	0.056
Feedback improves patient care	4.67 (0.48)	4.80 (0.41)	+0.13	-1.68	0.103
Learners are responsible for feedback	3.77 (0.82)	4.30 (0.65)	+0.53	-3.40	0.002 *

* meets statistical significance with P-value < 0.05

Table 2. Mean percent quiz accuracy by feedback domain and postgraduate year (3 questions per domain, N=30).

PGY Level	Expectations	SMART Goals	Feedback Plan
PGY-1	100.0%	100.0%	83.3%
PGY-2	100.0%	97.2%	80.6%
PGY-3	87.5%	91.7%	79.2%
Overall	96.7%	96.7%	81.1%

65 Anticipating Change: Local Attitudes Towards a New Community Emergency Medicine Residency Program

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Background: Indiana University School of Medicine will launch a new emergency medicine residency program at Indiana University Health Bloomington (IUH-B) in 2026. No prior work has examined community perceptions of emergency medicine residency implementation in a community hospital.

Objectives: To assess community members’ awareness, attitudes, and concerns regarding the introduction of emergency medicine (EM) residents at IUH-B, and to evaluate prior experience with resident physicians, perceptions of forthcoming residents, and understanding of resident training.

Methods: This cross-sectional observational study used a concurrent convergent mixed-methods design. A convenience sample of structured surveys and semi-structured interviews was conducted with adult patients and caregivers receiving