3-D printing can create high fidelity models for use in simulation. As pediatric lumbar puncture (LP) guidelines have changed, there have been less opportunities for training in a clinical environment. 3-D models can be utilized to assess learner skill and confidence with high acuity procedures.

Objectives: To assess learner confidence and competence using a 3-D printed model for pediatric LP.

Methods: Design: Pilot study Setting: A Midwest level 1 trauma center Participants/Subjects: 28 EM residents, 2 physician assistant (PA) EM residents, 30 family medicine (FM) residents and 4 PA FM residents Intervention: Pediatric LP models were created using an open access model. A 3-hour workshop began with a presentation followed by practice on the models before completing a scenario with a previously validated checklist with dichotomous scoring. The learners completed pre/post surveys assessing the models and procedural confidence.

Results: 23 learners completed the survey, and 32 learners completed the workshop. Learners who participated in the survey were well distributed by year and program. Upon workshop completion, 100% of learners achieved the minimum passing score (85%) for the checklist. After the workshop, resident confidence in positioning, preparation, and performance improved (Table 1). Most (95.6%) felt the model was beneficial.

Conclusion: The 3-D printed model is beneficial for teaching pediatric LP to resident trainees. Our limitations include small sample size and single evaluator for the final testing.

Figure.

Table.

	Pre-Test Score		Post-Test Score		Change in Score	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean	P value
Positioning	2.6 (1.1)	3 (2, 3)	4.0 (0.6)	4 (4, 4)	1.2	<0.0001
Preparation	3.0 (1.4)	3 (2, 4)	3.8 (0.9)	4 (4, 4)	0.8	0.018
Performance	2.1 (1.0)	2 (1, 3)	3.6 (0.7)	4 (3, 4)	1.4	<0.0001
Total	7.9 (3.0)	8 (6, 9)	11.4 (1.7)	12 (10, 12)	3.6	<0.0001

54 Emergency Department Utilization Measured Through Bounce Back Rate is Significantly Higher in Homeless Patients

Sasha Sairajeev, Sameer Desai

Background: The rate of readmission after discharge or bounce back rate can act as a proxy for the efficiency of emergency medical care. The emergency department (ED) is often the only source of healthcare for persons experiencing homelessness (PEH). Discharging PEH with instructions that require stable housing and other resources may result in another visit to the ED. It is important to account for their unique needs in order to provide them with necessary care in the ED.

Objectives: The purpose of this study is to determine whether there is a significant difference between the bounce-back rate of homeless patients in the ED and non-homeless patients.

Methods: To determine how regularly PEH are being readmitted to the ED following discharge, the bounce-back rates of PEH will be compared to non-PEH in this observational retroactive study. Through CCTS, patient data was collected that includes 100 homeless patients and 100 non-homeless patients. CCTS provided access to every chart that has the word “homeless” from 06/05/2021 to 01/01/2023. After confirming which patients were homeless, 100 were randomly selected. If a patient has returned to the ED within 7 or 30 days of another visit, that contributed to the bounce-back rate. The number of patients who have had two ED visits close in time counted towards the bounce-back group in their respective time frames (30-day and 7-day). Using a two-proportion z-test, the bounce back rates (7-day and 30-day) were compared to determine significance.

Results: The homeless sample had a significantly higher 7-day and 30-day bounce-back rate compared to the non-homeless sample ($z=-4.168$, $p<0.0001$).

Conclusions: In this study, the results suggest homeless patients visit the ED more frequently after their initial visit than non-homeless patients. The result of this study call for further research into the care homeless patients receive in the ED and how their unique needs may be better addressed.

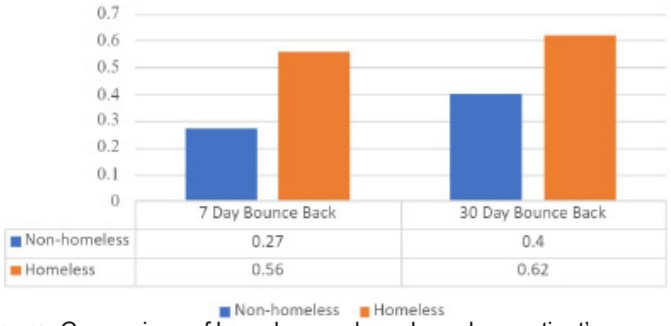

Figure. Comparison of homeless and non homeless patient's bounce back rates.

55 Measurement of the weight of academic performance on the residency interview and ranking

Joel Kravitz, Greg Neyman

Background: Educators agree that no one factor predicts a resident's chance of success in residency and beyond, and academic record is likely the strongest biasing factor in residency selection, though the exact magnitude of its weight is unknown.

Objective: To determine, with respect to medical students applying to residency in emergency medicine, to what degree prior knowledge of the candidate's academic record affects their ranking.

Methods: We undertook a prospective observational study, analyzing ranking scores of all interviewers of applicants to our East Coast academic EM residency program in the 2022-2023 interview cycle. Each applicant underwent 4 separate interviews, but (randomly) one of the three interviewers was blinded to their academic record. Though the applicants were interviewed, it was the interviewers who were the true subjects, and IRB approval was obtained. Applicants were then scored on a ten-point scale and data was stored in a secure database. These scores were then analyzed for inter-observer agreement. A difference of an interview rating score of 10% or greater was considered significant. Data was analyzed using a Student's T-test and Mann-Whitney test to compare data.

Results: 176 interviews were included for analysis. Interview scores between blinded and unblinded interviewers were significant ($p<0.00001$). When the differences were spread out via histogram, the discordances were significant at 1.5 points ($p<0.0001$) and statistically significantly related to percentile scoring on USMLE or COMLEX. The candidates with the highest blind/unblind discordances were associated with more failures in medical school ($p<0.03$)and on standardized exams like the USMLE or COMLEX ($p<0.07$) for poor academic performers.

Conclusions: This data would suggest academic performance accounts for at minimum a 15% jump or drop in rank score when assessing final applicant rank. Expanding this type of study may give insight into both interview biases.

56 Can you do it FAST-ER?: Focused Assessment with Sonography in Trauma Skills During Ultrasound Rotations and the Development of Competency

Gabriel Ceceñas Salas, Jeremiah Ojha, Emily Hillman, Monica Gaddis, Andrew Balk, Kevin O'Rourke, Matthew Cook

Background: The focused assessment with sonography in trauma (FAST) exam is part of trauma evaluation and is sensitive and specific in the identification of free intraperitoneal fluid. Findings can change patient management. EM residents are required by the RRC to complete 150 ultrasound (US) exams to graduate; however, there is no specified number of FAST exams required and no requirement for a dedicated US block. Competency is often assumed based on rotation completion.

Objective: To evaluate FAST exam competency outcomes of our 4-week ED US rotation for EM PGY-1 residents.

Methods: This was a pre-post study at a single institution. We assessed 12 PGY-1 EM residents' FAST exam competency using a previously published, validated objective assessment tool consisting of a task-specific checklist (TSC) and global rating scale (GRS). Residents were assessed during residency orientation, at the beginning, and end of their required 4-week US rotation. Three US fellowship-trained faculty performed the one-on-one assessments. Scores of 18/24 (TSC) and 27/40 (GRS) were used as a measure of competency.

Results: Post-rotation performance had a significant improvement when measured against pre-rotation and baseline scores (figures 1 and 2). A repeated measures ANOVA was used to compare the TSC and GRS scores from orientation, pre-rotation, and post-rotation. There were statistically significant differences in the scores at each measure (TSC: $F=63.169$, $p<0.001$; GRS: $F=38.87$, $p<0.001$). Multiple comparisons with Bonferroni Correction confirmed the significance of each measure (TSC: $p<0.001$; GRS: $p\leq0.002$).

Discussion: All residents had significant improvement in GRS and TSC scores when compared with baseline, and all had improvement in GRS or TSC when comparing pre-US rotation and post-US rotation. This study demonstrated the feasibility of incorporating a FAST exam assessment into an EM residency ultrasound curriculum to evaluate learning outcomes and curricular effectiveness.