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3-D Printed Models for Pediatric Lumbar Puncture: A Useful Tool

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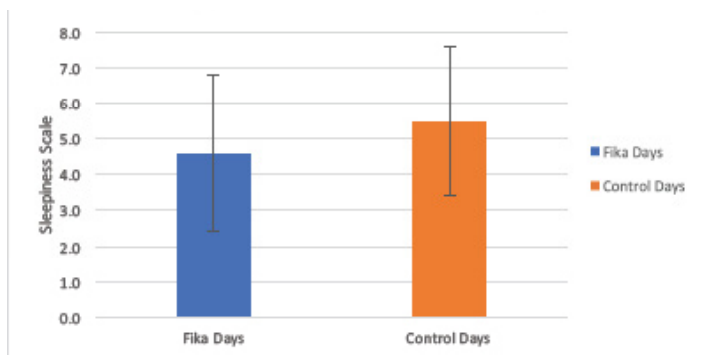


Figure. Sleepiness scale for Fika versus control days.

51 The Current Landscape of Emergency Medicine Resident Scheduling

Brian Walsh, Claire DeLong, Frederick Fiessler, Nicole Riley

Background: The Accreditation Council for Graduate Medical Education (ACGME) and Resident Review Committee (RRC) oversee resident physician work hours with additional specifics for US Emergency Medicine (EM) residency programs. While there are maximum work hours, the regulatory bodies do not describe minimum work hours to achieve competency, leading to variable scheduling practices.

Objectives: This study aimed to understand the current landscape of US EM residency scheduling given the expansion of programs, the evolution of policies, and the increased emphasis on wellness.

Methods: We conducted a cross-sectional study to assess current strategies of US EM residency scheduling. The RedCap survey was sent to all ACGME-accredited EM residency programs across the US via individualized emails between January 10, 2023, and March 15, 2023. Data was combined using Microsoft Excel.

Results: 138 out of 278 (50%) programs responded to the survey. 73.2% of programs were using 13 28-day blocks with the remainder using 12 one-month blocks or reported ‘other’ block scheduling. The number of blocks in the ED increases with each post-graduate year (PGY). For PGY-1 through PGY-3, the most commonly used shift duration was 9 hours. The mean total shifts per ED block and hours worked per ED block are as follows: 19 shifts and 185.1 hours (PGY-1), 18.2 shifts and 173.9 hours (PGY-2), 17.3 shifts and 163.6 hours (PGY-3), 14.8 shifts and 157.2 hours (PGY-4). Programs provide a median of 4 weeks of vacation per year of residency.

Conclusions: Given the expansion of US EM residency programs, we reevaluated the landscape of resident scheduling. We described scheduling patterns related to night shifts, vacations, requested time off, conference coverage, charting time, and circadian rhythms. Programs should utilize this data as a starting point for setting a clinical experience for their residents.

52 Pre-exposure prophylaxis provided in the Emergency Department: Physician Perspectives

Sarah Guess, Ava Roth, Mirinda Gormley, Prerana Roth, Alain H. Litwin, Jessica Hobbs, Moonseong Heo, Phillip Moschella

Background: While 38% of the population lives in the South, the area disproportionately accounts for 52% of new HIV diagnoses in the US. Effective Pre-Exposure Prophylaxis (PrEP) can reduce HIV transmission by more than 90%.

Objectives: The objective of this study was to assess emergency medicine (EM) clinician knowledge regarding PrEP prescription, as well as willingness to initiate care in the emergency department (ED).

Methods: Individuals were eligible for this IRB-approved survey if they were an EM physician or advanced practice clinician (APC) currently practicing at a Southern academic ED. Participants were asked to complete a survey assessing knowledge of HIV prevention, PrEP prescribing practices, and attitudes towards PrEP prescribing in the ED. Survey was available throughout August 2023. Descriptive statistics described the survey responses.

Results: Fifty-six EM clinicians participated for a response rate of 25.0%. Just under three-quarters (73.2%) correctly identified all methods of HIV prevention. Nearly a quarter (23.2%) of clinicians reported not prescribing PrEP because they felt they lacked medication knowledge or familiarity, while 5 stated PrEP should be handled by primary care. Whereas 52 felt that PrEP could be integrated in the ED, 54 mentioned a potential barrier to implementation. The most common barrier to integrating PrEP into the ED was a lack of information/training, while additional barriers included time and staff constraints.

Conclusion: Despite recognition of the utility of prescribing PrEP in the ED, clinicians identified multiple barriers to providing this essential component of healthcare. Responses indicate that systems in place are not well known, nor being fully utilized. Primary barriers to prescribing PrEP appear to be educational, including medication knowledge and screening. These results indicate that EM clinicians would be willing to prescribe PrEP with appropriate education and connection to care for patients.

53 3-D Printed Models for Pediatric Lumbar Puncture: A Useful Tool

Matt Traxler, Kaila Pomeranz, Yinghui Xu, Alexandra Murra, Kate DuChene Hanrahan

Background: Simulation allows for teaching and evaluating procedures in low-risk, controlled environments.

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.

Table.	Pre-Test Score		Post-Test Score		Change in Score	P value
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)		
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	0.016
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.