

Lateral Canthotomy and Inferior Cantholysis (LCIC), if performed within two hours of injury, leads to the highest chance of visual preservation. OCS has an incidence of 0.4%-0.65% in patients with orbital fractures. Due to the rare incidence, up to 90% of emergency physicians do not feel confident managing OCS. Simulated training is often the only way that providers gain procedural competency on rare procedures such as LCIC. Although some providers have access to cadaveric models, they are frequently not feasible or cost-effective. Previous low-cost trainers do not have feedback indicating successful cantholysis or have prolonged assembly time.

Objective: We propose a reusable, low-cost 3D printed device to train providers performing LCIC. We hypothesize that performing simulated LCIC will improve provider comfort in performing LCIC.

Methods: An observational prospective pre and post survey using a six point Likert scale from strongly agree to strongly disagree was conducted from March to September 2022 in the medical office building of a level II trauma center. A convenience sample of 32 medical students, residents, and physician assistant fellows viewed an instructional simulator set-up video, assembled the model themselves, and performed the simulated LCIC in addition to the surveys.

Results: 53% strongly agreed and 40% agreed the model was easy to set up and use while none disagreed. 78% agreed or strongly agreed they were comfortable performing LCIC following simulation compared to 43% prior to the simulation. 88% of those who had previously performed the procedure agreed or strongly agreed it was an adequate simulation of a true LCIC.

Conclusions: This model enhances provider comfort and skill at a low cost with rapid set up compared to high fidelity or cadaveric simulations.

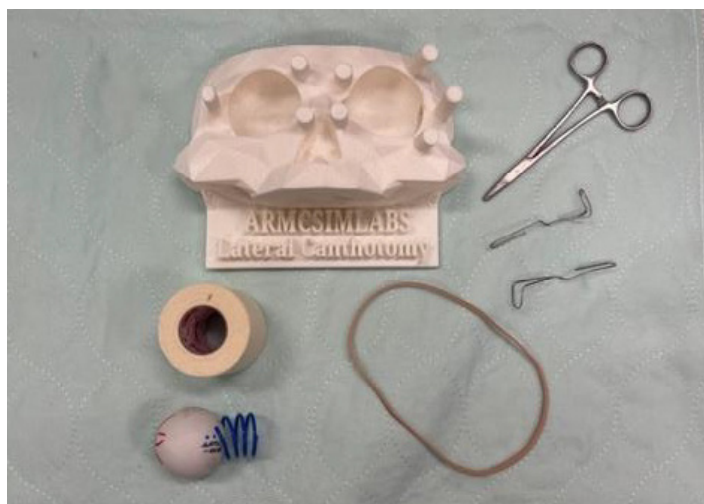


Figure.

27 Heart Rate and Variability as Indicators of Stress in Emergency Medicine Faculty and Residents During Simulation

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Background: The emergency department (ED) is a stressful clinical environment. Stress activates the sympathetic nervous system, which leads to physiologic responses such as increase in heart rate and heart rate variability. Studies have shown a relationship between heart rate variability (HRV) and cognitive performance. As a training tool, simulation attempts to mimic real world conditions including the reproduction of physiologic stress reactions in learners.

Objectives: We sought to assess physiologic indicators of resident stress and measure cognitive performance during a simulated clinical scenario.

Methods: A wearable device was used to measure heart rate, heart rate variability (HRV) and electrodermal activity (EDA) at two ACGME accredited emergency medicine (EM) residency programs during a simulation scenario. All residents at participating sites were eligible to participate. A standardized simulation protocol was utilized. Before and during the scenario, participants completed a cognitive test (Trail Making Test) and time for completion was noted. We calculated and reported descriptive statistics.

Results: Twenty-six residents participated including 7 PGY1s, 8 PGY2s, and 11 PGY3s. 11 (42.3%) participants were females, 15 (57.7%) male, and mean age was 30.7 years. The mean heart rate range was 59.11-117.46. Average percentage of time the heart rate was above 120, 130, and >160 were 2.475%, 0.88%, and 0.041%. HRV showed the mean standard deviation of the interbeat interval was 87 milliseconds(ms). EDA showed a trend of increasing throughout the scenario. Mean time for completion of cognitive test was 54.07 seconds before and 46.90 seconds during the simulation.

Conclusions: Simulation induced physiologic stress as evidenced by increased heart rates, HRV, and EDA. The cognitive test was completed in less time showing cognitive arousal during the simulation.

28 Impact of a Grading Committee for a Fourth-year Emergency Medicine Clerkship

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Background: As Step 1 has moved to pass/fail it has

been theorized that clerkship grades will have more bearing on residency recruitment. As such, the integrity of the grade selection process should be scrutinized. Problems abound in the literature with current processes. Group decision making in the form of a clerkship grading committee may provide several benefits.

Objective: We sought to examine the impact of a grading committee for our EM clerkship during the 21-22 academic year.

Methods: We conducted a retrospective observational study to describe grading committee decisions for the University of Florida fourth-year EM Clerkship from 8/2021 – 4/2022. Committee meeting procedures were highly structured based on best practices for group decision making. Most meetings were audio recorded. Outcomes included discussion time per student, times the committee grade differed from historical grade cutoffs with reasoning, and the frequency of a committee member voicing a first-hand account of student performance.

Results: Data from 9 meetings were reviewed and 86 students were evaluated. 7 were recorded. The mean discussion time per student was 2 minutes and 13 seconds (range 11 seconds to 9 minutes 22 seconds). The final committee decision differed from historical grade cutoffs for 9 students. 6 students had a grade assigned that was adjusted above what would have been earned using historical cutoffs, and for 3 students the grade assigned was adjusted below. 64% (41/64) of the time a committee member had worked with the student that was discussed. Positive grade adjustments tended to occur due to outlier evaluations and negative adjustments were made for professionalism concerns.

Conclusion: Grading committees are a means to conduct a holistic review of student performance and offer shared ownership of the grade decision amongst committee members. More study is needed to directly determine their potential benefit in addressing the challenges of clerkship grading.

29 Impact of a Simulation-Based Patient Safety Intervention on Self-Reported and Objective Measures of Situational Awareness

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Background: Situational Awareness (SA) is a key element of patient safety in the ED; there are few educational programs targeting and increasing SA in EM residency training. SIM is an ideal modality for these interventions.

Objective: To assess the impact of a SIM-based educational intervention on patient safety-focused SA; we hypothesized that intervention participants would perform better on self-reported and objective measures of SA.

Methods: A cross-sectional observational study was conducted over 6 months at 2 university-affiliated 3-year EM programs. A convenience sample of residents participated in 0, 1, or 2 SA-focused SIMs incorporating common safety hazards. After reviewing a mock handoff and chart, participants spent

10 minutes in a room documenting hazards and solutions. Interruptions and tasks were introduced to replicate the ED environment. Hazards, solutions, and SA concepts were discussed during debriefing. After participation in the session(s), participants completed the self-reported Situational Awareness Rating Technique (SART), a survey assessing comfort with identifying hazards in the ED and participated in an objective Situational Awareness Global Assessment Tool (SAGAT) SIM. A 2-sample t-test assessed the difference in post-intervention SART and SAGAT scores. A one-way ANOVA assessed the difference in post-intervention attitudes.

Results: 34, 44, and 14 residents participated in 0, 1, and 2 intervention SIMs, respectively. Residents who participated in at least 1 intervention did not have higher self-reported SA (SART) ($p=0.61$), objective SA (SAGAT) ($p=1$) than residents who participated in none. Residents who participated in 2 intervention SIMs had higher levels of comfort with identifying hazards than those who participated in none ($p=0.03$).

Conclusions: A SIM-based patient safety educational intervention targeting SA did not impact self-reported or objective SA in EM residents, but did improve comfort in identifying hazards.

30 Impact of Specific Resident-Driven Virtual Recruitment Sessions on Residency Applications and Match Preferences

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Background: An exploratory study at Maimonides Medical Center's (MMC) EM residency program in 2021 found that the virtual webinar series positively influenced respondents' ranking of the program. This model was continued into the 2022 recruitment cycle with modifications. We hosted 10 virtual events including focused panels (visiting clerkship; program director, faculty, & resident panel; diversity & inclusion committee panel), resident-run interview socials, and an open house. This study differed from the previous one as it surveyed all interviewees (as opposed to only the ones who matched at MMC's EM program) and specific virtual sessions were evaluated.

Objective: Does attending specific virtual sessions positively influence applicants' decision to apply to and rank a residency program? We predict it does.

Methods: This is a retrospective, single-site study of applicants to MMC's EM residency program. An anonymous survey asked applicants how each virtual session affected their application to or ranking of the program. Responses were recorded on a 5-point Likert scale and descriptive statistics were applied to assess application and rank preferences. Further data analysis using non-parametric Mann-Whitney U tests compared applicants who were going to apply regardless