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Lockdown Medical Education: Utilization and Effectiveness of Virtual Modalities for Pandemic-Safe Training

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**Table.** Laryngoscope device used based on PGY level.

	PGY-1 N (%) (N=1855)	PGY-2 N (%) (N=5135)	PGY-3+ N (%) (N=8214)
DL	528 (28)	1852 (36)	2421 (29)
HAVL	631 (34)	1486 (29)	1791 (22)
SGVL	696 (38)	1797 (35)	4002 (49)

PGY, post-graduate year; DL, direct laryngoscope; HAVL, hyperangulated blade video laryngoscope; SGVL, standar geometry blade vide laryngoscope.

## 40 Likelihood Patients with Opioid Use Disorder Encounter ED Staff Members who Hold them in Low Regard: Lessons from Computer Simulation Modeling

*Benjamin Finard, BS Biomedical Engineering; Joseph Arciprete, BS Biochemistry; Madalene Zale, MPH; Dimitrios Papanagnou, MD; Benjamin Slovis, MD, MA; Carissa Walkosak, BA, BS; Hannah Smith, PhD*

**Learning Objectives:** 1) Capture ED staff member regard for patients with OUD 2) Determine the likelihood with which a patient with OUD presenting to an ED would interface with staff who hold this subset of the population in low regard.

**Hypothesis:** OUD patients will likely encounter staff members with low regard

**Background:** Significant stigma surrounds patients with opioid use disorder (OUD). Stigma repeatedly follows patients into the ED and impacts care. Little is known about the patient’s journey in the ED and the negative regard patients with OUD receive from staff.

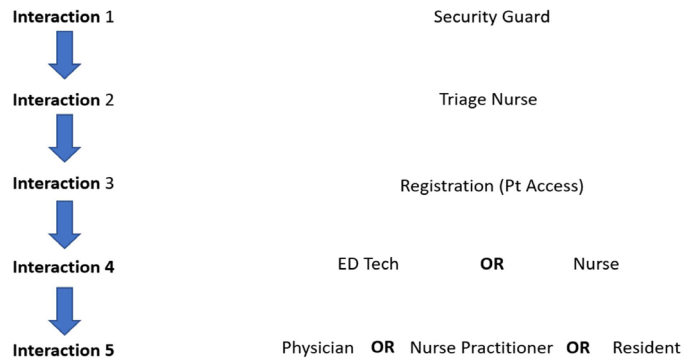
**Objectives:** We sought to: 1) capture ED staff member regard for patients with OUD; and 2) determine the likelihood with which a patient with OUD presenting to an ED would interface with staff who hold this subset of the population in low regard. Given numerous touchpoints of an ED visit, we hypothesize that OUD patients would likely encounter staff members with low regard for OUD patients.

**Methods:** We deployed the validated Medical Condition Regard Scale (MCRS) to 463 ED staff of an academic ED located in Philadelphia to capture sentiments towards patients with OUD. Data was analyzed by job type (i.e., nurses, physicians, technicians). Descriptive statistics (means, standard deviations) were calculated. Following a flow diagram (Figure 1), we created a simulation engine in Python to simulate the experience a patient with OUD would have in an actual ED. Each interaction corresponds to a juncture point where a patient meets a new staff member during the visit. The staff member is randomly selected from the pool of staff members with that job type, and their respective MCRS score is recorded. The simulation was run for 100,000 virtual patients, each with 5 staff member interactions.

**Results:** 429 staff members completed the MCRS

(response rate 93%). Patients with OUD will encounter someone with significantly low regard for their condition 15% of the time (2 SD below mean) and someone with significantly high regard for their condition 12% of the time (2 SD above mean).

**Conclusions:** Results suggest that patients with OUD may face bias when presenting to an ED. As a marginalized population, the probability patients with OUD will avoid care may rise if changes are not made to improve their experience.



**Figure 1.** Flow diagram of a sample ED visit with interactions with specific staff members.

## 41 Lockdown Medical Education: Utilization and Effectiveness of Virtual Modalities for Pandemic-Safe Training

*Adrian Cotarelo, MD, MHS; Carmen Martinez Martinez, MD; Danielle Langan, DO; Patrick Hinfey, MD; Mike Anana, MD; Jessica Noonan, MD; Jason David, MD; Aaron Johnson, MD; Saira Hoda, MD; Slack Intern Curriculum Consortium*

**Learning Objectives:** This study aimed to identify and measure effectiveness of common virtual education modalities utilized during the COVID-19 pandemic, as well as which of these modalities are perceived as most effective by medical students.

**Background:** During the 2019 Novel Coronavirus (COVID-19) pandemic, newly-matched “pre-interns” were displaced from clinical rotations and in-person didactics, many of which are bridges to residency preparedness. During this near-total shift towards virtual medical education, several modalities became commonplace. There has been no large-scale investigation of utilization or effectiveness of these virtual initiatives.

**Objectives:** This study aimed to identify and measure effectiveness of common virtual education modalities utilized during the COVID-19 pandemic, with the hypothesis that

active learning methods would be more used and effective.

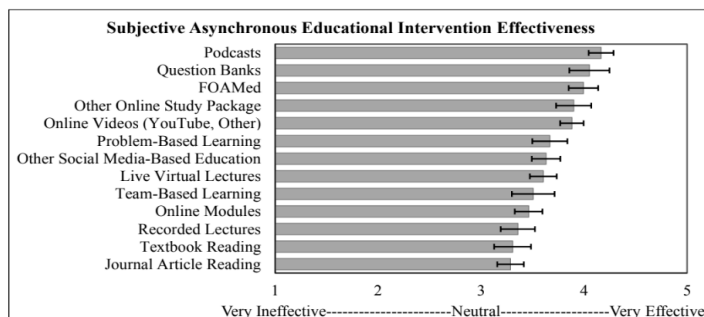
**Methods:** In spring 2020, two online surveys were distributed assessing time since last in-person clinical experience, and Likert-scale (1-5) questions regarding use and effectiveness of virtual education modalities. Results were analyzed using descriptive statistics.

**Results:** 27 EM residencies were recruited, with 311 pre-intern participants. 289 (92.9%) completed pre-surveys, and 240 (77.2%) completed post-surveys. They reported the number of weeks since performing a physical examination (median = 8, IQR 7, 12), attending an in-person didactic (median = 10, IQR 8, 15), and of rotation displacement (median = 4, IQR 2, 6). Common education tools included online modules (n=210), podcasts (n=193), and social-media based education (n=195). Effective tools included podcasts (Mean = 4.116, SD = 0.856), online question bank use (Mean = 4.052, SD = 0.872), and FOAMed resources (Mean = 3.994, SD = 0.904).

**Conclusions:** Pre-interns are entering residency disconnected from in-person clinical education, reflecting a need for effective remote teaching. Interactive options (podcasts, question banks, and FOAMed) were cited as more effective than traditional offline options (textbook and journal article reading). Identifying popular, effective virtual modalities can guide education initiatives during the present and future pandemics.

**Table.**

Educational Intervention Effectiveness	Frequency (%)	Mean (SD)	Confidence Interval (95%)
Podcasts	193	4.166 (0.856)	(4.045, 4.287)
Question Banks	77	4.052 (0.872)	(3.857, 4.247)
FOAMed	154	3.994 (0.904)	(3.851, 4.137)
Other Online Study Package	119	3.899 (0.951)	(3.728, 4.07)
Online Videos (YouTube, Other)	161	3.882 (0.736)	(3.768, 3.996)
Problem-Based Learning	114	3.667 (0.928)	(3.497, 3.837)
Other Social Media-Based Education	195	3.631 (0.988)	(3.492, 3.77)
Live Virtual Lectures	187	3.604 (0.906)	(3.474, 3.734)
Team-Based Learning	87	3.506 (0.987)	(3.299, 3.713)
Online Modules	210	3.462 (0.993)	(3.328, 3.596)
Recorded Lectures	115	3.357 (0.91)	(3.191, 3.523)
Textbook Reading	121	3.306 (1.007)	(3.127, 3.485)
Journal Article Reading	168	3.286 (0.856)	(3.157, 3.415)



**Figure.**

## 42 Measuring Depression, Stress, Anxiety and Resilience Levels During the Covid-19 Pandemic Using Validated Psychometric Testing

Sarah Bella, DO; frederick fiessler, DO; Kristen Walsh, MD; Ashley Flannery, DO; Brian Walsh, MD

**Learning Objectives:** To describe the prevalence of depression, anxiety, stress and resilience in EM residents during the Covid-19 pandemic

**Background:** EM residents were already known to be high-risk for depression and burnout; in all likelihood the Covid-19 pandemic has added to this risk. In addition to the understandable work stressors, social isolation caused by the lockdowns likely has affected their support structure negatively.

**Objectives:** Using validated psychometric testing, we sought to determine the levels of depression, anxiety, stress, and resilience in EM residents in a region severely impacted by the pandemic.

**Methods:** Setting: An EM residency program in the state with the highest per-capita deaths from Covid-19. All EM residents were surveyed eight months into the pandemic using the Depression, Anxiety, Stress Scales (DASS) and Brief Resilience Scale (BRS). Both studies have been validated in the psychology literature across multiple settings. Surveys were anonymous to promote honesty in answers. Levels of depression, anxiety, stress, and resilience were determined. Demographic information was also collected.

**Results:** 23 of 27 residents (85%) completed the survey. Using the DASS, 48% (95%CI 27-69) were found to have at least mild depression, with 17% (95%CI 2-33) found to have “severe” or “extremely severe” depression. 35% (95%CI 15-55) were found to have at least mild levels of anxiety, with 4% (95%CI -4 to 13) having “severe” or “extremely severe” anxiety. 52% (95%CI 31-73) were found to have at least mild stress, with 13% (95%CI -1 to 27) found to have “severe” or “extremely severe” stress. Using the BRS, 9% (95%CI -3 to 20) were found to have low levels of resilience.

**Conclusion:** While we knew EM residents (physicians) are high-risk for depression and burnout, the levels of depression and stress measured by validated psychometric testing during the Covid-19 pandemic were concerning. Although the residency has increased its wellness activities significantly, it appears much more needs to be done to help residents get through this extremely difficult situation.

## 43 Mitigating the Gender Gap: How “DOCTOR” badges affect physician identity

Jenny Chang, MD; Joshua Silverberg, MD; Michael Jones, MD; John Arbo, MD; Jill Corbo, MD

**Learning Objectives:** To elucidate the frequency of