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The Rapid Evaluation of COVID-19 Vaccination in Emergency Departments for Underserved Patients Study

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53 Clerkship Student Perceived Educational Effectiveness of Virtual Simulation

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Background: High fidelity simulation (HFS) has been described as an effective tool in medical training. COVID 19 has led to educational gathering restrictions for both medical students (MS) and Physician Assistant students (PAS). In response, we offered MS and PAS education through a virtual HFS (VS) experience.

Study Objective: To determine the perceived educational efficacy of VS.

Methods: This IRB reviewed study was conducted by a PGY 1-4 EM residency. Given COVID restrictions, virtual clerkship educational experiences, including VS were created. VS was conducted via WebEX TM . Previous in person HFS cases were streamed by on site personnel, including faculty and chief residents Student leaders were assisted by teammates via chat in teams of 3. Students had a minimum of 3 VS. After rotation completion, either full virtual (FV) or patient care with virtual education (PC), MS and PAS were asked to provide anonymous feedback. The electronic survey consisted of the host network's standard Continuing Medical Education (CME) questions (Table 1). The Likert questions were analyzed descriptively with a value of 1 for Strongly Disagree (SD), 2 Disagree (D), 3 Undecided (U), 4 Agree (A), and 5 Strongly Agree (SA). Open ended questions were qualitatively analyzed.

Results: From 8/3/20-10/23/20, 79 students (58 FV, 19 PC) rotated. Due to scheduling conflicts, 14 were unable to participate leaving 65 VS participants (44 FV, 21 PC). A total of 46 replied (70.8% response rate). Table 1 demonstrates that VS was received overwhelmingly positively. Only 1 respondent replied that they would not recommend this activity to others. Positives include perceived realism, experience, and teamwork. Ability to view the monitor was a theme for improvement.

Conclusions: This single site cohort indicates that VS is an effective, well received education tool for students unable to access a sim center. Further research is needed to compare VS to an in-person simulation experience.

Table 1: CME Questions and Analyzed Responses

Question	Analyzed Response
The objective(s) of this activity were met	4.71 (0 SD, 0 D, 0 N, 13 A, 33 SA)
The pacing of the activity was appropriate	4.59 (0 SD, 0 D, 1 N, 17 A, 28 SA)
The activity kept me engaged	4.76 (0 SD, 0 D, 0 N, 11 A, 35 SA)
I learned new knowledge from this activity	4.85 (0 SD, 0 D, 0 N, 7 A, 39 SA)
I will be able to apply what I have learned to my job	4.85 (0 SD, 0 D, 0 N, 11 A, 35 SA)
I would recommend this activity to others	4.82 (0 SD, 1 D, 0 N, 5 A, 40 SA)
This activity will improve my job performance and productivity	4.59 (0 SD, 1 D, 1 N, 14 A, 30 SA)
What about this activity was most useful to you?	Several students commented on the usefulness of acting as a leader and playing the role of a physician, as well as the feedback and review provided at conclusion of the cases. They also appreciated the realistic environment and scenarios that were created. In addition, students enjoyed being put in stressful situations and working as a team to put their knowledge into practice. Others commented on the extra experience and practice that is provided.
What about this activity was least useful to you?	Common responses included N/A, difficulties seeing the patient monitor and inherent difficulties with the virtual process (lack of actual patient touch/ inability to perform a physical exam, lagging of computer quality, etc.) and the procedure demonstrations.
How can we improve this activity to make it more relevant?	Many responses included N/A, having physician leads perform an example case, improve clarity of monitor/ EKGs/imaging presented over the web cam. One student mentioned adding metrics for team members in addition to the team leader, more structured debriefing.
Please provide any additional comments you may have. (e.g., speakers, content, facilities, cases, etc.)	Common responses included thanking the team for putting together the activity, suggesting making the monitor more clearly visible.
What are you going to change in your practice as a result of this educational activity?	Major themes included students having a more 'structured' approach, including utilization of a safety net (IV,O2, Monitor, POCT glucose, urine HCG) and assessment of ABCs. Second, students expressed they would be more careful to maintain a broad differential rather than 'anchoring' on a single diagnosis. Additionally, students reported they would strive to share their thoughts with the rest of the team throughout a patient's course of treatment and they would remember to utilize family and EMS for history that may be useful to the patient's diagnosis and treatment.
State any barriers to implementing this change.	Most responses were N/A, but also limitations placed by computer/ virtual aspects and inability to see live patients in their current level of training.

54 The Rapid Evaluation of COVID-19 Vaccination in Emergency Departments for Underserved Patients Study

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Study Objectives: Emergency departments (EDs) often serve vulnerable populations who may lack primary care and have suffered disproportionate COVID-19 pandemic effects. Comparing patients having and lacking a regular source of medical care and other ED patient characteristics, we assessed COVID-19 vaccine hesitancy, reasons for not wanting the vaccine, perceived access to vaccine sites and willingness to get the vaccine as part of ED care.

Methods: Cross sectional survey conducted from 12/10/2020 to 3/7/21 at 15 safety net United States EDs. Primary outcomes were COVID-19 vaccine hesitancy, reasons for vaccine hesitancy, and sites (including EDs) for potential COVID-19 vaccine receipt.

Results: Of 2575 patients approached, 2301 (89.4%) participated. Of the 18.4% of respondents who lacked a regular source of medical care, 65% used the ED as their usual source of health care. The overall rate of vaccine hesitancy was 39%; the range among the 15 sites was 28 to 58%. Respondents who lacked a regular source of medical care were more commonly vaccine hesitant than those who had a regular source of medical care (47 vs 38%, 9% difference, 95% CI 4 – 14%). Other characteristics associated with greater vaccine hesitancy were younger age (median 40 vs 52, $p < 0.0001$), (female sex (45% vs 33%; difference 12%, 95% CI 8 to 16%), African-American race (54% vs 30%; difference 24%, 95% CI 19 to 29%), Latinx ethnicity (39% vs 30%; difference 9%, 95% CI 4 to 14%), and not having a prior influenza vaccine in the past five years (58% vs 31%; difference 27%, 95% CI 23 to 32%). Homelessness and uninsured status were not associated with greater vaccine hesitancy. Fewer vaccine hesitant respondents reported that some or all of their family members would accept the COVID-19 vaccine if it was offered to them (29% vs 75%, 46% difference, 95% CI 42 to 50%). Of the 61% COVID-19 vaccine acceptors, 21% stated that they lacked a primary doctor or clinic to receive it. The vast majority (95%) of these respondents lacking primary care would accept the COVID-19 vaccine as part of their care in the ED.

Conclusions: ED patients who lack a regular source of medical care are particularly hesitant to COVID-19 vaccination. Most COVID-19 vaccine acceptors would accept it as part of their care in the ED. EDs may have pivotal roles in COVID-19 vaccine messaging and delivery to highly vulnerable populations.

55 Positivity Rates of CT Imaging for Pulmonary Embolism in COVID-19 Patients

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Study Objectives: Early evidence has suggested a high prevalence of acute pulmonary embolism (PE) in Coronavirus 19 (COVID). However, the bulk of existing data evaluates the population of COVID patients admitted to an intensive care unit (ICU). There has been limited evidence in the emergency department (ED) population and as a result, there is variability in diagnostic evaluation for patients presenting with COVID. The objective of this study was to describe the diagnostic evaluation of both COVID positive and negative patients in the ED.

Methods: Over a period of 13 months beginning March 2020, all patients presenting to the emergency department (ED) of a single, tertiary academic medical center in the United States and tested for COVID, who had contrast-enhanced computed tomography (CT) imaging of the chest performed were included in this retrospective cohort study. The primary outcome was CT positivity rate for PE and radiologist impressions were used to determine positivity rate for all patients. A subset of patients received D-dimer testing or received supplemental oxygen in the ED and CT positivity was evaluated in these strata.

Results: After exclusion of CT chest studies without contrast, 5576 patient encounters were included in the final cohort with 367 patients considered to be COVID positive at the time of ED presentation. The positivity rate for PE in COVID positive patients was 9.8% compared to 7.1% for non-COVID patients. The rate of D-dimer testing prior to CT was higher (76% vs 25%) in COVID positive compared to negative patients. CT test positivity rate was close when comparing COVID positive and negative patients who did not receive oxygen (5.0% vs 6.3%) but in those that received