Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

102 A Comparison of Presenting Characteristics, Comorbidities, and Outcomes of Those Admitted to the Intensive Care Unit Between Community and Urban Emergency Departments in Arizona

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Background: With the rapid spread of SARS-CoV-2 across the globe, numerous authors have noted different patient characteristics that may relate to an increased admission rate to an intensive care unit (ICU). However, little data has been presented comparing these characteristics among those who receive care at either a rural or urban emergency department (ED).

Study Objective: To compare the clinical characteristics and outcomes of patients with COVID-19 admitted to the ICU from rural and urban EDs.

Methods: A retrospective, multi-center cohort study of adult patients who required hospitalization between March 01, 2020 and July 01, 2020 due to confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection from two rural and one urban ED in Arizona were included in analysis. Research assistants who were blinded to the study hypothesis were trained on proper data abstraction prior to the collection of data by the study team. With adherence to a quality-controlled protocol and structured abstraction tool, research assistants manually collected patient demographics, ED laboratory values, initial vital signs, total hospitalizations, ICU admissions, and mortality in a with a one-to-one allocation ratio non-White and White patients. Comparisons of the comorbidities among patients transferred to the ICU in urban and rural hospitals were conducted with the chi-squared analysis. Factors that may predict transfer to the ICU were determined via a stepwise multivariable binomial logistic regression.

Results: A total of 304 patients (175 urban and 129 rural) with confirmed SARS-CoV-2 infection were admitted to the hospital during the study period with 63 patients (24 urban vs 39 rural; OR=2.1, p=0.01) being admitted to the ICU. Of those admitted to the ICU, a total of 21 (33.3%) were female (11 urban and 10 rural). The median age of patients admitted to the ICU from the urban cohort was 66.0 years old (IQR=35.0) and from the rural cohort was 62.6 years (IQR=28).The most common comorbidity seen in both urban and rural patients admitted to the ICU was hypertension (12 [50%] urban; 21 [53.8%] rural). In the overall cohort, multivariable logistic regression showed an increase in the odds of ICU admission among patients presenting with concurrent bacterial infection (p=0.043), elevated temperature (p=0.002), respiratory rate (p=0.003), white blood cells (p=0.034), and reduced hemoglobin levels (p=0.014). Across the total cohort, these factors predicted transfer to the ICU with a sensitivity of 39.5% and specificity of 95.2%.

Conclusion: Patients with confirmed SARS-CoV-2 are more likely to require critical care intervention if presenting to the emergency department with concurrent bacterial infection, elevated temperature, respiratory rate, white blood cells, and reduced hemoglobin. The degree to which these factors generalize between urban and rural hospitals remains to be elucidated.

103 Obesity Is Not Associated With Mortality In COVID-19 Pneumonia

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Study Objective: Currently there is conflicting evidence regarding the impact of obesity on patient outcomes in COVID-19 pneumonia. Specifically, obesity may be associated with severe pneumonia, hypoxia, intubation and mortality. The CXR opacity scoring system has been shown to characterize pneumonia severity in COVID-19 patients. The aim of this study is to evaluate the association between obesity, pneumonia severity and mortality.

Methods: A retrospective chart review was conducted for April 2020 at an urban ED located in a medically underserved region. Inclusion criteria consisted of adult ED patients who were admitted with COVID-19 pneumonia. An EM attending and senior resident determined the CXR opacity scores in severity ranging from 0 to 6. Scores ≥ 3 indicate a severe pneumonia. Inter-rater agreement was determined based on the kappa coefficient. Demographic information, Pulse Oximetry (PO), Body Mass Index (BMI), intubation requirement and mortality were analyzed using chi-square and student's t-test.

Results: 306 patients met inclusion criteria. The mean age was 61.9 ± 14.7 years and there were 40.2% male patients. The mean BMI and PO were 30.1 ± 6.4 and 88.7 ± 3.9, respectively. Pneumonia on CXR was 85.3% bilateral, 6.5% left and 8.2% right. 43.5% of patients were given CXR opacity scores ≥ 3 for severe pneumonia. The kappa coefficient for CXR opacity scoring agreement was 0.47. Patients were categorized as BMI ≤ 25 (63, 20%), $>$ 25-30 (101, 33%), $>$ 30-35 (82, 27%), $>$ 35-40 (32, 10.5%), > 40 (23, 7.5%) and undetermined (5, 2%). There were 84 (27.4%) patients with hypoxia determined with triage PO ≤ 85. We found that 48 (16%) patients were intubated in the ED. The overall in-hospital mortality was 21%. There was no association between BMI and hypoxia (P=0.38), CXR opacity score (P=0.71), intubation (P=0.67) or mortality (P=0.39).

Conclusion: In our ED cohort of COVID-19 pneumonia patients, we found that obesity was not associated with severity of pneumonia, hypoxia, intubation or mortality. Further research is therefore needed to fully understand the role of obesity in COVID-19 outcomes.

104 Inflammation-Type Dysbiosis of the Oral Microbiome Associates With the Duration of Coronavirus Disease 2019 (COVID-19) and Long COVID Disease States

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Study Objectives: The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) caused the pandemic, Coronavirus Disease 2019 (COVID-19), with many of those infected now facing the burden of prolonged symptoms after they have cleared the infection. The most debilitating of these, called post-acute sequelae of COVID-19 (PASC), known colloquially as long COVID, is thought to be linked to immune dysregulation due to harmful inflammation, with the exact causes being unknown. Given the oral-lung aspiration axis being a key factor to many respiratory infectious processes and the microbiome's previous role in systemic inflammation, we aimed to examine the relationship between the oral microbiome and the duration of symptom, including development of long COIVD.

Methods: Symptom duration was determined via follow-up among a cohort of emergency department patients admitted to the hospital for COVID-19 infection. Tongue swabs were collected from patients presenting with symptoms concerning for COVID-19 infection. Patients with confirmed COVID-19 infection were followed until resolution of all symptoms. Bacterial composition of oral samples was determined by metagenomic sequencing. We used random forest classification modeling to identify microbiota and clinical covariates that associate with longer duration of symptoms.

Results: Of the 31 patients followed, 17 developed ongoing symptomatic COVID-19 (symptoms $>$ 4 weeks) and 10 went on to long COVID (symptoms$>$8 weeks). Patients with prolonged symptoms had higher abundances of microbiota that induce inflammation, such as members of the genera Prevotella and Veillonella . Notable is the increased abundances of species that produce inflammation causing lipopolysaccharides and the similarity of long COVID patients' oral microbiome to those of patients with chronic fatigue syndrome.

Conclusion: This is the first study to describe the microbiome's association with long COVID and explore the possibility that the oral microbiome may play a role in this disease.

105 Sexually Transmitted Infection Testing at an Urban Hospital Pre- and Post-SARS-CoV-19 Pandemic

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Study Objectives: To determine whether behavior changes made during the SARS-CoV-19 pandemic impacted the number of patients being tested and the positivity rate

of sexually transmitted infections (STI) at a large, urban ED in the Bronx to identify how to improve the sexual health services available to our patients.

Methods: A retrospective, cross-sectional study using data from the EMR at a public hospital in the Bronx, New York. Included patients were aged 13 and over that had STI testing from Aug. 1, 2019 to Feb. 1, 2020 (Period 1) and Aug. 1, 2020 to Feb. 1, 2021 (Period 2) in the adult or pediatric ED. Periods 1 and 2 are 6 month periods before and after the SARS-CoV-19 pandemic in NYC, respectively. Counts and percents were used to quantify STI tests (HIV point of care, HIV 4th generation serum, Gonorrhea Amplification, Chlamydia Amplification, and Treponema Pallidum Ab screen) and positive results during Period 1 vs. Period 2. A chi-squared test of independence determined significance of positivity rates in Period 1 vs Period 2 with a p-value of .05.

Results: In Period 1, there were 2386 distinct patients accounting for 5445 STI tests with 54% female, 30% male and 18% unknown or other self-identified sex. The average age of all patients was 37 years (S.D. ± 15). In Period 2, 2218 distinct ED patients accounting for 5816 STI tests with 52% female, 24% male, 24% unknown or other self-identified sex. The average age for Period 2 was 37 years (S.D. ± 15). Our data (Table 1) show that more STI diagnostic tests were performed in Period 2 than Period 1 for chlamydia, gonorrhea, and syphilis in our ED. There were fewer HIV tests performed in Period 2. There were no significant differences in positivity rates between Periods 1 and 2 for HIV, chlamydia, gonorrhea, or syphilis, although there was a trend towards significance for gonorrhea and syphilis.

Conclusion: A higher absolute number of chlamydia, gonorrhea, and syphilis tests were performed in our ED in the post-SARS-CoV-19 time period. This overall increase in testing may be due to an increased utilization of emergency services given oversubscribed outpatient resources. The decrease in HIV testing could be due to patients opting out of testing, or providers having a lower suspicion of HIV infection in the context of the pandemic. A stable positivity rate could imply that despite newly imposed SARS-CoV-19 guidelines on social behavior, patients in our population continued to engage in condomless sexual encounters. STI testing panels incorporated into the electronic medical record may facilitate complete STI testing that includes HIV as an opt-out reminder for providers.

	Period 1			Period 2			Period 1 vs. Period 2	
STI	Tests (n)	Positive results (n)	Percent positive	Tests (n)	Positive results (n)	Percent positive	Percent difference of number of tests performed	Percent positive, *p-value*
HIV	1063	16	1.51%	913	14	1.53%	-14.11%	0.96
Chlamydia	1861	115	6.18%	2055	140	6.81%	+10.42%	0.42
Gonorrhea	1869	66	3.53%	2056	97	4.71%	+10.01%	0.06
Syphilis	576	35	6.08%	691	26	3.76%	+19.97%	0.06

106 Learning from the Long Term Experiences of Patients Recovering from COVID-19: Utilizing a Novel Approach to a Transition of Care Curriculum to Benefit Students and Patients

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Study Objective: Medical students interviewed and longitudinally followed COVID-19 patients after discharge from hospitalization and ED settings. Utilizing telehealth, students participated in care, provided support and learned about the disease burden of COVID-19. Students improved care by providing feedback from themes identified from these interviews to improve the transition of care process with care teams. In March 2020 medical students were removed from their clinical experiences due to COVID-19. This disruption to the traditional method of medical education was an impetus to explore new creative approaches to clinical education Transitions of care are an important component of patient care and pose significant risks for complex patients. The use of telehealth grew exponentially during the pandemic and is an important skill set for future physicians. Telehealth allowed medical students to participate in care in meaningful and safe ways.

Methods: Patients who either visited the ED or were hospitalized for a COVID-19 infection at two large hospitals from March-September 2020 were identified for inclusion in the study. Medical students contacted these patients over the telephone and administered a questionnaire. Students inquired about symptoms, impact on mental health, impact on financial stability and positive or negative experiences while in the hospital. Students followed up with patients who were still experiencing symptoms every 2 weeks or until symptoms were stable for 4 weeks. Students participated in a weekly meeting with care team leaders and provided feedback with themes related to the patient experience. Improvements to the transition of care and follow up with patients were made in real time based on this feedback. At the end of the project, a structured interview with medical students was collected about the impact of participation.

Results: 112 patients were contacted for participation. Of those, 64 individuals consented and completed the interview. 14 patients were interviewed multiple times due to ongoing symptoms. Students noted multiple benefits across Kirkpatrick's Scale on the structured interview. Benefits included learning about a novel disease, collaborating with care teams and creating student led performance improvement projects. Qualitative themes of long COVID patients reflected emotional impact of recovery and resulted in interventions to improve mental health care for recovering patients.

Conclusion: A wide variety of disease processes could be applied to transition of care curriculum to simultaneously provide another avenue of support for patients while exposing medical students to the vast complexity of disease burden.

Program Evaluation

Student Achievements

Benefit to Students	Theme of Benefit	Kirkpatrick Scale
Participation in the care of patients despite public safety limitations on the clinical environment	Overcoming barriers to learning	II
Learn about a novel disease during a pandemic	Novel education	II
Learn about long term patient outcomes of a novel pandemic	Novel education	II
Longitudinal patient follow-up	Hands-on education	II
Created a model to learn about rare and infectious conditions remotely	Novel education	II
Improve skills to connect to patients with empathy and compassion utilizing telehealth platform	Clinical skills training	III
Developing skill of creating connections through the phone and cold-calling patients	Clinical skills training	III
Benefits of listening to the patient's experience free from time constraints	Patient experience education	II
Understanding patient experience through chart review and the actual patient narrative	Patient experience education	II
Presenting results of study to regional hospital executive leadership	Empowering student as expert	IV
Conducting interviews with the local press	Empowering student as expert	III
Patient education videos QI project	Student-led projects	IV
Patient support groups QI project	Student-led projects	IV