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PODCAST CAPSULE SUMMARY

Infectious Disease

The chronicles of COVID

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This brief commentary is intended to accompany the journal's podcast on several articles.[1–9]

The 2019 novel coronavirus (COVID-19) has occupied most of our personal and professional lives this year. This August edition of the journal has 9 contributions about the pandemic and our colleagues' responses. Each article is worthy of your close attention, but in case you have limited time left for academic pursuits, this month's podcast gives an overview of the high points and discusses how we might use them to improve our practice.

COVID-19 is transmitted via respiratory droplets, but some procedures, including high flow oxygen, may lead to aerosol spread. The use of surgical masks has been implemented in most hospitals to help decrease this spread. Leonard et al[5] described an ingenious computer simulation to model surgical masks' effect on viral particle spread in "Reducing Aerosol Dispersion by High Flow Therapy in COVID-19: High Resolution Computational Fluid Dynamics Simulations of Particle Behavior During High Velocity Nasal Insufflation With a Simple Surgical Mask." They included some very revealing visualizations of their results, showing the airflow was redirected backward and upward relative to the patient. Even poorly fitted masks decreased airway flow, velocity, particle travel distance, and capture between 73% and 89% of viral particles. Although not sufficient to remove the requirement to wear PPE by any means, masks over oxygen delivery devices can be an important factor in decreasing viral spread.

Several articles address the role of EMS in the pandemic response. In "Integration of Aeromedicine in the Response to the Covid-19 Pandemic," Osborn et al[9] describe the changes they made at the Memorial Hermann Life Flight program. They created a specific COVID aircraft, modified their call taking and response processes, emphasized more aggressive airway management in flight, and instituted specific decontamination steps to maximize crew safety while keeping the aircraft in service as much as possible. Morris et al[8] describe the first outbreak in the United States in a King County, Washington, skilled nursing facility in "Lessons Learned From COVID-19 Outbreak in a Skilled Nursing Facility, Washington State." They discuss lessons learned and the importance of improving communication between EMS and skilled nursing facilities, including skilled nursing facilities in regional disaster planning, load balancing COVID patients between multiple hospitals, and separation of those patients and staff with COVID into distinct wings to decrease viral spread within the facility.

This pandemic is truly global, as is the response. In "Bracing for Impact: Operational Upshots From the National Centre for Infectious Diseases Screening Centre (Singapore) During the COVID-19 Outbreak," Manauis et al[6] describe a fascinating approach to limit community spread of the virus in Singapore. Based on their experiences with SARS in 2003 and H1N1 in 2009, they built the National Center for Infectious Diseases, which includes a large screening center. This is a center designed to rapidly evaluate and test patients from the public, clinics, and outside hospitals. It was designed for rapid and efficient patient flow while providing a high-level tracking ability throughout the center. It was accompanied by an aggressive contact-tracing capability to identify potential patients who were subsequently brought in for screening. Positive patients were admitted to the National Center for Infectious Diseases for observation and to limit community spread.

In Hong Kong, Lam et al[4] performed a case-control study of 37 COVID-positive patients matched with 111 negative controls to

look for characteristics associated with COVID ("Clinical, Laboratory, and Radiological Features Indicative of Novel Coronavirus Disease (COVID-19) in Emergency Departments: A Multicenter Case-Control Study in Hong Kong"). They found that, among patients treated early in the pandemic, travel to Hubei Province, known exposure to a positive patient, bilateral findings on chest films, leukocytosis, and thrombocytopenia were all associated with increased odds of testing positive. The strongest associations were found to be travel and known contact. In "Patient Factors Associated With SARS-CoV-2 in an Admitted Emergency Department Population," Haimovich et al[3] had similar findings in a review of their patients in Connecticut, but also noted an association with hypoxia, increasing age, fever, and anemia.

The epidemiology of COVID in the state of Georgia is described in "Epidemiology of the 2020 Pandemic of COVID-19 in the State of Georgia: Inadequate Critical Care Resources and Impact After 7 Weeks of Community Spread" by Moore et al.[7] They found widespread prevalence in all of the state's counties, with the largest number of cases in the metro Atlanta area, and identified the largest positive rate in rural areas. They also identified a large variation in the impact of the disease. Counties with the highest mortality rates were more rural and had a higher percentage of individuals who were Black, older, and living in poverty. These counties also had fewer college graduates and less access to health care (both intensive care units and primary care physians).

Finally, the question of coinfections is important. Early in the pandemic, in an attempt to triage limited testing supplies, the Centers for Disease Control and Prevention (CDC) recommended first testing suspected patients for other respiratory pathogens before testing for COVID. Unfortunately, both Castillo et al[1] and Davis et al[2] found this strategy could lead to missing patients with COVID. Castillo et al[1] looked at several San Diego facilities and found a low but present rate of coinfection (2%) in "Rates of Coinfection With Other Respiratory Pathogens in Patients Positive for Coronavirus Disease 2019 (COVID-19)." Davis et al[2] performed a systematic review and meta-analysis in "Viral and Atypical Respiratory Coinfections in COVID-19: A Systematic Review and Meta-analysis" and found an overall 12% coinfection rate. Influenza was the most common viral pathogen, and mycoplasma was the most common bacterial coinfection.

Collectively, the 9 articles in the August edition of *JACEP Open* provide a broad description of both the COVID epidemiology and the health care response.

CONFLICTS OF INTEREST

No authors have any conflicts of interest to declare.

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