

**OAKLAND UNIVERSITY WILLIAM BEAUMONT SCHOOL OF MEDICINE
COVID-19 Bibliography – October 2020**

OUWB faculty and students have been productive researching and writing about the pandemic. A search of the institutional affiliation field in the PubMed database retrieved 36 citations, six of which included student authors.

Bahl A, Van Baalen MN, Ortiz L, Chen NW, Todd C, Milad M, Yang A, Tang J, Nygren M and Qu L (2020). "Early predictors of in-hospital mortality in patients with COVID-19 in a large American cohort." [Internal and Emergency Medicine](#). ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

OUWB Medical Student Author

Department of Emergency Medicine

Department of Foundational Medical Studies (BH)

Coronavirus disease (COVID-19) has aggressively spread across the United States with numerous fatalities. Risk factors for mortality are poorly described. This was a multicentered cohort study identifying patient characteristics and diagnostic markers present on initial evaluation associated with mortality in hospitalized COVID-19 patients. Epidemiological, demographic, clinical, and laboratory characteristics of survivors and non-survivors were obtained from electronic medical records and a multivariable survival regression analysis was conducted to identify risk factors of in-hospital death. Of 1629 consecutive hospitalized adult patients with confirmed COVID-19 from March 1st thru March 31, 2020, 1461 patients were included in final analysis. 327 patients died during hospitalization and 1134 survived to discharge. Median age was 62 years (IQR 50.0, 74.0) with 56% of hospitalized patients under the age of 65. 47% were female and 63% identified as African American. Most patients (55%) had either no or one comorbidity. In multivariable analysis, older age, admission respiratory status including elevated respiratory rate and oxygen saturation $\leq 88\%$, and initial laboratory derangements of creatinine > 1.33 mg/dL, alanine aminotransferase > 40 U/L, procalcitonin > 0.5 ng/mL, and lactic acid ≥ 2 mmol/L increased risk of in-hospital death. This study is one of the largest analyses in an epicenter for the COVID-19 pandemic. Older age, low oxygen saturation and elevated respiratory rate on admission, and initial lab derangements including renal and hepatic dysfunction and elevated procalcitonin and lactic acid are risk factors for in-hospital death. These factors can help clinicians prognosticate and should be considered in management strategies.

Cappell MS (2020). "Moderately severe diarrhea and impaired renal function with COVID-19 infection." [American Journal of Gastroenterology](#) 115(6): 947-948.

[Full Text](#)

Department of Internal Medicine

Chams N, Chams S, Badran R, Shams A, Araji A, Raad M, Mukhopadhyay S, Stroberg E, Duval EJ, Barton LM and **Hajj Hussein I** (2020). "COVID-19: A multidisciplinary review." [Front Public Health](#) 8: 383.

[Full Text](#)

Department of Foundational Medical Studies (OU)

Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is a novel coronavirus that is responsible for the 2019-2020 pandemic. In this comprehensive review, we discuss the current published literature surrounding the SARS-CoV-2 virus. We examine the fundamental concepts including the origin, virology, pathogenesis, clinical manifestations, diagnosis, laboratory, radiology, and histopathologic findings, complications, and treatment. Given that much of the information has been extrapolated from what we know about other coronaviruses including severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle

East respiratory syndrome coronavirus (MERS-CoV), we identify and provide insight into controversies and research gaps for the current pandemic to assist with future research ideas. Finally, we discuss the global response to the coronavirus disease-2019 (COVID-19) pandemic and provide thoughts regarding lessons for future pandemics.

Dhar N, Dhar S, Timar R, Lucas S, **Lamb LE** and **Chancellor MB** (2020). "De novo urinary symptoms associated with COVID-19: COVID-19-associated cystitis." Journal of Clinical Medicine Research 12(10): 681-682.

[Full Text](#)

Department of Urology

Diokno AC and **Devries JM** (2020). "The impact of COVID-19 on urologic practice, medical education, and training." International Urology and Nephrology 52(7): 1195-1198.

[Full Text](#)

Department of Pediatrics

Department of Urology

Fiani B, Covarrubias C, Desai A, **Sekhon M** and Jarrah R (2020). "A contemporary review of neurological sequelae of COVID-19." Frontiers in Neurology 11: 640.

[Full Text](#)

OUWB Medical Student Author

Coronavirus 2019 (COVID-19) is currently the center of what has become a public health crisis. While the virus is well-known for its trademark effects on respiratory function, neurological damage has been reported to affect a considerable proportion of severe cases. To characterize the neuro-invasive potential of this disease, a contemporary review of COVID-19 and its neurological sequelae was conducted using the limited, but growing, literature that is available. These neurological sequelae are based on the manifestations that the virus has on normal central and peripheral nervous system function. The authors present the virology of the SARS-CoV-2 agent by analyzing its classification as an enveloped, positive-stranded RNA virus. A comprehensive timeline is then presented, indicating the progression of the disease as a public health threat. Furthermore, underlying chronic neurological conditions potentially lead to more adverse cases of COVID-19. SARS-CoV-2 may reach ACE2 receptors on neuronal tissue through mode of the general circulation. The CNS may also be susceptible to an immune response where a "cytokine storm" can manifest into neural injury. Histological evidence is provided, while symptoms such as headache and vertigo are highlighted as CNS manifestations of COVID-19. Treatment of these symptoms is addressed with paracetamol being recommended as a possible, but not conclusive, treatment to some CNS symptoms. The authors then discuss the peripheral nervous system sequelae and COVID's impact on causing chemosensory dysfunction starting with viral attack on olfactory sensory neurons and cells types within the lining of the nose. Histological evidence is also provided while symptoms such as anosmia and ageusia are characterized as PNS manifestations. Possible treatment options for these symptoms are then addressed as a major limitation, as anecdotal, and not conclusive evidence can be made. Finally, preventive measures of the neurological sequelae are addressed using a multidirectional approach. Postmortem examinations of the brains of COVID-19 patients are suggested as being a possible key to formulating new understandings of its neuropathology. Lastly, the authors suggest a more comprehensive neurological follow-up of recovered patients, in order to better characterize the neurological sequelae of this illness.

Folberg R and Higginbotham EJ (2020). "Introduction to the ophthalmologists-in-training COVID-19 editorials." American Journal of Ophthalmology. ePub Ahead of Print.

[Full Text](#)

Department of Ophthalmology

Freij BJ, **Gebara BM**, Tariq R, **Wang AM**, Gibson J, **El-Wiher N**, **Krasan G**, Patek PM, **Levasseur KA**, **Amin M** and **Fullmer JM** (2020). "Fatal central nervous system co-infection with SARS-CoV-2 and tuberculosis in a healthy child." BMC Pediatrics 20(1): 429.

[Full Text](#)

Department of Pediatrics

*Department of Diagnostic Radiology and Molecular Imaging
Department of Emergency Medicine
Department of Pathology*

Background: Central and peripheral nervous system symptoms and complications are being increasingly recognized among individuals with pandemic SARS-CoV-2 infections, but actual detection of the virus or its RNA in the central nervous system has rarely been sought or demonstrated. Severe or fatal illnesses are attributed to SARS-CoV-2, generally without attempting to evaluate for alternative causes or co-pathogens. Case Presentation: A five-year-old girl with fever and headache was diagnosed with acute SARS-CoV-2-associated meningoencephalitis based on the detection of its RNA on a nasopharyngeal swab, cerebrospinal fluid analysis, and magnetic resonance imaging findings. Serial serologic tests for SARS-CoV-2 IgG and IgA showed seroconversion, consistent with an acute infection. Mental status and brain imaging findings gradually worsened despite antiviral therapy and intravenous dexamethasone. Decompressive suboccipital craniectomy for brain herniation with cerebellar biopsy on day 30 of illness, shortly before death, revealed SARS-CoV-2 RNA in cerebellar tissue using the Centers for Disease Control and Prevention 2019-nCoV Real-Time Reverse Transcriptase-PCR Diagnostic Panel. On histopathology, necrotizing granulomas with numerous acid-fast bacilli were visualized, and *Mycobacterium tuberculosis* complex DNA was detected by PCR. Ventricular cerebrospinal fluid that day was negative for mycobacterial DNA. Tracheal aspirate samples for mycobacterial DNA and culture from days 22 and 27 of illness were negative by PCR but grew *Mycobacterium tuberculosis* after 8 weeks, long after the child's passing. She had no known exposures to tuberculosis and no chest radiographic findings to suggest it. All 6 family members had normal chest radiographs and negative interferon- γ release assay results. The source of her tuberculous infection was not identified, and further investigations by the local health department were not possible because of the State of Michigan-mandated lockdown for control of SARS-CoV-2 spread. Conclusion: The detection of SARS-CoV-2 RNA in cerebellar tissue and the demonstration of seroconversion in IgG and IgA assays was consistent with acute SARS-CoV-2 infection of the central nervous system. However, the cause of death was brain herniation from her rapidly progressive central nervous system tuberculosis. SARS-CoV-2 may mask or worsen occult tuberculous infection with severe or fatal consequences.

Gallagher MJ, Bloomingdale R, **Berman AD**, **Williamson BD**, **Dixon SR** and **Safian RD** (2020). "Strategic deployment of cardiology fellows in training using the Accreditation Council for Graduate Medical Education Coronavirus Disease 2019 framework." *Journal of the American Heart Association* 9(14): e017443.

[Full Text](#)

Department of Internal Medicine

Coronavirus disease 2019 is a global pandemic affecting >3 million people in >170 countries, resulting in >200 000 deaths; 35% to 40% of patients and deaths are in the United States. The coronavirus disease 2019 crisis is placing an enormous burden on health care in the United States, including residency and fellowship training programs. The balance between mitigation, training and education, and patient care is the ultimate determinant of the role of cardiology fellows in training during the coronavirus disease 2019 crisis. On March 24, 2020, the Accreditation Council for Graduate Medical Education issued a formal response to the pandemic crisis and described a framework for operation of graduate medical education programs. Guidance for deployment of cardiology fellows in training during the coronavirus disease 2019 crisis is based on the principles of a medical mission, and adherence to preparation, protection, and support of our fellows in training. The purpose of this review is to describe our departmental strategic deployment of cardiology fellows in training using the Accreditation Council for Graduate Medical Education framework for pandemic preparedness.

Halalau A, **Ditkoff J**, Hamilton J, **Sharrak A**, **Vanood A**, **Abbas A** and **Ziadeh J** (2020). "Emergency center curbside screening during the COVID-19 pandemic: Retrospective cohort study." *JMIR Public Health and Surveillance* 6(3): e20040.

[Full Text](#)

OUWB Medical Student Author

Background: Coronavirus disease (COVID-19) is a global pandemic that has placed a significant burden on health care systems in the United States. Michigan has been one of the top states affected by COVID-19.

Objective: We describe the emergency center curbside testing procedure implemented at Beaumont Hospital, a large hospital in Royal Oak, MI, and aim to evaluate its safety and efficiency. Methods: Anticipating a surge in patients requiring testing, Beaumont Health implemented curbside testing, operated by a multidisciplinary team of health care workers, including physicians, advanced practice providers, residents, nurses, technicians, and registration staff. We report on the following outcomes over a period of 26 days (March 12, 2020, to April 6, 2020): time to medical decision, time spent documenting electronic medical records, overall screening time, and emergency center return evaluations. Results: In total, 2782 patients received curbside services. A nasopharyngeal swab was performed on 1176 patients (41%), out of whom 348 (29.6%) tested positive. The median time for the entire process (from registration to discharge) was 28 minutes (IQR 17-44). The median time to final medical decision was 15 minutes (IQR 8-27). The median time from medical decision to discharge was 9 minutes (IQR 5-16). Only 257 patients (9.2%) returned to the emergency center for an evaluation within 7 or more days, of whom 64 were admitted to the hospital, 11 remained admitted, and 4 expired. Conclusions: Our curbside testing model encourages the incorporation of this model at other high-volume facilities during an infectious disease pandemic.

Halalau A, Imam Z, **Karabon P**, **Mankuzhy N**, Shaheen A, **Tu J** and **Carpenter C** (2020). "External validation of a clinical risk score to predict hospital admission and in-hospital mortality in COVID-19 patients." [Annals of Medicine](#). ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

Department of Medical Studies

OUWB Medical Student Author

Background: Identification of patients with novel coronavirus disease 2019 (COVID-19) requiring hospital admission or at high-risk of in-hospital mortality is essential to guide patient triage and to provide timely treatment for higher risk hospitalized patients. Methods: A retrospective multi-centre (8 hospital) cohort at Beaumont Health, Michigan, USA, reporting on COVID-19 patients diagnosed between 1 March and 1 April 2020 was used for score validation. The COVID-19 Risk of Complications Score was automatically computed by the EHR. Multivariate logistic regression models were built to predict hospital admission and in-hospital mortality using individual variables constituting the score. Validation was performed using both discrimination and calibration. Results: Compared to Green scores, Yellow Scores (OR: 5.72) and Red Scores (OR: 19.1) had significantly higher odds of admission (both $p < .0001$). Similarly, Yellow Scores (OR: 4.73) and Red Scores (OR: 13.3) had significantly higher odds of in-hospital mortality than Green Scores (both $p < .0001$). The cross-validated C-Statistics for the external validation cohort showed good discrimination for both hospital admission ($C = 0.79$ (95% CI: 0.77-0.81)) and in-hospital mortality ($C = 0.75$ (95% CI: 0.71-0.78)). Conclusions: The COVID-19 Risk of Complications Score predicts the need for hospital admission and in-hospital mortality patients with COVID-19. Key points: Can an electronic health record generated risk score predict the risk of hospital admission and in-hospital mortality in patients diagnosed with coronavirus disease 2019 (COVID-19)? In both validation cohorts of 2,025 and 1,290 COVID-19, the cross-validated C-Statistics showed good discrimination for both hospital admission ($C = 0.79$ (95% CI: 0.77-0.81)) and in-hospital mortality ($C = 0.75$ (95% CI: 0.71-0.78)), respectively. The COVID-19 Risk of Complications Score may help predict the need for hospital admission if a patient contracts SARS-CoV-2 infection and in-hospital mortality for a hospitalized patient with COVID-19.

Imam Z, Odish F, Armstrong J, **Elassar H**, **Dokter J**, Langnas E and **Halalau A** (2020). "Independent correlates of hospitalization in 2040 patients with COVID-19 at a large hospital system in Michigan, United States." [Journal of General Internal Medicine](#). ePub Ahead of Print.

[Full Text](#)

OUWB Medical Student Author

Department of Internal Medicine

Imam Z, Odish F, Gill I, O'Connor D, Armstrong J, **Vanood A**, **Ibironke O**, Hanna A, **Ranski A** and **Halalau A** (2020). "Older age and comorbidity are independent mortality predictors in a large cohort of 1305 COVID-19 patients in Michigan, United States." [Journal of Internal Medicine](#). ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine
OUWB Medical Student Author

Introduction: Higher comorbidity and older age have been reported as correlates of poor outcomes in COVID-19 patients worldwide; however, US data are scarce. We evaluated mortality predictors of COVID-19 in a large cohort of hospitalized patients in the United States. Design: Retrospective, multicenter cohort of inpatients diagnosed with COVID-19 by RT-PCR from 1 March to 17 April 2020 was performed, and outcome data evaluated from 1 March to 17 April 2020. Measures included demographics, comorbidities, clinical presentation, laboratory values and imaging on admission. Primary outcome was mortality. Secondary outcomes included length of stay, time to death and development of acute kidney injury in the first 48-h. Results: The 1305 patients were hospitalized during the evaluation period. Mean age was 61.0 +/- 16.3, 53.8% were male and 66.1% African American. Mean BMI was 33.2 +/- 8.8 kg m(-2). Median Charlson Comorbidity Index (CCI) was 2 (1-4), and 72.6% of patients had at least one comorbidity, with hypertension (56.2%) and diabetes mellitus (30.1%) being the most prevalent. ACE-I/ARB use and NSAIDs use were widely prevalent (43.3% and 35.7%, respectively). Mortality occurred in 200 (15.3%) of patients with median time of 10 (6-14) days. Age > 60 (aOR: 1.93, 95% CI: 1.26-2.94) and CCI > 3 (aOR: 2.71, 95% CI: 1.85-3.97) were independently associated with mortality by multivariate analyses. NSAIDs and ACE-I/ARB use had no significant effects on renal failure in the first 48 h. Conclusion: Advanced age and an increasing number of comorbidities are independent predictors of in-hospital mortality for COVID-19 patients. NSAIDs and ACE-I/ARB use prior to admission is not associated with renal failure or increased mortality.

Ionescu F, **Grasso-Knight G**, Castillo E, Naeem E, Petrescu I, Imam Z, **Patel VK**, Narasimhan M and **Nair GB** (2020). "Therapeutic anticoagulation delays death in COVID-19 patients: Cross-sectional analysis of a prospective cohort." [TH Open](#) 4(3): e263-e270.

[Full Text](#)

Department of Internal Medicine

A hypercoagulable state has been described in coronavirus disease 2019 (COVID-19) patients. Others have reported a survival advantage with prophylactic anticoagulation (pAC) and therapeutic anticoagulation (tAC), but these retrospective analyses have important limitations such as confounding by indication. We studied the impact of tAC and pAC compared with no anticoagulation (AC) on time to death in COVID-19. We performed a cross-sectional analysis of 127 deceased COVID-19 patients and compared time to death in those who received tAC (n = 67), pAC (n = 47), and no AC (n = 13). Median time to death was longer with higher doses of AC (11 days for tAC, 8 days for pAC, and 4 days for no AC, p < 0.001). In multivariate analysis, AC was associated with longer time to death, both at prophylactic (hazard ratio [HR] = 0.29; 95% confidence interval [CI]: 0.15 to 0.58; p < 0.001) and therapeutic doses (HR = 0.15; 95% CI: 0.07 to 0.32; p < 0.001) compared with no AC. Bleeding rates were similar among tAC and remaining patients (19 vs. 18%; p = 0.877). In deceased COVID-19 patients, AC was associated with a delay in death in a dose-dependent manner. Randomized trials are required to prospectively investigate the benefit and safety of higher doses of AC in this population.

Ionescu F, **Jaiyesimi I**, Petrescu I, Lawler PR, Castillo E, Munoz-Maldonado Y, Imam Z, Narasimhan M, **Abbas AE**, Konde A and **Nair GB** (2020). "Association of anticoagulation dose and survival in hospitalized COVID-19 patients: A retrospective propensity score weighted analysis." [European Journal of Haematology](#). ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

Background: Hypercoagulability may contribute to COVID-19 pathogenicity. The role of anticoagulation (AC) at therapeutic (tAC) or prophylactic doses (pAC) is unclear. Objectives: We evaluated the impact on survival of different AC doses in COVID-19 patients. Methods: Retrospective, multi-center cohort study of consecutive COVID-19 patients hospitalized between March 13th and May 5th, 2020. Results: 3480 patients were included (mean age, 64.5 years [17.0]; 51.5% female; 52.1% black and 40.6% white). 18.5% (n=642) required intensive care unit (ICU) stay. 60.9% received pAC (n=2121), 28.7% received ≥3 days of tAC (n=998), and 10.4% (n=361) received no AC. Propensity score (PS) weighted Kaplan-Meier plot demonstrated different 25-day survival probability in the tAC and pAC groups (57.5% vs 50.7%). In a PS weighted multivariate proportional hazards model, AC was associated with reduced risk of death at prophylactic (hazard ratio [HR] 0.35 [95% confidence interval {CI} 0.22-0.54]) and therapeutic doses (HR 0.14 [95% CI

0.05-0.23]) compared to no AC. Major bleeding occurred more frequently in tAC patients (81 [8.1%]) compared to no AC (20 [5.5%]) or pAC (46 [2.2%]) subjects. Conclusions: Higher doses of AC were associated with lower mortality in hospitalized COVID-19 patients. Prospective evaluation of efficacy and risk of AC in COVID-19 is warranted.

Jindal V, Sahu KK, **Gaikazian S**, Siddiqui AD and **Jaiyesimi I** (2020). "Cancer treatment during COVID-19 pandemic." Medical Oncology 37(7): 58.

[Full Text](#)

Department of Internal Medicine

Currently world is fighting with global pandemic of coronavirus disease 2019 (COVID-19). At this time of uncertainty, oncologists are struggling to provide appropriate care to cancer patients. They have to weigh risk and benefit of giving cancer treatment vs chances of getting them infected with COVID-19. As cancer patients are immunocompromised and there are high chances of exposure during hospital visits and if they get infected, outcome can be fatal. So through the column of this article, we would like to provide basic guideline in management of cancer patients during COVID-19 pandemic.

Kadavath S, Mohan J, Ashraf S, Kassier A, Hawwass D, Madan N, Salehi N, Bernardo M, Mawri S, Rehman KA, Ya'qoub L, Strobel A, Dixon SR, Siraj A, Messenger J, Spears JR, Lopez-Candales A, Madder R, Bailey SR, Alaswad K, Kim MC, **Safian RD** and Alraies MC (2020). "Cardiac catheterization laboratory volume changes during COVID-19-findings from a Cardiovascular Fellows Consortium." American Journal of Cardiology 130: 168-169.

[Full Text](#)

Department of Internal Medicine

Kalra A, Michos ED and **Chinnaiyan KM** (2020). "COVID-19 and the healthcare workers." European Heart Journal. ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

Kullar R, Marcelin JR, Swartz TH, Piggott DA, Macias Gil R, **Mathew TA** and Tan T (2020). "Racial disparity of coronavirus disease 2019 in African American communities." Journal of Infectious Diseases 222(6): 890-893.

[Full Text](#)

Department of Internal Medicine

The coronavirus disease 2019 (COVID-19) pandemic has unveiled unsettling disparities in the outcome of the disease among African Americans. These disparities are not new but are rooted in structural inequities that must be addressed to adequately care for communities of color. We describe the historical context of these structural inequities, their impact on the progression of COVID-19 in the African American (black) community, and suggest a multifaceted approach to addressing these healthcare disparities. (Of note, terminology from survey data cited for this article varied from blacks, African Americans, or both; for consistency, we use African Americans throughout.)

Lamb LE, Bartolone SN, Ward E and **Chancellor MB** (2020). "Rapid detection of novel coronavirus/Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) by reverse transcription-loop-mediated isothermal amplification." PLoS One 15(6).

[Full Text](#)

Department of Urology

Novel Corona virus/Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2 or 2019-nCoV), and the subsequent disease caused by the virus (coronavirus disease 2019 or COVID-19), is an emerging global health concern that requires a rapid diagnostic test. Quantitative reverse transcription PCR (qRT-PCR) is currently the standard for SARS-CoV-2 detection; however, Reverse Transcription Loop-Mediated Isothermal Amplification (RT-LAMP) may allow for faster and cheaper field based testing at point-of-risk. The objective of this study was to develop a rapid screening diagnostic test that could be completed in 30-45 minutes. Simulated patient samples were generated by spiking serum, urine, saliva, oropharyngeal swabs, and nasopharyngeal swabs with a portion of the SARS-CoV-2 nucleic sequence. RNA isolated from nasopharyngeal swabs collected from actual COVID-19 patients was also tested. The samples were tested

using RT-LAMP as well as by conventional qRT-PCR. Specificity of the RT-LAMP was evaluated by also testing against other related coronaviruses. RT-LAMP specifically detected SARS-CoV-2 in both simulated patient samples and clinical specimens. This test was performed in 30-45 minutes. This approach could be used for monitoring of exposed individuals or potentially aid with screening efforts in the field and potential ports of entry.

Macias Gil R, Marcelin JR, Zuniga-Blanco B, Marquez C, **Mathew T** and Piggott DA (2020). "COVID-19 pandemic: Disparate health impact on the Hispanic/Latinx population in the United States." Journal of Infectious Diseases. ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

In December 2019, a novel coronavirus known as SARS-CoV-2, emerged in Wuhan, China, causing the Coronavirus disease 2019 we now refer to as COVID-19. The World Health Organization declared COVID-19 a pandemic on March 12th, 2020. In the United States, the COVID-19 pandemic has exposed pre-existing social and health disparities among several historically vulnerable populations, with stark differences in the proportion of minority individuals diagnosed with and dying from COVID-19. In this article we will describe the emerging disproportionate impact of COVID-19 on the Hispanic/Latinx (henceforth: Hispanic or Latinx) community in the U.S., discuss potential antecedents and consider strategies to address the disparate impact of COVID-19 on this population.

Mi M, Zhang Y, Wu L and Wu W (2020). "Four health science librarians' experiences: How they responded to the COVID-19 pandemic crisis." Medical Science Educator 81(7).

[Full Text](#)

Department of Foundational Medical Studies (OU)

Medical Library

The COVID-19 pandemic has an unprecedented impact on the entire country. With exponential growth of COVID-19 cases in many areas, university administration and faculty faced mounting challenges on all fronts in meeting students' needs in transition to remote learning environments. In the face of indefinite closure of libraries and university campuses, how could academic libraries respond to emerging needs in response to the rapidly evolving situation from one day to the next?

Nair GB and Niederman MS (2020). "Updates on community acquired pneumonia management in the ICU." Pharmacology & Therapeutics: 107663.

[Full Text](#)

Department of Internal Medicine

While the world is grappling with the consequences of a global pandemic related to SARS-CoV-2 causing severe pneumonia, available evidence points to bacterial infection with *Streptococcus pneumoniae* as the most common cause of severe community acquired pneumonia (SCAP). Rapid diagnostics and molecular testing have improved the identification of co-existent pathogens. However, mortality in patients admitted to ICU remains staggeringly high. The American Thoracic Society and Infectious Diseases Society of America have updated CAP guidelines to help streamline disease management. The common theme is use of timely, appropriate and adequate antibiotic coverage to decrease mortality and avoid drug resistance. Novel antibiotics have been studied for CAP and extend the choice of therapy, particularly for those who are intolerant of, or not responding to standard treatment, including those who harbor drug resistant pathogens. In this review, we focus on the risk factors, microbiology, site of care decisions and treatment of patients with SCAP.

Pakray A, Walker D, Figacz A, **Kilanowski S**, **Rhodes C**, **Doshi S** and Coffey M (2020). "Imaging evaluation of COVID-19 in the emergency department." Emergency Radiology. ePub Ahead of Print.

[Full Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Purpose: The purpose of this study is to elucidate the chest imaging findings of suspected COVID-19 patients presenting to the emergency department and the relationship with their demographics and RT-PCR

testing results. Methods: Patients presenting to the ED between March 12 and March 28, 2020, with symptoms suspicious for COVID-19 and subsequent CXR and/or CT exam were selected. Patients imaged for other reasons with findings suspicious for COVID-19 were also included. Demographics, laboratory test results, and history were extracted from the medical record. Descriptive statistics were used to explore the relationship between imaging and these factors. Results: A total of 227 patients from the emergency department were analyzed (224 CXRs and 25 CTs). Of the 192 patients with COVID-19 results, 173 (90.1%) had COVID-19 RT-PCR (+). Abnormal imaging (CXR, 85.7% and/or CT, 100%) was noted in 155 (89.6%) of COVID-19 RT-PCR (+) cases. The most common imaging findings were mixed airspace/interstitial opacities (39.8%) on CXR and peripheral GGOs on CT (92%). The most common demographic were African Americans (76.8%). Furthermore, 97.1% of African Americans were RT-PCR (+) compared to 65.8% of Caucasians. Conclusion: We found a similar spectrum of thoracic imaging findings in COVID-19 patients as previous studies. The most common demographic were African Americans (76.8%). Furthermore, 97.1% of African Americans were RT-PCR (+) compared to 65.8% of Caucasians. Both CT and CXR can accurately identify COVID-19 pneumonitis in 89.6% of RT-PCR (+) cases, 89.5% of false negatives, and 72.7% of cases with no RT-PCR result.

Pamplona MDC and **Ysunza PA** (2020). "Speech pathology telepractice for children with cleft palate in the times of COVID-19 pandemic." International Journal of Pediatric Otorhinolaryngology 138: 110318.

[Full Text](#)

Department of Physical Medicine & Rehabilitation

Objective: To study whether providing Speech and Language Pathology (SLP) interventions by telepractice (TP) could effectively improve speech performance in children with cleft palate (CCP). Methods: Forty-three CCP were treated with TP intervention in 45 min sessions, 2 times per week for a period of one month. Children ages ranged 4-12 years ($X = 7.04$; $SD = 2.59$). All children presented with velopharyngeal insufficiency (VPI) and compensatory articulation (CA) after palatal repair. TP was provided in small groups (5-6 children) following the principles of the Whole Language Model (WLM). Severity of CA was evaluated by a standardized scale at the onset and at the end of the TP period. Results: At the onset of the TP intervention period, 84% of the patients demonstrated severe CA. At the end of the TP period there was a significant improvement in severity of CA ($p < 0.001$). Conclusion: The results of this study suggests that TP can be a safe and reliable tool for improving CA. Considering that the COVID-19 pandemic will radically modify the delivery of Health Care services in the long term, alternate modes of service delivery should be studied and implemented.

Pandey AS, Daou BJ, Tsai JP, Zaidi SF, Salahuddin H, Gemmete JJ, Oliver MJ, Singer J, Elder TA, Mbabuie N, Adel JG, Gujrati Y, Saleemi MA, Siddiqui FM, Elias AE, Rehman MF, Marin H, Chebl AB, Kole M, **Wilseck JM, Kazmierczak CD, Mick JM**, Majhoo AQ, Naravetla BR, Rayes M, Luqman AW, Richards BF, Kelkar P, Burgess R, Thompson BG, Chaudhary N, Mazaris PA, Qahwash O, Razak MA and Jumaa MA (2020). "Letter: COVID-19 pandemic-The bystander effect on stroke care in Michigan." Neurosurgery 87(3): E397-e399.

[Full Text](#)

Department of Diagnostics Radiology and Molecular Imaging

Patek P, Corcoran J, **Adams L** and **Khandhar P** (2020). "SARS-CoV-2 infection in a 2-week-old male with neutropenia." Clinical Pediatrics: 9922820920014.

[Full Text](#)

Department of Emergency Medicine

Department of Pediatrics

Raad M, Dabbagh M, Gorgis S, Yan J, Chehab O, Dagher C, Jamoor K, **Hussein IH**, Cook B, Van Harn M, Singh G, McCord J and Parikh S (2020). "Cardiac injury patterns and inpatient outcomes among patients admitted with COVID-19." American Journal of Cardiology 133: 154-161.

[Full Text](#)

Department of Foundational Medical Studies (OU)

Although certain risk factors have been associated with increased morbidity and mortality in patients admitted with Coronavirus Disease 2019 (COVID-19), the impact of cardiac injury and high-sensitivity

troponin-I (hs-cTnI) concentrations are not well described. In this large retrospective longitudinal cohort study, we analyzed the cases of 1,044 consecutively admitted patients with COVID-19 from March 9 until April 15. Cardiac injury was defined by hs-cTnI concentration >99th percentile. Patient characteristics, laboratory data, and outcomes were described in patients with cardiac injury and different hs-cTnI cut-offs. The primary outcome was mortality, and the secondary outcomes were length of stay, need for intensive care unit care or mechanical ventilation, and their different composites. The final analyzed cohort included 1,020 patients. The median age was 63 years, 511 (50% patients were female, and 403 (40% were white. 390 (38%) patients had cardiac injury on presentation. These patients were older (median age 70 years), had a higher cardiovascular disease burden, in addition to higher serum concentrations of inflammatory markers. They also exhibited an increased risk for our primary and secondary outcomes, with the risk increasing with higher hs-cTnI concentrations. Peak hs-cTnI concentrations continued to be significantly associated with mortality after a multivariate regression controlling for comorbid conditions, inflammatory markers, acute kidney injury, and acute respiratory distress syndrome. Within the same multivariate regression model, presenting hs-cTnI concentrations were not significantly associated with outcomes, and undetectable hs-cTnI concentrations on presentation did not completely rule out the risk for mechanical ventilation or death. In conclusion, cardiac injury was common in patients admitted with COVID-19. The extent of cardiac injury and peak hs-cTnI concentrations were associated with worse outcomes.

Rasmussen C, **Niculescu I**, **Patel S** and **Krishnan A** (2020). "COVID-19 and involvement of the corpus callosum: Potential effect of the cytokine storm?" [American Journal of Neuroradiology](#) 41(9): 1625-1628.

[Full Text](#)

Department of Internal Medicine

Department of Diagnostic Radiology and Molecular Imaging

Neurologic findings are being increasingly recognized in coronavirus disease 2019. We present a patient with a unique involvement of the corpus callosum that we relate to the cytokine storm seen in patients with Severe Acute Respiratory Syndrome coronavirus 2 infection. As the infection is increasingly seen around the world, recognition of these unique patterns may facilitate early identification of the progression of this disease and potentially facilitate appropriate management.

Sawarynski K and **Gould DJ** (2020). "A foundational science department's transition to an online community." [Medical Science Educator](#) Sep: 1-3.

[Full Text](#)

Department of Foundational Medical Studies (OU)

Like many medical school department's around the world, we needed to pivot, almost instantly to an online community. As a large and diverse foundational science department, grounded in a culture of collegiality and collaboration, we faced a host of challenges beyond immediate remote teaching. Of paramount concern to departmental leadership was-how do we maintain our culture while working remotely?

Schott JP, Mertens AN, Bloomingdale R, O'Connell TF, **Gallagher MJ**, **Dixon S** and **Abbas AE** (2020). "Transthoracic echocardiographic findings in patients admitted with SARS-CoV-2 infection." [Echocardiography](#). ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

Introduction: Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)-infected patients commonly have elevated troponin and D-dimer levels, but limited imaging exists to support most likely etiologies in efforts to avoid staff exposure. The purpose of this study was to report transthoracic echocardiographic (TTE) findings in SARS-CoV-2 patients with correlating troponin and D-dimer levels. Methods: We identified 66 SARS-CoV-2 patients (mean age 60 ± 15.7 years) admitted within a large, eight-hospital healthcare system over a 6-week period with a TTE performed. TTE readers were blinded to laboratory data with intra-observer and inter-observer analysis assessed. Results: Sixty-six of 1780 SARS-CoV-2 patients were included and represented a high-risk population as 38 (57.6%) were ICU-admitted, 47 (71.2%) had elevated D-dimer, 41 (62.1%) had elevated troponin, and 25 (37.9%) died. Right ventricular (RV) dilation was present in 49 (74.2%) patients. The incidence and average D-dimer elevation was similar between moderate/severe vs. mild/no RV dilation (69.6% vs 67.6%, P = 1.0; 3736 ± 2986 vs 4141 ± 3351 ng/mL, P = .679). Increased left ventricular (LV) wall thickness was present in 46 (69.7%) with similar incidence of elevated troponin and average

troponin levels compared to normal wall thickness (66.7% vs 52.4%, $P = .231$; 0.88 ± 1.9 vs 1.36 ± 2.4 ng/mL, $P = .772$). LV dilation was rare ($n = 6$, 9.1%), as was newly reduced LV ejection fraction ($n = 2$, 3.0%). Conclusion: TTE in SARS-CoV-2 patients is scarce, technically difficult, and reserved for high-risk patients. RV dilation is common in SARS-CoV-2 but does not correlate with elevated D-dimer levels. Increased LV wall thickness is common, while newly reduced LV ejection fraction is rare, and neither correlates with troponin levels.

Tan TQ, Kullar R, Swartz TH, **Mathew TA**, Piggott DA and Berthaud V (2020). "Location matters: Geographic disparities and impact of Coronavirus Disease 2019 (COVID-19)." Journal of Infectious Diseases. ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

The COVID-19 pandemic in the United States has revealed major disparities in the access to testing and messaging about the pandemic based on the geographic location of individuals, particularly in communities of color, rural areas, and areas of low income. This geographic disparity, in addition to deeply rooted structural inequities, have posed additional challenges to adequately diagnose and provide care for individuals of all ages living in these settings. We describe the impact that COVID-19 has had on geographic disparate populations in the United States and share our recommendations to what might be done to ameliorate the current situation.

Thapa SB, Kakar TS, Mayer C and Khanal D (2020). "Clinical outcomes of in-hospital cardiac arrest in COVID-19." JAMA Internal Medicine. ePub Ahead of Print.

[Full Text](#)

Department of Internal Medicine

This case series examines outcomes of in-hospital cardiac arrest among patients with COVID-19.

Wilson GD, Mehta MP, Welsh JS, Chakravarti A, Rogers CL and Fontanesi J (2020). "Investigating low-dose thoracic radiation as a treatment for COVID-19 patients to prevent respiratory failure." Radiation Research 194(1): 1-8.

[Full Text](#)

Department of Radiation Oncology

Yoon JW, Welch RL, Alamin T, Lavelle WF, Cheng I, **Perez-Cruet M**, Fielding LC, Sasso RC, Linovitz RJ, Kim KD and Welch WC (2020). "Remote virtual spinal evaluation in the era of COVID-19." International Journal of Spine Surgery 14(3): 433-440.

[Full Text](#)

Department of Neurosurgery

Background: With the COVID-19 pandemic disrupting many facets of our society, physicians and patients have begun using telemedicine as a platform for the delivery of health care. One of the challenges in implementing telemedicine for the spine care provider is completing a comprehensive spinal examination. Currently, there is no standardized methodology to complete a full spinal examination through telemedicine. Methods: We propose a novel, remote spinal examination methodology that is easily implemented through telemedicine, where the patient is an active participant in the successful completion of his or her examination. This type of examination has been validated in a neurology setting. To facilitate the telemedicine visit, we propose that video instruction be shared with the patient prior to the telemedicine visit to increase the efficacy of the examination. Results: Since the issuance of stay-at-home order across the states, many spine practices around the country have rapidly adopted and increased their telemedicine program to continue provide care for patients during COVID-19 pandemic. At a tertiary academic center in a busy metropolitan area, nearly 700 telemedicine visits were successfully conducted during a 4-week period. There were no remote visits being done prior to the shutdown. Conclusions: Implementation of our proposed remote spinal examination has the potential to serve as a guideline for the spine care provider to efficiently assess patients with spine disease using telemedicine. Because these are only suggestions, providers should tailor examination to each individual patient's needs. Level of Evidence: V. Clinical Relevance: It is likely that physicians will incorporate telemedicine into health care delivery services even after the COVID-19 pandemic subsides because of telemedicine's efficiency in meeting patient needs. Using the standard maneuvers provided in our study, spine care providers can perform a nearly comprehensive spine

examination through telemedicine. Further studies will be needed to validate the reproducibility and reliability of our methodology.