



## International EPI Cell Daily Evidence Briefing – 12/03/2020

Theme	Publication Date	Title/URL	Journal	Digest
Diagnostics and genomics	11.03.2020	<a href="#">ARTICLE: Development of a Laboratory-safe and Low-cost Detection Protocol for SARS-CoV-2 of the Coronavirus Disease 2019 (COVID-19)</a>	Experimental Neurobiology:	<ul style="list-style-type: none"> <li>Established a real-time reverse-transcription PCR (rtPCR)-based assay protocol composed of easy specimen self-collection from a subject via pharyngeal swab, Trizolbased RNA purification, and SYBR Green-based rtPCR.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">REVIEW: Harnessing the immune system via FcγR function in immune therapy: A pathway to next-gen mAbs</a>	Immunology and Cell Biology	<ul style="list-style-type: none"> <li>This review touches on recent aspects FcγR and IgG immunobiology and its relationship to the present and future actions of therapeutic monoclonal antibodies.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">ARTICLE: From SARS and MERS CoVs to SARS-CoV-2: moving toward more biased codon usage in viral structural and non-structural genes</a>	Journal of Medical Virology	<ul style="list-style-type: none"> <li>In this study, a fundamental knowledge gap question is to be resolved by evaluating the differences in biological and pathogenic aspects of SARS-CoV-2 and the changes in SARS-CoV-2 in comparison with the two prior major COV epidemics, SARS and MERS coronaviruses, via genomic comparisons.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">RESEARCH LETTER: Detection of SARS-CoV-2 in Different Types of Clinical Specimens</a>	JAMA	<ul style="list-style-type: none"> <li>Investigated the biodistribution of SARS-CoV-2 among different tissues of inpatients with COVID-19 diagnosed based on symptoms and radiology and confirmed by SARS-CoV-2 detection.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">PREPRINT - NOT PEER-REVIEWED: A deep learning algorithm using CT images to screen for Corona Virus Disease (COVID-19)</a>	medRxiv (not peer-reviewed)	<ul style="list-style-type: none"> <li>Based on COVID-19 radiographical changes in CT images, the authors aimed to develop a deep learning method that could extract COVID-19's graphical features in order to provide a clinical diagnosis ahead of the pathogenic test, thus saving critical time for disease control.</li> <li>The authors collected 1,119 CT images of pathogen-confirmed COVID-19 cases along with those previously diagnosed with typical viral pneumonia.</li> <li>These results demonstrate the proof-of-principle for using artificial intelligence to extract radiological</li> </ul>

				features for timely and accurate COVID-19 diagnosis.
Diagnostics and genomics	11.03.2020	<a href="#">PREPRINT - NOT PEER-REVIEWED: Genome-wide data inferring the evolution and population demography of the novel pneumonia coronavirus (SARS-CoV-2)</a>	bioRxiv (not peer-reviewed)	<ul style="list-style-type: none"> <li>• In this study, we used 10 new sequenced genomes of SARS-CoV-2 and combined 136 genomes from GISAID database to investigate the genetic variation and population demography through different analysis approaches (e.g. Network, EBSP, Mismatch, and neutrality tests) in the previous three months.</li> <li>• The results showed that eighty haplotypes had 183 substitution sites, including 27 parsimony-informative and 156 singletons.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">PREPRINT - NOT PEER-REVIEWED: Larger viral genome size facilitates emergence of zoonotic diseases</a>	bioRxiv (not peer-reviewed)	<ul style="list-style-type: none"> <li>• Comparing all known zoonotic viral genome sizes to known non-zoonotic viral genome sizes demonstrates that zoonotic viruses have significantly larger genomes.</li> <li>• These results support the notion that large viral genomes are important in producing new zoonotic disease, and suggest that genome size may be a useful surrogate in screening for potential zoonotic viruses.</li> </ul>
Diagnostics and genomics	11.03.2020	<a href="#">PREPRINT - NOT PEER-REVIEWED: A novel bat coronavirus reveals natural insertions at the S1/S2 cleavage site of the Spike protein and a possible recombinant origin of HCoV-19</a>	medRxiv (not peer-reviewed)	<ul style="list-style-type: none"> <li>• The authors report a novel bat-derived coronavirus, denoted RmYN02, identified from a metagenomics analysis of samples from 227 bats collected from Yunnan Province in China between May and October, 2019.</li> <li>• The results suggest that HCoV-19 originated from multiple naturally occurring recombination events among those viruses present in bats and other wildlife species.</li> </ul>
Epidemiology and clinical	06.03.2020	<a href="#">CORRESPONDENCE: Managing neonates with respiratory failure due to SARS-CoV-2</a>	The Lancet Child & Adolescent Health	<ul style="list-style-type: none"> <li>•The authors query points in a Comment in The Lancet Child &amp; Adolescent Health by Jianhui Wang et al which suggested a plan to handle neonates with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections and outbreaks in neonatal intensive care units (NICUs).</li> </ul>

Epidemiology and clinical	11.03.2020	<a href="#">CORRESPONDENCE: Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection?</a>	The Lancet Respiratory Medicine	<ul style="list-style-type: none"> <li>•The authors suggest that patients with cardiac diseases, hypertension, or diabetes, who are treated with ACE2-increasing drugs, are at higher risk for severe COVID-19 infection and, therefore, should be monitored for ACE2-modulating medications, such as ACE inhibitors or ARBs.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">ARTICLE: Early dynamics of transmission and control of COVID-19: a mathematical modelling study</a>	The Lancet Infectious Diseases	<ul style="list-style-type: none"> <li>• Combining a mathematical model of severe SARS-CoV-2 transmission with four datasets from within and outside Wuhan, the authors estimated how transmission in Wuhan varied between December, 2019, and February, 2020. They used these estimates to assess the potential for sustained human-to-human transmission to occur in locations outside Wuhan if cases were introduced.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">CHINESE ARTICLE: [Comparison of epidemic characteristics between SARS in 2003 and COVID-19 in 2020 in Guangzhou]</a>	Zhonghua Liu Xing Bing Xue Za Zhi	<ul style="list-style-type: none"> <li>•Analyzed the epidemic characteristics and related indicators of SARS (2003) and COVID-19 (2020), to explore the reasons for the similarities and differences of the two epidemics, so as to provide reference for epidemic prevention and control.</li> </ul>
Epidemiology and clinical	12.03.2020	<a href="#">COMMENT: Implications of COVID-19 for patients with pre-existing digestive diseases</a>	The Lancet Gastroenterology & Hepatology	<ul style="list-style-type: none"> <li>•COVID-19 has implications for the management of patients with pre-existing digestive diseases. This paper discusses this.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">JAMA INSIGHTS: Care for Critically Ill Patients With COVID-19</a>	JAMA	<ul style="list-style-type: none"> <li>•This article discusses issues pertaining to regions where critical care units have the capacity to provide mechanical ventilation, acknowledging that this capacity does not exist in many regions and that capacity could be exceeded in many places. This differential ability to manage the disease will likely have a substantial influence on patient outcomes.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">ARTICLE: ISUOG Interim Guidance on 2019 novel coronavirus infection during pregnancy and puerperium: information for healthcare professionals</a>	Ultrasound Obstet Gynecol	<ul style="list-style-type: none"> <li>•In response to the WHO statements and international concerns regarding the COVID-19 outbreak, ISUOG has issued guidance for management during pregnancy and puerperium which are outlined in this paper.</li> </ul>

Epidemiology and clinical	12.03.2020	<a href="#">AUDIO INTERVIEW: Making Decisions about Covid-19 Testing and Treatment for Your Patients</a>	The New England Journal of Medicine	<ul style="list-style-type: none"> <li>• In this audio interview conducted on March 10, 2020, the editors discuss the care of two hypothetical patients who present with equivocal symptoms.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">REPORT: COVID-19, Australia: Epidemiology Report 6 (Reporting week ending 19:00 AEDT 7 March 2020)</a>	Commun Dis Intell (2018)	<ul style="list-style-type: none"> <li>• This is the sixth epidemiological report for coronavirus disease 2019 (COVID-19), reported in Australia as of 7 March 2020. It includes data on COVID-19 cases diagnosed in Australia, the international situation and a review of current evidence.</li> </ul>
Epidemiology and clinical	06.03.2020	<a href="#">CORRESPONDENCE: Managing neonates with respiratory failure due to SARS-CoV-2- Authors' reply</a>	The Lancet Child & Adolescent Health	<ul style="list-style-type: none"> <li>• The authors reply to points made (above) about their Comment piece on managing neonates with respiratory failure due to SARS-CoV-2.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">RESEARCH LETTER: Co-infection with SARS-CoV-2 and Influenza A Virus in Patient with Pneumonia, China</a>	Emerging Infectious Diseases	<ul style="list-style-type: none"> <li>• Reports co-infection with SARS-CoV-2 and influenza A virus in a patient with pneumonia in China. The case highlights possible co-detection of known respiratory viruses. The authors noted low sensitivity of upper respiratory specimens for SARS-CoV-2, which could further complicate recognition of the full extent of disease.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">CHINESE ARTICLE: [Construction and evaluation of a novel diagnosis process for 2019-Corona Virus Disease]</a>	Zhonghua Yi Xue Za Zhi	<ul style="list-style-type: none"> <li>• This paper constructed and evaluated a diagnosis process for COVID-19. A continuous cohort of adults and adolescent (<math>\geq 12</math> years) (<math>n=382</math>) that were screened for COVID-19 were included from Xiangya Hospital of Central South University from January 23 to February 3, 2020.</li> </ul>
Epidemiology and clinical	09.03.2020	<a href="#">CLINICAL PICTURE: COVID-19 with spontaneous pneumomediastinum</a>	The Lancet Infectious Diseases	<ul style="list-style-type: none"> <li>• Describes a 38 yo male with COVID-19 who developed pneumomediastinum and subcutaneous emphysema.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">ARTICLE: Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study</a>	The Lancet	<ul style="list-style-type: none"> <li>• Describes the risk factors for mortality and the clinical course of illness, including viral shedding, for 191 COVID-19 patients in Wuhan, China.</li> </ul>
Epidemiology and clinical	11.03.2020	<a href="#">LETTER TO THE EDITOR: Co-infection of SARS-CoV-2 and HIV in a patient in Wuhan city, China</a>	Journal of Medical Virology	<ul style="list-style-type: none"> <li>• Describe a patient with HIV recovered from a coronavirus-related pneumonia. Among the patients infected by SARS-CoV-2, immunocompromised patients, such</li> </ul>

				as HIV infection need to be regarded as vulnerable group.
Epidemiology and clinical	11.03.2020	<a href="#">CORRESPONDENCE: Sex difference and smoking predisposition in patients with COVID-19</a>	The Lancet Respiratory Medicine	<ul style="list-style-type: none"> <li>•Discusses the sex difference and smoking predisposition of COVID-19 patients, based on published studies.</li> </ul>
Infection control	11.03.2020	<a href="#">CORRESPONDENCE: Adoption of COVID-19 triage strategies for low-income settings</a>	The Lancet Respiratory Medicine	<ul style="list-style-type: none"> <li>•Despite major advances in epidemic preparedness, Africa remains uniquely susceptible to novel coronavirus disease 2019 (COVID-19). This piece briefly discusses this.</li> </ul>
Infection control	11.03.2020	<a href="#">IDEAS AND OPINIONS: How Should U.S. Hospitals Prepare for Coronavirus Disease 2019 (COVID-19)?</a>	Annals of Internal Medicine	<ul style="list-style-type: none"> <li>•Discusses how health systems can prepare to care for a large influx of patients with COVID-19.</li> </ul>
Infection control	11.03.2020	<a href="#">CORRESPONDENCE: Can Nigeria contain the COVID-19 outbreak using lessons from recent epidemics?</a>	The Lancet Global Health	<ul style="list-style-type: none"> <li>•Quesies Nigeria's capacity to provide sufficient bed space and associated clinical care to support those who could need isolation and quarantine if local cycles of transmission of COVID-19 occur in the country.</li> </ul>
Infection control:	11.03.2020	<a href="#">IDEAS AND OPINIONS: Coronavirus Disease 2019 (COVID-19): Protecting Hospitals From the Invisible</a>	Annals of Internal Medicine:	<ul style="list-style-type: none"> <li>•Discusses way to protect hospitals against COVID-19.</li> </ul>
Social sciences	11.03.2020	<a href="#">COMMENT: COVID-19: a potential public health problem for homeless populations</a>	The Lancet Public Health	<ul style="list-style-type: none"> <li>•Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is infecting people throughout the world. It is probable that coronavirus disease (COVID-19) will be transmitted to people experiencing homelessness, which will become a major problem in particular in North America where there are sizable populations of people experiencing homelessness in nearly every metropolitan city in the USA and Canada. This is discussed.</li> </ul>
Social Sciences	11.03.2020	<a href="#">PERSPECTIVES: COVID-19: the medium is the message</a>	The Lancet	<ul style="list-style-type: none"> <li>•The spread of COVID-19, both within nations and internationally, is aided and abetted by misinformation that circumnavigates the planet in microseconds. Such misinformation is not all malevolent, although its impact can be devastating. This paper discusses this.</li> </ul>
Treatment	11.03.2020	<a href="#">LETTER TO THE EDITOR: COVID-19 and psoriasis: is it time to limit treatment with</a>	Dermatologic Therapy	<ul style="list-style-type: none"> <li>•The elderly and subjects with pre-existing diseases (diabetes, cardiovascular disease, cancer) are the most susceptible to COVID-19, and may develop severe respiratory</li> </ul>

		<a href="#">immunosuppressants? A call for action</a>		syndrome coronavirus. Currently, the COVID-19 rate risk in immunosuppressed is still largely unknown. This paper discusses this.
Treatment	11.03.2020	<a href="#">CORRESPONDENCE: Comorbidities and multi-organ injuries in the treatment of COVID-19</a>	The Lancet	<ul style="list-style-type: none"> <li>•The authors believe that the classification of COVID-19 in severe patients could help in individual evaluation of the disease and would provide effective triage for the treatment and management of individual patients. This is discussed.</li> </ul>
Miscellaneous	09.03.2020	<a href="#">COMMENT: How will country-based mitigation measures influence the course of the COVID-19 epidemic?</a>	The Lancet	<ul style="list-style-type: none"> <li>•Discusses how country-based mitigation measures influence the course of the COVID-19 epidemic.</li> </ul>
Miscellaneous	11.03.2020	<a href="#">PERSPECTIVE: Virtually perfect? Telemedicine for Covid-19</a>	The New England Journal of Medicine:	<ul style="list-style-type: none"> <li>• Discusses using telemedicine as an option for meeting patients needs during COVID-19</li> </ul>
Miscellaneous	10.03.2020	<a href="#">NEWS: Covid-19: What's the current advice for UK doctors?</a>	BMJ	<ul style="list-style-type: none"> <li>• Discusses the current advice for UK doctors around COVID-19 (answers specific questions that may be asked by members of the public).</li> </ul>
Modelling	11.03.2020	<a href="#">COMMENT: The value of early transmission dynamic studies in emerging infectious diseases</a>	The Lancet Infectious Diseases	<ul style="list-style-type: none"> <li>•Transmission dynamic models are a necessary first step in understanding the pandemic potential of an emerging infectious disease, including estimating the reproduction number—the number of new cases arising from a typical infected case. This paper discusses this.</li> </ul>