



International EPI Cell Daily Evidence Briefing – 16/03/2020

Theme	Publication Date	Title/URL	Journal/Publication type	Digest
Diagnostics and genomics	13.03.2020	Our experience with covid-19 patients has led to significant concerns over how they are identified and isolated	BMJ / Opinion	<ul style="list-style-type: none"> Any patient presenting to hospital in whom covid-19 enters the differential diagnosis should be tested on arrival. Widespread availability of a rapid point-of-care assay for SARS-CoV-2 with high negative predictive value will also be crucial.
Diagnostics and genomics	13.03.2020	Can lung US help critical care clinicians in the early diagnosis of Novel Coronavirus (COVID-19) pneumonia?	Radiology / Letter	<ul style="list-style-type: none"> The data are preliminary and further studies are necessary to confirm the role of lung US in the diagnosis and management of COVID-19 pneumonia, but the authors strongly recommend the use of bedside US for the early diagnosis of COVID-19 pneumonia in all the patients who presented to the emergency department with flu-like symptoms in novel COVID-19 era.
Diagnostics and genomics	13.03.2020	Evidence of the COVID-19 virus targeting the CNS: Tissue distribution, host-virus interaction, and proposed neurotropic mechanisms	ACS Chemical Neuroscience / Viewpoint	<ul style="list-style-type: none"> The authors investigate the density of the expression levels of ACE2 in the CNS, the host-virus interaction and relate it to the pathogenesis and complications seen in the recent cases resulting from the COVID-19 outbreak. They also debate the need for a model for staging COVID-19 based on neurological tissue involvement.
Diagnostics and genomics	13.03.2020	The establishment of reference sequence for SARS-CoV-2 and variation analysis	Journal of Medical Virology / Research article	<ul style="list-style-type: none"> The authors retrieved 95 full-length genomic sequences of SARS-CoV-2 strains from the NCBI and GISAID databases, established the reference sequence by conducting multiple sequence alignment and phylogenetic analyses, and analyzed sequence variations along the SARS-CoV-2 genome. These findings suggest that there may be selective mutations in SARS-CoV-2, and it is necessary to avoid certain regions when designing primers and probes.

Diagnosics and genomics	13.03.2020	The potential chemical structure of anti-SARS-CoV-2 RNA-dependent RNA polymerase	Journal of Medical Virology / Short communication	<ul style="list-style-type: none"> • In this study, the authors screened these chemical structures from traditional Chinese medicinal compounds proven to show anti-viral activity in SARS-CoV and the similar chemical structures through a molecular docking study to target RdRp of SARS-CoV-2, SARS-CoV and MERS-CoV. • The results suggest that theaflavin could be potential SARS-CoV-2 RdRp inhibitor for further study.
Diagnosics and genomics	13.03.2020	An exclusive 42 amino acid signature in pp1ab protein provides insights into the evolutive history of the 2019 novel human-pathogenic coronavirus (SARS-CoV2)	Journal of Medical Virology / Short communication	<ul style="list-style-type: none"> • In this short communication, the authors performed phylogenetic-structural sequence analysis of pp1ab protein of SARS-CoV2. • The analysis showed that the viral pp1ab has not changed in most isolates throughout the outbreak time, but interestingly a deletion of 8 aa in the virulence factor non-structural protein 1 was found in a virus isolated from a Japanese patient that did not display critical symptoms. • While comparing pp1ab protein with other betacoronaviruses, they found a 42 amino acid signature that is only present in SARS-CoV2 (AS-SCoV2).
Diagnosics and genomics	13.03.2020	[Which sampling method for the upper respiratory tract specimen should be taken to diagnose patient with COVID-19?]	Journal of Otorhinolaryngology Head and Neck Surgery / Chinese article	<ul style="list-style-type: none"> • It was found that among all the upper respiratory sampling methods, nasopharyngeal aspirate (NPA) had a higher positive rate within 2 weeks of symptom onset, while combined nasal and oropharyngeal swabs (NS + OPS) was the least harmful to medical staff during sampling. We wish this review is helpful for the prevention of COVID-19.
Epidemiology and clinical	13.03.2020	Bearing the brunt of covid-19: older people in low and middle income countries	BMJ / Editorial	<ul style="list-style-type: none"> • An age perspective should be included explicitly in the development of national and global planning for covid-19, and a global expert group on older people should be formed to support with guidance and response to the virus in both residential facilities and home settings.
Epidemiology and clinical	13.03.2020	Critical care utilization for the COVID-19 Outbreak in Lombardy, Italy: Early experience and forecast during	JAMA / Viewpoint	<ul style="list-style-type: none"> • This experience would suggest that only an ICU network can provide the initial immediate surge response to allow every patient in need for an ICU bed to receive one. • Health care systems not organized

		an emergency response		in collaborative emergency networks should work toward one now.
Epidemiology and clinical	11.03.2020	Report 8: Symptom progression of COVID-19	MRC Centre for Global Infectious Disease Analysis / Report	<ul style="list-style-type: none"> • The authors analysed clinical characteristics of cases in mainland China as well as case studies of individuals from Hong Kong, Japan, Singapore and South Korea. • The average time to presentation with pneumonia is 5.88 days, and may be linked to testing at hospitalisation; fever is often reported at onset (where the mean time to develop fever is 0.77 days).
Epidemiology and clinical	14.03.2020	Coronavirus Disease 2019 (COVID-19): What we know?	Journal of Medical Virology / Review	<ul style="list-style-type: none"> • The purpose of this review is primarily to review the pathogen, clinical features, diagnosis, and treatment of COVID-19, but also to comment briefly on the epidemiology and pathology based on the current evidences.
Epidemiology and clinical	14.03.2020	Liver injury during highly pathogenic human coronavirus infections	Liver International / Review	<ul style="list-style-type: none"> • In this review, the characteristics and mechanism of liver injury caused by SARS-CoV, MERS-CoV, as well as SARS-CoV-2 infection were summarized, which may provide help for further studies on the liver injury of COVID-19.
Epidemiology and clinical	13.03.2020	Epidemiology of 2019 Novel Coronavirus Disease-19 in Gansu Province, China, 2020	Emerging Infectious Diseases / Early release article - not final version	<ul style="list-style-type: none"> • Characteristics that differed significantly during the first and second waves of illness in Gansu Province were mean patient age, occupation, having visited epidemic areas, and mode of transportation. • Time from infection to illness onset for family clusters was shorter in Gansu Province than in Wuhan, consistent with shortened durations from onset to first medical visit or hospitalization.
Epidemiology and clinical	13.03.2020	Risk factors associated with acute respiratory distress syndrome and death in patients with Coronavirus 2019 pneumonia in Wuhan, China	JAMA Internal Medicine / Original investigation	<ul style="list-style-type: none"> • Retrospective cohort study of 201 patients with confirmed COVID-19 pneumonia admitted to Wuhan Jinyintan Hospital in China between December 25, 2019, and January 26, 2020. The final date of follow-up was February 13, 2020. • Risk for developing ARDS included factors consistent with immune activation; older age was associated with both ARDS development and death, likely owing to less robust immune responses.

Epidemiology and clinical	13.03.2020	Initial clinical features of suspected Coronavirus Disease 2019 in two emergency departments outside of Hubei, China	Journal of Medical Virology / Research article	<ul style="list-style-type: none"> • A total of 116 patients suspected of having COVID-19 who presented to two emergency departments in Anhui for the first time between 24 January 2020 and 20 February 2020 were enrolled in the study. • No initial clinical feature was found to be specific to diagnosed patients, which could allow for early clinical diagnosis of COVID-19 in EDs. • The authors recommend strict medical observation and quarantine of all patients suspected of having COVID-19, either in the ED itself or in a dedicated quarantine facility, irrespective of initial clinical features, especially in under-resourced regions without access to rapid nucleic acid amplification tests.
Epidemiology and clinical	13.03.2020	[COVID-19 Pandemic: Global epidemiological trends and China's subsequent preparedness and responses]	Zhonghua Liu Xing Bing Xue Za Zhi / Chinese article	<ul style="list-style-type: none"> • This study analyzed global COVID-19 epidemiological trends, examined impact of the pandemic on global health security, diplomacy, and social environment in China, and provided short- and long-term strategic policy recommendations for China's subsequent preparedness and responses.
Epidemiology and clinical	13.03.2020	[Epidemiological characteristics of confirmed COVID-19 cases in Tianjin]	Zhonghua Liu Xing Bing Xue Za Zhi / Chinese article	<ul style="list-style-type: none"> • Fever was the main symptom at the early phase of COVID-19 in Tianjin, and the local cluster cases accounted for high proportion in confirmed COVID-19 cases reported in Tianjin. • Severe illness was prone to occur in people with old age and multi underlying diseases. • Strict isolation of close contacts and intensive care of high-risk groups are the main measures to reduce the morbidity and case fatality of COVID-19.
Infection control	13.03.2020	From containment to mitigation of COVID-19 in the US	JAMA / Viewpoint	<ul style="list-style-type: none"> • Because SARS-CoV-2 is transmitted primarily by droplets, the proposed plan will focus on ensuring that reliable droplet precautions are used. • Key elements of a proposed plan for COVID-19 community spread mitigation in a Kaiser Permanente Northern California are highlighted.
Infection control	14.03.2020	Limiting spread of COVID-19 from cruise ships: Lessons to be learnt from Japan	QJM: Monthly Journal of the Association of Physicians / Commentary	<ul style="list-style-type: none"> • The reported development of a 15-minute blood-based Covid-1- test kit by Chinese scientists may help in future, if it is accurate and does not produce repeated false-negatives as the existing test does. • Similarly, creation of a purpose-

				built mass quarantine facility somewhere in Japan would be useful.
Infection control	14.03.2020	COVID-19 and rationally layered social distancing	International Journal of Clinical Practice / Letter	<ul style="list-style-type: none"> • It appears critical to implement social distancing in a rationally layered manner. • Young, healthy adults have a relatively lower risk of mortality, while individuals over their 60s, and particularly those in their 80s, have a disproportionately higher mortality risk. • Individuals with chronic, long-term conditions are at a higher risk of mortality. • It is imperative to support social interactions and social distancing interventions that are ideally positioned to protect everyone in a population and, at the same time, to more powerfully protect individuals from these highly susceptible groups.
Infection control	13.03.2020	Consensus of Chinese experts on protection of skin and mucous membrane barrier for healthcare workers fighting against Coronavirus Disease 2019	Dermatologic Therapy / Article	<ul style="list-style-type: none"> • Health professions preventing and controlling Coronavirus Disease 2019 are prone to skin and mucous membrane injury, which may cause acute and chronic dermatitis, secondary infection and aggravation of underlying skin diseases. • This is a consensus of Chinese experts on protective measures and advice on hand-cleaning- and medical-glove-related hand protection, mask- and goggles-related face protection, UV-related protection, eye protection, nasal and oral mucosa protection, outer ear and hair protection.
Infection control	13.03.2020	Impact of international travel and border control measures on the global spread of the novel 2019 coronavirus outbreak	Proceedings of the National Academy of Sciences of the United States of America / Research article	<ul style="list-style-type: none"> • To contain the global spread of the 2019 novel coronavirus epidemic (COVID-19), border control measures, such as airport screening and travel restrictions, have been implemented in several countries. • These results show that these measures likely slowed the rate of exportation from mainland China to other countries, but are insufficient to contain the global spread of COVID-19.
Infection control	13.03.2020	Involving antimicrobial stewardship programs in COVID-	Infection Control & Hospital Epidemiology / Letter	<ul style="list-style-type: none"> • The authors describe the need for hospital epidemiology programs to strongly consider integrating their Antimicrobial Stewardship Program (ASP) colleagues into disaster

		19 response efforts: All hands on deck		preparedness plans as well as identify a more formal role for stewards in their operations beyond the current COVID-19 outbreak.
Infection control	13.03.2020	Effectiveness of N95 respirators versus surgical masks against influenza: A systematic review and meta-analysis	Journal of Evidence-Based Medicine / Systematic review and meta-analysis	<ul style="list-style-type: none"> • The use of N95 respirators compared with surgical masks is not associated with a lower risk of laboratory-confirmed influenza. • It suggests that N95 respirators should not be recommended for general public and nonhigh-risk medical staff those are not in close contact with influenza patients or suspected patients.
Infection control	13.03.2020	Interrupting transmission of COVID-19: lessons from containment efforts in Singapore	Journal of Travel Medicine / Accepted manuscript	<ul style="list-style-type: none"> • In this article, the authors describe the combination of measures taken by Singapore to contain COVID-19 and share some early lessons learnt from the experience.
Infection control	13.03.2020	A review of Coronavirus Disease-2019 (COVID-19)	The Indian Journal of Pediatrics / Review article	<ul style="list-style-type: none"> • At the time of writing this article, the risk of coronavirus in India is extremely low. • Apart from curbing this outbreak, efforts should be made to devise comprehensive measures to prevent future outbreaks of zoonotic origin.
Infection control	13.03.2020	What further should be done to control COVID-19 outbreaks in addition to cases isolation and contact tracing measures?	BMC Medicine / MedViews	<ul style="list-style-type: none"> • Instead of asking whether case isolation and contact tracing measures are good enough, a more practical question might be: what further should be done by governments and communities to achieve effective control over outbreaks? • In the light that the strategies currently taken by China are beginning to prove effective, it would be of great interest to further discuss what can be learnt from their experience.
Miscellaneous	13.03.2020	Covid-19: Older adults and the risks of misinformation	BMJ / Opinion	<ul style="list-style-type: none"> • Research in political misinformation has shown that older adults in the US aged 65 and older were more likely to share fake news on social media as compared to other groups. • Efforts to address exposure to and sharing of misinformation during covid-19 thus need urgent attention, with a particular focus on making sure that at risk and vulnerable populations have access to accurate information that is tailored for them.

Miscellaneous	13.03.2020	Better use of data and digital offer rapid opportunities to address covid-19	BMJ / Opinion	<ul style="list-style-type: none"> • In the Oxford DataLab we informally assembled a small team of clinicians and digital health experts to think through urgent actions to improve our use of digital technologies during the current crisis, and actions to start implementing in preparation for future pandemics. • This post briefly summarises our suggestions and links to the full document: but its main purpose is to flag the urgent need for swift progress on digital in the NHS, and more sophisticated open discussion around the tools, systems, and culture towards digital technology across the health service.
Modelling	13.03.2020	Estimating risk for death from 2019 Novel Coronavirus Disease, China, January-February 2020	Emerging Infectious Diseases / Early release article - not final version	<ul style="list-style-type: none"> • Because the risk for death from COVID-19 is probably associated with a breakdown of the healthcare system in the absence of pharmaceutical interventions (i.e., vaccination and antiviral drugs), enhanced public health interventions (including social distancing measures, quarantine, enhanced infection control in healthcare settings, and movement restrictions), as well as enhanced hygienic measures in the general population and an increase in healthcare system capacity, should be implemented to rapidly contain the epidemic.
Modelling	13.03.2020	Case-fatality risk estimates for COVID-19 calculated by using a lag time for fatality	Emerging Infectious Diseases / Early release article - not final version	<ul style="list-style-type: none"> • Given the residual uncertainties, health sector decision-makers and disease modelers probably should consider a broad range of 0.25%–3.0% for COVID-19 case-fatality risk estimates. • The higher values could be more appropriate in resource poor settings where the quality of hospital and intensive care might be constrained.
Treatment	16.03.2020	COVID-19: consider cytokine storm syndromes and immunosuppression	Lancet / Correspondence	<ul style="list-style-type: none"> • Accumulating evidence suggests that a subgroup of patients with severe COVID-19 might have a cytokine storm syndrome. • The authors recommend identification and treatment of hyperinflammation using existing, approved therapies with proven safety profiles to address the immediate need to reduce the rising mortality.

Treatment	13.03.2020	Combination of western medicine and Chinese traditional patent medicine in treating a family case of COVID-19 in Wuhan	Frontiers of Medicine / Case report	<ul style="list-style-type: none"> • The authors report the first family case of coronavirus disease 2019 (COVID-19) confirmed in Wuhan and treated using the combination of western medicine and Chinese traditional patent medicine Shuanghuanglian oral liquid (SHL). • The authors describe the identification, diagnosis, clinical course, and management of three cases from a family, suggests the expected therapeutic effects of SHL on COVID-19, and warrants further clinical trials.
Treatment	13.03.2020	The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak – an update on the status	Military Medical Research / Review	<ul style="list-style-type: none"> • Currently, there are few specific antiviral strategies, but several potent candidates of antivirals and repurposed drugs are under urgent investigation. • The authors summarise the latest research progress of the epidemiology, pathogenesis, and clinical characteristics of COVID-19, and discussed the current treatment and scientific advancements to combat the epidemic novel coronavirus.
Treatment	13.03.2020	The convalescent sera option for containing COVID-19	The Journal of Clinical Investigation / Viewpoint	<ul style="list-style-type: none"> • This Viewpoint argues that human convalescent serum is an option for prevention and treatment of COVID-19 disease that could be rapidly available when there are sufficient numbers of people who have recovered and can donate immunoglobulin-containing serum.
Treatment	13.03.2020	Soluble angiotensin-converting enzyme 2: a potential approach for coronavirus infection therapy?	Clinical Science / Correspondence	<ul style="list-style-type: none"> • The authors explain the connection between the SARS-CoV, SARS-CoV-2, ACE2 and the rationale for soluble ACE2 as a potential therapy.
Treatment	13.03.2020	COVID-19: An update on the epidemiological, clinical, preventive and therapeutic evidence and guidelines of integrative Chinese–Western medicine for the management of 2019 Novel Coronavirus Disease	The American Journal of Chinese Medicine / Article	<ul style="list-style-type: none"> • The authors reviewed the latest national and provincial clinical guidelines, retrospective cohort studies, and case series regarding the treatment of COVID-19 by add-on Chinese medicine. • Given the paucity of strongly evidence-based regimens, the available data suggest that Chinese medicine could be considered as an adjunctive therapeutic option in the management of COVID-19.