



## International EPI Cell Daily Evidence Digest – 09/04/2020

This briefing is produced by the PHE COVID-19 Literature Digest Team. The papers are organised under the following themes:

- Diagnostics and genomics
- Epidemiology and clinical
- Infection control
- Treatment
- Social sciences
- Miscellaneous
- Modelling

Please note that we are including preprints (**highlighted in red**), which are preliminary reports of work that have NOT been peer-reviewed. They should not be relied on to guide clinical practice or health-related behaviour and should NOT be reported in news media as established information.

### Diagnostics and genomics

Publication Date	Title/URL	Journal/ Article type	Digest
07.04.2020	<a href="#">Ocular manifestations of a hospitalised patient with confirmed 2019 novel coronavirus disease</a>	Br J Ophthalmol / Article	<ul style="list-style-type: none"><li>• Reports the ocular characteristics and the presence of viral RNA of SARS-CoV-2 in conjunctival swab specimens in a patient (30 yo male) with confirmed COVID-19. The conjunctival swab specimens remained positive for SARS-CoV-2 on 14 and 17 days after onset. On day 19, RT-PCR result was negative for SARS-CoV-2.</li></ul>
08.04.2020	<a href="#">Clinical Characteristics of Patients Hospitalized with Coronavirus Disease, Thailand</a>	Emerging infectious diseases / Dispatch	<ul style="list-style-type: none"><li>• Among 11 patients in Thailand infected with SARS-CoV-2, the authors detected viral RNA in upper respiratory specimens a median of 14 days after illness onset and 9 days after fever resolution.</li><li>• They identified viral co-infections and an asymptomatic person with detectable virus RNA in serial tests. The authors describe implications for surveillance.</li></ul>

05.04.2020	<a href="#">In Vitro Diagnostic Assays for COVID-19: Recent Advances and Emerging Trends</a>	Diagnostics / Editorial	<ul style="list-style-type: none"> <li>• This article provides an overview of assays used for diagnosis. The main IVD assays used for COVID-19 employ RT-PCR that takes a few hours. But the assay duration has been shortened to 45 min.</li> <li>• Also of interest is the point-of-care (POC) molecular assay by Abbott that decreased the assay duration to just 5 min.</li> <li>• A wide range of serology immunoassays (IAs) have also been developed that complement the molecular assays for the diagnosis of COVID-19. The most prominent IAs are automated chemiluminescent IA (CLIA), manual ELISA, and rapid lateral flow IA (LFIA), which detect the immunoglobulin M (IgM) and immunoglobulin G (IgG) produced in persons in response to SARS-CoV-2 infection.</li> </ul>
09.04.2020	<a href="#">An alternative workflow for molecular detection of SARS-CoV-2 – escape from the NA extraction kit-shortage, Copenhagen, Denmark, March 2020</a>	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> <li>• With the global shortage of viral nucleic acid (NA) extraction kits affecting the diagnosis of suspected COVID-19 cases, this study investigated a new simplified workflow for molecular detection of SARS-CoV-2 that does not require NA extraction and could serve as an alternative in diagnostic laboratories to overcome chemical-based kit-shortages.</li> </ul>
08.04.2020	<a href="#">Extraction-free COVID-19 (SARS-CoV-2) diagnosis by RT-PCR to increase capacity for national testing programmes during a pandemic</a>	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• The authors describe a simplified qRT-PCR assay that removes the need for an RNA extraction process and can be run on a real-time thermal cyclers.</li> </ul>
08.04.2020	<a href="#">Severe Acute Respiratory Syndrome Coronavirus 2-Specific Antibody Responses in Coronavirus Disease 2019 Patients</a>	Emerging infectious diseases / Research	<ul style="list-style-type: none"> <li>• Developed serologic assays for detection of SARS-CoV-2 neutralizing, spike protein-specific, and nucleocapsid-specific antibodies. Using serum samples from patients with PCR-confirmed SARS-CoV-2 infections, other coronaviruses, or other respiratory pathogenic infections, they validated and tested various antigens in different in-house and commercial ELISAs.</li> <li>• Demonstrated that most PCR-confirmed SARS-CoV-2-infected persons seroconverted by 2 weeks after disease onset. They found that commercial S1 IgG or IgA ELISAs were of lower specificity, and sensitivity varied between the 2 assays; the IgA ELISA showed higher sensitivity.</li> </ul>
08.04.2020	<a href="#">PCR Assays Turned Positive in 25 Discharged COVID-19 Patients</a>	Clinical Infectious Diseases / Accepted manuscript	<ul style="list-style-type: none"> <li>• This article reports the observation that 14.5% of COVID-19 patients had positive RT-PCR testing again after discharge. The authors describe correlations between laboratory parameters and treatment duration (<math>r = -0.637</math>; <math>p = 0.002</math>) and time to virus recrudescence (<math>r = 0.52</math>; <math>p = 0.008</math>) respectively, suggesting the need for additional measures to confirm illness resolution in COVID-19 patients.</li> </ul>
06.04.2020	<a href="#">Calculated decisions: COVID-19 calculators during extreme resource-limited situations</a>	Emergency medicine practice / Review	<ul style="list-style-type: none"> <li>• This review discusses the use of clinical prediction scores for pneumonia severity at 3 main decision points to examine which scores may provide</li> </ul>

			value, using initial data from a cohort of over 44,000 COVID-19 patients in China.
08.04.2020	<a href="#">Asymptomatic Patients with Novel Coronavirus Disease (COVID-19)</a>	Balkan medical journal / Letter	<ul style="list-style-type: none"> <li>• In this study, the authors present imaging findings from 25 asymptomatic patients.</li> <li>• Asymptomatic patients received CT scans and 24 out of 25 had abnormal ST findings in the lung. Approximately two-thirds of the patients had an involvement of a single lobe, and two-thirds had only a ground-glass density shadow.</li> <li>• Chest CT examination is particularly important because it is conducive to the early detection of asymptomatic infections, hence resulting in early isolation of the positive cases and reduction of infections in people in contact.</li> </ul>
06.04.2020	<a href="#">CT imaging changes of corona virus disease 2019(COVID-19): a multi-center study in Southwest China</a>	Journal of translational medicine / Article	<ul style="list-style-type: none"> <li>• This retrospective study analyses CT imaging data from 131 patients with confirmed COVID-19 from 3 Chinese hospitals.</li> <li>• Most of the lesions identified in chest CT images were multiple lesions of bilateral lungs, lesions were more localized in the peripheral lung.</li> <li>• 109 (83%) patients had more than two lobes involved, 20 (15%) patients presented with patchy ground glass opacities, patchy ground glass opacities and consolidation of lesions co-existing in 61 (47%) cases.</li> </ul>
07.04.2020	<a href="#">A case report of COVID-19 with false negative RT-PCR test: necessity of chest CT</a>	Jpn J Radiol / Special report	<ul style="list-style-type: none"> <li>• Report a case of 34-year-old man who was diagnosed as negative for COVID-19 based on four sequential RT-PCR tests of his pharyngeal swab. Chest CT showed patchy ground-glass opacity on admission, and it rapidly progressed to segmental mixed consolidation and ground-glass opacity 3 days after admission, and it resolved in left upper lobe, but showed multifocal ground-glass opacities 7 days after admission, and they resolved within 2 weeks. The fifth RT-PCR test finally revealed positive results at the fifth day after admission.</li> <li>• It is difficult to distinguish COVID-19 pneumonia from other viral pneumonia on CT findings alone; however, the authors emphasize the utility of chest CT to detect early change of COVID-19 in cases which RT-PCR tests show negative results.</li> </ul>
08.04.2020	<a href="#">Chest Computed Tomography for Detection of Coronavirus Disease 2019 (COVID-19): Don't Rush the Science</a>	Annals of Internal Medicine / Ideas and Opinions	<ul style="list-style-type: none"> <li>• Discusses the quality of Fang et al and Ai et al's published rapid reviews on Chest Computed Tomography.</li> <li>• In reviewing these 2 publications in detail, as well as others that support the use of CT for the diagnosis of COVID-19, they have found that many problems, such as faulty research design, incomplete methods sections with little description of likely biased patient cohorts, absence of a valid gold standard, multiple confounding variables, and scant discussion, limit the</li> </ul>

			generalizability of the results and call into question the broad conclusions that are made.
07.04.2020	<a href="#">Nuclear medicine in SARS-CoV-2 pandemia: 18F-FDG-PET/CT to visualize COVID-19</a>	Nuklearmedizin / Review	<ul style="list-style-type: none"> <li>• The authors review the first F-FDG-PET/CT scans of COVID-19 to discuss how Nuclear Medicine could contribute to management of this disease.</li> </ul>
07.04.2020	<a href="#">The Role of Chest Imaging in Patient Management during the COVID-19 Pandemic: A Multinational Consensus Statement from the Fleischner Society</a>	Radiology / Article	<ul style="list-style-type: none"> <li>• A multidisciplinary panel comprised principally of radiologists and pulmonologists from 10 countries with experience managing COVID-19 patients across a spectrum of healthcare environments evaluated the utility of imaging within three scenarios representing varying risk factors, community conditions, and resource constraints.</li> <li>• Fourteen key questions, corresponding to 11 decision points within the three scenarios and three additional clinical situations, were rated by the panel based upon the anticipated value of the information that thoracic imaging would be expected to provide.</li> <li>• The results were aggregated, resulting in five main and three additional recommendations intended to guide medical practitioners in the use of CXR and CT in the management of COVID-19.</li> </ul>
08.04.2020	<a href="#">Policies and Guidelines for COVID-19 Preparedness: Experiences from the University of Washington</a>	Radiology / Review Article	<ul style="list-style-type: none"> <li>• Radiology departments play a critical role in policy and guideline development both for the department and for the institutions, specifically in planning diagnostic screening, triage, and management of patients. In addition, radiology workflows, volumes and access must be optimized in preparation for the expected COVID-19 patient surges.</li> <li>• This article discusses the processes that have been implemented at the University of Washington in managing the COVID-19 pandemic as well in preparing for patient surges, which may provide important guidance for other radiology departments who are in the early stages of preparation and management.</li> </ul>
08.04.2020	<a href="#">In-silico homology assisted identification of inhibitor of RNA binding against 2019-nCoV N-protein (N terminal domain)</a>	Journal of biomolecular structure & dynamics / Articles	<ul style="list-style-type: none"> <li>• The N terminal domain (NTD) of Nucleocapsid protein (N protein) of coronavirus (CoV) binds to the viral (+) sense RNA and results in CoV ribonucleoprotein (CoV RNP) complex, essential for the virus replication. In this study, the RNA-binding N terminal domain (NTD) of the N protein was targeted for the identification of possible inhibitors of RNA binding.</li> <li>• This study suggests two important class of compounds, theophylline and pyrimidone derivatives as possible inhibitors of RNA binding to the N terminal domain of N protein of coronavirus, thus opening new avenues for in vitro validations.</li> </ul>
08.04.2020	<a href="#">IDseq - An Open Source Cloud-based Pipeline and Analysis Service for Metagenomic Pathogen Detection and Monitoring</a>	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• The authors present IDseq, an open source cloud-based metagenomics pipeline and service for global pathogen detection and monitoring</li> </ul>

			( <a href="https://idseq.net">https://idseq.net</a> ). The IDseq Portal accepts raw mNGS data, performs host and quality filtration steps.
08.04.2020	<a href="#">Genomic determinants of pathogenicity in SARS-CoV-2 and other human coronaviruses</a>	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>The authors report an in-depth molecular analysis using integrated comparative genomics and machine learning techniques to look at the evolutionary origins of the pathogenicity of SARS-CoV-2 and other coronaviruses.</li> </ul>
06.04.2020	<a href="#">About the origin of the first two Sars-CoV-2 infections in Italy: inference not supported by appropriate sequence analysis</a>	Journal of Medical Virology / Commentary	<ul style="list-style-type: none"> <li>Comment on the paper Giovannetti et al., entitled “The first two cases of 2019-nCoV in Italy: where they come from?” published in the 5th February 2020 issue of Journal of Medical Virology.</li> <li>Since the short sequence of the isolates from Italy cases were included in the analysis, the conclusion of this study on the origin of these viral strains should be considered misleading and not scientifically supported.</li> </ul>

### Epidemiology and clinical

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">Screening and Severity of Coronavirus Disease 2019 (COVID-19) in Children in Madrid, Spain</a>	JAMA Pediatrics / Research Letter	<ul style="list-style-type: none"> <li>With the aim of obtaining an overview of the proportion of confirmed cases among those tested and the severity of the disease in children, a registry of tested cases was performed from March 2, 2020, to March 16, 2020, by paediatricians in 30 secondary and tertiary hospitals in Madrid, Spain, during the first 2 weeks of the epidemic. 365 children were screened within the 30 hospitals.</li> <li>During first week, 6 of 103 patients (5.8%) had positive test results. At end of second week, 41 of 365 patients (11.2%) had positive test results; 41 of the 4695 confirmed cases (0.8%) in Madrid region were children under 18 years.</li> <li>Infections in children occur early in COVID-19 epidemics. The proportion of confirmed patients among those with compatible symptoms was 11%. Severe infections may occur, needing PICU admission or high-flow ventilation. Further information is warranted to shape the features of this disease in children.</li> </ul>
08.04.2020	<a href="#">Neonatal Resuscitation and Postresuscitation Care of Infants Born to Mothers with Suspected or Confirmed SARS-CoV-2 Infection</a>	American journal of perinatology / Clinical opinion	<ul style="list-style-type: none"> <li>This article outlines the precautions and steps to be taken before, during, and after resuscitation of a new-born born to a COVID-19 mother, including three optional variations of current standards involving shared-decision making with parents for perinatal management, resuscitation of the new-born, disposition, nutrition, and post discharge care.</li> <li>The risk of vertical transmission is unclear; transmission from family</li> </ul>

			<p>members/providers to neonates is possible.</p> <ul style="list-style-type: none"> <li>• More evidence and research are needed to assess the risk of vertical and horizontal transmission of SARS-CoV-2 and its impact on foetal and neonatal outcomes.</li> </ul>
06.04.2020	<a href="#">Epidemiology and Clinical Features of Coronavirus disease 2019 in Children</a>	Clinical and Experimental Pediatrics/ Review	<ul style="list-style-type: none"> <li>• Paediatric COVID-19 accounts for a small percentage of patients with outbreaks and is often milder than adults, but can progress to severe disease in some cases. Even neonates can suffer from COVID-19, and children may play a role as a spreader in the community. In this review, the authors summarize what is known about COVID-19 in children and adolescents until now.</li> </ul>
08.04.2020	<a href="#">COVID-19 Obstetrics Task Force, Lombardy, Italy: executive management summary and short report of outcome</a>	International journal of gynaecology and obstetrics / Special Communication	<ul style="list-style-type: none"> <li>• This article reports on an obstetric task force in Lombardy, Italy. A pre-triage based on temperature and 14 other items was developed in order to screen suspected patients in all hospitals to be tested with nasopharyngeal swabs.</li> <li>• Obstetric outpatient facilities were instructed to maintain scheduled pregnancy screening as per Italian guidelines, and to provide pre-triage screening and surgical masks for personnel and patients for pre-triage-negative patients.</li> <li>• Results: Forty-two cases were recorded in the first 20 days of hub and spoke organization. The clinical presentation was interstitial pneumonia in 20 women. Of these, seven required respiratory support and eventually did well. Two premature labours occurred.</li> </ul>
07.04.2020	<a href="#">Hospitalization and Critical Care of 109 Decedents with COVID-19 Pneumonia in Wuhan, China</a>	Ann Am Thorac Soc / Article	<ul style="list-style-type: none"> <li>• Describe the process of hospitalization and critical care of decedents with COVID-19 pneumonia (n=109).</li> <li>• Mortality due to COVID-19 pneumonia was concentrated in old people whose age was always above 65 years, especially those with major comorbidities. Patients admitted to ICU lived longer than those who did not gain admission to ICU.</li> </ul>
06.04.2020	<a href="#">Clinicolaboratory study of 25 fatal cases of COVID-19 in Wuhan</a>	Intensive care medicine / Letter	<ul style="list-style-type: none"> <li>• Single-centre retrospective analysis of fatal cases of COVID-19 (25) admitted to Wuhan University Zhongnan Hospital from 3 Jan to 24 Feb 2020.</li> <li>• The median time from onset of symptoms to hospital admission and death was 7 and 19 days, respectively.</li> <li>• Fatal cases were older (70 years), disproportionately male (76%) and more often suffered from comorbidities (64%) compared with non-fatal cases.</li> </ul>
08.04.2020	<a href="#">Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying diseases in pandemic epicenters</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• Data from countries and US states or major cities with at least 250 COVID-19 deaths as of 4/4/2020 were included to evaluate relative risk of COVID-19 death in people &lt;65 years old versus older individuals in the general population.</li> <li>• People &lt;65 years old had 34- to 73-fold lower risk than those ≥65 years old</li> </ul>

			<p>in the European countries and 13- to 15-fold lower risk in New York City, Louisiana and Michigan.</p> <ul style="list-style-type: none"> <li>• People &lt;65 years old have very small risks of COVID-19 death even in the hotbeds of the pandemic and deaths for people &lt;65 years without underlying predisposing conditions are remarkably uncommon.</li> </ul>
08.04.2020	<a href="#">Coagulopathy and Antiphospholipid Antibodies in Patients with Covid-19</a>	New England journal of medicine / Correspondence	<ul style="list-style-type: none"> <li>• This article describes describe a patient with Covid-19 and clinically significant coagulopathy, antiphospholipid antibodies, and multiple infarcts.</li> <li>• A 69-year-old man with a history of hypertension, diabetes, and stroke presented with fever, cough, dyspnoea, diarrhoea, and headache. Covid-19 was diagnosed in the patient on January 25, 2020, on the basis of RT-PCR testing that detected SARS-CoV-2. The initial treatment was supportive; however, the illness subsequently progressed to hypoxemic respiratory failure warranting the initiation of invasive mechanical ventilation.</li> <li>• Examination and serologic testing are described further.</li> </ul>
08.04.2020	<a href="#">Acute kidney injury in patients hospitalized with COVID-19 in Wuhan, China: A single-center retrospective observational study</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• Observational study of 287 COVID-19 patients admitted to Hankou Hospital, Wuhan, assessing the predictors and outcomes of acute kidney injury (AKI).</li> <li>• Compared to patients without AKI, AKI patients were older, predominantly male, and were more likely to present with hypoxia and have pre-existing hypertension and cerebrovascular disease.</li> <li>• AKI patients had higher levels of white blood cells, D-dimer, aspartate aminotransferase, total bilirubin, creatine kinase, lactate dehydrogenase, procalcitonin, C-reactive protein, a higher prevalence of hyperkalaemia, lower lymphocyte counts, and higher chest computed tomographic scores.</li> </ul>
08.04.2020	<a href="#">Clinical Course and Outcomes of 344 Intensive Care Patients with COVID-19</a>	American journal of respiratory and critical care medicine / Accepted Article	<ul style="list-style-type: none"> <li>• This paper presents the clinical characteristics and outcomes of intensive care patients.</li> <li>• 344 severe and critically ill patients who were diagnosed with COVID-19 between 25 Jan and 25 Feb were included in the study.</li> <li>• 133 (38.7%) patients died at 28 days with a median survival of 25 days; median duration from admission to death was 10 (IQR: 6-15) days for non-survivors. Of the 211 survivors, 185 (87.7%) were discharged.</li> <li>• Summary: in this single-centre case series study, older patients with comorbidities are at dramatically increased risk of mortality. Real-time monitoring of S/F and regular measurements of lymphocyte count and inflammatory markers may be essential to disease management.</li> </ul>
08.04.2020	<a href="#">Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis</a>	Aging / Research Paper	<ul style="list-style-type: none"> <li>• The aim of this paper was to explore whether the presence of common comorbidities increases COVID-19 patients' risk.</li> <li>• A literature search was performed and relevant data of research endpoints in each study were extracted and merged. A total of 1558 patients with</li> </ul>

			<p>COVID-19 in 6 studies were enrolled in their meta-analysis.</p> <ul style="list-style-type: none"> <li>• Hypertension, diabetes, COPD, cardiovascular disease, and cerebrovascular disease are major risk factors for patients with COVID-19. Knowledge of these risk factors can be a resource for clinicians in the early appropriate medical management of patients with COVID-19.</li> </ul>
06.04.2020	<a href="#">Fighting COVID-19 exhausts T cells</a>	Nature Reviews Immunology / Article	<ul style="list-style-type: none"> <li>• Based on the retrospective study of 522 patients with COVID-19 and 40 healthy controls from Wuhan, China, this study found that the age-dependent and clinical severity-dependent reduction in T cell numbers inversely correlates with serum levels of TNF, IL-6 and IL-10.</li> <li>• CD8+ T cells from patients in intensive care units (ICUs) showed increased expression of PD1 compared with patients not in ICUs and healthy controls.</li> </ul>
08.04.2020	<a href="#">Critically Ill COVID-19 Infected Patients Exhibit Increased Clot Waveform Analysis Parameters Consistent with Hypercoagulability</a>	American journal of hematology / Correspondence	<ul style="list-style-type: none"> <li>• Clinical and laboratory features of 3 patients admitted to the ICU are summarised.</li> <li>• The findings show markedly raised CWA parameters in critically ill infected cases possibly consistent with hypercoagulability.</li> <li>• The rise of CWA parameters precedes and coincides with ICU admission and warrant further study to confirm its utility in the routine management of COVID-19 patients.</li> </ul>
08.04.2020	<a href="#">Vaso-occlusive Crisis and Acute Chest Syndrome in Sickle Cell Disease due to 2019 Novel Coronavirus Disease (COVID-19)</a>	American journal of hematology / Images in Hematology	<ul style="list-style-type: none"> <li>• Two patients with homozygous sickle cell disease (SCD) were admitted to hospital with a painful vaso-occlusive crisis (VOC) triggered by COVID-19. Both patients had no flu-like complaints characteristic of COVID-19 during or preceding the VOC episode.</li> <li>• Both patients illustrated that COVID-19 might trigger a VOC without the presence of flu-like symptoms.</li> <li>• When there is no alternative explanation for VOC or when clinical suspicion for COVID-19 remains high, a second PCR, preferably on a sputum sample, and non-contrast chest CT imaging, should be performed.</li> </ul>
08.04.2020	<a href="#">ANNALS EXPRESS: Electrolyte Imbalances in Patients with Severe Coronavirus Disease 2019 (COVID-19)</a>	Annals of clinical biochemistry / Research article	<ul style="list-style-type: none"> <li>• This pooled analysis confirms that COVID-19 severity is associated with lower serum concentrations of sodium, potassium, and calcium.</li> <li>• The authors recommend electrolytes be measured at initial presentation and serially monitored during hospitalization in order to establish timely and appropriate corrective actions.</li> </ul>
08.04.2020	<a href="#">Acute myocarditis presenting as a reverse Tako-Tsubo syndrome in a patient with SARS-CoV-2 respiratory infection</a>	European heart journal / Article	<ul style="list-style-type: none"> <li>• A 43-year-old woman presented to the emergency room for a 3-day history of oppressive chest pain and dyspnoea. Her past medical history was unremarkable. On admission, she had a temperature of 37.7°C, blood pressure 120/80 mmHg, and heart rate 79 b.p.m. Physical exam revealed decreased breath sounds at lung bases with ronchi. Because of oxygen desaturation (SpO2 89%), continuous positive airway pressure (CPAP) was</li> </ul>

			<p>positioned.</p> <ul style="list-style-type: none"> <li>• The final diagnosis was acute virus-negative lymphocytic myocarditis associated with SARS-CoV-2 respiratory infection.</li> </ul>
08.04.2020	<a href="#">Sudden and Complete Olfactory Loss Function as a Possible Symptom of COVID-19</a>	JAMA Otolaryngology– Head & Neck Surgery / Observation	<ul style="list-style-type: none"> <li>• Authors present a case where the main symptom expressed by the patient infected by SARS-CoV-2 was the sudden and complete loss of the olfactory function without nasal obstruction. Patient presented with bilateral obstructive inflammation of olfactory clefts on imaging, which severely impaired the olfactory function by preventing odorant molecules from reaching the olfactory epithelium.</li> <li>• As reported by the French Society of ENT (<a href="https://www.snorl.org/category-acces-libre/alerte-anosmie-covid-19-20-mars-2020/">https://www.snorl.org/category-acces-libre/alerte-anosmie-covid-19-20-mars-2020/</a>), they believe that the association of a sudden and complete olfactory function loss, without nasal obstruction in a patient with other symptoms, such as cough or fever, should alert the clinician to suspect SARS-CoV-2 infection.</li> </ul>
08.04.2020	<a href="#">Rapid progression of lung inflammatory infiltrates in SARS-CoV-2 infection in a young man</a>	Polish archives of internal medicine / Clinical Image	<ul style="list-style-type: none"> <li>• The report presents the case of COVID-19 in a young man, with no concomitant diseases other than obesity.</li> <li>• He reported a 6-day history of fever up to 38.5°C, cough, rhinitis, exertional dyspnoea and fatigue. He reported close contact with SARS-CoV-2 infected person 10 days before.</li> <li>• Treatment is described up until discharge of patient.</li> </ul>
05.04.2020	<a href="#">Epidemiology of 2019 novel coronavirus in Jiangsu Province, China after wartime control measures: A population-level retrospective study</a>	Travel medicine and infectious disease / Journal Pre-proof	<ul style="list-style-type: none"> <li>• This study aimed to compare the epidemiological characteristics in Jiangsu Province and assess whether so-called wartime control measures changed the trend of coronavirus disease 2019 (COVID-19) in the province.</li> <li>• Concluded that the number of daily confirmed new cases in Jiangsu Province peaked around January 31 and then declined. This result emphasized that wartime control measures, such as putting cities on lockdown to limit population mobility in Jiangsu Province, resulted in dramatic reductions in COVID-19 cases.</li> </ul>
09.04.2020	<a href="#">Excess cases of influenza-like illnesses synchronous with coronavirus disease (COVID-19) epidemic, France, March 2020</a>	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> <li>• Several French regions where COVID-19 has been reported currently show a renewed increase in influenza-like illnesses cases in the general practice-based Sentinelles network.</li> <li>• The authors computed the number of excess cases by region from 24 Feb to 8 Mar 2020 and found a correlation with the number of reported COVID-19 cases so far. The data suggest larger circulation of SARS-CoV-2 in the French population than apparent from confirmed cases.</li> </ul>
08.04.2020	<a href="#">Respiratory health in athletes: facing the COVID-19 challenge</a>	The Lancet Respiratory	<ul style="list-style-type: none"> <li>• For athletes, para-athletes, and clinicians concerned with their health, it is important that targeted guidance is available - including decisions to continue training, potential transmission of disease within teams, the potential effect</li> </ul>

		Medicine / Spotlight	of vigorous exercise on infection susceptibility, and the need for guidance regarding return to play, following COVID-19 infection. <ul style="list-style-type: none"> <li>• Respiratory illness is a key issue for athlete medical services; acute respiratory tract infection is the leading cause of non-injury related medical consultation and is associated with a significant loss in training and competition time in elite athlete cohorts.</li> </ul>
08.04.2020	<a href="#">Special considerations for the management of COVID-19 pediatric patients in the operating room and pediatric intensive care unit in a tertiary hospital in Singapore</a>	Paediatric anaesthesia / Special Interest Article	<ul style="list-style-type: none"> <li>• This article provides a summary of the general measures implemented at a large adult and paediatric tertiary hospital in Singapore.</li> <li>• Specific strategies are details for the operating room and paediatric intensive care unit.</li> </ul>
07.04.2020	<a href="#">Cytologic and histologic samples from patients infected by the novel coronavirus 2019 SARS-CoV-2: An Italian institutional experience focusing on biosafety procedures</a>	Cancer Cytopathol / Commentary	<ul style="list-style-type: none"> <li>• The current commentary reports and focuses on the protocols and guidelines in use at a large tertiary Italian hospital that accordingly are proposed for adoption in Italian laboratories as a potential model for national guidelines for the coronavirus emergency.</li> </ul>
07.04.2020	<a href="#">COVID-19 And Older Adults: What We Know</a>	J Am Geriatr Soc / Review	<ul style="list-style-type: none"> <li>• The authors discuss the transmission, symptomatology, mortality, and possible treatments for COVID-19, as they relate to older adults.</li> </ul>
07.04.2020	<a href="#">First statement on preparation for the COVID-19 pandemic in large German Speaking University-based radiation oncology departments</a>	Radiat Oncol / Review	<ul style="list-style-type: none"> <li>• The authors report on their learning system and preparation measures to effectively tackle the COVID-19 challenge in University-Based Radiation Oncology Departments.</li> </ul>
07.04.2020	<a href="#">Surgery in COVID-19 patients: operational directives</a>	World J Emerg Surg / Commentary	<ul style="list-style-type: none"> <li>• Describe recommended clinical pathways for COVID-19-positive patients requiring acute non-deferrable surgical care. All hospitals should organize dedicated protocols and workforce training as part of the effort to face the current pandemic.</li> </ul>
07.04.2020	<a href="#">Facing COVID-19 in Ophthalmology department</a>	Curr Eye Res	<ul style="list-style-type: none"> <li>• Provide useful guidelines, targeted at ophthalmology professionals, to minimize COVID-19 infection of both healthcare workers and patients.</li> </ul>
08.04.2020	<a href="#">CAPACITY-COVID: a European registry to determine the role of cardiovascular disease in the COVID-19 pandemic</a>	European heart journal	<ul style="list-style-type: none"> <li>• To accelerate knowledge on the role of cardiovascular disease in the COVID-19 pandemic, standardized and coordinated data collection on a large scale is of pivotal importance.</li> <li>• The authors launched the CAPACITY-COVID (<a href="http://www.capacity-covid.eu">www.capacity-covid.eu</a>) registry on the 23rd March. CAPACITY-COVID offers a comprehensive data collection tool that facilitates uniform data collection of patients infected with SARS-CoV-2.</li> <li>• By collecting information in the registry in a standardized manner, they hope this initiative can aid in providing more insight into (i) the incidence and pattern of cardiovascular complications in patients with COVID-19 and (ii) the vulnerability and clinical course of COVID-19 in patients with an underlying cardiovascular disease.</li> </ul>

## Infection control

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">Discharge criteria for confirmed COVID-19 cases – When is it safe to discharge COVID-19 cases from the hospital or end home isolation? / Guidance</a>	European Centre for Disease Prevention and Control / Technical Report	<ul style="list-style-type: none"> <li>• This ECDC document suggests criteria to be considered when deciding whether a confirmed COVID-19 case can be safely (i.e. without being infectious) discharged from hospital or released from home isolation.</li> <li>• Recommendation that when deciding on criteria for hospital discharge of COVID-19 patients, health authorities should take into account several factors such as the existing capacity of the healthcare system, laboratory diagnostic resources, and the current epidemiological situation.</li> <li>• Due to increasing evidence of virus shedding through faeces by convalescent patients, particularly children, recommendations for careful personal hygiene precautions after de-isolation are warranted.</li> </ul>
08.04.2020	<a href="#">Using face masks in the community - Reducing COVID-19 transmission from potentially asymptomatic or pre-symptomatic people through the use of face masks / Guidance</a>	European Centre for Disease Prevention and Control / Technical Report	<ul style="list-style-type: none"> <li>• This document provides the ECDC opinion on the suitability of face masks and other face covers in the community by individuals who are not ill in order to reduce potential pre-symptomatic or asymptomatic transmission of COVID-19 from the mask wearer to others.</li> <li>• The use of face masks in the community should be considered only as a complementary measure and not as a replacement for established preventive measures; appropriate use is key for the effectiveness of the measure and can be improved through education campaigns.</li> </ul>
08.04.2020	<a href="#">Infection control in non-clinical areas during COVID-19 pandemic</a>	Anaesthesia / Correspondence	<ul style="list-style-type: none"> <li>• This article suggests that non-clinical areas are potentially high-risk for transmission between healthcare workers, and often neglected by infection prevention and control protocols.</li> <li>• To alert others to this risk and how it may be reduced, the authors describe their non-clinical workplace infection prevention and control measures that have been modified from those originally developed during the 2003 severe acute respiratory syndrome epidemic.</li> </ul>
06.04.2020	<a href="#">Cardiopulmonary resuscitation after hospital admission with covid-19</a>	BMJ / Editorial	<ul style="list-style-type: none"> <li>• The author discusses the potential benefits and harms of CPR for COVID-19 patients and the potential significant harm to staff, especially where enhanced personal protection is not in place.</li> </ul>
08.04.2020	<a href="#">Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review</a>	Cochrane Database of Systematic Reviews / Cochrane	<ul style="list-style-type: none"> <li>• The authors conducted a rapid review to assess the effects of quarantine (alone or in combination with other measures) of individuals who had contact with confirmed cases of COVID-19, who travelled from countries with a declared outbreak, or who live in regions with high transmission of the</li> </ul>

		Systematic Review - Prototype	<p>disease.</p> <ul style="list-style-type: none"> <li>• 29 studies were included; 10 modelling studies on COVID-19, four observational studies and 15 modelling studies on SARS and MERS.</li> <li>• Findings consistently indicate that quarantine is important in reducing incidence and mortality during the COVID-19 pandemic. Early implementation of quarantine and combining quarantine with other public health measures is important to ensure effectiveness. In order to maintain the best possible balance of measures, decision makers must constantly monitor the outbreak situation and the impact of the measures implemented. Testing in representative samples in different settings could help assess the true prevalence of infection, and would reduce uncertainty of modelling assumptions.</li> </ul>
04.04.2020	<a href="#">Risk of nosocomial transmission of coronavirus disease 2019: an experience in a general ward setting in Hong Kong</a>	The Journal of hospital infection / Journal Pre-proof	<ul style="list-style-type: none"> <li>• Describe an outbreak investigation of a patient with COVID-19 who was nursed in an open cubicle of a general ward before the diagnosis was made.</li> <li>• Findings suggest that SARS-CoV-2 is not spread by an airborne route, and nosocomial transmissions can be prevented through vigilant basic infection control measures, including wearing of surgical masks, hand and environmental hygiene.</li> </ul>
07.04.2020	<a href="#">2019 Novel Coronavirus (COVID-19) Pandemic: Built Environment Considerations To Reduce Transmission</a>	mSystems / Article	<ul style="list-style-type: none"> <li>• The authors synthesize the microbiology of the built environment (BE) research and the known information about SARS-CoV-2 to provide actionable and achievable guidance to BE decision makers, building operators, and all indoor occupants attempting to minimize infectious disease transmission through environmentally mediated pathways.</li> </ul>
08.04.2020	<a href="#">Digestive system involvement of novel coronavirus infection: prevention and control infection from a gastroenterology perspective</a>	Journal of digestive diseases / Invited review	<ul style="list-style-type: none"> <li>• While the respiratory mode of transmission of COVID-19 is well-known and likely the principal mode of transmission of this disease, the possibility of the faecal–oral route of transmission has also emerged in various case series and clinical scenario.</li> <li>• In this review article, the authors summarized the published literatures to date concerning four different aspects: (a) gastrointestinal manifestations of COVID-19 infection; (b) microbiologic and virological investigations; (c) the role of faecal–oral transmission; and (d) prevention/control infection in the digestive endoscopy room.</li> </ul>
06.04.2020	<a href="#">Minimizing the risk of COVID-19 among patients on dialysis</a>	Nature Reviews Nephrology / Comment	<ul style="list-style-type: none"> <li>• Describes preventive strategies to minimise the risk of disease transmission in dialysis facilities, including education of staff and patients, screening for COVID-19 and separation of infected or symptomatic and non-infected patients.</li> </ul>

06.04.2020	<a href="#">Core Principles for Infection Prevention in Hemodialysis Centers during the Pandemic Situation of COVID-19</a>	Infection Control Hospital Epidemiology / Letter	<ul style="list-style-type: none"> <li>The author discusses the measures taken at their haemodialysis centre (Peking Union Medical College Hospital) to reduce COVID-19 transmission.</li> </ul>
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## Treatment

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">Recommendations from national regulatory agencies for ongoing cancer trials during the COVID-19 pandemic</a>	The Lancet Oncology / Comment	<ul style="list-style-type: none"> <li>Summary of guidance from national regulatory agencies for clinical trials during the COVID-19 pandemic is presented, noting specific considerations must be made for each trial, in view of the wide variety of study types, relative complexities, and perceived risks and benefits.</li> <li>For patients on study treatment, the difficult decision to stop or carry on with the investigational medical product or other study treatments should be discussed. Immunosuppressive regimens and drugs with a higher risk for drug-related lung injury may present the biggest risk - need to balance with potential issues of stopping or delaying treatment that might extend life, help with or delay symptoms, or reduce the risk for disease-related complications.</li> <li>Authors hope that risk mitigation and easing of previously inflexible rules will put the patient at the centre of clinical research.</li> </ul>
07.04.2020	<a href="#">COVID-19 and the use of immunomodulatory and biologic agents for severe cutaneous disease: An Australia/New Zealand consensus statement</a>	Australas J Dermatol / Review	<ul style="list-style-type: none"> <li>A consensus statement from Australia/New Zealand on the use of immunomodulatory and biologic agents for severe cutaneous disease.</li> </ul>
08.04.2020	<a href="#">Tissue Plasminogen Activator (tPA) Treatment for COVID-19 Associated Acute Respiratory Distress Syndrome (ARDS): A Case Series</a>	Journal of thrombosis and haemostasis / Case Report	<ul style="list-style-type: none"> <li>A hallmark of severe COVID-19 is coagulopathy, with 71.4% of patients who die of COVID-19 meeting ISTH criteria for disseminated intravascular coagulation (DIC) while only 0.6% of patients who survive meet these criteria.</li> <li>There is evidence in both animals and humans that fibrinolytic therapy in Acute Lung Injury and ARDS improves survival, which also points to fibrin deposition in the pulmonary microvasculature as a contributory cause of ARDS and would be expected to be seen in patients with ARDS and concomitant diagnoses of DIC on their laboratory values such as what is observed in more than 70% of those who die of COVID-19.</li> </ul>
08.04.2020	<a href="#">Corticosteroid treatment of patients with coronavirus disease 2019 (COVID-19)</a>	The Medical journal of Australia / Research	<ul style="list-style-type: none"> <li>Assessed the efficacy of corticosteroid treatment of patients with COVID-19.</li> <li>Eleven of 31 patients with COVID-19 received corticosteroid treatment. Cox proportional hazards regression analysis indicated no association between corticosteroid treatment and virus clearance time, or duration of symptoms .</li> </ul>

			<p>Univariate analysis indicated that virus clearance was slower in two patients with chronic hepatitis B infections.</p> <ul style="list-style-type: none"> <li>• Concluded that corticosteroids are widely used when treating patients with COVID-19, but they found no association between therapy and outcomes in patients without ARDS. An existing HBV infection may delay SARS-CoV-2 clearance, and this association should be further investigated.</li> </ul>
08.04.2020	<a href="#">Chloroquine and hydroxychloroquine for the treatment of COVID-19: A living systematic review protocol</a>	medRxiv (not peer-reviewed) / Review	<ul style="list-style-type: none"> <li>• Protocol for a systematic review to determine the relative impact of the use of chloroquine and hydroxychloroquine on outcomes important to patients with COVID 19.</li> <li>• A living, web-based version of this review will be openly available during the COVID-19 pandemic.</li> </ul>
08.04.2020	<a href="#">Continuous Intravenous Anakinra Infusion to Calm the Cytokine Storm in Macrophage Activation Syndrome</a>	ACR open rheumatology / Original Article	<ul style="list-style-type: none"> <li>• Report the benefit of a therapeutic approach consisting of intravenous continuous anakinra infusions in treating severely ill adult patients with secondary hemophagocytic lymphohistiocytosis/macrophage activation syndrome (sHLH/MAS).</li> <li>• Continuous infusion of IV anakinra may result in rapid serologic and subsequent clinical improvement in adult patients with MAS. This method for treating cytokine storm should be considered in the current COVID-19 pandemic in the subgroup of patients with severe disease that have a cytokine storm presentation.</li> </ul>
08.04.2020	<a href="#">Nelfinavir inhibits replication of severe acute respiratory syndrome coronavirus 2 in vitro</a>	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• The authors suggest nelfinavir, an HIV-1 protease inhibitor, can potently inhibit replication of SARS-CoV-2 at effective concentrations 50% and 90%.</li> </ul>
05.04.2020	<a href="#">Macrolide treatment for COVID-19: Will this be the way forward?</a>	Biosci Trends / Article	<ul style="list-style-type: none"> <li>• Using structure-based drug selection for identification of SARS-CoV-2 protease inhibitors, old drugs such as macrolides (MAC) were predicted to be effective for COVID-19. Lately, the anti-viral effects of macrolides have attracted considerable attention.</li> <li>• Very recently, hydroxychloroquine in combination with azithromycin treatment was reported to be effective for COVID-19.</li> <li>• This article suggests that treatments with macrolides alone or in combination with other drugs are promising and open the possibility of an international strategy to fight this emerging viral infection.</li> </ul>
08.04.2020	<a href="#">COVID-19. Can Historical Antivirals Be of Use?</a>	Centre for Evidence-Based Medicine, University of Oxford / Article	<ul style="list-style-type: none"> <li>• The UK Medical Research Council's Common Cold Unit ran 1,006 studies between 1946 and 1989; in 2000 a subset of 243 comparative studies formed the source of a systematic review "Antivirals for the common cold". The review, withdraw due to lack of funding, is now available again: <a href="https://drive.google.com/file/d/1QnxX_Uxg6ryhP32-pJ96Xajd9S8sNgRt/view">https://drive.google.com/file/d/1QnxX_Uxg6ryhP32-pJ96Xajd9S8sNgRt/view</a></li> <li>• Research recommendation: "Further assessment of the effects of dipyridamole, ICI 130, 685, Impulsin (palmitate) and Pleconaril in preventing</li> </ul>

			the common cold should be carried out. Assessment of the effects of dipyridamole initially could involve a case-control study prior to the conduct of a clinical trial. The common use of the drug should make a study of such a design relatively easy to organise. Attention should be paid to the development of compounds with a non-virus specific action.”
04.04.2020	<a href="#">Baricitinib -a Januase Kinase Inhibitor - not an ideal option for management of COVID-19</a>	International journal of antimicrobial agents / In Press Article Pre-proof	<ul style="list-style-type: none"> <li>• Several studies suggested Baricitinib as a potential drug for the management of COVID 19 infection through drug repurposing strategies because of its ability to act on AT2 cells and AAK1 mediated endocytosis.</li> <li>• Baricitinib, a Januase Kinase Inhibitor, have known to cause Lymphocytopenia, Neutropenia and Viral Reactivation.</li> <li>• Reported epidemiological studies have shown that COVID-19 patients have a lesser absolute lymphocyte count closer to the threshold value.</li> <li>• Moreover, incidence of co-infection for COVID-19 patients is one of the leading causes of Mortality. Baricitinib may enhance the incidence of co-infection.</li> <li>• Hence, Baricitinib may not be an ideal option for management of COVID-19.</li> </ul>
08.04.2020	<a href="#">Therapeutic Potential for Tetracyclines in the Treatment of COVID-19</a>	Pharmacotherapy / Letter	<ul style="list-style-type: none"> <li>• Tetracyclines are highly lipophilic antibiotics that are known to chelate zinc compounds on matrix metalloproteinases (MMPs). Coronaviruses are also known to heavily rely on host MMPs for survival, cell infiltration, cell to cell adhesion, and replication, many of which have zinc as part of their MMP complex. It is possible that the zinc chelating properties of tetracyclines may also aid in inhibiting COVID-19 infection in humans limiting their ability to replicate within the host.</li> <li>• The authors urge research groups to consider investigating the potential therapeutic efficacy of tetracycline antibiotics.</li> </ul>
06.04.2020	<a href="#">Effectiveness of convalescent plasma therapy in severe COVID-19 patients</a>	Proceedings of the National Academy of Sciences of the United States of America/ Article	<ul style="list-style-type: none"> <li>• The results of this study with 10 severe adult cases showed that one dose (200 mL) of convalescent plasma was well tolerated and could significantly increase or maintain the neutralising antibodies at a high level, leading to disappearance of viremia in 7 days and improvement of clinical symptoms within 3 d.</li> </ul>
07.04.2020	<a href="#">Deployment of convalescent plasma for the prevention and treatment of COVID-19</a>	J Clin Invest / Review	<ul style="list-style-type: none"> <li>• Provide an overview of convalescent plasma, from evidence of benefit, regulatory considerations, logistical work flow and proposed clinical trials, as scale up is brought underway to mobilize this critical resource.</li> </ul>
08.04.2020	<a href="#">Targeting SARS-CoV-2: A Systematic Drug Repurposing Approach to Identify Promising Inhibitors Against 3C-like Proteinase and 2'-O-RiboseMethyltransferase</a>	Journal of biomolecular structure & dynamics / Article	<ul style="list-style-type: none"> <li>• Two druggable targets, namely 3C-like proteinase (3CLpro) and 2'-O-ribose methyltransferase (2'-O-MTase) were selected in this study due to their indispensable nature in the viral life cycle.</li> <li>• The selected drug target proteins were screened against an in-house library of 123 antiviral drugs.</li> </ul>

			<ul style="list-style-type: none"> <li>• Two promising drug molecules were identified for each protein based on their estimated free energy of binding (<math>\Delta G</math>), the orientation of drug molecules in the active site and the interacting residues. The selected protein-drug complexes were then subjected to MD simulation, which consists of various structural parameters to equivalently reflect their physiological state.</li> <li>• After the extensive computational analysis, the authors proposed that Raltegravir, Paritaprevir, Bicittegravir and Dolutegravir are excellent lead candidates for these crucial proteins and they could become potential therapeutic drugs against SARS-CoV-2.</li> </ul>
08.04.2020	<a href="#">Considerations for statin therapy in patients with COVID-19</a>	Pharmacotherapy / Letter	<ul style="list-style-type: none"> <li>• Statins are known for their anti-inflammatory effects and some hospitals have included them in the COVID-19 treatment protocol. Here, the authors summarise main points that should be considered before incorporating this class of drugs in a treatment regimen.</li> <li>• Considerations include: potential mechanistic effects, adverse effects, drug interaction between statins and antiviral agents.</li> <li>• The authors recommend guideline-directed continuation of statin therapy among patients with history of atherosclerotic cardiovascular disease or diabetes. Recommend guidance-directed initiation of statin in patients with COVID-19 who show acute cardiac injury. But, de novo initiation of statin therapy for management of COVID-19 episode can be done only as clinical trial not routinely.</li> </ul>
08.04.2020	<a href="#">Lack of Antiviral Activity of Darunavir against SARS-CoV-2</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• Describes the lack of antiviral activity of the HIV protease inhibitor darunavir (DRV) against a clinical isolate from a patient infected with SARS-CoV-2.</li> </ul>
08.04.2020	<a href="#">Battling COVID-19: Critical care and peri-operative healthcare resource management strategies in a tertiary academic medical centre in Singapore</a>	Anaesthesia / Original Article	<ul style="list-style-type: none"> <li>• In this article they discuss some of the peri-operative and critical care resource planning considerations and management strategies employed in a tertiary academic medical centre in Singapore in response to the COVID-19 outbreak.</li> <li>• A study of the initial Chinese response has shown that there is a significant positive association between COVID-19 mortality and healthcare resource burden. Based on the Chinese experience, some 19% of COVID-19 cases develop severe or critical disease. This results in a need for adequate preparation and mobilisation of critical care resources to anticipate and adapt to a surge in COVID-19 case-load in order to mitigate morbidity and mortality.</li> </ul>
08.04.2020	<a href="#">Sequence-based prediction of vaccine targets for inducing T cell responses to SARS-CoV-2 utilizing the bioinformatics predictor RECON</a>	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• Using a bioinformatic platform, the authors have identified multiple putative epitopes for CD4+ and CD8+ T cells whose HLA binding properties cover nearly the entire population and may be effective in prophylactic vaccines against SARS-CoV-2 to induce broad cellular immunity.</li> </ul>

08.04.2020	<a href="#">Comment on "Organ-protective Effect of Angiotensin-converting Enzyme 2 and its Effect on the Prognosis of COVID-19"</a>	Journal of medical virology / Letter to the editor	<ul style="list-style-type: none"> <li>• Response to an article by Cheng H et al. The authors mentioned that angiotensin-converting enzyme 2 (ACE2) is protective against novel coronavirus disease 2019 (COVID-19).</li> <li>• This letter explains how cytosolic pH increases the COVID-19 infection by affecting the ACE2. In addition, the authors mention that amiloride, which increases the cytosolic pH, can be used in the COVID-19 treatment.</li> </ul>
08.04.2020	<a href="#">Targeting the catecholamine-cytokine axis to prevent SARS-CoV-2 cytokine storm syndrome</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• Emerging evidence suggests that a subset of COVID-19 is characterized by the development of a cytokine storm syndrome (CSS), and interleukin (IL)-6 levels are predictors of COVID-19 severity and in-hospital mortality.</li> <li>• Inhibition of catecholamine synthesis with the <math>\alpha</math>1-AR antagonist prazosin reduced catecholamines and cytokine responses in mice, and resulted in markedly increased survival following various hyper-inflammatory stimuli.</li> <li>• This offers a rationale for studying <math>\alpha</math>1-AR antagonists in the prophylaxis of patients with COVID-19-CSS and ARDS.</li> </ul>
06.04.2020	<a href="#">An orally bioavailable broad-spectrum antiviral inhibits SARS-CoV-2 in human airway epithelial cell cultures and multiple coronaviruses in mice</a>	Science translational medicine/ Article	<ul style="list-style-type: none"> <li>• Study demonstrating broad spectrum antiviral activity of ribonucleotide analog <math>\beta</math>-D-N4-hydroxycytidine (NHC, EIDD-1931) against SARS-CoV-2, MERS-CoV, SARS-CoV, and related zoonotic group 2b or 2c Bat-CoVs, as well as increased potency against a coronavirus bearing resistance mutations to the nucleoside analog inhibitor remdesivir.</li> </ul>

## Social sciences

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">Pandemic school closures: risks and opportunities</a>	The Lancet Child & Adolescent Health / Editorial	<ul style="list-style-type: none"> <li>• Over 90% of the world's students (more than 1.5 billion young people) are currently out of education. Following school closures amidst the west African Ebola epidemic, rates of child labour, neglect, sexual abuse, and adolescent pregnancies spiked, and many children never returned to school.</li> <li>• Many children will suffer from a lack of access to school-provided social assistance, such as free lunches or clean water and washing facilities, as well as school-facilitated health care.</li> <li>• Public health officials must prioritise national plans for how and when to reopen schools, with consideration of alternative measures such as reduced hours or staggered lessons.</li> </ul>
08.04.2020	<a href="#">Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis?</a>	The Lancet Public Health / Correspondence	<ul style="list-style-type: none"> <li>• The potential public health effects of long-term isolation on alcohol use and misuse are unknown. Stress is a prominent risk factor for the onset and maintenance of alcohol misuse.</li> </ul>

			<ul style="list-style-type: none"> <li>• This period of isolation might lead to a spike in alcohol misuse, relapse, and potentially, development of alcohol use disorder in at-risk individuals.</li> <li>• Authors suggest that, alongside current public health advice, governments give public health warnings about excessive alcohol consumption during isolation to protect vulnerable individuals.</li> </ul>
06.04.2020	<a href="#">Covid-19 pandemic: a public and global mental health opportunity for social transformation?</a>	BMJ / Letter	<ul style="list-style-type: none"> <li>• The author discusses the way that COVID-19 presents an opportunity for social transformation; through a public mental health focus there is an opportunity to bring people of all cultures together.</li> </ul>
06.04.2020	<a href="#">Covid-19 and the rise of racism</a>	BMJ / Letter	<ul style="list-style-type: none"> <li>• The author discusses the need for the government and media to condemn stigma and xenophobic actions, to educate the public, protect the vulnerable, and hold people accountable for prejudice and discrimination.</li> </ul>
08.04.2020	<a href="#">Lessons Never Learned: Crisis and gender-based violence</a>	Developing world bioethics / Original Article	<ul style="list-style-type: none"> <li>• In emergencies, particularly ones that involve quarantine, gender-based violence often increases.</li> <li>• Policymakers must utilize community expertise, technology and existing global guidelines to disrupt these trends in the early stages of the COVID-19 epidemic. Gender norms and roles relegating women to the realm of care work puts them on the frontlines in an epidemic, while often excluding them from developing the response.</li> </ul>
06.04.2020	<a href="#">Life in the pandemic: Social isolation and mental health</a>	Journal of Clinical Nursing / Editorial	<ul style="list-style-type: none"> <li>• Discussion around the mental health issues with social isolation, including those particularly at risk; children, older adults, minority groups, those from low socioeconomic groups, females and people with pre-existing mental health issues.</li> </ul>
08.04.2020	<a href="#">Analyzing Situational Awareness through Public Opinion to Predict Adoption of Social Distancing Amid Pandemic COVID-19</a>	Journal of Medical Virology / Research article	<ul style="list-style-type: none"> <li>• In this study, the authors evaluated the influence of information (formal and informal) sources on situational awareness of the public for adopting health-protective behaviours such as social distancing. A questionnaire was used.</li> <li>• Results suggest that information sources formal (<math>p=0.001</math>) and informal (<math>p=0.007</math>) were found to be significantly related to perceived understanding. Findings also indicate that social distancing is significantly influenced by situational awareness <math>p=0.000</math>.</li> </ul>
06.04.2020	<a href="#">Ethics in the time of COVID: What remains the same and what is different</a>	Neurology / Editorial	<ul style="list-style-type: none"> <li>• Editorial discussing how traditional ethical principles can apply to the novel ethical dilemmas brought on by COVID-19 such as distributing scarce resources and social distancing.</li> </ul>
08.04.2020	<a href="#">A Bold Response to the COVID-19 Pandemic: Medical Students, National Service, and Public Health</a>	JAMA / Editorial	<ul style="list-style-type: none"> <li>• US should move swiftly to build a robust public health response, drawing upon a workforce that includes future physicians. Proposes suspending the first year of medical school for 1 year and giving the incoming 20 000 medical students the opportunity to join a national service program for public health, beginning at start of July.</li> </ul>

## Miscellaneous

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">Ensuring and Sustaining a Pandemic Workforce</a>	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> <li>• Authors present the need for pragmatic steps to expand and sustain the health workforce, in a US context - Some permanent including expanding scopes of practice, cross-state licensure, and allowing greater use of telehealth services.</li> <li>• Others to meet surge demand e.g. drawing on third/fourth year medical students, identifying health care professionals who have retired or left the workforce; deploying respiratory therapists to hospitals most in need / developing programs to quickly train workers who can operate this technology competently.</li> </ul>
08.04.2020	<a href="#">Rapid Design and Implementation of an Integrated Patient Self-Triage and Self-Scheduling Tool for COVID-19</a>	Journal of the American Medical Informatics Association / Accepted Manuscript	<ul style="list-style-type: none"> <li>• The authors created a patient portal-based COVID-19 self-triage and self-scheduling tool and made it available to all primary care patients at this large academic health system.</li> <li>• This self-triage and self-scheduling tool has been widely used by patients and is being rapidly expanded to other populations and health systems. The tool has recommended emergency-level care with high sensitivity, and decreased triage time for patients with less severe illness. The data suggests it also prevents unnecessary triage messages, phone calls and in-person visits.</li> </ul>
05.04.2020	<a href="#">Interpreting COVID-19 and Virtual Care Trends: A Call for Action</a>	JMIR Public Health Surveill / Article	<ul style="list-style-type: none"> <li>• In this study, the authors explored possible trends in the use of virtual care during the COVID-19 initial period.</li> <li>• Of the 733 total visits, 257 (35%) were COVID-19 related symptoms.</li> <li>• Virtual Care can provide services to patients with COVID-19 like symptoms, which will limit the gathering of sick people in Emergency Rooms around the country.</li> </ul>
06.04.2020	<a href="#">Conducting Clinical Research During the COVID-19 Pandemic: Investigator and Participant Perspectives</a>	JMIR Public Health Surveillance / Viewpoint	<ul style="list-style-type: none"> <li>• This article discusses the ethical principles of beneficence and autonomy in helping the decision-making process when conducting clinical trials.</li> <li>• The authors discuss ways to weigh-in local and national guidance, staffing strain, and institutional support.</li> </ul>
07.04.2020	<a href="#">Adaptation of the National Plan for the Prevention and Fight Against Pandemic Influenza to the 2020 COVID-19 epidemic in France</a>	Disaster Med Public Health Prep / Article	<ul style="list-style-type: none"> <li>• This report from the field details the timely events which contributed to the extreme policy decision taken by France in their COVID-19 response.</li> </ul>
08.04.2020	<a href="#">American Geriatrics Society (AGS) Policy Brief: COVID-19 and Nursing Homes</a>	Journal of the American Geriatrics	<ul style="list-style-type: none"> <li>• This policy brief sets forth American Geriatrics Society (AGS) recommendations to guide federal, state, and local governments when</li> </ul>

		Society / Policy Brief	making decisions about care for patients with COVID-19 in nursing homes (NHs) and other long-term care facilities (LTCFs).
08.04.2020	<a href="#">ISUOG Consensus Statement on rationalization of early-pregnancy care and provision of ultrasonography in context of SARS-CoV-2</a>	Ultrasound in obstetrics & gynecology : the official journal of the International Society of Ultrasound in Obstetrics and Gynecology	<ul style="list-style-type: none"> <li>• ISUOG Consensus Statement on rationalization of early-pregnancy care and provision of ultrasonography in context of SARS-CoV-2.</li> </ul>
08.04.2020	<a href="#">ISUOG Consensus Statement on rationalization of gynaecological ultrasound services in context of SARS-CoV-2</a>	Ultrasound in obstetrics & gynecology : the official journal of the International Society of Ultrasound in Obstetrics and Gynecology	<ul style="list-style-type: none"> <li>• ISUOG Consensus Statement on rationalization of gynaecological ultrasound services in context of SARS-CoV-2.</li> </ul>
07.04.2020	<a href="#">Review of Emerging Pharmacotherapy for the Treatment of Coronavirus Disease 2019</a>	Pharmacotherapy / Review	<ul style="list-style-type: none"> <li>• The purpose of this review is to summarize practical considerations for pharmacotherapy in patients with COVID-19, with the intent of serving as a resource for health care providers at the forefront of clinical care during this pandemic.</li> </ul>

## Modelling

Publication Date	Title/URL	Journal/ Article type	Digest
08.04.2020	<a href="#">First-wave COVID-19 transmissibility and severity in China outside Hubei after control measures, and second-wave scenario planning: a modelling impact assessment</a>	The Lancet / Article	<ul style="list-style-type: none"> <li>• Authors report their assessment of the transmissibility and severity of COVID-19 during the first wave in four cities and ten provinces in China outside Hubei, using a susceptible–infectious–recovered model to show the potential effects of relaxing containment measures after the first wave of infection, in anticipation of a possible second wave.</li> <li>• The first wave of COVID-19 outside of Hubei abated because of aggressive non-pharmaceutical interventions. In all selected cities and provinces, the instantaneous reproduction number (Rt) decreased substantially since Jan 23,</li> </ul>

			<p>when control measures were implemented, and has remained below 1. The confirmed case-fatality risk (cCFR) outside Hubei was 0.98% (95% CI 0.82–1.16), which was almost five times lower than that in Hubei (5.91%, 5.73–6.09).</p> <ul style="list-style-type: none"> <li>• Given the substantial risk of viral reintroduction, particularly from overseas importation, close monitoring of Rt and cCFR is needed to inform strategies against a potential second wave to achieve an optimal balance between health and economic protection.</li> </ul>
08.04.2020	<a href="#">Beware of the second wave of COVID-19</a>	The Lancet / Comment	<ul style="list-style-type: none"> <li>• Comment on Leung and colleagues' study "First-wave COVID-19 transmissibility and severity..." in same issue.</li> <li>• Given multiple countries imposed travel restrictions against China in late Jan, the need to model whether earlier implementation of interventions such as social distancing, population behavioural change, and contact tracing would have been able to contain or mitigate the epidemic.</li> <li>• Risk of a second wave finding is critical to governments globally, because it warns against premature relaxation of strict interventions. As countries work toward returning to normalcy, knowledge of the effect of each intervention is urgently required.</li> <li>• Country-specific models of the effects of travel restrictions and social distancing, as well as the alternative strategies after the relaxation of these interventions, such as the use of face masks, temperature checks, and contact tracing, are now needed.</li> </ul>
07.04.2020	<a href="#">High Contagiousness and Rapid Spread of Severe Acute Respiratory Syndrome Coronavirus 2</a>	Emerg Infect Dis / Research	<ul style="list-style-type: none"> <li>• The authors collected extensive individual case reports across China and estimated key epidemiologic parameters, including the incubation period.</li> <li>• They then designed 2 mathematical modelling approaches to infer the outbreak dynamics in Wuhan by using high-resolution domestic travel and infection data. Results show that the doubling time early in the epidemic in Wuhan was 2.3-3.3 days. Assuming a serial interval of 6-9 days, they calculated a median R(0) value of 5.7 (95% CI 3.8-8.9).</li> <li>• They further show that active surveillance, contact tracing, quarantine, and early strong social distancing efforts are needed to stop transmission of the virus.</li> </ul>
08.04.2020	<a href="#">The impact of early social distancing at COVID-19 Outbreak in the largest Metropolitan Area of Brazil</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> <li>• The study evaluates the impact of early social distancing on the COVID-19 transmission in the Sao Paulo metropolitan area of Brazil.</li> <li>• Using an age-stratified SEIR model, the time-dependent reproductive number, and forecasted ICU beds necessary to tackle this epidemic are estimated.</li> <li>• Within 60 days, these measures might prevent 89,450 deaths.</li> </ul>

08.04.2020	<a href="#">Defining high-value information for COVID-19 decision-making</a>	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"><li>• The authors demonstrate a model-based approach to assessing the potential value of reducing uncertainties most applicable to COVID-19 decision-making and discuss priorities for acquiring new data to reduce these uncertainties.</li></ul>
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**Produced by the PHE COVID-19 Literature Digest Team**

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