



International EPI Cell Daily Evidence Briefing – 24/03/2020

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Please note that we are including preprints, which are preliminary reports of work that have NOT been peer-reviewed.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

Date of publication	Title / URL	Journal title / URL	Digest
23.03.2020	Temporal profiles of viral load in posterior oropharyngeal saliva samples and serum antibody responses during infection by SARS-CoV-2: an observational cohort study	Lancet Infectious Diseases / Article	<ul style="list-style-type: none"> • Posterior oropharyngeal saliva samples are a non-invasive specimen more acceptable to patients and health-care workers. • Unlike severe acute respiratory syndrome, patients with COVID-19 had the highest viral load near presentation, which could account for the fast-spreading nature of this epidemic. • This finding emphasises the importance of stringent infection control and early use of potent antiviral agents, alone or in combination, for high-risk individuals. Serological assay can complement RT-qPCR for diagnosis.
23.03.2020	Recommendations by the SEPD and AEG, both in general and on the operation of gastrointestinal endoscopy and gastroenterology	Rev Esp Enferm Dig / Article	<ul style="list-style-type: none"> • The presence of SARS-CoV-2 RNA in the faeces of patients infected with the virus, and occasionally in colonic biopsy samples, has been consistently documented. • In fact, viral elimination in the faeces may be more prolonged than viral identification in respiratory tract secretions.

	units, concerning the current SARS-CoV-2 pandemic (March, 18)		<ul style="list-style-type: none"> • Viral transmission may occur in asymptomatic individuals; however, as of this moment no information has been reported on the possibility of viral transmission, even to professionals, via this route
23.03.2020	Time Kinetics of Viral Clearance and Resolution of Symptoms in Novel Coronavirus Infection	Am J Respir Crit Care Med /Case series	<ul style="list-style-type: none"> • The study provides initial insights into the viral clearance kinetics and the ability of the virus to persist even after the resolution for as long as 8 days, which may pose a significant challenge in controlling the spread of the disease.
23.03.2020	SARS-CoV-2: virus dynamics and host response	Lancet Infectious Diseases / Comment	<ul style="list-style-type: none"> • The high viral load during the early phase of illness suggests that patients could be most infectious during this period, and it might account for the high transmissibility of SARS-CoV-2. • The high viral load on presentation suggests that SARS-CoV-2 could be susceptible to emergence of antiviral resistance. • Age was associated with viral load in this study, which could explain the high degree of severe disease in older patients with SARS-CoV-2.
20.03.2020	Single-cell transcriptome profiling an adult human cell atlas of 15 major organs	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The adult human cell atlas (AHCA) reveals the inter- and intra-organ heterogeneity of cell characteristics and provides a useful resource to uncover key events during the development of human diseases such as the recent outbreak of coronavirus disease 2019 (COVID-19) in the context of heterogeneity of cells and organs.
23.03.2020	Drive-Through Screening Center for COVID-19: a Safe and Efficient Screening System against Massive Community Outbreak	J Korean Med Sci / Article	<ul style="list-style-type: none"> • The authors present the overall concept, advantages, and limitations of the COVID-19 DT screening centers. • The steps of the DT centers include registration, examination, specimen collection, and instructions - the entire service takes about 10 minutes for one testee without leaving his or her car. • Increased testing capacity over 100 tests per day and prevention of cross-infection between testees in the waiting space are the major advantages, while protection of staff from the outdoor atmosphere is challenging - it could be implemented in other countries to cope with the global COVID-19 outbreak and transformed according to their own situations.
01.08.2020	Genetic evolution analysis of 2019 novel coronavirus and coronavirus from other species	Infection, Genetics and Evolution / Letter to editor	<ul style="list-style-type: none"> • The authors found the novel coronavirus was closely related to coronaviruses derived from five wild animals, including Paguma larvata, Paradoxurus hermaphroditus, Civet, Aselliscus stoliczkanus and Rhinolophus sinicus, and was in the same branch of the phylogenetic tree. • However, genome and ORF1a homology show that the virus is not the same coronavirus as the coronavirus derived from these five animals, whereas the virus has the highest homology with Bat coronavirus isolate RaTG13.
20.03.2020	SARS-CoV-2 specific antibody responses in COVID-19 patients	MedRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> •The authors developed serological assays for the detection of SARS-CoV-2 neutralizing, spike- and nucleocapsid-specific antibodies.

			<ul style="list-style-type: none"> • Overall, the validated assays described here can be instrumental for the detection of SARS-CoV-2-specific antibodies for diagnostic, seroepidemiological and vaccine evaluation studies.
21.03.2020	Comparative analyses of SAR-CoV2 genomes from different geographical locations and other coronavirus family genomes reveals unique features potentially consequential to host-virus interaction and pathogenesis	bioRxiv (not peer-reviewed) / New results	<ul style="list-style-type: none"> • To gain further insights into host responses to viral infection, the authors predict that antiviral host-miRNAs may be controlling the viral pathogenesis. • Their analysis reveals nine host miRNAs which can potentially target SARS-CoV2 genes. • hsa-miR-27b is the only unique miRNA which has a target gene in the Indian SARS-CoV2 genome.
20.03.2020	Development and validation of a rapid single-step reverse transcriptase loop-mediated isothermal amplification (RT-LAMP) system potentially to be used for reliable and high-throughput screening of COVID-19	MedRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The authors present a rapid RT-LAMP assay that could extend the capacity of laboratories to process 2.5 more clinical samples relative to qRT-PCR and potentially could be used for high-throughput screening purposes.
20.03.2020	The first-in-class peptide binder to the SARS-CoV-2 spike protein	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • This peptide binder to SARS-CoV-2-RBD provides new avenues for COVID-19 treatment and diagnostic modalities by blocking the SARS-CoV-2 spike protein interaction with ACE2 and thus precluding virus entry into human cells.
23.03.2020	A Genomic Perspective on The Origin and Emergence of SARSCoV-2	Cell / Commentary	<ul style="list-style-type: none"> • The authors describe what genomic data reveals about the emergence SARS-CoV-2 and discuss the gaps in our understanding of its origins.

Epidemiology and clinical

Date of publication	Title / URL	Journal title / URL	Digest
23.03.2020	A COVID-19 Transmission within a family cluster by presymptomatic infectors in China	Clin Infect Dis / Case report	<ul style="list-style-type: none"> • The authors report a COVID-19 family cluster caused by a presymptomatic case. • There were 9 family members, including 8 laboratory-confirmed with COVID-19, and a 6-year-old child had no evidence of infection - amongst the 8 patients, one adult and one 13-month-old infant were asymptomatic, one adult was diagnosed as having severe pneumonia.
23.03.2020	Coronavirus Disease 2019 (COVID-19) pandemic and pregnancy	American Journal of Obstetrics and Gynecology / Special report - in press	<ul style="list-style-type: none"> • Pregnant women and their fetuses represent a high-risk population during infectious disease outbreaks. • To date, the outcomes of 55 pregnant women infected with COVID-19 and 46 neonates have been reported in the literature, with no definite evidence of vertical transmission. • The authors present a review of COVID-19 in pregnancy, bringing together the various factors integral to the understanding of pathophysiology and susceptibility, diagnostic challenges with real-time reverse transcriptase polymerase chain reaction

			(RT-PCR) assays, therapeutic controversies, intrauterine transmission and maternal-fetal complications.
23.03.2020	The first infant case of COVID-19 acquired from a secondary transmission in Vietnam	Lancet Child & Adolescent Health / Case report	<ul style="list-style-type: none"> • On Feb 11, 2020, a 3-month-old, female patient was received at Vietnam National Children's Hospital who was transferred from a local hospital. • The patient was a previously healthy full-term baby, without any complications experienced during pregnancy or her delivery. • She was exclusively breastfed and her immunisations were up to date. • As of Feb 19, despite close contact with the patient, the infant's mother did not present any symptoms and her repeated nasopharyngeal swabs were negative for SARS-CoV-2. All the other family members, including a 5-year-old boy, were also asymptomatic and tested negative.
23.03.2020	Systematic review of COVID-19 in children show milder cases and a better prognosis than adults	Acta Paediatr / Systematic Review	<ul style="list-style-type: none"> • A systematic literature review was carried out to identify papers on COVID-19, using the Medline and EMBASE databases between 1 January and 18 March 2020 - the search identified 45 relevant scientific papers and letters. • The review showed that children have so far accounted for 1-5% of diagnosed COVID-19 cases, they often have milder disease than adults and deaths have been extremely rare. • Diagnostic findings have been similar to adults, with fever and respiratory symptoms being prevalent, but fewer children seem to have developed severe pneumonia - elevated inflammatory markers were less common in children and lymphocytopenia seemed rare.
23.03.2020	Forecasting ultra-early intensive care strain from COVID-19 in England	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • On the basis of the modelling assumptions made, ICU occupancy is likely to increase dramatically in the the days following the time of modelling. • If the current exponential growth continues, 5 out of 7 commissioning regions will have more critically ill COVID-19 patients than there are ICU beds within two weeks.
23.03.2020	Fair Allocation of Scarce Medical Resources in the Time of Covid-19	N Engl J Med / Comment	<ul style="list-style-type: none"> • Outlines 6 recommendations that should be used to develop guidelines for medical resource use that can be applied fairly and consistently across cases. • Such guidelines can ensure that individual doctors are never tasked with deciding unaided which patients receive life-saving care and which do not. • Guidelines should be provided at a higher level of authority, both to alleviate physician burden and to ensure equal treatment.
23.03.2020	The Toughest Triage — Allocating Ventilators in a Pandemic	N Engl J Med / Perspective	<ul style="list-style-type: none"> • In the US, estimates show that the number of patients needing ventilation could range between 1.4 and 31 patients per ventilator. • The angst that clinicians may experience when asked to withdraw ventilators for reasons not related to the welfare of their patients should not be underestimated — it may lead to debilitating and disabling distress for some clinicians.

			<ul style="list-style-type: none"> • Creation and use of triage committees, informed by experience in the current pandemic and prior written recommendations, can help mitigate the enormous emotional, spiritual, and existential burden to which caregivers may be exposed.
23.03.2020	Urology practice during COVID-19 pandemic	Minerva Urol Nefrol / Article	<ul style="list-style-type: none"> • A panel of Italian urologists has agreed on possible strategies for the reorganization of urological routine practice and on a set of recommendations that should facilitate the process of rescheduling both surgical and outpatient activities during the COVID-19 pandemic and in the subsequent phases. • This document could be a valid tool to be used in routine clinical practice and, possibly, a cornerstone for further discussion on the topic also considering the further evolution of the COVID-19 pandemic.
23.03.2020	Dermatology staff participate in fight against Covid-19 in China	J Eur Acad Dermatol Venereol / Comment	<ul style="list-style-type: none"> • In this paper the authors share their experiences in dealing with skin diseases in this special period and hope to provide some references for international colleagues in the COVID-19 epidemic situation.
20.03.2020	A Tool to Early Predict Severe 2019-Novel Coronavirus Pneumonia (COVID-19) : A Multicenter Study using the Risk Nomogram in Wuhan and Guangdong, China	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The authors aimed to construct an effective model for the early identification of cases at high risk of progression to severe COVID-19. • The train cohort consisted of 189 patients, while the two independent validation cohorts consisted of 165 and 18 patients. • Among all cases, 72 (19.35%) patients developed severe COVID-19 and 107 (28.76%) patients had one of the following basic disease, including hypertension, diabetes, coronary heart disease, chronic respiratory disease, tuberculosis disease. • This risk stratification tool will enable better centralized management and early treatment of severe patients, and optimal use of medical resources via patient prioritization and thus significantly reduce mortality rates.
23.03.2020	COVID-19: gastrointestinal symptoms and potential sources of 2019-nCoV transmission	Anaesthesiol Intensive Ther / Letter	<ul style="list-style-type: none"> • In order to control the epidemic, every effort should be made to pay attention to the initial gastrointestinal symptoms of COVID-19 infection for early diagnosis and isolation of patients before the development of: pulmonary symptoms. • The exact mechanism of COVID-19-induced gastrointestinal symptoms remains largely elusive; however, ACE2-based strategies and TMPRSS2 inhibitors are the subject of current research
23.03.2020	COVID-19: A Global Transplant Perspective on Successfully Navigating a Pandemic	Am J Transplant / Viewpoint	<ul style="list-style-type: none"> • A personal viewpoint representing different jurisdictions from around the world in order to outline the impact of the current COVID-19 pandemic on organ transplantation. • Based on collective experience, the authors discuss mitigation strategies such as donor screening, resource planning and a staged approach to transplant volume considerations as local resource issues demand
23.03.2020	Ventilatory Ratio in Hypercapnic Mechanically Ventilated Patients with COVID-19 Associated ARDS	Am J Respir Crit Care Med / Article	<ul style="list-style-type: none"> • The authors found that hypercapnia was common in patients with COVID-19-associated ARDS while using low tidal volume ventilation.

			<ul style="list-style-type: none"> • VR was increased in these patients, which reflected increased pulmonary dead space and inadequacy of ventilation. • Clinicians must have a high index of suspicion for increased pulmonary dead space when COVID-19-related ARDS patients present with hypercapnia
23.03.2020	Mimics and chameleons of COVID-19	Swiss Med Wkly / Viewpoint	<ul style="list-style-type: none"> • This article underlines the need for extensive testing and shows that the present policy of many government bodies to focus on patients at risk with specific symptoms is also limited by “chameleons”, such as patients with nonspecific symptoms. • As the true denominator is unknown, extending testing to patients presenting with possible COVID-19 mimics or chameleons should be considered.
23.03.2020	Case-Fatality Rate and Characteristics of Patients Dying in Relation to COVID-19 in Italy	Jama / Viewpoint	<ul style="list-style-type: none"> • The current data illustrate that Italy has a high proportion of older patients with confirmed COVID-19 infection and that the older population in Italy may partly explain differences in cases and case-fatality rates among countries.
23.03.2020	Lung Recruitability in SARS-CoV-2 Associated Acute Respiratory Distress Syndrome: A Single-center, Observational Study	Am J Respir Crit Care Med / Article	<ul style="list-style-type: none"> • This data shows that lung recruitability can be assessed at the bedside even in a very constrained environment and is low in patients with COVID-19 induced ARDS. • The findings do not imply that all patients with SARSCoV-2 associated ARDS were poorly recruitable, and both the severity and management of these patients can remarkably differ among regions.
23.03.2020	The impact of COVID-19 on the provision of donor hematopoietic stem cell products worldwide: collateral damage	Bone Marrow Transplant / Correspondance	<ul style="list-style-type: none"> • The currently accelerating rate of COVID-19 infection and the responses of governments and facilities have the potential to impact and interfere with the timely provision of hematopoietic stem cells that must cross national borders. • A number of strategies have been proposed to assist in navigating through these rapidly evolving difficulties • Organizations like World Marrow Donor Association could be vital to coordinate the urgent needs for cellular products
23.03.2020	High incidence of asymptomatic SARS-CoV-2 infection, Chongqing, China	MedRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • 82.04% of the SARS-CoV-2 infected patients had a travel history in Wuhan or a history of contact with returnees from Wuhan, showing typical characteristics of imported cases, and the proportion of severe Covid-19 patients was 13.2%, of which 59% were imported from Wuhan. For the patients who were returnees from Wuhan, 18.1% were asymptomatic. • The SARS-CoV-2 prevention needs to focus on the screening of asymptomatic patients in the community with a history of contact with the imported population, especially for children and the elderly population.
20.03.2020	Preliminary evidence that higher temperatures are associated with lower incidence of COVID-19, for cases reported globally up to 29th February 2020	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Using global gridded temperature data, and after adjusting for surveillance capacity and time since first imported case, the authors found that higher average temperature was strongly associated with lower COVID-19 incidence for temperatures of 1°C and higher.

20.03.2020	Comparison of the coronavirus pandemic dynamics in Europe, USA and South Korea	MedRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> The authors provide a simple method of data comparison that can be useful for both governmental organizations and anyone.
23.03.2020	Rising to the Challenge of the Novel SARS-coronavirus-2 (SARS-CoV-2): Advice for Pulmonary and Critical Care and an Agenda for Research	Am J Respir Crit Care Med / Editorial	<ul style="list-style-type: none"> We need to think about ways to move forward with a robust research agenda, which can be done with clinical and epidemiologic observations, use of new diagnostic testing tools, and clinical trials with new and repurposed therapies. Some of the key priorities for research in the Pulmonary and Critical Care community are summarized.
23.03.2020	Nursing and the Novel Coronavirus: Risks and Responsibilities in a Global Outbreak	J Adv Nurs / Editorial	<ul style="list-style-type: none"> As one of the most trusted health professional groups, nurses also play a key role in providing public education on disease prevention and reducing the spread of misinformation around the outbreak. There is a need for care coordination across public health departments, communities and healthcare systems that nurses are ideally suited to providing

Infection control

Date of publication	Title / URL	Journal title / URL	Digest
20.03.2020	Response and role of palliative care during the COVID-19 pandemic: a national telephone survey of hospices in Italy	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> The hospice sector is capable of responding flexibly and rapidly to the COVID-19 pandemic. Governments must urgently recognise the essential contribution of hospice and palliative care to the COVID-19 pandemic, and ensure these services are integrated into the health care system response. Availability of personal protective equipment and setting-specific guidance is essential.
18.03.2020	Forecasting of COVID-19 Confirmed Cases in Different Countries with ARIMA Models	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> The trend of South Korea was decreasing and will become stable in the near future. Iran and Italy had unstable trends. Mainland China and Thailand were successful in haltering COVID-19 epidemic. Their protocol for quarantine should be investigated by other countries.
23.03.2020	An Imperative Need for Research on the Role of Environmental Factors in Transmission of Novel Coronavirus (COVID-19)	Environ Sci Technol / Viewpoint	<ul style="list-style-type: none"> The occurrence, survival, and behaviour of COVID-19 virus in environmental compartments should be determined, requiring the development of high-throughput, automatic techniques for virus monitoring. To reduce the chance of infection, it is important to develop practical methods for large-scale disinfection treatment of COVID-19 virus in different environmental settings.
23.03.2020	Can a Paper-Based Device Trace COVID-19 Sources with Wastewater-Based Epidemiology?	Environ Sci Technol / Viewpoint	<ul style="list-style-type: none"> Utilizing wastewater-based epidemiology may provide an effective approach to predict the potential spread of COVID-19 infection by testing for infectious agents in wastewater

			<ul style="list-style-type: none"> • In the case of asymptomatic infections in the community or people are not sure whether they are infected or not, rapid and real-time community sewage detection through paper analytical devices can determine whether there are SARS-CoV-2 carriers in the area in a timely manner to enable rapid screening, quarantine, and prevention.
23.03.2020	COVID-19: mitigating transmission via wastewater plumbing systems	Lancet Global Health / Correspondence	<ul style="list-style-type: none"> • The interconnectedness of the wastewater plumbing network can facilitate exposure to SARS-CoV-2 within, or even between, buildings. • This is of particular concern in high-risk transmission settings such as hospitals and health-care buildings. • In this piece, the authors provide a set of recommendations which will help to minimise the risk of transmission.
23.03.2020	Richard Lehman's covid-19 reviews— 23 March 2020	BMJ / Opinion	<ul style="list-style-type: none"> • This piece highlights a number of key articles about optimal quarantine periods, improving adherence with quarantine, children with COVID-19.
23.03.2020	Scientific and ethical basis for social-distancing interventions against COVID-19	Lancet Infectious Diseases / Comment	<ul style="list-style-type: none"> • In the absence of any pharmaceutical intervention, the only strategy against COVID-19 is to reduce mixing of susceptible and infectious people through early ascertainment of cases or reduction of contact. • The effectiveness and societal impact of quarantine and social distancing will depend on the credibility of public health authorities, political leaders, and institutions. • It is important that policy makers maintain the public's trust through use of evidence-based interventions and fully transparent, fact-based communication.
23.03.2020	Covid-19: Protecting Worker Health	Ann Work Expo Health / Editorial	<ul style="list-style-type: none"> • There are many uncertainties around how transmission of respiratory infections like Covid-19 occur within workplace settings. • Research should seek to address the following questions - What is the relevant importance of inhaled exposure compared to surface contamination and hand-to-peri-oral routes in the transmission of Covid-19? How effective are different types of personal protective equipment in reducing both inhaled and surface transmission? What simple structural and behavioural changes in the workplace can be encouraged to reduce the risk of transmission
20.03.2020	How to improve adherence with quarantine: Rapid review of the evidence	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • People vary in their adherence to quarantine during infectious disease outbreaks. • To improve this, public health officials should provide a timely, clear rationale for quarantine and information about protocols; emphasise social norms to encourage this altruistic behaviour; increase the perceived benefit that engaging in quarantine will have on public health; and ensure that sufficient supplies of food, medication and other essentials are provided.
19.03.2020	SOCRATES: An online tool leveraging a social contact data sharing initiative	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Using the online tool with the available social contact data, the authors illustrate that social distancing could have a considerable impact on reducing transmission for COVID-19.

	to assess mitigation strategies for COVID-19		
21.03.2020	COVID-19: protecting health-care workers	Lancet / Editorial	<ul style="list-style-type: none"> • Adequate provision of PPE is just the first step; other practical measures must be considered, including cancelling non-essential events to prioritise resources; provision of food, rest, and family support; and psychological support.

Treatment

Date of publication	Title / URL	Journal title / URL	Digest
23.03.2020	The feasibility of convalescent plasma therapy in severe COVID-19 patients: a pilot study	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • In this study, ten severe patients confirmed by real-time viral RNA test were enrolled prospectively. • One dose of 200 mL convalescent plasma (CP) derived from recently recovered donors with the neutralizing antibody titers above 1:640 was transfused to the patients as an addition to maximal supportive care and antiviral agents. • The clinical symptoms were significantly improved along with increase of oxyhemoglobin saturation within 3 days. • This study showed CP therapy was well-tolerated and could potentially improve the clinical outcomes through neutralizing viremia in severe COVID-19 cases.
23.03.2020	Insights from nanomedicine into chloroquine efficacy against COVID-19	Nat Nanotechnol / Comment	<ul style="list-style-type: none"> • Chloroquine — an approved malaria drug — is known in nanomedicine research for the investigation of nanoparticle uptake in cells. • There is cautious optimism that (hydroxy)chloroquine may have prophylactic and/or therapeutic effects against COVID-19, and understanding the mechanisms by which these drugs affect SARS-CoV-2 would be critical for optimizing and developing preventative and therapeutic strategies
20.03.2020	Effect of continuous renal replacement therapy on all-cause mortality in COVID-19 patients undergoing invasive mechanical ventilation: a retrospective cohort study	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Assessed the effect of continuous renal replacement therapy (CRRT) on all cause mortality in patients with COVID 19 undergoing invasive mechanical ventilation (n=36). Concluded that CRRT may be beneficial for the treatment of COVID 19 patients with invasive mechanical ventilation. Further prospective multicenter studies with larger sample sizes are required.

Social sciences

Date of publication	Title / URL	Journal title / URL	Digest
23.03.2020	COVID-19 and medical education	Lancet Infectious Diseases / Correspondence	<ul style="list-style-type: none"> • In one Chinese medical school, online problem-based learning techniques were implemented to complete the curricula; these methods proved incredibly popular, to the extent that they were applied in subsequent years.

23.03.2020	That discomfort you're feeling is grief	Harvard Business Review / Perspective	<ul style="list-style-type: none"> • Harvard Business School staff discuss the content they're commissioning in this harrowing time of a pandemic and how they can help people. They also talked about how they were feeling.
23.03.2020	The Role of Telehealth in Reducing the Mental Health Burden from COVID-19	Telemed J E Health / Commentary	<ul style="list-style-type: none"> • While there is growing awareness of mortality rates associated with COVID-19, we should also be cognizant of the impact on mental health—both on a short- and a long-term basis. • Telemental health services are perfectly suited to this pandemic situation—giving people in remote locations access to important services without increasing risk of infection.
23.03.2020	Public Mental Health Crisis during COVID-19 Pandemic, China	Emerg Infect Dis / Research Letter	<ul style="list-style-type: none"> • China has been implementing emergency psychological crisis interventions to reduce the negative psychosocial impact on public mental health, but challenges exist. • Public mental health interventions should be formally integrated into public health preparedness and emergency response plans
23.03.2020	Coronavirus research	European Commission / Research resources	<ul style="list-style-type: none"> • Research projects and initiatives to tackle the spread of coronavirus and preparedness for other outbreaks. • A better understanding of COVID-19 and its spread is essential in order to detect the disease, treat and protect patients and ultimately control the epidemic. • The European Commission has been at the forefront of supporting research and coordination European and global research efforts, including preparedness for pandemics.
23.03.2020	The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure	Health Psychol / Comment	<ul style="list-style-type: none"> • The authors review research suggesting that repeated media exposure to community crisis can lead to increased anxiety, heightened stress responses that can lead to downstream effects on health, and misplaced health-protective and help-seeking behaviors that can overburden health care facilities and tax available resources.
23.03.2020	Coronavirus disease 2019: the harms of exaggerated information and non-evidence-based measures	Eur J Clin Invest / Commentary	<ul style="list-style-type: none"> • Proper communication and optimal decision-making is an ongoing challenge, as data evolve. • The challenge is compounded, however, by exaggerated information which can lead to inappropriate actions. • It is important to differentiate promptly the true epidemic from an epidemic of false claims and potentially harmful actions.
20.03.2020	Scientometric Trends for Coronaviruses and Other Emerging Viral Infections	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The authors demonstrate that the research volume of emerging infectious diseases is very high after an outbreak and drops drastically upon the containment of the disease. • This can yield inadequate research and limited investment in gaining a full understanding of novel coronavirus management and prevention.

			<ul style="list-style-type: none"> Independent of the outcome of the current COVID-19 outbreak, we believe that measures should be taken to encourage sustained research in the field.
23.03.2020	Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019	JAMA Network Open / Original investigation	<ul style="list-style-type: none"> In this survey of 1,257 health care workers in hospitals equipped with fever clinics or wards for patients with COVID-19 in Wuhan and other regions in China, participants reported experiencing psychological burden, especially nurses, women, those in Wuhan, and frontline health care workers directly engaged in the diagnosis, treatment, and care for patients with COVID-19.
01.11.2020	Caring for persons in detention suffering with mental illness during the Covid-19 outbreak	Forensic Science International: Mind and Law	<ul style="list-style-type: none"> The authors urge that governments take into account special needs of people in confined closed spaces, and make recommendations for achieving this. It should not be forgotten that psychiatric and psychological care must not just be provided to affected individuals among the general population, but also to vulnerable groups such as people in detention, homes, and asylum centers. Those who survive the infection may experience survivor guilt and those who experience loss of loved ones may experience grief.
23.03.2020	Social Media and Emergency Preparedness in Response to Novel Coronavirus	Jama / Viewpoint	<ul style="list-style-type: none"> More than 100 years ago, a global pandemic affected more than 500 million people worldwide - today, in the midst of another public health emergency, some lessons from history demonstrate the importance of understanding how information spreads and individuals interact. Integrating social media as an essential tool in preparedness, response, and recovery can influence the response to COVID-19 and future public health threats.
23.03.2020	How might the social stigma around covid-19 perpetuate the spread of disease?	BMJ / Opinion	<ul style="list-style-type: none"> The first thing people can do is to limit the adverse effects of social stigma is to acknowledge its presence and its potential role in the spread of coronavirus. Furthermore, the media must take accountability for the dissemination of misleading and sensationalist headlines, which encourage this stigmatisation.

Miscellaneous

Date of publication	Title / URL	Journal title / URL	Digest
20.03.2020	Roles of meteorological conditions in COVID-19 transmission on a worldwide scale	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> The authors examined the relationships of meteorological variables with the severity of the outbreak on a worldwide scale.
23.03.2020	Are We Ready for Coronavirus Disease 2019 Arriving at Schools?	J Korean Med Sci / Opinion	<ul style="list-style-type: none"> At this moment, we do not have strong evidence to guide decisions on durations of school closures and how various durations will effect public health. A few days of closure is reasonable in response to school-based cases of COVID-19 for decontamination and contact tracing; while medium to longer lengths of closure (4–8 weeks) may be considered as part of a broader community mitigation strategy

23.03.2020	Should COVID-19 Concern Nephrologists? Why and to What Extent? The Emerging Impasse of Angiotensin Blockade	Nephron / Article	<ul style="list-style-type: none"> • A review of the most recent findings on the effects of SARS-CoV-2 infection on kidney diseases, including acute kidney injury, and the potential effects of ARBs on the outcomes of patients with COVID-19
23.03.2020	Ethics Committee Reviews of Applications for Research Studies at 1 Hospital in China During the 2019 Novel Coronavirus Epidemic	Jama / Research Letter	<ul style="list-style-type: none"> • All new applications for COVID-19–related studies and meeting minutes from February 2 through March 7, 2020 were examined, categorized by study type, approval rate and review time determined, and issues in research proposals and informed consent forms summarised. • During the outbreak, ethics committee review of COVID-19 studies at 1 hospital were conducted within a few days, more quickly than the 27 ethical reviews organized by the Médecins Sans Frontières ethics review board during the Ebola crisis, with a mean time of 12.4 days to provide a review after the initial request
23.03.2020	COVID-19 and the crisis of national development	Nat Hum Behav / Viewpoint	<ul style="list-style-type: none"> • The global practice of monetizing ecosystems to further national economic development has laid fertile ground for the COVID-19 pandemic and others like it

Modelling

Date of publication	Title / URL	Journal title / URL	Digest
20.03.2020	Extended SIR prediction of the epidemics trend of COVID-19 in Italy and compared with Hunan, China	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Using time-series data of COVID-19 from Jan 22, 2020 to Mar 16, 2020, the authors found that Italy's current strict measures can effectively prevent the further spread of COVID-19 and should be maintained. • Necessary strict public health measures should be implemented as soon as possible in other European countries with a high number of COVID-19 cases.
23.03.2020	Interventions to mitigate early spread of SARS-CoV-2 in Singapore: a modelling study	Lancet Infectious Diseases / Article	<ul style="list-style-type: none"> • The authors adapted an influenza epidemic simulation model to estimate the likelihood of human-to-human transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in a simulated Singaporean population. • Implementing the combined intervention of quarantining infected individuals and their family members, workplace distancing, and school closure once community transmission has been detected could substantially reduce the number of SARS-CoV-2 infections.
20.03.2020	Pandemic dynamics of COVID-19 using epidemic stage, instantaneous reproductive number and pathogen genome identity (GENI) score: modeling molecular epidemiology	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The authors calculated an instantaneous country-specific R at different stages of outbreaks and formulated a novel metric for infection dynamics using viral genome sequences to capture gaps in untraceable transmission. Integrating epidemiology with genome sequencing allows evidence-based dynamic disease outbreak tracking with predictive evidence.

14.03.2020	Expected impact of school closure and telework to mitigate COVID-19 epidemic in France: Report 8	EPIcx lab / Report	<ul style="list-style-type: none"> Numerical results show that school closure alone would have limited benefit in reducing the peak incidence (less than 10% reduction with 8-week school closure for regions in the early phase of the epidemic). When coupled with 25% adults teleworking, 8-week school closure would be enough to delay the peak by almost 2 months with an approximately 40% reduction of the case incidence at the peak.
21.03.2020	Building a COVID-19 Vulnerability Index	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> While information specific to COVID-19 is limited, a model using complications due to other upper respiratory infections can be used as a proxy to help identify those individuals who are at the greatest risk. The authors present the results for three models predicting such complications, with each model having varying levels of predictive effectiveness at the expense of ease of implementation.
23.03.2020	Prudent public health intervention strategies to control the coronavirus disease 2019 transmission in India: A mathematical model-based approach	Indian J Med Res / Pre-Print Article	<ul style="list-style-type: none"> The objectives of this study were to find out if it was possible to prevent, or delay, the local outbreaks of COVID-19 through restrictions on travel from abroad and if the virus has already established in-country transmission, to what extent would its impact be mitigated through quarantine of symptomatic patients. Port-of-entry-based entry screening of travellers with suggestive clinical features and from COVID-19-affected countries, would achieve modest delays in the introduction of the virus into the community - acting alone, however, such measures would be insufficient to delay the outbreak by weeks or longer.
20.03.2020	Estimating Spot Prevalence of COVID-19 from Daily Death Data in Italy	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> This model predicts that when the first 3 infected cases had been identified by Italian authorities there were already nearly 30 cases in Italy, and by the 24th of February 2020 only 0.5% cases had been detected and confirmed by Italian authorities. While official statistics had 132 confirmed case the authors believe a more accurate estimate would be closer to 26000. With a case-doubling period of about 2.5 days.
20.03.2020	Estimating the Risks from COVID-19 Infection in Adult Chemotherapy Patients	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> The authors develop a simple model to estimate the potential harms in patients undergoing chemotherapy during a COVID outbreak. They use data from randomised trials to estimate benefit across a range of curative and palliative settings, and address the balance of benefit against the risk of harm. They then use those data to estimate the impact on national chemotherapy delivery patterns.

Produced by the PHE COVID-19 Literature Digest Team

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