



International EPI Cell Daily Evidence Digest – 01/05/2020

This Daily Evidence Digest is produced by the PHE COVID-19 Literature Digest Team as a resource for professionals working in public health. We do not accept responsibility for the availability, reliability or content of the items included in this resource and do not necessarily endorse the views expressed within them. The papers are organised under the following themes:

- Diagnostics
- Genomics
- Epidemiology and clinical - children and pregnancy
- Epidemiology and clinical - risk factors
- Epidemiology and clinical - other
- Infection control
- Treatment
- Social sciences
- Miscellaneous
- Modelling
- Guidance, consensus statements and hospital resources (no digest)
- Overviews, comments and editorials (no digest)

Please note that we are including preprints (**highlighted in red**), which are preliminary reports of work that have NOT been peer-reviewed.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

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Hypoxaemia related to COVID-19: vascular and perfusion abnormalities on dual-energy CT	The Lancet Infectious Diseases / Correspondence	• Alongside typical CT features of COVID-19 pneumonia, authors observed considerable proximal and distal pulmonary vessel dilatation and tortuosity, predominately within, or surrounding, areas of lung opacities for 3 patients (and 9 more retrospectively).

			<ul style="list-style-type: none"> • Three major findings from dual-energy CT were observed on the images of pulmonary blood volume perfusion: preferentially increased perfusion of the lungs proximal to areas of lung opacity, decreased areas of peripheral perfusion corresponding to peripheral lung opacities, and a halo of increased perfusion surrounding peripheral areas of consolidation. • Findings atypical for acute respiratory distress syndrome or thrombotic vascular disease and point to a possible central role for previously underappreciated pulmonary vascular shunting.
30.04.2020	MRI appearance of COVID-19 infection	Diagnostic and Interventional Radiology / Letter	<ul style="list-style-type: none"> • First report describing MRI of a patient infected with COVID-19.
29.04.2020	Antibody responses to SARS-CoV-2 in patients with COVID-19	Nat Med	<ul style="list-style-type: none"> • Report acute antibody responses to SARS-CoV-2 in 285 patients with COVID-19. Within 19 days after symptom onset, 100% of patients tested positive for antiviral immunoglobulin-G (IgG). Seroconversion for IgG and IgM occurred simultaneously or sequentially. Both IgG and IgM titres plateaued within 6 days after seroconversion. • Serological testing may be helpful for the diagnosis of suspected patients with negative RT-PCR results and for the identification of asymptomatic infections.
30.04.2020	Characteristics and diagnosis rate of 5,630 subjects receiving SARS-CoV-2 nucleic acid tests from Wuhan, China	JCI Insight / Article	<ul style="list-style-type: none"> • Retrospective analysis of 5,630 high-risk individuals that received SARS-CoV-2 nucleic acid tests in Wuhan, China. • The overall diagnosis rate was 34.7% (1,952/5,630). Male ($P = 0.025$) and older age ($P = 2.525 \times 10^{-39}$) were two significant risk factors of SARS-CoV-2 infection. • Results revealed a 1.27-fold improvement (35.5%/27.9%) of diagnosis rate from testing once to twice ($P = 5.847 \times 10^{-9}$), and a 1.43-fold improvement (39.9%/27.9%) from testing once to three times ($P = 7.797 \times 10^{-14}$).
24.04.2020	SUCCESSFUL MANUFACTURING OF CLINICAL-GRADE SARS-CoV-2 SPECIFIC T CELLS FOR ADOPTIVE CELL THERAPY	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Study testing the feasibility of rapid clinical-grade manufacturing of virus-specific T cells from convalescent donors. • This study is limited by the small number of donors and absence of recipient data; however, crucial first proof-of-principle data are provided demonstrating the feasibility of clinical-grade production of SARS-CoV-2 specific T cells for urgent clinical use, conceivably with plasma therapy concurrently. • The data showing that virus-specific T cells can be detected easily after brief stimulation with SARS-CoV-2 specific peptides suggest that a parallel diagnostic assay can be developed alongside serology testing.

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	A SARS-CoV-2 protein interaction map reveals targets for drug repurposing	Nature / Article	<ul style="list-style-type: none"> • The authors cloned, tagged and expressed 26 of the 29 SARS-CoV-2 proteins in human cells and identified 332 high-confidence SARS-CoV-2-human protein-protein interactions (PPIs). • Among these, they identified 66 druggable human proteins or host factors targeted by 69 compounds (29 FDA-approved drugs, 12 drugs in clinical trials, and 28 preclinical compounds). • Screening a subset of these in multiple viral assays identified two sets of pharmacological agents that displayed antiviral activity: inhibitors of mRNA translation and predicted regulators of the Sigma1 and Sigma2 receptors.
27.04.2020	Genotyping coronavirus SARS-CoV-2: Methods and implications	Genomics / Article	<ul style="list-style-type: none"> • This study genotyped 558 SARS-CoV-2 isolates from around the globe as of March 23, 2020 - frequent mutations are in the genes of S protein, RNA polymerase, RNA primase, and nucleoprotein. • This study established a method for monitoring and tracing SARS-CoV-2 mutations.
29.04.2020	Spike mutation pipeline reveals the emergence of a more transmissible form of SARS-CoV-2	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • The authors have developed an analysis pipeline to facilitate real-time mutation tracking in SARS-CoV-2, focusing initially on the Spike (S) protein because it mediates infection of human cells and is the target of most vaccine strategies and antibody-based therapeutics. To date they have identified fourteen mutations in Spike that are accumulating. • The mutation Spike D614G is of urgent concern; after beginning to spread in Europe in early Feb, when introduced to new regions it repeatedly and rapidly becomes the dominant form. They also present evidence of recombination between locally circulating strains, indicative of multiple strain infections. These findings have important implications for SARS-CoV-2 transmission, pathogenesis and immune interventions.
29.04.2020	ACE2 and TMPRSS2 expression by clinical, HLA, immune, and microbial correlates across 34 human cancers and matched normal tissues: implications for SARS-COV-2 COVID-19	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Integrated study of ACE2 and TMPRSS2 gene expression across and within organ systems, by normal versus tumour, across several existing databases, correlating gene expression with clinical factors, HLA genotype, immune gene expression patterns, cell subsets, and single-cell sequencing as well as commensal microbiome. • The authors identify novel associations with the microbiota and confirm host immunity associations with gene expression. They suggest caution in interpretation regarding genetic associations with ACE2 expression suggested from smaller case series.

30.04.2020	Identification of variable sites in Sars-CoV-2 and their abundance profiles in time	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Besides the source of the Sars-Cov-2 virus, it is also important to understand how different virus-variant change their frequency in time, because this may indicate different levels of aggressiveness, or provide useful data to trace the spreading of the virus in the population. • The authors trace 6 amino acid variants that have high frequency in Italy and Europe, but were absent or very low frequency during the first explosion in China and the initial diffusion in Europe. One of these, variant D614G in the Spike protein, appears in Germany on Jan 28 and since then has overcome the wild-type variant arrived from China.
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Epidemiology and clinical - children and pregnancy

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Second-Trimester Miscarriage in a Pregnant Woman With SARS-CoV-2 Infection	JAMA / Research letter	<ul style="list-style-type: none"> • The authors present a case of miscarriage during the second trimester in a pregnant woman with COVID-19.
27.04.2020	Coronavirus disease 2019 in pregnancy	Int J Infect Dis / Article Preprint	<ul style="list-style-type: none"> • 82 COVID-19 patients (28 pregnant women, 54 reproductive-aged non-pregnant women) were enrolled in this retrospective study. • Univariate regression indicated no association between pregnancy and severity of disease, virus clearance time, and length of hospital stay. • 23 live births: caesarean section (17, 60.7%), vaginal delivery (5, 17.9%). No infected neonates, no evidence of vertical transmission of COVID-19 in late stage of pregnancy including vaginal delivery.
30.04.2020	COVID-19 in pregnancy: risk of adverse neonatal outcomes	Journal of Medical Virology / Letter	<ul style="list-style-type: none"> • Letter in reply to the study by Siyu Chen and colleagues. The authors draw attention to a growing body of evidence that now points towards an under-addressed association between preterm maternal SARS-CoV-2 infection, preterm delivery and adverse neonatal outcomes, which is not reflected in Chen et al.'s small cohort. • They stress that vertical transmission, which was not tested for by Chen et al., should not be excluded as a potential mechanism for viral spread.

Epidemiology and clinical - risk factors

Publication Date	Title/URL	Journal/ Article type	Digest
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02.05.2020	Prisons are "in no way equipped" to deal with COVID-19	The Lancet / World Report	<ul style="list-style-type: none"> • Marion Correctional Institution in Ohio, USA, holds around 2500 detainees; more than 2000 have tested positive for COVID-19. • COVID-19 has been detected in the majority of UK prisons, at least 15 prisoners and four members of staff have died. Prisons running at 107% capacity; 15 000 inmates (almost 1/5 prison population) have to be let out if prisoners were to not share cells.
01.05.2020	Assessment of SARS-CoV-2 Infection Prevalence in Homeless Shelters - Four U.S. Cities, March 27-April 15, 2020	CDC / MMWR Morbidity and Mortality Weekly Report	<ul style="list-style-type: none"> • 1,192 residents and 313 staff members were tested in 19 homeless shelters. • When testing followed identification of a cluster, high proportions of residents and staff members had positive test results for SARS-CoV-2 in Seattle (17% of residents; 17% of staff members), Boston (36%; 30%), and San Francisco (66%; 16%). • Homelessness poses multiple challenges that can exacerbate and amplify the spread of COVID-19. Homeless shelters are often crowded, making social distancing difficult.
01.05.2020	COVID-19 Outbreak Among Three Affiliated Homeless Service Sites - King County, Washington, 2020	CDC/ MMWR Morbidity and Mortality Weekly Report	<ul style="list-style-type: none"> • On April 1, 2020, a COVID-19 outbreak was detected at three affiliated homeless shelters. • Testing for SARS-CoV-2 immediately offered to all residents and staff members identified additional unrecognized COVID-19 cases. • Enhanced surveillance and repeat testing identified and confirmed COVID-19 in 43 persons at these sites.
01.05.2020	Are some ethnic groups more vulnerable to COVID-19 than others?	IFS Briefing Note	<ul style="list-style-type: none"> • Reports unequal health and economic impacts of COVID-19 on UK's minority ethnic groups; risk factors for six largest minority groups in England and Wales. • Impacts are not uniform across ethnic groups, aggregating all minorities together misses important differences. • After accounting for age, gender, geographic profiles of ethnic groups, inequalities in mortality relative to white British the majority are more stark for most minority groups than it first appears. • Per-capita COVID-19 hospital deaths are highest among the black Caribbean population (three times those of white majority). At-risk underlying health conditions are especially prevalent among the older Bangladeshi, Pakistani and black Caribbean populations.
01.05.2020	Managing patients with cancer during the COVID-19 pandemic: frontline experience from Wuhan	The Lancet Oncology / Perspectives	<ul style="list-style-type: none"> • From Jan 15 to Feb 25, 2020, 1186 patients with cancer (including 165 haematological malignancies) were admitted to the Cancer Centre of Wuhan Union Hospital. Authors categorise patients with cancer with COVID-19 and treatments they received. • Fatality rate was six (46.2%) of 13 patients with blood cancer and two (10.0%) of 20 patients with solid tumours. Patients with blood cancer were more predisposed to SARS-CoV-2 infection than were patients with solid

			tumours; their higher fatality rate might be ascribed to aggressive chemotherapeutic protocols, agranulocytosis, and impaired immunity.
30.04.2020	Insights for increased risk of failed fibrinolytic therapy and stent thrombosis associated with COVID-19 in ST-segment elevation myocardial infarction patients	Catheter Cardiovasc Interv / Case report	<ul style="list-style-type: none"> • Reports the case of a 68-year-old man admitted for anterior STEMI and asymptomatic COVID-19. • Due to extended transportation delays to a cathlab, he received intravenous fibrinolytic therapy, which failed. Reperfusion was achieved with rescue coronary angioplasty, but the patient experienced two episodes of acute stent thrombosis at 2- and 36-hr following admission and despite optimal medical therapy. He finally died because of cardiogenic shock. • This raises concerns about a possible increase in platelet aggregability associated with COVID-19 leading to an increased risk of stent thrombosis, particularly in the context of STEMI.
30.04.2020	ST-Elevation Myocardial Infarction in Patients with COVID-19: Clinical and Angiographic Outcomes	Circulation / Article	<ul style="list-style-type: none"> • The authors evaluate incidence, clinical presentation, angiographic findings, and clinical outcomes of ST-elevation myocardial infarction (STEMI) in COVID-19 patients (n=28), in Lombardy, northern Italy. • Findings show that STEMI may represent the first clinical manifestation of COVID-19. In approximately 40% of COVID-19 patients with STEMI, a culprit lesion is not identifiable by coronary angiography. • A dedicated diagnostic pathway should be delineated for COVID-19 patients with STEMI, aimed at minimizing patients procedural risks and healthcare providers risk of infection.
30.04.2020	Acute aorto-iliac and mesenteric arterial thromboses as presenting features of COVID-19	British Journal of Haematology / letter	<ul style="list-style-type: none"> • SARS-CoV-2 infection has been reported to induce a hypercoagulable state which is associated with disease severity and poor outcomes. • In this report two cases of major occlusive arterial events in previously asymptomatic individuals with confirmed COVID-19 are reported.
30.04.2020	Association of Obesity with Disease Severity among Patients with COVID-19	Obesity / Brief Report	<ul style="list-style-type: none"> • From Feb 17th to Apr 5th, 103 consecutive patients were hospitalized with COVID-19, the prevalence of obesity was 47.5% (49/103). • In a multivariate analysis, severe obesity (BMI ≥ 35 kg/m²) was associated with ICU admission. • Moreover, patients who required invasive mechanical ventilation, were more likely to have had heart disease, obesity or severe obesity.
30.04.2020	Smoking in COVID-19 and other acute Respiratory Infections	CEBM Research / Article	<ul style="list-style-type: none"> • "Smoking in acute respiratory infections" updated to capture emerging data on smoking and COVID-19. 28 included studies, only three explicitly note 'never smoking' status; unclear if others not coded as 'smokers' were non-smokers. • Data on COVID-19 is still emerging, with contradictory evidence regarding whether people who smoke are at greater or reduced risk from COVID-19.

			<ul style="list-style-type: none"> Smoking is a known risk factor for a range of comorbidities, many of which are associated with worse COVID-19 outcomes.
30.04.2020	Does Cigarette Smoking Protect Against SARS-CoV-2 Infection?	Nicotine and Tobacco Research / Letter	<ul style="list-style-type: none"> In this letter the author suggests that widely accessible data bases from multiple countries with demographic data that includes smoking status, should be examined to look at the relationship between smoking and SARS-CoV-2 infection risk.

Epidemiology and clinical – other

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Temporal rise in the proportion of younger adults and older adolescents among coronavirus disease (COVID-19) cases following the introduction of physical distancing measures, Germany, March to April 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> Study to assess the relative roles of different age groups in SARS-CoV-2 transmission, using relative risk (RR) statistic, in Germany. Limitations but relative increase with time in prevalence in 15–34 year-olds (particularly 20–24-year-olds) compared with 35–49- and 10–14-year-olds. Suggests elevated role for that age group in propagating the epidemic following the introduction of physical distancing measures.
30.04.2020	Early experience of an infectious and tropical diseases unit during the coronavirus disease (COVID-19) pandemic, Florence, Italy, February to March 2020	Eurosurveillance / Research	<ul style="list-style-type: none"> Analysed first 84 COVID-19 patients hospitalised in an infectious and tropical disease unit in Florence, Italy, over 30 days. Describe clinical and demographic characteristics, differences for patients transferred to ICU, incidence rate of ICU transfers before and after the implementation of additional intensity care measures on their regular ward.
01.05.2020	An Italian programme for COVID-19 infection in multiple sclerosis	The Lancet Neurology / Correspondence	<ul style="list-style-type: none"> Authors report on pilot phase of investigation of COVID-19 among people with multiple sclerosis. Core set of data - 232 patients from 38 centres, 57 confirmed / 175 suspected with COVID-19. For more on the programme see https://www.aism.it/international_musc_19_platform_multiple_sclerosis_and_covid_19
30.04.2020	Emergency Room Neurology in times of COVID-19: Malignant Ischemic Stroke and SARS-COV2 Infection	European Journal of Neurology / Letter	<ul style="list-style-type: none"> Case report of 36-year-old health care worker who suffered a subacute infarct with a mild deviation of the midline, and a large vessel occlusion with a free-floating thrombus in the ascending aorta in the context of a SARS-CoV-2 infection.
30.04.2020	Digitate Papulosquamous Eruption Associated With Severe Acute Respiratory Syndrome Coronavirus 2 Infection	JAMA Dermatology / Observation	<ul style="list-style-type: none"> Case report of a digitate papulosquamous eruption occurring during a SARS-CoV-2 infection.

29.04.2020	Arterial and venous abdominal thrombosis in a 79-year-old woman with COVID-19 pneumonia	Radiol Case Rep / Case report	<ul style="list-style-type: none"> • Report a case of a 79-year-old woman with COVID-19 pneumonia complicated by combined arterial and venous thrombosis of upper mesenteric vessels. As unenhanced chest-CT scan plays a key-role in managing the COVID-19 pandemic we should pay attention to indirect signs of thrombosis.
29.04.2020	Urticarial exanthem as early diagnostic clue for COVID-19 infection	JAAD Case Rep / Case report	<ul style="list-style-type: none"> • Presents the case of a 61-year-old Spanish Medical Doctor with a 4-days history of a progressive cutaneous rash (provides photos of rash), who was subsequently diagnosed with COVID-19.
30.04.2020	Clinical and Epidemiological Characteristics of 1,420 European Patients with mild-to-moderate Coronavirus Disease 2019	Journal Internal Medicine / Article	<ul style="list-style-type: none"> • Patients with positive diagnosis of Covid-19 (1420) were recruited from 18 European hospitals. • The mean duration of Covid-19 symptoms of mild-to-moderate cured patients was 11.5±5.7 days. • The prevalence of symptoms significantly varied according to age and sex; young patients more frequently had ear, nose, and throat complaints, whereas elderly individuals often presented fever, fatigue and loss of appetite. • The loss of smell was a key symptom of mild-to-moderate patients and persisted at least 7 days after the disease in 37.5% of cured patients.
30.04.2020	Co-infection in SARS-CoV-2 infected Patients: Where Are Influenza Virus and Rhinovirus/Enterovirus?	Journal of Medical Virology / Commentary	<ul style="list-style-type: none"> • Amongst the patients who tested positive for SARS-CoV-2, 1,204 were also tested for other respiratory viruses, and concurrent infection was found in only 36 (< 3%). • In comparison, coinfection with at least one non-SARS-CoV-2 respiratory viral pathogen was found in 13.1% of patients who tested negative for SARS-CoV-2. • In patients who tested negative for SARS-CoV-2, the most common respiratory virus co-infections were those commonly seen circulating in the community including rhinovirus/enterovirus, influenza viruses and coronavirus NL63.
30.04.2020	Covid-19-related pancreatic injury	British Journal of Surgery / Letter	<ul style="list-style-type: none"> • Letter in response to the leading Article by Spinelli and Pellino and comment that initial observations as UK surgeons amidst this outbreak are similar. • The authors comment that this contrasts with the largest published Chinese case series demonstrating that gastrointestinal symptoms are uncommon, but that the potential for pancreatic injury remains as pancreatic cells highly express angiotensin-converting enzyme 2 (ACE2).
25.04.2020	Inferred duration of infectious period of SARS-CoV-2: rapid scoping review and analysis of available evidence for asymptomatic and symptomatic COVID-19 cases	medRxiv (not peer reviewed) / Scoping review	<ul style="list-style-type: none"> • Rapid scoping review of the literature on the inferred duration of the infectious period of COVID-19, and overview of the variation depending on the methodological approach. • There was substantial variation in the estimates, and how infectious period was inferred. • There are limitations of inferring infectiousness from repeated diagnosis, viral loads, and viral replication data alone, and also potential patient recall

bias relevant to estimating exposure and symptom onset times. Despite this, available data provides a preliminary evidence base to inform models of central tendency for key parameters, and variation for exploring parameter space and sensitivity analysis. Some current models may be underestimating infectious period.

Infection control

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Infection Control for CT Equipment and Radiographers' Personal Protection During the Coronavirus Disease (COVID-19) Outbreak in China	American Journal of Roentgenology / Perspective	<ul style="list-style-type: none"> • Modifications to the CT examination process, strict disinfection of examination rooms, arrangement of waiting areas, and efforts to increase radiographers' awareness of personal protection during the COVID-19 outbreak are described.
28.04.2020	Potential spreading risks and disinfection challenges of medical wastewater by the presence of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) viral RNA in septic tanks of fangcang hospital	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Study evaluating the presence of SARS-CoV-2 viral RNA in septic tanks of Wuchang Fangcang Hospital, which found their unexpected occurrence after disinfection with sodium hypochlorite. Embedded viruses in faeces particles might be released in septic tanks, behaving as a source of SARS-CoV-2 and potentially contributing to its spread through drainage pipelines.

Treatment

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Considering BCG vaccination to reduce the impact of COVID-19	The Lancet / Correspondence	<ul style="list-style-type: none"> • Randomised controlled trials are underway in the Netherlands and Australia to assess whether BCG-Danish reduces the incidence and severity of COVID-19 in health-care workers. • Authors present four main reasons for adhering to WHO's recommendation that the BCG vaccine is currently only used for COVID-19 in randomised controlled trial.
01.05.2020	Vitamin D: A rapid review of the evidence for treatment or prevention in COVID-19	CEBM Research / Rapid review	<ul style="list-style-type: none"> • This review found no evidence related to vitamin D deficiency predisposing to COVID-19, nor were there studies of supplementation for preventing or treating COVID-19. • Some evidence that daily vitamin D3 supplementation over weeks to months may prevent other acute respiratory infections

29.04.2020	COVID-19: treating and managing severe cases	Cell Res / Article	<ul style="list-style-type: none"> • Illustrate current strategies for the management of severe COVID-19 patients, and discuss the potential utility of antiviral drugs and glucocorticoids.
29.04.2020	Dose rationale for favipiravir use in patients infected with SARS-CoV-2	Clin Pharmacol Ther / Letter to the Editor	<ul style="list-style-type: none"> • The authors read with great interest the paper by Du et Chen suggesting dosing regimen of favipiravir in COVID-19 . They would like to complement their observations with their PK/PD experience of favipiravir against Ebola virus (EBOV). The drug EC(50) against EBOV and SARS-CoV-2 are 10-60 µg/ml and 9.4 µg/ml, respectively. • However results obtained by their working group suggest a higher value of EC(50), in the range 40-80 µg/ml (X. de Lamballerie & F. Touret, unpublished results). They therefore use the conservative assumption that the drug EC(50) against SARS-CoV-2 is in the same range as against EBOV.
29.04.2020	Rethinking the role of hydroxychloroquine in the treatment of COVID-19	Faseb j / Review	<ul style="list-style-type: none"> • In this article, they review the datasets that support or detract from the use of hydroxychloroquine (HCQ) and chloroquine (CQ)s for the treatment of COVID-19 and render a data informed opinion that they should only be used with caution and in the context of carefully thought out clinical trials, or on a case-by-case basis after rigorous consideration of the risks and benefits of this therapeutic approach.
29.04.2020	Effective treatment of severe COVID-19 patients with tocilizumab	PNAS / Research article	<ul style="list-style-type: none"> • Preliminary data show that tocilizumab, which improved the clinical outcome immediately in severe and critical COVID-19 patients, is an effective treatment to reduce mortality.

Social sciences

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Supporting families in end-of-life care and bereavement in the COVID-19 Era	International psychogeriatrics / Article	<ul style="list-style-type: none"> • Discusses approaches to end-of-life care and decision making during COVID-19 pandemic. • Frail older people and their families may have to make very quick decisions under highly stressful circumstances and decide whether to go into hospital or to remain at home, where they may be more comfortable. • People residing in care homes may not be able to see visitors due to social distancing and other measures to restrict movement and contact outside the "household."
30.04.2020	Covid-19 lockdown: a perfect storm for older people's mental health	Journal of Psychiatric and Mental Health Nursing	<ul style="list-style-type: none"> • The author highlights that when exiting lockdown, any slow release exit strategy should include plans for increasing resilience among older adults. • This will require a change in how this group is identified and discussed to

			reverse the 'othering' effect such as adopting inclusive language, valuing older people's contributions and avoiding negative emphasis on risk.
27.04.2020	A Preliminary Evaluation of the Public Risk Perception Related to the COVID-19 Health Emergency in Italy	Int J Environ Res Public Health / Article	<ul style="list-style-type: none"> • Questionnaire investigating Italian public perceptions of health risk during COVID-19 lockdown and quarantine to almost 9000 citizens in Italy and abroad. • Results highlight the significant influence that mass media plays on the level of knowledge and feelings of respondents.
30.04.2020	Covid-19: The implications for suicide in older adults	International psychogeriatrics / Article	<ul style="list-style-type: none"> • The authors examine the links between suicide in older people and the COVID-19 pandemic, provide the perspectives of psychiatrists from four regions (China, Hong Kong, Italy and Australia) facing different challenges and sociocultural contexts, and propose solutions to support older people.
25.04.2020	Public perceptions of COVID-19 in Australia: perceived risk, knowledge, health-protective behaviours, and vaccine intentions	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Two thirds of respondents to an online survey were at least moderately worried about a widespread COVID-19 outbreak in Australia. • Worry about the outbreak and closely following media coverage were consistent predictors of health-protective behaviours as well as vaccination intentions. Health-behaviour engagement over the previous month was lower in some demographic groups, including males and younger individuals (18-29 age group). • Uncertainty and misconceptions about COVID-19 were common, including one third of respondents who reported being unsure whether people are likely to have natural or existing immunity. These results point to areas of uncertainty that could be usefully targeted by public education campaigns, as well as psychological and demographic factors associated with engagement with health-protective behaviours.
30.04.2020	Severe psychological distress among epilepsy patients during the COVID-19 outbreak in southwest China	Epilepsia / Article	<ul style="list-style-type: none"> • The 252 patients and 252 controls in this study were similar along all demographic variables except family income. • Patients with epilepsy showed significantly higher K-6 scores than healthy controls and spent significantly more time following the COVID-19 outbreak (both $p < 0.001$). • Univariate analyses associated both diagnosis of drug-resistant epilepsy and time spent paying attention to COVID-19 with severe psychological distress.

Modelling

Publication Date	Title/URL	Journal/ Article type	Digest
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29.04.2020	Changes in contact patterns shape the dynamics of the COVID-19 outbreak in China	Science / Report	<ul style="list-style-type: none"> • The authors analysed contact surveys data for Wuhan and Shanghai before and during the outbreak and contact tracing information from Hunan Province. Daily contacts were reduced 7-8-fold during the COVID-19 social distancing period, with most interactions restricted to the household. They found that children 0-14 years are less susceptible to SARS-CoV-2 infection than adults 15-64 years of age, while in contrast, individuals over 65 years are more susceptible to infection. • Based on these data, they built a transmission model to study the impact of social distancing and school closure on transmission. They found that social distancing alone, as implemented in China during the outbreak, is sufficient to control COVID-19. While proactive school closures cannot interrupt transmission on their own, they can reduce peak incidence by 40-60% and delay the epidemic.
27.04.2020	Social Distancing Has Merely Stabilized COVID-19 in the US	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • The authors analyse the effect of current social distancing measures in the United States, finding that it is associated with a statistically-significant reduction in the doubling rate for all but three states. • At the same time, they do not find significant evidence that social distancing has resulted in a reduction in the number of daily confirmed cases. Instead, social distancing has merely stabilized the spread of the disease.
20.04.2020	Estimating COVID-19 Prevalence in the United States: A Sample Selection Model Approach	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Modelling study which adapted a sample selection model that corrects for non-random testing to estimate population infection rates. The methodology compares how the observed positive case rate vary with changes in the size of the tested population, and applies this gradient to infer total population infection rates. • The median population infection rate over the period March 31 to April 7 was 0.9%. The three states with the highest prevalence over the sample period were New York (8.5%), New Jersey (7.6%), and Louisiana (6.7%). Estimates from models that control for state-specific daily trends in infection rates were virtually identical to the baseline findings, and imply a nationwide average of 12 population infections per diagnosed case.
22.04.2020	A deeper look at COVID-19 CFR: health care impact and roots of discrepancy	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • The authors propose a method for estimating a lower bound for the number of positive cases by using the reported data on the oldest age group and the regions' population distributions. The proposed estimation method improved the expected similarity between the age-distribution of positive cases and regions' population. • Further, they have provided a quantitative measure for the impact of intensive care on the critical cases by comparing the CFR among those who did

and did not receive intensive care. Findings showed that the chance of living among non-ICU receivers is less than half of ICU receivers (~24% vs ~60%).

Guidance, consensus statements and hospital resources

Publication Date	Title/URL	Journal/ Article type
30.04.2020	Rapid Development of Resident-Led Procedural Response Teams to Support Patient Care During the Coronavirus Disease 2019 Epidemic: A Surgical Workforce Activation Team	JAMA Surgery / Viewpoint
29.04.2020	Treatment of patients with nonsevere and severe coronavirus disease 2019: an evidence-based guideline	Cmaj / Guideline
27.04.2020	Institution of a Novel Process for N95 Respirator Disinfection with Vaporized Hydrogen Peroxide in the setting of the COVID-19 Pandemic at a Large Academic Medical Center	Journal of the American College of Surgeons / Article
29.04.2020	Use of CT and artificial intelligence in suspected or COVID-19 positive patients: statement of the Italian Society of Medical and Interventional Radiology	Radiol Med / Short communication

Overviews, comments and editorials

Publication Date	Title/URL	Journal/ Article type
30.04.2020	COVID-19 and the cardiovascular system: implications for risk assessment, diagnosis, and treatment options	Cardiovascular Research
29.04.2020	Coronavirus Disease 2019 (COVID-19) Information for Cardiologists - Systematic Literature Review and Additional Analysis	Circ J / Article
30.04.2020	COVID-19 reveals weak health systems by design: Why we must re-make global health in this historic moment	Global Public Health / Commentary
30.04.2020	Histopathology and genetic susceptibility in COVID-19 pneumonia	Eur J Clin Invest / Article
29.04.2020	The Role of Antibody Testing for SARS-CoV-2: Is There One?	J Clin Microbiol / Commentary
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Produced by the PHE COVID-19 Literature Digest Team

Bláthnaid Mahon, Caroline De Brún, Nicola Pearce-Smith, Ruth Muscat, Rachel Gledhill, Emma Farrow, Cath Hayes