



## International EPI Cell Daily Evidence Digest – 17/04/2020

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 and consensus statements (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Please note that we are including preprints (**highlighted in red**), which are preliminary reports of work that have NOT been peer-reviewed.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
27.03.2020	<a href="#">Lymphopenia predicts disease severity of COVID-19: a descriptive and predictive study</a>	Signal transduction and targeted therapy / Research letter	<ul style="list-style-type: none"><li>• Letter reporting study results suggesting that blood lymphocyte percentage (LYM%) can be used as a reliable indicator to classify the moderate, severe, and critical ill types of COVID-19 independent of any other auxiliary indicators.</li></ul>

16.04.2020	<a href="#">Reactive lymphocytes in patients with Covid-19</a>	British Journal of Haematology / Images	<ul style="list-style-type: none"> <li>The authors examined the peripheral blood films of 32 patients and found reactive lymphocytes in 23 cases (72%). This is in stark contrast to the coronavirus responsible for the 2003 SARS outbreak where reactive lymphocytes of this type were not present in a review of 185 SARS cases in Singapore and were present in only 15.2% of 138 cases in Hong Kong.</li> </ul>
16.04.2020	<a href="#">A Tool to Early Predict Severe Corona Virus Disease 2019 (COVID-19) : A Multicenter Study using the Risk Nomogram in Wuhan and Guangdong, China</a>	Clinical Infectious Diseases / Accepted manuscript	<ul style="list-style-type: none"> <li>This nomogram could help clinicians to early identify patients who will exacerbate to severe COVID-19, which will enable better centralized management and early treatment of severe patients.</li> </ul>
05.03.2020	<a href="#">Molecular immune pathogenesis and diagnosis of COVID-19</a>	Journal of Pharmaceutical Analysis / Corrected proof	<ul style="list-style-type: none"> <li>In this minireview, the authors provide a brief introduction of the general features of SARS-CoV-2 and discuss current knowledge of molecular immune pathogenesis, diagnosis and treatment of COVID-19 on the base of the present understanding of SARS-CoV and MERS-CoV infections, which may be helpful in offering novel insights and potential therapeutic targets for combating the SARS-CoV-2 infection.</li> </ul>
10.04.2020	<a href="#">Serological immunochromatographic approach in diagnosis with SARS-CoV-2 infected COVID-19 patients</a>	Journal of Infection / Article in press	<ul style="list-style-type: none"> <li>The authors report high sensitivity of the colloidal gold-based immunochromatographic (ICG) strip targeting SARS-COV-2 IgM or IgG antibody in comparison to real-time RT-PCR.</li> </ul>
13.04.2020	<a href="#">Dual-Functional Plasmonic Photothermal Biosensors for Highly Accurate Severe Acute Respiratory Syndrome Coronavirus 2 Detection</a>	ACS nano / Article	<ul style="list-style-type: none"> <li>Authors report their dual-functional LSPR biosensor exhibits a high sensitivity toward the selected SARS-CoV-2 sequences with a lower detection limit down to the concentration of 0.22 pM and allows precise detection of the specific target in a multigene mixture.</li> <li>This study gains insight into the thermoplasmonic enhancement and its applicability in the nucleic acid tests and viral disease diagnosis.</li> </ul>
13.04.2020	<a href="#">Limits of Detection of Six Approved RT-PCR Kits for the Novel SARS-coronavirus-2 (SARS-CoV-2)</a>	Clinical chemistry / Letter	<ul style="list-style-type: none"> <li>The limit of detection (LoD), the lowest analyte concentration that a kit can detect, is an important performance parameter in evaluating kit quality. Six commercial kits approved by the China National Medical Products Administration (NMPA) were not verified or optimized with appropriate numbers of clinical samples.</li> <li>To examine whether limit of detection (LoD) is a factor contributing to the observed false-negative results, these were evaluated using real viral RNA. The LoDs differed substantially, with the poorest LODs likely leading to false-negative results when RT-PCR is used to detect SARS-CoV-2 infection.</li> </ul>
10.04.2020	<a href="#">Dynamics of Faecal SARS-CoV-2 in Infected Children during the Convalescent Phase</a>	Journal of Infection / Letter to the editor	<ul style="list-style-type: none"> <li>Evidence so far raises the possibility of faecal-oral transmission, reinforcing the need for nucleic acid testing of stool samples from COVID-19 patients during the convalescent phase.</li> <li>Close surveillance of convalescent patients would be crucial to curb the COVID-19 pandemic, and maybe outbreaks yet to come.</li> </ul>

11.04.2020	<a href="#">Olfactory Bulb Magnetic Resonance Imaging in SARS-CoV-2-Induced Anosmia: The First Report</a>	Academic radiology / Research letter	<ul style="list-style-type: none"> <li>• Letter presenting OB MRI findings in a patient presenting with isolated anosmia secondary to PCR assay-confirmed COVID-19 infection.</li> </ul>
17.03.2020	<a href="#">A serological assay to detect SARS-CoV-2 seroconversion in humans</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• The authors describe serological enzyme-linked immunosorbent assays (ELISA) developed using recombinant antigens derived from the spike protein of SARS-CoV-2.</li> <li>• Using negative control samples as well as samples from COVID19 patients, they demonstrate that these assays are sensitive and specific, with identification of COVID19 as early as two days post symptoms onset.</li> </ul>

## Genomics

Publication Date	Title/URL	Journal/Article type	Digest
10.04.2020	<a href="#">Evolutionary analysis of SARS-CoV-2: how mutation of Non-Structural Protein 6 (NSP6) could affect viral autophagy</a>	Journal of Infection / Article in press	<ul style="list-style-type: none"> <li>• One of the two mutations, likely developed within the genome during virus spread, could affect virus intracellular survival.</li> <li>• Genome follow-up of SARS-CoV-2 spread is urgently needed in order to identify mutations that could significantly modify virus pathogenicity.</li> </ul>
16.04.2020	<a href="#">Potential for developing a SARS-CoV receptor-binding domain (RBD) recombinant protein as a heterologous human vaccine against coronavirus infectious disease (COVID)-19</a>	Human vaccines & immunotherapeutics / Preprint	<ul style="list-style-type: none"> <li>• The authors findings include evidence that convalescent serum from SARS-CoV patients can neutralize SARS-CoV-2.</li> <li>• A review of published studies using monoclonal antibodies (mAbs) raised against SARS-CoV RBD was completed and found that some mAbs bind to the receptor-binding motif (RBM) within the RBD, while others bind to domains outside this region within RBD.</li> </ul>
08.04.2020	<a href="#">Introductions and early spread of SARS-CoV-2 in the New York City area</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• Phylogenetic analysis of 84 distinct SARS-CoV2 genomes indicates multiple, independent but isolated introductions mainly from Europe and other parts of the United States.</li> <li>• Evidence for community transmission of SARS-CoV2 is suggested by clusters of related viruses found in patients living in different neighbourhoods.</li> </ul>
16.04.2020	<a href="#">High IL-6/IFN-gamma ratio could be associated with severe disease in COVID-19 patients</a>	Journal of Medical Virology / Article	<ul style="list-style-type: none"> <li>• The authors found that severe COVID-19 patients have a higher IL-6/IFN-<math>\gamma</math> ratio than moderate patients, which could be related to an enhanced cytokine storm favouring lung damage.</li> <li>• Some studies have associated higher IL-6 levels with severe patients and patients who died, whereas the expression of IFN-<math>\gamma</math> tends to be slightly lower in severe cases than in moderate cases, mainly due to the decrease in CD4+, CD8+ and NK lymphocytes.</li> </ul>

16.04.2020	<a href="#">The SARS-CoV-2 receptor ACE2 expression of maternal-fetal interface and fetal organs by single-cell transcriptome study</a>	PLoS One / Research article	<ul style="list-style-type: none"> <li>This study revealed that the SARS-CoV-2 receptor was widely spread in specific cell types of maternal-fetal interface and fetal organs, therefore both the vertical transmission and the placenta dysfunction/abortion caused by SARS-CoV-2 need to be further carefully investigated in clinical practice.</li> </ul>
10.04.2020	<a href="#">Remdesivir and SARS-CoV-2: structural requirements at both nsp12 RdRp and nsp14 Exonuclease active-sites</a>	Antiviral Research / Research paper	<ul style="list-style-type: none"> <li>This study highlights the importance of considering the balance between incorporation and excision properties of nucleoside analogues between the RdRp and exonuclease (ExoN) domain.</li> </ul>
01.04.2020	<a href="#">Structural basis to design multi-epitope vaccines against Novel Coronavirus 19 (COVID19) infection, the ongoing pandemic emergency: an in silico approach</a>	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>The authors screened and shortlisted 38 CTL, 33 HTL and 12 B cell epitopes from the eleven Protein sequences of SARS CoV 2 by utilizing different in silico tools.</li> </ul>
16.04.2020	<a href="#">Relationships among Lymphocyte Subsets, Cytokines, and the Pulmonary Inflammation Index in Coronavirus (COVID-19) Infected Patients</a>	British Journal of Haematology / Article	<ul style="list-style-type: none"> <li>The authors explored the relationships between lymphocyte subsets, cytokines, pulmonary inflammation index (PPI), and disease evolution in patients with COVID-19.</li> <li>Higher survival rates were obtained in the mild group and IL-6 within the normal group. CD4(+) T, CD8(+) T, IL-6, IL-10 and PPI can be used as indicators of disease evolution, and PPI can be used as an independent indicator for the disease evolution of COVID-19.</li> </ul>
13.04.2020	<a href="#">An Infectious cDNA Clone of SARS-CoV-2</a>	Cell Host & Microbe / Corrected proof	<ul style="list-style-type: none"> <li>The authors generated a stable mNeonGreen SARS-CoV-2 (icSARS-CoV-2-mNG) by introducing this reporter gene into ORF7 of the viral genome.</li> <li>icSARS-CoV-2-mNG was successfully used to evaluate the antiviral activities of interferon (IFN).</li> <li>Collectively, the reverse genetic system and reporter virus provide key reagents to study SARS-CoV-2 and develop countermeasures.</li> </ul>
07.04.2020	<a href="#">Characterizing geographical and temporal dynamics of novel coronavirus SARS-CoV-2 using informative subtype markers</a>	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>The authors propose an efficient framework for genetic subtyping of a pandemic virus, with application to the novel coronavirus SARS-CoV-2.</li> <li>The subtype identification pipeline described in this paper is publicly available at <a href="https://github.com/EESI/ISM">https://github.com/EESI/ISM</a>.</li> </ul>

#### Epidemiology and clinical - children and pregnancy

Publication Date	Title/URL	Journal/Article type	Digest
13.04.2020	<a href="#">Clinical characteristics of 19 neonates born to mothers with COVID-19</a>	Frontiers of medicine / Article	<ul style="list-style-type: none"> <li>Study of 19 neonates at Tongji Hospital, Wuhan, Jan 31 - Feb 29, 2020; mothers were clinically diagnosed or laboratory-confirmed with COVID-19.</li> <li>Delivery occurred in an isolation room and neonates were immediately separated from the mothers and isolated for at least 14 days. No fetal distress</li> </ul>

			<p>was found.</p> <ul style="list-style-type: none"> <li>• No vertical transmission of SARS-CoV-2 and no perinatal complications in the third trimester.</li> </ul>
13.04.2020	<a href="#">Febrile Infant: COVID-19 in Addition to the Usual Suspects</a>	The Pediatric infectious disease journal / Letter	<ul style="list-style-type: none"> <li>• Authors report a previously healthy, fully vaccinated, late preterm, 58-day-old male who presented with fever. No respiratory distress, cough, decreased intake, decreased frequency of wet diapers, sick contacts, or travel.</li> <li>• Health professionals must consider COVID-19 in infants presenting with fever and minimal other findings or historical risk factors.</li> </ul>
16.04.2020	<a href="#">Sequential analysis of viral load in a neonate and her mother infected with SARS-CoV-2</a>	Clinical Infectious Diseases / Case report	<ul style="list-style-type: none"> <li>• The authors report changes in viral load over time in a 27-day old neonate with COVID-19 who presented with fever, cough, and vomiting.</li> <li>• SARS-CoV-2 RNA was detected in the nasopharynx, oropharynx, stool, saliva, plasma, and urine. The highest viral RNA copies in nasopharynx decreased over time while viral load in stool remained high.</li> </ul>
19.03.2020	<a href="#">Impact of COVID-19 infection on pregnancy outcomes and the risk of maternal-to-neonatal intrapartum transmission of COVID-19 during natural birth</a>	Infection Control and Hospital Epidemiology / Letter to the editor	<ul style="list-style-type: none"> <li>• None of the 3 women in this study had died of COVID-19 infection as of March 1, 2020.</li> <li>• No vertical transmission of COVID-19 was found in the third trimester of pregnancy among infants delivered via the vaginal route.</li> <li>• The authors did not find evidence of maternal-to-neonatal intrapartum transmission of COVID-19 via vaginal delivery.</li> </ul>
16.04.2020	<a href="#">Management of COVID-19 Related Paediatric Blood Samples in a Clinical Haematology Laboratory</a>	British Journal of Haematology / Letters	<ul style="list-style-type: none"> <li>• Report of the specimen management policy for handling and processing COVID-19 related blood samples in a Singapore Women and Children's laboratory; highlighting the challenges of working with paediatric samples during this period.</li> </ul>

### Epidemiology and clinical - risk factors

Publication Date	Title/URL	Journal/Article type	Digest
31.03.2020	<a href="#">The effect of corticosteroid treatment on patients with coronavirus infection: a systematic review and meta-analysis</a>	Journal of Infection / Journal pre-proof	<ul style="list-style-type: none"> <li>• Patients with severe conditions are more likely to require corticosteroids. Corticosteroid use is associated with increased mortality in patients with coronavirus pneumonia.</li> </ul>
13.04.2020	<a href="#">Cardiovascular Disease and Use of Renin-Angiotensin System Inhibitors in COVID-19</a>	American journal of cardiovascular drugs : drugs, devices, and other interventions / Current Opinion	<ul style="list-style-type: none"> <li>• This article reviews evidence on use of RAS inhibitors in CVD patients with COVID-19, focusing on safety issues.</li> <li>• The established benefits of ACE inhibitors and ARBs in CVD outweigh the uncertain risks among patients at risk of COVID-19.</li> </ul>

09.04.2020	<a href="#">Diabetes in COVID-19: Prevalence, pathophysiology, prognosis and practical considerations</a>	Diabetes & metabolic syndrome / Review	<ul style="list-style-type: none"> <li>• Review of the evidence of increased incidence and severity of COVID-19 in patients with diabetes and discussion around the potential effect on the pathophysiology of diabetes.</li> </ul>
16.04.2020	<a href="#">Considerations for obesity, vitamin D, and physical activity amidst the COVID-19 pandemic</a>	Obesity / Article	<ul style="list-style-type: none"> <li>• The link between diminished immune function and individuals with obesity raises important questions about the possibility for greater viral pathogenicity in this population.</li> <li>• A further challenge to those with obesity during the current pandemic may involve vitamin D deficiency/insufficiency.</li> </ul>
13.04.2020	<a href="#">Clinical Characteristics and Prognosis in Cancer Patients with COVID-19: a Single Center's Retrospective Study</a>	The Journal of infection / Letter	<ul style="list-style-type: none"> <li>• Cancer patients had a high infection rate of SARS-CoV-2 and were easy to become severe or critical cases.</li> <li>• Among cancer patients with COVID-19, the numbers of neutrophil, NLR (ratio of neutrophil to lymphocyte, IL-6, LDH and PCT in the severe/critical group were significantly higher than those in the mild group.</li> </ul>
17.04.2020	<a href="#">Characteristics of Health Care Personnel with COVID-19 - United States, February 12-April 9, 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• Most health care personnel (HCP) with COVID-19 (6,760, 90%) were not hospitalized; however, severe outcomes, including 27 deaths, occurred across all age groups; deaths most frequently occurred in HCP aged <math>\geq 65</math> years.</li> <li>• These preliminary findings highlight that whether HCP acquire infection at work or in the community, it is necessary to protect the health and safety of this essential national workforce.</li> </ul>
10.04.2020	<a href="#">Neutrophil-to-lymphocyte ratio as an independent risk factor for mortality in hospitalized patients with COVID-19</a>	Journal of Infection / Article in press	<ul style="list-style-type: none"> <li>• Neutrophil to lymphocyte ratio (NLR) is an independent risk factor of the in-hospital mortality for COVID-19 patients especially for male.</li> <li>• Assessment of NLR may help identify high risk individuals with COVID-19.</li> </ul>
06.04.2020	<a href="#">Is antibody-dependent enhancement playing a role in COVID-19 pathogenesis?</a>	Swiss medical weekly / Viewpoint	<ul style="list-style-type: none"> <li>• The author outlines the role of antibody-dependent enhancement (ADE) in human infections and discusses the possible role for ADE in COVID-19.</li> </ul>

#### Epidemiology and clinical – other

Publication Date	Title/URL	Journal/Article type	Digest
13.04.2020	<a href="#">Clinical Presentation of COVID-19: A Systematic Review Focusing on Upper Airway Symptoms</a>	Ear, nose, & throat journal	<ul style="list-style-type: none"> <li>• Review of current evidences on clinical presentation of COVID-19, focusing on upper airway symptoms in order to help otolaryngologists identifying suspected cases.</li> <li>• Found that pharyngodynia was quite common between patients with COVID-19 (12.4%), while nasal congestion was not frequent (3.7%), and rhinorrhea was rare. None of included reports considered smell reduction.</li> </ul>



11.04.2020	<a href="#">Central nervous system manifestations of COVID-19: A systematic review</a>	Journal of the neurological sciences / Systematic review	<ul style="list-style-type: none"> <li>• Systematic review reveals that neurological manifestations of COVID-19 have not been studied appropriately, however it is highly likely that patients, particularly those who suffer from a severe illness, have CNS involvement and neurological manifestations.</li> <li>• Precise and targeted documentation, investigations of patients, attempts to isolate SARS-CoV-2 from cerebrospinal fluid, and autopsies of the COVID-19 victims may clarify the role played by this virus in causing neurological manifestations.</li> </ul>
10.04.2020	<a href="#">Rapid asymptomatic transmission of COVID-19 during the incubation period demonstrating strong infectivity in a cluster of youngsters aged 16-23 years outside Wuhan and characteristics of young patients with COVID-19: a prospective contact-tracing study</a>	Journal of Infection / Article in press	<ul style="list-style-type: none"> <li>• The authors enrolled a cluster of eight young people with COVID-19 (median age [range], 22 [16-23] years; six males) originating from Patient-Index returning from Wuhan to Hefei on January 19.</li> <li>• SARS-CoV-2-infection presented strong infectivity during the incubation-period with rapid transmission in this cluster of youngsters outside Wuhan.</li> <li>• COVID-19 developed in these young people had fast onset and various nonspecific atypical manifestations, and were much milder than in older patients as previously reported.</li> </ul>
16.04.2020	<a href="#">Positive RT-PCR tests among discharged COVID-19 patients in Shenzhen, China</a>	Infection Control and Hospital Epidemiology / Article	<ul style="list-style-type: none"> <li>• Among all 209 discharged coronavirus 2019 patients in Shenzhen China between January 23 and February 21, 2020, there are 9 (4.3%) patients showed RT-PCR positive in throat swabs, 13 (6.2%) patients showed RT-PCR positive in anal swabs, and 22 (10.5%) positive in either type.</li> </ul>
13.04.2020	<a href="#">Hematological findings and complications of COVID-19</a>	American journal of hematology / Critical Review	<ul style="list-style-type: none"> <li>• In this extensive review, the authors summarize the numerous hematologic findings and complications of COVID-19 and provide guidance for early prevention and management of the latter.</li> </ul>
10.04.2020	<a href="#">Encephalitis as a clinical manifestation of COVID-19</a>	Brain, Behavior, and Immunity / Letter to the editor	<ul style="list-style-type: none"> <li>• This letter describes a COVID-19 case who presented with encephalitis.</li> </ul>
02.04.2020	<a href="#">Keratoconjunctivitis as the initial medical presentation of the novel coronavirus disease 2019 (COVID-19)</a>	Canadian Journal of Ophthalmology / Article in press	<ul style="list-style-type: none"> <li>• The authors present a case of coronavirus disease 2019 (COVID-19) with an initial medical presentation of keratoconjunctivitis, the first such reported case in North America.</li> </ul>
13.04.2020	<a href="#">Anosmia in a healthcare worker with COVID-19 in Madrid, Spain</a>	Travel medicine and infectious disease / Letter	<ul style="list-style-type: none"> <li>• Case presentation of a radiologist who tested positive for COVID-19 with somewhat atypical symptoms, including anosmia.</li> </ul>
04.03.2020	<a href="#">Clinical characteristics of 101 COVID-19 nonsurvivors in Wuhan, China: a retrospective study</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• Older patients with underlying comorbidities suffering COVID-19 were at increased risks of death.</li> <li>• Respiratory failure, acute cardiac injury and acute kidney injury played crucial roles in the death of COVID-19 patients.</li> <li>• Early development of sepsis, increased white blood cell count and neutrophil count on admission were associated with the rapid disease progress to death.</li> </ul>

11.04.2020	<a href="#">Epidemiological and clinical features of 125 Hospitalized Patients with COVID-19 in Fuyang, Anhui, China</a>	International Journal of Infectious Diseases / Journal pre-proof	<ul style="list-style-type: none"> <li>• In this single-centre, retrospective, descriptive study, fever is the most common symptom.</li> <li>• Old age, chronic underlying diseases and smoking history may be risk factors to worse condition.</li> </ul>
16.04.2020	<a href="#">SARS-CoV-2 and Legionella Co-infection in a Person Returning from a Nile Cruise</a>	Journal of Travel Medicine / Case report	<ul style="list-style-type: none"> <li>• The authors report a case of severe acute respiratory syndrome coronavirus 2 and Legionella co-infection manifesting as pneumonia with gastrointestinal symptoms.</li> </ul>
16.04.2020	<a href="#">Panton-Valentine Leukocidin-Secreting Staphylococcus aureus Pneumonia Complicating COVID-19</a>	Emerging Infectious Diseases / Case report	<ul style="list-style-type: none"> <li>• Necrotizing pneumonia induced by Panton-Valentine leukocidin-secreting Staphylococcus aureus is a rare but life-threatening infection that has been described in patients after they had influenza. This report describes a fatal case in a COVID-19 patient.</li> </ul>
17.04.2020	<a href="#">Geographic Differences in COVID-19 Cases, Deaths, and Incidence - United States, February 12-April 7, 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• This report describes the geographic distribution of laboratory-confirmed COVID-19 cases and related deaths reported by each U.S. state, each territory and freely associated state,* DC, and NYC during February 12-April 7, 2020, and estimates cumulative incidence for each jurisdiction.</li> </ul>
17.04.2020	<a href="#">Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 - COVID-NET, 14 States, March 1-30, 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• CDC report of laboratory-confirmed COVID-19-associated hospitalizations in the United States.</li> </ul>
04.04.2020	<a href="#">Correlation between weather and Covid-19 pandemic in Jakarta, Indonesia</a>	The Science of the total environment / Article	<ul style="list-style-type: none"> <li>• Analysis of the correlation between weather and covid-19 pandemic in Jakarta Indonesia.</li> <li>• Among the components of the weather, only temperature average ( degrees C) was significantly correlated with covid-19 pandemic (<math>r = 0.392</math>; <math>p &lt; .01</math>).</li> </ul>
17.04.2020	<a href="#">Community Transmission of SARS-CoV-2 at Two Family Gatherings - Chicago, Illinois, February-March 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• This report describes the cluster of 16 cases of confirmed or probable COVID-19, including three deaths, likely resulting from transmission of SARS-CoV-2 at two family gatherings (a funeral and a birthday party).</li> </ul>
08.04.2020	<a href="#">Neurotropism of SARS-CoV 2: Mechanisms and manifestations</a>	Journal of the neurological sciences / Letter	<ul style="list-style-type: none"> <li>• Letter outlining a possible neural pathway given by the olfactory nerve, and theorising that respiratory distress is not only the result of pulmonary inflammatory structural damage, but also due to the damage caused by the virus in the respiratory centres of the brain, making it more difficult to manage these patients.</li> </ul>
03.04.2020	<a href="#">COVID-19 patients exhibit less pronounced immune suppression compared with bacterial septic shock patients</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• The author report that despite a pronounced inflammatory response, the innate immune suppression in COVID-19 patients is moderate compared with bacterial septic shock patients. These data signify that innate immune suppression as a negative feedback mechanism following PAMP-induced inflammation appears less pronounced in COVID-19.</li> </ul>
10.04.2020	<a href="#">Correlation Between Relative Nasopharyngeal Virus RNA Load and</a>	Viral immunology / Research article	<ul style="list-style-type: none"> <li>• The authors report that relative SARS-CoV-2 RNA load in the nasopharynx is closely related to COVID-19 severity. If the relative RNA load was higher, the</li> </ul>



	<a href="#">Lymphocyte Count Disease Severity in Patients with COVID-19</a>		lymphocyte count was lower, organ damage was greater, and the time it took for the nucleic acid test to turn negative was longer.
16.04.2020	<a href="#">Blood transfusion strategies and ECMO during the COVID-19 pandemic - Authors' reply</a>	The Lancet Respiratory Medicine / Correspondence	<ul style="list-style-type: none"> <li>In this response, the authors suggest that the majority of patients with COVID-19 who require ECMO could be treated with venovenous ECMO, and lower trigger thresholds (eg, 7 g/dL) would be tolerated if they are stable and not actively bleeding. ECMO for such patients should be offered in experienced centres in line with WHO guidelines.</li> </ul>
16.04.2020	<a href="#">The Role of Data Registries in the Time of COVID-19</a>	Circulation. Cardiovascular quality and outcomes / Article	<ul style="list-style-type: none"> <li>As CVD and other pre-existing conditions have been implemented in severe health outcomes from COVID-19 infection, clinical registry data can provide valuable insights into patient characteristics, treatment patterns, and clinical outcomes.</li> </ul>

### Infection control

Publication Date	Title/URL	Journal/Article type	Digest
16.04.2020	<a href="#">SARS-CoV2 infection and primary school closure</a>	Eurosurveillance / Letter	<ul style="list-style-type: none"> <li>This letter suggests that detailed analysis of inter-individual contact remains a key determinant with viral characteristics in order to understand the dynamic of viral transmission in close environments such as primary schools.</li> </ul>
16.04.2020	<a href="#">Protecting workers aged 60-69 years from COVID-19</a>	The Lancet Infectious Diseases / Correspondence	<ul style="list-style-type: none"> <li>Applying infection fatality rate ratios from estimates to the age structure of the population of the UK shows that 70% of all deaths are in the over-70-years age group, so it is important that they are protected. However, nearly two thirds (64%) of the remaining deaths occur in the 60–69 years age group.</li> </ul>
10.04.2020	<a href="#">Positive effects of COVID-19 control measures on influenza prevention</a>	International journal of infectious diseases / Journal pre-proof	<ul style="list-style-type: none"> <li>This article aims to alert clinicians of the presence of co-infection with these two viruses and to describe the effect of the measures taken to fight COVID-19 on influenza prevention and control.</li> </ul>
10.04.2020	<a href="#">Duration for Carrying SARS-CoV-2 in COVID-19 Patients</a>	Journal of Infection / Journal pre-proof	<ul style="list-style-type: none"> <li>Patients infected tend to have a long SARS-CoV-2 carrying and infectious duration, which requires an early persistent isolation and monitoring strategy, and longer antiviral therapy for infected cases.</li> <li>Long-term SARS-CoV-2 carrying may serve as the consideration for the continued exacerbation of the condition in elderly and severe patients over 60 years of age.</li> </ul>
16.04.2020	<a href="#">Pasteurized blood samples for transfusion compatibility testing during the coronavirus disease 2019 outbreak</a>	Infection Control and Hospital Epidemiology / Letter to the editor	<ul style="list-style-type: none"> <li>During COVID-19 virus outbreak, pasteurization can be used to test transfusion compatibility, to protect laboratory staff from infected-samples and ensure transfusion safe and effective.</li> <li>Pasteurization is convenient and quick, and suitable for promotion in hospitals.</li> </ul>

16.04.2020	<a href="#">Reducing onward spread of COVID-19 from imported cases: quarantine and 'stay at home' measures for travellers and returning residents to Singapore</a>	Journal of Travel Medicine / Accepted manuscript	<ul style="list-style-type: none"> <li>• Article describes the success, processes and enforcement Singapore 14-day 'Stay Home Notice' (SHN) put on travellers and returning residents to reduce secondary transmission from imported cases of COVID-19.</li> </ul>
16.04.2020	<a href="#">Viral transportation in COVID-19 pandemic: Inactivated virus transportation should be implemented for safe transportation and handling at diagnostics laboratories.</a>	Archives of Pathology & Laboratory Medicine / Early online release	<ul style="list-style-type: none"> <li>• The authors discuss the biosafety of COVID-19 samples during transportation and laboratory diagnosis.</li> <li>• They recommend the CDC reconsider their recommendation for transportation of SARS-CoV-2/COVID-19 specimens in virus- preserving VTM to reduce the risk to laboratory and transportation professionals.</li> </ul>
16.04.2020	<a href="#">Vietnam's response to COVID-19: Prompt and proactive actions</a>	Journal of Travel Medicine / Accepted manuscript	<ul style="list-style-type: none"> <li>• Unlike affluent Asian countries with GDP per capita of twentyfold higher, Vietnam could not afford a community-wide testing program, and has focused on cost-effective measures.</li> <li>• At the centre of its active case finding is extensive contact tracing and health declaration for all. In combination with case isolation, mass quarantine, and mass masking, these measures control infections at source, even asymptomatic cases.</li> </ul>
16.04.2020	<a href="#">Drawing on Israel's Experience Organizing Volunteers to Operationalize Drive-Through Coronavirus Testing Centers</a>	Disaster Medicine and Public Health Preparedness / Article	<ul style="list-style-type: none"> <li>• This article examines the challenges that the national emergency medical services and volunteers faced in the process of implementing drive-through testing centres to offer lessons learned and direction to healthcare professionals in other countries.</li> </ul>
16.04.2020	<a href="#">Shelter hospital: glimmers of hope in treating COVID-19</a>	Disaster Medicine and Public Health Preparedness / Article	<ul style="list-style-type: none"> <li>• The deployable rapid assembly shelter hospital is a major public health measure taken by the government of Wuhan, China in this epidemic prevention and control campaign, and has become a valuable experience in dealing with public health emergencies around the world.</li> </ul>
16.04.2020	<a href="#">Case fatality rate analysis of Italian COVID-19 outbreak</a>	Journal of Medical Virology / Short communication	<ul style="list-style-type: none"> <li>• The authors reject the possibility that social habits and intergenerational contacts can explain the profound effect on the number of deaths observed in Italy during COVID-19 outbreak.</li> </ul>
17.04.2020	<a href="#">Transmission of COVID-19 to Health Care Personnel During Exposures to a Hospitalized Patient - Solano County, California, February 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• Health care facilities should emphasize early recognition and isolation of patients with possible COVID-19 and use of recommended PPE to minimize unprotected, high-risk HCP exposures and protect the health care workforce.</li> </ul>
17.04.2020	<a href="#">Timing of Community Mitigation and Changes in Reported COVID-19 and Community Mobility - Four U.S. Metropolitan Areas, February 26-April 1, 2020</a>	MMWR. Morbidity and mortality weekly report / Report	<ul style="list-style-type: none"> <li>• This report suggests that public policy measures are an important tool to support social distancing and provides some very early indications that these measures might help slow the spread of COVID-19.</li> </ul>

10.04.2020	<a href="#">Endoscopy units and the COVID-19 Outbreak: A Multi-Center Experience from Italy</a>	Gastroenterology / Journal pre-proof	<ul style="list-style-type: none"> <li>• Survey to investigate the burden of COVID-19 on endoscopic activity in a high-risk area of COVID-19 outbreak in Italy, to explore approaches to evaluating patients, adoption and compliance of HCP with protective measures, and initial possible viral transmission outcomes from endoscopy units.</li> </ul>
10.04.2020	<a href="#">Household Transmission of SARS-CoV-2</a>	Journal of Infection / Article in press	<ul style="list-style-type: none"> <li>• In this retrospective case series, 85 patients infected with SARS-CoV-2 and their household members were enrolled.</li> <li>• The rate of secondary transmission among household contacts of patients with SARS-CoV-2 infection was 30%.</li> </ul>
10.04.2020	<a href="#">Google searches for the keywords of "wash hands" predict the speed of national spread of COVID-19 outbreak among 21 countries</a>	Brain, Behavior, and Immunity / Corrected proof	<ul style="list-style-type: none"> <li>• Google searches for "wash hands" and "face mask" during January 19 to February 18 was used to look at national population health literacy among 21 countries and compared to COVID-19 cases.</li> <li>• Increased search for "wash hands" correlated with a lower spreading speed of COVID-19.</li> <li>• Increased search for "face mask" had no significant correlation with spreading speed.</li> </ul>

## Treatment

Publication Date	Title/URL	Journal/Article type	Digest
07.04.2020	<a href="#">Should chloroquine and hydroxychloroquine be used to treat COVID-19? A rapid review</a>	BJGP open / Rapid review	<ul style="list-style-type: none"> <li>• At present, there is insufficient evidence to determine whether CQ/HCQ are safe and effective treatments for COVID-19. High quality, adequately powered randomised clinical trials in primary and secondary care settings are urgently required to guide policymakers and clinicians. These studies should report medium- and long-term follow-up results, and safety data.</li> </ul>
10.04.2020	<a href="#">Does Hydroxychloroquine Combat COVID-19? A Timeline of Evidence</a>	Journal of the American Academy of Dermatology / Journal pre-proof	<ul style="list-style-type: none"> <li>• To date, despite enough rationale to justify investigation into the efficacy and safety of Hydroxychloroquine (HCQ) in COVID-19, the evidence regarding its effect remains limited.</li> <li>• HCQ has not yet received FDA approval for use against COVID-19 and further trials are needed to establish guidelines.</li> <li>• If emerging data from ongoing trials establishes the efficacy of HCQ for prophylaxis and treatment of COVID-19, triage will be important to ensure that existing supplies are used appropriately.</li> </ul>
08.04.2020	<a href="#">Off-label prescribing in the midst of a pandemic: The case of hydroxychloroquine</a>	Australian Journal of General Practice / Article	<ul style="list-style-type: none"> <li>• There is currently no robust evidence to support prescribing hydroxychloroquine as a treatment or prophylaxis for COVID-19.</li> </ul>

07.04.2020	<a href="#">Chloroquine diphosphate in two different dosages as adjunctive therapy of hospitalized patients with severe respiratory syndrome in the context of coronavirus (SARS-CoV-2) infection: Preliminary safety results of a randomized, double-blinded, phase IIb clinical trial (CloroCovid-19 Study)</a>	medRxiv (not peer reviewed) / RCT preliminary results	<ul style="list-style-type: none"> <li>• Preliminary findings suggest that the higher CQ dosage (10-day regimen) should not be recommended for COVID-19 treatment because of its potential safety hazards. Such results forced us to prematurely halt patient recruitment to this arm.</li> </ul>
10.04.2020	<a href="#">Plausibility of therapeutic effects of Rho kinase inhibitors against Severe Acute Respiratory Syndrome Coronavirus 2 (COVID-19)</a>	Pharmacological Research / In Press, Journal Pre-proof	<ul style="list-style-type: none"> <li>• It should be noted that although several other agents are also able to inhibit virus cell entry, Rho kinase inhibitors besides hindering virus entry, can suppress pathways involved in lung tissue destruction.</li> </ul>
16.04.2020	<a href="#">SARS CoV-2: Recent Reports on Antiviral Therapies Based on Lopinavir/Ritonavir, Darunavir/Umifenovir, Hydroxychloroquine, Remdesivir, Favipiravir and Other Drugs for the Treatment of the New Coronavirus</a>	Current Medicinal Chemistry / Article	<ul style="list-style-type: none"> <li>• Several cases of recovered patients have been reported after being treated with lopinavir/ritonavir.</li> <li>• In addition, remdesivir, which has been previously administered to Ebola virus patients, has also proven effective in the U.S. against coronavirus, while antimalarial chloroquine and hydroxychloroquine, favipiravir and co-administered darunavir and umifenovir (in patient therapies) were also recently recorded as having anti-SARS CoV-2 effects.</li> </ul>
16.04.2020	<a href="#">Off-label Use of Tocilizumab in Patients with SARS-CoV-2 Infection</a>	Journal of Medical Virology / Letter to the editor	<ul style="list-style-type: none"> <li>• The use of humanized anti-human interleukine-6 receptor antibody tocilizumab seems a promising strategy for patients with SARS-CoV-2 infection.</li> </ul>
13.04.2020	<a href="#">Delayed Initiation of Remdesivir in a COVID-19 Positive Patient</a>	Pharmacotherapy / Article	<ul style="list-style-type: none"> <li>• Case report of late initiation of remdesivir antiviral therapy in the successful treatment of a patient - it's late initiation of remdesivir may be effective, unlike antivirals utilized for different disease states, such as oseltamivir, which are most effective when started as soon as possible following symptom onset.</li> <li>• Urgent action is needed by regulatory agencies to work with drug manufacturers to expedite the study and approval of investigational agents targeting SARS-CoV-2 as well as to meet manufacturing demands.</li> </ul>
16.04.2020	<a href="#">Novel Coronavirus Disease (COVID-19) and Biologic Therapy in Psoriasis: Infection Risk and Patient Counseling in Uncertain Times</a>	Dermatology and Therapy / Article	<ul style="list-style-type: none"> <li>• While there are currently no specific data for psoriasis biologics and COVID-19, data are presented here from phase III clinical trials of psoriasis biologics on rates of upper respiratory infection, influenza, and serious infection.</li> </ul>
09.04.2020	<a href="#">Mesenchymal Stromal Cell Secretome for Severe COVID-19 Infections: Premises for the Therapeutic Use</a>	Cells / Perspective	<ul style="list-style-type: none"> <li>• In the authors' opinion, mesenchymal stem cell secretome could offer a new therapeutic approach in treating COVID-19 pneumonia, due to the broad pharmacological effects it shows, including anti-inflammatory, immunomodulatory, regenerative, pro-angiogenic and anti-fibrotic properties.</li> </ul>
09.03.2020	<a href="#">Mesenchymal stem cells and management of COVID-19 pneumonia</a>	Medicine in drug discovery / Short communication	<ul style="list-style-type: none"> <li>• The author considers new approaches to improve patient's biological resistance to COVID-19 using stem cells, and how benefit might be scaled and</li> </ul>

			simplified using synthetic stem cells to meet logistical needs within a short time frame.
13.04.2020	<a href="#">Oligonucleotides and the COVID-19 Pandemic: A Perspective</a>	Nucleic acid therapeutics / Article	<ul style="list-style-type: none"> <li>Article on behalf of the oligonucleotide research community arguing that oligo-based therapies introduce a galaxy of possible applications to SARS-CoV-2 and other CoV infections. Oligo therapeutics are easy to design, cost-effective to manufacture, and already possess many optimizing chemical modifications identified for use in other diseases, thereby simplifying design, production, and medicinal chemistry optimization during a crisis when rapid drug development is of utmost importance.</li> </ul>
07.04.2020	<a href="#">Currently available intravenous immunoglobulin (Gamunex&lt;sup&gt;®&lt;/sup&gt;-C and Flebogamma&lt;sup&gt;®&lt;/sup&gt; DIF) contains antibodies reacting against SARS-CoV-2 antigens</a>	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>Gamunex-C and Flebogamma DIF IVIG contain antibodies reacting against SARS-CoV-2 antigens and may be useful for immediate treatment of COVID-19 disease.</li> </ul>
16.04.2020	<a href="#">Antiplatelet Therapy Following Percutaneous Coronary Intervention in Patients Complicated by COVID-19: Implications from Clinical Features to Pathological Findings</a>	Circulation / Article	<ul style="list-style-type: none"> <li>Considering approximately 5 million percutaneous coronary interventions (PCIs) were performed annually worldwide, as well as recent clinical and pathological findings, the authors raised safety concerns regarding dual antiplatelet therapy (DAPT) on life-threatening bleeding complications among COVID-19 infected patients, especially the risk for diffuse alveolar haemorrhage (DAH).</li> </ul>
10.04.2020	<a href="#">Effect of regular intravenous immunoglobulin therapy on prognosis of severe pneumonia in patients with COVID-19</a>	Journal of Infection / Letter to the editor	<ul style="list-style-type: none"> <li>Initiation of IVIG as adjuvant treatment for COVID-19 pneumonia within 48 hours of admission to the ICU can reduce the use of mechanical ventilation, hospital length of stay and length of stay in ICU, and 28-day mortality of patients with severe COVID-19 pneumonia.</li> </ul>
13.04.2020	<a href="#">Successful treatment of plasma exchange followed by intravenous immunoglobulin in a critically ill patient with 2019 novel coronavirus infection</a>	International journal of antimicrobial agents / Case report	<ul style="list-style-type: none"> <li>The authors report a case of laboratory-confirmed COVID-19 patient who developed respiratory failure and shock accompanied by persistent diarrhoea despite conventional therapeutic interventions.</li> <li>The patient avoided mechanical ventilation and acquired an immediate clinical and radiological improvement, after treatment of intensive plasma exchange (PE) followed by intravenous immunoglobulin (IVIG).</li> </ul>
21.02.2020	<a href="#">Potential benefits of precise corticosteroids therapy for severe 2019-nCoV pneumonia</a>	Signal transduction and targeted therapy / Research letter	<ul style="list-style-type: none"> <li>The authors discuss current evidence for the clinical benefits of corticosteroids therapy for critical novel coronavirus pneumonia (NCP) patients.</li> <li>They endorse the potential benefits from low-dose corticosteroids treatment in a subset of critically ill patients with COVID-19 based on existing studies and clinical experience, despite there is no significant improvement in overall survival.</li> </ul>
14.04.2020	<a href="#">What Does Plant-Based Vaccine Technology Offer to the Fight against COVID-19?</a>	Vaccines / Article	<ul style="list-style-type: none"> <li>Injectable vaccines could be generated by using transient expression systems, which offer the highest protein yields and are already adopted at the industrial</li> </ul>

			<p>level to produce VLPs-vaccines and other biopharmaceuticals under GMPC-processes.</p> <ul style="list-style-type: none"> <li>• Stably-transformed plants are another option, but this approach requires more time for the development of antigen-producing lines.</li> </ul>
26.03.2020	<a href="#">Structural basis of SARS-CoV-2 3CL(pro) and anti-COVID-19 drug discovery from medicinal plants</a>	Journal of pharmaceutical analysis / Article	<ul style="list-style-type: none"> <li>• The viral 3-chymotrypsin-like cysteine protease (3CL(pro)) enzyme controls coronavirus replication and is essential for its life cycle.</li> <li>• The authors analysed the 3CL(pro) sequence, constructed its 3D homology model, and screened it against a medicinal plant library containing 32,297 potential anti-viral phytochemicals/traditional Chinese medicinal compounds. The analysis revealed that the top nine hits might serve as potential anti- SARS-CoV-2 lead molecules for further optimisation and drug development process to combat COVID-19.</li> </ul>
03.04.2020	<a href="#">Early nutritional supplementation in non-critically ill patients hospitalized for the 2019 novel coronavirus disease (COVID-19): Rationale and feasibility of a shared pragmatic protocol</a>	Nutrition / Article	<ul style="list-style-type: none"> <li>• To prevent malnutrition in non-critically ill patients hospitalized for COVID-19, high-calorie dense diets in a variety of different consistencies with highly digestible foods and snacks could be made available for all patients.</li> <li>• Oral supplementation of whey proteins as well as intravenous infusion of multivitamin, multimineral trace elements solutions are implemented at admission.</li> </ul>
16.04.2020	<a href="#">Care of Immunocompromised Patients with Head and Neck Cancer During the COVID-19 Pandemic: Two Challenging and Informative Clinical Cases</a>	Head & Neck / Article	<ul style="list-style-type: none"> <li>• There is no uniform set of rules to apply to this heterogeneous group of immune-compromised patients.</li> <li>• The authors provide some general principles to help guide patient management during the current pandemic.</li> </ul>
16.04.2020	<a href="#">How to Guarantee the Best of Care to Patients with Cancer During the COVID-19 Epidemic: The Italian Experience</a>	The Oncologist / Article	<ul style="list-style-type: none"> <li>• Patients who need to be hospitalized for cancer treatment were protected from potential SARS-CoV-2 infection by creating a dedicated diagnostic and therapeutic internal pathway for cancer treatment.</li> </ul>
16.04.2020	<a href="#">Description and Proposed Management of the Acute COVID-19 Cardiovascular Syndrome</a>	Circulation / Article	<ul style="list-style-type: none"> <li>• A review of available data on Acute COVID-19 Cardiovascular Syndrome (ACovCS) epidemiology, pathogenesis, diagnosis and treatment.</li> <li>• From these data, a surveillance, diagnostic and management strategy is proposed that balances potential patient risks and healthcare staff exposure with improvement in meaningful clinical outcomes.</li> </ul>
11.04.2020	<a href="#">High flow nasal cannula is a good treatment option for COVID-19</a>	Heart & lung : the journal of critical care / Letter	<ul style="list-style-type: none"> <li>• Study reporting outcomes in 8 patients with COVID-19 with mild or moderate ARDS treated with high flow nasal cannula (HFNC). The authors argue that HFNC is a suitable treatment for this class of patient.</li> </ul>
11.04.2020	<a href="#">From the insight of glucose metabolism disorder: Oxygen therapy and blood glucose monitoring are crucial for quarantined COVID-19 patients</a>	Ecotoxicology and environmental safety / Article	<ul style="list-style-type: none"> <li>• The authors present evidence suggesting that the imbalance of glucose metabolism could be crucially involved in respiratory pathogenic virus infection, and argue that high attention should be paid to rescue this process to prevent the further deterioration of COVID-19.</li> </ul>



07.04.2020	<a href="#">Extracorporeal Membrane Oxygenation for Severe Respiratory Failure during Respiratory Epidemics and Pandemics: A Narrative Review</a>	Annals of the Academy of Medicine, Singapore / Review	<ul style="list-style-type: none"> <li>• This review focuses on considerations for ventilatory strategies, infection control and patient selection related to ECMO for ARDS in a pandemic.</li> <li>• The role of ECMO in managing ARDS during respiratory pandemics continues to grow. This is supported by efforts to redefine optimal ventilatory strategies, reinforce infection control measures and enhance patient selection.</li> </ul>
12.04.2020	<a href="#">Letter: Covid-19, and vitamin D</a>	Alimentary Pharmacology & Therapeutics / Letter to the editor	<ul style="list-style-type: none"> <li>• It seems plausible that Vitamin D prophylaxis (without over-dosing) may contribute to reducing the severity of illness caused by SARS-CoV-2, particularly in settings where hypovitaminosis D is frequent.</li> </ul>
10.04.2020	<a href="#">Rehabilitation following critical illness in people with COVID-19 infection</a>	American Journal of Physical Medicine & Rehabilitation / Analysis and perspective	<ul style="list-style-type: none"> <li>• Rehabilitation providers will serve as an important link in the continuum of care during the COVID-19 pandemic, helping move patients on from acute sites to eventual discharge to the community.</li> </ul>
13.04.2020	<a href="#">Clinical characteristics and immunosuppressants management of coronavirus disease 2019 in solid organ transplant recipients</a>	American journal of transplantation / Case report	<ul style="list-style-type: none"> <li>• Authors report two cases of COVID-19 in two transplant recipients, with different treatments and prognoses.</li> <li>• These effectively treated cases can provide a basis for immunosuppressant management of COVID-19-positive SOT recipients.</li> </ul>
16.04.2020	<a href="#">Finding Effective Treatments for COVID-19: Scientific Integrity and Public Confidence in a Time of Crisis</a>	JAMA / Viewpoint	<ul style="list-style-type: none"> <li>• A recent review suggests that scientists in China planned at least 87 drug studies, including 10 studies of chloroquine or hydroxychloroquine, but studies reported to date have been small and have provided conflicting results.</li> <li>• It is important to optimize treatments that already exist, including supportive critical care.</li> <li>• It is critical to protect the integrity of and resulting public trust in the scientific and regulatory agencies and their advice and decisions.</li> </ul>

## Social sciences

Publication Date	Title/URL	Journal/Article type	Digest
16.04.2020	<a href="#">Mental health problems and social media exposure during COVID-19 outbreak</a>	PLoS One / Research article	<ul style="list-style-type: none"> <li>• The prevalence of depression, anxiety and combination of depression and anxiety (CDA) was 48.3% (95%CI: 46.9%-49.7%), 22.6% (95%CI: 21.4%-23.8%) and 19.4% (95%CI: 18.3%-20.6%) during COVID-19 outbreak in Wuhan, China.</li> <li>• Social media use was positively associated with high odds of anxiety.</li> </ul>
13.04.2020	<a href="#">Are we facing a crashing wave of neuropsychiatric sequelae of COVID-19? Neuropsychiatric symptoms and potential immunologic mechanisms</a>	Brain, Behavior, and Immunity / Article	<ul style="list-style-type: none"> <li>• The authors discuss currently available evidence of COVID-19 related neuropsychiatric sequelae while drawing parallels to past viral pandemic-related outcomes.</li> <li>• Past pandemics have demonstrated that diverse types of neuropsychiatric</li> </ul>

			symptoms, such as encephalopathy, mood changes, psychosis, neuromuscular dysfunction, or demyelinating processes, may accompany acute viral infection, or may follow infection by weeks, months, or longer in recovered patients.
13.04.2020	<a href="#">Grief During the COVID-19 Pandemic: Considerations for Palliative Care Providers</a>	Journal of Pain and Symptom Management / Article	<ul style="list-style-type: none"> <li>The authors describe the relationship of the COVID-19 pandemic to anticipatory grief, disenfranchised grief, and complicated grief for individuals, families, and their providers and discuss countering grief through communication, advance care planning, and self-care practices.</li> </ul>
13.04.2020	<a href="#">A Longitudinal Study on the Mental Health of General Population during the COVID-19 Epidemic in China</a>	Brain, Behavior, and Immunity / Article	<ul style="list-style-type: none"> <li>This longitudinal study surveyed the general population twice - during the initial outbreak, and the epidemic's peak four weeks later, surveying demographics, symptoms, knowledge, concerns, and precautionary measures against COVID-19.</li> </ul>
04.04.2020	<a href="#">Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak</a>	Psychiatry Research / Article	<ul style="list-style-type: none"> <li>Adults who did not work in the outbreak were worse in mental and physical health, distress and life satisfaction.</li> <li>The identification of whose health and wellbeing is more affected by the disruption enables more targeted assistance.</li> <li>The early evidence from China can help countries that consider implementing confinement policies to contain COVID-19.</li> </ul>
09.04.2020	<a href="#">Top concerns of tweeters during the COVID-19 pandemic: A surveillance study</a>	Journal of Medical Internet Research / Accepted manuscript	<ul style="list-style-type: none"> <li>Social media provides an opportunity to directly communicate health information to the public.</li> <li>There is also a need for a more proactive and agile public health presence on social media to combat the spread of fake news.</li> </ul>
08.04.2020	<a href="#">Assessing the risks of "infodemics" in response to COVID-19 epidemics</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>The authors analysed worldwide twitter messages in 64 languages and found that unreliable and low-quality information tended to occur before epidemics, and once countries were exposed to epidemics, there was a shift to more reliable information.</li> </ul>

### Miscellaneous

Publication Date	Title/URL	Journal/Article type	Digest
12.04.2020	<a href="#">Organ Donation During the Coronavirus Pandemic: An Evolving Saga in Uncharted Waters</a>	Transplant International / Letter to the editor	<ul style="list-style-type: none"> <li>Donation is discouraged for asymptomatic individuals who have been in a COVID-19-affected area in the last 28 days.</li> </ul>
16.04.2020	<a href="#">The use of UV fluorescent powder for COVID-19 airway management simulation training</a>	Anaesthesia / Article	<ul style="list-style-type: none"> <li>With the recognition that aerosol generating procedures are of particular importance to practice due to their high risk of virus transmission, the authors offer an additional tool for COVID-19 airway simulation training that helped</li> </ul>

			consolidate learning and motivate change to practice in hospitals across Vancouver.
10.04.2020	<a href="#">Rapid Implementation of Inpatient Telepalliative Medicine Consultations during COVID-19 Pandemic</a>	Journal of Pain and Symptom Management / Journal pre-proof	<ul style="list-style-type: none"> <li>The authors describe their rapid and ongoing implementation of tele palliative medicine consultation for inpatient palliative care teams and discuss lessons learned and recommendations for programs considering similar care models.</li> </ul>
16.04.2020	<a href="#">Kidney transplant programmes during the COVID-19 pandemic</a>	The Lancet Respiratory Medicine / Correspondence	<ul style="list-style-type: none"> <li>The authors suggest caution in planning transplant procedures, as SARS-CoV-2 infection could be missed in both donors and recipients who are asymptomatic owing to the sensitivity issues with the RT-PCR test.</li> <li>Insufficient evidence is available to consider kidney transplantation as a safe procedure in COVID-19 pandemic areas.</li> <li>In emergency situations—e.g., in cases of no vascular access, unfeasible dialysis, or a hyperimmune state—the benefits might outweigh the risks of a kidney transplant.</li> </ul>
08.04.2020	<a href="#">Innovation in Response to the COVID-19 Pandemic Crisis</a>	Academic Medicine: Journal of the Association of American Medical Colleges / Invited commentary	<ul style="list-style-type: none"> <li>The author considers the implications of exemplary innovations-virtual care, hospital at home, advances in diagnosis and therapy, virtual learning, and virtual clinical learning-for regulators, academic medical centres, faculty, and students.</li> </ul>

## Modelling

Publication Date	Title/URL	Journal/Article type	Digest
16.04.2020	<a href="#">Modelling data on COVID-19 in Ireland, as presented at the Department of Health press briefing on Thursday 16 April 2020 by Professor Philip Nolan.</a>	Department of Health, Ireland	<ul style="list-style-type: none"> <li>The linked slides were presented and explained by Professor Philip Nolan, Chair of the Irish Epidemiological Modelling Advisory Group (IEMAG), at the press briefing on 16 April 2020.</li> <li>The IEMAG intends to publish in due course a more technical report outlining the assumptions and methodologies involved.</li> </ul>
16.04.2020	<a href="#">Potential lethal outbreak of coronavirus disease (COVID-19) among the elderly in retirement homes and long-term facilities, France, March 2020</a>	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> <li>The authors present the impact of worst-case scenarios in French institutions using a specific age structure and case–age fatality ratios.</li> <li>The death toll could equal the yearly death toll caused by seasonal influenza in those older than 65 years or could largely exceed that, depending on the final attack rate and proportion of infected institutions.</li> </ul>
16.04.2020	<a href="#">Estimating the Maximum Capacity of COVID-19 Cases Manageable per Day Given a Health Care System's Constrained Resources</a>	Annals of Internal Medicine / Letters	<ul style="list-style-type: none"> <li>Outputs from this tool allow planners to examine how increases in acute and critical resources available for patients with COVID-19 can affect health care system sustainability.</li> </ul>

16.04.2020	<a href="#">Failure in initial stage containment of global COVID-19 epicenters</a>	Journal of Medical Virology / Research article	<ul style="list-style-type: none"> <li>• While the initial data in Asian countries are encouraging with respect to case development at the initial stage, the opposite is true for European countries.</li> <li>• The authors suggest disease management in the two weeks following first reported cases is of utmost importance.</li> </ul>
10.03.2020	<a href="#">Isolation and contact tracing can tip the scale to containment of COVID-19 in populations with social distancing</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• A transmission model is described, looking at what conditions containment or slowing down of COVID-19 is possible by isolation and contact tracing in settings with various levels of social distancing.</li> <li>• In a situation with social distancing, contact tracing can act synergistically and tip the scale towards containment, and can therefore be a tool for controlling COVID-19 epidemics as part of an exit strategy from current lockdown measures.</li> </ul>
06.04.2020	<a href="#">Analysing and comparing the COVID-19 data: The closed cases of Hubei and South Korea, the dark March in Europe, the beginning of the outbreak in South America</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• Using Hubei's data as a basis of analysis, the authors have studied the spreading rate of COVID-19 and modelled the epidemic curve for 10 European countries. The final TCCpM curves for Italy and Lombardia are provided.</li> </ul>
10.02.2020	<a href="#">Beyond R<sub>0</sub>: Heterogeneity in secondary infections and probabilistic epidemic forecasting</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• The authors show how to predict outbreak size using estimates of the distribution of secondary infections, leveraging both its average R<sub>0</sub> and the underlying heterogeneity.</li> <li>• They highlight the critical need for contact tracing during emerging infectious disease outbreaks and the need to look beyond R<sub>0</sub> when predicting epidemic size.</li> </ul>
22.03.2020	<a href="#">Using early data to estimate the actual infection fatality ratio from COVID-19 in France</a>	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> <li>• The main objective was to estimate the actual number of people infected with COVID-19 during the observation window in France and to deduce the IFR.</li> <li>• The final IFR of 0.8% (95%-CI: 0.45-1.25) is consistent with previous findings in China (0.66%) and in the UK (0.9%) and lower than the value previously computed on the Diamond Princess cruise ship data (1.3%).</li> </ul>

#### Guidance, consensus statements and hospital resources

Publication Date	Title/URL	Journal/Article type
17.04.2020	<a href="#">Report 15 - Strengthening hospital capacity for the COVID-19 pandemic</a>	Imperial College / Report
11.04.2020	<a href="#">Evidence Based Management Guideline for the COVID-19 Pandemic - Review article</a>	International Journal of Surgery / Review - journal pre-proof
01.04.2020	<a href="#">Infection Control in the Medical Imaging Department During the COVID-19 Pandemic</a>	Journal of Medical Imaging and Radiation Sciences / Letter to the editor

10.04.2020	<a href="#">Novel Approach to Reduce Transmission of COVID-19 During Tracheostomy</a>	Journal of the American College of Surgeons / Journal pre-proof
16.04.2020	<a href="#">How to avoid nosocomial spread during Tracheostomy for Covid-19 patients</a>	Head & Neck / Article
16.04.2020	<a href="#">Finding Ways to Reduce Coronavirus Exposure During Dialysis</a>	JAMA / Medical News & Perspectives
13.04.2020	<a href="#">COVID-19 pandemic will have a long-lasting impact on the quality of cirrhosis care</a>	Journal of hepatology / Article
10.04.2020	<a href="#">Peri-operative Considerations in Urgent Surgical Care of Suspected and Confirmed COVID-19 Orthopedic Patients: Operating rooms protocols and recommendations in the Current COVID-19 Pandemic</a>	The Journal of the American Academy of Orthopaedic Surgeons / Guideline summary
03.04.2020	<a href="#">Operational Strategies to Prevent Coronavirus Disease 2019 (COVID-19) Spread in Radiology: Experience From a Singapore Radiology Department After Severe Acute Respiratory Syndrome</a>	Journal of the American College of Radiology : JACR / Guidance
16.04.2020	<a href="#">Clinical Best Practice Advice for Hepatology and Liver Transplant Providers During the COVID-19 Pandemic: AASLD Expert Panel Consensus Statement</a>	Hepatology / Article
16.04.2020	<a href="#">Management of Infantile Hemangiomas during the COVID Pandemic</a>	Pediatric Dermatology / Consensus recommendations
16.04.2020	<a href="#">Endoscopy in inflammatory bowel diseases during the COVID-19 pandemic and post-pandemic period</a>	The Lancet Gastroenterology & Hepatology / Rapid review
16.04.2020	<a href="#">A Framework for Prioritizing Head and Neck Surgery during the COVID-19 Pandemic</a>	Head & Neck / Article
11.04.2020	<a href="#">Doing the right thing for the right reason when treating ruptured abdominal aortic aneurysms in the COVID-19 era</a>	Journal of Vascular Surgery / Journal pre-proof
11.04.2020	<a href="#">Triage of scarce critical care resources in COVID-19: an implementation guide for regional allocation An expert panel report of the Task Force for Mass Critical Care and the American College of Chest Physicians</a>	Chest / Expert panel report - pre-proof
13.04.2020	<a href="#">TELEUROLOGY IN THE TIME OF COVID-19 PANDEMIC: HERE TO STAY?</a>	Urology / Article
16.04.2020	<a href="#">Potential Neurologic and Oncologic Implications of the Novel Coronavirus</a>	Neuro-oncology / Letter to editor
16.04.2020	<a href="#">Hospital Preparedness for COVID-19: A Practical Guide from a Critical Care Perspective</a>	American Journal of Respiratory and Critical Care Medicine / Article

### Overviews, comments and editorials

Publication Date	Title/URL	Journal/Article type
16.04.2020	<a href="#">Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity</a>	The Lancet / Comment
16.04.2020	<a href="#">COVID-19: time to plan for prompt universal access to diagnostics and treatments</a>	The Lancet Global Health / Comment
16.04.2020	<a href="#">Why health promotion matters to the COVID-19 pandemic, and vice versa</a>	Health Promotion International /Editorial
18.04.2020	<a href="#">COVID-19 exacerbating inequalities in the US</a>	The Lancet / World Report
16.04.2020	<a href="#">Coronavirus disease (COVID-19): a scoping review</a>	Eurosurveillance / Review

11.04.2020	<a href="#">Neonatal COVID-19: little evidence and the need for more information</a>	Jornal de pediatria / Editorial
16.04.2020	<a href="#">Rheumatic disease and COVID-19: initial data from the COVID-19 Global Rheumatology Alliance provider registries</a>	The Lancet Rheumatology / Comment
18.04.2020	<a href="#">Offline: CoHERE—a call for a post-pandemic health strategy</a>	The Lancet / Comment
18.04.2020	<a href="#">Flooded by the torrent: the COVID-19 drug pipeline</a>	The Lancet / World Report
18.04.2020	<a href="#">COVID-19 in the USA: a question of time</a>	The Lancet / Editorial
18.04.2020	<a href="#">Sustaining containment of COVID-19 in China</a>	The Lancet / Editorial
16.04.2020	<a href="#">Unity amidst uncertainty: COVID-19 pandemic fosters collaboration in rheumatology community</a>	The Lancet Rheumatology / Editorial
16.04.2020	<a href="#">Pandemic Surge Models in the Time of Severe Acute Respiratory Syndrome Coronavirus-2: Wrong or Useful?</a>	Annals of Internal Medicine / Editorial

**Produced by the PHE COVID-19 Literature Digest Team**

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