



International EPI Cell Daily Evidence Digest – 04/05/2020

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Please note that we are including preprints (**highlighted in red**), which are preliminary reports of work that have NOT been peer-reviewed.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
04.05.2020	A human monoclonal antibody blocking SARS-CoV-2 infection	Nature Communications / Article	<ul style="list-style-type: none">• The authors report a human monoclonal antibody that neutralizes SARS-CoV-2 (and SARS-CoV) in cell culture.• This cross-neutralizing antibody targets a communal epitope on these viruses and may offer potential for prevention and treatment of COVID-19.

02.05.2020	Longitudinal Change of SARS-Cov2 Antibodies in Patients with COVID-19	J Infect Dis / Article	<ul style="list-style-type: none"> • Retrospective study conducting an antibody assay to detect COVID-19 envelope protein E and nucleocapsid protein N antigen. • Of 112 patients with symptoms of fever, cough, fatigue, myalgia, and diarrhoea, 58 (51.79%) were positive for both IgM and IgG, 7 (6.25%) were negative for both antibodies, 1 (0.89%) was positive for only IgM, and 46 (41.07%) were positive for only IgG. • IgM antibody appeared within a week post disease onset, and lasted for one month and gradually decreased, while IgG antibody was produced 10 days after infection, and lasted for a longer time. However, no significant difference in level of IgM and IgG antibody between positive and negative patients of nucleic acid test after treatment was found.
01.05.2020	Kinetics of SARS-CoV-2 specific IgM and IgG responses in COVID-19 patients	Emerg Microbes Infect / Article	<ul style="list-style-type: none"> • Report of a study investigating IgM and IgG responses against SARS-CoV-2 nucleocapsid (N) and spike (S) protein after symptom onset in the intensive care unit (ICU) and non-ICU patients. • S-IgG was significantly higher in non-ICU patients than in ICU patients in the third week. In contrast, N-IgG was significantly higher in ICU patients than in non-ICU patients. The increase of S-IgG positively correlated with the decrease of C-reactive protein (CRP) in non-ICU patients. N and S specific IgM and IgG increased gradually after symptom onset and can be used for detection of SARS-CoV-2 infection.
01.05.2020	Early detection of SARS-CoV-2 antibodies in COVID-19 patients as a serologic marker of infection	Clin Infect Dis / Research article	<ul style="list-style-type: none"> • Using CHO cell expressed full length SARS-CoV-2 S1 protein as capturing antigen, a COVID-19/SARS-CoV-2 S1 serology ELISA kit was developed and validated with negative samples collected prior to the outbreaks or during the outbreak, and positive samples from patients confirmed with COVID-19. • The specificity of the ELISA kit was 97.5%, as examined against total 412 normal human samples. The sensitivity was 97.1% by testing against 69 samples from hospitalized and/or recovered COVID-19 patients. The overall accuracy rate reached 97.3%.
30.04.2020	Beyond the Spike: identification of viral targets of the antibody response to SARS-CoV-2 in COVID-19 patients	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Using Luciferase Immunoprecipitation System (LIPS), authors detected antibody responses in COVID-19 patients to 11 of 15 SARS-CoV-2 antigens tested, identifying novel immunogenic targets. • COVID-19 patients produce antibodies not just to Spike protein but other structural and non-structural proteins; unknown if confer protection. • Combination of 3 SARS-CoV-2 antibody LIPS assays, i.e. N, ORF3b, and ORF8, sufficient to identify all COVID-19 patients in cohort even at early time-points of illness, whilst Spike alone failed.

28.04.2020	A possible role of immunopathogenesis in COVID-19 progression	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • 53 patients with moderate, severe, and critical COVID-19; comparing quantitative, phenotypic, functional characteristics of circulating immune cells, SARS-CoV-2 antigen specific T-cells, and humoral immunity. • Data demonstrate that depletion of activated memory phenotype circulating T-cells and a strong SARS-CoV-2-specific cellular and humoral immunity are associated with COVID-19 disease severity. This counter-intuitive finding may have important implications for diagnostic, therapeutic and prophylactic COVID-19 management.
01.05.2020	Can we predict the severity of COVID-19 with a routine blood test?	Pol Arch Intern Med / Overview	<ul style="list-style-type: none"> • A total of 15 studies with 3090 COVID-19 patients were included in this analysis. • Severe patients had more neutrophils, higher NLR level, and fewer lymphocytes than non-severe patients with COVID-19. Measurement of these markers might assist clinicians to monitor and predict the severity and prognosis of COVID-19.
01.05.2020	Olfactory and Gustatory Dysfunction in Coronavirus Disease 19 (COVID-19)	Clin Infect Dis / Research article	<ul style="list-style-type: none"> • Cross-sectional study finding that two-thirds of European patients with polymerase chain reaction confirmed COVID-19 reported olfactory and gustatory dysfunction, indicating the significance of this history in the early diagnostics.
27.04.2020	Predictive value of sudden olfactory loss in the diagnosis of COVID-19	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • 500 patients with symptoms of a common cold presenting at a corona testing centre completed a standardized diagnostic questionnaire. 69 of 500 presented with olfactory loss. • 22 of those 69 tested positive for COVID-19 versus twelve patients without olfactory loss, resulting in a frequency of 64.7% for the symptom sudden smell loss in COVID-19 patients. Compared to COVID-19 patients without smell loss, they were significantly younger and less severely affected. • By excluding patients with a blocked nose, the symptom sudden smell loss can be attested a high specificity (97%) and a sensitivity of 65% with a PPV of 63% and NPV of 97% for COVID-19.
26.04.2020	High frequency of SARS-CoV-2 RNAemia and association with severe disease	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Study frequency of SARS-CoV-2 RNA in plasma (RNAemia) and linked clinical severity of COVID-19 for 85 consecutive COVID-19 patients - RNAemia detected in 28/85 (32.9%), including 22/28 (78.6%) who required hospital admission; more frequent in individuals who developed severe disease including ICU transfer (32.1% vs 14.0%; p=0.05), mechanical ventilation (21.4% vs 3.5%; p=0.01) and 30-day all-cause mortality (14.3% vs 0%; p=0.01). • High proportion of SARS-CoV-2 RNAemia, and association with clinical severity suggesting potential utility of plasma viral testing as a prognostic indicator for COVID-19.

27.04.2020	High rate of increased level of plasma Angiotensin II and its gender difference in COVID-19: an analysis of 55 hospitalized patients with COVID-19 in a single hospital, WuHan, China	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Of 55 COVID-19 patients, 34 (61.8%) had an increased level of angiotensin II. Severity of COVID-19 and male positively related with level of angiotensin II. Gender differences in angiotensin II level might indicate less loss of ACE2 in female patients.
27.04.2020	Clinical classifiers of COVID-19 infection from novel ultra-high-throughput proteomics	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Authors describe a set of COVID-19 clinical classifiers discovered using a newly designed low-cost high-throughput mass spectrometry-based platform; report 27 biomarkers that distinguish mild and severe forms of COVID-19, some with potential as therapeutic targets. • These proteins highlight the role of complement factors, the coagulation system, inflammation modulators as well as pro-inflammatory signalling upstream and downstream of Interleukin 6.
30.04.2020	Status of SARS-CoV-2 in cerebrospinal fluid of patients with COVID-19 and stroke	J Neurol Neurosurg Psychiatry / Article	<ul style="list-style-type: none"> • Present two patients with covid-19 and concurrent neurological symptoms. • Report shows that patients' CSF may be devoid of viral particles even when they test positive for covid-19 on a nasal swab. Whether SARS-CoV-2 is present in CSF may depend on the systemic disease severity and the degree of the virus' nervous tissue tropism and should be examined in future studies.
30.04.2020	Admission Hyperglycemia and Radiological findings of SARS-Cov2 in patients with and without Diabetes	Diabetes Res Clin Pract / Article	<ul style="list-style-type: none"> • With this retrospective analysis, the authors report for the first time that hyperglycaemia on day-1 is the best predictor of radiographic imaging of SARS-Cov2, regardless of the past medical history of diabetes.
05.01.2020	Functional pathways in respiratory tract microbiome separate COVID-19 from community-acquired pneumonia patients	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Authors introduce a comparative functional analysis of bronchoalveolar lavage fluid of eight COVID-19, 25 community-acquired pneumonia (CAP) patients and 20 healthy controls. • Resulting functional profiles clearly separate the cohorts; distinct pathway signatures in respiratory tract microbiome consistently distinguishing COVID-19 patients. These include increased vitamin, drug, nucleotide, and energy metabolism during SARS-CoV-2 infection, contrasted with decreased amino acid and carbohydrate metabolism.
01.05.2020	Heat inactivation of the Severe Acute Respiratory Syndrome Coronavirus 2	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Supernatants of cells infected with SARS-CoV-2, nasopharyngeal and sera samples containing SARS-CoV-2 were submitted to heat inactivation for various periods of time • SARS-CoV-2 could be inactivated in less than 30 minutes, 15 minutes and 3 minutes at 56 C, 65 C and 95 C respectively. Inform protocols for handling of virus in biosafety conditions.
28.04.2020	Failure of the cobas® SARS-CoV-2 (Roche) E-gene assay is associated	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Authors report the identification of a C-to-T transition at position 26340 of the SARS-CoV-2 genome which is associated with failure of the cobas®SARS-

	with a C-to-T transition at position 26340 of the SARS-CoV-2 genome		<p>CoV-2 E-gene assay; variant detected in four health care workers from same team. Examination of GISAID showed this mutation has arisen independently on three occasions.</p> <ul style="list-style-type: none"> • Necessity of monitoring SARS-CoV-2 for emergence of SNPs that adversely affect RT-PCRs used in diagnostics. Argues two regions targeted in RT-PCRs to avoid false negatives.
25.04.2020	Performance & Quality Evaluation of Marketed COVID-19 RNA Detection Kits	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Evaluated 8 Nucleic Acid qPCR Kits approved in China (some also in US and EU). Half lack 1:1 linear relationship for virus RNA copy: qPCR signal. Of the 4 with linear response, 2 demonstrated sensitivity at 1 Copy viral RNA/Reaction, suitable for early detection of virus infection. • Study provides an effective method to assess and compare performance quality of all COVID-19 nucleic acid testing kits, globally.
28.04.2020	Molecular detection of SARS-CoV-2 using a reagent-free approach	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Fomsgaard et al recently presented results using heat-processing of respiratory samples prior to RT-qPCR as an economical method enabling an extremely fast streamlining of the processes at virtually no cost. • Here, the authors present their results using this method and highlight some major pitfalls that diagnostics laboratories should be aware of before proceeding with this technique.
02.05.2020	Evaluation of COVID-19 RT-qPCR test in multi-sample pools	Clin Infect Dis / Article	<ul style="list-style-type: none"> • Description of a sample pooling method for RT-qPCR SARS-CoV-2 testing, which uses the standard protocols, reagents and equipment and can therefore be applied immediately in current clinical testing laboratories. • This could allow expanding current screening capacities.
28.04.2020	FACT- Frankfurt adjusted COVID-19 testing- a novel method enables high-throughput SARS-CoV-2 screening without loss of sensitivity	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Factors limiting the output of laboratories interfere with the effectiveness of public health measures. Conserving reagents by pooling samples in low-probability settings is proposed, but may cause dilution and loss of sensitivity. • The authors tested an alternate approach by simultaneously incubating multiple respiratory swabs in a single tube. • The proposed protocol did not cause a significant loss in analytic or diagnostic sensitivity compared to single sample testing in multiple setups. It reduced the amount of reagents needed by up to 40%, and also reduced hands-on time. This method could enhance testing efficiency, especially in groups with a low pretest-probability, such as systemically relevant professional groups.
30.04.2020	The novel coronavirus (COVID-19) pneumonia with negative detection of viral ribonucleic acid from nasopharyngeal swabs: a case report	BMC Infect Dis / Case report	<ul style="list-style-type: none"> • This case report described an effective supportive medication scheme to treat SARS-COV-2 infected patient and emphasized the necessity of detection of the viral genome using BALF samples and its significance in the diagnosis and prognosis of the disease.

01.05.2020	SARS-CoV-2 productively infects human gut enterocytes	Science / Research article	<ul style="list-style-type: none"> • The SARS-CoV-2 receptor ACE2 is highly expressed on differentiated enterocytes. In human small intestinal organoids (hSIOs), enterocytes were readily infected by SARS-CoV and SARS-CoV-2 as demonstrated by confocal- and electron-microscopy. Consequently, significant titres of infectious viral particles were detected. • mRNA expression analysis revealed strong induction of a generic viral response program. • Hence, intestinal epithelium supports SARS-CoV-2 replication, and hSIOs serve as an experimental model for coronavirus infection and biology.
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Genomics

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	Structural basis for inhibition of the RNA-dependent RNA polymerase from SARS-CoV-2 by remdesivir	Science / Article	<ul style="list-style-type: none"> • The authors report the cryo-EM structure of the SARS-CoV-2 RdRp either in the apo form at 2.8 Å resolution or in complex with a 50-base template-primer RNA and Remdesivir at 2.5 Å resolution. • The complex structure reveals that the partial double-stranded RNA template is inserted into the central channel of the RdRp where Remdesivir is covalently incorporated into the primer strand at the first replicated base pair and terminates chain elongation. • The structures provide critical insights into the mechanism of viral RNA replication and a rational template for drug design to combat the viral infection.
02.05.2020	Release of potential pro-inflammatory peptides from SARS-CoV-2 spike glycoproteins in neutrophil-extracellular traps	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Neutrophil activation seems crucial in initiation and perpetuation of exacerbated lung inflammation. This in silico study tried to identify potential proinflammatory inducing peptides (PIPs) produced by the action of the elastase released in neutrophil-extracellular traps over SARS-CoV-2 particles. • Nine potential PIPs exclusive from the SARS-CoV-2, showing homology against T cell recognition epitopes. 78% produced by the enzymatic cleavage on the spike glycoproteins, suggesting that high PIP concentrations might be released following SARS-CoV-2 huge replication rate. These PIPs might play a role in the exacerbated inflammatory response observed in some patients.
05.01.2020	Comprehensive characterization of N- and O- glycosylation of SARS-CoV-2 human receptor angiotensin converting enzyme 2	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • The S protein of SARS-CoV-2 binds to the human angiotensin converting enzyme 2 (hACE2) for the entry and the serine protease TMPRSS2 for S protein priming. • Authors describe the quantitative glycosylation mapping on hACE2

			expressed on human cells by both glycoproteomics and glycomics; observed heavy glycan occupancy at all seven possible N-glycosylation sites and surprisingly, observed three novel O-glycosylation sites.
30.04.2020	Comparative transcriptome analysis reveals the intensive early-stage responses of host cells to SARS-CoV-2 infection	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Analysis showed rapid growth of virus accompanied by an early intensive response of host genes. Cytokine and antiviral responses triggered by SARS-CoV and MERS-CoV only observed in late stage of infection. • Early rapid host responses potentially attributed to high efficiency of SARS-CoV-2 entry into host cells, underscored by evidence of up-regulated gene expression of TPRMSS2 soon after infection.

Epidemiology and clinical - children and pregnancy

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	Children with Covid-19 in pediatric emergency departments in Italy	New England Journal of Medicine / Correspondence	<ul style="list-style-type: none"> • The Coronavirus Infection in Paediatric Emergency Departments (CONFIDENCE) study involved a cohort of 100 Italian children younger than 18 years of age with Covid-19 confirmed by reverse-transcriptase–polymerase-chain-reaction testing of nasal or nasopharyngeal swabs who were assessed between March 3 and March 27 in 17 paediatric emergency departments. • The incidence of transmission through apparent exposure to a family cluster was lower than that in other cohorts, possibly because of the late lockdown in Italy.
28.04.2020	Clinical and Transmission Dynamics Characteristics of 406 Children with Coronavirus Disease 2019 in China: A Review	Journal of Infection / Review - journal pre-proof	<ul style="list-style-type: none"> • By searching Chinese and English literature, the data of 406 children with COVID-19 in China were analysed. • There are more children than adults with asymptomatic infections, milder conditions, faster recovery, and a better prognosis. • COVID-19 screening is needed in the paediatric fever clinic, and respiratory and digestive tract nucleic acid tests should be performed.
28.04.2020	Preparedness and response to Pediatric CoVID-19 in European Emergency Departments: a survey of the REPEM and PERUKI networks	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • 102 centres from 18 countries completed survey identified variability and gaps in preparedness and response to the COVID-19 epidemic across European referral Emergency Departments (EDs) for children. • Early availability of a documented contingency plan, provision of simulation training, appropriate use of PPE, and appropriate isolation facilities emerged as key factors.

02.05.2020	Neonatal Late Onset Infection with Severe Acute Respiratory Syndrome Coronavirus 2	Am J Perinatol / Short communication	<ul style="list-style-type: none"> • Observational study aiming to evaluate post discharge SARS-CoV-2 status of new-borns to mothers with COVID-19 in pregnancy that, at birth, were negative to SARS-CoV-2. • Of seven pregnant women with documented SARS-CoV-2 infection, one woman had a spontaneous abortion at 8 weeks of gestational age, four women recovered and were still in follow-up, and two women delivered. Two new-borns were enrolled in the study. At birth and 3 days of life, new-borns were negative to SARS-CoV-2. At 2-week follow-up, one new-born tested positive although asymptomatic. • These findings highlight the importance of follow-up of new-borns to mothers with COVID-19 in pregnancy, since they remain at risk of contracting the infection in the early period of life and long-term consequences are still unknown.
02.05.2020	COVID-19 and Neonatal Respiratory Care: Current Evidence and Practical Approach	Am J Perinatol / Review	<ul style="list-style-type: none"> • Review of the current evidence regarding COVID-19 perinatal transmission, respiratory outcomes of neonates born to mothers with COVID-19 and infants with documented SARS-CoV-2 infection, and the evidence for using different respiratory support modalities and aerosol-generating procedures in this specific population. • Currently, the recommended respiratory approach for infants with suspected or confirmed infection is not evidence based but should include all routinely used types of support, with the addition of viral filters, proper personal protective equipment, and placement of infants in isolation rooms, ideally with negative pressure.

Epidemiology and clinical - risk factors

Publication Date	Title/URL	Journal/ Article type	Digest
30.04.2020	Obesity could shift severe COVID-19 disease to younger ages	Lancet / Correspondence	<ul style="list-style-type: none"> • The authors conclude that in populations with a high prevalence of obesity, COVID-19 will affect younger populations more than previously reported. • Public messaging to younger adults, reducing the threshold for virus testing in obese individuals, and maintaining greater vigilance for this at-risk population should reduce the prevalence of severe COVID-19 disease.
01.05.2020	Cardiovascular disease, drug therapy, and mortality in Covid-19	New England Journal of Medicine / Article	<ul style="list-style-type: none"> • This study confirmed previous observations suggesting that underlying cardiovascular disease is associated with an increased risk of in-hospital death among patients hospitalized with Covid-19. • These results did not confirm previous concerns regarding a potential

			harmful association of ACE inhibitors or ARBs with in-hospital death in this clinical context.
01.05.2020	Renin-Angiotensin-Aldosterone System Blockers and the Risk of Covid-19	New England Journal of Medicine / Case control study	<ul style="list-style-type: none"> • Large, population-based study which found that the use of ACE inhibitors and ARBs was more frequent among patients with Covid-19 than among controls because of their higher prevalence of cardiovascular disease. However, there was no evidence that ACE inhibitors or ARBs affected the risk of COVID-19.
01.05.2020	Renin-Angiotensin-Aldosterone System Inhibitors and Risk of Covid-19	New England Journal of Medicine / Article	<ul style="list-style-type: none"> • The authors assessed the relation between previous treatment with ACE inhibitors, angiotensin-receptor blockers, beta-blockers, calcium-channel blockers, or thiazide diuretics and the likelihood of a positive or negative result on Covid-19 testing as well as the likelihood of severe illness (defined as intensive care, mechanical ventilation, or death) among patients who tested positive. Using Bayesian methods, they compared outcomes in patients who had been treated with these medications and in untreated patients, overall and in those with hypertension. • There was no association between any single medication class and an increased likelihood of a positive test. None of the medications examined was associated with a substantial increase in the risk of severe illness among patients who tested positive.
01.05.2020	Inhibitors of the renin-angiotensin-aldosterone system and Covid-19	New England Journal of Medicine / Editorial	<ul style="list-style-type: none"> • Professional scientific societies and experts have spoken with one voice in advising that patients should not discontinue ACE inhibitor or angiotensin-receptor blocker (ARB) therapy out of a concern that they are at increased risk for infection, severe illness, or death during the Covid-19 pandemic. • Ultimately, one or more randomized trials will be needed to answer definitively the question of whether ACE inhibitors or ARBs pose a harm to patients with Covid-19.
01.05.2020	Case Fatality Rate of Cancer Patients with COVID-19 in a New York Hospital System	Cancer Discov / Article	<ul style="list-style-type: none"> • A total of 218 COVID-19 positive patients with a malignant diagnosis were identified. A total of 61 (28%) cancer patients died from COVID-19 with a case fatality rate (CFR) of 37% (20/54) for hematologic malignancies and 25% (41/164) for solid malignancies. 6/11 (55%) lung cancer patients died from COVID-19 disease. • Increased mortality was significantly associated with older age, multiple comorbidities, need for ICU support, and elevated levels of D-Dimers, LDH and lactate on multivariable analysis. • Age-adjusted CFRs in cancer patients compared to non-cancer patients at this institution and NYC reported a significant increase in case fatality for cancer patients. These data suggest the need for proactive strategies to

			reduce likelihood of infection and improve early identification in this vulnerable patient population.
28.04.2020	Systematic investigations of COVID-19 in 283 cancer patients	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Study of 283 COVID-19 patients (50% male; median age, 63.0 years [IQR, 55.0 to 70.0]) with more than 20 cancer types, in 33 designated hospitals for COVID-19 in Hubei province, China. • Current cancer patients exhibited worse outcomes than former patients. Highest mortality in patients receiving recent chemotherapy (33%), surgery (26%), other anti-tumour treatments (19%). • Patients with tumours, especially lymphohematopoietic malignancies (LHM), may have poorer prognosis of COVID-19.
02.05.2020	Longitudinal association between markers of liver injury and mortality in COVID-19 in China	Hepatology / Rapid communication	<ul style="list-style-type: none"> • Multi-centre retrospective cohort study that included 5,771 adult patients with COVID-19 to reveal the hepatic injury related to this disease and its clinical significance. Longitudinal liver function tests were retrospectively analysed and correlated with the risk factors and death. • Common factors associated with elevated liver injury indicators were lymphocyte count decrease, neutrophil count increase, and male gender. Because elevated liver injury indicators, particularly AST, are strongly associated with the mortality risk, this study indicates that these parameters should be monitored during hospitalization.
30.04.2020	Clinical course and outcome of 107 patients infected with the novel coronavirus, SARS-CoV-2, discharged from two hospitals in Wuhan, China	Crit Care / Article	<ul style="list-style-type: none"> • A total of 107 discharged patients with COVID-19 were enrolled. The clinical course of COVID-19 presented as a tri-phasic pattern. • In severe cases, leucocytosis, neutrophilia, and deteriorating multi-organ dysfunction were dominant. By week 3, mild cases had clinically resolved except for lymphopenia. However, severe cases showed persistent lymphopenia, severe acute respiratory dyspnoea syndrome, refractory shock, anuric acute kidney injury, coagulopathy, thrombocytopenia, and death. • A period of 7-13 days after illness onset is the critical stage in the COVID-19 course. Age and male gender were independent risk factors for death of COVID-19.
30.04.2020	Acute myocardial injury is common in patients with covid-19 and impairs their prognosis	Heart / Article	<ul style="list-style-type: none"> • A total of 101 cases were enrolled from Jan to 10 Mar 2020 (average age 49 years, IQR 34-62 years). • Concluded that acute myocardial injury is common in patients with covid-19 and is associated with adverse prognosis.
02.05.2020	Clinical Course of COVID-19 in a Liver Transplant Recipient on Hemodialysis and Response to Tocilizumab Therapy: A Case Report	Am J Transplant / Case report	<ul style="list-style-type: none"> • The authors report the clinical course and management of a liver transplant recipient on haemodialysis, who presented with COVID-19 pneumonia, and despite completing a 5-day course of hydroxychloroquine, later developed marked inflammatory manifestations with rapid improvement after administration of off-label, single-dose tocilizumab.

			<ul style="list-style-type: none"> • They also highlight the role of lung ultrasonography in early diagnosis of the inflammatory phase of COVID-19.
03.05.2020	Risk Factors Associated with Clinical Outcomes in 323 COVID-19 Hospitalized Patients in Wuhan, China	Clin Infect Dis / Article	<ul style="list-style-type: none"> • Retrospective review of 323 hospitalized patients with COVID-19 in Wuhan to identify risk factors associated with clinical outcomes. • Current standard treatments did not show significant improvement in patient outcomes. By univariate logistic regression analysis, 27 risk factors were significantly associated with clinical outcomes. Multivariate regression indicated age over 65 years, smoking, critical disease status, diabetes, high hypersensitive troponin I, leucocytosis and neutrophilia predicted unfavourable clinical outcomes. • By contrast, the administration of hypnotics was significantly associated with favourable outcomes, which was confirmed by survival analysis.
28.04.2020	COVID-19 in people living with human immunodeficiency virus: A case series of 33 patients	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Case series 33 PLWH (people living with HIV) patients with COVID-19. All on antiretroviral treatment; 22 on tenofovir-containing regimen, 4 on protease inhibitor darunavir. • Three of 32 documented died (9%), 91% recovered, 76% classed as mild cases. Indicates no excess morbidity and mortality among PLWH with symptomatic COVID-19.
28.04.2020	Acute limb ischemia in patients with COVID-19 pneumonia	Journal of Vascular Surgery / Journal pre-proof	<ul style="list-style-type: none"> • The incidence of acute limb ischemia (ALI) has significantly increased during COVID-19 pandemic in the Italian Lombardia region. • Successful revascularization was lower than expected which the authors hypothesize is due to a virus-related hypercoagulable state. • The use of prolonged systemic heparin may improve surgical treatment efficacy as well as improve limb salvage and overall mortality.
30.04.2020	Outcomes of COVID-19 in 79 patients with IBD in Italy: an IG-IBD study	Gut / Article	<ul style="list-style-type: none"> • Between 11 and 29 Mar 2020, 79 patients with IBD with COVID-19 were enrolled at 24 IBD referral units. Thirty-six patients had COVID-19-related pneumonia (46%), 22 (28%) were hospitalised, 7 (9%) required non-mechanical ventilation, 9 (11%) required continuous positive airway pressure therapy, 2 (3%) had endotracheal intubation and 6 (8%) died. Four patients (6%) were diagnosed with COVID-19 while they were being hospitalised for a severe flare of IBD. • Active IBD, old age and comorbidities were associated with a negative COVID-19 outcome, whereas IBD treatments were not. Preventing acute IBD flares may avoid fatal COVID-19 in patients with IBD. Further research is needed.
01.05.2020	Radiographic severity index in COVID-19 pneumonia: relationship to age and sex in 783 Italian patients	Radiol Med / Article	<ul style="list-style-type: none"> • Study aiming to retrospectively evaluate correlations between the an experimental chest X-ray (CXR) scoring system for quantifying lung abnormalities and the age or sex of Italian patients infected with SARS-CoV-2.

			<ul style="list-style-type: none"> The CXR score was significantly higher in males than in females only in groups aged 50 to 79 years. A significant correlation was observed between the CXR score and age in both males and females. Males aged 50 years or older and females aged 80 years or older with coronavirus disease 2019 showed the highest CXR score (median ≥ 8).
01.05.2020	Biologics increase the risk of SARS-CoV-2 infection and hospitalization, but not ICU admission and death: real-life data from a large cohort during RED-ZONE declaration	Dermatol Ther / Article	<ul style="list-style-type: none"> Report of a single centre case-control study in Lombardy to assess the impact on biologics in psoriatic patients. With respect to the general population of Lombardy, patients on biologics were at higher risk to be symptomatic for COVID-19, to be self-quarantined at home and hospitalized however not increased risk of ICU admission or death were found.
02.05.2020	2019 Novel Coronavirus Disease (COVID-19) in patients with Inflammatory Bowel Diseases	Aliment Pharmacol Ther / Case series	<ul style="list-style-type: none"> Case series reporting the clinical characteristics, including gastrointestinal symptoms, of COVID-19 in IBD patients, and assessing the risk of COVID-19 in IBD. 12 patients out of 1918 IBD patients were diagnosed with COVID-19 and assessed. IBD patients do not have an increased risk of COVID-19 and associated mortality compared with the general population. In many IBD patients diarrhoea was a presenting symptom, and sometimes, was the only symptom at onset of COVID-19.
30.04.2020	Effect of temperature on the infectivity of COVID-19	Int J Infect Dis / Article	<ul style="list-style-type: none"> Analysis showed a possible association between low temperature and increased risk of COVID-19 infection. Further evaluation would be desirable at a global level.
28.04.2020	Modifiable and non-modifiable risk factors for COVID-19: results from UK Biobank	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> Investigated demographic, lifestyle, socioeconomic, and clinical risk factors, and compared them to risk factors for pneumonia and influenza in UK Biobank. Early data from UK Biobank suggest risk factors for confirmed COVID-19 infection differ from pneumonia, being more common in males than females, in lower SES, and with stronger associations with ethnicity, CV risk markers, prior smoking and adiposity. Findings suggest advocating improvements in lifestyle as an additional measure to reduce the risk of COVID-19, implications for health advice targeted at the public.

Epidemiology and clinical – other

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	COVID-19 presenting with ophthalmoparesis from cranial nerve palsy	Neurology / Case study	<ul style="list-style-type: none"> • Case report of two patients who were diagnosed with COVID-19 after presenting with diplopia and ophthalmoparesis.
30.04.2020	2019 novel coronavirus disease (COVID-19) in hemodialysis patients: a report of two cases	Clin Biochem / Article	<ul style="list-style-type: none"> • Two COVID-19 cases undergoing haemodialysis with chronic renal failure were retrospectively analysed. • The two COVID-19 patients were discharged after a month of hospitalization. The removal of cytokines through blood purification technology may be beneficial for the recovery of COVID-19 patients.
30.04.2020	Clinical characteristics of asymptomatic and symptomatic patients with mild COVID-19	Clin Microbiol Infect / Article	<ul style="list-style-type: none"> • Of the 213 patients with COVID-19, 41 (19.2%) were asymptomatic until admission. Among the remaining patients with mild COVID-19, the most common symptom was cough (40.1% [69/172]), followed by hyposmia (39.5% [68/172]) and sputum (39.5%, [68/172]). Of the 68 patients with hyposmia, 61 (90%) patients had accompanying symptoms such as hypogeusia, nasal congestion, or rhinorrhea. Fever (>37.5 °C) was only observed in 20 (11.6%). • As much as one-fifth of patients with COVID-19 had remained asymptomatic from exposure to admission. Hyposmia was quite frequent among patients with mild COVID-19, whereas fever was not.
28.04.2020	Early viral clearance and antibody kinetics of COVID-19 among asymptomatic carriers	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Study of 56 COVID-19 patients without symptoms at admission and 19 age-matched symptomatic patients. • Young COVID-19 patients seem to be asymptomatic cases with early clearance of SARS-CoV-2 and low levels of IgM generation but high total Ab, IgG and IgA.
13.03.2020	Lack of Reinfection in Rhesus Macaques Infected with SARS-CoV-2	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Rhesus macaques were rechallenged with SARS-CoV-2 during an early recovery phase from initial infection characterized by weight loss, interstitial pneumonia and systemic viral dissemination mainly in respiratory and gastrointestinal tracts. • Results indicated that primary SARS-CoV-2 infection protects from subsequent reinfection.

Infection control

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	Report 19: The potential impact of the COVID-19 epidemic on HIV, TB, and malaria in low- and middle-income countries	Imperial College / Report	<ul style="list-style-type: none"> • COVID-19 has the potential to cause disruptions to health services in different ways; through the health system becoming overwhelmed with COVID-19 patients, through the intervention used to slow transmission of COVID-19 inhibiting access to preventative interventions and services, and through supplies of medicine being interrupted. • The authors aim to quantify the extent to which such disruptions in services for HIV, TB and malaria in high burden low- and middle-income countries could lead to additional loss of life.
01.05.2020	Public Health Measures and the Reproduction Number of SARS-CoV-2	JAMA / Insights	<ul style="list-style-type: none"> • Presents the number of cases in Wuhan, China, following the different infection controls:- Early stage without strong interventions.- Massive migration without strong interventions.- City lockdown, traffic suspension, home quarantine.- Centralized quarantine and treatment, improved medical resources.- Centralized quarantine, universal symptom survey.
02.05.2020	COVID-19: Remaking the social contract	Lancet / Editorial	<ul style="list-style-type: none"> • According to one analysis (http://documents.worldbank.org/curated/en/383541588017733025/Social-Protection-and-Jobs-Responses-to-COVID-19-A-Real-Time-Review-of-Country-Measures-April-24-2020), as of April 23, a staggering 151 countries have planned, introduced, or adapted a total of 684 social protection measures in response to the pandemic.
30.04.2020	Environmental Contamination of SARS-CoV-2 in Healthcare Premises	J Infect / Article	<ul style="list-style-type: none"> • Collected 626 surface swabs within the Zhongnan Medical Centre in Wuhan in the mist of the COVID-19 outbreak between Feb 7 - Feb 27, 2020. • The most contaminated objects were self-service printers (20.0%), desktop/keyboard (16.8%), and doorknob (16.0%). Both hand sanitizer dispensers (20.3%) and gloves (15.4%) were the most contaminated PPE. • The findings emphasize the urgent need to ensure adequate environmental cleaning, strengthen infection prevention training, and improve infection prevention among HCWs during the outbreak of COVID-19.

Treatment

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	Assessment of QT Intervals in a Case Series of Patients With Coronavirus Disease 2019 (COVID-19) Infection Treated With Hydroxychloroquine Alone or in Combination With Azithromycin in an Intensive Care Unit	JAMA Cardiology / Research letter	<ul style="list-style-type: none"> • This study raises safety concerns about the use of hydroxychloroquine with or without azithromycin for patients with COVID-19, particularly when both drugs are administered together. • The finding that QTc intervals increased in more than 90% of patients raises concerns about the widespread use of hydroxychloroquine, with or without azithromycin, to treat COVID-19 in settings where patients cannot be adequately monitored.
01.05.2020	Risk of QT Interval Prolongation Associated With Use of Hydroxychloroquine With or Without Concomitant Azithromycin Among Hospitalized Patients Testing Positive for Coronavirus Disease 2019 (COVID-19)	JAMA Cardiol / Brief report	<ul style="list-style-type: none"> • Cohort study to characterize the risk and degree of QT prolongation in patients with COVID-19 in association with their use of hydroxychloroquine with or without concomitant azithromycin. • Patients who received hydroxychloroquine for the treatment of pneumonia associated with COVID-19 were at high risk of QTc prolongation, and concurrent treatment with azithromycin was associated with greater changes in QTc. Clinicians should carefully weigh risks and benefits if considering hydroxychloroquine and azithromycin, with close monitoring of QTc and concomitant medication usage.
01.05.2020	Hydroxychloroquine, Coronavirus Disease 2019, and QT Prolongation	JAMA Cardiology / Editorial	<ul style="list-style-type: none"> • Opinions vary regarding the optimal dose of hydroxychloroquine and stopping points based on corrected QT (QTc) prolongation. • In patients with COVID-19, there may be greater risk tolerance among clinicians for QTc prolongation and toxicity in patients who are very sick, but at the same time, there may be an increased risk of ventricular arrhythmias because of electrolyte abnormalities, hypoxia, concomitant QT-prolonging medications, and underlying cardiovascular disease. • The risk-benefit trade off of hydroxychloroquine may also depend on whether other drugs with unclear benefit (such as remdesivir and tocilizumab) are available as alternative therapies.
27.04.2020	QT Interval Prolongation and Torsade De Pointes in Patients with COVID-19 treated with Hydroxychloroquine/Azithromycin	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Multi-centre retrospective study of 251 COVID-19 patients treated with Hydroxychloroquine/Azithromycin (HY/AZ); reviewed ECG tracings from baseline, until 3 days after therapy completion, to determine progression of QTc and incidence of arrhythmia and mortality. • QTc prolonged in parallel with increasing drug exposure and incompletely shortened after its completion. Extreme new QTc prolongation to >500 ms, a known marker of high risk for TdP, developed in 15.9% of patients. One patient requiring emergent cardioversion, seven required premature

			<p>termination of therapy.</p> <ul style="list-style-type: none"> • Combination of HY/AZ significantly prolongs the QTc in patients with COVID-19. Prolongation may be responsible for life threatening arrhythmia in form of TdP.
02.05.2020	A Rapid Systematic Review of Clinical Trials Utilizing Chloroquine and Hydroxychloroquine as a Treatment for COVID-19	Acad Emerg Med / Rapid review	<ul style="list-style-type: none"> • There are currently 7 completed clinical trials and 29 registered clinical trials focusing on HCQ or CQ as a therapeutic avenue for COVID-19. Of these, 5/7 trials have shown favourable outcomes for patients using CQ or HCQ and 2/7 have shown no change compared to control. However, all 7 trials carried varying degrees of bias and poor study design. • There is currently not enough data available to support the routine use of HCQ and CQ as therapies for COVID-19.
27.04.2020	Hydroxychloroquine application is associated with a decreased mortality in critically ill patients with COVID-19	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Retrospective study of 568 critically ill COVID-19 patients in Tongji Hospital, Wuhan. All received basic therapy; 48 also received hydroxychloroquine for 7–10 days (200 mg twice per day). • Level of inflammatory cytokine IL-6 lowered from 22.2 (8.3-118.9) pg/mL at start of treatment to 5.2 (3.0-23.4) pg/ml (p<0.05) at end in HCQ group; no change in NHCQ group. • Hydroxychloroquine treatment is significantly associated with a decreased mortality in critically ill COVID-19 patients and attenuated inflammatory cytokine IL-6 level.
01.05.2020	Drug vignettes: Tocilizumab	Oxford COVID-19 Evidence Service / Drug vignette	<ul style="list-style-type: none"> • Tocilizumab has been used to treat cytokine release syndrome due to CAR-T cell therapy. However, its use in COVID-19 is experimental. It should not be used except in the context of clinical trials to establish whether the benefits outweigh the harms of treatment.
01.05.2020	Pilot prospective open, single-arm multicentre study on off-label use of tocilizumab in severe patients with COVID-19	Clin Exp Rheumatol / Research article	<ul style="list-style-type: none"> • Pilot prospective open, single-arm multicentre study on off-label use of tocilizumab (TCZ) involving 63 hospitalised adult patients with severe COVID-19. • A significant improvement in the levels of ferritin, C-reactive protein, D-dimer was observed. The ratio of the partial pressure of oxygen (PaO2) to the fraction of inspired oxygen (FiO2) improved. The overall mortality was 11%; D-dimer level at baseline, but not IL-6 levels were predictors of mortality. TCZ administration within 6 days from admission in the hospital was associated with an increased likelihood of survival. • In hospitalised adult patients with severe COVID-19, TCZ could be a safe option. An improvement in respiratory and laboratory parameters was observed.
02.05.2020	Bacterial and fungal co-infection in individuals with coronavirus: A	Clin Infect Dis / Rapid review	<ul style="list-style-type: none"> • Despite frequent prescription of broad-spectrum empirical antimicrobials in patients with coronavirus associated respiratory infections, there is a

	rapid review to support COVID-19 antimicrobial prescribing		paucity of data to support the association with respiratory bacterial/fungal co-infection. Generation of prospective evidence to support development of antimicrobial policy and appropriate stewardship interventions specific for the COVID-19 pandemic are urgently required.
01.05.2020	Convalescent plasma transfusion for the treatment of COVID-19: Systematic review	J Med Virol / Systematic review	<ul style="list-style-type: none"> • Review of 5 studies reporting convalescent plasma transfusion (CPT) to COVID-19 patients. The main findings from available data are as follows: (1) Convalescent plasma may reduce mortality in critically ill patients (2) Increase in neutralizing antibody titres and disappearance of SARS-CoV-2 RNA was observed in almost all the patients after CPT therapy (3) Beneficial effect on clinical symptoms after administration of convalescent plasma. • Based on the limited scientific data, CPT therapy in COVID-19 patient appears safe, clinically effective and reduces mortality. Well-designed large multi-centre clinical trial studies should be conducted urgently to establish the efficacy of CPT to COVID-19 patients.
01.05.2020	A rational roadmap for SARS-CoV-2/COVID-19 pharmacotherapeutic research and development. IUPHAR review "XXX"	Br J Pharmacol / Review	<ul style="list-style-type: none"> • IUPHAR review identifying opportunities for drug discovery in the treatment of COVID-19 and providing a rational roadmap whereby pharmacology and pharmacologists can mitigate against the global pandemic.
30.04.2020	COVID-19: Therapeutics and Their Toxicities	J Med Toxicol / Review	<ul style="list-style-type: none"> • Reviews the use, mechanism of action, and toxicity of proposed COVID-19 therapeutics.
28.04.2020	Antiviral Activities of Type I Interferons to SARS-CoV-2 Infection	Antiviral Research / In press, journal pre-proof	<ul style="list-style-type: none"> • Results demonstrate the potential efficacy of human Type I IFN in suppressing SARS-CoV-2 infection, a finding which could inform future treatment options for COVID-19.
03.05.2020	Development and validation of a UHPLC-MS/MS method for quantification of the prodrug remdesivir and its metabolite GS-441524: a tool for clinical pharmacokinetics of SARS-CoV-2/COVID-19 and Ebola virus disease	J Antimicrob Chemother / Article	<ul style="list-style-type: none"> • Remdesivir pharmacokinetics and pharmacodynamics in humans are still unexplored, highlighting the need for a precise analytical method for remdesivir and GS-441524 quantification. This study validates a reliable UHPLC-MS/MS method for remdesivir and GS-441524 quantification in human plasma. • The method successfully fulfilled the validation process and it was demonstrated that, when possible, sample thermal inactivation could be a good choice in order to improve biosafety.
02.05.2020	An artificial intelligence system reveals liquiritin inhibits SARS-CoV-2 by mimicking type I interferon	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Employed transcriptional analysis to uncover potential antiviral drugs - liquiritin significantly inhibit replication of SARS-CoV-2 in Vero E6 cells with EC50 = 2.39 µM. Exerts anti-viral function by mimicking type I interferon. • Upregulated genes induced by liquiritin are enriched in GO categories including type I interferon signalling pathway, negative regulation of viral genome replication and etc. In toxicity experiment, no death was observed when treated at dose of 300 mg/kg for a week in ICR mice. All the organ

indexes but liver and serum biochemical indexes were normal after treatment.

Social sciences

Publication Date	Title/URL	Journal/ Article type	Digest
04.05.2020	An e-mental health intervention to support burdened people in times of the COVID-19 pandemic: CoPE It	Journal of Public Health / Article	<ul style="list-style-type: none"> • The e-mental health intervention 'CoPE It' offers manualized, evidence-based psychotherapeutic/psychological support to overcome psychological distress in times of COVID-19. • The aspect of mental health issues, which has been neglected (so far) in times of social isolation and governmental restrictions, now demands innovative and situation-based approaches to support psychological burdened people.
30.04.2020	Using social and behavioural science to support COVID-19 pandemic response	Nat Hum Behav / Perspective	<ul style="list-style-type: none"> • Discuss evidence from a selection of research topics relevant to pandemics, including work on navigating threats, social and cultural influences on behaviour, science communication, moral decision-making, leadership, and stress and coping.
27.04.2020	Communicating with patients and families about difficult matters: A rapid review in the context of the COVID-19 pandemic	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Synthesis of high-quality evidence from actual clinical practice supports recommendations for communicating about difficult matters during and beyond the COVID-19 pandemic. • Identified 11 communication practices including: discussing future indirectly (11/37); discussing future explicitly (7/37) linking to something previously said or done (11/37); using hypothetical scenarios (13/37).

Modelling

Publication Date	Title/URL	Journal/ Article type	Digest
01.05.2020	Report 18: The potential public health impact of COVID-19 on malaria in Africa	Imperial College / Report	<ul style="list-style-type: none"> • Results indicate that if all malaria-control activities are highly disrupted then the malaria burden in 2020 could more than double that in the previous year, resulting in large malaria epidemics across the region. • These will depend on the course of the COVID-19 epidemic and how it interrupts local health system.
21.04.2020	Modelling the pandemic	BMJ / Editorial	<ul style="list-style-type: none"> • Insights from mathematical models are essential for decision making, especially when key characteristics about an outbreak remain unknown.

			<ul style="list-style-type: none"> • But models have well documented limitations—and the modelling community has a responsibility to make these limitations clear, not only to scientific audiences but more importantly to policy makers and the public. • Finally, mathematical models do not include value systems or morals so their outputs must be used cautiously, and with attention to ethics.
03.05.2020	Clinical and laboratory predictors of in-hospital mortality in patients with COVID-19: a cohort study in Wuhan, China	Clin Infect Dis / Article	<ul style="list-style-type: none"> • This study aimed to develop clinical and laboratory mortality-prediction models for patients with COVID-19. • The clinical model developed with age, history of hypertension and coronary heart disease showed AUC of 0.88. The laboratory model developed with age, high-sensitivity C-reactive protein (hsCRP), peripheral capillary oxygen saturation (SpO2), neutrophil and lymphocyte count, D-dimer, aspartate aminotransferase (AST) and glomerular filtration rate (GFR) had a significantly stronger discriminatory power than the clinical model ($p=0.0157$), with AUC of 0.98.
01.05.2020	Mathematical Modeling of Interaction between Innate and Adaptive Immune Responses in COVID-19 and Implications for Viral Pathogenesis	J Med Virol / Research article	<ul style="list-style-type: none"> • Mathematical modelling study to investigate pathogenesis in COVID-19 infection. • The interaction between host innate and adaptive immune responses was found to be a potential cause for the higher severity and mortality in COVID-19 patients. • Stronger adaptive immunity in COVID-19 patients can potentially lead to longer recovery time and more severe secondary complications. Based on the analysis, delaying the onset of adaptive immune responses during early phase of infections may be a potential treatment option for high risk COVID-19 patients. Suppressing the adaptive immune response temporarily and avoiding its interference with the innate immune response may allow the innate immunity to more efficiently clear the virus.
02.05.2020	The first, holistic immunological model of COVID-19: implications for prevention, diagnosis, and public health measures	Pediatr Allergy Immunol / Review	<ul style="list-style-type: none"> • The authors propose a model explaining how the outcome of first, crucial 10-15 days after COVID-19 infection, hangs on the balance between the cumulative dose of viral exposure and the efficacy of the local innate immune response. • This "quantitative and time-sequence dependent" model has several implications for prevention, diagnosis, and therapy of COVID-19 at all ages.
27.04.2020	Population-scale testing can suppress the spread of COVID-19	medRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • Authors propose: (1) testing every individual (2) repeatedly, and (3) self-quarantine of infected individuals. False negative rates up to 15% tolerated if 80% comply with testing every 10 days. • Standard epidemiological model shows by identification and isolation of majority infectious individuals, including asymptomatic, R_0 of SARS-CoV-2 will reduce well below 1.0.

Guidance, consensus statements and hospital resources

Publication Date	Title/URL	Journal/ Article type
30.04.2020	Availability of Telemedicine Services Across Hospitals in the United States in 2018: A Cross-sectional Study	Annals of Internal Medicine / Letters
01.05.2020	Children and young people who are immunocompromised: COVID-19 rapid guideline NG174	NICE / Rapid guideline
01.05.2020	Antibiotics for pneumonia in adults in hospital: COVID-19 rapid guideline NG173	NICE / Rapid guideline
01.05.2020	Hospital-at-home to support COVID-19 surge - time to bring down the walls?	JAMA Health Forum / Insights
30.04.2020	European Task Force on Contact Dermatitis statement on coronavirus 19 disease (COVID-19) outbreak and the risk of adverse cutaneous reactions	J Eur Acad Dermatol Venereol / Letter to the editor
01.05.2020	Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the COVID-19 adult patient group	Med J Aust / Consensus statement
30.04.2020	UK neurology response to the COVID-19 crisis	Clin Med (Lond)
01.05.2020	Identifying rheumatic disease patients at high risk and requiring shielding during the COVID-19 pandemic	Clin Med (Lond) / Guidance

Overviews, comments and editorials

Publication Date	Title/URL	Journal/ Article type
01.05.2020	What questions are priority areas for primary care during the COVID-19 pandemic? A rapid question generation and prioritisation exercise	Oxford COVID-19 Evidence Service / Survey
01.05.2020	Safeguarding cancer care in a post-COVID-19 world	Lancet Oncology / Editorial
01.05.2020	Addressing multiple gastroenterological aspects of COVID-19	Pol Arch Intern Med / Review
01.05.2020	Overcoming the bottleneck to widespread testing: A rapid review of nucleic acid testing approaches for COVID-19 detection	Rna / Rapid review
01.05.2020	Itch in the era of COVID-19 pandemic: an unfolding scenario	Dermatol Ther / Literature review
01.05.2020	Considering the Effects of Microbiome and Diet on SARS-CoV-2 Infection: Nanotechnology Roles	ACS Nano / Perspective
01.05.2020	Consideration of the Aerosol Transmission for COVID-19 and Public Health	Risk Analysis / Commentary
02.05.2020	The use of Google trends for acral symptoms during COVID-19 outbreak in France	J Eur Acad Dermatol Venereol / Letter

Produced by the PHE COVID-19 Literature Digest Team

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