



International EPI Cell Daily Evidence Briefing – 26/03/2020

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

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

Please note that we are including preprints, which are preliminary reports of work that have NOT been peer-reviewed.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

Diagnostics and genomics

Publication Date	Title/URL	Author	Digest
26.03.2020	Coronavirus disease (COVID-19) Community Testing Team in Scotland: A 14-day review, 6 to 20 February 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none">• In response to the outbreak of COVID-19, the authors set up a team to carry out sampling in the community.• This enabled individuals to remain in self-isolation in their own homes and to prevent healthcare settings and services from being overwhelmed by admissions for sampling of suspected cases.• There is evidence that this is a cost effective, safe and necessary service to complement COVID-19 testing in hospitals.
25.03.2020	Viral screening before initiation of biologics in patients with inflammatory bowel disease during the COVID-19 outbreak	Lancet Gastroenterology & Hepatology / Correspondence	<ul style="list-style-type: none">• The authors believe that current recommendations for screening before initiation of biologics should be updated (at least temporarily) to include testing for SARS-CoV-2.• They believe physicians should screen for COVID-19 even if patients are asymptomatic or do not have a history of high-risk travel or contact.

25.03.2020	The role of CT in case ascertainment and management of COVID-19 pneumonia in the UK: insights from high-incidence regions	Lancet Respiratory Medicine / Comment	<ul style="list-style-type: none"> • The observed evolution from pneumonic injury to respiratory death in this disease suggests a pathological pathway that might be amenable to early CT detection, particularly if the patient is scanned 2 or more days after developing symptoms. • Additionally, a negative CT 1 week after the onset of symptoms is reported to have a high negative predictive value for COVID-19 pneumonia.
24.03.2020	Analysis of Serologic Cross-Reactivity Between Common Human Coronaviruses and SARS-CoV-2 Using Coronavirus Antigen Microarray	bioRxiv (not peer-reviewed) / New results	<ul style="list-style-type: none"> • Current practice for diagnosis of SARS-CoV-2 infection relies on PCR testing of nasopharyngeal or respiratory specimens, a testing strategy which likely underestimates the true prevalence of infection. • The authors describe the development of a coronavirus antigen microarray containing immunologically significant antigens from SARS-CoV-2, in addition to SARS-CoV, MERS-CoV, common human coronavirus strains, and other common respiratory viruses. • This array can be used to answer outstanding questions regarding SARS-CoV-2 infection, including whether baseline serology for other coronaviruses impacts disease course, how the antibody response to infection develops over time, and what antigens would be optimal for vaccine development.
23.03.2020	Ultra-Low-Cost Integrated Silicon-based Transducer for On-Site, Genetic Detection of Pathogens	bioRxiv (not peer-reviewed) / New results	<ul style="list-style-type: none"> • The authors report a silicon-based integrated Point-of-Need (PoN) transducer (TriSilix) that can chemically-amplify and detect pathogen-specific sequences of nucleic acids (NA) quantitatively in real-time. Unlike other silicon-based technologies, TriSilix can be produced at wafer-scale in a standard laboratory. TriSilix is, therefore, resilient to disruptions in the global supply chain as the devices can be produced anywhere in the world. • Using TriSilix, they detected the cDNA from SARS-CoV-2 (1 pg), through PCR, with high specificity against SARS-CoV (2003).
24.03.2020	Covid-19 infection and mortality - A physiologist's perspective enlightening clinical features and plausible interventional strategies	American Journal of Physiology Lung Cellular & Molecular Physiology / Editorial	<ul style="list-style-type: none"> • Cleavage of the S-glycoprotein by furin and its binding to ACE2-expressing cells in the lung, kidney, heart, intestine and testis are key steps in the zoonotic SARS-CoV-2 transmission. • It is appealing to assume that inhibition of furin, essential for viral intracellular translocation, or blocking the viral anchoring capability of ACE2, might be potential treatment options in combating this new formidable threat to the health and well-being of the human civilization.
24.03.2020	Fibrinolytic niche is requested for alveolar type 2 cell-mediated alveologenesis and injury repair	bioRxiv (not peer-reviewed) / New results	<ul style="list-style-type: none"> • To test the role of the fibrinolytic niche in the regeneration of alveolar epithelium, this study compared the self-renewing capacity of alveolar epithelial type 2 (AT2) cells and its differentiation to AT1 cells between wild type (wt) and fibrinolytic niche deficient mice (Plau^{-/-} and Serpine1Tg). • The authors demonstrate that the fibrinolytic niche can regulate AT2-mediated homeostasis and regeneration via a novel uPA-A6-CD44⁺-ENaC cascade.
24.03.2020	SARS-CoV-2 launches a unique transcriptional signature from in vitro, ex vivo, and in vivo systems	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The authors offer the first in-depth characterization of the host transcriptional response to SARS-CoV-2 and other respiratory infections through in vitro, ex vivo, and in vivo model systems. • Their data demonstrate that each virus elicits both core antiviral components as well as unique transcriptional footprints. Compared to the response to influenza A virus and respiratory syncytial virus, SARS-CoV-2 elicits a muted response that lacks robust induction of a subset of cytokines

			<p>including the Type I and Type III interferons as well as a numerous chemokines.</p> <ul style="list-style-type: none"> • Taken together, these data suggest that the unique transcriptional signature of this virus may be responsible for the development of COVID-19.
21.03.2020	Potent human neutralizing antibodies elicited by SARS-CoV-2 infection	bioRxiv (not peer reviewed) / New results	<ul style="list-style-type: none"> • SARS CoV-2 cellular entry depends on binding between the viral Spike protein receptor-binding domain (RBD) and the angiotensin converting enzyme 2 (ACE2) target cell receptor. Here, the authors report on the isolation and characterization of 206 RBD-specific monoclonal antibodies (mAbs) derived from single B cells of eight SARS-CoV-2 infected individuals. • Results suggest that antibody response to RBDs is viral species-specific while that cross-recognition target regions outside the RBD. The specificity and neutralizing characteristics of this plasma cross-reactivity requires further investigation. Nevertheless, the diverse and potent neutralizing antibodies identified here are promising candidates for prophylactic and therapeutic SARS-CoV-2 interventions.
23.03.2020	scRNA-seq reveals ACE2 and TMPRSS2 expression in TROP2+ Liver Progenitor Cells: Implications in COVID-19 associated Liver Dysfunction	bioRxiv (not peer reviewed) / New results	<ul style="list-style-type: none"> • Beside respiratory symptoms, consistent with other common respiratory virus infection when patients become viraemic, a significant number of COVID-19 patients also develop liver comorbidities. • The authors explored if specific target cell-type in the mammalian liver, could be implicated in disease pathophysiology other than the general deleterious response to cytokine storms. They employed single-cell RNA-seq (scRNA-seq) to survey the human liver and identified potentially implicated liver cell-type for viral ingress. • These results indicated that in COVID-19 associated liver dysfunction and cell death, viral infection of TROP2+ progenitors in liver may significantly impaired liver regeneration and could lead to pathology.
24.03.2020	A unifying structural and functional model of the coronavirus replication organelle: tracking down RNA synthesis	bioRxiv (not peer reviewed) / New results	<ul style="list-style-type: none"> • The authors present results which provide a unifying model of the CoV viral replication organelle (RO) and clearly establish double-membrane vesicles (DMVs) as the central hub for viral RNA synthesis and a potential drug target in coronavirus infection.
25.03.2020	Computational analysis of SARS-CoV-2 S1 protein O-glycosylation and phosphorylation modifications and identifying potential target positions against CD209L-mannose interaction to inhibit initial binding of the virus	bioRxiv (not peer reviewed) / New results	<ul style="list-style-type: none"> • Determining the 3D structures of the proteins involved in host-pathogen interactions are of great importance in the fight against infection. Besides, post-translational modifications of the protein on 3D structure should be revealed in order to understand the protein function since these modifications are responsible for the host-pathogen interaction. • Based on these, the authors predicted O-glycosylation and phosphorylation positions using full amino acid sequence of S1 protein and suggest these positions as a potential target for the inhibition of the initial binding of SARS-CoV-2 S1 protein to the host cell.

Epidemiology and clinical

Publication Date	Title/URL	Author	Digest
26.03.2020	Rapid assessment of regional SARS-CoV-2 community transmission through a convenience sample of healthcare workers, the Netherlands, March 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • To rapidly assess possible community transmission in Noord-Brabant, the Netherlands, healthcare workers (HCW) with mild respiratory complaints and without epidemiological link (contact with confirmed case or visited areas with active circulation) were tested for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). • Within 2 days, 1,097 HCW in nine hospitals were tested; 45 (4.1%) were positive. Of six hospitals with positive HCW, two accounted for 38 positive HCW. • The results informed local and national risk management.
24.03.2020	CT Findings of Coronavirus Disease (COVID-19) Severe Pneumonia	AJR / Case report	<ul style="list-style-type: none"> • At the early stage of disease, CT showed multiple patchy or ground-glass opacities with subpleural distribution in multiple bilateral lobes, which are the characteristic CT findings of COVID-19 pneumonia. • As pneumonia progressed, CT showed that the areas of lesions in the lungs enlarged and developed into diffuse consolidations in both lungs within a few days. • Even when SARS-CoV-2 nucleic acid test results become negative and the patient's symptoms abated, there was a delay in the changes on CT and evidence of lesion absorption.
25.03.2020	COVID-19 in children: the link in the transmission chain	Lancet Infectious Diseases / Comment	<ul style="list-style-type: none"> • Children are susceptible to SARS-CoV-2 infection, but frequently do not have notable disease, raising the possibility that children could be facilitators of viral transmission. • If children are important in viral transmission and amplification, social and public health policies (eg, avoiding interaction with elderly people) could be established to slow transmission and protect vulnerable populations.
25.03.2020	Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study	Lancet Infectious Diseases / Article	<ul style="list-style-type: none"> • From Jan 17 to March 1, 2020, 36 children (mean age 8.3 [SD 3.5] years) were identified to be infected with severe acute respiratory syndrome coronavirus 2. • Although all paediatric patients in this cohort had mild or moderate type of COVID-19, the large proportion of asymptomatic children indicates the difficulty in identifying paediatric patients who do not have clear epidemiological information, leading to a dangerous situation in community-acquired infections.
24.03.2020	Management of pregnant women infected with COVID-19	Lancet Infectious Diseases / Comment	<ul style="list-style-type: none"> • This piece discusses several papers on the management of pregnant women with COVID-19, but concludes that understanding of SARS-CoV-2, especially the effect on pregnant women and neonates, is still insufficient.
26.03.2020	Updated rapid risk assessment from ECDC on coronavirus disease 2019 (COVID-19) pandemic: increased	Eurosurveillance / Overview	<ul style="list-style-type: none"> • ECDC provides regularly updated information on coronavirus disease-2019 (COVID-19) relevant to Europe on a dedicated webpage. • Besides general information including Q&As, daily case counts, and maps with disease distribution, examples of latest updates comprise: Considerations related to the safe handling of bodies of deceased persons with suspected or confirmed COVID-19 and Coronavirus disease 2019 (COVID-19) and supply of substances of human origin in the EU/EEA.

	transmission in the EU/EEA and the UK		<ul style="list-style-type: none"> • ECDC also publishes regular risk assessments. A summary of the seventh update published on 25 March 2020 is outlies in this paper.
3.202	COVID-19 and smoking: A systematic review of the evidence	Tobacco Induced Diseases / Editorial	<ul style="list-style-type: none"> • The authors conducted a systematic review of studies on COVID-19 that included information on patients' smoking status to evaluate the association between smoking and COVID-19 outcomes including the severity of the disease, the need for mechanical ventilation, the need for intensive care unit (ICU) hospitalization and death. • A total of 71 studies were retrieved through the search, of which 66 were excluded after full-text screening, leaving five studies. • Although further research is warranted as the weight of the evidence increases, with the limited available data, and although the above results are unadjusted for other factors that may impact disease progression, smoking is most likely associated with the negative progression and adverse outcomes of COVID-19.
25.03.2020	The official French guidelines to protect patients with cancer against SARS-CoV-2 infection	Lancet Oncology / Comment	<ul style="list-style-type: none"> • Patients with cancer are at high risk of severe and urgent clinical complications and patients with cancer with COVID-19 should discontinue their systemic anticancer treatments until complete resolution of symptoms (at clinician discretion). • Patients with cancer should be closely monitored owing to their susceptibility to SARS-CoV-2 infection.
24.03.2020	COVID-19 and Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers: What Is the Evidence?	Jama / Viewpoint	<ul style="list-style-type: none"> • There is insufficient clinical or scientific evidence to determine how to appropriately manage hypertension in the setting of COVID-19. • This provides an opportunity for the research community to better outline the renin-angiotensin system and specifically ACE2 in the pathogenesis of COVID-19 while clinical data are accumulated to determine if there is a link between the use of ACEIs, ARBs, or both and COVID-19 mortality and morbidity.
25.03.2020	Supporting people with long-term conditions (LTCs) during national emergencies	CEBM Research / Rapid review	<ul style="list-style-type: none"> • The data particularly highlights cardiovascular disease, diabetes, older people and people in deprived areas as being at increased risk. • Suggestions for mitigation strategies can be grouped into planning and response phases, and broadly focus on collaboration, communication, and continuity planning. • Recent guidance (https://www.rcgp.org.uk/-/media/Files/Policy/A-Z-policy/2020/covid19/RCGP%20guidance/202003233RCGPGuidanceprioritisationroutineworkduringCovidFINAL) from the Royal College of General Practitioners may facilitate this.
24.03.2020	Critical Organizational Issues for Cardiologists in the COVID-19 Outbreak: A Frontline Experience From Milan, Italy	Circulation / Article	<ul style="list-style-type: none"> • Key actions for cardiologists should include efforts to foster a close collaboration with other specialists involved in the management of COVID-19 patients, define pathways to appropriately manage cardiovascular diseases in both COVID-19- positive and uninfected patients while guaranteeing safety of healthcare professionals, and enhance cooperation between hospitals to centralize services to treat cardiovascular diseases.
26.03.2020	Defining the Epidemiology of	New England Journal of	<ul style="list-style-type: none"> • This perspective includes a table outlining the types of evidence needed for controlling an epidemic. • The impact of an epidemic depends on the number of persons infected, the infection's transmissibility, and

	Covid-19 — Studies Needed	Medicine / Perspective	<p>the spectrum of clinical severity.</p> <ul style="list-style-type: none"> • The authors suggest alternative ways of collecting data including mild cases. • Testing in unexplained clusters or severe cases of acute respiratory infections, regardless of a patient's travel history, may be a sensitive way to screen for chains of transmission that may have been missed.
26.03.2020	Tracking COVID-19 responsibly	Lancet / Correspondence	<ul style="list-style-type: none"> • One of the most visible tools to track COVID-19 has been the online dashboard hosted by the Centre for Systems Science and Engineering (CSSE) at Johns Hopkins University. • On this dashboard, the occupied Palestinian territory was identified as oPt, but on March 11, the oPt entry was removed and its figures merged with the entry for Israel. • The Israeli Health Ministry does not record COVID-19 cases in the West Bank and the Gaza Strip, so it is not easy to effectively monitor the spread of infection. • Now is exactly when the international medical and public health community must cooperate to provide accurate, impartial, and sufficiently detailed information on the spread of COVID-19, to inform containment measures and public health research.
25.03.2020	An international comparison of the second derivative of COVID-19 deaths after implementation of social distancing measures	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • This work compares deaths for confirmed COVID-19 cases in China to eight other countries, Italy, Spain, France, USA, UK, Germany, Netherlands and South Korea. • By calculating future trajectories in these countries based on the observed Chinese fatality statistics, an estimate of the total deaths and maximum daily death rates over a defined period of time is made. • Our lower bound estimate for the United Kingdom based on the real data approximates the lower bound estimate of the recent modelling study of Ferguson et al. These results suggest there may be a threshold of effective public health intervention.
25.03.2020	Novel Coronavirus and Old Lessons — Preparing the Health System for the Pandemic	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> • This perspective raises the concern that lessons have not been learned from previous outbreaks, and describes what measures should be taken to avoid this happening again. • The authors suggest contingency plans for the current outbreak. • Covid-19 seems to affect children at much lower rates than older adults, so many paediatric resources may be available for both outpatient and inpatient adult support. • Specialty clinic and elective procedure volumes may decrease rapidly, owing to both patient preference and decisions to cancel procedures, which will free up providers, clinics, and operating rooms that can be leveraged for acute care. • Ambulatory surgical centres, procedure centres, and other facilities may offer substantial capacity, as well as staff well versed in monitoring patients with complex conditions.

Infection control

Publication Date	Title/URL	Author	Digest
26.03.2020	The Global Impact of COVID-19 and Strategies for	Imperial College / Report	<ul style="list-style-type: none"> • This analysis suggests that healthcare demand can only be kept within manageable levels through the rapid adoption of public health measures (including testing and isolation of cases and wider social distancing measures) to suppress transmission, similar to those being adopted in many countries at

	Mitigation and Suppression: Report 12		<p>the current time.</p> <ul style="list-style-type: none"> • If a suppression strategy is implemented early (at 0.2 deaths per 100,000 population per week) and sustained, then 38.7 million lives could be saved whilst if it is initiated when death numbers are higher (1.6 deaths per 100,000 population per week) then 30.7 million lives could be saved.
25.03.2020	The Italian health system and the COVID-19 challenge	Lancet Public Health / Correspondence	<ul style="list-style-type: none"> • The Italian decentralisation and fragmentation of health services seems to have restricted timely interventions and effectiveness, and stronger national coordination should be in place. • Second, health-care systems capacity and financing need to be more flexible to take into account exceptional emergencies. • Solid partnerships between the private and public sector should be institutionalised. • Recruitment of human resources must be planned and financed with a long-term vision.
25.03.2020	Challenges posed by COVID-19 to children with cancer	Lancet Oncology / Correspondence	<ul style="list-style-type: none"> • Risk of exposure to SARS-CoV-2, either in the hospital or community setting, has resulted in widespread anxiety among families of children with cancer. • This has led to the development of standardised guidance (https://anzchog.org/covid-19-guidance-for-children-and-young-people-undergoing-cancer-treatment/) by national and regional authorities, in Australia and New Zealand for reducing the risk of SARS-CoV-2 transmission to children with cancer, which are readily adaptable based on the evolving local climate, and provide a uniform resource for both paediatric oncologists and caregivers.
25.03.2020	The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: a modelling study	Lancet Public Health / Article (previously added as a pre-print)	<ul style="list-style-type: none"> • Restrictions on activities in Wuhan, if maintained until April, would probably help to delay the epidemic peak. • Projections suggest that premature and sudden lifting of interventions could lead to an earlier secondary peak, which could be flattened by relaxing the interventions gradually. • There are limitations to this analysis, including large uncertainties around estimates of R0 and the duration of infectiousness.
25.03.2020	Critical Supply Shortages — The Need for Ventilators and Personal Protective Equipment during the Covid-19 Pandemic	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> • Beyond increasing the supply, a crucial role for the government is to coordinate efforts to ensure that the areas hardest hit at any given time are receiving needed equipment. • The Centres for Disease Control and Prevention (CDC) recommends that during crisis situations, N95 respirator masks be used only during aerosol-generating procedures, but that means risking exposure of health care workers using less protective surgical masks around patients with confirmed or suspected Covid-19 infection. • Additional guidelines from the CDC include reusing masks and respirators intended for one-time use and, if stocks are fully depleted, using scarves or bandanas.
24.03.2020	Preparation for Possible Sustained Transmission of 2019 Novel Coronavirus: Lessons From Previous Epidemics	JAMA / Viewpoint	<ul style="list-style-type: none"> • In preparing for possible sustained transmission of 2019-nCoV beyond China, applicable lessons from previous experiences with epidemics/pandemics of respiratory viruses should be carefully considered to better control and mitigate potential consequences.

Treatment

Publication Date	Title/URL	Author	Digest
24.03.2020	Treating COVID-19-Off-Label Drug Use, Compassionate Use, and Randomized Clinical Trials During Pandemics	Jama / Viewpoint	<ul style="list-style-type: none"> • Optimally, during an outbreak, the type of RCTs that should be prioritized are ones with an adaptive design, which are able to rapidly accept or reject multiple experimental therapies throughout the trial, while being adequately powered for meaningful clinical outcomes. • With the current COVID-19 pandemic, RCTs have been launched around the world, including an adaptive trial sponsored by the NIH - this unprecedented speed from concept to implementation in just a few weeks is noteworthy and provides proof that clinical trials can be promptly initiated even in the middle of a pandemic. • The rapid and simultaneous combination of supportive care and RCTs is the only way to find effective and safe treatments for COVID-19 and any other future outbreak.
23.03.2020	FEP-based screening prompts drug repositioning against COVID-19	bioRxiv (not peer reviewed) / New results	<ul style="list-style-type: none"> • The FEP (free energy perturbation)-based screening strategy is newly derived as a rapid protocol to accurately reposition potential agents against COVID-19 by targeting viral proteinase Mpro. • Restrained energy distribution (RED) function was derived to optimize the alchemical pathway of FEP, which greatly accelerated the calculations and first made FEP possible in the virtual screening of the FDA-approved drugs database. • As a result, fifteen out of twenty-five drugs validated in vitro exhibited considerable inhibitory potencies towards Mpro. Among them, the most potent Mpro inhibitor dipyrindamole potentially inhibited NF-κB signalling pathway and inflammatory responses, and has just finished the first round clinical trials.
24.03.2020	Enhancing the Antiviral Efficacy of RNA-Dependent RNA Polymerase Inhibition by Combination with Modulators of Pyrimidine Metabolism	bioRxiv (not peer reviewed) / Article	<ul style="list-style-type: none"> • The authors present findings highlighting a new host-targeting strategy for potentiating the antiviral activities of RdRp inhibitors.
25.03.2020	Should we prescribe longer repeat prescriptions for patients with long-term conditions during a pandemic?	CEBM Research / Rapid review	<ul style="list-style-type: none"> • Discusses prescribing longer repeat prescriptions for patients with long-term conditions during a pandemic. • The evidence is very limited and there is currently no definitive answer to this question. • NHS England has advised that longer duration prescriptions should not be issued by GPs at this time, in order to protect the supply chain.
20.03.2020	COVID-19 Vaccine Candidates: Prediction and Validation of 174 SARS-CoV-2 Epitopes	bioRxiv (not peer-reviewed) / New results	<ul style="list-style-type: none"> • The authors tested 15 epitope-HLA-binding prediction tools, and using an in vitro peptide MHC stability assay, they assessed 777 peptides that were predicted to be good binders across 11 MHC allotypes. • In this study they present 174 SARS-CoV-2 epitopes with high prediction binding scores, validated to bind stably to 11 HLA allotypes. These may contribute to the design of an efficacious vaccine against COVID-19.

19.03.2020	Effectiveness and safety of antiviral or antibody treatments for coronavirus: A rapid review	medRxiv (not peer-reviewed) / Rapid review	<ul style="list-style-type: none"> • A review was carried out to identify safe and effective medical countermeasures (e.g., antivirals/antibodies) to address the current outbreak of a novel coronavirus (COVID-19). • Concluded that the current evidence for the effectiveness and safety of antiviral therapies for coronavirus is inconclusive and suffers from a lack of well-designed prospective trials or observational studies, preventing any treatment recommendations from being made. However, it is clear that the existing body of evidence is weighted heavily towards ribavirin (41/54 studies), which has not shown conclusive evidence of effectiveness and may cause harmful adverse events so future investigations may consider focusing on other candidates for antiviral therapy
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Miscellaneous

Publication Date	Title/URL	Author	Digest
25.03.2020	COVID-19: extending or relaxing distancing control measures	Lancet Public Health / Comment	<ul style="list-style-type: none"> • This piece describes different papers about modelling and infection control, and suggests that such models and projections should be made available in the public domain without delay to inspire public trust and allow wider potentially beneficial input. • Social and economic effects of lockdown and other interventions and knock-on effects on health, including mental health and interpersonal violence, should also be empirically evaluated and incorporated into future models.
24.03.2020	Early in the epidemic: impact of preprints on global discourse about COVID-19 transmissibility	Lancet Global Health / Correspondence	<ul style="list-style-type: none"> • This piece highlights the potential issues with pre-prints (non-peer-reviewed papers), but concludes that they still have an important role to play in getting information out to everyone during times of crisis.
26.03.2020	Structural violence in the era of a new pandemic: the case of the Gaza Strip	Lancet / Correspondence	<ul style="list-style-type: none"> • Preventive measures and containment of COVID-19 will be extremely difficult now that the pandemic has reached the Gaza Strip. • A COVID-19 pandemic that further cripples the Gaza Strip's health-care system should not be viewed as an inevitable biomedical phenomenon experienced equally by the world's population, but as a preventable biosocial injustice rooted in decades of Israeli oppression and international complicity in the struggle for the health, fundamental rights, and self-determination of all Palestinians.
24.03.2020	Rapid Response to COVID-19: Health Informatics Support for Outbreak Management in an Academic Health System	Journal of the American Medical Informatics Association / Article	<ul style="list-style-type: none"> • UC San Diego Health built multiple COVID-19-specific tools to support outbreak management, including scripted triaging, electronic check-in, standard ordering and documentation, secure messaging, real-time data analytics, and telemedicine capabilities. • Challenges included the need to frequently adjust build to meet rapidly evolving requirements, communication and adoption, and coordinating the needs of multiple stakeholders while maintaining high-quality, pre-pandemic medical care
01.08.2020	Severe air pollution events not avoided by reduced	Resources, Conservation and	<ul style="list-style-type: none"> • This study highlights that large emissions reduction in transportation and slight reduction in industrial would not help avoid severe air pollution in China, especially when meteorology is unfavourable.

[anthropogenic activities during COVID-19 outbreak](#)

Recycling / Article

Modelling

Publication Date	Title/URL	Author	Digest
26.03.2020	Potential short-term outcome of an uncontrolled COVID-19 epidemic in Lombardy, Italy, February to March 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none">• Sustained coronavirus disease (COVID-19) transmission is ongoing in Italy, with 7,375 reported cases and 366 deaths by 8 March 2020.• The authors provide a model-based evaluation of patient records from Lombardy, predicting the impact of an uncontrolled epidemic on the healthcare system. It has the potential to cause more than 250,039 (95% credible interval (CrI): 147,717–459,890) cases within 3 weeks, including 37,194 (95% CrI: 22,250–67,632) patients requiring intensive care. Aggressive containment strategies are required.
26.03.2020	Estimating the infection and case fatality ratio for coronavirus disease (COVID-19) using age-adjusted data from the outbreak on the Diamond Princess cruise ship, February 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none">• Adjusting for delay from confirmation to death, the authors estimated case and infection fatality ratios (CFR, IFR) for coronavirus disease (COVID-19) on the Diamond Princess ship as 2.6% (95% confidence interval (CI): 0.89–6.7) and 1.3% (95% CI: 0.38–3.6), respectively.• Comparing deaths on board with expected deaths based on naive CFR estimates from China, we estimated CFR and IFR in China to be 1.2% (95% CI: 0.3–2.7) and 0.6% (95% CI: 0.2–1.3), respectively.
25.03.2020	Estimating the maximum daily number of incident COVID-19 cases manageable by a healthcare system	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none">• The COVID-19 Acute and Intense Resource Tool (CAIC-RT) is an interactive online tool capable of estimating the maximum daily number of incident COVID-19 cases that a healthcare system could manage given age-based case distribution and severity.

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