



International EPI Cell Daily Evidence Briefing – 20/03/2020

These 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Please note that we are including preprints, which are preliminary reports of work that have NOT been peer-reviewed.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	Journal/Type	Digest
19.03.2020	The critical role of laboratory medicine during coronavirus disease 2019 (COVID-19) and other viral outbreaks	Clinical Chemistry and Laboratory Medicine / Preprint - not peer-reviewed	<ul style="list-style-type: none">• Some proactive and reactive strategies may hence be identified to confront this serious healthcare challenge, which entail major investments on conventional laboratory resources, reinforcement of regional networks of clinical laboratories, installation of mobile laboratories, as well as being proactive in establishing laboratory emergency plans.

19.03.2020	A doubt of multiple introduction of SARS-CoV-2 in Italy: a preliminary overview	Journal of Medical Virology / Short communication	<ul style="list-style-type: none"> • The authors phylogenetic reconstructions suggest possible multiple introduction of SARS-CoV-2. • Continued genomic surveillance strategies are needed to improve monitoring and understanding of the currently SARS-CoV-2 epidemics, which might help to attenuate public health impact of infectious diseases.
19.03.2020	Serological and molecular findings during SARS-CoV-2 infection: the first case study in Finland, January to February 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • The first case of coronavirus disease (COVID-19) in Finland was confirmed on 29 January 2020. No secondary cases were detected. The authors describe the clinical picture and laboratory findings 3–23 days since the first symptoms. • The SARS-CoV-2/Finland/1/2020 virus strain was isolated, the genome showing a single nucleotide substitution to the reference strain from Wuhan. Neutralising antibody response appeared within 9 days along with specific IgM and IgG response, targeting particularly nucleocapsid and spike proteins.
19.03.2020	Safety Considerations in the Laboratory Testing of Specimens Suspected or Known to Contain the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)	American Journal of Clinical Pathology / Article	<ul style="list-style-type: none"> • Laboratorians are aware that any specimen received in the laboratory may contain a pathogen capable of containing a highly hazardous pathogen (HHP) and that the laboratory administration is required to provide a safe environment for the staff where quality laboratory testing can be performed.

19.03.2020	Artificial Intelligence Distinguishes COVID-19 from Community Acquired Pneumonia on Chest CT	Radiology / Original research	<ul style="list-style-type: none"> • A deep learning model can accurately detect COVID-19 and differentiate it from community acquired pneumonia and other lung diseases. • There is overlap in the chest CT imaging findings of all viral pneumonias with other chest diseases that encourages a multidisciplinary approach to the final diagnosis used for patient treatment.
19.03.2020	COVID-19 epidemic in Switzerland: on the importance of testing, contact tracing and isolation	Swiss Medical Weekly / Viewpoint	<ul style="list-style-type: none"> • In this article, the authors explain why the testing strategy in Switzerland should be strengthened urgently, as a core component of a combination approach to control COVID-19.
18.03.2020	Host susceptibility to severe COVID-19 and establishment of a host risk score: findings of 487 cases outside Wuhan	Critical Care / Research letter	<ul style="list-style-type: none"> • By identifying host risk factors associated with severe COVID-19, this study shed light on the underlying mechanisms of disease progression. • The major finding that hypertension is a host risk factor for severe COVID-19 may underscore the involvement of renin-angiotensin system (RAS) in the pathogenesis of this disease. • The host risk score provides a useful tool to identify high-risk individuals, which is helpful for designing specific strategies for prevention and treatment of this disease.
18.03.2020	Lower mortality of COVID-19 by early recognition and intervention: experience from Jiangsu Province	Annals of Intensive Care / Letter to the editor	<ul style="list-style-type: none"> • This article presents management and treatment bundles to help achieve in the battle against COVID-19.

			<ul style="list-style-type: none"> • From authors' experience, early screening of critically ill patients and critical care-guided early intervention are prominent in reducing novel coronavirus pneumonia (NCP) patients' mortality.
19.03.2020	Temporal Changes of CT Findings in 90 Patients with COVID-19 Pneumonia: A Longitudinal Study	Radiology / Original research	<ul style="list-style-type: none"> • This prospective longitudinal study systematically described the temporal changes of CT findings in COVID-19 pneumonia and summarized the CT findings at the time of hospital discharge. • The extent of CT abnormalities progressed rapidly after symptom onset, peaked during illness days 6-11, and followed by persistence of high levels. • The predominant pattern of abnormalities after symptom onset was ground-glass opacity; the percentage of mixed pattern peaked during illness days 12-17, and became the second most prevalent pattern thereafter. • Sixty-six of the 70 patients (94%) discharged had residual disease on final CT scans, with ground-glass opacity the most common pattern.

19.03.2020	Prolonged presence of SARS-CoV-2 viral RNA in faecal samples	The Lancet Gastroenterology & Hepatology / Correspondence	<ul style="list-style-type: none"> • Present severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) real-time RT-PCR results of all respiratory and faecal samples from patients with coronavirus disease 2019 (COVID-19) at the Fifth Affiliated Hospital of Sun Yat-sen University, Zhuhai, China, throughout the course of their illness and obligated quarantine period. • The data suggests the possibility of extended duration of viral shedding in faeces, for nearly 5 weeks after the patients' respiratory samples tested negative for SARS-CoV-2 RNA.
19.03.2020	Association of radiologic findings with mortality of patients infected with 2019 novel coronavirus in Wuhan, China	PLoS One / Research article	<ul style="list-style-type: none"> • The authors retrospectively studied 27 consecutive patients who were confirmed 2019 novel coronavirus (2019-nCoV) infected pneumonia (NCIP). • 2019-nCoV was more likely to infect elderly people with chronic comorbidities. • CT findings of NCIP were featured by predominant ground glass opacities mixed with consolidations, mainly peripheral or combined peripheral and central distributions, bilateral and lower lung zones being mostly involved. A simple CT scoring method was capable to predict mortality.

18.03.2020	CT image of novel coronavirus pneumonia: a case report	Japanese Journal of Radiology / Special report	<ul style="list-style-type: none"> • This case of COVID-19 pneumonia showed multiple subpleural GGOs in bilateral lung, rapid progression, and it also accompanied nodular GGOs on chest CT. • These findings were consistent with the previous reports, and they might be useful for early detection and evaluation of severity of COVID-19 pneumonia.
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Epidemiology and clinical

Publication date	Title/URL	Journal/Type	Digest
29.03.2020	Characteristics and Outcomes of 21 Critically Ill Patients With COVID-19 in Washington State	JAMA / Research letter	<ul style="list-style-type: none"> • In this case series, the authors describe the clinical presentation, characteristics, and outcomes of incident cases of COVID-19 admitted to the intensive care unit (ICU) at Evergreen Hospital to inform other clinicians treating critically ill patients with COVID-19.

19.03.2020	Rapidly increasing cumulative incidence of coronavirus disease (COVID-19) in the European Union/European Economic Area and the United Kingdom, 1 January to 15 March 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> •The cumulative incidence of coronavirus disease (COVID-19) cases is showing similar trends in European Union/European Economic Area countries and the United Kingdom confirming that, while at a different stage depending on the country, the COVID-19 pandemic is progressing rapidly in all countries. Based on the experience from Italy, countries, hospitals and intensive care units should increase their preparedness for a surge of patients with COVID-19 who will require healthcare, and in particular intensive care.
18.03.2020	The difference in the incubation period of 2019 novel coronavirus (SARS-CoV-2) infection between travelers to Hubei and non-travelers: The need of a longer quarantine period	Infection Control and Hospital Epidemiology / Original research	<ul style="list-style-type: none"> • This work provides additional evidence for a median incubation period for COVID-19 of approximately 5 days, similar to SARS. • The results support current proposals for the length of quarantine or active monitoring of persons potentially exposed to SARS-CoV-2, although longer monitoring periods might be justified in extreme cases.
18.03.2020	Insight into COVID-2019 for pediatricians	Pediatric Pulmonology / Case report	<ul style="list-style-type: none"> • From the perspective of clinical paediatricians as the first line fighting the epidemic, this paper will discuss the clinical characteristics, prevention and control measures, outcomes, diagnosis, and treatment of paediatric cases.

18.03.2020	Pregnancy and Perinatal Outcomes of Women With Coronavirus Disease (COVID-19) Pneumonia: A Preliminary Analysis	AJR American Journal of Roentgenology / Preprint - not peer-reviewed	<ul style="list-style-type: none"> • Pregnancy and childbirth did not aggravate the course of symptoms or CT features of COVID-19 pneumonia. • All the cases of COVID-19 pneumonia in pregnant women in THIS study were mild. • All the women in this study—some of whom did not receive antiviral drugs—achieved good recovery from COVID-19 pneumonia.
19.03.2020	Viral dynamics in mild and severe cases of COVID-19	The Lancet Infectious Diseases / Correspondence	<ul style="list-style-type: none"> • Here, the authors report the viral RNA shedding patterns observed in patients with mild and severe COVID-19. Overall, the data indicates that, similar to SARS in 2002–03, patients with severe COVID-19 tend to have a high viral load and a long virus-shedding period. This finding suggests that the viral load of SARS-CoV-2 might be a useful marker for assessing disease severity and prognosis.
19.03.2020	Alert for non-respiratory symptoms of Coronavirus Disease 2019 (COVID-19) patients in epidemic period: A case report of familial cluster with three asymptomatic COVID-19 patients	Journal of Medical Virology / Short communication	<ul style="list-style-type: none"> • The authors reported the screening, clinical features, and treatment process of a family cluster involving three COVID-19 patients.

			<ul style="list-style-type: none"> • The prevention and control experience of this family cluster showed that comprehensive rigorous epidemiological investigation and combination of multiple detection methods were of great value for the detection of hidden asymptomatic carriers.
20.03.2020	Evaluation of the Effectiveness of Surveillance and Containment Measures for the First 100 Patients with COVID-19 in Singapore - January 2-February 29, 2020	Morbidity and Mortality Weekly Report / Report	<ul style="list-style-type: none"> • A multipronged surveillance strategy could lead to enhanced case detection and reduced transmission of highly infectious diseases such as COVID-19.
19.03.2020	SARS-CoV-2 enterocolitis with persisting to excrete the virus for about two weeks after recovering from diarrhea: A case report	Infection Control and Hospital Epidemiology / Case report	<ul style="list-style-type: none"> • Clinicians should be mindful of the fact that COVID-2019 may manifest as enterocolitis in patients without respiratory tract infection, and should provide thorough instruction in hand hygiene, because patients even after recovering from enterocolitis due to SARS-CoV-2 could continue to excrete the virus for weeks.
19.03.2020	Coronavirus disease (COVID-19) in a paucisymptomatic patient: epidemiological and clinical challenge in settings with limited community transmission, Italy, February 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • Data concerning the transmission of the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) in paucisymptomatic patients are lacking.

			<ul style="list-style-type: none"> •The authors report an Italian paucisymptomatic case of coronavirus disease 2019 with multiple biological samples positive for SARS-CoV-2. This case was detected using the World Health Organization protocol on cases and contact investigation. Current discharge criteria and the impact of extra-pulmonary SARS-CoV-2 samples are discussed.
18.03.2020	Is nicotine exposure linked to cardiopulmonary vulnerability to COVID-19 in the general population?	FEBS Journal / Article	<ul style="list-style-type: none"> • The authors focus on those individuals who have been exposed to nicotine prior to their exposure to the virus. • They predict that these individuals are "primed" to be at higher risk because nicotine can directly impact the putative receptor for the virus (ACE2) and lead to deleterious signalling in lung epithelial cells.
19.03.2020	COVID-2019 and Pregnancy: A plea for transparent reporting of all cases	Acta Obstetricia et Gynecologica Scandinavica / Letter to editor	<ul style="list-style-type: none"> • Transparent and comprehensive reporting of all cases of COVID-19 pregnancies is very important. • The authors believe that building a common portal where details of all such cases could be entered continuously so that data analysis could be performed in real-time to get some concrete results helping to generate evidence and guide clinical management.

19.03.2020	COVID-19 pandemic: perspectives on an unfolding crisis	British Journal of Surgery / Leading article	<ul style="list-style-type: none"> • Telemedicine may reduce the need for physical attendance in outpatient clinics, thereby minimizing contact exposure where possible. • Virtual meetings have advantages including a better environmental profile, lower costs, and on-demand streaming. • A joint international effort is advisable to face the COVID-19 fallout and establish pathways for crisis management.
21.03.2020	COVID-19: protecting health-care workers	The Lancet / Editorial	<ul style="list-style-type: none"> • Worldwide, as millions of people stay at home to minimise transmission of severe acute respiratory syndrome coronavirus 2, health-care workers prepare to do the exact opposite. They will go to clinics and hospitals, putting themselves at high risk from COVID-2019. • Figures from China's National Health Commission show that more than 3300 health-care workers have been infected as of early March and, according to local media, by the end of February at least 22 had died. This paper discusses this.

19.03.2020	Influenza-associated pneumonia as reference to assess seriousness of coronavirus disease (COVID-19)	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • Although fatalities occur mostly among elderly people with chronic comorbidities, serious disease progressions do also occur among younger, healthy patients and more often than would be expected from the experience during influenza epidemics. • First comparisons expose the high rate of patients requiring ventilation over prolonged time periods, thus hospital resources may be in higher demand of ventilation supply than usual. • Early non-invasive mechanical ventilation can promote positive outcomes.
19.03.2020	Influenza-associated pneumonia as reference to assess seriousness of coronavirus disease (COVID-19)	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • Information on severity of coronavirus disease (COVID-19) (transmissibility, disease seriousness, impact) is crucial for preparation of healthcare sectors.

			<ul style="list-style-type: none"> •The authors present a simple approach to assess disease seriousness, creating a reference cohort of pneumonia patients from sentinel hospitals. First comparisons exposed a higher rate of COVID-19 patients requiring ventilation. There were more case fatalities among COVID-19 patients without comorbidities than in the reference cohort. Hospitals should prepare for high utilisation of ventilation and intensive care resources.
16.03.2020	COVID-19 - what should anaesthesiologists and intensivists know about it?	Anaesthesiology Intensive Therapy / Review paper	<ul style="list-style-type: none"> • The most important guidelines and updates on COVID-19 are being translated into Polish and published online: • This paper aims to provide up-to-date information on COVID-19, which should be important for anaesthetists, intensivists and trainees in this specialty. • The article presents basic information about ethology, pathogenesis and diagnostics (with particular emphasis on the importance of tomocomputer imaging), clinical picture, treatment and prevention of the infection.

Infection control

Publication date	Title/URL	Journal/Type	Digest
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<p>19.03.2020</p>	<p>Securing the Safety Net and Protecting Public Health During a Pandemic: Medicaid's Response to COVID-19</p>	<p>JAMA / Viewpoint</p>	<ul style="list-style-type: none"> • Individuals with end stage kidney disease, a majority of whom are dually eligible for Medicare and Medicaid, may be particularly vulnerable to COVID-19, given their frequent interaction with the health care system. • Medicaid programs may transition to home dialysis when possible by removing service authorizations on equipment.
<p>18.03.2020</p>	<p>Initial Investigation of Transmission of COVID-19 Among Crew Members During Quarantine of a Cruise Ship - Yokohama, Japan, February 2020</p>	<p>Morbidity and Mortality Weekly Report / Report</p>	<ul style="list-style-type: none"> • This investigation underscores the need for swift epidemiologic investigation as soon as a COVID-19 case is detected in an area or group where a large number of persons gather in a closed or crowded setting (e.g., a cruise ship, music club, health care setting, sports arena, or gymnasium). • These settings have been previously associated with infections spread by contact or droplet, such as influenza. • Close contacts of persons with confirmed COVID-19 should self-quarantine and monitor their symptoms; persons who develop COVID-19 symptoms while on board a ship should be isolated to limit transmission to other passengers and crew.

18.03.2020	There may be virus in conjunctival secretion of patients with COVID-19	Acta Ophthalmologica / Perspective	<ul style="list-style-type: none"> • In the authors' hospital, 37 patients with 2019-nCoV infection pneumonia were detected in the conjunctival sac by real-time RT-PCR. • The viral load of conjunctival sac secretion of COVID-19 patients is relatively low, and the authors estimate the viral load is directly proportional to the severity of the disease.
18.03.2020	The possibility of COVID-19 transmission from eye to nose	Acta Ophthalmologica / Letter to the editor	<ul style="list-style-type: none"> • When coming into contact with confirmed or suspected cases of COVID-19, healthcare workers should wear eye safety goggles. • Although a small number of COVID-19 patients have conjunctivitis, not all of them show positive test of SARS-CoV-2 nucleic acid in conjunctival sac swabs.
18.03.2020	Safe patient transport for COVID-19	Critical Care / Letter	<ul style="list-style-type: none"> • Haphazard transport of infected cases leading to nosocomial spread can stymie efforts to break the chains of transmission. • The authors make suggestions for overcoming issues with patient transport.
18.03.2020	The impact of high-flow nasal cannula (HFNC) on coughing distance: implications on its use during the novel coronavirus disease outbreak	Canadian Journal of Anaesthesia / Correspondence	<ul style="list-style-type: none"> • The authors carried out an experiment to simulate a patient coughing while using high-flow nasal cannula (HFNC) to assess the maximum distance of droplet dispersion.

			<ul style="list-style-type: none"> • They showed that in these healthy volunteers, cough-generated droplets spread to a mean (standard deviation) distance of 2.48 (1.03) m at baseline and 2.91 (1.09) m with HFNC. A maximum cough distance of 4.50 m was reported when using HFNC. • This document also recommends wearing a standard medical face mask if the healthcare worker is within 2 m of the patient and there is a physical bed separation of at least 1 m. • Healthcare workers caring for those using HFNC should be wearing full airborne personal protective equipment (i.e., N95 mask or equivalent, gown, gloves, goggles, hair covers, and face shield or hoods).
17.03.2020	COVID-19 pneumonia: infection control protocol inside computed tomography suites	Japanese Journal of Radiology / Special report	<ul style="list-style-type: none"> • The authors present their experience with infection control protocol for COVID-19 inside the CT suites.
17.03.2020	Successful containment of COVID-19: the WHO-Report on the COVID-19 outbreak in China	Infection / Editorial	<ul style="list-style-type: none"> • Strict and rapid response to an emerging epidemic can halt the spread of a new virus. • The outbreak in Hubei province has shown how much harm a newly emerging respiratory virus can cause. • Infections in confined spaces, such as prisons or cruise ships, can rapidly spread, complications can be severe and health care-associated transmission poses a risk for health care workers and other patients.

18.03.2020	[Coronavirus disease 2019 (COVID-19): update for anesthesiologists and intensivists March 2020]	Anaesthetist / German article	<ul style="list-style-type: none"> • Preventing nosocomial infections (primarily by correct use of personal protective equipment) and maintenance of hospitals' operational capability are of utmost importance.
18.03.2020	COVID-19: social distancing, ACE 2 receptors, protease inhibitors and beyond?	International Journal of Clinical Practice / Letter	<ul style="list-style-type: none"> • This letter raises additional questions about the control of COVID-19, and invites more discussion with the author of this paper: COVID-19 and Rationally Layered Social Distancing.
18.03.2020	COVID-19 infection epidemic: the medical management strategies in Heilongjiang Province, China	Critical Care / Editorial	<ul style="list-style-type: none"> • This paper presents a range of strategies for managing COVID-19 infection control in clinical settings.

Treatment

Publication date	Title/URL	Journal/Type	Digest
19.03.2020	Natural small molecules as inhibitors of coronavirus lipid-dependent attachment to host cells: a possible strategy for reducing SARS-COV-2 infectivity?	Acta Biomedica /	<ul style="list-style-type: none"> • Certain molecules prove able to reduce the infectivity of some coronaviruses, possibly by inhibiting viral lipid-dependent attachment to host cells. • More research into these molecules and methods would be worthwhile as it could provide insights the mechanism of transmission of SARS-COV-2 and, into how they could become a basis for new antiviral strategies.
18.03.2020	[Thoughts and practice on the treatment of severe and critical new coronavirus pneumonia]	Chinese Journal of Tuberculosis and Respiratory Diseases / Chinese article	<ul style="list-style-type: none"> • Early start with non-invasive ventilation (NIV) against the possible physiological abnormalities could be helpful to improve prognosis.

			<ul style="list-style-type: none"> • Close monitoring of oxygenation, reducing patients' oxygen consumption, active psychological intervention, and rapidly dealing with severe hypoxemia events are the key factors for the successful treatment of NIV. • Active adjuvant therapy is also important, such as correcting coagulation dysfunction, providing proper nutritional support, accurate volume control, and safe individualized blood glucose monitoring and control.
19.03.2020	Use of antiviral drugs to reduce COVID-19 transmission	The Lancet Global Health / Correspondence	<ul style="list-style-type: none"> • Antiviral drugs administered shortly after symptom onset can reduce infectiousness to others by reducing viral shedding in the respiratory secretions of patients (SARS-CoV-2 viral load in sputum peaks at around 5–6 days after symptom onset and lasts up to 14 days), and targeted prophylactic treatment of contacts could reduce their risk of becoming infected. This paper discusses this.

Social Sciences

Publication date	Title/URL	Journal/Type	Digest
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19.03.2020	COVID-19 and the consequences of isolating the elderly	The Lancet Public Health / Correspondence	<ul style="list-style-type: none"> •As countries are affected by coronavirus disease 2019 (COVID-19), the elderly population will soon be told to self-isolate for “a very long time” in the UK, and elsewhere. This paper discusses the consequences of isolating the elderly.
18.03.2020	Covid-19: how doctors and healthcare systems are tackling coronavirus worldwide	BMJ / Global health feature	<ul style="list-style-type: none"> • As coronavirus continues to spread, doctors and healthcare systems are facing a multitude of challenges at all stages of the pandemic. • This article describes what is happening in other countries.

Miscellaneous

Publication date	Title/URL	Journal/Type	Digest
19.03.2020	Covid-19 and the Stiff Upper Lip — The Pandemic Response in the United Kingdom	N Engl J Med / Perspective	<ul style="list-style-type: none"> •Discusses the pandemic response in the UK. What is not in doubt is that barring a miracle, a treatment, and ultimately a vaccine, the NHS in the UK is about to experience a challenge unlike any other in its 70 years of existence.
19.03.2020	COVID-19: What implications for sexual and reproductive health and rights globally?	Sexual and Reproductive Health Matters / Editorial	<ul style="list-style-type: none"> •The principles of human rights can help us think through how to take action: through fostering community participation; focusing on non-discrimination; working to ensure the availability, accessibility, acceptability and quality of services; providing access to information; and striving to ensure transparency and accountability in the response to the pandemic.

20.03.2020	Mass gathering events and reducing further global spread of COVID-19: a political and public health dilemma	The Lancet / Comment	<ul style="list-style-type: none"> • Mass gathering events pose considerable public health challenges to health authorities and governments. • WHO, working with global partners in MG health, many of whom were involved in the Riyadh conferences and The Lancet's 2014 Mass Gatherings Medicine Series has developed comprehensive recommendations for managing the public health aspects of MGs that have been updated with interim key recommendations for COVID-19. This paper discusses this.
18.03.2020	Coronavirus: the spread of misinformation	BMC Medicine / Commentary	<ul style="list-style-type: none"> • Disconnect between scientific consensus and members of the public on topics such as vaccine safety, the shape of the earth, or climate change has existed for a number of years. • This has created an optimal environment for antiscience groups to gain footing and propagate their false theories and information. • If powerful and clear statements are not made denouncing and debunking these fabrications, then the impact on the populous has the potential to be devastating.
21.03.2020	Canada and COVID-19: learning from SARS	The Lancet / World Report	<ul style="list-style-type: none"> • The 2003 SARS epidemic killed 44 people in Canada, and led to many proposals for reforms. Paul Webster looks at how the SARS outbreak has affected Canada's COVID-19 response.

18.03.2020	COVID-19: Knowns, Unknowns, and Questions	mSphere / Commentary	<ul style="list-style-type: none"> • The authors highlight the current state of knowledge of coronavirus biology while answering questions concerning the current outbreak of SARS-CoV-2.
18.03.2020	One Health approach and Coronavirus Disease 2019	Human Vaccines & Immunotherapeutics / Letter	<ul style="list-style-type: none"> • This letter describes the One Health Approach Model. • The One Health approach should minimize the economic burden of disease and improve understanding of disease mechanism, health problems, disease emergence, and re-emergence in order to respond in a proportionate and timely manner, thereby detecting, preventing, and combating future pandemics based on experience from 2019-nCoV.
18.03.2020	Covid-19 exposes weaknesses in European response to outbreaks	BMJ / Editorial	<ul style="list-style-type: none"> • It is important that the EU learns from it and takes action to improve preparedness planning for all infectious disease outbreaks. • There is scope for smarter use of technology—robotics have already been used to minimise risks to healthcare workers treating patients with covid-19 and artificial intelligence has played a role in diagnosis and modelling the spread of new cases. • Working closely with WHO, the ECDC should be given a greater mandate for surveillance, preparedness planning, scientific advice, and responses to infectious disease outbreaks across all countries in Europe.

			<ul style="list-style-type: none"> • Accompanied by a substantial increase in funding.
19.03.2020	Analysis of COVID-19 infection spread in Japan based on stochastic transition model	Bioscience Trends / Advance online publication	<ul style="list-style-type: none"> • This simulation showed that the number of Infected and Removed will increase rapidly if there is no reduction of the time spent in crowded zone. • The infection spread in Japan will be gradually contained by reducing the time spent in the crowded zone to less than 4 hours.

Modelling

Publication date	Title/URL	Journal/Type	Digest
18.03.2020	AI-Driven Tools for Coronavirus Outbreak: Need of Active Learning and Cross-Population Train/Test Models on Multitudinal/Multimodal Data	Journal of Medical Systems / Education and training	<ul style="list-style-type: none"> • AI-driven tools are expected to have active learning-based cross-population train/test models that employs multitudinal and multimodal data, which is the primary purpose of the paper. • AI-driven tools help identify COVID-19 outbreaks as well as forecast their nature of spread across the globe.

19.03.2020	Estimation of COVID-19 outbreak size in Italy / Correspondence	The Lancet Infectious Diseases	<ul style="list-style-type: none"> • This paper estimates the size of the COVID-19 outbreak size in Italy. When all cases were considered the authors estimated a true outbreak size of 3971 cases (95% CI 2907–5297), as compared with a reported case count of 1128 on Feb 29, 2020, suggesting non-identification of 72% (61–79%) of cases. In sensitivity analyses, outbreak sizes varied from 1552 to 4533 cases (implying non-identification of 27–75% of cases; table).
17.03.2020	Receptor Recognition by the Novel Coronavirus from Wuhan: an Analysis Based on Decade-Long Structural Studies of SARS Coronavirus	Journal of Virology / Article	<ul style="list-style-type: none"> • Based on the sequence of 2019-nCoV spike protein, the authors apply this predictive framework to provide novel insights into the receptor usage and likely host range of 2019-nCoV. • This study provides a robust test of this reiterative framework, providing the basic, translational, and public health research communities with predictive insights that may help study and battle this novel 2019-nCoV.
19.03.2020	Serial Interval of COVID-19 among Publicly Reported Confirmed Cases	Emerging infectious diseases / Research letter	<ul style="list-style-type: none"> • The authors estimate the distribution of serial intervals for 468 confirmed cases of 2019 novel coronavirus disease reported in China as of February 8, 2020. • The mean interval was 3.96 days (95% CI 3.53–4.39 days), SD 4.75 days (95% CI 4.46–5.07 days); 12.6% of case reports indicated presymptomatic transmission.