Public Health England

International EPI Cell Daily Evidence Briefing – 13/03/2020

Theme	Publication Date	Title/URL	Journal/Subject/Type	Digest
Diagnostics and genomics	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Genomic epidemiology of a densely sampled COVID19 outbreak in China	medRxiv (not peer-reviewed) / Article	•Analysed 20 SARS-CoV 2 genomes from a single relatively small and geographically constrained outbreak in Weifang, People's Republic of China.
Diagnostics and genomics	12.03.2020	SARS-CoV-2 RNA more readily detected in induced sputum than in throat swabs of convalescent COVID-19 patients	The Lancet Infectious Diseases / Correspondence	•In patients with COVID-19, whether SARS-CoV-2 RNA tests of sputum samples are more sensitive than viral RNA tests of throat swabs is uncertain. Furthermore, most of these patients do not have sputum, especially during the convalescent period. The authors resolved this problem in two patients by inducing sputum production.
Epidemiology and clinical	12.03.2020	2019 novel coronavirus patients' clinical characteristics, discharge rate and fatality rate of meta-analysis	Journal of Medical Virology / Article	• Studied the clinical data, discharge rate, and fatality rate of COVID-19 patients for clinical help. The available data of 1994 patients in 10 literatures were included in this study.
Epidemiology and clinical	12.03.2020	A case report of neonatal COVID-19 infection in China / Article	Clinical Infectious Diseases	•This study reports a case of neonatal COVID-19 infection in China with pharyngeal swabs tested positive by rRT-PCR assay 36 hours after birth. However, whether the case is a vertical transmission from mother to child remains to be confirmed.
Epidemiology and clinical	11.003.2020	Chest computed tomography images of early coronavirus disease (COVID-19)	Canadian Journal of Anaesthesia / Article	•This study describes the clinical and imaging features of a 27-yr-old pregnant woman at 36 weeks gestation, who was diagnosed with COVID-19.
Epidemiology and clinical	11.03.2020	Chest computed tomography in children with COVID-19 respiratory infection	Paediatric Radiology / Article	•Describes the chest CT findings in children with COVID-19. •Included five children from 10 months to 6 years of age (mean 3.4 years). All had had at least one CT scan after admission. Three of these five had CT

				abnormality on the first CT scan (at 2 days, 4 days and 9 days, respectively, after onset of symptoms) in the form of patchy ground-glass opacities; all normalised during treatment.
Epidemiology and clinical	12.03.2020	CHINESE ARTICLE: [Epidemiological investigation on a cluster epidemic of COVID-19 in a collective workplace in Tianjin]	Zhonghua Liu Xing Bing Xue Za Zhi / Article	• Investigated and analysed the epidemiological characteristics of a cluster epidemic of COIVD-19 in a collective workplace in Tianjin and evaluated the prevention and control measures based on limited evidence and experience in early period of COVID-19 epidemic.
Epidemiology and clinical	12.03.2020	A comparative study on the clinical features of COVID-19 pneumonia to other pneumonias	Clinical Infectious Diseases / Article	•This study compared the clinical features of COVID-19 pneumonia to other pneumonias. •Nineteen 2019-nCoV pneumonia (NCOVID-19) and fifteen other pneumonia patients (NON-NCOVID-19) in out of Hubei places were included. •Found that the 2019-nCoV infection caused similar onsets to other pneumonias. CT scan may be a reliable test for screening NCOVID-19 cases. Liver function damage is more frequent in NCOVID-19 than NON-NCOVID-19 patients. LDH and α-HBDH may be considerable markers for evaluation of NCOVID-19.
Epidemiology and clinical	12.03.2020	Detection of Covid-19 in Children in Early January 2020 in Wuhan, China	The New England Journal of Medicine / Correspondence	•This study conducted a retrospective analysis involving hospitalized children in Wuhan, China. •From January 7 to January 15, 2020, a total of 366 hospitalized children (≤16 years of age) were enrolled in a retrospective study of respiratory infections at three branches of Tongji Hospital, which are located 14 km to 34 km from one another in central Wuhan. •This study showed that Covid-19 occurred in children, causing moderate-to-severe respiratory illness, in the early phase of the SARS-CoV-2 outbreak in Wuhan and was associated with ICU admission in one patient.
Epidemiology and clinical	12.03.2020	Dysregulation of immune response in patients with COVID-19 in Wuhan, China	Clinical Infectious Diseases / Article	•The demographic and clinical data of all confirmed cases with COVID-19 on admission at Tongji Hospital from January 10 to February 12, 2020, were collected and analysed. The data of laboratory examinations, including peripheral lymphocyte subsets, were analysed and compared between

				severe and non-severe patients. •Of the 452 patients with COVID-19 recruited, 286 were diagnosed as severe infection. •Concluded that the novel coronavirus might mainly act on lymphocytes, especially T lymphocytes. Surveillance of NLR and lymphocyte subsets is helpful in the early screening of critical illness, diagnosis and treatment of COVID-19.
Epidemiology and clinical	12.03.2020	Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020	Eurosurveillance / Rapid communication	•On 5 February 2020, in Yokohama, Japan, a cruise ship hosting 3,711 people underwent a 2-week quarantine after a former passenger was found with COVID-19 post-disembarking. As at 20 February, 634 persons on board tested positive for the causative virus. •The authors conducted statistical modelling to derive the delay-adjusted asymptomatic proportion of infections, along with the infections' timeline. The estimated asymptomatic proportion was 17.9% (95% credible interval (CrI): 15.5–20.2%). Most infections occurred before the quarantine start.
Epidemiology and clinical	13.03.2020	First known person-to-person transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the USA	The Lancet / Article	•Describes the first known person-to-person transmission of SARS-CoV-2 in the USA. •Person-to-person transmission of SARS-CoV-2 occurred between two people with prolonged, unprotected exposure while Patient 1 was symptomatic. Despite active symptom monitoring and testing of symptomatic and some asymptomatic contacts, no further transmission was detected.
Epidemiology and clinical	11.03.2020	Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight	International Journal of Health Geographic's / Editorial	•This paper offers pointers to, and describes, a range of practical online/mobile GIS and mapping dashboards and applications for tracking the 2019/2020 coronavirus epidemic and associated events as they unfold around the world. Some of these dashboards and applications are receiving data updates in near-real-time (at the time of writing), and one of them is meant for individual users (in China) to check if the app user has had any close contact with a person confirmed or suspected to have been infected with SARS-CoV-2 in the recent past. •They also discuss additional ways GIS

		against outbreaks and epidemics		can support the fight against infectious disease outbreaks and epidemics.
Epidemiology and clinical	12.03.2020	Histopathologic Changes and SARS-CoV-2 Immunostaining in the Lung of a Patient With COVID-19	Ann Intern Med / Letters	•Describes the histopathologic changes in the lung of a patient with COVID-19. •The histopathologic changes seen on post-mortem transthoracic needle biopsies from a patient with COVID-19 who had respiratory failure and radiographic bilateral ground-glass opacities are consistent with diffuse alveolar damage.
Epidemiology and clinical	11.03.2020	How to balance acute myocardial infarction and COVID-19: the protocols from Sichuan Provincial People's Hospital	Intensive Care Medicine / Article	•Acute myocardial infarction (AMI) is a cardiovascular emergency and requires an emergency diagnosis and treatment process. Unfortunately, the highly contagious COVID-19 pneumonia is obviously affecting the diagnosis and treatment of acute myocardial infarction (AMI) which includes ST-elevated myocardial infarction (STEMI) and non-ST-segment elevation acute myocardial infarction (NSTEMI). •This paper discuss the protocol developed by Sichuan Provincial People's Hospital for the diagnosis and treatment of AMI during this epidemic.
Epidemiology and clinical	12.03.2020	Indirect Virus Transmission in Cluster of COVID-19 Cases, Wenzhou, China, 2020	Emerg Infect Dis / Research Letter	•To determine possible modes of virus transmission, the authors investigated a cluster of COVID-19 cases associated with a shopping mall in Wenzhou, China. •Data indicated that indirect transmission of the causative virus occurred, perhaps resulting from virus contamination of common objects, virus aerosolization in a confined space, or spread from asymptomatic infected persons.
Epidemiology and clinical	11.03.2020	New coronavirus outbreak: Framing questions for pandemic prevention	Science Translational Medicine / Editorial	•The authors discuss the need to understand and quantify the dominant variables that govern the SARS–CoV-2 outbreak, rather than relying exclusively on confirmed cases and their geospatial spread.
Epidemiology and clinical	12.03.2002	Novel Coronavirus (COVID-19) Epidemic: What	Journal of the American Geriatrics Society / Research Letter	•Since COVID-19 seems to have a similar pathogenic potential as SARS-CoV and MERS-CoV, older adults are likely to be at increased risk of severe infections, cascade of complications,

		Are the Risks for Older Patients?		disability, and death, as observed with influenza and respiratory syncytial virus infections. This paper discusses this.
Epidemiology and clinical	12.03.2020	Post-discharge surveillance and positive virus detection in two medical staff recovered from coronavirus disease 2019 (COVID-19), China, January to February 2020	Eurosurveillance / Rapid communication	•Since December 2019, 62 medical staff of Zhongnan Hospital in Wuhan, China have been hospitalised with coronavirus disease 2019. During the post-discharge surveillance after clinical recovery, swabs were positive in two asymptomatic cases (3.23%). Case 1 had presented typical clinical and radiological manifestations on admission, while manifestation in Case 2 was very mild. •In conclusion, a small proportion of recovered patients may test positive after discharge, and post-discharge surveillance and isolation need to be strengthened.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Analysis clinical features of COVID-19 infection in secondary epidemic area and report potential biomarkers in evaluation	medRxiv (not peer-reviewed) / Article	•Identified potential biomarkers for the evaluation of novel coronavirus-infected patients (n=33), to guide the diagnosis and treatment of this disease in secondary epidemic areas and provide a reference for the clinical prevention and control of this epidemic situation. •Respiratory tract ailments and systemic symptoms were the primary symptoms of novel coronavirus infection in the secondary epidemic area. The abnormal increase in serum amyloid protein (SAA) may be used as an auxiliary index for diagnosis and treatment. CRP changes before other blood parameters and thus may be an effective evaluation index for patients with COVID-19 infection.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Clinical features of imported cases of coronavirus disease 2019 in Tibetan patients in the Plateau area	medRxiv (not peer-reviewed) / Article	•The clinical characteristics of Tibetan patients living in the Qinghai-Tibetan plateau are unknown. This study investigated the epidemiological, clinical, laboratory and radiological characteristics of these patients. They included 67 Tibetan patients with confirmed SARS-CoV-2 infection. •Imported cases of COVID-19 in Tibetan patients were generally mild in this high-altitude area. Absence of fever or radiologic abnormalities on initial presentation were common.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Epidemiological	medRxiv (not peer-reviewed) /Article	•In this retrospective study, 64 confirmed cases of novel coronavirus-infected medical staff admitted to Union Hospital, Wuhan between 16

		and clinical characteristics of COVID-19 in adolescents and young adults		Jan, 2020 to 15 Feb, 2020 were included. •In this study, medical staff infected with COVID-19 have relatively milder symptoms and favourable clinical course, which may be partly due to their medical expertise, younger age and less underlying diseases.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Estimates of the severity of COVID-19 disease	PRE-PRINT NOT PEER-REVIEWED:	•The authors used individual-case data from mainland China and cases detected outside mainland China to estimate the time between onset of symptoms and outcome (death or discharge from hospital). •Interpretation: These early estimates give an indication of the fatality ratio across the spectrum of COVID-19 disease and demonstrate a strong age-gradient in risk.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: First 12 patients with coronavirus disease 2019 (COVID-19) in the United States	medRxiv (not peer-reviewed) / Article	•Describes the epidemiology, clinical course, and virologic characteristics of the first 12 U.S. patients with COVID-19.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Maternal and neonatal outcomes of pregnant women with COVID-19 pneumonia: a case-control study	medRxiv (not peer-reviewed) / Article	•Conducted a case-control study to compare clinical characteristics, maternal and neonatal outcomes of pregnant women with and without COVID-19 pneumonia. •Conclusion: Severe maternal and neonatal complications were not observed in pregnant women with COVID-19 pneumonia who had vaginal delivery or caesarean section. Mild respiratory symptoms of pregnant women with COVID-19 pneumonia highlight the need of effective screening on admission.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Prolonged presence of SARS-CoV-2 in feces of pediatric patients during the convalescent phase	medRxiv (not peer-reviewed) / Article	•Faecal shedding of SARS-CoV-2 has been constantly reported in patients with coronavirus disease 2019 (COVID-19). Most published studies focus on adult populations, whereas data concerning paediatric patients is relatively scarce. •From January 17, 2020 to March 6, 2020, three paediatric cases of COVID-19 were reported in Qingdao, Shandong Province, China. Epidemiological, clinical, laboratory, and radiological characteristics and treatment data of these children were

				collected. •Paediatric patients with COVID-19 are very different from adult patients in regards to epidemiological, clinical, laboratory, and radiological characteristics. Prolonged shedding of SARS-CoV-2 in stools of infected children indicates the potential for the virus to be transmitted through faecal excretion.
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Retrospective Analysis of Clinical Features in 101 Death Cases with COVID-19	medRxiv (not peer-reviewed) / Article	•Describe the clinical features in death cases with COVID-19 (n=101). •Conclusions: Critical COVID-19 can cause fatal respiratory distress syndrome and multiple organ failure with high mortality rate. Heart may be the earliest damaged organ except the lungs. Secondary infection in the later period is worthy of attention
Epidemiology and clinical	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: The demand for inpatient and ICU beds for COVID-19 in the US: lessons from Chinese cities	medRxiv (not peer-reviewed) / Article	•Describe the intensive care unit (ICU) and inpatient bed needs for confirmed COVID-19 patients in two Chinese cities (Wuhan and Guangzhou) from January 10 to February 29, 2020, and compared the timing of disease control measures in relation to the timing of SARS-CoV-2 community spread. •Estimated the peak ICU bed needs in US cities if a Wuhan-like outbreak occurs.
Epidemiology and clinical	11.03.2020	Prevalence and impact of cardiovascular metabolic diseases on COVID-19 in China	Clinical Research in Cardiology / Review	•The aim of this paper was to determine the association of cardiovascular metabolic diseases with the development of COVID-19. A total of six studies with 1527 patients were included in this study. •Patients with previous cardiovascular metabolic diseases may face a greater risk of developing into the severe condition and the comorbidities can also greatly affect the prognosis of the COVID-19. On the other hand, COVID-19 can, in turn, aggravate the damage to the heart.
Epidemiology and clinical	12.03.2020	A report of clinical diagnosis and treatment of 9 cases of coronavirus disease 2019	Journal of Medical Virology / Article	•In retrospective analysis, the authors report nine cases of COVID-19, describe the history of contact, clinical manifestations, the course of diagnosis and clinical treatment before, during and after treatment.
Epidemiology and clinical	12.03.2020	SARS-CoV-2 Infection among Travelers Returning from Wuhan, China	The New England Journal of Medicine / Correspondence	•Modelling estimates suggest that in Wuhan, China, the city with the most Covid-19 cases, there are substantially more cases than were officially reported, because milder cases may

				not have been captured in hospital-based surveillance. Data on travellers returning from areas with cases of Covid-19 could be useful in estimating its incidence. •This paper followed up on 94 persons who boarded an evacuation flight from Wuhan to Singapore on January 30, 2020.
Epidemiology and clinical	12.03.2020	Supporting the Health Care Workforce During the COVID-19 Global Epidemic	JAMA / Viewpoint	• The pressure on the global health care workforce continues to intensify. This pressure takes 2 forms. The first is the potentially overwhelming burden of illnesses that stresses health system capacity and the second is the adverse effects on health care workers, including the risk of infection. • This paper discusses ways to support the health care workforce during the COVID-19 global epidemic.
Infection control	12.03.2020	Coronavirus Disease 2019 (COVID-19): Emerging and Future Challenges for Dental and Oral Medicine	Journal of Dental Research / Article	• For dental practices and hospitals in areas that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed. •This article, based on the authors experience and relevant guidelines and research, introduces essential knowledge about COVID-19 and nosocomial infection in dental settings and provides recommended management protocols for dental practitioners and students in (potentially) affected areas.
Infection control	11.03.2020	Preparing for a COVID-19 pandemic: a review of operating room outbreak response measures in a large tertiary hospital in Singapore	Canadian Journal of Anaesthesia / Brief Report	•To prepare for a pandemic, hospitals need a strategy to manage their space, staff, and supplies so that optimum care is provided to patients. In addition, infection prevention measures need to be implemented to reduce in-hospital transmission. In the operating room, these preparations involve multiple stakeholders and can present a significant challenge. •Here, the authors describe the outbreak response measures of the anaesthetic department staffing the largest (1,700-bed) academic tertiary level acute care hospital in Singapore (Singapore General Hospital) and a smaller regional hospital (Sengkang General Hospital).

Infection control	12.03.2020	Updated rapid risk assessment from ECDC on the novel coronavirus disease 2019 (COVID-19) pandemic: increased transmission in the EU/EEA and the UK	Eurosurveillance / Overview	•The 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: Poster: Effective hand-washing, COVID-19 - How to minimise the spread? and Considerations relating to social distancing measures in response to the COVID-19 epidemic. •ECDC also publishes regular risk assessments. This paper contains the summary from the sixth update published on 12 March 2020.
Treatment	11.03.2020	The emergence of a novel coronavirus (SARS-CoV-2), their biology and therapeutic options	Journal of Clinical Microbiology / Review	•In this review, the authors summarize current information about the emergence, origin, diversity, and epidemiology of three pathogenic coronaviruses with a specific focus on the current outbreak in Wuhan, China. they also discuss the clinical features and potential therapeutic options that may be effective against SARS-CoV-2.
Treatment	12.03.2020	Possible therapeutic role of a highly standardized mixture of active compounds derived from cultured Lentinula edodes mycelia (AHCC) in patients infected with 2019 novel coronavirus	Minerva Gastroenterologica e Dietologica / Article	•AHCC is an α-glucan-based standardized mushroom extract that has been extensively investigated as an immunostimulant both in animals and/or in humans affected by West Nile virus, influenza virus, avian influenza virus, hepatitis C virus, papillomavirus, herpes virus, hepatitis B virus and HIV by promoting a regulated and protective immune response. •Although the efficacy of AHCC has not yet been specifically evaluated with respect to SARS-CoV-2 disease, its action in promoting a protective response to a wide range of viral infections, and the current absence of effective vaccines, could support its use in the prevention of diseases provoked by human pathogenic coronavirus, including COVID-19.
Treatment	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Protocol for a randomized controlled trial testing inhaled nitric oxide therapy in	medRxiv (not peer-reviewed) / Article	•Describes a protocol for a randomized controlled trial testing inhaled nitric oxide therapy in spontaneously breathing patients with COVID-19.

		spontaneously breathing patients with COVID-19		
Treatment	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Protocol of a randomized controlled trial testing inhaled Nitric Oxide in mechanically ventilated patients with severe acute respiratory syndrome in COVID-19 (SARS-CoV-2)	medRxiv (not peer-reviewed) / Article	•Describes the protocol of a randomized controlled trial testing inhaled Nitric Oxide in mechanically ventilated patients with severe acute respiratory syndrome in COVID-19 (SARS-CoV-2).
Treatment	11.03.2020	Rapid Identification of Potential Inhibitors of SARS-CoV-2 Main Protease by Deep Docking of 1.3 Billion Compounds	Molecular Informatics / Article	•The authors previously developed a novel deep learning platform - Deep Docking (DD) which provides fast prediction of docking scores of Glide (or any other docking program) and, hence, enables structure-based virtual screening of billions of purchasable molecules in a short time. •In the current study the authors applied DD to all 1.3 billion compounds from ZINC15 library to identify top 1,000 potential ligands for SARS-CoV-2 Mpro protein. The compounds are made publicly available for further characterization and development by scientific community.
Miscellaneous	11.03.2020	Nigeria responds to COVID-19; first case detected in sub-Saharan Africa	Nature Medicine / News feature	•Discusses Nigeria's position to respond to COVID-19.
Miscellaneous	13.03.2020	Did the hesitancy in declaring COVID-19 a pandemic reflect a need to redefine the term?	The Lancet / Correspondence	•The debate around the terminology used for COVID-19 raises two important questions. The first question is why there was reluctance to call the COVID-19 outbreak a pandemic, and the second question is whether the terminology is of any practical importance. This paper discusses this.
Miscellaneous	12.03.2020	History in a Crisis - Lessons for Covid-19	The New England Journal of Medicine / Perspective	•The history of epidemics offers considerable advice, but only if people know the history and respond with wisdom. This paper discusses this.

Miscellaneous	11.03.2020	How Is the World Responding to the 2019 Coronavirus Disease Compared with the 2014 West African Ebola Epidemic? The Importance of China as a Player in the Global Economy	The American Journal of Tropical Medicine and Hygiene / Article	•This article describes similarities and differences in the response of governments and the international community to the current COVID-19 and the 2014 West African Ebola epidemic. It expresses the opinion that the speed and scale of the response to the 2019 COVID-19 are affected by the important role that China plays in the global economy. By contrast, insufficient and less timely action was initially undertaken in West African countries during the 2014 Ebola epidemic. •It concludes by stating why preparedness for and response to all disease outbreaks, also in countries of lower economic importance, should become a priority in the global health agenda.
Miscellaneous	13.03.2020	Politicians: please work together to minimise the spread of COVID-19 / Editorial	The New Zealand Medical Journal	•A piece by a group of more than 50 of the New Zealand's leading infectious disease and public health scientists and professionals. They request that the political leaders work together and use their influence to minimise the impact of the virus in their community and propose measures to do so.
Miscellaneous	13.03.2020:	PRE-PRINT NOT PEER-REVIEWED: The Impact of School Closure for COVID-19 on the US Healthcare Workforce and the Net Mortality Effects	medRxiv (not peer-reviewed) / Article	•Analysed data from the US Current Population Survey to measure the potential child care obligations for US healthcare workers that will need to be addressed if school closures are employed as a social distancing measure.
Miscellaneous	12.03.2020	Retrospective analysis of the possibility of predicting the COVID-19 outbreak from Internet searches and social media data, China, 2020	Eurosurveillance / Rapid communication	•The peak of Internet searches and social media data about the coronavirus disease 2019 (COVID-19) outbreak occurred 10–14 days earlier than the peak of daily incidences in China. Internet searches and social media data had high correlation with daily incidences, with the maximum $r > 0.89$ in all correlations. The lag correlations also showed a maximum correlation at 8–12 days for laboratory-confirmed cases and 6–8 days for suspected cases.
Miscellaneous	12.03.2020	To what extent does evidence support	Evidence & Policy: A Journal of Research,	•This review defined and contextualised the role of scientific evidence in the governance of

		decision making during infectious disease outbreaks? A scoping literature review	Debate and Practice / Review	infectious disease outbreaks and to identified recommendations for overcoming common barriers to evidence-informed decision making.
Modelling	12.03.2020	Real estimates of mortality following COVID-19 infection	The Lancet Infectious Diseases / Correspondence	• Recently, WHO reported that the time between symptom onset of COVID-19 ranged from about 2 weeks to 8 weeks. In this study the authors re-estimated mortality rates of COVID-19 by dividing the number of deaths on a given day by the number of patients with confirmed COVID-19 infection 14 days before. •On this basis, using WHO data on the cumulative number of deaths to March 1, 2020, mortality rates would be 5·6% (95% CI 5·4–5·8) for China and 15·2% (12·5–17·9) outside of China. Estimates will increase if a longer delay between onset of illness and death is considered. A recent time-delay adjusted estimation indicates that mortality rate of COVID-19 could be as high as 20% in Wuhan, the epicentre of the outbreak. •These findings show that the current figures might underestimate the potential threat of COVID-19 in symptomatic patients.
Modelling	12.03.2020	COVID-19 and Italy: what next?	The Lancet	•The percentage of patients in intensive care reported daily in Italy between March 1 and March 11, 2020, has consistently been between 9% and 11% of patients who are actively infected. The number of patients infected since Feb 21 in Italy closely follows an exponential trend. If this trend continues for 1 more week, there will be 30000 infected patients. Intensive care units will then be at maximum capacity; up to 4000 hospital beds will be needed by mid-April, 2020. •This analysis might help political leaders and health authorities to allocate enough resources, including personnel, beds, and intensive care facilities, to manage the situation in the next few days and weeks. If the Italian outbreak follows a similar trend as in Hubei province, China, the number of newly infected patients

				could start to decrease within 3?4 days, departing from the exponential trend. However, this cannot currently be predicted because of differences between social distancing measures and the capacity to quickly build dedicated facilities in China.
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Effectiveness of isolation and contact tracing for containment and slowing down a COVID-19 epidemic: a modelling study	medRxiv (not peer-reviewed) / Article	•Evaluated whether and under which conditions it is possible to control and slow down a COVID-19 epidemic in the early stages by isolation and contact tracing.
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Inferring the number of COVID-19 cases from recently reported deaths	medRxiv (not peer-reviewed) / Article	•Estimated the number of COVID-19 cases from newly reported deaths in a population without previous reports. •Results suggest that by the time a single death occurs, hundreds to thousands of cases are likely to be present in that population. This suggests containment via contact tracing will be challenging at this point, and other response strategies should be considered. •This approach is implemented in a publicly available, user-friendly, online tool.
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Lessons drawn from China and South Korea for managing COVID-19 epidemic: insights from a comparative modeling study	medRxiv (not peer-reviewed) / Article	•Conducted a comparative study of COVID-19 epidemic in three different settings: mainland China, the Guangdong province of China and South Korea, by formulating two disease transmission dynamics models incorporating epidemic characteristics and setting-specific interventions, and fitting the models to multi-source data to identify initial and effective reproduction numbers and evaluate effectiveness of interventions.
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Modeling the situation of COVID-19 and effects of different containment	medRxiv (not peer-reviewed) / Article	•This paper proposes a quarantine-susceptible-exposed-infectious-resistant (QSEIR) model which considers the unprecedented strict quarantine measures in almost the whole of China to resist the epidemic.

		strategies in China with dynamic differential equations and parameters estimation		
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Prediction of the COVID-19 outbreak based on a realistic stochastic model	medRxiv (not peer-reviewed) / Article	•In this paper, a novel stochastic model is proposed which aims to account for the unique transmission dynamics of COVID-19 and capture the effects of intervention measures implemented in Mainland China.
Modelling	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: The time scale of asymptomatic transmission affects estimates of epidemic potential in the COVID-19 outbreak	medRxiv (not peer-reviewed) / Article	•Assess the impact of asymptomatic transmission on epidemic potential of novel respiratory pathogens (like COVID-19) as measured both by the basic reproduction number (i.e., the expected number of secondary cases generated by an average primary case in a fully susceptible population) and the fraction of new secondary cases attributable to asymptomatic individuals.
Modelling	12.03.2020	Serial interval in determining the estimation of reproduction number of the novel coronavirus disease (COVID-19) during the early outbreak	J Travel Med / Article	•Discussed findings of a review published by Liu et al which summarized the scientific research in estimating the basic reproduction number (R0) released from 1 January to 7 February 2020. •During the early outbreak, when the key epidemiological features of COVID-19 were uncovered, the R0 estimation largely relied on the growth rate of the epidemic curve and the estimation of the serial interval (SI). Here, the authors demonstrate that an overlarge SI would lead to overestimation of R0.
Social Sciences	13.03.2020	PRE-PRINT NOT PEER-REVIEWED: Novel Coronavirus (COVID-19) Knowledge and Perceptions: A Survey on Healthcare workers	medRxiv (not peer-reviewed) / Article	•Investigated the knowledge and perceptions of healthcare workers (HCWs) about COVID-19. A total of 453 HCWs completed the survey (response rate: 85.6%); 51.6% are males, aged 25-34 years (32.1%), and most of them are doctors (30.2%) and medical students (29.6%). •Most used social media to obtain the information (61%), a significant proportion of HCWs had poor knowledge of its transmission (61%), and symptoms onset (63.6%) and showed a positive perception of

				COVID-19 prevention and control. Factors such as age and profession are associated with inadequate knowledge and poor perception of COVID-19. •Conclusion: As the global threat of COVID-19 continues to emerge, it is critical to improving knowledge and perceptions among HCWs. Educational interventions are urgently needed to reach HCWs beyond the borders, and further studies are warranted.