Public Health England

International EPI Cell Daily Evidence Digest – 27/03/2020

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Please note that we are including preprints, which are preliminary reports of work that have NOT been peer-reviewed.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
24.03.2020	Coronavirus disease 2019: initial chest CT findings / Research article	European Radiology	• Multiple GGOs with consolidations in the periphery of the lungs were the primary CT characteristic of COVID-19. • The halo sign may be a special CT feature in the early-stage COVID-19 patients. • Significantly increased CT score may indicate the aggravation of COVID-19 in the progressive stage.
26.03.2020	CT screening for early diagnosis of SARS-CoV-2 infection - Authors' reply	The Lancet Infectious Diseases / Correspondence	•The authors reply to concerns raised by Yongshun Huang and colleagues regarding their article on radiological findings in coronavirus disease 2019 (COVID-19).

27.03.2020	Radiographic Findings and other Predictors in Adults with Covid-19	medRxiv (not peer-reviewed) / Article	•This report suggests that the extent of lung lesions in early CT images is a potential predictor of poor outcome of Covid-19. This will help clinicians to identify the patients with poor prognosis at early stage.
21.03.2020	Profile of Specific Antibodies to SARS-CoV-2: The First Report	Journal of Infection / Letter	•Profile of specific antibodies to virus in blood can assist diagnosis and reflect disease course. •The preliminary study explored the dynamic profile of IgM and IgG. •Serum IgM to SARS-COV-2 last more than a month indicating the prolonged virus replication in infected patients.
27.03.2020	A role for CT in COVID-19? What data really tell us so far.	The Lancet / Correspondence	•Discusses imaging as an aid in screening or accelerating the speed of diagnosis with COVID-19, especially with shortages of RT-PCR.
26.03.2020	CT screening for early diagnosis of SARS-CoV-2 infection	The Lancet Infectious Diseases / Correspondence	•Heshui Shi et al reported chest CT image characteristics of subclinical and clinical stages among 81 patients confirmed to have SARS-CoV-2 infection. Undoubtedly, their work is important for clinical management of coronavirus disease 2019 (COVID-19) pneumonia. However, from an epidemiological perspective, interpretation of CT for early identification of SARS-CoV-2 infection needs to be done with caution. This paper discusses this.
26.03.2020	Comparative accuracy of oropharyngeal and nasopharyngeal swabs for diagnosis of COVID-19	CEBM Research / Rapid review	•Review of the accuracy of oropharyngeal and nasopharyngeal swabs for diagnosis of COVID-19. •The only current COVID-19 specific data comparing OP with NP comes from two low quality, non-peer-reviewed studies and should be viewed with caution. It is not possible to accurately assess sensitivity from the existing data and there are no data to assess the diagnostic impact of combining both tests. •Overall, the data are not robust but the authors would caution against relying on OP alone over NP.
21.03.2020	Comparisons of nucleic acid conversion time of SARS-CoV-2 of different samples in ICU and non-ICU patients	Journal of Infection / Letter	• Dynamic RT-PCR test samples of nasal swabs, blood, faecal, urine, saliva and tears from thirty-two COVID-19 patients admitted to Central Hospital of Xiangtan from January to February, 2020. • Nasal swab had a longer conversion time of SARS-CoV-2 nucleic acid than blood and saliva. • Nucleic acid conversion time of SARS-CoV-2 in ICU was longer than non-ICU patients.
18.03.2020	Role of changes in SARS-CoV-2 spike protein in the interaction with the human ACE2 receptor: An in silico analysis	Excli Journal / Article	• The aim of this study was to determine the mutation(s) in the sequence of the spike protein of the SARS-CoV-2 that might be favouring human to human transmission. • An in silico approach was performed, and changes were detected in the S1 subunit of the receptor-binding domain of spike. • The data presented in this study suggest a higher affinity of the SARS-Cov-2 spike protein to the human ACE2 receptor, compared to the one of Bat-CoV spike and ACE2. This could be the cause of the rapid viral spread of SARS-CoV-2 in humans.
23.03.2020	Evolutionary Trajectory for the Emergence of Novel Coronavirus SARS-CoV-2	Pathogens / Article	• Aimed to track the evolutionary ancestors and different evolutionary strategies that were genetically adapted by SARS-CoV-2. •Whole-genome analysis revealed that SARS-CoV-2 was the descendant of Bat SARS/SARS-like CoVs and bats served as a natural reservoir. SARS-CoV-2 used mutations and recombination as

			crucial strategies in different genomic regions including the envelop, membrane, nucleocapsid, and spike glycoproteins to become a novel infectious agent. •Confirmed that mutations in different genomic regions of SARS-CoV-2 have specific influence on virus reproductive adaptability, allowing for genotype adjustment and adaptations in rapidly changing environments.
01.04.2020	Computers and viral diseases. Preliminary bioinformatics studies on the design of a synthetic vaccine and a preventative peptidomimetic antagonist against the SARS-CoV-2 (2019-nCoV, COVID-19) coronavirus	Computers in Biology & Medicine / Research article	• Bioinformatics studies are carried out on the COVID-19 virus. • A sequence motif KRSFIEDLLFNKV is of particular interest. • This sequence motif and surrounding variations formed the basis for proposing a specific synthetic vaccine epitope and peptidomimetic agent.
17.03.2020	Unrevealing sequence and structural features of novel coronavirus using in silico approaches: The main protease as molecular target	Excli Journal / Article	• Using an in silico approach, they evaluated SARS-CoV-2 main protease as a target for HIV-1 protease inhibitors to reveal the structural features related to their antiviral effect. •The results showed that several HIV inhibitors such as lopinavir, ritonavir, and saquinavir produce strong interaction with the active site of SARS-CoV-2 main protease. Furthermore, broad library protease inhibitors obtained from PubChem and ZINC (www.zinc.docking.org) were evaluated. •The analysis revealed 20 compounds that could be clustered into three groups based on their chemical features. Then, these structures could serve as leading compounds to develop a series of derivatives optimizing their activity against SARS-CoV-2 and other coronaviruses.

Epidemiology and clinical

Publication Date	Title/URL	Author	Digest
26.03.2020	Antibodies in Infants Born to Mothers With COVID-19 Pneumonia	Jama / Research letter	•Tests for IgG and IgM antibodies for SARS-CoV-2 became available in February 2020. On March 4, 2020, the seventh edition of the New Coronavirus Pneumonia Prevention and Control Protocol for the COVID-19 was released by the National Health Commission of the People's Republic of China and added serological diagnostic criteria. •The authors applied these new criteria to 6 pregnant women with confirmed COVID-19 and their infants. •Among 6 mothers with confirmed COVID-19, SARS-CoV-19 was not detected in the serum or throat swab by RT-PCR in any of their new-borns. However, virus-specific antibodies were detected in neonatal blood sera samples. The IgG concentrations were elevated in 5 infants.
26.03.2020	Possible Vertical Transmission of SARS-CoV-2 From an Infected Mother to Her Newborn	Jama/ Research letter	•A neonate born to a mother with COVID-19 had elevated antibody levels and abnormal cytokine test results 2 hours after birth. •The elevated IgM antibody level suggests that the neonate was infected in utero. The laboratory results displaying inflammation and liver injury indirectly support the possibility of vertical transmission.

			•Although infection at delivery cannot be ruled out, IgM antibodies usually do not appear until 3 to 7 days after infection, and the elevated IgM in the neonate was evident in a blood sample drawn 2 hours after birth. •Limitations of this report include the single case and that no PCR testing of amniotic fluid or placenta was performed. Additional examination of maternal and new born samples should be done to confirm this preliminary observation.
26.03.2020	Can SARS-CoV-2 Infection Be Acquired In Utero?	Jama / Editorial	•Two articles reported in this issue of JAMA from separate research teams in China present details of 3 neonates who may have been infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in utero from mothers with coronavirus disease 2019 (COVID-19). •Evidence for such transmission is based on elevated IgM antibody values in blood drawn from the neonates following birth. This paper discusses.
26.03.2020	Epidemiological and Clinical Characteristics of Children with Coronavirus Disease 2019	medRxiv (not peer-reviewed) / Article	•The authors reviewed and analysed data on paediatric patients (n=74) with laboratory-confirmed COVID-19, including basic information, epidemiological history, clinical manifestations, laboratory and radiologic findings, treatment, outcome and follow-up results. •Forty (59.46%) of the infected children were male, and the median age was 6 years. Except for one critically ill case, 20 (27.03%) patients did not show any symptoms of infection, 24 (32.43%) patients had acute upper respiratory tract infection and 29 (39.19%) patients were diagnosed with mild pneumonia. •Cough (24/74, 32.43%) and fever (20, 27.03%) were the predominant symptoms of 44 (59.46%) symptomatic patients at onset of the illness.
25.03.2020	Novel coronavirus SARS-CoV-2: familial spread resulting in COVID-19 pneumonia in a pediatric patient	Diagnostic & Interventional Radiology / Case report	• The authors briefly communicate a paediatric COVID-19 case in Hubei Province, which is a result of familial aggregation. • This case emphasizes that COVID-19 can easily result in familial spread and it may lead to COVID-19 pneumonia in young adults and children, which can be asymptomatic in the initial phases of the infection.
25.03.2020	Why is COVID-19 so mild in children?	Acta Paediatrica / Editorial	• A general pattern has been reported from multiple countries that children who test positive for COVID-19 experience a mild form of the disease. • This means that children and younger adults who do not have underlying conditions, such as impaired lung function or immunosuppression, have a much lower risk of severe forms of COVID-19 than other age groups. • The reasons for this mild COVID-19 disease in children remain elusive and multiple hypotheses exist. This editorial discusses some of these theories.
25.03.2020	The different clinical characteristics of corona virus disease cases between children and their families in China - the character of children with COVID-19	Emerging Microbes & Infections / Article	• Clinical data from nine children and their 14 families were collected, including general status, clinical, laboratory test, and imaging characteristics. All the children had positive result after the onset family of members. • Concluded that COVID-19 in children is mainly caused by family transmission, and their symptoms are mild and prognosis is better than adult. However, their PCR result in stool showed longer time than their families.

25.03.2020	Retrospective Analysis of 61 Cases of Children Died of Viral Pneumonia	Journal of Forensic Medicine [Fa i Hsueh Tsa Chih] / Article	• Retrospectively analysed the forensic and pathological post-mortem examination and clinical data of children who died of viral pneumonia in identification of cause of death cases and to discuss the clinical characteristics and pathological features of viral pneumonia in children, in order to provide reference to pathological diagnosis of viral pneumonia in children caused by SARS-CoV-2 infection. • Concluded that the clinical symptoms of children with viral pneumonia are difficult to notice, and because their immune system is not fully developed and they have poor autoimmunity, they can easily get into a critical condition and even die. Through analysis of the characteristics of forensic autopsy and histopathological changes, this study could provide reference for pathological diagnosis of viral pneumonia.
26.03.2020	Chest CT Findings in a Pregnant Patient with 2019 Novel Coronavirus Disease	Balkan Medical Journal / Case report	• The authors present the characteristics of CT changes, from onset to recovery, in the lungs of a 25-year-old woman with COVID-19 who was 35 weeks pregnant
27.03.2020	Clinical features and the maternal and neonatal outcomes of pregnant women with coronavirus disease 2019	medRxiv (not peer-reviewed) / Article	•This study aimed to determine the clinical features and the maternal and neonatal outcomes of pregnant women with Covid-19. •Thirty-three pregnant women with Covid-19 and 28 new-borns were identified. One (3%) pregnant woman needed the use of mechanical ventilation. No pregnant women admitted to the ICU. There were no moralities among pregnant women or new-borns. The percentages of pregnant women with mild, moderate, and severe symptoms were 13 (39.4%),19(57.6%), and 1(3%). One (3.6%) new born developed ARDS and was admitted to the NICU. The rate of perinatal transmission of SARS-CoV-2 was 3.6%. •This report suggests that pregnant women are not at increased risk for severe illness or mortality with Covid-19 compared with the general population.
27.03.2020	Anaesthesia and infection control in cesarean section of pregnant women with coronavirus disease 2019 (COVID-19)	medRxiv (not peer-reviewed) / Article	•Conducted a retrospective study to evaluate the safety and efficacy of combined spinal-epidural anaesthesia (CSEA) and infection control measures on perinatal care quality of 30 pregnant women with confirmed and suspected COVID-19. •Concluded that in caesarean sections for pregnant women with COVID-19 infection, CSEA was safe and efficient in achieving satisfactory obstetrical anaesthesia and postoperative analgesia. No cross-infection occurred in the HCWs working in these operations.
27.03.2020	Anaesthetic managment and clinical outcomes of parturients with COVID-19: a multicentre, retrospective, propensity score matched cohort study	medRxiv (not peer-reviewed) / Article	•Analysed the clinical features of COVID-19 parturients, and compared the anaesthetic regimen and clinical outcomes in parturients with or without COVID-19 undergoing caesarean delivery. •After achieving a balanced cohort through propensity score matching, 89 patients (COVID-19 group), who were diagnosed with COVID-19 by SARS-CoV-2 nucleic acid test and CT scan matched with 173 patients without COVID-19 (Control group). •Concluded that anaesthesia-related complications occur more frequently in the COVID-19 parturients and their newborns have a high risk of distress.
20.03.2020	Clinical characteristics of fatal and recovered cases of coronavirus disease	Chinese Medical	•Analysed the clinical characteristics of patients who succumbed to and who recovered from COVID-19.

	2019 (COVID-19) in Wuhan, China: a retrospective study	Journal / Research article	•Concluded that compared to the recovered group, more patients in the death group exhibited characteristics of advanced age, pre-existing comorbidities, dyspnoea, oxygen saturation decrease, increased WBC count, decreased lymphocytes, and elevated CRP levels. More patients in the death groups had complications such as ARDS, acute cardiac injury, acute kidney injury, shock, and DIC.
01.04.2020	COVID-19 in a patient with chronic lymphocytic leukaemia	The Lancet Haematology / Clinical picture	•Here the authors describe a case of a patient (39 yo male) with chronic lymphocytic leukaemia with COVID-19. •Concluded that clinical and biochemical data of COVID-19 might be partly masked by coexisting chronic lymphocytic leukaemia; better diagnostic strategies (ie, superior CT differential techniques such as radiomics) could be used for diagnosis; individuals with compromised immune status might be subjected to a longer incubation period; and it remains uncertain whether the combination of chemotherapy, corticosteroids, α-interferon, and immunoglobulins could work synergistically in patients with chronic lymphocytic leukaemia and COVID-19.
25.03.2020	The first locally acquired novel case of 2019-nCoV infection in a healthcare worker in the Paris area	Clinical Infectious Diseases / Case report	• The authors report the first 2019-nCoV locally acquired case in a healthcare-worker (HCW). • The patient, a 53-year-old man works as general practitioner, visiting up to 30-40 patients per day in the Paris area. On January 23rd, he provided care to Chinese tourists with influenza-like illness.
25.03.2020	Leukoerythroblastic reaction in a patient with COVID-19 infection	American Journal of Hematology / Case report	• The authors describe an unusual finding of leukoerythroblastosis in a 46 year old previously healthy female with COVID-19. • While cautioning that they cannot definitively conclude that their findings are secondary to infection with COVID-19, they report that, following clinical improvement, the neutrophilia resolved with the other blood findings slowing improving.
21.03.2020	The Clinical Characteristics of Myocardial injury 1 in Severe and Very Severe Patients with 2019 Novel Coronavirus Disease	Journal of Infection / Research letter in press	• The authors report a study where they explored the cardiac lesion biomarkers in patients with severe and very severe COVID-19. • They noted significantly increased cTnI, CK, HBDB and LDH levels in very severe group as compare to severe. • The consistently high cTnI levels in very severe group point to the importance that the heart injury could be a distinct, or even lethal feature in very severe COVID-19. Protecting from myocardial injury could be of vital importance in clinical treatment for reducing the mortality rate.
25.03.2020	Analysis of Epidemiological and Clinical features in older patients with Corona Virus Disease 2019 (COVID-19) out of Wuhan	Clinical Infectious Diseases / Research article	•A retrospective study was performed, with collecting data from medical records of confirmed COVID-19 patients in Zhejiang province from Jan 17 to Feb 12, 2020. Epidemiological, clinical and treatment data were analysed between those older (>=60y) and younger (<60y) patients. • 788 patients with confirmed COVID-19 were selected, where 136 were older patients with corresponding age of 68.28y+/-7.314y. •Concluded that the specific epidemiological and clinical features of older COVID-19 patients

			included female gender, body temperature, co-existing of basic diseases and rate of severe and critical type.
25.03.2020	Epidemiological and Clinical Predictors of COVID-19	Clinical Infectious Diseases / Case-control study	•This retrospective case-control study involves subjects (7 to 98 years) presenting at the designated national outbreak screening centre and tertiary care hospital in Singapore for SARS-CoV-2 testing from January 26 to February 16, 2020. •The study population included 788 subjects, of whom 54 (6.9%) were SARS-CoV-2 positive and 734 (93.1%) were SARS-CoV-2 negative. The median age was 34 years and 407 (51.7%) were female. • Concluded that rapidly ascertainable clinical and laboratory data could identify individuals at high risk of COVID-19 and enable prioritization of PCR-testing and containment efforts. Basic laboratory test results were crucial to prediction models.
25.03.2020	Association of Cardiac Injury With Mortality in Hospitalized Patients With COVID-19 in Wuhan, China	JAMA Cardiology / Cohort study	•Clinical laboratory, radiological, and treatment data were collected and analysed (n=416). Outcomes of patients with and without cardiac injury were compared. The association between cardiac injury and mortality was analysed. • Concluded that cardiac injury is a common condition among hospitalized patients with COVID-19 in Wuhan, China, and it is associated with higher risk of in-hospital mortality.
26.03.2020	Risk Factors Associated with Clinical Outcomes in 323 COVID-19 Patients in Wuhan, China	medRxiv (not peer-reviewed) / Article	•Data are urgently needed about risk factors associated with clinical outcomes. A retrospective chart review of 323 hospitalized patients with COVID-19 in Wuhan was conducted. •27 risk factors were significantly associated with clinical outcomes. Further, multivariate regression indicated that age over 65 years, smoking, critical disease status, diabetes, high hypersensitive troponin I (>0.04 pg/mL), leukocytosis (>10 x 109/L) and neutrophilia (>75 x 109/L) predicted unfavourable clinical outcomes. •By contrast, the use of hypnotics was significantly associated with favourable outcomes. Survival analysis also confirmed that patients receiving hypnotics had significantly better survival.
27.03.2020	ACE2 Expression is Increased in the Lungs of Patients with Comorbidities Associated with Severe COVID-19	medRxiv (not peer-reviewed) / Article	•The authors analysed over 700 lung transcriptome samples of patients with comorbidities associated with severe COVID-19 and found that ACE2 was highly expressed in these patients, compared to control individuals. •This finding suggests that patients with such comorbidities may have higher chances of developing severe COVID-19.
26.03.2020	Comorbid Diabetes Mellitus was Associated with Poorer Prognosis in Patients with COVID-19: A Retrospective Cohort Study	medRxiv (not peer-reviewed) / Article	• In this cohort study, they retrospectively reviewed 258 consecutive hospitalized COVID-19 patients with or without diabetes. Of the 258 hospitalized patients (63 with diabetes) with COVID-19, the median age was 64 years (range 23-91), and 138 (53.5%) were male. •Concluded that diabetes mellitus is associated with greater disease severity and a higher risk of mortality in patients with COVID-19. Primary and secondary prevention strategies are needed for COVID-19 patients with diabetes.

23.03.2020	Clinical Characteristics Hospitalized Patients with SARS-Cov-2 and HBV Co-infection	medRxiv (not peer-reviewed) / Article	•Investigated the impact of SARS-CoV-2 infection on Hepatitis B virus patients. •Concluded that SARS-Cov-2 infection may cause Live function damage in COVID-19 cases and the patients with HBV infection are likely to have more severe outcome.
26.03.2020	Acute kidney injury at early stage as a negative prognostic indicator of patients with COVID-19: a hospital-based retrospective analysis	medRxiv (not peer-reviewed) / Article	•This study describes acute kidney injury (AKI) at early stage of COVID-19 and its clinical significance. 355 COVID-19 patients were recruited and clinical data were collected from electronic medical records. Patient's prognosis was tracked and risk factors of AKI was analysed. •Among 56 COVID-19 patients with AKI, 33.9% died on mean 10.9 day after hospitalization. •Concluded that male, elderly COVID-19 patients with diabetes are more susceptible to AKI. AKI at early stage may be a negative prognostic indicator for COVID-19.
25.03.2020	An Acute Respiratory Infection Runs Into the Most Common Noncommunicable Epidemic-COVID-19 and Cardiovascular Diseases	JAMA Cardiology / Opinion	• The authors summarise current knowledge around COVID-19 patients with comorbid chronic cardiovascular diseases (CVDs) and review data with respect to cardiovascular complications of COVID-19.
25.03.2020	Considerations for Cardiac Catheterization Laboratory Procedures During the COVID-19 Pandemic - Perspectives from the Society for Cardiovascular Angiography and Interventions Emerging Leader Mentorship (SCAI ELM) Members and Graduates	Catheterization & Cardiovascular Interventions / Guidance	• COVID-19 infection likely triggers many of the pathways that promote acute coronary syndrome (endothelial activation, oxidation of low-density lipoproteins, platelet activation, expression of tissue factor), as previously established in the setting of influenza. • Since patients with cardiovascular disease are particularly susceptible, this document is intended to provide strategies for triage and management of care in the Cardiac Catheterization Laboratory (CCL). • Accordingly, this document has been created to guide the response to: - Confirmed COVID-19 positive or - Person under investigation (PUI)
17.03.2020	Diagnosis and Treatment Plan for COVID-19 (Trial Version 6)	Chinese Medical Journal / Guidance	• With the in-depth understanding and accumulation of diagnosis and treatment experience of COVID-19, the People's Republic of China's Diagnosis and Treatment Plan for COVID-2019 (the Tentative Fifth Revised Edition) was revised and formed the current tentative sixth edition.
23.03.2020	Managing COVID-19 in Surgical Systems	Annals of Surgery / Guidance	• The authors argue that provision of surgery will continue to be an essential aspect of our healthcare system throughout the pandemic, but all surgical systems will need to adapt to a rapidly changing environment. Having a clear surgical strategy during the COVID-19 pandemic will keep our systems resilient and effective and allow us to provide the very best care to the populations we serve. • The authors round up best practice from around the world in managing COVID-19 in surgical systems.
24.03.2020	Disseminated intravascular coagulation in patients with 2019-nCoV pneumonia	Journal of Thrombosis & Haemostasis / Commentary	• Commentary discussing emerging evidence that disseminated intravascular coagulation is a frequent occurrence in worsening 2019-nCoV pneumonia and is often associated with mortality.

24.03.2020	The Rheumatologist's Role in Covid-19	Journal of Rheumatology / Research article	•The authors discuss the role of rheumatologists in the management of Covid-19 CSS (cytokine storm syndrome). •Rheumatologists have a strong background in understanding the immune system, are familiar with CSS such as MAS as many of their patients develop it, and are most practiced with utilizing cytokine targeting therapy (e.g. IL-1 blockade, IL-6 blockade). • Rheumatologists can assist and work together with their colleagues in other subspecialties to diagnose and to treat those Covid-19 patients who develop CSS.
25.03.2020	Coronavirus Disease 2019 in Geriatrics and Long-term Care: The ABCDs of COVID-19	Journal of the American Geriatrics Society / Article	• The authors provide information, insights, and recommended approaches to COVID-19 in the long-term facility setting.
25.03.2020	Clinical observation and management of COVID-19 patients	Emerging Microbes & Infections / Commentary	• Three leading infectious disease experts in China share their bedside observations in the management of COVID-19 patients • Professor Taisheng Li depicts the clinical course of SARS-CoV-2 infection. Furthermore, he observes the significant abnormality of coagulation function and proposes that the early intravenous immunoglobulin and low molecular weight heparin anticoagulation therapy are very important. • Professor Hongzhou Lu expresses concern on the quality of the ongoing clinical trials as most trials are small in scale and repetitive in nature, and emphasizes the importance of the quick publication of clinical trial results. • Professor Wenhong Zhang introduces the team approach to manage COVID-19 patients.
24.03.2020	Practical considerations for performing regional anesthesia: lessons learned from the COVID-19 pandemic	Canadian Journal of Anaesthesia / Review article	• To avoid any airway manipulation, regional anaesthesia should be considered whenever surgery is planned for a suspect or confirmed COVID-19 patient or any patient who poses an infection risk. Regional anaesthesia has benefits of preservation of respiratory function, avoidance of aerosolization and hence viral transmission. • This article explores the practical considerations and recommended measures for performing regional anaesthesia in this group of patients, focusing on control measures geared towards ensuring patient and staff safety, equipment protection, and infection prevention.
24.03.2020	Covid-19: most patients require mechanical ventilation in first 24 hours of critical care	BMJ / News	• Reports results of an audit of patients from England, Wales, and Northern Ireland which found that two thirds (132) of covid-19 patients who required critical care in the UK had mechanical ventilation within 24 hours of admission. Additional information available at https://www.icnarc.org/About/Latest-News/2020/03/22/Report-On-196-Patients-Critically-Ill-With-Covid-19
23.03.2020	Recommendations for Endotracheal Intubation of COVID-19 Patients	Anesthesia & Analgesia / Guidance	• This editorial updates the recommendations for intubation which were prepared during the 2003 SARS epidemic in Toronto, Canada, relating to self protection when intubating suspected or confirmed patients with COVID-19. • The recommendations were prepared in consultation with infection protection and control

			experts at the University of Toronto. They should be adopted in the context of more comprehensive strategies to prevent disease transmission and may change as knowledge increases.
26.03.2020	Management of Critically Ill Adults With COVID-19	Jama / Comment	•Outlines guidelines on the management of critically ill adults with COVID-19. Includes infection control and testing, hemodynamic support, ventilatory support and therapy.
24.03.2020	Doctors' wellbeing: self-care during the covid-19 pandemic	BMJ / Views and reviews	• Commissioned opinion piece outlining principles of self-care for NHS staff during the COVID-19 pandemic.
24.03.2020	Epidemiological data from the COVID-19 outbreak, real-time case information	Scientific Data / Article	• To aid the analysis and tracking of the COVID-19 epidemic the authors collected and curated individual-level data from national, provincial, and municipal health reports, as well as additional information from online reports. • All data are geo-coded and, where available, include symptoms, key dates (date of onset, admission, and confirmation), and travel history. • The generation of detailed, real-time, and robust data for emerging disease outbreaks is important and can help to generate robust evidence that will support and inform public health decision making.
26.03.2020	SARS-CoV-2 viral load and the severity of COVID-19	CEBM Research / Rapid review	•The authors discuss evidence in SARs, SARs-CoV-2 and Influenza and the relationship of viral load and severity of the disease. •They also present a summary of the sources that verify current healthcare workers who have died across different countries.
24.03.2020	Clare Gerada: Doctors on the covid-19 front line also need to protect themselves and their colleagues	BMJ / Opinion	• Clare Gerada, former Chair of the RCGP, describes her COVID-19 symptoms and discusses the ethical dilemmas of doctors' duty to treat vs. their ethical duty to protect themselves and their colleagues.

Infection control

Publication Date	Title/URL	Author	Digest
28.03.2020	Offline: COVID-19 and the NHS - 'a national scandal'	The Lancet / Comment	•UK COVID-19 response criticism. •Discusses the UK Government's Contain–Delay–Mitigate–Research strategy.
28.03.2020	COVID-19: learning from experience	The Lancet / Editorial	•UK COVID-19 response criticism. •Following the sweep of COVID-19 is a series of dramatic containment measures that reflect the scale of the threat posed by the pandemic. Lockdowns that seemed draconian when instigated in Wuhan only 2 months ago are now becoming commonplace. However, many countries are still not following WHO's clear recommendations on containment (widespread testing, quarantine of cases, contact tracing, and social distancing) and have instead implemented haphazard measures, with some attempting only to suppress deaths by shielding the elderly and those with certain health conditions. This paper discusses this.

26.03.2020	COVID-19 gives the lie to global health expertise	The Lancet / Correspondence	•UK COVID-19 response criticism. •As the coronavirus disease 2019 (COVID-19) outbreak began spreading in Europe and the USA, a chart started circulating online showing ratings from the 2019 Global Health Security Index, an assessment of 195 countries' capacity to face infectious disease outbreaks, compiled by the US-based Nuclear Threat Initiative and the Johns Hopkins School of Public Health's Centre for Health Security. The USA was ranked first, and the UK second; South Korea was ranked ninth, and China 51st; most African countries were at the bottom of the ranking. •Things look different now. This paper discusses.
27.03.2020	Experts' request to the Spanish Government: move Spain towards complete lockdown	The Lancet / Correspondence	•The authors would like to express their concern about the limited capacity of actions taken by the Spanish Government to successfully control the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) outbreak and end the exponential growth phase of new cases. •The measures taken so far, consisting primarily of partial restriction mobility, are in the right direction, although some researchers have warned about the pressure placed on the building blocks of the health system.
25.03.2020	COVID-19 containment: China provides important lessons for global response	Fronteras en Medicina / Commentary	• The authors summarise the effective intervention and prevention measures in the fields of public health response, clinical management, and research development in China, which may provide vital lessons for the global response. It is really important to take collaborative actions now to save more lives from the pandemic of COVID-19.
21.03.2020	Wuhan and Hubei COVID-19 mortality analysis reveals the critical role of timely supply of medical resources	Journal of Infection / Article in press	• New COVID-19 cases have been steadily declining in China and more than 60000 patients have been recovered, largely due to the effective implementation of comprehensive control measures in China. • Here the authors report that some of these measures, such as a dramatic and timely increase of medical supplies, may play a critical role such that the mortality and recovery rates of COVID-19 in Wuhan follow exponential decay and growth modes, respectively.
23.03.2020	Protecting healthcare personnel from 2019-nCoV infection risks: lessons and suggestions	Fronteras en Medicina / Commentary	• Based on literature search and interviews with some HCP working at Wuhan, capital city of Hubei, the authors summarise some of the effective measures taken to reduce infection among HCP, and also make suggestions for improving occupational safety during an infectious disease outbreak.
21.03.2020	Putting resiliency of a health system to the test: COVID-19 in Taiwan	Journal of the Formosan Medical Association / Letter	• Letter summarising measures taken to date in Taiwan to limit spread of COVID-19.
01.04.2020	Deciphering the power of isolation in controlling COVID-19 outbreaks	The Lancet Global Health / Comment	•Isolation of cases and contacts has long been a strategy in the fight against infectious diseases; however, its effectiveness has varied. This paper discusses findings from studies looking at this.

26.03.2020	Transmission Potential of SARS-CoV-2 in Viral Shedding Observed at the University of Nebraska Medical Center	medRxiv (not peer-reviewed) / Article	•During the initial isolation of 13 individuals confirmed positive with COVID-19 infection, air and surface samples were collected in eleven isolation rooms to examine viral shedding from isolated individuals. •While all individuals were confirmed positive for SARS-CoV-2, symptoms and viral shedding to the environment varied considerably. •Concluded that SARS-CoV-2 is shed during respiration, toileting, and fomite contact, indicating that infection may occur in both direct and indirect contact.
27.03.2020	A special case of COVID-19 with long duration of viral shedding for 49 days	medRxiv (not peer-reviewed) / Article	•Report a non-severe patient with COVID-19 with viral shedding for 49 days.
24.03.2020	COVID-19 may transmit through aerosol	Irish Journal of Medical Science / Brief report	• The authors briefly discuss possible mechanisms of aerosol transmission of COVID-19.
21.03.2020	Coronavirus (Covid-19) outbreak on the cruise ship Diamond Princess	International Maritime Health / Editorial	• Editorial examining the quarantine of Diamond Princess, the first cruise ship that had an outbreak of coronavirus illness (Covid-19) on board. Lasting more than 14 days, the ship quarantine is unprecedented for the cruise industry, and some maritime health issues are addressed.
23.03.2020	Health measures to travelers and cruise ships in response to COVID-19	Journal of Travel Medicine / Article	• Modelling has estimated that early evacuation of all passengers who were quarantined for more than two weeks on board Diamond Princess in Japan in February 2020 would have been associated with 76 incubating persons, versus 619 who were actually tested positive for SARS-CoV-2 during the quarantine period on board the ship. • The author therefore argues the need for predefined standardised emergency plans at ports and on ships, trained staff to execute them and coordinated efforts with clear roles between ships and authorities at local, central and international level.
25.03.2020	Management strategy of novel coronavirus (COVID-19) pneumonia in the radiology department: a Chinese experience	Diagnostic & Interventional Radiology / Commentary	• The authors provide a general overview of the prevention and control of the COVID-19 epidemic in the radiology department based on their own experience in Xiangyang First People's Hospital Affiliated to Hubei University of Medicine. • They give a detailed overview including the aspects of CT acquisition process, protection level, equipment management, environmental zoning and disinfection, and psychological counselling measures.
26.03.2020	Considering inequalities in the school closure response to COVID-19	The Lancet Global Health / Correspondence	•Children have milder symptoms of COVID-19, and their role in transmitting the disease remains unclear. While governments can implement proactive school closures to slow transmission (delay phase), reduce burden on health care, or protect at-risk populations (mitigate phase), both the benefits for transmission and the adverse community effects should be considered. This paper discusses this.
26.03.2020	Audio Interview: Practical Measures to Help Prevent Covid-19	New England Journal of	• In this audio interview conducted on March 25, 2020, the editors discuss transmission of SARS-CoV-2 and how to prevent it, particularly in at-risk health care workers.

		Medicine / Audio interview	
25.03.2020	SARS-CoV-2 Transmission in Patients With Cancer at a Tertiary Care Hospital in Wuhan, China	JAMA Oncology / Research letter	•Reports the incidence and outcomes of SARS-CoV-2 infection in cancer patients who were treated at a tertiary cancer institution in Wuhan. •Propose that aggressive measures be undertaken to reduce frequency of hospital visits of patients with cancer during a viral epidemic going forward. For patients who require treatment, proper isolation protocols must be in place to mitigate the risk of SARS-CoV-2 infection.
25.03.2020	Suggestions for infection prevention and control in digestive endoscopy during current 2019-nCoV pneumonia outbreak in Wuhan, Hubei province, China	Endoscopy / Letter	• The authors suggest that endoscopy examination and procedures should be strictly limited in all areas of China during the current outbreak in order to combat against 2019-nCoV. • For essential endoscopy procedures, pre-screening of patients and protection of staff are critical to avoid hospital transmission. • A workflow is recommended for all endoscopy centres in China based on the current 2019-nCoV pneumonia outbreak in Wuhan, Hubei province, China.
25.03.2020	All Feet On Deck-The Role of Podiatry During the COVID-19 Pandemic: Preventing hospitalizations in an overburdened healthcare system, reducing amputation and death in people with diabetes	Journal of the American Podiatric Medical Association / Article	• Implementing the proposed Pandemic Diabetic Foot Triage System, in-home visits, higher acuity office visits, telemedicine, and remote patient monitoring can help podiatrists manage patients while reducing the COVID-19 risk.

Treatment

Publication Date	Title/URL	Author	Digest
21.03.2020	New therapeutic opportunities for COVID-19 patients with Tocilizumab: Possible correlation of interleukin-6 receptor inhibitors with osteonecrosis of the jaws	Oral Oncology / Letter	• After a literature research, the authors highlight a possible correlation between tocilizumab and medication-related osteonecrosis of the jaws (MRONJ), an infectious complication of antiresorptive and antiangiogenic drugs. Such a correlation has not previously been reported, but should be kept in mind when Tocilizumab is administered intravenous experimentally in the treatment of COVID-19 in China and Italy.
26.03.2020	Antihypertensive drugs and risk of COVID-19?	The Lancet Respiratory Medicine / Correspondence	(one of three papers with the same title published by different authors in the Lancet on 26.03.2020. This one is by Kevin Bryan Lo et al.) •Lei Fang and colleagues postulate that because severe SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2) receptor to facilitate host cell entry, disease severity and mortality of COVID-19 might be increased in patients taking angiotensin converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) during the COVID-19 pandemic, because the ACE2 receptor might be upregulated with use of ACEIs and ARBs. •The authors caution against indiscriminate discontinuation of ACEIs and ARBs in patients who rely on these drugs for treatment of heart failure and who, additionally, might benefit from the

			postulated positive effects during overwhelming infection with SARS-CoV-2. Discontinuation of ACEIs or ARBs is associated with readmission to hospital and mortality among patients with heart failure.
26.03.2020	Antihypertensive drugs and risk of COVID-19?	The Lancet Respiratory Medicine / Correspondence	(One of three papers with the same title published by different authors in the Lancet on 26.03.2020. This one is by Joshua Brown) •ACE2 is upregulated by antagonists along the renin–angiotensin system, such as angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs), which are common antihypertensive drugs used to treat patients with hypertension and diabetes. •Whether an association exists between increased ACE2 expression and risk of infection with SARS-CoV-2 or severity of COVID-19 is currently not understood. Nevertheless, Fang and colleagues suggested alternative treatment could be sought for those at high risk of infection, and broader public knowledge of this hypothesis has led to increasing uncertainty and concern.
26.03.2020	Antihypertensive drugs and risk of COVID-19?	The Lancet Respiratory Medicine / Correspondence	(One of three papers with the same title published by different authors in the Lancet on 26.03.2020. This one is by CJ Tignanelli et al.) •Lei Fang and colleagues suggest that clinicians should consider withholding angiotensin converting enzyme inhibitors (ACEIs) or angiotensin receptor blockers (ARBs) because of a potential increased risk of worse clinical outcomes in patients with coronavirus disease 2019 (COVID-19), and they suggest calcium channel blockers as an alternative. •However, data for this mechanism are largely from animal studies of heart tissue. Human data have not consistently shown increased ACE2 levels. This premature hypothesis has generated confusion across various media channels and in the medical community.
26.03.2020	Antihypertensive drugs and risk of COVID-19?-Authors' reply	The Lancet Respiratory Medicine / Correspondence	•The authors thank Joshua Brown, Kevin Lo and colleagues, and Christopher Tignanelli and colleagues for their responses to their Correspondence, and welcome the opportunity to reply. •Available published data indicate that ACE2 is a double-edged sword, particularly when considering patients with SARS-CoV-2 infection and comorbidities of hypertension, diabetes, and cardiovascular disease. The final answer as to whether drugs to treat these comorbidities (ie, ACEIs or ARBs) are more beneficial than harmful in this current pandemic is unclear, and all hypotheses should be investigated rather than being interpreted as evidence. •The overinterpretation of the authors hypothesis should not lead to changing drugs for patients with hypertension or diabetes without first consulting with an expert clinician.
23.03.2020	Angiotensin II for the Treatment of COVID-19-Related Vasodilatory Shock	Anesthesia & Analgesia / Article	• The disruption of ACE function in ARDS and sepsis makes early exogenous Ang-2 administration a physiologically rational choice for the treatment of COVID-19–associated vasodilatory shock. • With the anticipated widespread shortage of life-sustaining equipment , critical care personnel, and hospital resources, every single RRT-free, hypotension-free, ventilator-free, and ICU-free day will matter. Thus, although there are no current trials to support Ang-2's superiority over conventional vasopressors in COVID-19 patients with vasodilatory shock, the

			physiologic rationale for using the drug is strong, and the gravity of the current situation mandates that alternative therapies be considered.
25.03.2020	Renin-Angiotensin System Blockers and the COVID-19 Pandemic: At Present There Is No Evidence to Abandon Renin-Angiotensin System Blockers	Hypertension / Article	• Because the ACE2 protein is the receptor that facilitates coronavirus entry into cells, the notion has been popularized that treatment with renin-angiotensin system blockers might increase the risk of developing a severe and fatal severe acute respiratory syndrome coronavirus-2 infection. The present article discusses this concept. • In summary, based on the currently available evidence, treatment with renin-angiotensin system blockers should not be discontinued because of concerns with coronavirus infection.
25.03.2020	The Trial of Chloroquine in the Treatment of Corona Virus Disease 2019 (COVID-19) and Its Research Progress in Forensic Toxicology	Journal of Forensic Medicine [Fa i Hsueh Tsa Chih] / Review	• This paper reviews the pharmacological effects, poisoning and toxicological mechanisms, in vivo metabolism and distribution, and forensic issues of chloroquine drugs. • Chloroquine phosphate which has already been approved is confirmed to have an anti-SARS-CoV-2 effect and has been included in diagnostic and therapeutic guidelines. •However, awareness of the risk of chloroquine phosphate causing acute poisoning or even death should be strengthened.
24.03.2020	Inflammatory bowel disease care in the COVID-19 pandemic era: the Humanitas, Milan experience	Journal of Crohn's & colitis / Article	• The authors give a viewpoint on how operationally manage IBD patients ensuring quality of care in the current pandemic era.
25.03.2020	Chloroquine and hydroxychloroquine: Current evidence for their effectiveness in treating COVID-19	CEBM Research / Rapid review	•Several in vitro studies report antiviral activity of chloroquine and hydroxychloroquine against SARS-CoV-2. In vivo data, although promising, is currently limited to one study with considerable limitations. On the basis of the weak evidence available to date, treatment guidelines have already incorporated the usage of chloroquine/hydroxychloroquine for certain patients with COVID-19. •There is a higher risk of side effects in the presence of renal and liver impairment, and there have been isolated reports of COVID-19 disease-causing renal and hepatic injury. •Over twenty in vivo clinical trials have already been registered to test the use of chloroquine and hydroxychloroquine for the treatment of COVID-19. •Contraindications for the use of these drugs must be checked for each individual before treatment. Empirical evidence suggests that hydroxychloroquine has a better safety profile, and it might therefore be preferable to focus research efforts on this less toxic metabolite.
24.03.2020	Could chloroquine /hydroxychloroquine be harmful in Coronavirus Disease 2019 (COVID-19) treatment?	Clinical Infectious Diseases / Letter	• In response to research reporting in vitro activity of Hydroxychloroquine (HCQ) in inhibiting SARS-CoV-2, the authors point out that: • Despite the in vivo antiviral activity, no acute virus infection has been successfully treated by CQ/HCQ in humans • CQ/HCQ did not show any anti SARS-CoV effect on in-vivo models • The pathogenesis of COVID-19 is still unknown; therefore the immune effect provoked by CQ/HCQ administration in COVID-19 patients is unpredictable • Thus, CQ/HCQ not only could be useless in treating COVID-19 patients but even harmful, as it was for Chikungunya Virus infection. Hence, nevertheless the proved in vitro efficacy, before

			clinical trials results publication and/or further clarification about COVID-19 pathogenesis, clinicians should use it with caution.
24.03.2020	Covid-19: doctors are given new guidelines on when to admit patients to critical care	BMJ / News, Guidance	• Summarises recent NICE Rapid Guidelines NG159, NG160, NG161 covering critical care, delivery of systemic anticancer treatments, and dialysis service delivery.
25.03.2020	Optimizing COVID-19 candidate therapeutics: Thinking Without Borders	Clinical and translational science / Commentary	• This commentary seeks to share some key insights relevant to optimizing COVID-19 candidate therapeutics that were learned from attempts to optimize anti-infective posology in settings where quality and timely availability of data is challenging, with particular focus on influenza, including experiences from H5N1 and pH1N1 outbreaks.
24.03.2020	Covid-19: trials of four potential treatments to generate "robust data" of what works	BMJ / News	• The World Health Organization (WHO) is to coordinate an international study of treatments for covid-19 that will focus on four potential treatment strategies. • The study will focus on four treatment options: the novel antiviral drug remdesivir, developed by Gilead in response to Ebola; lopinavir and ritonavir, antiretroviral drugs used against HIV; lopinavir and ritonavir in combination with the immune system regulator interferon β; the antimalarial drug chloroquine, which has reportedly been effective in China. The drugs and combinations will be tested against standard care, which is supportive treatment with supplementary oxygen and respiratory support as required.

Social sciences

Publication Date	Title/URL	Author	Digest
01.04.2020	Mental health care for international Chinese students affected by the COVID-19 outbreak	The Lancet Psychiatry / Correspondence	•International Chinese students are living with the fear that their families in China are susceptible and at risk of infection with SARS-CoV-2, responsible for COVID-19. They also face discrimination and isolation in some countries due to being deemed as potential SARS-CoV-2 carriers. •Some media outlets have used derogatory headlines, perpetuating stereotypes and prejudices about Chinese people. This coverage fuels public fear, alienation, and discrimination. Consequently, such students are at risk of hate crimes, especially when individuals consider them contagious. •This situation can lead to mental health problems, such as denial, stress, anxiety, and fear. Hence, we urgently need to address the mental health needs of international Chinese students.
26.03.2020	A citizen's thoughts about COVID-19	The Lancet / Correspondence	•Thoughts on the COVD-19 pandemic from a Canadian student. •"Knowledge dissemination is especially crucial during this time, not only to share progress and hopefully expedite it, but also to ease many people around the world who are gripped by fear and are awaiting any positive or hopeful news. I am scared, but I can be less scared with increased communication."

25.03.2020	Parenting in a time of COVID-19	The Lancet / Correspondence	•COVID-19 is changing family life. The United Nations Educational, Scientific and Cultural Organization estimates 1·38 billion children are out of school or child care, without access to group activities, team sports, or playgrounds. •WHO, UNICEF, the Global Partnership to End Violence Against Children, the United States Agency for International Development USAID, the US CDC, Parenting for Lifelong Health, and the UK Research and Innovation Global Challenges Research Fund Accelerating Achievement for Africa's Adolescents Hub are collaborating to provide open access online parenting resources during COVID-19. This paper provide links to these resources.
01.04.2020	Patients with mental health disorders in the COVID-19 epidemic	The Lancet Psychiatry / Correspondence	•Global attention has largely been focused on the infected patients and the frontline responders, with some marginalised populations in society having been overlooked. Here, the authors write to express their concerns with regards to the effect of the epidemic on people with mental health disorders. Ignorance of the differential impact of the epidemic on these patients will not only hinder any aims to prevent further spread of COVID-19, but will also augment already existing health inequalities.

Miscellaneous

Publication Date	Title/URL	Author	Digest
26.03.2020	Efforts escalate to protect homeless people from COVID-19 in UK	The Lancet Respiratory Medicine / Spotlight	•Across the UK, a large team is working at breakneck speed to put in place systems to protect homeless people from the potentially devastating effects caused by coronavirus disease 2019 (COVID-19). Homeless people often have multiple chronic conditions and live together in shared and cramped accommodation, or on the streets; they are, therefore, vulnerable to high rates of infection and mortality without urgent intervention. This paper discusses this.
27.03.2020	Air Pollution Reduction and Mortality Benefit during the COVID-19 Outbreak in China	medRxiv (not peer-reviewed) / Article	•The authors examine the change in air pollution levels and the potentially avoided cause-specific mortality during this massive population quarantine episode. •Conclude that interventions to contain the COVID-19 outbreak led to air quality improvements that brought health benefits which outnumbered the confirmed deaths due to COVID-19 in China (3199 deaths as of March 14, 2020).
28.03.2020	Venezuelan migrants 'struggling to survive' amid COVID-19	The Lancet / World report	•Humanitarian organisations are concerned that border closures and health-care shortages are amplifying the challenges posed by COVID-19. Joe Parkin Daniels reports from Bogotá. •The coronavirus disease 2019 (COVID-19) pandemic is exacerbating an already precarious health crisis for Venezuelan migrants fleeing a collapsed health system at home. At the time of going to press, the outbreak is continuing to spread in Venezuela despite a military-enforced quarantine.
24.03.2020	Covid-19: medical students should not work outside their competency, says BMA	BMJ / News	• Medical students who are employed in the NHS as part of efforts to swell staff numbers to tackle covid-19 should not be expected to “step up” and act outside of their competency, says the BMA in new guidance.

			• It says that any employment should be voluntary and within the competency of the student, who should have adequate access to personal protective equipment.
25.03.2020	A midpoint perspective on the COVID-19 pandemic	Singapore Medical Journal / Report	• The authors describe several key experiences and lessons learnt during the early course of the outbreak in Singapore. • First, it is critical to evaluate the outbreak objectively based on its own characteristics and not those of past epidemics. • Second, the great advancements in speed and power of science and international collaboration have been critical in providing knowledge about the virus and disease. • Third, public risk communications and the need to combat false information and rumours are even more crucial in this age of social media and viral information spread. • Lastly, outbreak control and mitigation goes beyond the healthcare sector.
28.03.2020	WHO launches crowdfund for COVID-19 response	The Lancet / World report	•For the first time, WHO is asking the general public and private donors for support. The project is a test run for the WHO Foundation, to be launched later this year. Ann Danaiya Usher reports. •The COVID-19 Solidarity Response Fund for WHO, managed by the UN Foundation and the Swiss Philanthropy Foundation, has been launched to raise money from individuals, the private sector, and foundations to finance WHO's response to the coronavirus disease 2019 (COVID-19) pandemic. 10 days after its March 13 launch, it had raised US$71 million from 170 000 individuals and organisations, including Facebook, Google, and FIFA.
24.03.2020	Tackling two pandemics: a plea on World Tuberculosis Day	The Lancet Respiratory Medicine / Comment	•Tuberculosis and COVID-19 are both pandemics that show ongoing, sustained community transmission across continents. Indeed, no country is tuberculosis-free and this is likely to be the case soon for COVID-19. This paper discusses the similarities and differences between the two.
25.03.2020	Preserving Clinical Trial Integrity During the Coronavirus Pandemic	Jama / Viewpoint	•As of March 2020, ClinicalTrials.gov listed 262 366 ongoing randomized clinical trials, including 146 420 trials studying drug or biologic interventions, 85 045 trials of behavioural interventions, and 61 351 trials of surgical or device interventions. •Suddenly, and quite dramatically, the coronavirus pandemic threatens the integrity of these clinical trials. The National Institutes of Health has advised investigators to consult with their institutional review boards and institutions about potential measures to protect participants and research staff. Responses from academic medical centre and other research groups have varied from mandatory suspension of research involving human participants to relying on principal investigator discretion.

Modelling

Publication Date	Title/URL	Author	Digest

26.03.2020	Estimation of the COVID-19 burden in Egypt through exported case detection	The Lancet Infectious Diseases / Correspondence	•As of March 6, 2020, Egypt has reported three cases of COVID-19; however, at least 14 cases have been exported from Egypt to four countries. The burden of infection in Egypt, therefore, might be substantially larger than reported. The authors estimated the potential burden of COVID-19 in Egypt using the approach of Fraser and colleagues. •Concluded that Egypt probably has a large burden of COVID-19 cases that are unreported, and increased clinical capacity for public health might help identify and manage cases. Using the lower bound of our more conservative estimate, this estimate would still represent a substantially greater number of cases than has been officially reported in the country. Additionally, Egypt might be a source of COVID-19 exportation that is not yet accounted for by many public health initiatives.
27.03.2020	Age-dependent effects in the transmission and control of COVID-19 epidemics	medRxiv (not peer-reviewed) / Article	•Age disparities in observed cases of COVID-19 could be explained by assortative mixing patterns and reactive school closures which decrease mixing between children, or by children exhibiting lower susceptibility to infection, or by children having a lower propensity to show clinical symptoms. •The authors formally test these hypotheses by fitting an age-structured mathematical model to epidemic data from six countries, finding strong age dependence in the probability of developing clinical symptoms, rising from around 20% in under 10s to over 70% in older adults. •They found that interventions aimed at halting transmission in children may have minimal effects on preventing cases depending on the relative transmissibility of subclinical infections.
21.03.2020	Herd immunity - estimating the level required to halt the COVID-19 epidemics in affected countries	Journal of Infection / Letter	• The authors discuss the concept of enhancing herd immunity to control the COVID-19 epidemic, and provide detailed modelling. • Given that the case fatality rate (CFR) of COVID-19 can be anything between 0.25-3.0% of a country's population, they conclude that the estimated number of people who could potentially die from COVID-19, whilst the population reaches the P_{crit} herd immunity level, may be difficult to accept.
25.03.2020	Using the spike protein feature to predict infection risk and monitor the evolutionary dynamic of coronavirus	Infectious Diseases of Poverty / Research article	• A prediction model is proposed to evaluate the infection risk of non-human-origin coronavirus for early warning. •Concluded that the optimal feature (GGAP, g = 3) performed well in terms of predicting infection risk and could be used to explore the evolutionary dynamic in a simple, fast and large-scale manner.
23.03.2020	Routes for COVID-19 importation in Brazil	Journal of Travel Medicine / Article	• As the number of imported SARS-CoV-2 cases is on the rise in Brazil, the authors use incidence and historical air travel data to estimate the most important routes of importation into the country.

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