



International EPI Cell Daily Evidence Digest – 03/04/2020

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

Please note that we are including preprints, which are preliminary reports of work that have NOT been peer-reviewed.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

Diagnostics and genomics

Publication Date	Title/URL	Journal/ Article type	Digest
02.04.2020	Emergence of a Novel Coronavirus (COVID-19): Protocol for Extending Surveillance Used by the Royal College of General Practitioners Research and Surveillance Centre and Public Health England	JMIR Public Health and Surveillance / Article	<ul style="list-style-type: none"> • Established national RCGP RSC influenza surveillance system converted into one that can test effectiveness of COVID-19 containment policy. • General practice clinical system providers have introduced an emergency new set of clinical codes to support COVID-19 surveillance. Additionally, practices participating in current virology surveillance are now taking samples for COVID-19 surveillance from low-risk patients presenting with LRTIs. Within the first 2 weeks of setup of this surveillance, the authors have identified 3 cases: 1 through the new coding system, the other 2 through the extended virology sampling. • Rapid sharing of this protocol should enable scientific critique and shared learning.
02.04.2020	A case of imported COVID-19 diagnosed by PCR-positive lower respiratory specimen but	Infectious Diseases / Case report	<ul style="list-style-type: none"> • Case study of a 35-year-old woman who presented with fever and travel history to Wuhan, China, but lacked respiratory symptoms. • CT scan revealed pneumonia but initial PCR test on throat swab was negative for SARS-CoV-2. • On hospital day 5, PCR test on induced sputum was positive, but a second test on throat swab remained negative.

	with PCR-negative throat swabs		<ul style="list-style-type: none"> • Authors suggest that a lower respiratory tract specimen would aid better diagnosis, even in the absence of respiratory symptoms for patients with significant travel or exposure history.
30.03.2020	Diagnostic performance of chest CT to differentiate COVID-19 pneumonia in non-high-epidemic area in Japan	Jpn J Radiol / Special report	<ul style="list-style-type: none"> • Evaluated the diagnostic performance of chest CT to differentiate COVID-19 pneumonia (n=29) in non-high-epidemic area in Japan. • All patients confirmed COVID-19 pneumonia had bilateral GGO- and peripheral-predominant lesions without airway abnormalities, mediastinal lymphadenopathy, and pleural effusion. The five CT criteria showed moderate to excellent diagnostic performance with area under the curves (AUCs) ranging 0.77-0.88 for R1 and 0.78-0.92 for R2. The criterion (e) showed the highest AUC. • CONCLUSION: Chest CT would play a supplemental role to differentiate COVID-19 pneumonia from other respiratory diseases presenting with similar symptoms in a clinical setting.
02.04.2020	Gargle lavage as a safe and sensitive alternative to swab samples to diagnose COVID-19: a case report in Japan	Clinical infectious diseases / Letter	<ul style="list-style-type: none"> • Case in which gargle lavage samples yielded a positive PCR result. • For other respiratory pathogens, gargle lavage samples have been reported to be more sensitive than throat swab. Gargle lavage can be done by patients themselves without putting healthcare professionals at increased risk and so offer a safer and possibly more sensitive alternative or additional option for diagnosing COVID-19.
29.03.2020	The correlation between viral clearance and biochemical outcomes of 94 COVID-19 infected discharged patients	Inflammation Research / Original Research Article	<ul style="list-style-type: none"> • This study evaluated the correlation between viral clearance and blood biochemical index of 94 discharged patients with COVID-19 infection in Shenzhen Third People's Hospital, enrolled from Jan 5 to Feb 13, 2020. • COVID-19 mRNA clearance ratio was identified significantly correlated with the decline of serum creatine kinase (CK) and lactate dehydrogenase (LDH) levels. Furthermore, COVID-19 mRNA clearance time was positively correlated with the length of hospital stay in patients treated with either IFN-α + lopinavir/ritonavir or IFN-α + lopinavir/ritonavir + ribavirin. • Conclusions: Therapeutic regimens of IFN-α + lopinavir/ritonavir and IFN-α + lopinavir/ritonavir + ribavirin might be beneficial for treatment of COVID-19. Serum LDH or CK decline may predict a favourable response to treatment of COVID-19 infection.
30.03.2020	ACE2 and TMPRSS2 variants and expression as candidates to sex and country differences in COVID-19 severity in Italy	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Prognostic markers for early identification of high-risk individuals are an urgent medical need. Authors searched for possible genetic components of peculiar severity of COVID-19 among Italians, by looking at expression levels and variants in ACE2 and TMPRSS2 genes, which are crucial for viral infection. • Exome and SNP array data from a large Italian cohort representative of Italy's population were used to compare the burden of rare variants and frequency of polymorphisms with European and East Asian populations. • No significant evidence that ACE2 associated with disease severity/sex bias in Italian population, TMPRSS2 levels and genetic variants proved to be possible candidate disease modulators, contributing to the observed epidemiological data among Italian patients. • Analysis suggests a role for TMPRSS2 variants and expression levels in modulating COVID-19 severity, a hypothesis that fosters a rapid experimental validation on large cohorts of patients with different clinical manifestations.

30.03.2020	The ACE2 expression in human heart indicates new potential mechanism of heart injury among patients infected with SARS-CoV-2	Cardiovasc Res / Research letter	<ul style="list-style-type: none"> This study performed the first state-of-art single cell atlas of adult human heart, and revealed that pericytes with high expression of ACE2 might act as the target cardiac cell of SARS-CoV-2.
30.03.2020	Reply to: 'Interaction between RAAS inhibitors and ACE2 in the context of COVID-19'	Nat Rev Cardiol / Correspondence	<ul style="list-style-type: none"> The authors thank Mourad and Levy for their constructive Correspondence (Interaction between RAAS inhibitors and ACE2 in the context of COVID-19. Nat. Rev. Cardiol. https://doi.org/10.1038/s41569-020-0368-x (2020)) on the authors Comment article (COVID-19 and the cardiovascular system. Nat. Rev. Cardiol. https://doi.org/10.1038/s41569-020-0360-5 (2020)), and replies to comments.
31.03.2020	SARS-CoV-2 receptor and entry genes are expressed by sustentacular cells in the human olfactory neuroepithelium	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> Reports have indicated an association between SARS-CoV-2 infection and anosmia, suggesting an alteration not restricted to the respiratory tissue, but that might also include the olfactory sensory epithelium. This was explored by generating RNA-seq libraries from human neuroepithelium, in which the authors found significant expression of ACE2 and TMPRSS2. To determine whether specific cell types of this chemosensory tissue may coexpress both of the virus entry genes, they analysed a scRNA-seq dataset. They determined that sustentacular cells, which are in direct contact with the external world and maintain the integrity of olfactory sensory neurons, represents a prime candidate for SARS-CoV-2 infection via the nose, and possibly for SARS-CoV-2-induced anosmia.
30.03.2020	Performance of VivaDiagTM COVID-19 IgM/IgG Rapid Test is inadequate for diagnosis of COVID-19 in acute patients referring to emergency room department	J Med Virol / Letter	<ul style="list-style-type: none"> Report results of a study performed in an emergency room department of a tertiary hospital in Northern Italy to validate VivaDiagTM COVID-19 IgM/IgG Rapid Test lateral flow immunoassay (LFIA) for the rapid diagnosis of COVID-19. Based on their results, VivaDiagTM COVID-19 IgM/IgG Rapid Test LFIA is not recommended for triage of patients with suspected COVID-19.
04.02.2020	Developing antibody tests for SARS-CoV-2	The Lancet / World Report	<ul style="list-style-type: none"> The demand for antibody tests is high in response to the pandemic. Its most important current use, en masse, is to help inform public policy makers how many asymptomatic cases have occurred in a population. Discussion of the development of antibody tests includes interviews with scientists.
30.03.2020	SARS-CoV-2 Testing	Am J Clin Pathol / Editorial	<ul style="list-style-type: none"> The authors discuss the evolution of SARS-CoV-2 tests in the United States, alternative tests, the logistics of increasing testing, and issues regarding laboratory staffing in response to the increased demands of testing.
30.03.2020	Evaluation of saline, phosphate buffered saline and minimum	J Clin Microbiol / Letter	<ul style="list-style-type: none"> As testing demand has increased, specimen collection and transportation supplies, including VTM, are decreasing nationwide. Due to these shortages of collection supplies and transport media, the authors assessed the feasibility of placing NP swabs in sterile 0.9% saline, sterile phosphate buffered

	essential medium as potential alternatives to viral transport media for SARS-CoV-2 testing		<p>saline (PBS), or minimum essential media (MEM) prior to testing for SARS-CoV-2 by a commercially-available and a SARS-CoV-2 laboratory-developed test (LDT) that has been validated and submitted to the Food and Drug Administration for EUA approval.</p> <ul style="list-style-type: none"> • The SARS-CoV-2 results of both assays showed equivalence (i.e., 100% qualitative agreement and Ct variation < 2 cycles) when swabs were stored in MEM, PBS, saline and VTM over 7 days at both refrigerated and frozen storage conditions. No evidence of loss in sensitivity or stability (>2 Ct value increase) was observed for any of the transport media. These data support the use of MEM, PBS, or 0.9% saline as alternatives to VTM for SARS-CoV-2 testing.
31.03.2020	Virus-host interactome and proteomic survey of PMBCs from COVID-19 patients reveal potential virulence factors influencing SARS-CoV-2 pathogenesis	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Integrated proteomics approach to systematically investigate intra-viral and virus-host interactomes for the identification of unrealized SARS-CoV-2 host targets and participation of cellular proteins in the response to viral infection using peripheral blood mononuclear cells (PBMCs) isolated from COVID-19 patients. • From the interactome, identified that non-structural protein nsp9 and nsp10 interact with NKRF, a NF-kB repressor, and may precipitate the strong IL-8/IL-6 mediated chemotaxis of neutrophils and overexuberant host inflammatory response observed in COVID-19 patients.
01.04.2020	Insights into The Codon Usage Bias of 13 Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Isolates from Different Geolocations	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Analysed genome-wide codon usage patterns in 13 SARS-CoV-2 isolates from 13 different geolocations (countries) by utilizing different CUB measurements. • The outcome of this study may help in understanding the underlying factors involved in the evolution of SARS-CoV-2 viruses and interactions with their host, also it may aid in vaccine design strategies.
30.03.2020	Comparative genomics suggests limited variability and similar evolutionary patterns between major clades of SARS-Cov-2	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Phylogenomic analysis of SARS-Cov-2 as available from publicly available repositories suggests the presence of 4 prevalent groups of viral episomes (super-clades), which are mostly associated with outbreaks in distinct geographic locations (China, USA and Europe). • Authors analysed more than 1100 complete, high quality SARS-Cov-2 genome sequences, and provide evidence for absence of distinct evolutionary patterns/signatures in genomes of currently known major clades of SARS-Cov-2. • Evidence presented is strongly consistent with the notion that the biased geographic distribution of SARS-Cov-2 isolates should not be associated with adaptive evolution of this novel pathogen.
02.04.2020	Whole genome and phylogenetic analysis of two SARS-CoV-2 strains isolated in Italy in January and February 2020: additional clues on multiple introductions	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • The authors characterised the full-genome sequence of two SARS-CoV-2 strains isolated from two patients diagnosed in Italy. • The first patient was a Chinese tourist from Wuhan diagnosed at the end of January, who had visited Rome and not been in areas of Italy later found to be the initially affected areas of the epidemic in Lombardy. The second patient was an Italian person, with no apparent direct epidemiological link with China and who was diagnosed in the second half of February in Lombardy. • The sequences presented are analysed in the context of other available genome sequences from Europe and elsewhere.

[and further circulation in Europe](#)

Epidemiology and clinical

Publication Date+B19:E33	Title/URL	Journal/ Article type	Digest
02.04.2020	COVID-19 in a Designated Infectious Diseases Hospital Outside Hubei Province, China	Allergy / Article	<ul style="list-style-type: none"> • Describes the clinical characteristics of 298 COVID-19 patients outside the epicentre of Hubei province, China from Jan 11, 2020 to Feb 6, 2020 and followed until Mar 6, 2020. • 192(64.4%) cases had a fever as the initial symptom. Severe cases were associated with older age, underlying diseases, higher levels of C-reactive protein, interleukin-6, and erythrocyte sedimentation rate. • Slower clearance of the virus was associated with higher risk of critical progression. • As of March 6, 2020, 268 (89.9%) patients were discharged and the overall case fatality ratio was 1.0%.
31.03.2020	Coronavirus Disease 19 Infection Does Not Result in Acute Kidney Injury: An Analysis of 116 Hospitalized Patients from Wuhan, China	American Journal of Nephrology / Research article	<ul style="list-style-type: none"> • Study aimed to explore the effects of SARS-CoV-2 infection on renal function through analysing the clinical data of 116 hospitalized COVID-19-confirmed patient • Acute kidney injury (AKI) was uncommon in COVID-19. SARS-CoV-2 infection does not result in AKI, or aggravate CKD in COVID-19 patients.
02.04.2020	Clinical Features and Short-term Outcomes of 102 Patients with Corona Virus Disease 2019 in Wuhan, China	Clinical infectious diseases / Article	<ul style="list-style-type: none"> • Investigation of clinical and laboratory features and short-term outcomes of COVID-19 patients admitted to Wuhan University Zhongnan Hospital between January 3 and February 1, 2020. • 102 adult patients, median age 54 years and 48% were female. • 34 patients (33.3%) were exposed to source of transmission in the hospital setting and 10 patients (9.8%) had a familial cluster. • 18 patients were admitted to the ICU, and 17 patients died. • Those who survived were younger, more likely to be health care workers, less likely to suffer from comorbidities and less likely to suffer COVID-19 related complications. • Patients who survived were less likely to have been admitted to ICU (14.1% vs. 35.3%).
02.04.2020	COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020	Emerging infectious diseases/ Research letter	<ul style="list-style-type: none"> • Case study of 3 familial clusters of COVID-19 originating from an air-conditioned restaurant in Guangzhou, China. • The airflow direction was consistent with droplet transmission. • Restaurants should increase the distance between tables and improve ventilation to prevent the spread of SARS-COV-2.
30.03.2020	Fast nosocomial spread of SARS-CoV2 in a French	Infect Control Hosp Epidemiol / Letter	<ul style="list-style-type: none"> • Report the extremely fast spread of Covid-19 in a 24-bed geriatric unit in France. • The fast spread of nosocomial covid-19 infection in this ward confirms the contagiousness of SARS-

	geriatric unit Lyon Study Group on Covid-19 infection		CoV2 in healthcare settings and the high mortality rates in this population. The existence of super-shedders has been suggested and could facilitate cluster emergence.
02.04.2020	A Sentinel COVID-19 Case in Houston, Texas: Informing Frontline Emergency Department Screening and Preparedness	Journal of the American College of Emergency Physicians Open / Case Report	<ul style="list-style-type: none"> • Describes a sentinel CoVID-19 patient in Houston, Texas, who first presented on March 1, 2020. The patient did not meet criteria for a Person Under Investigation (PUI) as recommended by the Centres for Disease Control (CDC) at the time. This case has broad implications for emergency department screening and preparedness for CoVID-19 and other future infectious diseases.
02.04.2020	Clinical characteristics of Non-ICU hospitalized patients with coronavirus disease 2019 and liver injury. A Retrospective study.	Liver International / Article	<ul style="list-style-type: none"> • Retrospective study in Non-ICU Ward at Jinyintan Hospital from Feb 2, 2020 to Feb 23, 2020 to investigate the risk factors related to liver injury in the COVID-19 patients. • Of 79 COVID-19 patients, 31.6%, 35.4% and 5.1% COVID-19 patients had elevated levels of ALT, AST and bilirubin, respectively. • Compared to controls, patients with liver injury had increased levels of white blood cell counts, neutrophils, CRP and CT score and had a longer length of stay. • Intense monitoring and evaluation of liver function in patients with severe pulmonary imaging lesions should be considered.
02.04.2020	Liver impairment in COVID-19 patients: a retrospective analysis of 115 cases from a single center in Wuhan city, China	Liver International / Letter	<ul style="list-style-type: none"> • Retrospective, single-centre study with 115 confirmed cases of COVID-19 in Zhongnan hospital of Wuhan University from Jan 18 to Feb 22, 2020, to investigate the changes of liver function and its clinical significance. • Abnormalities of liver function indexes were common in COVID-19 patients but impairment of liver function was not a prominent feature and serious clinical consequences were not significant.
31.03.2020	Clinical features and outcomes of 2019 novel coronavirus-infected patients with high plasma BNP levels	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • 34 patients with corona virus COVID-19 were included in the analysis. Ten patients had high plasma BNP level. • Compared with patients with normal BNP, patients with high BNP were more likely to develop severe pneumonia, and receive tracheal cannula, invasive mechanical ventilation, continuous renal replacement therapy, extracorporeal membrane oxygenation, and be admitted to the intensive care unit.
31.03.2020	Blood glucose levels in elderly subjects with type 2 diabetes during COVID-19 outbreak: a retrospective study in a single center	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Investigated the changes of blood glucose levels in subjects aged 65 and above at Fujian Provincial Hospital with type 2 diabetes (T2D) during COVID-19 outbreak. • 135 elderly subjects with T2D with baseline and follow-up fasting plasma glucose and 50 elderly subjects with T2D with baseline and follow-up HbA1c were analysed, respectively. The baseline and follow-up mean fasting plasma glucose were 7.08 and 7.48 mmol/L, respectively (P=0.008). The mean baseline and follow-up HbA1c were 7.2 and 7.4, respectively (P=0.158). • Elderly subjects with T2D had higher fasting plasma glucose levels during COVID-19 outbreak. We should pay more attention to the management of diabetics during public health emergencies.

03.04.2020	Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility - King County, Washington, March 2020	MMWR. Morbidity and mortality weekly report / Article	<ul style="list-style-type: none"> • Describes practices following identification of a case COVID-19 in a health care worker in a long term care facility in the USA. 76 of 82 residents were tested for SARS-CoV-2; 23 (30.3%) had positive test results with approx. half asymptomatic or presymptomatic. • Symptom-based screening of care home residents might fail to identify all SARS-CoV-2 infections, and asymptomatic residents might contribute to SARS-CoV-2 transmission.
02.04.2020	Isolated sudden onset anosmia in COVID-19 infection. A novel syndrome?	Rhinology / Special Report	<ul style="list-style-type: none"> • Present a case report and case series as well as other evidence that there is an important fourth presenting syndrome, namely isolated sudden onset anosmia (ISOA), which should be considered highly suspicious for SARS-CoV-2. • Urge all healthcare practitioners with patients presenting with ISOA to treat these patients as possible COVID-19 positive with appropriate precautions and to avoid prescribing oral immunosuppressants in these cases.
02.04.2020	Evolving epidemiology and transmission dynamics of coronavirus disease 2019 outside Hubei province, China: a descriptive and modelling study	The Lancet Infectious Diseases / Article	<ul style="list-style-type: none"> • Collected data on 8579 cases from 30 provinces laboratory-confirmed cases reported outside Hubei in mainland China. • The median age of cases was 44 years (33–56), with an increasing proportion of cases in younger age groups and in elderly people (i.e, aged >64 years) as the epidemic progressed. The mean time from symptom onset to hospital admission decreased from 4.4 days (95% CI 0.0–14.0) for the period of Dec 24 to Jan 27, to 2.6 days (0.0–9.0) for the period of Jan 28 to Feb 17. The mean incubation period for the entire period was estimated at 5.2 days (1.8–12.4) and the mean serial interval at 5.1 days (1.3–11.6). • Estimated that the epidemic was self-sustained for less than 3 weeks, with mean Rt reaching peaks between 1.08 (95% CI 0.74–1.54) in Shenzhen city of Guangdong province and 1.71 (1.32–2.17) in Shandong province. • The estimates of the incubation period and serial interval were similar, suggesting an early peak of infectiousness, with possible transmission before the onset of symptoms. The results also indicate that, as the epidemic progressed, infectious individuals were isolated more quickly, thus shortening the window of transmission in the community.
30.03.2020	Clinical and Transmission Characteristics of Covid-19 - A Retrospective Study of 25 Cases from a Single Thoracic Surgery Department	Curr Med Sci / Article	<ul style="list-style-type: none"> • In this study, the authors analysed clinical and transmission features of 25 cases of Covid-19 from a single thoracic department, including 13 patients and 12 health care staff. By the end of follow-up date (Mar. 3, 2020), there were 16 non-severe cases (64%) and 9 severe cases (36%), 5 cases were dead (20%). • They found that COPD was significantly associated with severity and death (P=0.040, and P=0.038, respectively), and chest operation was significantly associated with death for Covid-19 patients (P=0.039). A potential "super spreader" may be the source of the transmission before the implementation of quarantine and comprehensive protection. • It was concluded that Covid-19 is associated with poor prognosis for patients undergoing thoracic

			operation, especially for those with COPD. Implementation of comprehensive protective measures is important to control nosocomial infection.
31.03.2020	Monitoring trends and differences in COVID-19 case fatality rates using decomposition methods: Contributions of age structure and age-specific fatality	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • The population-level case CFR associated with COVID-19 varies substantially, both across countries and within countries over time. Authors analysed the contribution of two key determinants of the variation in the observed CFR: the age-structure of diagnosed infection cases and age-specific case-fatality rates. • Use data on diagnosed COVID-19 cases and death counts attributable to COVID-19 by age for China, France, Germany, Italy, South Korea, Spain, and the United States. CFR for each country calculated at the latest data point and for Italy also over time. Demographic decomposition used to break the difference between CFRs into unique contributions arising from the age-structure of confirmed cases and the age-specific case-fatality. • CFRs vary from 0.7% in Germany and 1.6% in South Korea to 8.6% in Spain and 10.6% in Italy. The age-structure of detected cases can explain a substantial proportion of cross-country variation in the CFR. • Findings support recommendations for data to be disaggregated by age, and potentially other variables, to facilitate a better understanding of population-level differences in CFRs. They also show the need for well-designed seroprevalence studies to ascertain the extent to which differences in testing regimes drive differences in the age-structure of detected cases.
02.04.2020	Coronavirus disease 2019 (COVID-19): a clinical update	Frontiers of medicine / Review	<ul style="list-style-type: none"> • Review of the literature on the epidemiology, clinical characteristics, diagnostics and latest advancements in treatment of COVID-19.
30.03.2020	Facing a disruptive threat: how can a nuclear medicine service be prepared for the coronavirus outbreak 2020?	Eur J Nucl Med Mol Imaging / Short communication	<ul style="list-style-type: none"> • The authors describe the key considerations of policies and processes that have been implemented in their nuclear medicine service since the first case of COVID-19 was confirmed in Singapore General Hospital on 23 January 2020, up to the present time.
02.04.2020	Monitoring the COVID-19 epidemic in the context of widespread local transmission	The Lancet Respiratory Medicine / Comment	<ul style="list-style-type: none"> • The availability of reliable surveillance platforms is crucial to monitor the COVID-19 epidemic in a timely manner and to respond with adequate control measures. • For COVID-19 surveillance purposes, the main objective is to detect changes in disease burden indicators that are more stable (in time or space). The main attribution of these indicators needs to be consistency, rather than validity.
02.04.2020	Post-donation COVID-19 identification in blood donors	Vox sanguinis / Commentary	<ul style="list-style-type: none"> • Author presents experience of blood transfusions that support the evidence that SARS-CoV-2 is not transfusion-transmissible. In nine patients who received transfusions from donors who later tested positive for COVID-19, none tested positive for SARS-COV-2 nor developed symptoms.
29.03.2020	Preparing an obstetric unit in the heart of the epidemic strike of	The Journal of Maternal-Fetal &	<ul style="list-style-type: none"> • The purpose of this review is to suggest quick key points of strategies to implement in obstetric units without delay to respond to the oncoming wave, based on experience and feedback from the

	COVID-19: quick reorganization tips	Neonatal Medicine / Article	field. It is essential in an emergency situation to understand what is at stake and prepare maternity wards in the best possible way.
02.04.2020	Cancer guidelines during the COVID-19 pandemic	The Lancet Oncology / News	<ul style="list-style-type: none"> • This article includes links to several different cancer guidelines, including guidance on delivering radiotherapy and systemic cancer therapies.
31.03.2020	Coronavirus pandemic and Colorectal surgery: practical advice based on the Italian experience	Colorectal Disease / Article	<ul style="list-style-type: none"> • Description of the strategy adopted in Italy for management of colorectal patients • Some policies are described, including minimally-invasive surgery. It is likely that a reorganization of health system is required, both at central and local levels.

Infection control

Publication Date	Title/URL	Journal/ Article type	Digest
02.04.2020	Guidance COVID-19: infection prevention and control	gov.uk / guidance	<p>This guidance outlines the infection prevention and control advice for health and social care providers involved in receiving, assessing and caring for patients who are a possible or confirmed case of COVID-19. It should be used in conjunction with local policies. On 2 April 2020, the main changes to previous guidance are:</p> <ul style="list-style-type: none"> • Enhanced PPE recommendations for a wide range of health and social care contexts • Inclusion of individual and organisational risk assessment at local level to inform PPE use • Recommendation of single sessional (extended) use of some PPE items • Re-usable PPE can be used. Advice on suitable decontamination arrangements should be obtained from the manufacturer, supplier or local infection control • Guidance for when case status is unknown and SARS-CoV-2 is circulating at high levels • Recommendation on patient use of facemask
30.03.2020	A RANDOMIZED TRIAL OF INSTRUCTOR-LED TRAINING VERSUS VIDEO LESSON IN TRAINING HEALTH CARE PROVIDERS IN PROPER DONNING AND DOFFING OF PERSONAL PROTECTIVE EQUIPMENT	Disaster Med Public Health Prep / Article	<ul style="list-style-type: none"> • This study compared live instructor-led training in Personal Protective Equipment (PPE) donning and doffing with video-based instruction. It assessed the difference in performance between (i) attending one instructor-led training session in donning and doffing PPE one month prior to assessment, and (ii) watching training videos over the month. • 19 participants were assessed after one month. • Found no significant difference in donning and doffing score between instructor-led and video lessons. Video training could be a fast and resource-efficient method of training in PPE donning and doffing in responding to the COVID-19 pandemic.
29.03.2020	Covid-19: Doctors are told not to perform CPR on patients in cardiac arrest	BMJ / News	<ul style="list-style-type: none"> • Healthcare staff in the West Midlands have been told not to start chest compressions or ventilation in patients who are in cardiac arrest if they have suspected or diagnosed covid-19 unless they are in the emergency department and staff are wearing full personal protective equipment (PPE). • If a patient with suspected covid-19 is in cardiac arrest they should be given cardiac compressions

			and be ventilated only if they are in the emergency department and the person attending them is wearing aerosol generating procedures (AGP) PPE. That means wearing an FFP3 mask, full gown with long sleeves, gloves, and eye protection.
02.04.2020	Electronic Personal Protective Equipment: A Strategy to Protect Emergency Department Providers in the Age of COVID-19	Journal of the American Medical Informatics Association : JAMIA / Article	<ul style="list-style-type: none"> • Authors define electronic personal protective equipment (ePPE) as an approach using telemedicine tools to perform electronic medical screening exams while satisfying EMTALA. The safety, legal, and technical factors necessary for implementing such a pathway are discussed. • This approach has the potential to conserve PPE and protect providers while maintaining safe standards for medical screening exams in the ED for low risk patients in whom COVID-19 is suspected. ePPE has potential applicability to settings such as emergency medical services, medical wards, and intensive care units, where ePPE may facilitate more frequent patient contact while reducing staff exposure and conserving PPE.
02.04.2020	Stability of SARS-CoV-2 in different environmental conditions	The Lancet Microbe / Correspondence	<ul style="list-style-type: none"> • Here, the authors report the stability of SARS-CoV-2 in different environmental conditions. • Measurements include: the stability of SARS-CoV2 at different temperatures, on different surfaces, and the viricidal effects of disinfectants.
02.04.2020	A risk-based approach is best for decision making on holding mass gathering events / Correspondence	The Lancet	<ul style="list-style-type: none"> • Response to: https://doi.org/10.1016/S0140-6736(20)30754-6 • Memish and colleagues, in their response to their Comment, perceive conflict between the current best practice risk management advice on physical distancing and the scientific evaluation of cancelling or continuing mass gathering events during the COVID-19 pandemic. Although the authors have already acknowledged the need to balance these two considerations in order to maintain public understanding and trust, they do not accept that conflict is inevitable as their approach requires all mass gatherings to be considered in context, including the prevailing advice on physical distancing and movement restrictions. • An open and transparent process to explicitly consider the risks of a mass gathering can, in fact, promote public confidence in the decision.
01.04.2020	Environment and Personal Protective Equipment Tests for SARS-CoV-2 in the Isolation Room of an Infant With Infection	Annals of Internal Medicine / Letters	<ul style="list-style-type: none"> • Objective: To investigate environmental contamination and potential for transmission from an infant with COVID-19. • A 6-month-old infant was admitted for isolation in the authors hospital because both parents were in the isolation units of other hospitals for confirmed COVID-19. On admission, the infant was asymptomatic, but nasopharyngeal swabs confirmed COVID-19 infection with very high viral load. • The investigation confirmed that a generally well infant with COVID-19 can contaminate the environment with PCR-detectable virus. Despite close physical contact with the infant during feeding, they did not detect any evidence of SARS-CoV-2 on the gown of the HCW.
02.04.2020	Only strict quarantine measures can curb the coronavirus disease (COVID-19) outbreak in Italy, 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • Investigated the extent of physical distancing needed to effectively control the outbreak in a lockdown situation in a small size town setting typical of Italy. • They specifically estimate the disease burden and the time required until the quarantine can be lifted, by taking into account the time spent by individuals in the public (i.e. outside of the home) and the household size. • Conclusion: If the lockdown in Italy is aimed at containment, close to 100% restriction of contact

			time within communities combined with prompt case detection and immediate isolation of infected persons need to be achieved.
02.04.2020	From China: hope and lessons for COVID-19 control	The Lancet Infectious Diseases / Comment	<ul style="list-style-type: none"> • Outside the original epicentre of Hubei province, Zhang et al found that the effective reproduction number dropped below the critical threshold of 1 by the end of January, 2020, for nine heavily affected Chinese provinces or cities. • This finding suggests significant slowing of local transmission. Importantly, these reductions were achieved in a matter of weeks from the first signs of local transmission in most provinces.

Treatment

Publication Date	Title/URL	Journal/ Article type	Digest
02.04.2020	Caution and clarity required in the use of chloroquine for COVID-19	The Lancet Rheumatology / Correspondence	<ul style="list-style-type: none"> • Among the drugs being tested for COVID-19 in China is chloroquine, which was reported on Feb 4, 2020, to inhibit SARS-CoV-2 in vitro. The drug was rapidly pushed to clinical testing as an experimental treatment; on Feb 15, 2020, it was included in the sixth version of the COVID-19 treatment guidelines by the National Health Commission of the People's Republic of China. • This guideline established the use of chloroquine nationwide for patients with COVID-19, at a recommended adult dose of 500 mg twice per day for no more than 10 days. • The lethal dose of chloroquine in adults is about 5g, and in the human body it has a large volume of distribution with an elimination half-life of 20–60 days and a tendency to accumulate in metabolically active tissues at higher levels compared with the plasma concentration. • The potential toxicities of experimental treatments should be meticulously reported in peer-reviewed publications to avoid potentially misleading accounts and the risk of dangerous self-medication by the public.
02.04.2020	Chloroquine and hydroxychloroquine to treat COVID-19: between hope and caution	Clinical toxicology / Letter	<ul style="list-style-type: none"> • While awaiting urgent, adequately powered, randomized trials to assess chloroquine/hydroxychloroquine-attributed benefits to treat COVID-19, these drugs should be prescribed cautiously, with initial cardiac evaluation in outpatients and daily ECG and twice-weekly residual blood concentration monitoring in hospitalized patients. If antimalarial drug effectiveness further disappoints, the onset of well-established drug-induced toxicity will not be forgiven.
02.04.2020	Respiratory Support for Adult Patients with COVID-19	Journal of the American College of Emergency Physicians Open / Concepts	<ul style="list-style-type: none"> • This is a clinical review of non-invasive options to avert mechanical ventilation and ICU admission, and discusses their applicability in adult COVID-19 patients.
02.04.2020	Global coalition to accelerate COVID-19 clinical research in resource-limited settings	The Lancet / Comment	<ul style="list-style-type: none"> • Of the 332 COVID-19 related clinical trials, 188 are open for recruitment and 146 trials are preparing to recruit. • The distribution of these clinical trials is centred in the countries most affected by COVID-19 in the past 2 months, particularly China and South Korea, with high-income countries in Europe and North

			<p>America planning most of the forthcoming trials.</p> <ul style="list-style-type: none"> • Very few trials are planned in Africa, south and southeast Asia, and central and South America.
29.03.2020	COVID-19 treatment by repurposing drugs until the vaccine is in sight	Drug Development Research / Commentary	<ul style="list-style-type: none"> • Until such time that an effective vaccine is available for COVID-19 viral infection, one can repurpose known therapeutic drug molecules such as angiotensin receptor 2 blocker, a commonly used antihypertensive drug, to control COVID-19 virus from gaining entry into the host cell by blocking the angiotensin receptor. • Clinical trials should also be undertaken to use statins, which are lipid-lowering drugs but have anti-inflammatory and immunomodulatory properties to prevent acute lung injury in COVID-19 infection.
02.04.2020	Converting gas-driven ventilators from oxygen to air	Anaesthesia / Correspondence	<ul style="list-style-type: none"> • Shared advice from Devon based clinician: • Identified that GE Healthcare anaesthetic machines (GE Healthcare, Amersham Place, Little Chalfont, UK) had a ventilator which was gas-driven, using oxygen, resulting in large amount of wasted oxygen. • A simple procedure can make the switch from oxygen to air as the driving gas for the ventilators and requires no new additional parts and takes 45 min to complete per machine.
31.03.2020	Guidance for Cardiac Electrophysiology During the Coronavirus (COVID-19) Pandemic from the Heart Rhythm Society COVID-19 Task Force; Electrophysiology Section of the American College of Cardiology; and the Electrocardiography and Arrhythmias Committee of the Council on Clinical Cardiology, American Heart Association	Circulation / Article	<ul style="list-style-type: none"> • Joint document from representatives of the HRS, ACC and AHA • Describe the impact of COVID-19 on cardiac arrhythmias and methods of triage based on acuity and patient comorbidities, provide guidance for managing invasive and non-invasive electrophysiology procedures, clinic visits and cardiac device interrogations. • Discuss resource conservation and the role of tele-medicine in remote patient care along with management strategies for affected patients.
31.03.2020	Intranasal corticosteroids in allergic rhinitis in COVID-19 infected patients: An ARIA-EAACI statement	Allergy / Letter	<ul style="list-style-type: none"> • Questionnaire to ARIA database, 209 replies from 61 countries • With current knowledge, in patients with COVID-19 infection, intranasal corticosteroid (including spray) can be continued in allergic rhinitis at the recommended dose • Stopping local intra-nasal corticosteroid is not advised. Suppression of the immune system has not been proven and more sneezing after stopping means more spreading of the virus • These recommendations are conditional since there is a paucity of data and they should be revised regularly with new knowledge
02.04.2020	The versatile heparin in COVID-19	Journal of thrombosis and haemostasis : JTH / Commentary	<ul style="list-style-type: none"> • Coagulopathy in coronavirus infection has been shown to be associated with high mortality with high D-dimers being a particularly important marker for the coagulopathy. • In the latest paper the use of anticoagulant therapy with heparin was shown to decrease mortality

			as well. Especially in patients i) who have met the sepsis induced coagulopathy (SIC) criteria ≥ 4 (40.0% vs 64.2%, $P=0.029$) compared to those with SIC score < 4 (29.0% vs 22.6%, $P=0.419$). or ii) with markedly elevated D-dimer (greater than six-fold at the upper limit of normal).
02.04.2020	Pivotal Role of Convalescent Plasma in Managing Emerging Infectious Diseases	Vox sanguinis / Commentary	<ul style="list-style-type: none"> • Commentary on the role of convalescent plasma for COVID-19 treatment, including a review of existing evidence, potential hurdles in plasma collection and measures to mitigate risks to blood safety.
02.04.2020	Collecting and evaluating convalescent plasma for COVID-19 treatment: why and how	Vox sanguinis / Review	<ul style="list-style-type: none"> • Review of the potential for plasma provided by COVID-19 convalescent patients for treatment. • Prior findings from SARS-CoV-1 related pneumonia suggest convalescent plasma can reduce mortality, although formal proof of efficacy is still lacking. • Clinical evaluation is need to assess if passive immunotherapy can reduce patient deterioration, and COVID-19 mortality.
31.03.2020	Characterization and treatment of SARS-CoV-2 in nasal and bronchial human airway epithelia	bioRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • Authors used human reconstituted airway epithelial models of nasal or bronchial origin to characterize viral infection kinetics, tissue-level remodelling of the cellular ultrastructure and transcriptional immune signatures induced by SARS-CoV-2. • Results underline the relevance of this model for the preclinical evaluation of antiviral candidates. Also evidence on the antiviral efficacy of remdesivir and the therapeutic potential of the remdesivir-diltiazem combination as a rapidly available option to respond to the current unmet medical need imposed by COVID-19.
02.04.2020	In-silico approaches to detect inhibitors of the human severe acute respiratory syndrome coronavirus envelope protein ion channel	Journal of biomolecular structure & dynamics / Article	<ul style="list-style-type: none"> • Authors employed computational approaches for studying the structure as well as function of the human "SARS-CoV2 E" protein as well as its interaction with various phytochemicals. • Two amino acids, namely VAL25 and PHE26, play a key role while interacting with three phytochemicals. As these three phytochemicals, namely, Belachinal, Macaflavanone E & Vibsanol B, have passed the ADMET (Absorption, Distribution, Metabolism, Excretion and Toxicity) property as well as "Lipinski's Rule of 5s", they may be utilized as drugs in controlling disease caused via SARS-COV2, after further investigation.
02.04.2020	Identification of Chymotrypsin-like Protease Inhibitors of SARS-CoV-2 Via Integrated Computational Approach	Journal of biomolecular structure & dynamics / Article	<ul style="list-style-type: none"> • The functional importance of Chymotrypsin-like protease (3CL(pro)) in viral replication and maturation turns it into an attractive target for the development of effective antiviral drugs against SARS and other coronaviruses. The authors applied computational drug design methods to identify Chymotrypsin-like protease inhibitors from FDA approved antiviral drugs and their in-house database of natural and drug-like compounds of synthetic origin. • Three FDA approved drugs (Remdesivir, Saquinavir and Darunavir) and two natural compounds (flavone and coumarine derivatives) were identified as promising hits.

Social sciences

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02.04.2020	Understanding coronavirus disease (COVID-19) risk perceptions among the public to enhance risk communication efforts: a practical approach for outbreaks, Finland, February 2020	Eurosurveillance / Rapid communication	<ul style="list-style-type: none"> • In February 2020, The Finnish Institute for Health and Welfare (THL) initiated a practical exercise to analyse risk perceptions and trust towards public authorities in the context of coronavirus disease (COVID-19). • The process allows qualitative data collection and analysis in real time, based on social media posts and emails from the public. Its objective is to inform risk communication efforts on weekly basis. • The information can be used to help identify appropriate responses and communication strategies to COVID-19 related topics of public interest. This paper describes the methodology and the results of the first 3 weeks of the exercise.
02.04.2020	The COVID-19 pandemic: we are all in this together	Clinical infectious diseases / Letter	<ul style="list-style-type: none"> • Letter discussing how stigma, discrimination and misinformation is effecting responses to the COVID-19 pandemic, and the need for a unified response globally rather than an “us against them mentality.”
02.04.2020	Achieve Research Continuity During Social Distancing by Rapidly Implementing Individual and Group Videoconferencing with Participants: Key Considerations, Best Practices, and Protocols	AIDS and behavior / Note	<ul style="list-style-type: none"> • The authors describe methodology to continue social and behavioural research with individuals and group participants during social distancing, including use of videoconferencing and phone-based interactions. Best practices, key considerations, examples from the field, and sample protocols are presented to ease transition for ongoing studies and maximize the potential of videoconferencing.
30.03.2020	Health psychology and the coronavirus (COVID-19) global pandemic: A call for research	Br J Health Psychol / Editorial	<ul style="list-style-type: none"> • Despite similarities with previous pandemics and a rapid response by the scientific community to understand COVID-19 and reduce its global impact, there is still much that we do not know, especially given the novel features of COVID-19, and governments varying responses to the crisis worldwide. There is therefore an urgent need for health psychology research.
02.04.2020	The impact of unplanned school closure on children’s social contact: rapid evidence review	Eurosurveillance / Review	<ul style="list-style-type: none"> • Rapid review format discusses the impact of school closures on children's interaction with others outside the home and factors associated with contact outside the home. • This review of 19 papers found that all studies reported children leaving the home during the closure period and/or being looked after by non-household members, thereby having social contact with others they could potentially infect if they themselves were infected. There was some evidence that continuing to engage in social contact during school closures may be related to older child age, parental disagreement with closure and potentially infection status. • Further research is needed to identify how best to ensure that children are incentivised to stay at home during a school closure.
02.04.2020	Critical health literacy and the COVID-19 crisis	Health promotion international / Letter	<ul style="list-style-type: none"> • Letter discussing the need to build critical health literacy in the population in light of the COVID-19 pandemic, so individuals can reflect on complex health issues and critically assess information

			available. Included in forward thinking should be efforts to strengthen values and attitudes of collective responsibility to reduce carelessness and prevent over-reactions.
31.03.2020	Knowledge and behaviors toward COVID-19 among U.S. residents during the early days of the pandemic	medRxiv (not peer-reviewed) / Article	<ul style="list-style-type: none"> • This survey is one of the first attempts to study determinants of knowledge and behaviours in response to the COVID-19 pandemic in the U.S; tests hypothesis that knowledge of COVID-19 influences participation in different behaviours including self-reports of purchasing more goods than usual, attending large gatherings, and using medical masks. • A national, coordinated effort at pandemic response may ensure better compliance with behavioural recommendations to address this public health emergency.
02.04.2020	COVID-19 and experiences of moral injury in front-line key workers	Occupational medicine / Editorial	<ul style="list-style-type: none"> • COVID-19 pandemic may lead to increased 'moral injury' in UK front line key workers; a type of psychological distress resulting from actions, or the lack of them, which violate one's moral or ethical code. • The condition can contribute to the development of mental health problems, including depression, PTSD and anxiety. • A lack of resources may mean workers are unable to adequately care for those they are responsible for which may result in great suffering or a loss of life.
02.04.2020	Monitoring behavioural insights related to COVID-19	The Lancet / Correspondence	<ul style="list-style-type: none"> • A critical element in reducing transmission of the virus is rapid and widespread behavioural change. Evidence shows that a perceived lack of consistency, competence, fairness, objectivity, empathy, or sincerity in crisis response in the public could lead to distrust and fear. • Conversely, when the public perceives measures as having these characteristics, as well as being easily understood and communicated through trusted and accessible channels, and when the necessary services are available, people are able to make informed choices, protect themselves, and comply with recommended practices.
04.04.2020	Redefining vulnerability in the era of COVID-19	The Lancet / Editorial	<ul style="list-style-type: none"> • Vulnerable groups of people are those that are disproportionately exposed to risk, but who is included in these groups can change dynamically. A person not considered vulnerable at the outset of a pandemic can become vulnerable depending on the policy response. • The strategies most recommended to control the spread of COVID-19—social distancing and frequent handwashing—are not easy for the millions of people who live in highly dense communities with precarious or insecure housing, and poor sanitation and access to clean water. • While responding to COVID-19, policy makers should consider the risk of deepening health inequalities. If vulnerable groups are not properly identified, the consequences of this pandemic will be even more devastating.
02.04.2020	Why inequality could spread COVID-19	The Lancet Public Health / Comment	<ul style="list-style-type: none"> • The inequitable response to COVID-19 is already evident. Healthy life expectancy and mortality rates have historically been markedly disproportionate between the richest and poorest populations. • The full effects of COVID-19 are yet to be seen, while the disease begins to spread across the most fragile settings, including conflict zones, prisons, and refugee camps. • As the global economy plunges deeper into an economic crisis and government bailout programmes continue to prioritise industry, scarce resources and funding allocation decisions must aim to reduce inequities rather than exacerbate them.

Miscellaneous

Publication Date	Title/URL	Journal/ Article type	Digest
02.04.2020	Communication Skills in the Age of COVID-19	Annals of Internal medicine / Ideas and Opinions	<ul style="list-style-type: none"> • Comment on the impact of COVID-19 in revealing challenges that clinicians already face in communicating with patients about serious illness. • Clinicians are confronted with new communication tasks not faced before, including proactive COVID-19 planning for at risk patients, facilitating virtual goodbyes between family members, and explaining decisions around scarce resources. • Clinicians lacking training in evidence-based methods to communicate with patients with serious illness may particularly struggle
02.04.2020	Collision of the COVID-19 and Addiction Epidemics	Annals of Internal medicine / Ideas and Opinions	<ul style="list-style-type: none"> • Comment on the impact of COVID-19 and social distancing on those with substance use disorders (SUD). • Those with SUD or recovering may be particularly susceptible to COVID-19 and associated complications, struggle to access care, and be uniquely challenged by social distancing measures. • Many risks of the current pandemic to persons with SUD are indirect, such as housing instability and incarceration.
02.04.2020	An Epidemic in the Midst of a Pandemic: Opioid Use Disorder and COVID-19	Annals of Internal medicine / Ideas and Opinions	<ul style="list-style-type: none"> • Strategies to address disruptions in medication access facing persons with opioid use disorder plus reduce in-person contact with health care providers for treatment assessments and to manage changes in care.
02.04.2020	Flattening the Curve for Incarcerated Populations - Covid-19 in Jails and Prisons	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> • Practical steps to operationalize a response for incarcerated populations.
02.04.2020	Governmental Public Health Powers During the COVID-19 Pandemic: Stay-at-home Orders, Business Closures, and Travel Restrictions	JAMA / Viewpoint	<ul style="list-style-type: none"> • To limit cross-border spread, more than a dozen states in the USA have issued mandatory quarantines for interstate travellers. Some models suggest physical distancing would have to persist for 3 months to mitigate the peak effects on health systems and could be required on an intermittent basis for 12 to 18 months. • This article discusses what legal powers governments have, the role of the courts, and how public health can be balanced with personal and economic rights.
02.04.2020	Fangcang shelter hospitals: a novel concept for responding to public health emergencies	The Lancet / Health Policy	<ul style="list-style-type: none"> • Fangcang shelter hospitals are a novel public health concept. The authors document the development of Fangcang shelter hospitals during the COVID-19 outbreak in China and explain their three key characteristics (rapid construction, massive scale, and low cost) and five essential functions (isolation, triage, basic medical care, frequent monitoring and rapid referral, and essential living and social engagement).

			<ul style="list-style-type: none"> • Fangcang shelter hospitals could be powerful components of national responses to the COVID-19 pandemic, as well as future epidemics and public health emergencies.
02.04.2020	The 3 Steps Needed to End the COVID-19 Pandemic: Bold Public Health Leadership, Rapid Innovations, and Courageous Political Will	JMIR Public Health and Surveillance / Editorial	<ul style="list-style-type: none"> • The authors describe the rationale for three priority areas to stop the COVID-19 pandemic: 1) coordinated and consistent stay-at-home orders across multiple jurisdictions, including potential nation-wide mandates 2) rapid scale-up of SARS-CoV-2 testing 3) improving healthcare capacity to respond.
02.04.2020	Covid-19 and Health Care's Digital Revolution	The New England journal of medicine / Perspective	<ul style="list-style-type: none"> • Perspective piece on the need to increase use of digital health in all health care systems to support response to COVID-19, and suggested actions.
02.04.2020	Thinking Globally, Acting Locally — The U.S. Response to Covid-19	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> • Suggests that national leadership in an epidemic response only works if it is evidence-based. • Discussion of lessons already learned from COVID-19, in the United States.
02.04.2020	Covid-19 and Health Care's Digital Revolution	New England Journal of Medicine / Perspective	<ul style="list-style-type: none"> • The authors suggest that the United States' health care system is ill equipped to deal with this pandemic due to its analogue nature. • New remote service options are needed, including: video, text, email, mobile phone applications, wearable devices and "chatbots". • Hospital-at-home care should be an option for otherwise stable patients with newly diagnosed SARS-CoV-2 infections and for early discharge of patients admitted to hospitals. • An emergency update of privacy and communication regulation is needed to accompany these new digital services, including for payment models.
02.04.2020	Declining Public Health Protections within Autocratic Regimes: Impact on Global Public Health Security, Infectious Disease Outbreaks, Epidemics, and Pandemics	Prehospital and disaster medicine / Article	<ul style="list-style-type: none"> • Paper describing the impact of autocratic regimes and leaders on public health response, with a review of a cross section of autocratic nations currently experiencing the impact of COVID-19 as an example of how these regimes have global impact.
02.04.2020	Medical student involvement in the COVID-19 response	The Lancet / Correspondence	<ul style="list-style-type: none"> • The paradoxical dual role of medical students is that, as the future health-care workforce, they potentially form part of a health-care system's response to public health emergencies but, conversely, are considered non-essential in clinical delivery and might be restricted from clinical learning. • Some medical schools have cancelled training, whereas others encourage clinical placements. Both represent a loss of essential learning opportunities.
02.04.2020	COVID-19: the current situation in Afghanistan	The Lancet Global Health / Correspondence	<ul style="list-style-type: none"> • Although the health-care system in Afghanistan has improved over the past 17 years, the authors question its preparedness for a prompt and functional response to the COVID-19 outbreak.

Produced by the PHE COVID-19 Literature Digest Team

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