Public Health England

International EPI Cell Daily Evidence Digest – 18/05/2020

This Daily Evidence Digest is produced by the PHE COVID-19 Literature Digest Team as a resource for professionals working in public health. We do not accept responsibility for the availability, reliability or content of the items included in this resource and do not necessarily endorse the views expressed within them. The papers are organised under the following themes:

- Diagnostics
- Serology and immunology
- Genomics
- Epidemiology and clinical - children and pregnancy
- Epidemiology and clinical - risk factors
- Epidemiology and clinical - other
- Infection control
- Treatment
- Social sciences
- Miscellaneous
- Modelling
- Guidance, consensus statements and hospital resources (no digest)
- Overviews, comments and editorials (no digest)

Please note that we are including preprints (highlighted in red), which are preliminary reports of work that have NOT been peer-reviewed.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

Publication Date	Title/URL	Journal/ Article type	Digest
15.05.2020	Chest CT for detecting COVID-19: a systematic review and meta-analysis of diagnostic accuracy	Eur Radiol / Systematic review	• Systematic review and meta-analysis of 16 studies (n = 3186 patients) regarding the diagnostic test accuracy of chest CT for detecting COVID-19.

			• Chest CT offers great sensitivity for detecting COVID-19, especially in a region with severe epidemic situation. However, the specificity is low. • In the context of emergency disease control, chest CT provides a fast, convenient, and effective method to early recognize suspicious cases and might contribute to confine epidemic.
17.05.2020	Persistent viral shedding of SARS-CoV-2 in faeces - a rapid review	Colorectal Dis / rapid review	• Rapid review of 26 articles to establish the incidence and timing of positive faecal samples for SARS-CoV-2 in patients with COVID-19. • Combining study results demonstrated that 53·9% of those tested for faecal RNA were positive. Duration of faecal viral shedding ranged from 1 to 33 days after a negative nasopharyngeal swab with one result remaining positive 47 days after onset of symptoms. • There is insufficient evidence to suggest that COVID-19 is transmitted via faecally shed virus.
15.05.2020	Plasma CRP level is positively associated with the severity of COVID-19	Ann Clin Microbiol Antimicrob / Article	• Study aiming to estimate whether the c-reactive protein (CRP) level is able to act as a marker in indicating the severity of COVID-19. • The level of plasma CRP was positively correlated to the severity of COVID-19 pneumonia.

Serology and immunology

Publication Date	Title/URL	Journal/ Article type	Digest
15.05.2020	Symptoms and immunoglobulin development in hospital staff exposed to a SARS-CoV-2 outbreak	Pediatr Allergy Immunol / Article	• Study investigating exposure to SARS-CoV-2, symptoms and antibody responses in a large sample of health care workers following a COVID-19 outbreak. • Approximately 80% of COVID-19 cases developed some specific antibody response (IgA and IgG) approximately 3 weeks after onset of symptoms. Subjects in the non COVID-19 groups had also elevated IgG (1.8%) and IgA values (7.6%) irrespective of contact history with cases. • The authors conclude that a significant number of diseased did not develop relevant antibody responses three weeks after

			symptom onset, and suggest that exposure to COVID-19 positive co-workers in a hospital setting is not leading to the development of measurable immune responses in a significant proportion of asymptomatic contact-persons.
13.05.2020	[Convergent Antibody Responses to SARS-CoV-2 Infection in Convalescent Individuals](#)	bioRxiv (non-peer reviewed) / Article	• Report on 68 COVID-19 convalescent individuals. Plasmas collected on average 30 days after symptoms onset had variable half-maximal neutralizing titres ranging from undetectable in 18% to below 1:1000 in 78%, while only 3% showed titres >1:5000. • Antibody cloning revealed expanded clones of RBD-specific memory B cells expressing closely related antibodies in different individuals. Despite low plasma titres, antibodies to distinct epitopes on RBD neutralized at half-maximal inhibitory concentrations (IC50s) as low as few ng/mL. • Most convalescent plasmas obtained from recovered individuals without hospitalization don't contain high levels of neutralizing activity. Nevertheless, rare but recurring RBD-specific antibodies with potent antiviral activity were found in all individuals tested, suggesting that a vaccine designed to elicit such antibodies could be broadly effective.
14.05.2020	[Pre-existing and de novo humoral immunity to SARS-CoV-2 in humans](#)	bioRxiv (non-peer reviewed) / Article	• Using diverse assays for detection of antibodies reactive with the SARS-CoV-2 Spike (S) glycoprotein, authors demonstrate pre-existing immunity in uninfected and unexposed humans. • HCoV patient sera exhibited specific neutralising activity against SARS-CoV-2 S pseudotypes, according to levels of SARS-CoV-2 S-binding IgG and with efficiencies comparable to those of COVID-19 patient sera. • Distinguishing pre-existing and de novo antibody responses to SARS-CoV-2 critical for serology, seroprevalence and vaccine studies.
29.04.2020	[Comparison of four new commercial serologic assays for determination of SARS-CoV-2 IgG](#)	J Clin Virol / Article	• This study is the first to compare four new commercially available assays using 75 sera from patients tested positive or negative by SARS-CoV-2 PCR: the anti SARS-CoV-2 ELISA (IgG) (Euroimmun, Germany), the EDI New Coronavirus COVID-19 IgG ELISA, (Epitope diagnostics (EDI), USA), the recomWell SARS-CoV-2 IgG ELISA (Mikrogen, Germany), and the SARS-CoV-2 Virachip IgG (Viramed, Germany). • Results show a sensitivity of 86.4 %, 100 %, 86.4 %, and 77.3

			% and a specificity of 96,2 %, 88,7 %, 100 %, and 100 % for the Euroimmun assay, the EDI assay, the Mikrogen assay, and the Viramed assay, respectively. • Commercially available SARS-CoV-2 IgG assays thus have a sufficient specificity and sensitivity for identifying individuals with past SARS-CoV-2 infection.
25.04.2020	[Test performance evaluation of SARS-CoV-2 serological assays](#)	medRxiv (not peer reviewed) / Article	• Evaluation of 10 lateral flow assays (LFAs) and two ELISAs to detect anti-SARS-CoV-2 antibodies. • For SARS-CoV-2 RT-PCR-positive specimens, percent seropositive increased with time interval, peaking at 81.8-100.0% in samples taken >20 days after symptom onset. Test specificity ranged from 84.3-100.0% in pre-COVID-19 specimens. • Specificity higher when weak LFA bands considered negative, but this decreased sensitivity. IgM detection more variable than IgG; detection highest when IgM and IgG results were combined. Agreement between ELISAs and LFAs ranged from 75.7-94.8%. No consistent cross-reactivity was observed. • Evaluation showed heterogeneous assay performance. Reader training key to reliable LFA performance. Informed use of serology requires evaluations of full spectrum of SARS-CoV-2 infections: asymptomatic and mild infection to severe disease, and convalescence.
14.05.2020	[Targets of T cell responses to SARS-CoV-2 coronavirus in humans with COVID-19 disease and unexposed individuals](#)	Cell / Article	• CD4+ T cell responses to spike, the main target of most vaccine efforts, were robust and correlated with the magnitude of the anti-SARS-CoV-2 IgG and IgA titers. • The M, spike and N proteins each accounted for 11-27% of the total CD4+ response, with additional responses commonly targeting nsp3, nsp4, ORF3a and ORF8, among others.
13.05.2020	[The SARS-CoV-2 T-cell immunity is directed against the spike, membrane, and nucleocapsid protein and associated with COVID 19 severity](#)	medRxiv (not peer reviewed) / Article	• Explore and compare immunogenicity of SARS-CoV-2 S-, M- and N-proteins in context of different COVID-19 manifestations. Analysing a cohort of COVID-19 patients with moderate, severe, and critical disease severity, show that overlapping peptide pools (OPP) of all three proteins can activate SARS-CoV-2-reactive T-cells with a stronger response of CD4+ compared to CD8+ T-cells. • Since S-, M-, and N-proteins induce T-cell responses with individual differences, all three proteins should be evaluated

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			for diagnostics and therapeutic strategies to avoid underestimation of cellular immunity and to deepen our understanding of COVID-19 immunity.
15.05.2020	CoV-AbDab: the Coronavirus Antibody Database	bioRxiv (non-peer reviewed) / Article	• Database, CoV-AbDab, contains data on over 380 published/patented antibodies and nanobodies known to bind to at least one beta coronavirus e.g. SARS-CoV-2 and MERS-CoV. • Supply relevant metadata - evidence of cross-neutralisation, antibody/nanobody origin, full variable domain sequence (where available) and germline assignments, epitope region, links to relevant PDB entries, homology models, and source literature. • Potential applications including identifying characteristic germline usage biases in receptor-binding domain antibodies and contextualising the diagnostic value of the SARS-CoV binding CDRH3s through comparison to over 500 million antibody sequences from SARS-CoV serologically naive individuals. • Community submissions are invited. CoV-AbDab is freely available and downloadable at http://opig.stats.ox.ac.uk/webapps/coronavirus

Genomics

Publication Date	Title/URL	Journal/ Article type	Digest
15.05.2020	Evidence of Increasing Diversification of Emerging SARS-CoV-2 Strains	J Med Virol / Article	• A compositional analysis as well as a Bayesian coalescent analysis of complete genome sequences of SARS-CoV-2 strains recently isolated in Europe, North America, South America and Asia was performed. • Results revealed a diversification of SARS-CoV-2 strains in three different genetic clades. Co-circulation of different clades in different countries, as well as different genetic lineages within different clades were observed. • A mean rate of evolution of 6.57 x 10(-4) substitutions per site per year was found. A significant migration rate per genetic

			lineage per year from Europe to South America was also observed.
12.05.2020	Tracking the COVID-19 pandemic in Australia using genomics	medRxiv (not peer reviewed) / Article	• Authors applied high-throughput genome sequencing of SARS-CoV-2 to 75% of cases in Australian State of Victoria (pop. 6.24 million). 903 samples included in genomic analyses. • 76 distinct genomic clusters identified; included large clusters associated with social venues, healthcare facilities and cruise ships. Sequencing of sequential samples from 98 patients revealed minimal intra-patient SARS-CoV-2 genomic diversity. • Phylodynamic modelling indicated significant reduction in effective viral reproductive number (Re) from 1.63 to 0.48 after travel restrictions and population-level physical distancing. • Framework for use of SARS-CoV-2 genomics in public health responses. Application to rapidly identify SARS-CoV-2 transmission chains will become critically important as social restrictions ease globally.
16.05.2020	SARS-CoV-2 Receptor ACE2 Is an Interferon-Stimulated Gene in Human Airway Epithelial Cells and Is Detected in Specific Cell Subsets across Tissues	Cell / Article	• Study leveraging human, non-human primate, and mouse single-cell RNA-sequencing (scRNA-seq) datasets across health and disease to uncover putative targets of SARS-CoV-2 among tissue-resident cell subsets. The authors identify ACE2 and TMPRSS2 co-expressing cells within lung type II pneumocytes, ileal absorptive enterocytes, and nasal goblet secretory cells. Strikingly, they discovered that ACE2 is a human interferon-stimulated gene (ISG) in vitro using airway epithelial cells and extend the findings to in vivo viral infections. • These data suggest that SARS-CoV-2 could exploit species-specific interferon-driven upregulation of ACE2, a tissue-protective mediator during lung injury, to enhance infection.
15.05.2020	Distribution of ACE2, CD147, cyclophilins, CD26 and other SARS-CoV-2 associated molecules in human tissues and immune cells in health and disease	bioRxiv (non-peer reviewed) / Article	• Data suggest different receptor repertoire potentially involved in the SARS-CoV-2 infection at the epithelial barriers and in the immune cells. • Altered expression of these receptors related with age, gender, obesity and smoking, as well as with the disease status might contribute to COVID-19 morbidity and severity patterns.

Epidemiology and clinical – children and pregnancy

Publication Date	Title/URL	Journal/ Article type	Digest
17.05.2020	[Children with Coronavirus Disease 2019 (COVID-19): A Review of Demographic, Clinical, Laboratory and Imaging Features in 2,597 Pediatric Patients](#)	J Med Virol / Article	• Review of the demographic, clinical, laboratory and imaging features from 2,597 paediatric patients of COVID-19. • Although lymphopenia was the most common lab finding in adults, it infrequently occurred in children (9.8%). • Moreover, elevated creatine kinase MB isoenzyme (CK-MB) was much more commonly observed in children (27.0%) than that in adults, suggesting that heart injury would be more likely to happen in paediatric patients.
08.05.2020	[Characterisation of COVID-19 Pandemic in Paediatric Age Group: A Systematic Review and Meta-Analysis](#)	J Clin Virol / Systematic review	• Systematic review and meta-analysis to analyse the disease characterisation in paediatric age group including the possibility of vertical transmission to neonates. • The most frequently reported symptoms were cough 49% and fever 47%. Lymphopenia and increased Procalcitonin were recorded in 21%) and 28%. No sex difference for COVID-19 was found in paediatric age group (p = 0.7). Case fatality rate was 0%. Four out of 58 neonates (6.8%) born to COVID-19 confirmed mothers tested positive for the disease. • The disease trajectory in paediatric patients has good prognosis compared to adults. Intensive care unit and death are rare. Vertical transmission and virus shedding in breast milk are yet to be established.

Epidemiology and clinical - risk factors

Publication Date	Title/URL	Journal/ Article type	Digest
14.05.2020	[Impact of Cerebrovascular and Cardiovascular Diseases on Mortality and Severity of COVID-19 - Systematic Review, Meta-analysis, and Meta-regression](#)	J Stroke Cerebrovasc Dis / Systematic review	• Systematic review and meta-analysis of 4448 patients from 16 studies to evaluate the latest evidence on the association between cerebrovascular, cardiovascular disease, and poor outcome in patients with COVID-19. • Cerebrovascular disease was associated with increased poor composite outcome. Subgroup analysis revealed that cerebrovascular disease was associated with mortality and was

			borderline significant for severe COVID-19. • Cardiovascular disease was associated with increased composite poor outcome, and its mortality and severe COVID-19 subgroup. • Meta-regression demonstrate that the association was not influenced by gender, age, hypertension, diabetes, and respiratory comorbidities. The association between cerebrovascular disease and poor outcome was not affected by cardiovascular diseases and vice versa.
14.05.2020	[Hypertension is associated with increased mortality and severity of disease in COVID-19 pneumonia: A systematic review, meta-analysis and meta-regression](#)	J Renin Angiotensin Aldosteron Syst / Systematic review	• Hypertension was associated with increased composite poor outcome, including mortality, severe COVID-19, ARDS, need for ICU care and disease progression in patients with COVID-19.
15.05.2020	[Risk factors for SARS-CoV-2 among patients in the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care network: a cross-sectional study](#)	The Lancet Infectious Diseases / Article	• Aimed to identify demographic and clinical risk factors for testing positive for SARS-CoV-2 within the Oxford Royal College of General Practitioners (RCGP) Research and Surveillance Centre primary care network. • A positive SARS-CoV-2 test result in this primary care cohort was associated with similar risk factors as observed for severe outcomes of COVID-19 in hospital settings, except for smoking. Provide evidence of potential sociodemographic factors associated with a positive test, including deprivation, population density, ethnicity, and chronic kidney disease.
07.05.2020	[Vitamin D concentrations and COVID-19 infection in UK Biobank](#)	Diabetes Metab Syndr / Article	• Study aiming to establish whether blood 25-hydroxyvitamin D (25(OH)D) concentration was associated with COVID-19 risk, and whether it explained the higher incidence of COVID-19 in black and South Asian people. • Complete data were available for 348,598 UK Biobank participants. Of these, 449 had confirmed COVID-19 infection. Vitamin D was associated with COVID-19 infection univariably, but not after adjustment for confounders. • Ethnicity was associated with COVID-19 infection univariably (blacks versus whites OR = 5.32, 95% CI = 3.68-7.70, p-value<0.001; South Asians versus whites OR = 2.65, 95% CI = 1.65-4.25, p-value<0.001). Adjustment for 25(OH)D concentration made little difference to the magnitude of the association. • These findings do not support a potential link between

Date	Title	Source / Type	Summary
			vitamin D concentrations and risk of COVID-19 infection, nor that vitamin D concentration may explain ethnic differences in COVID-19 infection.
10.05.2020	[NON-WHITE ETHNICITY, MALE SEX, AND HIGHER BODY MASS INDEX, BUT NOT MEDICATIONS ACTING ON THE RENIN-ANGIOTENSIN SYSTEM ARE ASSOCIATED WITH CORONAVIRUS DISEASE 2019 (COVID-19) HOSPITALISATION: REVIEW OF THE FIRST 669 CASES FROM THE UK BIOBANK](#)	medRxiv (not peer reviewed) / Article	• Investigate factors associated with COVID-19 positivity for first 669 (out of 1,474) UK Biobank participants: non-white ethnicity, male sex, greater BMI independently associated with COVID-19 positive result. • Same 3 factors plus diabetes, hypertension, prior MI, and smoking independently associated with COVID-19 positivity compared to remining cohort (test negatives plus untested). • Similar associations observed comparing test negatives with untested cohort; suggests factors associate with general hospitalisation not specifically COVID-19. • Among participants tested for COVID-19 with presumed moderate to severe symptoms in a hospital setting, non-white ethnicity, male sex, and higher BMI are associated with a positive result. Other cardiometabolic morbidities confer increased risk of hospitalisation, without specificity for COVID-19. • Notably, ACE/ARB use did not associate with COVID-19 status.
07.05.2020	[APOE E4 GENOTYPE PREDICTS SEVERE COVID-19 IN THE UK BIOBANK COMMUNITY COHORT](#)	medRxiv (not peer reviewed) / Article	• In older adults, pre-existing dementia a major risk factor (OR = 3.07, 95% CI: 1.71 to 5.50) for COVID-19 severity in UK Biobank (UKB). Impaired consciousness, including delirium, common in severe cases. • ApoE e4 genotype associated with both dementia and delirium; e4e4 (homozygous) genotype associated with a 14-fold increase in risk of Alzheimer's disease compared to the common e3e3 genotype, in populations with European ancestries. Authors tested associations between ApoE e4 alleles and COVID-19 severity, using the UKB data. • The ApoE e4e4 allele increases risks of severe COVID-19 infection, independent of pre-existing dementia, cardiovascular disease, and type-2 diabetes.
13.05.2020	[Glycosylated hemoglobin is associated with systemic inflammation, hypercoagulability, and prognosis of COVID-19 patients](#)	Diabetes Res Clin Pract / Article	• Study exploring the relationship between glycosylated haemoglobin (HbA1c) level, inflammation, and prognosis of 132 COVID-19 patients. • High HbA1c level is associated with inflammation,

| | | | hypercoagulability, and low SaO(2) in COVID-19 patients, and the mortality rate (27.7%) is higher in patients with diabetes. Determining HbA1c level after hospital admission is thus helpful assessing inflammation, hypercoagulability, and prognosis of COVID-19 patients. |

Epidemiology and clinical – other

Publication Date	Title/URL	Journal/ Article type	Digest
15.05.2020	Estimating the extent of true asymptomatic COVID-19 and its potential for community transmission: systematic review and meta-analysis	medRxiv (not peer reviewed) / Article	• Screened 571 articles and included five low risk-of-bias studies from three countries (China (2), USA (2), Italy (1)) that tested 9,242 at-risk people, of which 413 were positive and 65 were asymptomatic. • Concluded that estimates of the prevalence of asymptomatic COVID-19 cases are lower than many highly publicized studies, but still substantial. Further robust epidemiological evidence is urgently needed, including in sub-populations such as children, to better understand the importance of asymptomatic cases for driving spread of the pandemic.
11.05.2020	COVID-19: a retrospective cohort study with focus on the over-80s and hospital-onset disease	medRxiv (not peer reviewed) / Article	• Describes presenting features and outcomes of first 450 patients with COVID-19 in a UK hospital, with a focus on those patients over 80 years and patients with hospital onset infection. • Inpatient mortality was high, especially among the over-80s, who were more likely to present atypically. The ethnic composition of caseload was similar to the underlying population. While a significant number of patients presented with COVID-19 while already in hospital, their outcomes were no worse.
11.05.2020	Risk factors for clinical progression in patients with COVID-19: a retrospective study of electronic health record data in the United Kingdom	medRxiv (not peer reviewed) / Article	• Analysed data on 2756 patients admitted to Chelsea & Westminster Hospital NHS Foundation Trust - several demographic, clinical and laboratory findings associated with a symptomatic presentation of COVID-19. • Significant associations between patient deterioration were found with age, sex and specific blood markers, chiefly C-

			reactive protein, and could help early identification of patients at risk of poorer prognosis.
14.05.2020	Use of all cause mortality to quantify the consequences of covid-19 in Nembro, Lombardy: descriptive study	Bmj / Article	• Nembro, in the Bergamo province of Lombardy, northern Italy, had 11 505 residents as of 1 January 2020. • Monthly all-cause mortality between Jan 2012 and Feb 2020 fluctuated around 10 per 1000 person years, with a maximum of 21.5 per 1000 person years. In Mar 2020, monthly all-cause mortality reached a peak of 154.4 per 1000 person years. For the first 11 days in April, this rate decreased to 23.0 per 1000 person years. • The observed increase in mortality was driven by the number of deaths among older people (≥65 years), especially men. From the outbreak onset until 11 April 2020, only 85 confirmed deaths from covid-19 in Nembro were recorded, corresponding to about half of the 166 deaths from all causes observed in that period.
16.05.2020	The first 100 days of SARS-CoV-2 control in Vietnam	medRxiv (not peer reviewed) / Article	• Describe the control measures used and their relationship with imported and domestically-acquired case numbers. • Vietnam has controlled SARS-CoV-2 spread through the early introduction of communication, contact tracing, quarantine, and international travel restrictions.
15.05.2020	EXCESS MORTALITY FROM COVID-19. WEEKLY EXCESS DEATH RATES BY AGE AND SEX FOR SWEDEN	medRxiv (not peer reviewed) / Article	• Estimated age- and sex-specific death rates to get more accurate estimates of the excess mortality attributed to Covid-19, as well as the difference between men and women in Sweden. • Concluded that the Covid-19 pandemic has so far had a clear and consistent effect on total mortality in Sweden, with male death rates being comparably more affected.
10.05.2020	COVID-19 and Environmental factors. A PRISMA-compliant systematic review	medRxiv (not peer reviewed) / Article	• Reviewed impact of environmental factors on human coronaviruses. Temperature, humidity and other environmental factors recorded as environmental drivers. • Analysis of 23 studies show evidence that high temperature and high humidity reduce the COVID-19 transmission. Further studies concerning other environmental (namely meteorological) factors role should be conducted in order to further prove this correlation.

Infection control

Publication Date	Title/URL	Journal/ Article type	Digest
15.05.2020	Examining the current intelligence on COVID-19 and infection prevention and control strategies in health settings: A global analysis	Infect Control Hosp Epidemiol / Review	• Review of global COVID-19 IPC guidelines such as WHO, the CDC, and European Centre for Disease Prevention and Control (ECDC). Guidelines from two high income countries (Australia and UK) and one middle income country (China) were also reviewed. • Findings showed nosocomial transmission of SARS-CoV-2 in health settings through droplet, aerosol and by an oral-fecal or fecal-droplet route. However, the IPC guidelines fail to cover all transmission modes and the recommendations also conflict with each other. Most guidelines recommend surgical masks for healthcare providers during routine care and N95 respirators for aerosol generating procedures. However, recommendations around type of surgical masks varied. In addition, CDC recommends cloth masks when the surgical mask is totally unavailable.
13.05.2020	Triaging of Respiratory Protective Equipment on the assumed risk of SARS-CoV-2 aerosol exposure in patient-facing healthcare workers delivering secondary care: a rapid review	medRxiv (not peer reviewed) / Article	• Review studies containing primary data comparing surgical facemasks and respirators specific to SARS-CoV-2, and studies underpinning government PPE guidance. • Paucity of evidence on comparison of FRSMs and respirators specific to SARS-CoV-2, and poor-quality evidence in other contexts. Indirectness results in extrapolation of non-SARS-CoV-2 specific data to guide UK Government PPE guidance. The appropriateness of this is unknown given the uncertainty over the transmission of SARS-CoV-2. 1. The evidence base for UK Government PPE guidelines is not based on SARS-CoV-2 and requires generalisation from low-quality evidence of other pathogens/particles. 2. There is a paucity of high-quality evidence regarding the efficacy of RPE specific to SARS-CoV-2. 3. HMG's PPE guidelines are underpinned by the assumption of droplet transmission of SARS-CoV-2. Triaging the use of FFP3 respirators might increase the risk of COVID-19 faced by some.
14.05.2020	Safe management of bodies of deceased persons with suspected or confirmed COVID-19: a rapid systematic review	BMJ Glob Health / Systematic review	• While a substantive number of guidance documents propose specific strategies, no study was identified that provided direct evidence for the effects of any of those strategies.

Treatment

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18.05.2020	Mast cell stabilisers, leukotriene antagonists and antihistamines: A rapid review of effectiveness in COVID-19	Oxford COVID-19 Evidence Service / Rapid review	• There have been no studies examining the use of mast cell stabilisers, leukotriene antagonists or anti-histamines in COVID-19. • Lung damage and "cytokine storm" observed in SARS-CoV-2 infection are associated with raised pro-inflammatory cytokines. Mast cells are the main source of these. It has been speculated that mast cell stabilisers may attenuate pulmonary complications, fatal inflammation and death in COVID-19. • It is unclear whether administration of mast cell stabilisers in COVID-19 would be beneficial. Clinical trials would be required to establish whether these drugs may be repurposed for treatment of this disease.
15.05.2020	Risks and Impact of Angiotensin-Converting Enzyme Inhibitors or Angiotensin-Receptor Blockers on SARS-CoV-2 Infection in Adults	Annals of Internal Medicine / Systematic review	• High-certainty evidence suggests that ACEI or ARB use is not associated with more severe COVID-19 disease, and moderate-certainty evidence suggests no association between use of these medications and positive SARS-CoV-2 test results among symptomatic patients. • Whether these medications increase the risk for mild or asymptomatic disease or are beneficial in COVID-19 treatment remains uncertain.
14.05.2020	Efficacy and safety of corticosteroids in COVID-19 based on evidence for COVID-19, other coronavirus infections, influenza, community-acquired pneumonia and acute respiratory distress syndrome: a systematic review and meta-analysis	Cmaj / Systematic review	• Systematic review examining the impact of corticosteroids in COVID-19 and related severe acute respiratory illnesses, in support a guideline for managing COVID-19. • Corticosteroids may reduce mortality for patients with COVID-19 and ARDS. For patients with severe COVID-19 but without ARDS, evidence regarding benefit from different bodies of evidence is inconsistent and of very low quality.
12.05.2020	Nifedipine and Amlodipine Are Associated With Improved Mortality and Decreased Risk for Intubation and Mechanical Ventilation in Elderly Patients Hospitalized for COVID-19	Cureus / Article	• Retrospective review of dihydropyridine calcium channel blockers (CCB) use in hospitalized patients with COVID-19 in search of any difference in outcomes related to specific endpoints: survival to discharge and progression of disease leading to intubation and mechanical ventilation. • Patients treated with a CCB were significantly more likely to survive than those not treated with a CCB: 12 (50%) survived

			and 12 expired in the CCB group vs. six (14.6%) that survived and 35 (85.4%) that expired in the No-CCB treatment group (P<.01; p=0.0036). CCB patients were also significantly less likely to undergo intubation and mechanical ventilation. • Nifedipine and amlodipine were found to be associated with significantly improved mortality and a decreased risk for intubation and mechanical ventilation in elderly patients hospitalized with COVID-19.
11.05.2020	The effects of ARBs, ACEIs and statins on clinical outcomes of COVID-19 infection among nursing home residents	medRxiv (not peer reviewed) / Article	• Retrospective multi-centre cohort study in two Belgian nursing homes that experienced similar COVID-19 outbreaks; 154 COVID-19 positive subjects. • Found a statistically significant association between statin intake and absence of symptoms during COVID-19 infection, which remained statistically significant after adjusting for age, sex, functional status, diabetes mellitus and hypertension. Strength of this association was considerable and clinically important. • No statistically significant association between ACEi/ARB and asymptomatic status or serious clinical outcome. • Role of statins and any interaction with renin-angiotensin system drugs need to be further explored in larger observational studies as well as randomised clinical trials

Social science

Publication Date	Title/URL	Journal/ Article type	Digest
16.05.2020	Capability, opportunity, and motivation to enact hygienic practices in the early stages of the COVID-19 outbreak in the United Kingdom	Br J Health Psychol / Article	• Study of 2025 UK adults, exploring influences on hygienic practices, a set of key transmission behaviours, in relation to the Capability, Opportunity, Motivation-Behaviour (COM-B) model of behaviour change. • All three COM-B components significantly predicted good hygienic practices, with motivation having the greatest influence on behaviour. • Reflective motivation was largely driving behaviour, with those highest in reflective motivation scoring 51% more on the measure of hygienic practices compared with those with the

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			lowest scores. • Behaviour change interventions to promote hygienic practices should focus on increasing and maintaining motivation to act and include elements that promote and maintain social support and knowledge of COVID-19 transmission.
14.05.2020	COVID-19 social distancing and sexual activity in a sample of the British Public	J Sex Med / Article	• In this sample of 868 UK adults self-isolating owing to the COVID-19 pandemic the prevalence of sexual activity was lower than 40%. • Those reporting particularly low levels of sexual activity included females, older adults, those not married, and those who abstain from alcohol consumption. • Interventions to promote health and wellbeing during the COVID-19 pandemic should consider positive sexual health messages in mitigating the detrimental health consequences in relation to self-isolation and should target those with the lowest levels of sexual activity.
09.05.2020	Behaviors and attitudes in response to the COVID-19 pandemic: Insights from a cross-national Facebook survey	medRxiv (not peer reviewed) / Article	• Authors developed a continuously run online survey ("COVID-19 Health Behaviour Survey") across eight countries (Belgium, France, Germany, Italy, the Netherlands, Spain, UK, US) to collect key information on people's health status, behaviours, close social contacts, and attitudes in response to COVID-19. Results from March 13-April 19, 2020. • Women show substantially higher perception of threat and lower level of confidence in health system. Paralleled by sex-specific behaviours: women more likely to adopt a wide range of preventive behaviours. Higher level of awareness and concern among older respondents, in line with the evidence that at highest risk. • Substantial temporal and spatial heterogeneity in terms of confidence in institutions and responses to non-pharmaceutical interventions.

Modelling

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15.05.2020	[Sensitivity of UK Covid-19 deaths to the timing of suppression measures and their relaxation](#)	medRxiv (not peer reviewed) / Article	• Examined the sensitivity of total UK Covid-19 deaths and the demand for intensive care and ward beds, to the timing and duration of suppression periods during a 500 day period. • The results indicate the extreme sensitivity to timing and the consequences of even small delays to suppression and premature relaxation of such measures.
09.05.2020	[Time is of the essence: impact of delays on effectiveness of contact tracing for COVID-19](#)	medRxiv (not peer reviewed) / Article	• Authors evaluated the impact of timeliness and completeness in various steps of a contact tracing strategy (CTS) using a stochastic mathematical model with explicit time delays between time of infection, symptom onset, diagnosis by testing, and isolation. • Minimizing testing delay is of key importance for the effectiveness of CTS. Optimizing testing and tracing coverage and minimizing tracing delays, for instance with app-based technology further enhances effectiveness of CTS, with a potential to prevent up to 80% of all transmissions. • The process of conventional contact tracing should be reviewed and streamlined, while mobile app technology may offer a tool for gaining speed in the process.

Guidance, consensus statements

Publication Date	Title/URL	Journal/ Article type
31.03.2020	[International Committee of the Red Cross (ICRC): General guidance for the management of the dead related to COVID-19](#)	Forensic Sci Int / Guidance
11.05.2020	[AGA Institute Rapid Review of the GI and Liver Manifestations of COVID-19, Meta-Analysis of International Data, and Recommendations for the Consultative Management of Patients with COVID-19](#)	Gastroenterology / Rapid review
15.05.2020	[NG176: COVID-19 rapid guideline: chronic kidney disease](#)	NICE / Rapid guideline
15.05.2020	[NG177: COVID-19 rapid guideline: interstitial lung disease](#)	NICE / Rapid guideline

Overviews, comments and editorials

Publication Date	Title/URL	Journal/ Article type
15.05.2020	COVID-19 and Angiotensin-Converting Enzyme Inhibitor/Angiotensin-Receptor Blocker Therapy	Annals of Internal Medicine / Editorial
15.05.2020	Who is most likely to be infected with SARS-CoV-2?	The Lancet Infectious Diseases / Comment
15.05.2020	Importance of precise data on SARS-CoV-2 transmission dynamics control	The Lancet Infectious Diseases / Comment

Produced by the PHE COVID-19 Literature Digest Team

Bláthnaid Mahon, Caroline De Brún, Nicola Pearce-Smith, Ruth Muscat, Rachel Gledhill, Emma Farrow, Cath Hayes, Paul Rudd