COVID-19 Literature Digest – 12/08/2020

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- Serology and immunology
- Diagnostics
- Epidemiology and clinical - children and pregnancy
- Epidemiology and clinical - risk factors
- Epidemiology and clinical - other
- Infection control
- 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Please note that we are including preprints (highlighted in red), which are preliminary reports of work that have NOT been peer-reviewed.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.

Serology and immunology

Publication Date	Title / URL	Journal / Article type	Digest
06.08.2020	Seroprevalence and presentation of SARS-CoV-2 in pregnancy	Lancet / Correspondence	• The authors tested for antibodies for SARS-CoV-2 in 874 pregnant women consecutively attending first trimester screening (ie, at 10–16 weeks of gestation; n=372) or delivery (n=502) from April 14 to May 5, 2020, at three university hospitals in Barcelona, Spain. • Found a substantially higher seroprevalence (14%) of SARS-CoV-2 than that found by use of the SARS-CoV-2 PCR positive rates (0·78%) in women aged 20–40 years in Barcelona, Spain. • Data suggest that COVID-19 is commonly asymptomatic in pregnant women and

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			illustrate that seroprevalence studies might capture undiagnosed infections and offer different estimates of infection severity.
06.08.2020	Development of an Inactivated Vaccine Candidate, BBIBP-CorV, with Potent Protection against SARS-CoV-2	Cell / Article	• The authors describe development of an inactivated SARS-CoV-2 vaccine candidate, BBIBP-CorV. • BBIBP-CorV induces high levels of neutralizing antibodies titers in animal models. • Two-dose immunization with 2 µg/dose BBIBP-CorV efficiently protects rhesus macaques. • BBIBP-CorV is efficiently produced, genetically stable, and seems to be safe in animals.

Diagnostics

Publication Date	Title / URL	Journal / Article type	Digest
06.08.2020	SARS-CoV-2 viral load predicts COVID-19 mortality	Lancet Respir Med / Correspondence	• Report on SARS-CoV-2 viral load at diagnosis as an independent predictor of mortality in a large hospitalised cohort (n=1145). • Univariate survival analysis revealed a significant difference in survival probability between those with high viral load (defined as being greater than the overall mean log10 viral load of 5·6 copies per mL) and those with low viral load (p=0·0003; appendix p 4), with a mean follow-up of 13 days (SD 11) and a maximum follow-up of 67 days. *Previously included in the Digest as a preprint.*

Epidemiology and clinical - children and pregnancy

Publication Date	Title / URL	Journal / Article type	Digest
07.08.2020	Hospitalization Rates and Characteristics of Children Aged <18 Years Hospitalized with Laboratory-Confirmed COVID-19 — COVID-NET, 14 States, March 1–July 25, 2020	MMWR Morb Mortal Wkly Rep / Report	• Analysis of paediatric COVID-19 hospitalization data from 14 states found that although the cumulative rate of COVID-19–associated hospitalization among children (8.0 per 100,000 population) is low compared with that in adults (164.5), one in three hospitalized children was admitted to an ICU. • Children are at risk for severe COVID-19. Public health authorities and clinicians should continue to track paediatric SARS-CoV-2 infections. Reinforcement of prevention efforts is essential in congregate settings that serve children, including childcare centres and schools.

| 10.08.2020 | [Multisystem inflammatory syndrome associated with COVID-19 in children in Pakistan](#) | The Lancet Child & Adolescent Health / Correspondence | • Report initial experience of Multisystem inflammatory syndrome in children (MIS-C) from The Children's Hospital Lahore, Pakistan - the first report of this new inflammatory syndrome from south Asia.
• Eight children so far who fulfil the WHO criteria of MIS-C. Their data, although restricted by numbers, show some differences from the reported literature on MIS-C.
• The incidence of coronary artery involvement was high with two-thirds of children showing coronary artery dilatations.
• Presentation of SARS-CoV-2 positive children with hypotension and shock seems to be less common in their patients than in reported case series from France, the USA, and the UK. Is possible that some patients did not make it to their institution and that this type of presentation is therefore underestimated. |

Epidemiology and clinical - risk factors

Publication Date	Title / URL	Journal / Article type	Digest
11.08.2020	[Transmission of SARS-CoV-2 Involving Residents Receiving Dialysis in a Nursing Home — Maryland, April 2020](#)	MMWR Morb Mortal Wkly Rep / Report	• Investigation of a COVID-19 outbreak in a Maryland nursing home identified a significantly higher prevalence among residents receiving dialysis (47%) than among those not receiving dialysis (16%); 72% were asymptomatic at the time of testing. • Nursing home residents undergoing dialysis might be at a higher risk for SARS-CoV-2 infection because of exposures to staff members and community dialysis patients. Attention to infection control practices and surveillance in nursing homes and dialysis centres is critical to preventing nursing home COVID-19 outbreaks.
07.08.2020	[Outcomes of COVID-19 related hospitalisation among people with HIV in the ISARIC WHO Clinical Characterisation Protocol UK Protocol: prospective observational study](#)	medRxiv (non-peer reviewed) / Article	• A study of 47,539 hospitalised COVID-19 patients to describe outcomes of HIV-positive patients (n=115) compared to HIV-negative. • HIV-positive patients were younger than HIV-negative patients (median 55 versus 74 years; p=0.001), had a higher prevalence of obesity and moderate/severe liver disease, higher lymphocyte counts and C-reactive protein, and more systemic symptoms. • In the HIV-positive group, mortality was more common among those who were slightly older and among people with obesity and diabetes with complications.
07.08.2020	[Severe COVID-19 and Diabetes: A Retrospective Cohort Study from Three London Teaching Hospitals](#)	medRxiv (non-peer reviewed) / Article	• A study of 889 COVID-19 patients in three hospitals of a large London NHS Trust examined outcomes for patients with diabetes mellitus. • Diabetes did not confer an independent risk for adverse outcomes in COVID-19,

			although patients with diabetes and ischaemic heart disease were at particular risk. • Additional risk factors significantly and independently associated with poorer outcomes in patients with diabetes were age, male gender and lower platelet count. • Antiplatelet medication was associated with a lower risk of death/ICU admission and should be evaluated in randomised clinical trials amongst high risk patient groups.

Epidemiology and clinical – other

Publication Date	Title / URL	Journal / Article type	Digest
11.08.2020	COVID-19 clusters and outbreaks in occupational settings in the EU/EEA and the UK	European Centre for Disease Prevention and Control / Technical report	• Describes COVID-19 clusters and outbreaks in the EU/EEA and the UK linked to occupational settings, including healthcare and non-healthcare settings, and identifies possible factors contributing to transmission in these settings.
11.08.2020	Facility-Wide Testing for SARS-CoV-2 in Nursing Homes — Seven U.S. Jurisdictions, March–June 2020	MMWR Morb Mortal Wkly Rep / Report	• In two health department jurisdictions, testing in facilities without a previous COVID-19 case identified a prevalence of 0.4%. Five health department jurisdictions that targeted facility-wide testing after identification of a case found a prevalence of 12%; for each additional day before completion of initial facility-wide testing, an estimated 1.3 additional cases were identified. • Performing facility-wide testing rapidly following identification of a case in a nursing home might facilitate control of transmission among residents and health care personnel. Strategies are needed to optimize facility-wide testing in nursing homes without a reported case.
06.08.2020	Whole Care Home Testing for Covid-19 in a Local Authority Area in the United Kingdom	medRxiv (non-peer reviewed) / Article	• A cross-sectional study of 15 Essex care homes to describe the point prevalence of COVID-19 in care homes reporting low numbers of cases. • A total of 912 residents and staff of care homes were tested. Residents were eligible to be tested regardless of symptoms. • COVID-19 was detected in 23 (5.2%) of 441 residents. • Of these 23, 21/23 (91%) were asymptomatic as reported by the care home managers. • COVID-19 was detected in 8/471 (1.7%) of staff. This differs from that in residents (p=0.003). • Suggests that symptoms, as reported by care home managers, are an insensitive method of defining the extent of COVID-19 infection in nursing homes.

Date	Title	Source / Type	Summary
04.08.2020	SARS-CoV-2 and the Role of Orofecal Transmission: Systematic Review	medRxiv (non-peer reviewed) / Article	• Systematic review examining the potential role of orofecal transmission of COVID-19. • Found 59 studies: nine reviews and 51 primary studies or reports. Half (n=29) were done in China. • Thirty seven studies reported positive faecal samples for COVID-19 based on RT-PCR results (n=1,034 patients). • Six studies reported isolating the virus from faecal samples of nine patients, one study isolated the virus from rectal tissue, and one laboratory study found that COVID-19 productively infected human small intestinal organoids. • Eleven studies report on faecal samples found in sewage, and two sampled bathrooms and toilets.
10.08.2020	Post-exertion oxygen saturation as a prognostic factor for adverse outcome in patients attending the emergency department with suspected COVID-19: Observational cohort study	medRxiv (non-peer reviewed) / Article	• The authors examined the accuracy of post-exertional oxygen saturation for predicting adverse outcome in suspected COVID-19 across 70 emergency departments during first wave of the COVID-19 pandemic in the UK (817 patients). • Multivariable analysis showed that post-exertion oxygen saturation was not a significant predictor of adverse outcome when baseline clinical assessment was taken into account (p=0.368). • Secondary analysis excluding patients in whom post-exertion measurement appeared inappropriate resulted in a c-statistic of 0.699 (0.581 to 0.817), likelihood ratios of 1.98 (1.26 to 3.10) and 0.61 (0.35 to 1.07), and some evidence of additional prognostic value on multivariable analysis (p=0.019).
11.08.2020	COVIDTrach; the outcomes of mechanically ventilated COVID-19 patients undergoing tracheostomy in the UK: Interim Report	medRxiv (non-peer reviewed) / Article	• An interim report from the COVIDTrach project highlights early outcomes following tracheostomy in mechanically ventilated COVID-19 patients. • To date, 78 hospitals have submitted 564 COVID-19 tracheostomy cases. • The all cause in-hospital mortality following tracheostomy was 12% (n=62/530), with 3% of these (n=2/62) due to tracheostomy related complications and the remaining deaths due to COVID-19 related complications. • No instance of COVID-19 infection amongst operators was recorded amongst 400 cases submitting data two weeks after the tracheostomy.
07.08.2020	Impact of COVID-19 outbreak by income: hitting hardest the most deprived	J Public Health (Oxf) / Article	• This ecological study analysed age-standardized incidence rates by economic level in Barcelona. • The incidence of COVID-19 showed an inverse socioeconomic gradient by mean income in the 10 districts of the city of Barcelona. Beyond healthcare for people with the disease, attention must focus on a health strategy for the whole population, particularly in the most deprived areas.
10.08.2020	Myasthenia Gravis Associated With SARS-CoV-2 Infection	Ann Intern Med / Letter	• Case reports of 3 patients without previous neurologic or autoimmune disorders who were diagnosed with AChR antibody–positive myasthenia gravis after the onset of COVID-19.

| | | | • Observations were consistent with reports of other infections that induce autoimmune disorders, as well as with the growing evidence of other neurologic disorders with presumed autoimmune mechanisms after COVID-19 onset.
• Symptoms of myasthenia gravis appeared within 5 to 7 days after fever onset in all 3 patients, and the time from presumed infection with COVID-19 to the beginning of myasthenia gravis symptoms is consistent with the timeframe in other neurologic disorders triggered by infections. Possible explanations are discussed. |

Infection control

Publication Date	Title / URL	Journal / Article type	Digest
07.08.2020	Low-cost measurement of facemask efficacy for filtering expelled droplets during speech	Science Advances / Article	• Demonstrated a simple optical measurement method to evaluate the efficacy of masks to reduce the transmission of respiratory droplets during regular speech. • In proof-of-principle studies, the authors compared a variety of commonly available mask types and observed that some mask types approach the performance of standard surgical masks, while some mask alternatives, such as neck fleece or bandanas, offer very little protection. • Measurement setup is inexpensive and can be built and operated by non-experts, allowing for rapid evaluation of mask performance during speech, sneezing, or coughing. *Previously included in the Digest as a preprint.*

Overviews, comments and editorials

Publication Date	Title / URL	Journal / Article type
11.08.2020	Management of post-acute covid-19 in primary care	Bmj / Practice pointer
05.08.2020	Experts Discuss COVID-19-Remdesivir, Vaccines, and More	JAMA / Medical news & perspectives
05.08.2020	Recovery From Severe COVID-19: Leveraging the Lessons of Survival From Sepsis	Jama / Viewpoint
10.08.2020	Patient-reported outcomes: central to the management of COVID-19	The Lancet / Correspondence
10.08.2020	Applications of predictive modelling early in the COVID-19 epidemic	The Lancet Digital Health / Comment
11.08.2020	Racial Disproportionality in Covid Clinical Trials	The New England Journal of Medicine / Perspective
11.08.2020	Inclusion of pregnant women in COVID-19 vaccine development	The Lancet Infectious Diseases / Comment

| 06.08.2020 | The Cummings effect: politics, trust, and behaviours during the COVID-19 pandemic | Lancet / Correspondence |

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