COVID-19 Literature Digest – 18/09/2020

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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
- Modelling
- 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Please note that we are including preprints (highlighted in red), which are preliminary reports of work that have NOT been peer-reviewed.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
14.09.2020	Seasonal coronavirus protective immunity is short-lasting	Nature Medicine / Brief communication	• *This paper was previously included in the Digest as a preprint.* • The authors monitored healthy individuals for more than 35 years and determined that reinfection with the same seasonal coronavirus occurred frequently at 12 months after infection.

Diagnostics

Publication Date	Title / URL	Journal / Article type	Digest
18.09.2020	COVID-19 testing strategies and objectives	European Centre for Disease Control and Prevention / Technical report	• Outlines strategies and objectives for sustainable SARS-CoV-2 testing to achieve specific public health objectives in various epidemiological situations. • General population-wide testing, as well as targeted testing of individuals, or specific populations related to particular settings, are presented on the basis of country experiences and information collected from scientific literature.
17.09.2020	Assessing a novel, lab-free, point-of-care test for SARS-CoV-2 (CovidNudge): a diagnostic accuracy study	The Lancet Microbe / Article	• CovidNudge platform is a novel, rapid point-of-care real time RT-PCR test without laboratory handling or sample pre-processing. Overall sensitivity compared with laboratory-based testing was 94% (95% CI 86–98) with an overall specificity of 100% (99–100). • Point-of-care testing can relieve pressure on centralised laboratories and increase overall testing capacity, complementing existing approaches. • CovidNudge, implemented in UK hospitals since May 2020, is being rolled out nationwide. • Can enable rapid decisions for clinical care and testing programmes.
16.09.2020	Detection of SARS-CoV-2 with SHERLOCK One-Pot Testing	N Engl J Med / Letter	• The authors describe a simple test for detection of SARS-CoV-2. The sensitivity of this test is similar to that of RT-qPCR assays. • STOP (SHERLOCK testing in one pot) is a streamlined assay that combines simplified extraction of viral RNA with isothermal amplification and CRISPR-mediated detection. This test can be performed at a single temperature in less than an hour and with minimal equipment.

Epidemiology and clinical – children and pregnancy

Publication Date	Title / URL	Journal / Article type	Digest
17.09.2020	Letter to the editor: COVID-19 cases among school-aged children and school-based measures in Hong Kong, July 2020	Eurosurveillance / Letter	• The authors share their perspective of COVID-19 cases among school-aged children and school-based measures in Hong Kong.

Epidemiology and clinical – risk factors

Publication Date	Title / URL	Journal / Article type	Digest
15.09.2020	[Biomarkers and outcomes of COVID-19 hospitalisations: systematic review and meta-analysis](#)	BMJ Evid Based Med / Article	• Systematic review and meta-analysis that evaluated the association between biomarkers and outcomes in COVID-19 hospitalised patients. • 32 studies with 10 491 confirmed COVID-19 patients were included. • Found a significant association between lymphopenia, thrombocytopenia and elevated levels of CRP, PCT, LDH, D-dimer and COVID-19 severity.
12.09.2020	[B-Type Natriuretic Peptide as Biomarker of COVID-19 Disease Severity-A Meta-Analysis](#)	J Clin Med / Article	• In this meta-analysis, the authors summarized the available evidence on N-terminal natriuretic peptide (NT-proBNP) in patients admitted for COVID-19. Pooled mean, mean differences (MD) and standardized mean difference (SMD) were the summary metrics. • Thirteen studies were finally selected for this analysis with a total of 2248 patients, of which 507 had a severe condition (n = 240) or died (n = 267). • Results suggest that assessing NT-proBNP may support physicians in discriminating high-risk COVID-19 patients.
17.09.2020	[Association between mental illness and COVID-19 susceptibility and clinical outcomes in South Korea: a nationwide cohort study](#)	The Lancet Psychiatry / Article	• 1,391 (3·0%) of 47,058 patients without a mental illness tested COVID-19 positive; compared to 1,383 (2·9%) of 48.058 with a mental illness (adjusted odds ratio [OR] 1·00, 95% CI 0·93–1·08). • Diagnosis of a mental illness was not associated with increased likelihood of testing positive for SARS-CoV-2. Patients with a severe mental illness had a slightly higher risk for severe clinical outcomes of COVID-19 than patients without a history of mental illness. • Clinicians treating patients with COVID-19 should be aware of the risk associated with pre-existing mental illness.

Epidemiology and clinical – other

Publication Date	Title / URL	Journal / Article type	Digest
17.09.2020	[Hospital admissions for acute myocardial infarction before and after lockdown according to regional prevalence of COVID-](#)	The Lancet Public Health / Article	• Data from 21 centres participating in French Cohort of Myocardial Infarction Evaluation (FRENCHIE) registry: admissions for acute myocardial infarction decreased after lockdown, from 686 before to 481 after lockdown (30% decrease; incidence rate ratio 0·69 [95% CI

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	19 and patient profile in France: a registry study		0·51–0·70]). • A marked decrease in hospital admissions was observed following the lockdown, irrespective of patient characteristics and regional prevalence of COVID-19. • Health authorities should be aware of these findings, in order to adapt their message if COVID-19 pandemic persists or recurs, or in case of future major epidemics.
16.09.2020	SARS-CoV-2 in Quarantined Domestic Cats from COVID-19 Households or Close Contacts, Hong Kong, China	Emerg Infect Dis / Research letter	• The authors tested 50 cats from coronavirus disease households or close contacts in Hong Kong, China, for SARS-CoV-2 RNA in respiratory and faecal samples. • They found 6 cases of apparent human-to-feline transmission involving healthy cats. Virus genomes sequenced from 1 cat and its owner were identical.
11.09.2020	New SARS-CoV-2 Infection Detected in an Italian Pet Cat by RT-qPCR from Deep Pharyngeal Swab	Pathogens / Communication	• In this study, a domestic cat with clear clinical signs of pneumonia, confirmed by Rx imaging, was found to be infected by SARS-CoV-2 using quantitative RT–qPCR from a nasal swab. • The cat's pathology evolved rapidly and harmfully (the animal died in as little as three days), with clinical signs and rate of disease progression similar to human COVID-19 patients. • No association could be made between detection of SARS-CoV-2 in the nasal swab of the cat and its clinical condition.
17.09.2020	Comparison of Rhesus and Cynomolgus macaques as an authentic model for COVID-19	bioRxiv (non-peer reviewed) / Article	• SARS-CoV-2 replicates in the upper and lower respiratory tract and causes pulmonary lesions in both rhesus and cynomolgus macaques, resembling the mild clinical cases of COVID-19 in humans. • Immune responses against SARS-CoV-2 were also similar in both species and equivalent to those reported in milder infections and convalescent human patients. • The authors devise a new method for lung histopathology scoring that will provide a metric to enable clearer decision making.

Infection control

Publication Date	Title / URL	Journal / Article type	Digest
17.09.2020	Poor self-reported adherence to COVID-19-related quarantine/isolation requests, Norway, April to July 2020	Eurosurveillance / Rapid communication	• The authors found low self-reported adherence to requested quarantine and isolation measures among 1,704 individuals in Norway (42%; 95% confidence interval: 37–48).

| | | | • Adherence was lower in May–June–July (33–38%) compared with April (66%), and higher among those experiencing COVID-19-compatible symptoms (71%) compared with those without (28%).
• These findings suggest that consideration is required of strategies to improve people's adherence to quarantine and isolation. |

Modelling

Publication Date	Title / URL	Journal / Article type	Digest
17.09.2020	Baseline projections of COVID-19 in the EU/EEA and the UK: update	European Centre for Disease Control and Prevention / Technical report	• This report provides updated 30-day projections, together with the inherent model assumptions and uncertainties. • The projections presented here illustrate potential future trends in COVID-19 transmission in EU/EEA countries and the UK.
15.09.2020	Nowcasting CoVID-19 Deaths in England by Age and Region	medRxiv (non-peer reviewed) / Article	• The authors estimated the number of deaths per day in each of five age strata within seven English regions. • They used a Bayesian hierarchical model which includes submodels for the number of deaths per day and for the reporting delay distribution, and accounts for reporting-day effects and longer-term changes over time in the delay distribution.

Overviews, comments and editorials

Publication Date	Title / URL	Journal / Article type
15.09.2020	From doctors as patients: a manifesto for tackling persisting symptoms of covid-19	Bmj / Letter
15.09.2020	National Academies Offers Strategies to Encourage Cooperation in COVID-19 Contact Tracing	JAMA Health Forum / In the News
17.09.2020	Transmission of SARS-CoV-2: A Review of Viral, Host, and Environmental Factors	Annals of internal Medicine / Review
17.09.2020	Travel-associated COVID-19: a challenge for surveillance?	Eurosurveillance / Editorial
16.09.2020	The evolving picture of SARS-CoV-2 and COVID-19 in children: critical knowledge gaps	BMJ Glob Health / Commentary
16.09.2020	Eye Protection and the Risk of Coronavirus Disease 2019: Does Wearing Eye Protection Mitigate Risk in Public, Non-Health Care Settings?	JAMA Ophthalmol / Invited commentary

Produced by the PHE COVID-19 Literature Digest Team

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