



COVID-19 Literature Digest – 27/01/2021

Dear all,

Please find [today's report](#) below.

PHE's COVID-19 Literature Digest has been produced since February 2020. A selection of our previous Digests [can be found here](#). This resource aims to highlight a small selection of recent COVID-19 papers that are relevant to UK settings, contain new data, insights or emerging trends. The Digest Team generate a report three times per week (Mon, Wed, Fri). The reports include both preprints, which should be treated with caution as they are NOT peer-reviewed and may be subject to change, and also research that has been subject to peer review and wider scrutiny. The Digest is very rapidly produced and does not claim to be a perfect product; the inclusion or omission of a publication should not be viewed as an endorsement or rejection by PHE. We do not accept responsibility for the availability, reliability or content of the items included in this resource.

To join our email distribution list please send a request to COVID.LitDigest@phe.gov.uk. If you are interested in papers relating to behaviour and social science please contact COVID19.behaviouralscience@phe.gov.uk to sign up to receive the PHE Behavioural Sciences Weekly Report.

Best wishes,

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On behalf of the PHE COVID-19 Literature Digest Team

Report for 27.01.2021 (please note that papers that have **NOT been peer-reviewed** are highlighted in red).

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Serology and immunology

Publication Date	Title / URL	Journal / Article type	Digest
25.01.2021	T cell response to SARS-CoV-2 infection in humans: A systematic review	PLoS One / Article	<ul style="list-style-type: none"> • Systematic Review of T cell response to SARS-CoV-2; 61 articles included. Complex pattern of T cell response identified. • Inferences regarding population level immunity hampered by significant methodological limitations and heterogeneity between studies / lack of research in asymptomatic or pauci-symptomatic individuals.
25.01.2021	Prospective mapping of viral mutations that escape antibodies used to treat COVID-19	Science / Article	<ul style="list-style-type: none"> • <i>This paper was previously included in the Digest as a preprint.</i> • Maps how all mutations to SARS-CoV-2's receptor-binding domain (RBD) affect binding by the antibodies in Regeneron's REGN-COV2 cocktail and Eli Lilly's LY-CoV016. • Identifies a single amino-acid mutation which fully escapes the REGN-COV2 cocktail, and viral mutations that are selected in a persistently infected patient treated with REGN-COV2.
25.01.2021	mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants	bioRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Assessed the neutralizing capacity of sera from human subjects or non-human primates (NHPs) that received mRNA-1273 (Moderna). • No significant impact on neutralization against the B.1.1.7 variant was detected in either case, however reduced neutralization was measured against the mutations present in B.1.351.
25.01.2021	Increased Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7 to Antibody Neutralization	bioRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Reports that variant B.1.1.7 is refractory to neutralisation by most monoclonal antibody (mAbs) to the N-terminal domain (NTD) of spike, relatively resistant to a number of mAbs to the receptor-binding domain (RBD), and modestly more resistant to convalescent plasma (~3 fold) and vaccine sera (~2 fold). • Variant B.1.351 is refractory to neutralisation by most NTD mAbs but also by multiple individual mAbs to the receptor-binding motif on RBD, and markedly more resistant to neutralisation by convalescent plasma (~11-33 fold) and vaccine sera (~6.5-8.6 fold).
26.01.2021	Longevity of SARS-CoV-2 immune responses in haemodialysis patients and protection against reinfection	medRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Study found that in-centre haemodialysis patients mount durable immune responses 6 months post SARS-CoV-2 infection, with <3% of patients showing no evidence of humoral or cellular immunity.

Vaccines

Publication Date	Title / URL	Journal / Article type	Digest
25.01.2021	Trends, regional variation, and clinical characteristics of COVID-19 vaccine recipients: a retrospective cohort study in 23.4 million patients using OpenSAFELY	medRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Reports data from preliminary weeks of rapid mass COVID-19 vaccination by the NHS in England. • By 13 Jan, 961,580 people out of 23.4m had received a vaccine, including 41.1% of patients aged 80 or over and not living in a care home. • Targeted activity may be needed to address lower vaccination rates observed among certain key groups: ethnic minorities, people living in areas of higher deprivation, and those with severe mental illness or learning disabilities.

Diagnostics and genomics

Publication Date	Title / URL	Journal / Article type	Digest
01.02.2021	Strand-Specific Reverse Transcription PCR for Detection of Replicating SARS-CoV-2	Emerg Infect Dis / Article	<ul style="list-style-type: none"> • Authors developed an assay that detects minus-strand RNA as a surrogate for actively replicating SARS-CoV-2. • Detected minus-strand RNA in 41 persons with coronavirus disease up to 30 days after symptom onset. This assay might inform clinical decision-making about patient infectiousness.

Epidemiology and clinical – risk factors

Publication Date	Title / URL	Journal / Article type	Digest
27.01.2021	Prevalence of SARS-CoV-2 Antibodies in First Responders and Public Safety Personnel, New York City, New York, USA, May-July 2020	Emerg Infect Dis / Research	<ul style="list-style-type: none"> • Of first responders tested in New York City during May–July 2020 (n=22,647), 22.5% tested positive for SARS-CoV-2 antibodies. • Seroprevalence was highest in correctional staff (39.2%) and emergency medical technicians (38.3%), and lowest in laboratory technicians (10.1%) and medicolegal death investigators (10.8%). • Seropositivity was associated to positive household members, non-Hispanic Black race or ethnicity, and severe obesity. • Consistent glove use increased likelihood of seropositivity.

Infection control / non-pharmaceutical interventions

Publication Date	Title / URL	Journal / Article type	Digest
25.01.2021	Implementation and Evolution of Mitigation Measures, Testing, and Contact Tracing in the National Football League, August 9–November 21, 2020	MMWR / Report	<ul style="list-style-type: none"> • The National Football League observed SARS-CoV-2 transmission after <15 minutes of cumulative interaction, leading to a revised definition of a high-risk contact that evaluated mask use and ventilation in addition to duration and proximity of interaction. • Intensive mitigation protocols effectively reduced close interactions.
25.01.2021	Evaluation of Seasonal Respiratory Virus Activity Before and After the Statewide COVID-19 Shelter-in-Place Order in Northern California	JAMA Netw Open / Original investigation	<ul style="list-style-type: none"> • A cohort study in California, USA found that statistically significant lower rates of common community respiratory viruses appeared to be associated with a statewide shelter-in-place order during the COVID-19 pandemic.

Transmission

Publication Date	Title / URL	Journal / Article type	Digest
26.01.2021	COVID-19 Cases and Transmission in 17 K–12 Schools — Wood County, Wisconsin, August 31–November 29, 2020	MMWR / Report	<ul style="list-style-type: none"> • Among 17 rural Wisconsin schools, reported student mask-wearing was high, and the COVID-19 incidence among students and staff members was lower than in the county overall (3,453 versus 5,466 per 100,000). • Among 191 cases identified in students and staff members, only seven (3.7%) cases, all among students, were linked to in-school spread.
26.01.2021	SARS-CoV-2 Transmission Associated with High School Wrestling Tournaments — Florida, December 2020–January 2021	MMWR / Report	<ul style="list-style-type: none"> • Describes COVID-19 outbreak investigation from attendance at two U.S. high school wrestling tournaments. • A total of 54 (41.5%) of the 130 tournament attendees received testing, and 38 cases of SARS-CoV-2 infection were identified; the minimum attack rate was 30.2% (38 of 126§), and 70.4% (38 of 54) of tests had a positive result. • Among 95 (21.3%) contacts who received SARS-CoV-2 testing, 41 (43.2%) received a positive test result (minimum attack rate = 9.3% [41 of 441]).

Treatment

Publication Date	Title / URL	Journal / Article type	Digest
26.01.2021	Reported Adverse Drug Reactions Associated With the Use of Hydroxychloroquine and Chloroquine During the COVID-19 Pandemic	Ann Intern Med / Letters	<ul style="list-style-type: none"> • Authors quantify change in number / type of reported adverse drug reactions (ADRs) associated with hydroxychloroquine and chloroquine during pandemic compared with 2018 and 2019. • Number of reported ADRs more than doubled in 2020 (n = 11 493 and 89

			607 ADRs) compared with same months in 2018 (n = 4681 and 25 035 ADRs) and 2019 (n = 5131 and 37 559 ADRs). <ul style="list-style-type: none"> • 97.1% of 2020 ARDS serious (73.4% in 2018 / 84.8% in 2019). Countries with highest reported ADRs were also most affected by COVID-19 during this period.
26.01.2021	Thrombosis, Bleeding, and the Observational Effect of Early Therapeutic Anticoagulation on Survival in Critically Ill Patients With COVID-19	Ann Intern Med / Original research	<ul style="list-style-type: none"> • U.S multicenter cohort study, 3239 critically ill COVID-19 adults: incidence of VTE and major bleeding within 14 days after ICU admission, effect of therapeutic anticoagulation in first 2 days of ICU admission (2809 patients). • 204 patients (6.3%) developed VTE, 90 patients (2.8%) developed a major bleeding event. • 384 (11.9% of 2809) patients who had received early therapeutic anticoagulation had similar risk for death as those who did not (hazard ratio, 1.12 [95% CI, 0.92 to 1.35]).

Overviews, comments and editorials

Publication Date	Title / URL	Journal / Article type
25.01.2021	Improving National Intelligence for Public Health Preparedness: a methodological approach to finding local multi-sector indicators for health security	BMJ Glob Health / Practice
25.01.2021	SARS-CoV-2 vaccination for patients with inflammatory bowel disease: a British Society of Gastroenterology Inflammatory Bowel Disease section and IBD Clinical Research Group position statement	Lancet Gastroenterology & Hepatology / Correspondence

Produced by the PHE COVID-19 Literature Digest Team

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