



COVID-19 Literature Digest – 11/01/2021

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 The reports include both preprints, which should be treated with caution as they are NOT peer-reviewed and may be subject to change, and also research that has been subject to peer review and wider scrutiny.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Report for 11.01.2021 (please note that papers that have **NOT been peer-reviewed** are highlighted in red).

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Diagnostics and genomics

Publication Date	Title / URL	Journal / Article type	Digest
07.01.2021	Diagnostic Value of Patient-Reported and Clinically Tested Olfactory Dysfunction in a Population Screened for COVID-19	JAMA Otolaryngol Head Neck Surg / Original investigation	<ul style="list-style-type: none">• In a diagnostic study of 809 participants evaluated prior to reverse transcriptase–polymerase chain reaction testing for SARS-CoV-2, 35% of 58 participants with confirmed COVID-19 reported olfactory dysfunction, gustatory dysfunction, or both; this compared with only 4% of 751 without COVID-19.• Olfactory anamnesis and clinical testing results were complementary, yielding similar, strong diagnostic values for COVID-19.
08.01.2021	Liverpool Covid-SMART Pilot: evaluation, 10 December 2020	Gov.uk / Research and analysis	<ul style="list-style-type: none">• Paper prepared by academics on Liverpool’s pilot of community testing to improve COVID-19 resilience and recovery.
08.01.2021	Investigation of novel SARS-CoV-2 variant: 202012/01. Technical briefing 3	Gov.uk / Guidance	<ul style="list-style-type: none">• This briefing provides an update on the briefing of 28 Dec 2020.• VOC 202012/01 has been detected in all regions and almost all local authorities.• The age and sex distribution of VOC 202012/01, as determined by SGTF, is similar to other variants in circulation over the same period.• Secondary attack rates estimated from contact tracing data are observed to be higher where the index case has the variant strain, from around 11% to 15% of named contacts.
08.01.2021	Establishment and lineage dynamics of the SARS-CoV-2 epidemic in the UK	Science / Article	<ul style="list-style-type: none">• Study describing the fine-scale genetic lineage structure of the UK’s COVID-19 epidemic through analysis of 50,887 SARS-CoV-2 genomes, including 26,181 from the UK sampled throughout the country’s first wave of infection.• The size, spatio-temporal origins and persistence of genetically-distinct UK transmission lineages are quantified.• Rapid fluctuations in virus importation rates resulted in >1000 lineages; those introduced prior to national lockdown tended to be larger and more dispersed.• Lineage importation and regional lineage diversity declined after lockdown, while lineage elimination was size-dependent.• Implications on transmission dynamics for COVID-19 epidemiology and control are discussed.

07.01.2021	Neutralization of N501Y mutant SARS-CoV-2 by BNT162b2 vaccine-elicited sera	bioRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Rapidly spreading variants of SARS-CoV-2 that have arisen in the United Kingdom and South Africa share the spike N501Y substitution, which is of particular concern because it is located in the viral receptor binding site for cell entry and increases binding to the receptor. • Authors generated isogenic N501 and Y501 SARS-CoV-2. • Sera of 20 participants in a previously reported trial of the mRNA-based COVID-19 vaccine BNT162b2 had equivalent neutralizing titres to the N501 and Y501 viruses.
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Epidemiology and clinical – children / pregnancy

Publication Date	Title / URL	Journal / Article type	Digest
09.01.2021	Pregnancy and neonatal outcomes of COVID-19, co-reporting of common outcomes from the PAN-COVID and AAP SONPM registry	medRxiv (non-peer reviewed) / Article	<ul style="list-style-type: none"> • Findings from two national SARS-CoV-2 in pregnancy registries (PAN-COVID (UK), n=1606; AAP SONPM (USA), n=2398) were remarkably concordant. • Pre-term delivery affected a higher proportion of women in pregnancy than expected from historical and contemporaneous national data. • The proportions of women affected by stillbirth, small for gestational age infants and early neonatal death were comparable to historical and contemporaneous UK and US data. • Although maternal death was uncommon, the proportion was higher than expected from UK and US population data, likely explained by under-ascertainment of women affected by milder and asymptomatic infection in pregnancy.

Epidemiology and clinical – risk factors

Publication Date	Title / URL	Journal / Article type	Digest
08.01.2021	Prevalence and risk factors for delirium in critically ill patients with COVID-19 (COVID-D): a multicentre cohort study	Lancet Respiratory Medicine / Article	<ul style="list-style-type: none"> • Aimed to investigate the prevalence of delirium and coma, and risk factors for delirium in critically ill patients with COVID-19, to aid the development of strategies to mitigate delirium and associated sequelae. • Between Jan 20 and April 28, 2020, 4530 patients with COVID-19 were admitted to 69 ICUs across 14 countries, of whom 2088 patients were included in the study cohort. • Acute brain dysfunction was highly prevalent and prolonged in critically ill patients with COVID-19. Benzodiazepine use and lack of family visitation were

identified as modifiable risk factors for delirium, and thus these data present an opportunity to reduce acute brain dysfunction in patients with COVID-19.

Epidemiology and clinical – long-term complications / sequelae

Publication Date	Title / URL	Journal / Article type	Digest
08.01.2021	6-month consequences of COVID-19 in patients discharged from hospital: a cohort study	Lancet / Article	<ul style="list-style-type: none"> • The aim of this study was to describe the long-term health consequences of patients with COVID-19 who have been discharged from hospital and investigate the associated risk factors, in particular disease severity. • In total, 1733 of 2469 discharged patients with COVID-19 (Wuhan, China) were enrolled after 736 were excluded. Patients had a median age of 57·0 (IQR 47·0–65·0) years and 897 (52%) were men. • At 6 months after acute infection, COVID-19 survivors were mainly troubled with fatigue or muscle weakness, sleep difficulties, and anxiety or depression. • Patients who were more severely ill during their hospital stay had more severe impaired pulmonary diffusion capacities and abnormal chest imaging manifestations, and are the main target population for intervention of long-term recovery.

Epidemiology and clinical – other

Publication Date	Title / URL	Journal / Article type	Digest
08.01.2021	Genomic epidemiology of SARS-CoV-2 in the University of Cambridge identifies dynamics of transmission: an interim report - 10 December 2020	Gov.uk / Research and analysis	<ul style="list-style-type: none"> • Present the results of systematic genomic analysis of early SARS-CoV-2 infections amongst students at the University of Cambridge from the first five weeks of Michaelmas term. • 219 genomes from 490 positive individuals were sequenced from term weeks 1-5 (Table 1) with samples from week 1 currently unavailable. • Limited cross-transmission between University students and the local community is observed during the study period. • Phylogenetic diversity amongst University students is low, indicating few introductions led to established outbreaks of SARS-CoV-2 in the University population. • One cluster, that includes a diverse number of Colleges, courses and years of study is observed. This appears to be the source of the majority of onwards transmission within the University by week 5 of term.

09.01.2021	Confirmed Reinfection with SARS-CoV-2 Variant VOC-202012/01	Clin Infect Dis / Accepted manuscript	<ul style="list-style-type: none"> • Describes a confirmed case of reinfection with SARS-CoV-2 in a 78 year old patient, with the second episode due to the 'new variant' VOC-202012/01 of lineage B.1.1.7. • The initial infection occurred in the first wave of the pandemic in the UK and was a mild illness. • Eight months later, during the second wave of the pandemic in the UK, reinfection with the 'new variant' VOC-202012/01 was confirmed and caused a critical illness.
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Infection control / non-pharmaceutical interventions

Publication Date	Title / URL	Journal / Article type	Digest
08.01.2021	Time from Start of Quarantine to SARS-CoV-2 Positive Test Among Quarantined College and University Athletes - 17 States, June-October 2020	MMWR Morb Mortal Wkly Rep / Report	<ul style="list-style-type: none"> • Among US collegiate athletes (n=1,830) quarantined due to exposure to COVID-19, one quarter (n=458) had positive test results during the 14-day quarantine. • Among athletes who had not received a positive test result by day 5, the probability of testing positive decreased from 27% after day 5 to <5% after day 10.

Modelling

Publication Date	Title / URL	Journal / Article type	Digest
07.01.2021	Optimal COVID-19 quarantine and testing strategies	Nat Commun / Article	<ul style="list-style-type: none"> • Describes a mathematical model that quantifies probability of post-quarantine transmission incorporating testing into travel quarantine, quarantine of traced contacts with an unknown time of infection, and quarantine of cases with a known time of exposure. • Data suggests testing on exit (or entry and exit) can reduce duration of a 14-day quarantine by 50%, while testing on entry shortens quarantine by at most one day. • In a real-world test applied to offshore oil rig employees, 47 positives were obtained with testing on entry and exit to quarantine, of which 16 had tested negative at entry; preventing an expected nine offshore transmission events that each could have led to outbreaks.
08.10.2021	TTI Modelling Group: Comparison of quarantine and testing strategies to prevent onwards infection from	Gov.uk / Research and analysis	<ul style="list-style-type: none"> • Paper by the TTI Modelling Group comparing quarantine and testing strategies to prevent onwards infection from infected travellers returning to the UK from abroad.

	infected travelers returning to the UK from abroad, 1 December 2020		<ul style="list-style-type: none"> Consider the number of SARS CoV2 infections potentially resulting from a returning traveller under different quarantine and testing return policy options.
08.01.2021	Rapid testing strategies for traced contacts: comparing quarantine, quarantine and testing, and daily testing - 16 November 2020	Gov.uk / Research and analysis	<ul style="list-style-type: none"> Paper on rapid testing strategies for traced contacts; comparing quarantine, quarantine and testing, and daily testing.
08.01.2021	TTI Modelling Group: On the use of lateral flow antigen tests in contact tracing - preliminary findings, 15 November 2020	Gov.uk / Research and analysis	<ul style="list-style-type: none"> Paper by the TTI Modelling Group on the use of lateral flow antigen (LFA) tests in contact tracing.

Guidance and consensus statements

Publication Date	Title / URL	Journal / Article type
08.01.2021	COVID-19 vaccination: easy-read resources	Gov.uk / Guidance
10.01.2021	National protocol for COVID-19 Vaccine AstraZeneca (ChAdOx1-S [recombinant])	Gov.uk / Guidance
08.01.2021	Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health	WHO / Overview

Overviews, comments and editorials

Publication Date	Title / URL	Journal / Article type
11.01.2021	Strategic and performance analysis of ECDC response to the COVID-19 pandemic	European Centre for Disease Prevention and Control / Corporate publication
08.01.2021	Long-term follow-up of recovered patients with COVID-19	Lancet / Comment
08.01.2021	COVID-19 testing: One size does not fit all	Science / Perspective
08.01.2021	SARS-CoV-2 spillover events	Science / Perspective

Produced by the PHE COVID-19 Literature Digest Team

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