COVID-19 Literature Digest – 03/12/2021

Dear all,

Please find today's report below.

UKHSA'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 once per week (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 The reports include both preprints, which should be treated with caution as they are NOT peer-reviewed and may be subject to change, and also research that has been subject to peer review and wider scrutiny.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 UKHSA. We do not accept responsibility for the availability, reliability or content of the items included in this resource.

To join our email distribution list, or to be removed, 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 Behavioural Sciences Weekly Report.

Best wishes,

Emma Farrow, James Robinson, Michael Cook
On behalf of the UKHSA COVID-19 Literature Digest Team

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Report for 03.12.2021 (please note that papers that have **NOT been peer-reviewed** are highlighted in red).

Sections:

Serology and immunology

Publication Date	Title/URL	Journal / Article type	Digest
19.11.2021	Biology of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the humoral immunoresponse: A systematic review of evidence to support global policy-level actions and research	Glob Health J / Systematic Review	• Systematic review of biological and immuno-response to SARS-CoV-2 (to February 2021) included 36 studies. • Evidence suggests: i) early seroconversion in infected patients; ii) antibody titers markedly increase two weeks after infection, followed by plateau; iii) a more robust immune response is seen in patients with severe COVID-19 as opposed to mild/asymptomatic; iv) overall immunity appears to wane within two to three months post-infection.
02.12.2021	Heterologous infection and vaccination shapes immunity against SARS-CoV-2 variants	Science / Article	• Longitudinal healthcare worker cohort (n=51). After three antigen exposures (infection+two vaccine doses), S1 antibody, memory B cells and heterologous neutralization of B.1.351, P.1 and B.1.617.2 plateaued, while B.1.1.7 neutralization and spike T cell responses increased. • Serology using Wuhan Hu-1 spike receptor binding domain poorly predicted neutralizing immunity against VOCs. • Neutralization potency against VOCs changed with heterologous virus encounter and number of antigen exposures. • Neutralization potency fell differentially depending on targeted VOCs over 5-months from the second vaccine dose. • Heterologous combinations of spike encountered during infection and vaccination shape subsequent cross-protection against VOC, with implications for future-proof next-generation vaccines.
29.11.2021	SARS-CoV-2-specific memory B cells can persist in the elderly who have lost detectable neutralising antibodies	J Clin Invest / Article	• Authors sampled cohort (n=42) of very elderly residents and younger staff who developed mild/asymptomatic SARS-CoV-2 infection during care home outbreaks; high proportion had lost nAb by five months (despite maintenance of spike-binding Ab).

Publication Date	Title/URL	Journal / Article type	Digest
			• Loss of detectable nAb 5 months after asymptomatic/mild infection is frequently compensated by the presence of a memory response primed to respond upon re-exposure.
01.12.2021	Reinfection with new variants of SARS-CoV-2 after natural infection: a prospective observational cohort in 13 care homes in England	Lancet Healthy Longev	• Observational cohort surveillance in 13 care homes in Greater London between 10.04.2020 and 03.08.2020: in total 1377 were included in the follow-up period to 31.01.2021 (810 staff and 567 residents). • Reinfections were rare: 23 reinfections (ten confirmed, eight probable, five possible) in 656 previously infected individuals (366 staff / 290 residents), compared with 165 primary infections in 721 susceptible individuals (444 staff / 277 residents). • Those with confirmed reinfections had no or low neutralising antibody concentration before reinfection, with boosting of titres after reinfection. • Kinetics of binding and neutralising antibodies were similar in older residents and younger staff. • Associated comment: https://doi.org/10.1016/S2666-7568(21)00276-2

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Vaccines

Publication Date	Title/URL	Journal / Article type	Digest
02.12.2021	Safety and immunogenicity of seven COVID-19 vaccines as a third dose (booster) following two doses of ChAdOx1 nCov-19 or BNT162b2 in the UK (COV-BOOST): a blinded, multicentre, randomised, controlled, phase 2 trial	Lancet / Article	• Phase 2 trial of third dose booster vaccination against COVID-19 between 01.06.2021 and 30.06.2021 included 2878 participants • Vaccines assessed: Oxford–AstraZeneca (ChAd); Pfizer–BioNtech (BNT); Moderna (m1273); Janssen (Ad26); Novavax (NVX); CureVac (CVn); Valneva (VLA). • Three vaccines showed overall increased reactogenicity: m1273 after ChAd/ChAd or BNT/BNT; and ChAd and Ad26 after BNT/BNT. • Humoral and cellular responses are provided; results were similar between those aged 30–69 years and those aged ≥70 years; no safety concerns identified.
25.11.2021	Effectiveness of ChAdOx1 nCoV-19 vaccine against SARS-CoV-2 infection during the delta (B.1.617.2) variant surge in India: a test-	Lancet Infect Dis / Article	• Test-negative, case-control study at two medical research centres in Faridabad, India during a surge likely dominated by Delta variant

	negative, case-control study and a mechanistic study of post-vaccination immune responses		(01.04.2021 to 31.05.2021) included 2883 patients testing positive for COVID-19 and 3695 controls • Vaccine effectiveness of two doses of ChAdOx1 against SARS-CoV-2 infection was 63·1% • Vaccine effectiveness of a single dose against SARS-CoV-2 infection was 46·2% • Vaccine effectiveness of two doses against moderate-to-severe disease of 81·5% • Vaccine effectiveness of a single dose against moderate-to-severe disease was 79·2% • Among 49 healthy, fully vaccinated individuals, neutralising antibody responses were lower against the alpha (geometric mean titre 244·7), beta (97·6), kappa (112·8), and delta (88·4) variants than against wild-type SARS-CoV-2 (599·4); however, antigen-specific CD4 and CD8 T-cell responses were conserved against both delta and wild-type. • Associated comment: https://dx.doi.org/10.1016/s1473-3099(21)00688-5
01.12.2021	ChAdOx1 interacts with CAR and PF4 with implications for thrombosis with thrombocytopenia syndrome	Science Advances / Article	• Study demonstrates all three adenoviruses deployed as COVID-19 vaccination vectors (chimpanzee adenovirus Y25, and human adenovirus types 26 and 5) bind to platelet factor 4 (PF4). • Computational simulations using ChAdOx1 viral vector structure demonstrate an electrostatic interaction mechanism with PF4, confirmed experimentally by surface plasmon resonance. • These data may help unravel the mechanisms underlying the ultrarare side effect of thrombosis with thrombocytopenia syndrome. • Press Release: https://www.cardiff.ac.uk/news/view/2589446-scientists-may-have-solved-an-important-part-of-the-mystery-of-ultra-rare-blood-clots-linked-to-adenovirus-covid-19-vaccines
23.11.2021	Efficacy and safety of the CVnCoV SARS-CoV-2 mRNA vaccine candidate in ten countries in Europe and Latin America (HERALD): a randomised, observer-blinded, placebo-controlled, phase 2b/3 trial	Lancet Infect Dis / Article	• Phase 2b/3 clinical trial of CVnCoV (CureVac) mRNA vaccine conducted in 47 centres in ten countries in Europe and Latin America: 39 680 participants randomly assigned to CVnCoV (n=19,846) or placebo (n=19,834) • After a mean observation period of 48·2 days the overall vaccine efficacy against symptomatic COVID-19 was 48·2%. Safety profile was acceptable. • Vaccine efficacy against moderate-to-severe COVID-19 was 70·7%.

			• In participants aged 18–60 years, vaccine efficacy against symptomatic disease was 52·5%. • Too few cases occurred in participants aged ≥ 61 years (CVnCoV n=12, placebo n=9) to allow meaningful assessment of vaccine efficacy. • The decision has been made to cease activities on CVnCoV and to focus efforts on development of next-generation vaccine candidates.
23.11.2021	Effectiveness of an inactivated virus-based SARS-CoV-2 vaccine, BBV152, in India: a test-negative, case-control study	Lancet Infect Dis / Article	• Test-negative, case-control study among employees of a tertiary hospital in New Delhi, India during a wave likely dominated by Delta variant (15.04.2021 to 15.05.2021) included 2714 symptomatic employees and 1068 matched case-control pairs. • Adjusted effectiveness of BBV152 (Covaxin) against symptomatic COVID-19 after two doses administered at least 14, 28 or 42 days before testing was 50%, 46% and 57%, respectively. • After excluding participants with previous SARS-CoV-2 infections, adjusted effectiveness of two doses administered at least 14 days before testing was 47%. • Associated comment: https://www.sciencedirect.com/science/article/pii/S1473309921006976
20.11.2021	Long-term analysis of antibodies elicited by SPUTNIK V: A prospective cohort study in Tucumán, Argentina	Lancet Reg Health Am / Article	• Humoral immune responses measured in 602 Argentinian healthcare workers at 0, 14, 28, 60 and 180 days after receiving SPUTNIK V between December 2020 and July 2021. • Seroconversion detected in 97% of individuals after 28 days post-vaccination (dpv) (N=405). • Anti-RBD titers decreased after 60 dpv (N=328), but remained detectable in 94% at 90 dpv (N=224); at 180 dpv, anti-RDB titers persisted in 31% (N=146). • Previous infection triggered increased immune response to first dose and increased neutralisation activity against VOC; second doses further increased titers, even 90 dpv (N = 75).
24.11.2021	Elapsed time since BNT162b2 vaccine and risk of SARS-CoV-2 infection: test negative design study	BMJ / Article	• Israeli study looking at increased risk of COVID infection after two doses of Pfizer-BioNTech BNT162b2 mRNA vaccine • 83,057 participants (adults aged over 18, minimum of 3 weeks since second jab, with no history of COVID infection) received PCR test. 9.6% tested positive • Findings state a general increase in risk of infection for those who received their second dose > 90 days.

Publication Date	Title/URL	Journal / Article type	Digest
30.11.2021	Odds of Testing Positive for SARS-CoV-2 Following Receipt of 3 vs 2 Doses of the BNT162b2 mRNA Vaccine	JAMA Intern Med / Original investigation	• Case-control study in Israel included 306,710 adults ≥40 years found: i) an estimated significant reduction in odds of SARS-CoV-2 infection within a few weeks of receiving the booster compared with receiving just the 2 primary doses; ii) those receiving the booster also had lower odds of hospitalisation.
16.11.2021	Efficacy of booster doses in augmenting waning immune responses to COVID-19 vaccine in patients with cancer	Cancer Cell / Letter	• Among 88 cancer patients, 18/32 (56%) of patients seronegative prior to booster seroconverted anti-S IgG titers after booster vaccination (Pfizer-BioNTech or Moderna). • Prior anti-CD20/BTK inhibitor therapy was associated with reduced vaccine efficacy.
17.11.2021	Side-effect expectations from COVID-19 vaccination: Findings from a nationally representative cross-sectional survey (CoVAccS - wave 2)	J Psychosom Res / Article	• Online cross-sectional survey of 1470 UK adults not vaccinated for COVID-19 (conducted 13-15 January 2021). • Most participants were uncertain whether they would experience side effects from a COVID-19 vaccine. • Only a minority reported that side effects were very likely (9.4%). As systemic side effects are more common than this, the authors suggest experiencing unexpected side effects might affect uptake of a second dose. • Side-effect expectations were associated with: older age, being clinically extremely vulnerable to COVID-19, being afraid of needles, lower perceived social norms for COVID-19 vaccination, lower perceived necessity and safety of COVID-19 vaccination, and perceived lack of information about COVID-19 and vaccination.

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Diagnostics and genomics

Publication Date	Title/URL	Journal / Article type	Digest
23.11.2021	A comparison of precipitation and filtration-based SARS-CoV-2 recovery methods and the influence of temperature, turbidity, and surfactant load in urban wastewater	Sci Total Environ / Article	• Compared wastewater viral recovery using three concentration methods (polyethylene glycol precipitation, ammonium sulphate precipitation, and InnovaPrep) • No major difference in SARS-CoV-2 and faecal indicator virus recovery from wastewater samples (n = 46) using these methods. • Controlled experiment found that sample turbidity, storage temperature, and surfactant load did affect viral recovery; highlights importance of viral concentration methodology used.

Publication Date	Title/URL	Journal / Article type	Digest
22.11.2021	Surveillance of SARS-CoV-2 variants of concern by identification of single nucleotide polymorphisms in the spike protein by a multiplex real-time PCR	J Virol Methods / Short Communication	• Authors used a multiplex, real-time PCR assay for detection of single nucleotide polymorphisms (SNPs) for identification of the prevalence of different SARS-CoV-2 VOCs in 16/26 districts in Sri Lanka. • Of 664/934 subjected to the multiplex qRT-PCR, 638 (96.1 %) detected L452R and K417 in the channels and were identified as the delta variant; 25 samples (3.9 %) detected N501Y, with K417 were considered as the alpha variant. • This multiplex qRT-PCR may be a cheaper and less technically demanding method to generate data regarding the spread of SARS-CoV-2 variants, especially in lower income countries.
26.11.2021	Amilorides inhibit SARS-CoV-2 replication in vitro by targeting RNA structures	Sci Adv / Article	• Authors report on the identification of amiloride-based small molecules that potently inhibit OC43 and SARS-CoV-2 replication through targeting of conserved structured elements within the viral 5'-end. • These molecules may serve as chemical probes to further understand CoV RNA biology and enable development of specific CoV RNA–targeted antivirals.
27.11.2021	Occurrence of a substitution or deletion of SARS-CoV-2 spike amino acid 677 in various lineages in Marseille, France	Virus Genes / Short Report	• Analyses genomes obtained from 3634 French patients sampled between February 2020 and April 2021. • Results suggest the spike Q677H substitution should be considered as another example of convergent evolution, in addition to L18F, E484K, L452R, and N501Y.

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Epidemiology and clinical - children and pregnancy

Publication Date	Title/URL	Journal / Article type	Digest
30.11.2021	Risk of COVID-19 hospital admission among children aged 5-17 years with asthma in Scotland: a national incident cohort study	Lancet Respir Med / Article	• Cohort study [from 01.03.2020 to 27.07.2021] of all children in Scotland aged 5–17 years who were included in the EAVE II dataset (n=752 867); 63,463 (8·4%) had asthma of whom 4339 (6·8%) had SARS-CoV-2 infection. • Analysis suggests school-aged children with asthma with previous recent hospital admission or two or more courses of oral corticosteroids are at markedly increased risk of COVID-19 hospital admission.

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			• Associated comment: https://doi.org/10.1016/S2213-2600(21)00509-9 • Associated comment: https://dx.doi.org/10.1136/bmj.n2959
29.11.2021	SARS-CoV-2 infection and return to play in junior competitive athletes: is systematic cardiac screening needed?	Br J Sports Med / Original Research	• Italian observational prospective multicentre study examining incidence of cardiovascular complications in cohort (n=571) of junior athletes • Also looks at effectiveness of a cardiovascular screening protocol as way for safe returning to play; systematic echocardiographic screening not recommended.
24.11.2021	Infants younger than 6 months old infected by SARS-CoV-2 show the highest respiratory viral loads	J Infect Dis / Accepted Manuscript	• Authors using swab samples obtained from 45,318 people with COVID-19 between October 2020 and June 2021 in Buenos Aires, Argentina to compared the respiratory viral loads of younger infants with those of older children in the cohort. • Results suggest that: i) infants younger than 6 months old presented higher viral loads than other age groups; ii) children older than 6 months showed significantly lower viral loads, similar to those founds in adults.
30.11.2021	Obstetrical outcomes and maternal morbidities associated with COVID-19 in pregnant women in France: A national retrospective cohort study	PLoS Med / Article	• 874 in cohort of pregnant women > 22 weeks hospitalised for COVID vs pregnant women > 22 weeks • Findings state that pregnant women COVID cohort had higher frequency of certain negative outcomes including ICU admission and preterm birth.

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Epidemiology and clinical – risk factors

Publication Date	Title/URL	Journal / Article type	Digest
01.12.2021	Trends and associated factors for Covid-19 hospitalisation and fatality risk in 2.3 million adults in England	medRxiv (non-peer reviewed) / Article	• Retrospective cohort study included all adults (≥18 years) in England with a positive COVID-19 test result between 01.10.2020 and 30.04.2021 (n=2,311,282 people) • Found significant variation in case hospitalisation and mortality risk over time, peaking in December 2020-February 2021, which remained after adjustment for individual risk factors. • Higher odds of admission and mortality in older age groups, males, those resident in more deprived areas, and those with obesity.

			• Highest odds of admission and mortality for severe mental illness and learning disability risk factors.
30.11.2021	[Recovery From COVID-19 in Multiple Sclerosis: A Prospective and Longitudinal Cohort Study of the United Kingdom Multiple Sclerosis Register](#)	Neurol Neuroimmunol Neuroinflamm / Article	• Longitudinal cohort study of 599 UK patients with MS who reported COVID-19 (from 17.03.2020 to 19.03.2021) and prospectively updated their recovery status • At least 165 participants (29.7%) had long-standing COVID-19 symptoms for ≥4 weeks and 69 (12.4%) for ≥12 weeks. • Participants with pre–COVID-19 Expanded Disability Status Scale scores ≥7, participants with probable anxiety and/or depression (Hospital Anxiety and Depression Scale scores ≥11) before COVID-19 onset, and women were less likely to report recovery from COVID-19.
26.11.2021	[Fungal infections in mechanically ventilated patients with COVID-19 during the first wave: the French multicentre MYCOVID study](#)	Lancet Respir Med / Articles	• Observational cohort study in 18 French ICUs (29.02.2020 to 09.07.2020) included 565 mechanically ventilated patients with COVID-19. • Results suggest high prevalence of invasive pulmonary aspergillosis and candidaemia in this cohort. • At time of discharge, overall ICU mortality was significantly higher in patients with proven/probable COVID-19-associated pulmonary aspergillosis (pr/pb CAPA) (61·8%) than in those without (32·1%). • Age older than 62 years (odds ratio [OR] 2·34), treatment with dexamethasone and anti-IL-6 (OR 2·71), and long duration of mechanical ventilation (>14 days; OR 2·16) were independently associated with pr/pb CAPA. • Significant factors for death included age older than 62 years (hazard ratio [HR] 1·71), solid organ transplantation (HR 2·46), and pr/pb CAPA (HR 1·45). • Linked comment: https://doi.org/10.1016/S2213-2600(21)00500-2
19.11.2021	[Cardiovascular health and risk of hospitalization with COVID-19: A Mendelian Randomization study](#)	JRSM Cardiovasc Dis / Article	• Study using 2-sample Mendelian randomisation found no evidence for a causal association of cardiovascular risk factors/disease (blood pressure, body mass index, type 2 diabetes or coronary artery disease) with severe COVID-19 compared to population controls, nor evidence of reverse causality. • Authors suggest the association between cardiovascular risk factors/disease and hospitalisation with COVID-19 reported in observational studies could be due to residual confounding by socioeconomic factors and /or those that influence the indication for hospital admission.

Publication Date	Title/URL	Journal / Article type	Digest
30.11.2021	Nutritional risk factors for SARS-CoV-2 infection: a prospective study within the NutriNet-Santé cohort	BMC Med / Article	• Analyses a French prospective cohort (NutriNet-Santé, 2009–2020): study included 7766 adults, of whom 311 were positive for anti-SARS-CoV-2 antibodies. • Dietary intakes of vitamin C (OR=0.86), vitamin B9 (OR=0.84), vitamin K (OR=0.86), fibers (OR=0.84), and fruit and vegetables (OR=0.85) were associated to a decreased probability of SARS-CoV-2 infection while dietary intakes of calcium (OR=1.16) and dairy products (OR=1.19) were associated to increased odds.

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Epidemiology and clinical – other

Publication Date	Title/URL	Journal / Article type	Digest
24.11.2021	COVID-19 hospital activity and in-hospital mortality during the first and second waves of the pandemic in England: an observational study	Thorax / Original Research	• Retrospective analysis of English observational data (01.03.2020 to 31.03.2021) included 374,244 patients diagnosed with COVID-19 during hospital stay, of whom 93,701 (25%) died in hospital. • Adjusted mortality rates fell from 40%-50% in March 2020 to 11% in August 2020, rose to 21% in January 2021, and steadily declined to March 2021. • Improvements in mortality rates were less apparent in older and comorbid patients. • Mortality rates fell for all ethnic groups from first to second wave, although declines less pronounced for several Asian and African/Caribbean ethnic groups.
17.11.2021	COVID-19 infection risk amongst 14,104 vaccinated care home residents: a national observational longitudinal cohort study in Wales, UK, December 2020-March 2021	Age Ageing / Article	• Observational study of 14,104 vaccinated older care home residents in Wales, UK: 1.05% (N=148) tested positive following vaccination with 90% of those occurring within 28-days, suggesting extra precautions to reduce transmission risk should be taken in this time frame. • Increased risk of infection after 21-days was associated with frailty.
26.11.2021	COVID-19 due to the B.1.617.2 (Delta) variant compared to B.1.1.7 (Alpha) variant of SARS-CoV-2: two prospective observational cohort studies	medRxiv (non-peer reviewed) / Article	• Assessed symptomatic UK adults testing positive for SARS-CoV-2 from 26.05.2021 to 01.07.2021 (Delta predominant in UK), compared (1:1) with matched individuals presenting from December 28.12.2020 to 06.05.2021 (Alpha predominant); included 3,581 individuals in each group.

			• The 7 most frequent symptoms were common to both variants; within first 28 days some symptoms were more common with Delta vs. Alpha infection (fever, sore throat and headache) and vice versa (dyspnoea). • Symptom burden in first week higher with Delta vs. Alpha infection, although odds of any given symptom lasting ≥7 days was lower or unchanged. • Illness duration ≥28 days was lower with Delta vs. Alpha infection, though unchanged in unvaccinated individuals. • Delta appeared more (1·47) transmissible than Alpha; re-infections were low in all UK regions; vaccination markedly (69-84%) reduced risk of Delta infection.

Infection control / non-pharmaceutical interventions

Publication Date	Title/URL	Journal / Article type	Digest
30.11.2021	Adherence to protective measures among healthcare workers in the UK: a cross-sectional study	Emerg Med J / Short Report	• Cross-sectional survey of 831 UK healthcare professionals (data collected 12–16 June 2020). • Adherence to personal protective measures was suboptimal (PPE use: 80.0%; hand hygiene: 67.8%; coming into close contact with colleagues: 74.7%). • Adherence to PPE use was associated with having received COVID-19 health and safety training, greater perceived social pressure to adopt the behaviour, and availability of PPE. • Non-adherence was associated with fatalism about COVID-19 and greater perceived difficulty of adopting protective measures. • Workplace markings to facilitate distancing was associated with adherence to physical distancing.

Transmission

Publication Date	Title/URL	Journal / Article type	Digest
02.12.2021	[Surge in SARS-CoV-2 transmission in school-aged children and household contacts, England, August to October 2021](#)	Euro Surveill / Rapid Communication	• Population rates per 100,000 of SARS-CoV-2 infection in England were assessed from national surveillance capturing all test methods [including self-collected] up to 02.11.2021. • Easing of COVID-19 restrictions in England in summer 2021 was followed by a sharp rise in cases among school-aged children. • Weekly rates of SARS-CoV-2 infection in primary and secondary school children reached 733.3 and 1,664.7/100,000 population, respectively, by week 39 2021. • A surge in household clusters with school-aged index cases was noted at the start of the school term, with secondary cases predominantly in children aged 5–15 years and adults aged 30–49 years.

Treatment

Publication Date	Title/URL	Journal / Article type	Digest
23.11.2021	[Wave comparisons of clinical characteristics and outcomes of COVID-19 admissions - Exploring the impact of treatment and strain dynamics](#)	J Clin Virol / Article	• Retrospective observational study of COVID-19 patients in a UK teaching hospital in three cohorts; 1) pre 16.06.2020 (before dexamethasone was incorporated into standard of care); 2) 17.06.2020 to 30.11.2020 (post-dexamethasone, pre-Alpha as dominant strain); and 3) 01.12.2020 to 03.03.2021 (during establishment of Alpha as the dominant strain). • Dexamethasone treatment more common in cohorts 2 and 3 (42.7% and 51.6%) compared with cohort 1 (2.5%). • Adjusted odds of death within 28 days were 2-fold lower in cohort 2 vs 1 (OR:0.47) i.e. after dexamethasone was incorporated. • Mortality was higher in cohort 3 vs 2 (20% vs 14%); but not significantly different to cohort 1 (OR: 0.86).
01.12.2021	[Lenzilumab in hospitalised patients with COVID-19 pneumonia (LIVE-AIR): a phase 3, randomised, placebo-controlled trial](#)	Lancet Respir Med / Article	• Phase 3 trial: hospitalised adults with COVID-19 (n=520) not on invasive mechanical ventilation were randomised (1:1) to receive lenzilumab (600 mg) or placebo.

			• Lenzilumab improved the likelihood of ventilator free survival compared to placebo (hazard ratio 1·54) • Preprint previously included
29.11.2021	Natalizumab administration in multiple sclerosis patients during active SARS-CoV-2 infection: a case series	BMC Neurol / Case Report	• Case series of 6 patients with Multiple Sclerosis (MS) receiving Natalizumab during active COVID-19 infection • Findings indicate that treatment with Natalizumab during pandemic is relatively safe and might be continued in selected COVID-19 patients, reducing the risk of MS disease rebound.

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Modelling

Publication Date	Title/URL	Journal / Article type	Digest
24.11.2021	Assessing the Impact of (Self)-Quarantine through a Basic Model of Infectious Disease Dynamics	Infect Dis Rep / Article	• Modelling suggests that during the first wave in the UK strong adherence to self-quarantine rules yields a reduction of 22% of peak numbers and delays onset of the peak by approximately 30-35 days; impact of self-quarantine is more significant during early phase of the outbreak. • Taking national lockdown into account, in case of a 90% reduction of the effective susceptible population size, strong adherence to self-quarantine still only yields 25% reduction of peak infectious numbers compared to low adherence, possibly due to asymptomatic infectious individuals in the population.
28.11.2021	Dosing interval strategies for two-dose COVID-19 vaccination in 13 low- and middle-income countries of Europe: health impact modelling and benefit-risk analysis	medRxiv (non-peer reviewed) / Article	• Transmission modelling was applied to reported COVID-19 mortality in 13 low- and middle-income countries in the WHO European Region. • In 12 of 13 countries, optimal COVID-19 vaccination strategies prioritise the first doses among older adults (60+ years) or adults (20-59 years), leading to dosing intervals longer than six months • A four-week fixed dosing interval may incur 10.2% more deaths (13 countries). • Generally negative association between dosing interval and COVID-19 mortality within the range investigated. • Benefit-risk ratios were the highest for fixed dosing intervals of 8-12 weeks.

Guidance and consensus statements

Publication Date	Title/URL	Journal / Article type
26.11.2021	Events Research Programme: Phase II and III findings	Gov.uk / Guidance
03.12.2021	Final report on progress to address COVID-19 health inequalities	Gov.uk / Research and analysis
26.11.2021	Threat Assessment Brief: Implications of the emergence and spread of the SARS-CoV-2 B.1.1. 529 variant of concern (Omicron) for the EU/EEA	ECDC / Risk Assessment

Overviews, comments and editorials

Publication Date	Title/URL	Journal / Article type
15.11.2021	Post-Acute Sequelae of COVID-19 and Cardiovascular Autonomic Dysfunction: What Do We Know?	J Cardiovasc Dev Dis / Review
28.11.2021	Resetting international systems for pandemic preparedness and response	BMJ / Analysis
28.11.2021	Aggressive containment, suppression, and mitigation of covid-19: lessons learnt from eight countries	BMJ / Analysis
20.11.2021	An overview of solutions for airborne viral transmission reduction related to HVAC systems including liquid desiccant air-scrubbing	Energy (Oxf) / Article
29.11.2021	Covid-19: Omicron may be more transmissible than other variants and partly resistant to existing vaccines, scientists fear	Bmj / News
02.12.2021	MHRA approves Xevudy (sotrovimab), a COVID-19 treatment found to cut hospitalisation and death by 79%	MHRA / News
01.12.2021	Fluvoxamine for the Early Treatment of SARS-CoV-2 Infection: A Review of Current Evidence	Drugs / Current Opinion
29.11.2021	Use of remdesivir in children with COVID-19 infection: a quick narrative review	Acta Biomed / Review
25.11.2021	Structures and functions of coronavirus replication-transcription complexes and their relevance for SARS-CoV-2 drug design	Nat Rev Mol Cell Biol / Review

COVID-19 Literature Digest Team
Public Health Advice, Guidance and Expertise (PHAGE)
UK Health Security Agency
COVID.LitDigest@phe.gov.uk

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