

COVID-19 Literature Digest – 29/02/2021

Dear all,

Thank you to all who participated in our recent survey and for your very useful and positive responses.

Based on feedback received and changes to current staffing levels, we will be making the following changes to the Digest [effective as of next week, so from start of February]:

- the frequency of the Digest will be reduced from three days a week to once a week (Friday) - so you will receive the next report on Friday 5th February
- the frequency of the Guest Editorials will be reduced from once a week to once every two weeks

These changes will be trialled for the next 4 – 6 weeks. Feedback welcome.

This week's guest editor is Dr Marilena Korkodilos, Deputy Director for Healthcare, Wellbeing and Workforce, PHE London. She has supported the COVID-19 response initially as one of the Regions Operation Cell (ROC) Chairs and is currently the Programmed Delivery Unit (PDU) Children and Young People's Lead.

If you only read three papers this week...

The papers that I have selected this week highlight the importance of maintaining wider healthcare provision and the need to mitigate the indirect impact of COVID-19 on maternity and paediatric health service provision.

Most pregnant women who are infected with COVID-19 generally experience only mild or moderate symptoms; severe illness is relatively uncommon. In a large national cohort of US women hospitalised for childbirth, [Jering et al](#) compared the clinical characteristics and outcomes of hospitalised women who gave birth with and without COVID-19 between 1st April and 23rd November 2020. Of the 406,446 women hospitalised for childbirth, 6,380 (1.6%) had COVID-19. Pregnant women with COVID-19 were younger and more often Black and/or Hispanic and with diabetes and obesity. Whilst the absolute rates of adverse events and death in women diagnosed with COVID-19 were low, they were considerably higher in women who gave birth with COVID-19 compared to those without. Among women with COVID-19 who gave birth, age, obesity, diabetes, kidney disease, eclampsia, thrombotic events and stillbirth were associated with higher odds of mechanical ventilation use or in-hospital death. This study adds to

the evidence of stark inequalities in maternity outcomes and the need to review changes to maternity care delivery in England to understand if changes in its provision have narrowed or widened existing inequalities.

Whilst most children and young people with COVID-19 rarely have severe illness, the longer-term impact on education, mental wellbeing, health service provision and poverty is likely to be profound, with this pandemic exposing the fragile situation that many children and young people live in. Changes in caregiver healthcare-seeking behaviour on children due to national lockdown have not been fully quantified. A retrospective study by [Williams et al](#) compared all emergency paediatric healthcare utilisation and severe disease in Scotland following national lockdown (23rd March – 9th August 2020), with mean or aggregated rates for the equivalent dates in 2016-2019. The findings highlight a picture of reduced healthcare utilisation, without a short-term increase in severe paediatric disease or mortality. This reduction is likely to be due to a combination of changes in healthcare-seeking behaviour and a fall in the overall burden of infectious causes of childhood disease and whilst there was no short-term impact, the risk of delayed healthcare utilisation to critically ill children may only become apparent in the months and years to come. This study highlights the need for continued communication to encourage parents and guardians to seek necessary medical attention for children in spite of the pandemic.

It is important to maintain the best possible routine childhood vaccine uptake to prevent serious and sometimes life-threatening diseases such as meningococcal infections. [MacDonald et al](#) summarised how childhood immunisation rates were kept stable in Lothian, Scotland in the weeks during the first lockdown. This included an emphasis on the needs of children who require vaccinations, delivery of vaccinations via fixed-point clinics that were accessible by public transport, timely monitoring of immunisation uptake, communication with families and responding to their needs and ensuring adequate staffing.

Marilena

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,

Emma Farrow, James Robinson

On behalf of the PHE COVID-19 Literature Digest Team

Report for 29.01.2021 (please note that papers that have **NOT been peer-reviewed** are highlighted in red).

Sections:

[Vaccines](#)

[Diagnostics and genomics](#)

[Epidemiology and clinical - long-term complications / sequelae](#)

[Epidemiology and clinical – risk factors](#)

[Infection control / non-pharmaceutical interventions](#)

[Transmission](#)

[Treatment](#)

[Overviews, comments and editorials \(no digest\)](#)

[Guidance and consensus statements \(no digest\)](#)

Vaccines

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|---------------------------------------|---|
| 28.01.2021 | Novavax COVID-19 Vaccine Demonstrates 89.3% Efficacy in UK Phase 3 Trial | Novavax / Press Release | <ul style="list-style-type: none"> • Strong efficacy in Phase 3 UK trial with over 50% of cases attributable to the now-predominant UK variant and the remainder attributable to COVID-19 virus • Clinical efficacy demonstrated in Phase 2b South Africa trial with over 90% of sequenced cases attributable to prevalent South Africa escape variant |
| 28.01.2021 | SARS-CoV-2 variant B.1.1.7 is susceptible to neutralizing antibodies elicited by ancestral Spike vaccines | bioRxiv (non-peer reviewed) / Article | <ul style="list-style-type: none"> • SARS-CoV-2 variant B.1.1.7 remains sensitive to neutralisation by serum samples from convalescent individuals and recipients of two different vaccines based on ancestral Spike (mRNA-1273, Moderna, and NVX-CoV2373, Novavax), albeit at moderately reduced levels (~2-fold). • Suggests B.1.1.7 is not a neutralisation escape variant of concern for current vaccines, or for reinfection risk. |
| 27.01.2021 | Neutralization of spike 69/70 deletion, E484K, and N501Y SARS-CoV-2 by BNT162b2 vaccine-elicited sera | bioRxiv (non-peer reviewed) / Article | <ul style="list-style-type: none"> • The authors engineered three SARS-CoV-2 viruses containing key spike mutations from the newly emerged variants found in the United Kingdom and South Africa. • Results indicate small effects of these mutations on neutralisation by sera elicited by two BNT162b2 vaccine doses. |

Diagnostics and genomics

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|--------------------------------|---|
| 28.01.2021 | Evaluation of endpoint PCR (EPCR) as a diagnostic test technology for SARS-CoV-2 | Gov.uk / Research and analysis | <ul style="list-style-type: none"> • EPCR testing on combined throat and nose swabs, with RNA extraction, had a sensitivity of 98.56% (CI 0.976% to 0.992%) and specificity of 99.8% (CI 0.997 to .998) across all samples tested (CT less than 40 by real-time PCR comparator). • EPCR technology gives viral detection with excellent sensitivity and specificity; offering option to use as alternative to real-time PCR and a highly scalable assay technology. |
| 28.01.2021 | Rapid evaluation of Oxford Nanopore Technologies' LamPORE assay | Gov.uk / Research and analysis | <ul style="list-style-type: none"> • Evaluation carried out by NHS trusts and universities finds test to be highly effective in detecting the virus in people with and without symptoms. • LamPORE technology is highly mobile, with pop-up laboratories being piloted in Aberdeen, Telford, Brent and Newbury in U.K |
| 22.01.2021 | Catching a resurgence: Increase in SARS-CoV-2 viral RNA identified in wastewater 48 h before COVID-19 clinical tests and 96 h before hospitalizations | Sci Total Environ / Article | <ul style="list-style-type: none"> • SARS-CoV-2 viral signal was measured in primary clarified sludge harvested every two days at a wastewater facility in Ottawa, Canada during the summer of 2020. • Wastewater viral signal increase of >400 was identified 48 hours prior to an increase in new COVID cases (>300%) retrospectively attributed to community-acquired infections, and 96 hours prior to an increase in COVID hospitalisations (>160%). • Wastewater-based COVID-19 surveillance of populations may augment the efficacy of diagnostic testing. |

Epidemiology and clinical – long-term complications / sequelae

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|---|--|
| 27.01.2021 | Respiratory and Psychophysical Sequelae Among Patients With COVID-19 Four Months After Hospital Discharge | JAMA Netw Open / Original investigation | <ul style="list-style-type: none"> • Study of 238 hospitalised COVID-19 patients in Northern Italy found that 4 months after discharge over half of patients had significant reduction of diffusing lung capacity for carbon monoxide or measurable functional impairment, and about one-fifth of patients had symptoms of post-traumatic stress. |

Epidemiology and clinical – risk factors

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|--|--|
| 22.01.2021 | Factors associated with deaths due to COVID-19 versus other causes: population-based cohort analysis of UK primary care data and linked national death registrations within the OpenSAFELY platform | medRxiv (non-peer reviewed) / Article | <ul style="list-style-type: none"> • In a study using primary care data in England (17,456,515 adults) between 1 February to 9 November 2020, a total of 17,063 died from COVID-19 and 134,316 from other causes. • Older age was more strongly associated with COVID-19 death than non-COVID death, as was male sex, deprivation, obesity, and some comorbidities. • Smoking, history of cancer and chronic liver disease had stronger associations with non-COVID than COVID-19 death. • Black and South Asian ethnic groups had higher odds than white of COVID-19 death, but lower odds than white of non-COVID death. |
| 27.01.2021 | Association of Psychiatric Disorders With Mortality Among Patients With COVID-19 | JAMA Psychiatry / Original investigation | <ul style="list-style-type: none"> • In a study of 7348 COVID-19 positive adults in a New York health system, schizophrenia spectrum diagnosis was associated with an increased risk of death after adjusting for demographic and medical risk factors, while no association was found for anxiety or mood disorders. |

Infection control / non-pharmaceutical interventions

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|--------------------------------------|---|
| 29.01.2021 | Face coverings in the community and COVID-19: a rapid review [Update 1] | Public Health England / Rapid review | <ul style="list-style-type: none"> • An updated rapid review identified 17 observational studies from diverse regions (US, Europe, Asia) which examined the effectiveness of face coverings in relation to COVID-19. • Studies consistently reported that use of face coverings in the community reduced the spread of COVID-19. • Most studies examined effects of national or regional face coverings policy. Limited evidence from specific community settings was identified. • Face covering interventions were typically implemented alongside other interventions, making effectiveness of face coverings used in isolation unclear. • Fourteen laboratory simulations, although not using SARS-CoV-2, provide mechanistic evidence that various types of face coverings can filter droplets and aerosols to some extent, and that |

| | | | |
|------------|---|-------------------------------------|---|
| | | | medical masks may offer better protection than fabric alternatives provided they fit well. |
| 29.01.2021 | Response to a COVID-19 Outbreak on a University Campus - Indiana, August 2020 | MMWR Morb Mortal Wkly Rep / Article | <ul style="list-style-type: none"> • Following a COVID-19 outbreak (371 cases) on a US university campus in August 2020, a rapid decrease in new cases and the resumption of in-person learning was achieved through rapid implementation of mitigation measures including: aggressive testing, tracing, and isolation; enhanced data systems; and communication focused on adherence to measures. |

Transmission

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|--|---------------------------------------|--|
| 28.01.2021 | Bioaerosol sampling for SARS-CoV-2 in a referral centre with critically ill COVID-19 patients March-May 2020 | Clin Infect Dis / Accepted manuscript | <ul style="list-style-type: none"> • Authors investigated whether virus-containing aerosols were present in nursing stations and patient room hallways in a referral centre with critically ill COVID-19 patients. • Of 528 aerosol samples collected, none were positive for SARS-CoV-2 RNA by the estimated limit of detection of 8 viral copies/m³ of air. • Results may provide reassurance for use of alternatives to tight-fitting respirators in areas outside of patient rooms. |
| 27.01.2021 | SARS-CoV-2 Transmission Dynamics in a Sleep-Away Camp | Pediatrics / Article | <ul style="list-style-type: none"> • A retrospective cohort study (627 participants) examined a large outbreak of COVID-19 in June 2020 at a sleep-away youth camp in Georgia, USA, affecting primarily persons ≤ 21 years. • The attack rate was 56% (351/627) among all attendees. • An estimated 12 cases were infected before arriving at camp, while 339 cases were camp-associated. • Forty-five (16%) of 288 cases with available symptom information were asymptomatic. • Despite cabin cohorting, 50% of attendees reported direct contact with people outside their cohort. |

Treatment

| Publication Date | Title/URL | Journal / Article Type | Digest |
|------------------|---|---------------------------------------|---|
| 26.01.2021 | Efficacy of Colchicine in Non-Hospitalized Patients with COVID-19 | medRxiv (non-peer reviewed) / Article | <ul style="list-style-type: none">• In a randomised controlled trial of non-hospitalised patients (n=4159) with confirmed COVID-19, colchicine reduced the composite rate of death or hospitalisation |

Overviews, comments and editorials

| Publication Date | Title/URL | Journal / Article Type |
|------------------|---|------------------------|
| 26.01.2021 | Covid-19: New UK variant may be linked to increased death rate, early data indicate | BMJ / News |
| 28.01.2021 | SARS-CoV-2 Vaccines and the Growing Threat of Viral Variants | JAMA / Viewpoint |
| 26.01.2021 | Covid-19: Moderna plans booster doses to counter variants | BMJ / News |

Guidance and consensus statements

| Publication Date | Title/URL | Journal / Article Type |
|------------------|--|---------------------------------|
| 28.01.2021 | Fostering global data sharing: highlighting the recommendations of the Research Data Alliance COVID-19 working group | Wellcome Open Res / Open letter |

Produced by the PHE COVID-19 Literature Digest Team

To sign-up, email COVID.LitDigest@phe.gov.uk

A selection of previous digests [can be found here](#)

www.gov.uk/phe Follow us on Twitter @PHE_uk

Protecting and improving the nation's health