



2019-nCoV Literature

Situation Report (Lit

Rep)

December 28, 2020

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to Washington State decision making around COVID-19 response efforts. Included in these Lit Reps are some manuscripts that have been made available online as pre-prints but have not yet undergone peer review. Please be aware of this when reviewing articles included in the Lit Reps.

### Key Takeaways

- **Presence of anti-spike or anti-nucleocapsid IgG antibodies was associated with a reduced risk of SARS-CoV-2 reinfection among health care workers in the UK over 6 months of follow-up.** [More](#)
- **The novel SARS-CoV-2 variant VOC 202012/01 was estimated to be 56% more transmissible than the widely circulating SARS-CoV-2 based on mathematical modeling that accounted for differences in mobility and contact patterns.** [More](#)
- **In a systematic review, the air close to patients with COVID-19 was frequently contaminated with SARS-CoV-2 RNA; however, few of these samples contained viable viruses.** [More](#)

### Non-Pharmaceutical Interventions

- *[pre-print; not peer-reviewed]* Users of the SwissCovid digital contact tracing app who were notified of a non-household close contact with a SARS-CoV-2 quarantined a median of 1 day earlier than close contacts who were manually traced. Among a population-based sample of adult SARS-CoV-2 index cases (n=393) and close contacts (n=261) identified through manual contact tracing who were surveyed regarding use of the SwissCovid app, 88% of index cases reported receiving and uploading a notification code in the app to trigger a warning among proximity contacts. Among close contacts using the app, only 38% reported receiving an app warning due to the risk exposure. Non-household contacts notified by the app started quarantine on a median of day 2 following the exposure compared to day 3 among those not notified by the app.

*Ballouz et al. (Dec 23, 2020). Digital proximity tracing app notifications lead to faster quarantine in non-household contacts results from the Zurich SARS-CoV-2 Cohort Study. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.21.20248619>*

### Transmission

- In a systematic review of 24 studies evaluating the level of air contamination from SARS-CoV-2 in different hospital areas and factors associated with contamination, 17% of air samples from close patient environments were positive for SARS-CoV-2 RNA, with viability of the virus found in 9% of cultures. There was no significant difference in positivity between samples collected from within 1 meter of patients (2.5% positive) or 1 to 5 meters (5.5% positive, p=0.22). High viral loads were found in toilets and bathrooms, staff areas, and public hallways.

*Birgand et al. (Dec 23, 2020). Assessment of Air Contamination by SARS-CoV-2 in Hospital Settings. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.33232>*



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- *[pre-print; not peer-reviewed]* An online panel survey administered December 4-18, 2020 to individuals from 10 US states (n = 7,905) found that many individuals reported spending Thanksgiving outside of their home (26%) or at home with at least one non-household member (27%). Planned travel over the December holidays was more common among those who tested positive for SARS-CoV-2 in the prior 2 weeks (67%) compared with 25% of those who tested negative in the prior 2 weeks and 11% among those who were not tested.

*Mehta et al. (Dec 24, 2020). "There's No Place Like Home for The Holidays:" Travel and SARS-CoV-2 Test Positivity Following Thanksgiving Weekend. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.22.20248719>*

## Testing and Treatment

- *[pre-print; not peer-reviewed]* Based on results from a discrete choice experiment (n=4,793), the uptake for testing for SARS-CoV-2 was predicted to increase by 82% to 98% if less invasive testing (saliva specimen type), dual testing (both viral and antibody tests), and at home testing scenarios were offered in addition to standard testing scenarios.

*Romo et al. (Dec 24, 2020). Patterns of SARS-CoV-2 testing preferences in a national cohort in the United States. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.22.20248747>*

## Vaccines and Immunity

- In a nationally representative survey of 1,556 adults aged 50 to 80 years in the US (October 2020), 58% of older adults indicated they would be likely to get a COVID-19 vaccine, 28% said they were unlikely, and 14% were either unsure or did not know if they would get vaccinated. Interest in getting a COVID-19 vaccine was more common among those aged 65 to 80 years (63%) compared with those aged 50 to 64 years (54%), more common among men (64%) compared with women (52%), and more common among white people (63%) compared with Hispanic (51%) and Black people (40%). Individuals who lived with other people, had higher household incomes, and had more education were also more likely to report they would get a COVID-19 vaccine.

*Malani et al. (Dec 23, 2020). Older Adults' Perspectives on a COVID-19 Vaccine. JAMA Health Forum. <https://doi.org/10.1001/jamahealthforum.2020.1539>*

- The presence of SARS-CoV-2 anti-spike or anti-nucleocapsid IgG antibodies was associated with a reduced risk of SARS-CoV-2 reinfection over 6 months of follow-up among health care workers in the UK (n=12,541). The risk of testing positive for SARS-CoV-2 by PCR during study follow-up was 1.09 per 10,000 person-days at risk among workers who were negative for anti-spike antibodies at enrollment versus 0.13 per 10,000 person-days at risk among workers who were positive for anti-spike antibodies at enrollment (aIRR = 0.11, 95%CI 0.03-0.44).

*Lumley et al. (Dec 23, 2020). Antibody Status and Incidence of SARS-CoV-2 Infection in Health Care Workers. The New England Journal of Medicine. <https://doi.org/10.1056/NEJMoa2034545>*

## Clinical Characteristics and Health Care Setting

- A study of data from the total population of Scotland (n=5.5 million) found that people with diabetes had a substantially higher risk of dying from COVID-19 or requiring intensive care than the general population. After adjustment for age and sex, people living with Type 2 diabetes had 1.4 times the odds of dying or requiring intensive care for COVID-19 and people with Type 1 diabetes had 2.4 times the odds compared to people without diabetes. Among people with diabetes, those who were men, people living in residential care facilities, living in deprived areas, with other COVID-19 risk conditions, or with poor glucose control were more likely to die from COVID-19 or require intensive care.

McGurnaghan et al. (Dec 28, 2020). Risks of and Risk Factors for COVID-19 Disease in People with Diabetes: A Cohort Study of the Total Population of Scotland. *The Lancet Diabetes & Endocrinology*. [https://doi.org/10.1016/S2213-8587\(20\)30405-8](https://doi.org/10.1016/S2213-8587(20)30405-8)

- [pre-print; not peer-reviewed] In an international web-based survey of people with suspected or confirmed COVID-19 with illness lasting >28 days (n=3,762) identified 205 symptoms across 10 organ systems. In those who recovered in less than 90 days, the average number of symptoms peaked at week 2, as compared to a peak in month 2 among participants who did not recover within 90 days. 86% experienced relapses of their symptoms, with exercise, physical or mental activity, and stress as the main triggers. 87% of unrecovered respondents were experiencing fatigue at the time of survey, compared to 45% of recovered respondents. 45% reported requiring a reduced work schedule compared to pre-illness and 22% were not working at the time of survey due to their health conditions.

Davis et al. (Dec 27, 2020). Characterizing Long COVID in an International Cohort: 7 Months of Symptoms and Their Impact. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.24.20248802>

## Mental Health and personal impact

- [pre-print; not peer-reviewed] In a nationally-representative survey of working-age adults in the US, 54% reported household income loss since the start of the COVID-19 pandemic. Experiencing somewhat of a financial hardship (vs no hardship) was associated with a greater likelihood of depressive (OR=2.9) or anxiety symptoms (OR=3.1) and greater likelihood of food insufficiency (OR=15.6). Experiencing considerable financial hardship (vs no hardship) was even more strongly associated with depressive (OR=5.7) or anxiety symptoms (6.4), a likely eviction (OR=24.0), and food insufficiency (OR=52.2).

Kim (Dec 26, 2020). Financial Hardship and Social Assistance as Determinants of Mental Health and Food and Housing Insecurity During the COVID-19 Pandemic. Pre-print downloaded Dec 28 <https://doi.org/10.1101/2020.12.24.20248835>

- [pre-print; not peer-reviewed] In a cross-sectional survey administered to 5,267 transgender people in 63 higher-middle income and high-income countries, over 50% of the participants had risk factors for severe COVID-19 infection and were at a high risk of avoiding testing or treatment for a COVID-19 infection due to the fear of mistreatment or discrimination. Nearly 50% of participants reported decreased access to transgender health care services due to the COVID-19 pandemic. Male sex assigned at birth and a lower monthly income were significant predictors for the experience of restrictions to health care. 35% of participants reported at least one mental health condition, 35% had had suicidal thoughts during the COVID-19 pandemic, and 3% had attempted suicide since the pandemic began.

Koehler et al. (Dec 24, 2020). How the COVID-19 pandemic affects transgender health care in upper-middle-income and high-income countries – A worldwide, cross-sectional survey. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.23.20248794>

## Modeling and Prediction

- [pre-print; not peer-reviewed] A mathematical modeling study for 3 regions in England estimated that the novel SARS-CoV-2 variant, VOC 202012/01, is 56% (range 50-74%) more transmissible than earlier strains. The analysis incorporated testing data and cell phone data to estimate population movements in order to assess for the contribution of behavioral change as an alternate explanation for increased spread of SARS-CoV-2 in these regions. The analysis did not find evidence for differences in mobility and contact patterns to explain differences in prevalence of the variant, but

found that a modeling scenario incorporating higher transmissibility of the variant strain was the best fit to data observed in these regions.

*Davies et al. (Dec 26, 2020). Estimated transmissibility and severity of novel SARS-CoV-2 Variant of Concern 202012/01 in England. Pre-print downloaded Dec 28 from <https://doi.org/10.1101/2020.12.24.20248822>*

## Other Resources and Commentaries

- [Equitable distribution of COVID-19 vaccines](#) – The Lancet Infectious Diseases (Dec 28)
- [SARS-CoV-2 Testing in Florida Illinois and Maryland Access and Barriers](#) – MedRxiv (Dec 24)
- [Association of tiered restrictions and a second lockdown with COVID-19 deaths and hospital admissions in England: a modelling study](#) – The Lancet Infectious Diseases (Dec 23)
- [FDA Oncology Center of Excellence During COVID-19](#) – Working for Patients With Cancer – JAMA Oncology (Dec 23)
- [Pragmatic Recommendations for Safety while Caring for Hospitalized Patients with Coronavirus Disease 2019 \(COVID-19\) in Low- and Middle-Income Countries](#) – The American Journal of Tropical Medicine and Hygiene (Dec 22)
- [Country performance against COVID-19: rankings for 35 countries](#) – BMJ Global Health (Dec 21)
- [Forecasting intensive care unit demand during the COVID-19 pandemic A spatial age-structured microsimulation model](#) – MedRxiv (Dec 21)
- [SARS-CoV-2 mutations among minks show reduced lethality and infectivity to humans](#) – BioRxiv (Dec 27)
- [Quantifying the online news media coverage of the COVID-19 pandemic](#) – MedRxiv (Dec 27)
- [Identifying communities at risk for COVID-19-related burden across 500 U.S. Cities and within New York City](#) – MedRxiv (Dec 24)

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