



2019-nCoV Literature Situation Report (Lit Rep)

April 5, 2021

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

- ❑ **Spike-specific IgG antibody levels and ACE2 antibody binding inhibition responses were similar between healthcare workers in California who had been previously infected with SARS-CoV-2 and received a single dose of the Pfizer-BioNTech vaccine and those who had no prior infection and had received both vaccine doses.** [More](#)
- ❑ **Between March 1, 2020 and January 2, 2021, the US experienced 22.9% more deaths than expected (522,368 excess deaths), with higher rates of excess deaths among non-Hispanic Black populations than non-Hispanic white or Hispanic populations.** [More](#)
- ❑ **Forty-six cases of COVID-19 were linked to an indoor bar opening in Illinois during February 2021. Transmission associated with the event resulted in one school closure affecting 650 students and one hospitalization. Event attendees reported inconsistent mask use and not maintaining ≥ 6 ft of physical distance.** [More](#)

Non-Pharmaceutical Interventions

- *[Pre-print, not peer-reviewed]* Among 1,422 people in the UK who reported they could work completely from home between January and February 2021, 26.8% of respondents reported attending their workplace at least once in the preceding week. Independent factors associated with non-essential workplace attendance included male gender (OR = 1.9), dependent children in the household (OR = 1.7), financial hardship (OR = 1.1), manual occupation (OR = 1.7), having been vaccinated (OR = 2.1), or working in sectors such as health or social care (OR = 4.2), education and childcare (OR = 2.5) or key public service (OR = 3.8)

Michie et al. (Apr 4, 2021). Factors Associated with Nonessential Workplace Attendance during the Covid-19 Pandemic in the UK in Early 2021 Evidence from Cross-Sectional Surveys. Pre-print downloaded April 5 from <https://doi.org/10.1101/2021.03.30.21254333>

Transmission

- Forty-six cases of COVID-19 were linked to an opening event for an indoor bar (accommodates ~100 persons) in rural Illinois in February 2021 (26 cases among patrons, 3 among staff, and 17 secondary cases). Among secondary cases, 12 occurred in eight households with children, two on a school sports team, and three in a long-term care facility (LTCF). Transmission associated with the opening event resulted in one school closure affecting 650 children (9,100 lost person-days of school) and hospitalization of one LTCF resident with COVID-19. Event attendees reported inconsistent mask use and not maintaining ≥ 6 ft of physical distance.

Sami et al. (Apr 5, 2021). Community Transmission of SARS-CoV-2 Associated with a Local Bar Opening Event — Illinois, February 2021. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7014e3>

- From March 1–April 30, 2020, 907 symptomatic and asymptomatic cases of SARS-CoV-2 infection were detected among detained persons (n = 628) and staff (n = 279) in a large jail in Chicago, representing an attributable risk of 13%. Of 1,256 detained persons tested for SARS-CoV-2, 628 (50%) were positive, among whom 479 (76%) were symptomatic. Early interventions included enhanced cleaning and disinfection, eliminating aerosol-generating procedures, provision of hand hygiene supplies and education, and training staff on personal protective equipment use. Cases declined among detained persons and staff after implementation of interventions, while cases continued to climb in the surrounding community.

Zawitz et al. (Apr 2021). Outbreak of COVID-19 and Interventions in a Large Jail — Cook County, IL, United States, 2020. *American Journal of Infection Control*. <https://doi.org/10.1016/j.ajic.2021.03.020>

- In a study of 4996 participants (aged 18–82 years, 34.5% men) from Greece with plasma antibodies against SARS-CoV-2 nucleocapsid protein between June and November 2020, 49% of seropositive cases (39/79) reported no history of SARS-CoV-2 infection-related clinical symptoms. The majority of SARS-CoV-2 asymptomatic infections were “unsuspected” cases (26/39) who had no known contact with a confirmed or suspected COVID-19 case. Anti-SARS-CoV-2 antibody levels against the spike-protein receptor binding domain were similar between symptomatic and asymptomatic individuals, with no differences by age or gender.

Tsitsilonis et al. (Mar 2, 2021). SARS-CoV-2 Infection Is Asymptomatic in Nearly Half of Adults with Robust Anti-Spike Protein Receptor-Binding Domain Antibody Response. *Vaccines*. <https://doi.org/10.3390/vaccines9030207>

- Acutely infected COVID-19 patients and those who received the Moderna vaccine had significantly reduced IgG binding to the B.1.351 variant receptor binding domain (RBD) compared to the B.1-lineage RBD-specific IgG response. However, sera containing polyclonal antibodies to the spike protein could still effectively neutralize B.1.351. Individuals with prior infection or vaccinated individuals had a nearly 3-fold reduction in binding antibody titers to the B.1.351 variant against the RBD of the spike protein and a 3.5-fold reduction in neutralizing antibody titers compared to the B.1 variant.

Edara et al. (Mar 2021). Infection- and Vaccine-Induced Antibody Binding and Neutralization of the B.1.351 SARS-CoV-2 Variant. *Cell Host & Microbe*. <https://doi.org/10.1016/j.chom.2021.03.009>

Testing and Treatment

- Between mid-August to mid-October 2020, 1,176 of 73,643 rapid antigen test results (1.6%) were positive for travelers at points of entry in the Lazio Region of Italy via the STANDARD F COVID-19 Ag FIA, but only 40.5% antigen-positive samples also tested positive by RT-PCR. Antigen tests with a higher semiquantitative result were more likely to be confirmed by PCR.

Colavita et al. (Mar 13, 2021). COVID-19 Rapid Antigen Test as Screening Strategy at Points of Entry: Experience in Lazio Region, Central Italy, August–October 2020. *Biomolecules*. <https://doi.org/10.3390/biom11030425>

Vaccines and Immunity

- Among healthcare workers in California who received the Pfizer-BioNTech vaccine (n = 1,090), spike-specific IgG antibody levels and ACE2 antibody binding inhibition responses were similar

between individuals who had been previously infected with SARS-CoV-2 and received a single dose (n = 35), and those who had no prior infection and received both vaccine doses (n = 228). The study measured participants' antibody levels at three time points: before or up to 3 days after dose 1; within 7–21 days after dose 1; and within 7–21 days after dose 2.

Ebinger et al. (Apr 1, 2021). Antibody Responses to the BNT162b2 mRNA Vaccine in Individuals Previously Infected with SARS-CoV-2. Nature Medicine.

<https://doi.org/10.1038/s41591-021-01325-6>

- A study of hospitalized and non-hospitalized symptomatic patients (n = 210 samples, 84 patients) over a period of 10 months using six different commercial assays for antibody detection found that assays targeting total antibodies presented higher positivity rates and reached the highest positivity rates sooner than assays directed against IgG alone. The inter-assay agreement was also higher between assays targeting total antibody levels. Antibody assays evaluated were the Roche RBD total Ab, Roche NCP total Ab, DiaSorin S1+S2 IgG, Ortho S1 IgG, Ortho S1 total Ab, and Phadia S1 IgG.

Favresse et al. (Mar 8, 2021). Persistence of Anti-SARS-CoV-2 Antibodies Depends on the Analytical Kit: A Report for Up to 10 Months after Infection. Microorganisms.

<https://doi.org/10.3390/microorganisms9030556>

Modeling and Prediction

- A modeling study assessing vaccine allocation in the US across priority groups by age and essential worker status determined that prioritizing essential workers could potentially avert between 20,000 (when nonpharmaceutical interventions are strong) and 300,000 (when these interventions are weak) deaths. The authors suggest their findings indicate that optimal vaccine allocation may change over time, with the priority groups being those with high risk of infection initially, and then switching to targeting groups with high infection fatality.

Buckner et al. (Apr 20, 2021). Dynamic Prioritization of COVID-19 Vaccines When Social Distancing Is Limited for Essential Workers. Proceedings of the National Academy of Sciences.

<https://doi.org/10.1073/pnas.2025786118>

Public Health Policy and Practice

- The US experienced 22.9% more deaths than expected (522,368 excess deaths) between March 1, 2020 and January 2, 2021. The rate of excess deaths was higher among non-Hispanic Black (208.4 deaths per 100 000) than non-Hispanic white or Hispanic populations (157.0 and 139.8 deaths per 100 000, respectively); these groups accounted for 16.9%, 61.1%, and 16.7% of excess deaths, respectively. Deaths rates from causes other than COVID-19, including heart disease and Alzheimer disease, increased during COVID-19 surges in the US. The 10 states with the highest per capita rate of excess deaths were Mississippi, New Jersey, New York, Arizona, Alabama, Louisiana, South Dakota, New Mexico, North Dakota, and Ohio.

Woolf et al. (Apr 2, 2021). Excess Deaths From COVID-19 and Other Causes in the US, March 1, 2020, to January 2, 2021. JAMA. <https://doi.org/10.1001/jama.2021.5199>

- Among 256 US college students surveyed in June 2020, only 49% reported adequate health literacy (HL) and 57% found digital health literacy (DHL) tasks easy overall. DHL tasks included searching for health information online. Both HL and DHL were independently associated with overall compliance with basic preventive practices for COVID-19. Higher DHL was significantly associated with greater willingness to get a COVID-19 vaccine, while HL was not.

Patil et al. (Mar 23, 2021). Health Literacy, Digital Health Literacy, and COVID-19 Pandemic Attitudes and Behaviors in U.S. College Students: Implications for Interventions. International Journal of Environmental Research and Public Health. <https://doi.org/10.3390/ijerph18063301>

- During the COVID-19 pandemic, women spent more time than men on tasks such as childcare and household chores, according to responses from eight cross-sectional surveys and one longitudinal survey of adults in the US, Canada, Denmark, Brazil, and Spain (n = 31,141). These differences were stronger for parents. The authors note that to the extent that women spent more time on chores, they reported lower levels of happiness.

Giurge et al. (Mar 23, 2021). A Multicountry Perspective on Gender Differences in Time Use during COVID-19. Proceedings of the National Academy of Sciences.

<https://doi.org/10.1073/pnas.2018494118>

Other Resources and Commentaries

- [One Dose of COVID-19 Nanoparticle Vaccine REVC-128 Provides Protection against SARS-CoV-2 Challenge at Two Weeks Post Immunization](#) – BioRxiv (Apr 2)
- [Food Insecurity in Households of People with Autism Spectrum Disorder during the COVID-19 Pandemic](#) – MedRxiv (Apr 4)
- [Breastfeeding during COVID-19: A Narrative Review of the Psychological Impact on Mothers](#) – Behavioral Sciences (Mar)
- [The Impact of Reduced Working on Mental Health in the Early Months of the COVID-19 Pandemic: Results from the Understanding Society COVID-19 Study](#) – Journal of Affective Disorders (Mar)
- [The Dawn of mRNA Vaccines: The COVID-19 Case](#) – Journal of Controlled Release (Mar)
- [Reasons for Taking the COVID-19 Vaccine by US Social Media Users](#) – Vaccines (Mar 29)
- [SARS-CoV-2 Survival on Surfaces and the Effect of UV-C Light](#) – Viruses (Mar)
- [Barriers Related to Mask Wearing in African American Neighborhood Businesses](#) – Journal of Community Health (Apr)
- [Smokers Are More Likely to Smoke More after the COVID-19 California Lockdown Order](#) – International Journal of Environmental Research and Public Health (Mar)
- [Should We Ration Extracorporeal Membrane Oxygenation during the COVID-19 Pandemic?](#) – The Lancet Respiratory Medicine (Apr)
- [Concerns about SARS-CoV-2 Evolution Should Not Hold Back Efforts to Expand Vaccination](#) – Nature Reviews Immunology (Apr)
- [Why Is It so Hard to Investigate the Rare Side Effects of COVID Vaccines?](#) – Nature (Apr 1)
- [The Evolving Role of Preprints in the Dissemination of COVID-19 Research and Their Impact on the Science Communication Landscape](#) – PLoS Biology (Apr)
- [Redeployment of Health Care Workers in the COVID-19 Pandemic: A Qualitative Study of Health System Leaders' Strategies](#) – Journal of Patient Safety (Mar)
- [The Metrics Matter: Improving Comparisons of COVID-19 Outbreaks in Nursing Homes](#) – Journal of the American Medical Directors Association (Mar)
- [Addressing Vaccine Hesitancy in BIPOC Communities — Toward Trustworthiness, Partnership, and Reciprocity](#) – New England Journal of Medicine (Mar 31)
- [Fair Allocation at COVID-19 Mass Vaccination Sites](#) – JAMA Health Forum (Apr 2)

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