

2019-nCoV Literature Situation Report (Lit Rep)

March 18, 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

- **US parents of children aged 5-12 years who received virtual or combined virtual/in-person instruction were more likely to report both poor parent and child well-being compared to parents of children who received in-person instruction only. Findings are based on a nationwide survey of 1,290 parents, of whom 46% reported their child was receiving virtual instruction only. [More](#)**
- **A New Jersey private boarding school with high adherence to COVID-19 mitigation protocols reported a SARS-CoV-2 test positivity rate of 0.18% and 0.06% among staff and students, respectively, from August to November 2020. [More](#)**
- **51% of COVID-19 survivors reported at least 1 new-onset symptom at four months after hospitalization in a cohort study (n=478) in France. The most common symptoms were fatigue, cognitive symptoms, and shortness of breath. [More](#)**

Transmission

- In a retrospective study of healthcare workers (HCWs) in Turkey with SARS-CoV-2 infection (n=149), 98% of symptomatic HCWs had developed symptoms within 14 days of their index case developing symptoms. Among 39 HCW infector-infectee pairs, the median serial interval (time between symptom onset in the pair) was 4 days (IQR: 2-6). The authors suggest that rigorous contact tracing and isolation in this population could explain the shorter serial intervals than are typically observed in the general population (median 5-7 days).

Emecen et al. (Mar 17, 2021). Transmission Dynamics and Timing of Key Events for SARS-CoV-2 Infection in Healthcare Workers. Infectious Diseases.

<https://doi.org/10.1080/23744235.2021.1900599>

- *[Pre-print, not peer-reviewed]* The SARS-CoV-2 B.1.1.7 strain is suggested to be 40% more transmissible than previously circulating strains, according to a model-based analysis using the time course of the proportion of SARS-CoV-2 infections with the B.1.1.7 variant applied to SARS-CoV-2 genome sequence data and the distribution of serial intervals in England. For mitigation, the authors suggest that contact rates between individuals would need to fall by 29% compared to rates allowable for previously circulating strains.

Piantham and Ito. (Mar 17, 2021). Estimating the Increased Transmissibility of the B.1.1.7 Strain over Previously Circulating Strains in England Using Fractions of GISAID Sequences and the Distribution of Serial Intervals. Pre-print downloaded Mar 18 from

<https://doi.org/10.1101/2021.03.17.21253775>

- In an outbreak investigation by the Florida Department of Health, an index case of COVID-19 in a high school football player was linked to an additional 18 confirmed cases (12 players, 2 coaches, and 2 non-player classroom contacts). Because of potential close contact between infected team members and classmates, 267 students at the football team’s school were quarantined, resulting in approximately 2,243 person-days of lost in-person learning. Factors that likely led to transmission included infrequent mask use in the weight room or during practice, inadequate physical distancing and ventilation on buses transporting players, infrequent disinfection of communal areas, and insufficient sanitization of shared hydration systems.

Siegel et al. (Mar 19, 2021). Notes from the Field: SARS-CoV-2 Transmission Associated with High School Football Team Members — Florida, September–October 2020. MMWR. Morbidity and Mortality Weekly Report. <https://doi.org/10.15585/mmwr.mm7011a3>

- A New Jersey private boarding school with high adherence to COVID-19 mitigation protocols reported 17 positive PCR tests among faculty and staff (0.18% of total) and 8 positive tests among students (0.06% of total) during August to November 2020. Case investigations found likely off-campus sources for all but 2 of the positive cases (both students), suggesting that only 7% of cases were considered to represent on-campus transmission. Among persons receiving a positive test, all were asymptomatic at the time of testing.

Volpp et al. (Mar 19, 2021). Minimal SARS-CoV-2 Transmission After Implementation of a Comprehensive Mitigation Strategy at a School — New Jersey, August 20–November 27, 2020. MMWR. Morbidity and Mortality Weekly Report. <https://doi.org/10.15585/mmwr.mm7011a2>

Testing and Treatment

- The monoclonal antibody treatment mavrilimumab did not significantly lower the proportion of patients with severe COVID-19 who were alive and off oxygen therapy at day 14 compared to placebo (52% vs 47%, OR = 1.48, 95% CI: 0.43-5.16) in a multicenter, double-blind placebo-controlled randomized trial (n=40). Patients were included in the study if they were hospitalized, had COVID-19 pneumonia, low blood oxygen levels, and a C-reactive protein concentration >5 mg/dL. Patients who were mechanically ventilated were excluded.

Cremer et al. (Mar 18, 2021). Mavrilimumab in Patients with Severe COVID-19 Pneumonia and Systemic Hyperinflammation (MASH-COVID): An Investigator Initiated, Multicentre, Double-Blind, Randomised, Placebo-Controlled Trial. The Lancet Rheumatology. [https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913\(21\)00070-9/fulltext](https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(21)00070-9/fulltext)

Vaccines and Immunity

- Individuals with a positive SARS-CoV-2 PCR test during the first surge in Denmark (prior to June 2020) were less likely to get a positive test during the second surge (September to December 2020) compared to individuals with a negative SARS-CoV-2 PCR test during the first surge. In this nationwide cohort study (n=525,339), 72 of 11,068 (0.65%) individuals who were initially positive retested positive again compared to 16,819 of 514,271 (3.27%) who were initially negative but retested positive, suggesting an estimated protection against a repeat infection of 80%. Among those aged 65 years and older, observed protection against a repeat infection was 47%. [EDITORIAL NOTE: Differences between those who do and do not retest for SARS-CoV-2 after an initial positive or negative test result could affect the observed test positivity. Conclusions based on these findings about the effectiveness of prior infection against re-infection should be made with caution.]

Hansen et al. (Mar 17, 2021). Assessment of Protection against Reinfection with SARS-CoV-2 among 4 Million PCR-Tested Individuals in Denmark in 2020: A Population-Level Observational Study. *The Lancet*. [https://doi.org/10.1016/S0140-6736\(21\)00575-4](https://doi.org/10.1016/S0140-6736(21)00575-4)

Clinical Characteristics and Health Care Setting

- Visitor restriction policies varied significantly among the 70 largest US hospitals during the first 3 months of the COVID-19 pandemic. 65 of the hospitals had public-facing visitor restriction policies. While 49 of these policies had general "no-visitor" statements, 16 allowed at least 1 visitor to accompany all patients. 63 policies included exceptions to their visitor restriction policies, including allowing visitors to pediatrics, obstetrics/gynecology, and emergency department settings.

Jaswaney et al. (Mar 12, 2021). Hospital Policies During COVID-19. *Journal of Public Health Management and Practice*. <https://doi.org/10.1097/PHH.0000000000001320>

- 51% of COVID-19 survivors reported at least 1 new-onset symptom at four months after hospitalization that was not previously present in a cohort study (n=478) in France. New-onset symptoms included fatigue (31%), cognitive symptoms (21%), and shortness of breath (16%). In a subset of patients with further evaluations (n=177, including 97 of 142 former ICU patients), the median score for mental fatigue was high, and lung-scan abnormalities were common.

Morin et al. (Mar 17, 2021). Four-Month Clinical Status of a Cohort of Patients After Hospitalization for COVID-19. *JAMA*. <https://doi.org/10.1001/jama.2021.3331>

- COVID-19 patients with frailty had a 2.5-fold higher risk of dying compared to those without frailty, according to a systematic review and meta-analysis of 15 studies including 23,944 COVID-19 patients. Subgroup analyses of studies with hospitalized patients (n=8 studies) and nursing home residents (n=2) showed that risk of dying among patients with frailty was 2.6-fold and 2.1-fold higher, respectively. Patients with frailty were at higher risk of mortality regardless of the frailty assessment tool used.

Zhang et al. (Mar 17, 2021). Frailty as a Predictor of Mortality among Patients with COVID-19: A Systematic Review and Meta-Analysis. *BMC Geriatrics*. <https://doi.org/10.1186/s12877-021-02138-5>

Mental Health and Personal Impact

- Compared to US parents of children aged 5-12 years receiving in-person instruction only, parents of children receiving virtual instruction were more likely to report poor child well-being, such as decreased physical activity (63% vs 30%) or worsened mental and emotional health (25% vs 16%). Parents of children receiving virtual instruction were also more likely to report poorer well-being, such as loss of work (43% vs 31%), child care challenges (14% vs 7%), and emotional distress (54% vs 39%). Similar patterns were observed when comparing parents of children receiving in-person instruction only to parents of children receiving combined virtual/in-person instruction. The findings were from a nationwide probabilistic survey conducted between October and November 2020 (n=1,290 parents), where nearly half of parents (46%) reported their child received virtual instruction.

Verlenden et al. (Mar 19, 2021). Association of Children's Mode of School Instruction with Child and Parent Experiences and Well-Being During the COVID-19 Pandemic — COVID Experiences Survey, United States, October 8–November 13, 2020. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7011a1>

Public Health Policy and Practice

- Census tracts in Boston with high incidence of COVID-19 between February and May 2020 had significant colocation of several neighborhood-level factors and the top quintile of cases: percentage of population that was Hispanic, non-Hispanic Black, without health insurance, receiving Supplemental Nutrition Assistance Program benefits, and living in poverty. They observed a 25% higher incidence of COVID-19 incidence for each 5% increase in percentage of population that is Hispanic and households living in poverty.

Samuels-Kalow et al. (Mar 17, 2021). Neighborhood Disadvantage Measures and COVID-19 Cases in Boston, 2020. Public Health Reports. <https://doi.org/10.1177/00333549211002837>

Other Resources and Commentaries

- [Rapid Telepsychiatry Implementation During COVID-19: Increased Attendance at the Largest Health System in the United States](#) – Psychiatric Services (Mar 18)
- [Prioritizing the Marginalized in the COVID-19 Vaccine Rollout](#) – Journal of Public Health (Mar 18)
- [Training Networks of Local Health Departments](#) – Journal of Public Health Management and Practice (Mar 12)
- [Racial/Ethnic Disparities in Very Preterm Birth and Preterm Birth Before and During the COVID-19 Pandemic](#) – JAMA Network Open (Mar 17)
- [COVID-19](#) – Journal of Public Health Management and Practice (Feb 25)
- [Addressing Health Equity and Social Determinants of Health Through Healthy People 2030](#) – Journal of Public Health Management and Practice (Mar 12)
- [Current Status of COVID-19 Vaccine Development: Focusing on Antigen Design and Clinical Trials on Later Stages](#) – Immune Network (Feb 26)
- [Antibody Dynamics, Seroreversion, and Persistence After SARS-CoV-2: Another Answer](#) – Clinical Infectious Diseases (Mar 17)
- [Discussion: Community Evidence of Severe Acute Respiratory Syndrome Coronavirus 2 \(SARS-CoV-2\) Transmission through Air. Atmospheric Environment 2020, 118083](#) – Atmospheric Environment (Mar 12)
- [Audio Interview: Efficacy of Current Covid-19 Vaccines against Variant Viruses](#) – New England Journal of Medicine (Mar 18)
- [COVID-19 Vaccines vs Variants—Determining How Much Immunity Is Enough](#) – JAMA (Mar 17)
- [A Survey on Security and Privacy Issues in Contact Tracing Application of Covid-19](#) – SN Computer Science (Mar 11)
- [Experts Discuss COVID-19—Vaccine Questions, School Openings, and More](#)
- [Lessons Learned From Miami-Dade County’s COVID-19 Epidemic](#) - Journal of Public Health Management and Practice (Mar 12)

Report prepared by the UW Alliance for Pandemic Preparedness and Global Health Security and the START Center in collaboration with and on behalf of WA DOH COVID-19 Incident Management Team