



2019-nCoV Literature

Situation Report (Lit

Rep)

December 21, 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

- **The Advisory Committee on Immunization Practices issued an interim recommendation for use of the Moderna COVID-19 vaccine in persons aged ≥ 18 years for prevention of COVID-19 on December 19, 2020. [More](#)**
- **More than 60% of US adults indicated they would likely get a COVID-19 vaccine in a survey completed between September 14 and 27, 2020. Individuals likely to get a COVID-19 vaccine accepted mandates at a higher rate than those unlikely to get vaccinated. [More](#)**
- **During the COVID-19 pandemic in California, older adults, residents who identified as Black and Latino, and people without college degrees have experienced the highest per capita excess mortality. [More](#)**

Non-Pharmaceutical Interventions

- *[Pre-print, not peer-reviewed]* A longitudinal UK-wide survey found that individuals who wore face coverings "most of the time" or "always" had better mental health and wellbeing than those who did not, even after controlling for behavioral, social, and psychological factors. The odds of feeling anxious were 58% lower among individuals who "always" adhered to guidance on wearing face coverings, and the odds of having depressive symptoms were 25% lower among individuals who "always" adhered to the guidance.
Altschul et al. (Dec 20, 2020). Face Covering Adherence Is Positively Associated with Better Mental Health and Wellbeing a Longitudinal Analysis of the CovidLife Surveys. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.18.20248477v1>

Transmission

- *[Pre-print, not peer-reviewed]* Using serial interval data from infector-infectee pairs before and after the rollout of non-pharmaceutical interventions (NPIs) in China (January and February 2020), the relative frequency of pre-symptomatic transmission increased from 34% pre-rollout to 71% post-rollout. After the rollout of NPIs, transmission post-symptom onset was reduced by 82% whereas pre-symptomatic transmission decreased by only 16%. The authors suggest that interventions that limit opportunities for transmission in the later stages of infection, such as contact tracing and isolation, may have been particularly effective at reducing transmission of SARS-CoV-2.
Bushman et al. (Dec 18, 2020). Transmission of SARS-CoV-2 before and after Symptom Onset Impact of Nonpharmaceutical Interventions in China. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.16.20214106v1>



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- *[Pre-print, not peer-reviewed]* There was no evidence from a prospective study that school reopenings across Italy drove the second wave of SARS-CoV-2 infections. Analysis of data from 20 regions indicated that from September 12 to November 7, new SARS-CoV-2 cases among elementary and middle school students was an average of 39% lower than in the general population in all regions except Lazio. Conversely, infection appears to be more widespread among teachers and staff members of schools (including staff with little interaction with students) than in the general population. The increase in the reproduction number was not temporally associated with school opening dates. In schools, despite the high frequency of tests per week, secondary infections were <1%, and clusters were infrequent in a representative November week.

Gandini et al. (Dec 18, 2020). No Evidence of Association between Schools and SARS-CoV-2 Second Wave in Italy. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.16.20248134v1>

Vaccines and Immunity

- The Advisory Committee on Immunization Practices issued an interim recommendation for use of the Moderna COVID-19 vaccine in persons aged ≥ 18 years for the prevention of COVID-19 on December 19, 2020. Vaccination with the Moderna COVID-19 vaccine consists of 2 doses administered intramuscularly 4 weeks apart. Vaccine efficacy after 2 doses was 94.1% in preventing symptomatic, laboratory-confirmed COVID-19 among persons without evidence of previous SARS-CoV-2 infection. Evidence for the vaccine was primarily informed by one large, randomized, double-blind, placebo-controlled Phase III clinical trial that enrolled approximately 30,000 participants.

Oliver et al. (Dec 20, 2020). The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Moderna COVID-19 Vaccine — United States, December 2020. MMWR. Morbidity and Mortality Weekly Report. <https://doi.org/10.15585/mmwr.mm695152e1>
- 61.4% of US adults who completed a Gallup Panel web survey between September 14 and 27, 2020 indicated they would likely get a COVID-19 vaccine. Nearly one-half (48.6%) of respondents thought requiring a COVID-19 vaccination for children attending school was acceptable. Individuals likely to get a COVID-19 vaccine accepted mandates at higher rates than those who were unlikely to do so (mandates for children, 73.6% vs 23.7%; for adults, 65.0% vs 17.3%; for employees, 72.5% vs 22.9%). Democrats were more likely than Republicans or Independents to accept state vaccine mandates for children and adults and accept employer-enforced employee mandates. Fewer respondents who identified as Black accepted state mandates for adults than non-Black respondents (42.7% vs 27.0%). No gender differences were observed.

Largent et al. (Dec 18, 2020). US Public Attitudes Toward COVID-19 Vaccine Mandates. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.33324>
- Results from a cross-national survey conducted in Australia, Canada, Hong Kong, New Zealand, South Africa, Singapore, the UK, and the US in May 2020 (n = 5920) showed that most respondents preferred for scientists to conduct accelerated trials (human challenge trials, 75%; Phase II/III safety, immunogenicity, and efficacy integrated trials, 63%) over traditional vaccine trials for COVID-19. Respondents were presented with hypothetical studies, and generally understood the key differences and ethical trade-offs between the designs. This support was consistent across geographic and demographic subgroups.

Broockman et al. (Dec 14, 2020). Broad Cross-National Public Support for Accelerated COVID-19 Vaccine Trial Designs. Vaccine. <https://doi.org/10.1016/j.vaccine.2020.11.072>
- *[Pre-print, not peer-reviewed]* A predictive modeling study of vaccine hesitancy in the UK that used a large-scale survey data and Bayesian statistical methods to estimate public opinion predicted that clusters of non-vaccinators will likely emerge in many regions across the UK, including London and the North West. Respondents (n= 17,684) were surveyed between September 24 and October 14, 2020. Across the UK, less than half of respondents said they would "definitely" accept a COVID-19

vaccine (47.5%), while 8.7% stated that they would "definitely not" accept a vaccine. Men were more likely to state intent to accept the vaccine than women (OR 1.59), and people who identified as Black were less likely to report willingness to accept the vaccine than those who identified as white (0.47).

Figueiredo et al. (Dec 18, 2020). Sub-National Forecasts of COVID-19 Vaccine Acceptance across the UK a Large-Scale Cross-Sectional Spatial Modelling Study. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.17.20248382v1>

Clinical Characteristics and Health Care Setting

- Among patients hospitalized with COVID-19, pre-admission frailty was strongly associated with the need for an increased level of care at discharge in a multicenter observational cohort study in Europe. Among 831 discharged patients (median age = 71 years, 44.4% women), the median length of hospital stay was 12 days, 23.2% had increased care needs at discharge.

Vilches-Moraga et al. (Dec 18, 2020). Increased Care at Discharge from COVID-19: The Association between Pre-Admission Frailty and Increased Care Needs after Hospital Discharge; a Multicentre European Observational Cohort Study. BMC Medicine. <https://doi.org/10.1186/s12916-020-01856-8>

- *[Pre-print, not peer-reviewed]* Risk factors for seropositivity among hospital workers (n = 1,557, seropositivity 10.8%) at an academic medical center in California were male gender, exposure to COVID-19 outside of work, working in food or environmental services, and working in COVID-19 units. Seropositive HCWs who were missed by occupational screening were more likely to be younger, work in roles without direct patient care, or have COVID-19 exposure outside of work.

Schubl et al. (Dec 19, 2020). Risk Factors for SARS-CoV-2 Seropositivity in a Health Care Worker Population. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.17.20248430v1>

Mental Health and Personal Impact

- A survey of professionals providing support to survivors of intimate partner violence (IPV) and sexual assault indicated that since the start of the pandemic, support staff are experiencing more personal and professional stressors, perceive a decrease in client safety, and lack resources needed to help survivors and themselves. Common problems included a lack of food or supplies at home and work, and housing and financial support, for survivors. In addition, a 51% increase in the use of video conference for work was reported, which contributed to workforce strain.

Wood et al. (Dec 17, 2020). On the Front Lines of the COVID-19 Pandemic: Occupational Experiences of the Intimate Partner Violence and Sexual Assault Workforce. Journal of Interpersonal Violence. <https://doi.org/10.1177/0886260520983304>

Modeling and Prediction

- *[Pre-print, not peer-reviewed]* After developing a network description of households in the UK, and using a configuration model to link households, bubbling scenarios in which single-person households join with another household had a minimal impact on network connectivity and transmission potential (increase in reproduction number of 0.3). Scenarios where all households formed a bubble were likely to lead to extensive transmission (increase in reproduction number of 2.84-3.55). The impact of scenarios that varied in bubble uptake and size could be mitigated by reducing the number of contacts outside the household.

Danon et al. (Dec 18, 2020). Household Bubbles and COVID-19 Transmission Insights from Percolation Theory. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.16.20248311v2>

- *[Pre-print, not peer-reviewed]* A modeling study of potential vaccination scenarios in China, Brazil, Indonesia, Russia, UK, and the US showed that there was a critical (minimum) vaccination coverage needed for each country to balance the discontinuation of non-pharmaceutical interventions (NPIs) while avoiding a subsequent wave of infections, depending on effectiveness of NPIs. The authors concluded that discontinuation of NPIs should be tailored to countries based on quarantine rates and testing ability, and vaccine accessibility, affordability, and efficiency.
Tang et al. (Dec 20, 2020). The Challenges of the Coming Mass Vaccination and Exit Strategy in Prevention and Control of COVID-19 a Modelling Study. Pre-print downloaded Dec 21 from <https://www.medrxiv.org/content/10.1101/2020.12.18.20248478v1>

Public Health Policy and Practice

- *[Pre-print, not peer-reviewed]* A six-wave, repeated cross-sectional survey (N = 1942) conducted in six major cities in China from February to April found that reliance on expert sources for information on COVID-19 was not a major factor motivating protective actions (staying at home, wearing a facemask, and washing hands) until wave 3, and the negative effect of inexpert sources on these actions was limited to wave 2. In addition, perceived severity of COVID-19 infection exhibited a stronger effect on these behaviors than perceived susceptibility. The authors suggest that engagement in protective behaviors may have been driven by executive orders.
Rui et al. (Dec 18, 2020). How Information Sources, Risk Perception, and Efficacy Appraisal Predicted Engagement in Protective Behaviors Against COVID-19: A Repeated Cross-Sectional Survey in China (Preprint). JMIR Human Factors. <https://doi.org/10.2196/23232>
- During the COVID-19 pandemic in California, older adults, residents who identified as Black and Latino, and those without college degrees have experienced the highest per capita excess mortality. From March 1 through August 22, 2020, an estimated 19,806 deaths in excess of those predicted by historical trends occurred in California. Excess deaths among Latino residents tripled (from 16 to 51 per million) and increased by a factor of 3.4 (from 21 to 72 per million) among people without a high school degree or GED. Across age groups, younger adults had the greatest increases in excess death, with rates more than doubling during the study period.
Chen et al. (Dec 21, 2020). Excess Mortality in California During the Coronavirus Disease 2019 Pandemic, March to August 2020. JAMA Internal Medicine. <https://doi.org/10.1001/jamainternmed.2020.7578>

Other Resources and Commentaries

- [Outcomes Evaluated in Controlled Clinical Trials on the Management of COVID-19: A Methodological Systematic Review](#) – Life (Dec 15 2020)
- [Challenges of SARS-CoV-2 prevention in flights, suggested solutions with potential on-site diagnosis resembling cancer biomarkers and urgency of travel medicine](#) – European Review for Medical and Pharmacological Sciences (Dec 2020)
- [The WHO's chief scientist on a year of loss and learning](#) – Nature (Dec 17 2020)
- [Reinfection with SARS-CoV-2: Implications for Vaccines](#) – Clinical Infectious Diseases (Dec 18 2020)
- [A tale of two studies: Study design and our understanding of SARS-CoV-2 seroprevalence](#) – Clinical Infectious Diseases (Dec 18 2020)
- [Potential impact of COVID-19 pandemic on vaccination coverage in children: A case study of measles-containing vaccine administration in the United States \(US\)](#) – Vaccine (Dec 9 2020)
- [Same pandemic but different studies: an exploration of COVID-19 research at the early stage](#) – European Review for Medical and Pharmacological Sciences (Dec 2020)
- [Renin-angiotensin system blockers, risk of SARS-CoV-2 infection and outcomes from CoViD-19: systematic review and meta-analysis](#) – European Heart Journal – Cardiovascular Pharmacotherapy (Dec 18 2020)

- [COVID-Well: Evaluation of the Implementation of Supported Wellbeing Centres for Hospital Employees during the COVID-19 Pandemic](#) – International Journal of Environmental Research and Public Health (Dec 15 2020)
- [Enrolling Minors in COVID-19 Vaccine Trials](#) – Pediatrics (Dec 17 2020)
- [Changes in evidence for studies assessing interventions for COVID-19 reported in preprints: meta-research study](#) – BMC Medicine (Dec 17 2020)
- [Redesigning Public Mental Health Systems Post–COVID-19](#) – Psychiatric Services (Dec 18 2020)
- [Assessment of Filled Buprenorphine Prescriptions for Opioid Use Disorder During the Coronavirus Disease 2019 Pandemic](#) – JAMA Internal Medicine (Dec 21 2020)

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