



2019-nCoV Literature

Situation Report (Lit

Rep)

December 14, 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 US Advisory Committee on Immunization Practices issued an interim recommendation for use of the Pfizer-BioNTech COVID-19 vaccine in persons aged ≥ 16 years for the prevention of COVID-19. [More](#)**
- **A meta-analysis (54 studies, 77,758 participants) reported higher secondary transmission rates of SARS-CoV-2 among households with transmissions from symptomatic index cases (vs. asymptomatic), to adult contacts (vs. child) and to spouses (vs. other family members), and among households with 1 contact (vs. more contacts). [MoreMore](#)**
- **Receiving the anti-inflammatory medication baricitinib in addition to remdesivir was associated with shorter recovery time (median 7 vs. 8 days), higher level of improvement at day 15, and fewer adverse events in a double-blind, randomized controlled trial involving 1,033 patients hospitalized with COVID-19. [More](#)**

Transmission

- An environmental modeling study of respiratory emissions reported a very low probability of airborne transmission of SARS-CoV-2 (< 1 RNA copy/m³) through respiratory aerosol in outdoor public areas using the environmental characteristics of the cities Milan and Bergamo in northern Italy.
Belosi et al. (Dec 8, 2020). On the Concentration of SARS-CoV-2 in Outdoor Air and the Interaction with Pre-Existing Atmospheric Particles. Environmental Research. <https://doi.org/10.1016/j.envres.2020.110603>
- A meta-analysis of 54 studies including 77,758 participants estimated an overall household secondary transmission rate of SARS-CoV-2 of 17% (95% CI 14%-19%). The rate was higher from symptomatic index cases than from asymptomatic index cases (18% vs. 1%), to adult contacts than to child contacts (28% vs. 17%), to spouses than to other family contacts (38% vs. 18%), and in households with 1 contact than in households with 3 or more contacts (42% vs. 23%). The authors suggest that households will continue to be important venues for transmission as individuals with suspected or confirmed infections are instructed to isolate at home.
Madewell et al. (Dec 14, 2020). Household Transmission of SARS-CoV-2: A Systematic Review and Meta-Analysis. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.31756>



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- [Preprint, not peer-reviewed] In a study collecting 22,643 surface samples from 116 food processing facilities in the US from Mar 17 to Sep 3, 2020, 1.2% of the total samples tested positive for SARS-CoV-2 by PCR. 62 (53%) facilities had at least one sample positive for SARS-CoV-2. Among the positive samples, 33% were found on doorknobs/handles. The authors suggest that environmental surveillance for SARS-CoV-2 may aid in identifying workplaces with SARS-CoV-2 transmission.
Ming et al. (Dec 11, 2020). Environmental Monitoring Shows SARS-CoV-2 Contamination of Surfaces in Food Plants. Pre-print downloaded Dec 14 from <https://doi.org/10.1101/2020.12.10.20247171>

Testing and Treatment

- [Preprint, not peer-reviewed] Receiving azithromycin in addition to usual care was not associated with 28-day mortality (19% vs. 19%) or the duration of hospitalization (12 days vs. 13 days) in a randomized, controlled trial among 7,764 patients hospitalized with COVID-19 in the UK. Results were consistent across subgroups of age, sex, ethnicity, level of respiratory support, days since symptom onset, use of corticosteroids, and baseline predicted risk.
Horby et al. (Dec 14, 2020). Azithromycin in Hospitalised Patients with COVID-19 (RECOVERY) a Randomised Controlled Open-Label Platform Trial. Pre-print downloaded Dec 14 from <https://doi.org/10.1101/2020.12.10.20245944>
- Receiving baricitinib, a kinase inhibitor that blocks a cytokine signaling pathway, in addition to remdesivir, was associated with shorter recovery time (median 7 vs. 8 days, RR=1.2) and higher odds of improvement at day 15 (OR=1.3) in a double-blind, randomized, placebo-controlled trial involving 1,033 patients hospitalized with COVID-19. The estimate for the risk of death through 28 days was lower in the combination group, but was not statistically significant (HR=0.65, 95% CI 0.39-1.09). Serious adverse events were less frequent with the combination therapy (16% vs. 21%, p=0.03).
Kalil et al. (Dec 11, 2020). Baricitinib plus Remdesivir for Hospitalized Adults with Covid-19. The New England Journal of Medicine. <https://doi.org/10.1056/NEJMoa2031994>

Vaccines and Immunity

- An online survey conducted in fall 2020 among 5,114 adults in the UK reported 72% were willing to be vaccinated with a COVID-19 vaccine, 17% were very unsure, and 12% were strongly hesitant. Higher levels of vaccine hesitancy were associated with lower adherence to social distancing guidelines and a lower likelihood of taking a diagnostic or antibody test.
Freeman et al. (Dec 11, 2020). COVID-19 Vaccine Hesitancy in the UK: The Oxford Coronavirus Explanations, Attitudes, and Narratives Survey (OCEANS) II. Psychological Medicine. <https://doi.org/10.1017/S0033291720005188>
- [Preprint, not peer-reviewed] A cross-sectional study using 25 national samples from 12 countries (total N = 25,334) identified male gender, trust in medical and scientific experts, and worry about the virus as consistent psychological correlates of reported vaccine acceptance.
Kerr et al. (Dec 11, 2020). Predictors of COVID-19 Vaccine Acceptance across Time and Countries. Pre-print downloaded Dec 14 from <https://doi.org/10.1101/2020.12.09.20246439>
- On Dec 12, 2020, the Advisory Committee on Immunization Practices issued an interim recommendation for use of the Pfizer-BioNTech COVID-19 vaccine in persons in the US aged ≥16

years to prevent COVID-19. Vaccination consists of 2 doses administered intramuscularly 3 weeks apart. The recommendation was primarily informed by findings from a randomized, double-blind, placebo-controlled Phase II/III trial (n = 43,252, median age 52 years) reporting 95% efficacy in preventing symptomatic laboratory-confirmed COVID-19 among persons without previous SARS-CoV-2 infection during a median 2-months of follow-up.

Oliver et al. (Dec 13, 2020). *The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Pfizer-BioNTech COVID-19 Vaccine — United States, December 2020*. MMWR. <https://doi.org/10.15585/mmwr.mm6950e2>

Clinical Characteristics and Health Care Setting

- A retrospective cohort study indicated that people with HIV in the UK (n = 27,480) had a higher risk of mortality from COVID-19 than those without HIV, after adjusting for age and sex (HR = 2.9). The risk remained high (HR = 2.6) after adjusting for index of multiple deprivation, smoking status, ethnicity, and obesity. Having HIV was associated with a higher risk of COVID-19 death among Black versus non-Black individuals (HR = 4.3).

Bhaskaran et al. (Dec 11, 2020). *HIV Infection and COVID-19 Death: A Population-Based Cohort Analysis of UK Primary Care Data and Linked National Death Registrations within the OpenSAFELY Platform*. *The Lancet HIV*. [https://doi.org/10.1016/S2352-3018\(20\)30305-2](https://doi.org/10.1016/S2352-3018(20)30305-2)

- In a national cohort of 1775 patients discharged from Veterans Affairs medical centers after hospitalization for COVID-19 during March-July 2020, 479 (27%) were readmitted (20%) or died (9%) within 60 days of discharge. Rates of readmission or death by 60 days were significantly lower than those for matched survivors of pneumonia (26% vs. 32%) or heart failure (27% vs. 37%), but higher during the first 10 days after discharge (13% vs. 10% and 14% vs. 9%, respectively). The most common readmission diagnoses were COVID-19 (30.2%), sepsis (8.5%), pneumonia (3.1%), and heart failure (3.1%).

Donnelly et al. (Dec 14, 2020). *Readmission and Death After Initial Hospital Discharge Among Patients With COVID-19 in a Large Multihospital System*. *JAMA*. <https://doi.org/10.1001/jama.2020.21465>

Modeling and Prediction

- [Preprint, not peer-reviewed] A modeling study using a compartmental SEIR model to evaluate the impact of mass testing of SARS-CoV-2 during an epidemic rebound in France found that a monthly campaign covering 75% of the population would reduce daily infections by 43% by May 1st, 2021, and a bi-weekly campaign would reduce infections by 75%. The model assumed the testing campaign would start on January 4th, 2021, with an infection doubling time of 21 days. For a rebound with doubling time of 14 days, the reductions would be 20% for a monthly campaign and 44% for a biweekly campaign.

Bosetti et al. (Dec 13, 2020). *Impact of Mass Testing during an Epidemic Rebound of SARS-CoV-2 A Modelling Study*. Pre-print downloaded Dec 14 from <https://doi.org/10.1101/2020.12.08.20246009>

Other Resources and Commentaries

- [An EUA for Bamlanivimab—A Monoclonal Antibody for COVID-19](#) – JAMA (Dec 11)
- [Differential Household Attack Rates Mirror the Ability to Control Covid-19](#) – Clinical Infectious Diseases (Dec 11)

- [Remdesivir for the Treatment of Coronavirus COVID-19: A Meta-Analysis of Randomised Controlled Trials](#) – Journal of Global Antimicrobial Resistance (Dec 8)
- [The Role of Schools and School-Aged Children in SARS-CoV-2 Transmission](#) – The Lancet Infectious Diseases (Dec 8)
- [Safe Contact Tracing for COVID-19: A Method without Privacy Breach Using Functional Encryption Techniques Based-on Spatio-Temporal Trajectory Data](#) – PLOS ONE (Dec 11)
- [Did People Really Drink Bleach to Prevent COVID-19 A Tale of Problematic Respondents and a Guide for Measuring Rare Events in Survey Data](#) – MedRxiv (Dec 11)
- [Rethinking Clinical Trials and Personalized Medicine with Placebogenomics and Placebo Dose](#) – OMICS: A Journal of Integrative Biology (Dec 10)
- [COVID-19 Infection in Pregnant Women: Review of Maternal and Fetal Outcomes.](#) – International Journal of Gynaecology and Obstetrics (Dec 10)
- [SARS-CoV-2 Viral Load in Saliva Rises Gradually and to Moderate Levels in Some Humans](#) – MedRxiv (Dec 11)
- [COVID-19 deaths in people with HIV: interpret cautiously](#) – The Lancet HIV (Dec 11)

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