



2019-nCoV Literature

Situation Report (Lit

Rep)

October 19, 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

- **During the first wave of the COVID-19 pandemic in Hong Kong, there was a longer time to diagnosis among people living in public rental houses and in areas with lower educational attainment. In contrast, no such association was observed during the second wave when surveillance measures were enhanced.** [More](#)
- **Approximately 40% of residents of skilled nursing facilities who tested positive for SARS-CoV-2 were asymptomatic in facility-wide or unit-based surveys done in response to one or more positive cases.** [More](#)
- **Adoption of university policies for non-pharmaceutical interventions to prevent COVID-19 were often made by individual universities, leading to variation in responses within states.** [More](#)
- **Results from a systematic review and meta-analysis of cardiovascular disease (CVD) and COVID-19 found a high burden of CVD among individuals with COVID-19, which was significantly associated with mortality and ICU admission.** [More](#)

### Non-Pharmaceutical Interventions

- Researchers compiled a database of COVID-19-related non-pharmaceutical intervention policy changes at US universities to be used for future research focusing on drivers and trends of COVID-19 interventions in the university setting. Data from university websites and official statements were combined for 575 universities from all 50 states during March. Preliminary analyses of the dataset indicate that approximately 75% of universities adopted all five common non-pharmaceutical interventions (moving classes online, encouraging students to leave on-campus housing, cancelling university-sponsored travel, closing campus, and making remote work the default option for staff and faculty). Additionally, policy decisions were often made by individual universities, leading to large variations in policy responses between and within states.  
*Cevasco et al. (Oct 16, 2020). COVID-19 Observations and Accompanying Dataset of Non-Pharmaceutical Interventions across U.S. Universities, March 2020. PLOS ONE. <https://doi.org/10.1371/journal.pone.0240786>*
- An econometrics model of population movement from cellphone location data and local mandates indicated that residents of low income areas complied with shelter-in-place ordinances to a lesser degree than those in areas with stronger economic endowments, even after accounting for partisanship, population density, exposure to recent trade disputes, unemployment, and other



factors. Analysis of the local impact of the 2020 CARES Act suggested that this program significantly increased social distancing.

Wright et al. (2020). *Poverty and Economic Dislocation Reduce Compliance with COVID-19 Shelter-in-Place Protocols*. *Journal of Economic Behavior & Organization*. <https://doi.org/10.1016/j.jebo.2020.10.008>

## Transmission

- SARS-CoV-2 testing surveys among residents of skilled nursing facilities (SNFs) identified that approximately 40% of residents testing positive for SARS-CoV-2 cases were asymptomatic, emphasizing the importance of testing all residents rather than relying on symptom-based screening. Greater numbers of asymptomatic and presymptomatic individuals were detected in SNFs located in areas with high SARS-CoV-2 prevalence. Of the cases identified in SNFs with facility-wide testing, 41% were asymptomatic, 9% were presymptomatic, and 40% were symptomatic at presentation. Of the cases identified in SNFs with unit-based testing, 37% were asymptomatic, 16% were presymptomatic, and 47% were symptomatic at presentation.

White et al. (Oct 19, 2020). *Asymptomatic and Presymptomatic Severe Acute Respiratory Syndrome Coronavirus 2 Infection Rates in a Multistate Sample of Skilled Nursing Facilities*. *JAMA Internal Medicine*. <https://doi.org/10.1001/jamainternmed.2020.5664>

## Testing and Treatment

- Pre-exposure prophylaxis with hydroxychloroquine once or twice weekly did not significantly reduce COVID-19 or COVID-19-compatible illness among healthcare workers with ongoing exposure to people with SARS-CoV-2. The randomized, double-blind, placebo-controlled clinical trial of healthcare workers in the US and Canada found that for once weekly hydroxychloroquine prophylaxis, the hazard ratio for COVID-19 was 0.72 (95%CI 0.44 – 1.16), and for twice-weekly it was 0.74 (95%CI 0.46 – 1.19), as compared with placebo.

Rajasingham et al. (Oct 17, 2020). *Hydroxychloroquine as Pre-Exposure Prophylaxis for COVID-19 in Healthcare Workers: A Randomized Trial*. *Clinical Infectious Diseases*. <https://doi.org/10.1093/cid/ciaa1571>

- Living in public rental houses and living in an area with low educational attainment were associated with longer time to diagnosis in the first wave of SARS-CoV-2 infections in Hong Kong. In contrast, this association was not observed during the second wave of infections, when the surveillance measures were enhanced. The study examined socioeconomic characteristics and geographical accessibility to healthcare services in relation to time to diagnosis among symptomatic patients with COVID-19. The risk of delayed diagnosis for public rental house residents was partially mitigated by a higher density of public clinics and hospitals, but exacerbated by a higher density of private medical practitioners nearby.

Wu et al. (2020). *Association of Time to Diagnosis with Socioeconomic Position and Geographical Accessibility to Healthcare among Symptomatic COVID-19 Patients: A Retrospective Study in Hong Kong*. *Health & Place*. <https://doi.org/https://doi.org/10.1016/j.healthplace.2020.102465>

## Vaccines and Immunity

- [Pre-print, not peer-reviewed] Most participants in an acceptability study of a future COVID-19 vaccine in England reported that they would accept a SARS-CoV-2 vaccine for themselves or their child. Participants were more likely to report willingness to accept a COVID-19 vaccine for themselves than for their child and less than 4% of participants reported that they would not accept the vaccine at all. Participants who self-identified as Black, Asian, or as members of another minority racial/ethnic group were nearly 3 times more likely to reject a COVID-19 vaccine for themselves and

their children than white participants. The main reason for vaccine acceptance was for self-protection from COVID-19, while common concerns pertained to safety and effectiveness.

*Bell et al. (Sept 18, 2020). Parents' and Guardians' Views on the Acceptability of a Future Covid-19 Vaccine a Multi-Methods Study in England. Pre-print downloaded Oct 19 from <https://doi.org/10.1101/2020.09.16.20188227>*

- Criscuolo et al. found a poor direct correlation between anti-SARS-CoV-2 antibody titers and neutralizing activity levels against a clinical isolate of SARS-CoV-2. The authors suggest these findings highlight a need for future investigations into the role of neutralizing antibodies and their correlation with protection. In keeping with earlier studies, two commercial serology tests by DiaSorin and Roche demonstrated good sensitivity when used on samples collected from patients 15 days after hospital admission and low sensitivity for samples collected on the day of admission. The specificity evaluated for the two tests ranges from 96.5 to 100%, respectively.

*Criscuolo et al. (2020). Weak Correlation between Antibody Titers and Neutralizing Activity in Sera from SARS-CoV-2 Infected Subjects. Journal of Medical Virology. <https://doi.org/10.1002/jmv.26605>*

- An infection-based herd immunity approach, in which low-risk groups become infected while higher-risk groups are sheltered, has been proposed as a strategy for response to the SARS-CoV-2 pandemic. Omer et al. describe methods for estimating the herd immunity threshold and estimate a SARS-CoV-2 herd immunity threshold of 50-67%. Because most, if not all of the population lacks immunity to the novel SARS-CoV-2 virus, they estimate that around 198 million people in the US would have to be infected to reach a herd immunity threshold of 60%, which would result in several hundred thousand additional deaths using an estimated infection fatality rate of 0.5%. The authors highlight the importance of efficient and widespread vaccination campaigns to reach the herd immunity threshold.

*Omer et al. (Oct 19, 2020). Herd Immunity and Implications for SARS-CoV-2 Control. JAMA. <https://doi.org/10.1001/jama.2020.20892>*

## Clinical Characteristics and Health Care Setting

- Mean interleukin (IL)-6 concentrations among patients with severe COVID-19 were significantly lower than concentrations found among patients with other critical illnesses associated with elevated cytokine concentrations. A systematic review and meta-analysis compared COVID-19 studies in which IL-6 concentrations in patients with severe or critical disease were recorded with studies of sepsis, cytokine release syndrome, and acute respiratory distress syndrome unrelated to COVID-19. Compared to the concentrations in patients with COVID-19, mean IL-6 concentrations were nearly 100 times higher in patients with cytokine release syndrome, 27 times higher in patients with sepsis, and 12 times higher in patients with acute respiratory distress syndrome unrelated to COVID-19.

*Leisman et al. (Oct 2020). Cytokine Elevation in Severe and Critical COVID-19: A Rapid Systematic Review, Meta-Analysis, and Comparison with Other Inflammatory Syndromes. The Lancet Respiratory Medicine. [https://doi.org/10.1016/S2213-2600\(20\)30404-5](https://doi.org/10.1016/S2213-2600(20)30404-5)*

- A systematic review and meta-analysis of cardiovascular disease (CVD) and COVID-19 (n=56 studies) identified a high burden of CVD among individuals with COVID-19 and significantly elevated risk for mortality and ICU admission among COVID-19 patients with CVD. Specifically, acute cardiac injury, (OR=13.3), hypertension (OR=2.6), heart failure (OR=6.7), arrhythmia (OR=2.8), coronary artery disease (OR=3.8), and cardiovascular disease (OR=2.6) were all significantly associated with mortality. Arrhythmia (OR=7.0), acute cardiac injury (OR=15.6), coronary heart disease (OR=2.6),

cardiovascular disease (OR=3.1), and hypertension (OR=2.0) were significantly associated with ICU admission in patients with COVID-19.

Hessami et al. (2020). *Cardiovascular Diseases Burden in COVID-19: Systematic Review and Meta-Analysis*. *The American Journal of Emergency Medicine*. <https://doi.org/10.1016/j.ajem.2020.10.022>

## Other Resources and Commentaries

- [Hospital transfers across U.S. regions to address the “space” shortage in a pandemic: a public good](#) – Clinical Infectious Diseases (Oct 2020)
- [Transmission of SARS-CoV-2 via Contaminated Surfaces: What is to be Done?](#) – Clinical Infectious Diseases (Oct 2020)
- [Trustworthiness before Trust — Covid-19 Vaccine Trials and the Black Community](#) – New England Journal of Medicine (Oct 2020)
- [The scientific and ethical feasibility of immunity passports](#) – The Lancet Infectious Diseases (Oct 2020)
- [Emergency Use Authorization of Covid Vaccines — Safety and Efficacy Follow-up Considerations](#) – New England Journal of Medicine (Oct 2020)
- [COVID-19 and Flu Pandemics Follow a Pattern: A possible Cross-immunity in the Pandemic Origin and Graver Disease in Farther Regions](#) – Archives of Medical Research (Oct 2020)
- [Understanding Challenges for Recovery Homes During COVID-19](#) – International Journal of Drug Policy (Oct 2020)
- [Intravenous immunoglobulin immunotherapy for coronavirus disease-19 \(COVID-19\)](#) – Clinical & Translational Immunology (Oct 2020)

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