

## 2019-nCoV Literature Situation Report (Lit Rep)

September 2, 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

- **A meta-analysis of 7 randomized trials (12 countries, 1,703 critically ill patients with COVID-19) found that patients receiving corticosteroids had lower 28-day all-cause mortality (OR=0.7, 95%CI 0.5-0.8) compared with usual care or placebo. [More](#)**
- **COVID-19 has had negative effects on undergraduates' current and expected outcomes, including delayed graduation (13%) and losing a job or job offer (40%). [More](#)**
- **Using the term "immunity" rather than "antibody" to describe antibody test results increased the proportion of people who believed that a positive antibody test result meant they had no future risk of coronavirus infection and prompted an intention to wash their hands less frequently. [More](#)**
- **A modeling study indicates that common strategies to reopen US colleges and universities are estimated to reduce student SARS-CoV-2 infections by 24%-26%. Perfect testing and immediate quarantining of all students on arrival to campus could further reduce infections by a considerable degree. [More](#)**

### Non-Pharmaceutical Interventions

- A survey of Americans in ten states and eight metropolitan areas (n=25,269) found that knowing someone who had COVID-19 and/or died from it was strongly associated with taking protective health measures like washing hands, avoiding public places, and canceling social engagements.  
*Qeadan et al. (Aug 29, 2020). What Protective Health Measures Are Americans Taking in Response to COVID-19? Results from the COVID Impact Survey. International Journal of Environmental Research and Public Health. <https://doi.org/10.3390/ijerph17176295>*

### Testing and Treatment

- A meta-analysis of 7 randomized trials conducted in 12 countries and including 1,703 critically ill patients with COVID-19 found that administration of systemic corticosteroids, compared with usual care or placebo, was associated with lower 28-day all-cause mortality (OR=0.7, 95%CI 0.5-0.8). Serious adverse events occurred in 64/354 (18%) patients who were randomized to corticosteroids and 80 events occurred among 342 patient randomized to usual care or placebo in the six trials that reported serious adverse events.

*The WHO Rapid Evidence Appraisal for COVID-19 Therapies (REACT) Working Group. (Sept 2, 2020). Association Between Administration of Systemic Corticosteroids and Mortality Among Critically Ill Patients With COVID-19 A Meta-Analysis. JAMA.*

<https://doi.org/10.1001/jama.2020.17023>

- Six of eight children who had SARS-CoV-2 antibodies detected in leftover clinical samples had not been suspected of having COVID-19. Dingens et al. screened 1,775 leftover serum samples from children seeking medical care at Seattle Children's Hospital during the early Seattle outbreak period and found one child was seropositive with SARS-CoV-2 in March and seven were seropositive in April, for a seroprevalence of 1% during this period among this population of children seeking care. Only two of the children with positive antibodies had tested positive for SARS-CoV-2 by RT-PCR. [EDITORIAL NOTE: A summary of a pre-print version of this manuscript appeared in the Lit Rep on May 28]

*Dingens et al. (Sept 1, 2020). Serological Identification of SARS-CoV-2 Infections among Children Visiting a Hospital during the Initial Seattle Outbreak. Nature Communications.*

<https://doi.org/10.1038/s41467-020-18178-1>

## Clinical Characteristics and Health Care Setting

- Initial SARS-CoV-2 viral load in nasopharyngeal samples was significantly higher among hospitalized patients who required mechanical ventilation and/or subsequently died (n=21) compared to non-mechanically ventilated patients who survived (n=149). Initial SARS-CoV-2 viral load has negatively associated with the lowest level of blood oxygen saturation recorded during hospitalization, but was not associated with other clinical parameters in this study that took place March-July, 2020.

*Shlomai et al. (Sept 1, 2020). Nasopharyngeal Viral Load Predicts Hypoxemia and Disease Outcome in Admitted COVID-19 Patients. Critical Care.*

<https://doi.org/10.1186/s13054-020-03244-3>

- A study among people with confirmed, locally transmitted SARS-CoV-2 in Singapore (n=164) reported that patients older than 70 years had significantly longer incubation periods for COVID-19 than those younger than 70 years (median 8 days vs. 5 days, p=0.04). Researchers concluded that elderly people may benefit from earlier and proactive testing, especially after exposure to a positive case.

*Tan et al. (Sept 2, 2020). Does Incubation Period of COVID-19 Vary with Age? A Study of Epidemiologically Linked Cases in Singapore. Epidemiology and Infection.*

<https://doi.org/10.1017/S0950268820001995>

- Between March 29 and May 13, 2020, 16 skilled nursing facilities (SNFs) in the Seattle area (1,583 employees and 1,208 residents) were tested for SARS-CoV-2 by PCR, of which 11 (69%) SNFs had one or more employees or residents positive. Overall prevalence of SARS-CoV-2 was 3% among employees and 9% among residents. Despite facility policies that employees with new respiratory symptoms should not come to work, 42 (3%) employees reported respiratory symptoms (22 with cough, 39 with sore throat, 7 with fever) during the on-site testing. Out of 13 who tested positive and had symptom information available, 9 (69%) were asymptomatic.

*Weil et al. (Sept 1, 2020). Cross-Sectional Prevalence of SARS-CoV-2 Among Skilled Nursing Facility Employees and Residents Across Facilities in Seattle. Journal of General Internal Medicine.*

<https://doi.org/10.1007/s11606-020-06165-7>

## Mental Health and Personal Impact

- Among 1,500 undergraduates at Arizona State University, COVID-19 has led to negative effects on students' current and expected outcomes: 13% have delayed graduation, 40% have lost a job, internship, or job offer, and 29% expect to earn less at age 35. These effects have been highly

heterogeneous and followed existing socioeconomic divides. Lower-income students were 55% more likely than their higher-income peers to have delayed graduation due to COVID-19.

*Aucejo et al. (Aug 27, 2020). The Impact of COVID-19 on Student Experiences and Expectations: Evidence from a Survey. Journal of Public Economics.*

<https://doi.org/10.1016/j.jpubeco.2020.104271>

- Results from a survey of COVID-19 racism and racial discrimination among 543 Chinese American parents (78% mothers) and 230 of their children (48% girls) shows that nearly half of parents and youth reported being directly targeted by COVID-19 racial discrimination online (32% parents; 46% youths) or in person (51% parents; 50% youths), and most reported at least one incident of COVID-19 vicarious racial discrimination online and/or in person (89% parents; 92% youths). In both parental and youth groups, higher levels of perceived racism and racial discrimination were associated with poorer mental health.

*Cheah et al. (Sept 1, 2020). COVID-19 Racism and Mental Health in Chinese American Families. Pediatrics.* <https://doi.org/10.1542/peds.2020-021816>

- A survey with recruitment through social media and email invitation found that the level of self-reported intimate partner violence stayed the same throughout the beginning of the COVID-19 stay-at-home policies for the majority of participants (54%). Participants that did report changes in victimization were more likely to report that victimization became less severe during the COVID-19 pandemic (30%) than to report that it got worse (17%).
- The risk of intimate partner violence worsening since the COVID-19 outbreak was 4.4-fold higher among those who experienced physical victimization (vs. non-physical victimization) and 2.3-fold higher among those who experienced sexual victimization (vs. non-sexual victimization).

*Jetelina et al. (Sept 1, 2020). Changes in Intimate Partner Violence during the Early Stages of the COVID-19 Pandemic in the USA. Injury Prevention.*

<https://doi.org/10.1136/injuryprev-2020-043831>

## Modeling and Prediction

- *[Preprint, not peer reviewed]* A modeling study based on three counties in Washington state predicts that if 15% of the population participates in a digital exposure notification system, it could reduce SARS-CoV-2 infections by 8% and COVID-19 related deaths by 6%. The authors conclude that this approach could complement traditional contact tracing.

*Abueg et al. (Sept 2, 2020). Modeling the Combined Effect of Digital Exposure Notification and Non-Pharmaceutical Interventions on the COVID-19 Epidemic in Washington State. Preprint downloaded Sep 2 from* <https://doi.org/10.1101/2020.08.29.20184135>

- *[Preprint, not peer reviewed]* A modeling study of various US college and university reopening plans (various fully open, hybrid, and fully virtual approaches) shows common reopening strategies could reduce student SARS-CoV-2 infections by 24%-26% and deaths by 36%-50%. Perfect testing and immediate quarantining of all students on arrival to campus at the start of term could further reduce infections by 58%-95% and deaths by 95%-100%. All scenarios were simulated assuming best/worst case ranges for disease prevalence among community residents and arriving students, precaution compliance, contact frequency, virus attack rates, and tracing and isolation effectiveness.

*Benneyan et al. (Sept 2, 2020). Potential Community and Campus Covid-19 Outcomes Under University and College Reopening Scenarios. Preprint downloaded Sep 2 from*

<https://doi.org/10.1101/2020.08.29.20184366>

- *[Preprint, not peer reviewed]* A modeling study found that the observed peak in PCR-detected SARS-CoV-2 infections can follow the peak of true infection incidence due to prolonged shedding of SARS-CoV-2 by approximately ten days in a scenario with an R0 of 1.6 versus 5 days when R0 is 3. Half of those who tested positive by PCR prior to the observed epidemic peak were actually in the prolonged PCR positivity stage. Additionally, the observed seroprevalence substantially underestimated true prevalence of ever having infection, with the underestimation most pronounced around the time of epidemic peak.

*Makhoul et al. (Sept 2, 2020). Analyzing Inherent Biases in SARS-CoV-2 PCR and Serological Epidemiologic Metrics. Preprint downloaded Sep 2 from <https://doi.org/10.1101/2020.08.30.20184705>*

## Public Health Policy and Practice

- In an online survey among 1,204 adults from a UK research panel, Waller et al. reported that by using the term “immunity” (vs “antibody”) to describe antibody tests for SARS-CoV-2, participants were more likely to perceive no risk of catching coronavirus given an positive antibody test result (OR 2.9). Perceiving no risk of infection was associated with an intention to wash hands less frequently (aOR=2.3)

*Waller et al. (Sept 2, 2020). “Immunity Passports” for SARS-CoV-2: An Online Experimental Study of the Impact of Antibody Test Terminology on Perceived Risk and Behaviour. BMJ Open. <https://doi.org/10.1136/bmjopen-2020-040448>*

## Other Resources and Commentaries

- [No One Likes a Stick up Their Nose: Making the Case for Saliva-Based Testing for COVID-19](#) – Clinical Infectious Diseases (Sept 2)
- [Regulatory Decision-Making on COVID-19 Vaccines During a Public Health Emergency](#) – JAMA (Aug 31)
- [Ageing, Sex, Obesity, Smoking and COVID-19 - Truths, Myths and Speculations.](#) – Advances in Respiratory Medicine (Aug 31)
- [Angiotensin-Converting Enzyme Inhibitors and Angiotensin-Receptor Blockers and the Risk of COVID-19 Infection or Severe Disease: Systematic Review and Meta-Analysis](#) – IJC Heart & Vasculature (Aug 27)
- [A SARS-CoV-2 Vaccine Candidate Would Likely Match All Currently Circulating Variants](#) – PNAS (Aug 31)
- [Covid-19: White House Told CDC to Stop Recommending Tests for Asymptomatic Contacts](#) – BMJ (Sept 1)
- [Probable Evidence of Fecal Aerosol Transmission of SARS-CoV-2 in a High-Rise Building](#) – Annals of Internal Medicine (Sept 1)
- [Debates Around the Role of School Closures in the Coronavirus 2019 Pandemic](#) – JAMA Pediatrics (Aug 31)
- [Understanding the Immunologic Characteristics of Neurologic Manifestations of SARS-CoV-2 and Potential Immunological Mechanisms](#) – Molecular Neurobiology (Sept 1)
- [More Testing Alone Will Not Get Us out of This Pandemic](#) – Nature (Sept 3)
- [Estimates of Serial Interval for COVID-19: A Systematic Review and Meta-Analysis](#) – Clinical Epidemiology and Global Health (Aug 26)

- [Rapid Response to Crisis: Health System Lessons from the Active Period of COVID-19](#) – Health Policy and Technology (Aug 27)
- [Complexities to Consider When Communicating Risk of COVID-19](#) – Public Health (July 23)
- [Emergency Use Authorizations During the COVID-19 Pandemic: Lessons From Hydroxychloroquine for Vaccine Authorization and Approval](#) – JAMA (Aug 31)
- [Are Two Consecutive Negative RT-PCRs Enough to Rule out COVID-19?](#) – New Microbes and New Infections (Aug 27)

*Report prepared by the UW MetaCenter 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*