



2019-nCoV Literature Situation Report (Lit Rep)

June 29, 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 seroprevalence survey from six US states and regions found seroprevalence in serum collected for routine clinical purposes ranged from 1.1% to 7.9%. The authors concluded that in five out of the six US sites, there have been >10-times more SARS-CoV-2 infections than cases reported. [More](#)
- A longitudinal study found the proportion of US adults who report drinking alcohol four or more days per week increased from 12% to 19% from March to early April, 2020 and that the increase persisted through April and May. [More](#)
- A neighborhood-level analysis using smartphone mobility data found neighborhoods with low median income had less ability to observe stay home orders compared to neighborhoods with high median income. [More](#)
- A survey of healthcare workers in New York City during the height of COVID-19 inpatient admissions found a high burden of psychological distress as well as a high level of interest in counseling services. [More](#)
- A multi-center cohort study in Europe found severe outcomes from COVID-19 are rare among children, but risk is higher for children who are under 1 month old, male, or have pre-existing medical conditions. [More](#)
- Nearly half of persons with SARS-CoV-2 infection among detained or incarcerated individuals in Louisiana were asymptomatic or pre-symptomatic at the time of testing, indicating the importance of serial testing of close contacts to control infection in this setting. [More](#)

Geographic Spread

- *[pre-print, not peer-reviewed]* Havers et al. report findings from a large seroprevalence study using a convenience sample of serum collected for routine clinical purposes from patients in Connecticut (CT), south Florida (FL), Missouri (MO), New York City metro region (NY), Utah (UT), and the Puget Sound region (WA) from March 23-May 3.
- Out of a total of almost 12,000 samples, seroprevalence was lowest in WA at 1.13% (95% CI 0.70%, 1.94%), and highest in NY at 6.93% (95% CI 5.02%, 8.92%).
- Based on these results, the estimated number of total infections per confirmed infection ranged from 6 to 24 across these sites. *[EDITORIAL NOTE: Individuals undergoing routine clinical testing may not be representative of the seroprevalence in the general population of these sites]*

Havers et al. (June 26, 2020). Seroprevalence of Antibodies to SARS-CoV-2 in Six Sites in the United States March 23-May 3 2020. Pre-print downloaded June 26 from

<https://doi.org/10.1101/2020.06.25.20140384>



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Testing and Treatment

- Two phase I studies evaluating the safety and pharmacokinetics of single escalating and multiple intravenous (IV) doses of remdesivir in healthy subjects found all adverse events were grade 1 or 2 in severity (mild to moderate, with only minimal, local, or non-invasive treatment needed) and that once daily dosing is appropriate.

Humeniuk et al. (June 2020). Safety, Tolerability, and Pharmacokinetics of Remdesivir, an Antiviral for Treatment of COVID-19, in Healthy Subjects. Clinical and Translational Science.
<https://doi.org/10.1111/cts.12840>

Clinical Characteristics and Health Care Setting

- A cohort study of 582 children with PCR-confirmed SARS-CoV-2 across 25 European countries found 25% had pre-existing conditions, 62% were admitted to the hospital, 8% were admitted to the ICU, 4% received mechanical ventilation, and 0.69% (4 children) died (4% symptomatic at end of study).
- Significant risk factors for ICU admission included being younger than 1 month (OR 5.06), being male sex (OR 2.12), having a pre-existing medical condition (OR 3.27), and having lower respiratory tract infection symptoms at presentation (OR 10.46).

Götzinger et al. (2020). COVID-19 in Children and Adolescents in Europe: A Multinational, Multicentre Cohort Study. The Lancet Child & Adolescent Health. [https://doi.org/10.1016/S2352-4642\(20\)30177-2](https://doi.org/10.1016/S2352-4642(20)30177-2)

Mental Health and Personal Impact

- *[pre-print, not peer-reviewed]* Daly and Robinson found a significant increase in the percentage of participants who reported drinking alcohol 4 or more times per week from 12% pre-COVID-19 to 18% by early April among US adults (n=7,327), with this increase persisting through April and May. Effects were largest among individuals who were under 50, white, unmarried, and from households earning \$40,000 or more per year. Results were similar in the UK (n=12,594).

Daly and Robinson. (June 28, 2020). Problem Drinking before and during the COVID-19 Crisis in US and UK Adults Evidence from Two Population-Based Longitudinal Studies. Pre-print downloaded June 26 from <https://doi.org/10.1101/2020.06.25.20139022>

- A survey of US healthcare workers conducted during the peak of inpatient admissions for COVID-19 in New York City found 57% screened positive for acute stress, 48% for depressive symptoms, and 33% for anxiety symptoms. The proportion screening positive was higher for nurses and advanced practice providers than attending physicians. Sixty-one percent reported an increased sense of meaning/purpose since the outbreak. Physical activity was the most common coping behavior (59%) and 33% were interested in access to an individual therapist with online self-guided counseling.

Shechter et al. (June 2020). Psychological Distress, Coping Behaviors, and Preferences for Support among New York Healthcare Workers during the COVID-19 Pandemic. General Hospital Psychiatry. <https://doi.org/10.1016/j.genhosppsych.2020.06.007>

- A survey of US adults conducted from mid-March through early April 2020 found residing in a state with stay-at-home orders and/or bans on large gatherings was not associated with life stressors, probable depression, or suicidal ideation or attempts within the past month.
Bryan et al. (June 2020). Associations among State-Level Physical Distancing Measures and Suicidal Thoughts and Behaviors among U.S. Adults during the Early COVID-19 Pandemic. Suicide & Life-Threatening Behavior. <https://doi.org/10.1111/sltb.12653>

Modeling and Prediction

- Rawson et al. applied an optimal control framework to an adapted SEIR model framework to evaluate the efficacy of lockdown release strategies in the UK. They found simultaneous release of the entire population to be a high-risk strategy, with gradual re-integration preferred. Among gradual re-integration strategies, releasing approximately half the population 2-4 weeks after the end of the initial peak, then waiting 3-4 months to allow for a second peak before releasing the second half of the population was found to be superior to a “on-off” strategy, whereby lockdown is ended for the entire population, then re-established if infections become too high.
Rawson et al. (2020). How and When to End the COVID-19 Lockdown: An Optimization Approach. Frontiers in Public Health. <https://doi.org/10.3389/fpubh.2020.00262>
- *[pre-print, not peer-reviewed]* Zhan et al. developed a Susceptible-Exposed-Infected-Confirmed-Recovered model that incorporates both intercity travel and insufficient testing to predict the spread of COVID-19 in the US and Japan, using data through March 20. The authors found that the ratio of detected to undetected cases may be as high as 1:5 in the US and that without an increase in interventions to slow the spread of COVID-19, 18% of the US population would eventually be infected.
Zhan et al. (June 2020). General Model for COVID-19 Spreading with Consideration of Intercity Migration, Insufficient Testing and Active Intervention: Application to Study of Pandemic Progression in Japan and USA. JMIR Public Health and Surveillance. <https://doi.org/10.2196/18880>

Public Health Policy and Practice

- *[pre-print, not peer-reviewed]* A cross-sectional study conducted in five Brazilian cities found that out of over 12,000 people observed, only 45% wore masks correctly, 16% did not use masks at all, and 40% used masks incorrectly.
Araujo et al. (June 28, 2020). Teach and Teach and Teach: Does the Average Citizen Use Masks Correctly during Daily Activities Results from an Observational Study with More than 12000 Participants. Pre-print downloaded June 26 from <https://doi.org/10.1101/2020.06.25.20139907>
- *[pre-print, not peer-reviewed]* Using smartphone mobility data, Jay et al. found that the increase in the proportion of individuals staying at home by April 2020 in neighborhoods with a high median income was more than double that of neighborhoods with low median income (11% vs 27%). People in low-income neighborhoods were more likely to work outside of the home but not more likely to visit non-work locations.
Jay et al. (June 26, 2020). Neighborhood Income and Physical Distancing during the COVID-19 Pandemic in the U.S. Pre-print downloaded June 26 from <https://doi.org/10.1101/2020.06.25.20139915>

- Among 98 incarcerated and detained persons in a Louisiana facility who were quarantined for exposure to SARS-CoV-2, 71 (72%) developed SARS-CoV-2 infection, including 32 (45%) who did not have symptoms at the time of testing. Additionally, 18 persons developed a positive test after originally testing negative, indicating that serial testing for close contacts identified additional persons with SARS-CoV-2 in this setting.

Njuguna et al. (June 29, 2020). Serial Laboratory Testing for SARS-CoV-2 Infection Among Incarcerated and Detained Persons in a Correctional and Detention Facility — Louisiana, April–May 2020. MMWR. Morbidity and Mortality Weekly Report.

<https://doi.org/10.15585/mmwr.mm6926e2>

Other Resources and Commentaries

- [COVID-19 Planning Considerations: Guidance for School Re-entry](#) – American Academy of Pediatrics (June 25)
- [The MIT Press and UC Berkeley launch Rapid Reviews: COVID-19](#) – MIT Press (June 29)
- [Molecular Evolution and Phylogenetic Analysis of SARS-CoV-2 and Hosts ACE2 Protein Suggest Malayan Pangolin as Intermediary Host](#) – Brazilian Journal of Microbiology (June 26)
- [The Mental Health Impact of the COVID-19 Epidemic on Immigrants and Racial and Ethnic Minorities](#) – QJM: Monthly Journal of the Association of Physicians (June 17)
- [Cultural Orientation, Power, Belief in Conspiracy Theories, and Intentions to Reduce the Spread of COVID-19](#) – The British Journal of Social Psychology (June 27)
- [A Potently Neutralizing Antibody Protects Mice against SARS-CoV-2 Infection](#) – Journal of Immunology (June 26)
- [Group Testing for Sars-Cov-2 to Enable Rapid Scale-Up of Testing and Real-Time Surveillance of Incidence](#) – The Journal of Infectious Diseases (June 27)
- [Segmenting Communities as Public Health Strategy: A View from the Social Sciences and Humanities](#) – Wellcome Open Research (May 26)
- [You Don't Have To Be Infected To Suffer: COVID-19 and Racial Disparities in Severe Maternal Morbidity and Mortality](#) – American Journal of Perinatology (June)
- [Rethinking COVID-19 Vulnerability: A Call for LGBTQ+ Im/Migrant Health Equity in the United States During and After a Pandemic](#) – Health Equity (May 27)
- [Emerging Prevention and Treatment Strategies to Control COVID-19](#) – Pathogens (June 23)
- [Community Health Centers and Covid-19 - Time for Congress to Act](#) – NEJM (June 26)
- [Ensuring Uptake of Vaccines against SARS-CoV-2](#) – NEJM (June 26)

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