



2019-nCoV Literature Situation Report (Lit Rep) September 10, 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

- **Adults with a positive SARS-CoV-2 PCR test were twice as likely to have reported dining at a restaurant than were those with negative SARS-CoV-2 test results in a study at 11 US medical centers.** [More](#)
- **Hospital-acquired COVID-19 was found to be very rare at a large academic medical center with rigorous infection control measures.** [More](#)
- **Hospitalized patients with COVID-19 who were taking high dose immunosuppressive medications were more than twice as likely to die compared to those not on immunosuppressive medications.** [More](#)
- **A seroprevalence survey found that 32% of asymptomatic residents of Chelsea, Massachusetts without a prior positive PCR test had anti-SARS-CoV-2 antibodies.** [More](#)
- **Self-reported intention to receive a hypothetical COVID-19 vaccine was more common among individuals who have a college education or greater, those of non-Hispanic white race/ethnicity, those ≥ 60 years, and among respondents who reported a liberal ideology.** [More](#)

Non-Pharmaceutical Interventions

- *[Pre-print, not peer reviewed]* Preliminary data from SwissCovid, the first Exposure Notification-based contact tracing app launched on June 25, shows that voluntary digital contact tracing has a similar effectiveness for identifying infected partners of COVID-19 index cases as classic contact tracing, provided that both the index case and the exposed contacts use the app. The authors conclude that the app can be used as a complementary tool for controlling the spread of SARS-CoV-2 within and across country borders.

Salath et al. (Sept 9, 2020). Early Evidence of Effectiveness of Digital Contact Tracing for SARS-CoV-2 in Switzerland. Pre-print downloaded Sep 10 from <https://doi.org/10.1101/2020.09.07.20189274>

Transmission

- Among more than 400 samples from 20 hospitalized patients with COVID-19, their hospital rooms (fomites and aerosols), and their close contacts, Binder et al. found low molecular prevalence and lack of viable SARS-CoV-2 virus on fomites and in air samples. The authors conclude that this implies low nosocomial risk of SARS-CoV-2 transmission through inanimate objects or aerosols. Among the human samples, there was 90% positive agreement between nasopharyngeal and salivary samples.



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Binder et al. (Sept 9, 2020). *Environmental and Aerosolized SARS-CoV-2 Among Hospitalized COVID-19 Patients*. *The Journal of Infectious Diseases*. <https://doi.org/10.1093/infdis/jiaa575>

- Adults with a positive SARS-CoV-2 RT-PCR test were approximately twice as likely to have reported dining at a restaurant than were those with a negative test in an investigation among outpatients seen at 11 US health care facilities. Close contact with persons with known COVID-19 was also associated with a positive SARS-CoV-2 test.

Fisher et al. (Sept 11, 2020). *Community and Close Contact Exposures Associated with COVID-19 Among Symptomatic Adults ≥18 Years in 11 Outpatient Health Care Facilities — United States, July 2020*. *MMWR*. <https://doi.org/10.15585/mmwr.mm6936a5>

Testing and Treatment

- Among asymptomatic residents of Chelsea, Massachusetts without a prior positive PCR test for SARS-CoV-2 (n=200), the seroprevalence of SARS-CoV-2 antibodies was 32% (18% IgM+IgG+, 9% IgM+IgG-, and 5% IgM-IgG+), representing a substantial burden of undocumented infection. Additionally, 51% of participants reported no symptoms in the preceding 4 weeks, of whom 25% (25/101) were seropositive, and 60% of these were IgM+IgG-.

Naranbhai et al. (Sept 9, 2020). *High Seroprevalence of Anti-SARS-CoV-2 Antibodies in Chelsea, Massachusetts*. *The Journal of Infectious Diseases*. <https://doi.org/10.1093/infdis/jiaa579>

Clinical Characteristics and Health Care Setting

- [Pre-print, not peer reviewed] Among hospitalized patients with COVID-19 (n=866) at Massachusetts General Hospital from March 11 to May 4, Hispanic patients were younger and had fewer comorbidities compared to non-Hispanic white patients. Despite comparable rates of ICU care and death, a greater proportion of Hispanic patients recovered by 14 days after presentation.

Bassett et al. (Sept 9, 2020). *Massachusetts General Hospital Covid-19 Registry Reveals Two Distinct Populations of Hospitalized Patients by Race and Ethnicity*. Pre-print downloaded Sep 10 from <https://doi.org/10.1101/2020.09.08.20190421>

- Transmission of SARS-CoV-2 within the hospital (nosocomial infection) was rare during the height of the pandemic in a cohort study of patients (n=9149) hospitalized over a 12-week period at a large academic medical center with rigorous infection control measures. Only 2% (12/697) of hospitalized COVID-19 patients first tested positive on hospital day 3 or later. Of these, only 1 case was deemed to be hospital acquired, most likely from a presymptomatic spouse who was visiting daily and diagnosed with COVID-19 before visitor restrictions and masking were implemented. Eleven of 8,379 (0.1%) patients with non-COVID-19-related hospitalizations tested positive within 14 days of hospital discharge and only 1 case was determined likely to be hospital acquired, albeit with no known exposures.

Rhee et al. (Sept 9, 2020). *Incidence of Nosocomial COVID-19 in Patients Hospitalized at a Large US Academic Medical Center*. *JAMA Network Open*.

<https://doi.org/10.1001/jamanetworkopen.2020.20498>

- Dandachi et al. found that the severe clinical outcomes of ICU admission, mechanical ventilation, and death occurred commonly in patients with both HIV and COVID-19 (n=286) enrolled from inpatient and outpatient health facilities in the US and three international sites. The risk for poor outcomes was higher in older patients, those with comorbidities (chronic lung disease,

hypertension), and lower CD4 cell counts, despite HIV viral suppression. Within 30 days of positive SARS-CoV-2 testing, 57% of patients were hospitalized and 17% required ICU admission. Overall, 9% of patients died.

Dandachi et al. (Sept 9, 2020). Characteristics, Comorbidities, and Outcomes in a Multicenter Registry of Patients with HIV and Coronavirus Disease-19. Clinical Infectious Diseases.
<https://doi.org/10.1093/cid/ciaa1339>

- In a cohort study of 981 confirmed COVID-19 patients consecutively hospitalized at a large North West London hospital between March 12 and April 15, taking high dose immunosuppressive medications, such as for autoimmune disease or solid organ transplant, was associated with significantly higher mortality rates, supporting the current UK government's early isolation ("shielding") policy for these individuals. During the follow-up period, 36% of study patients died. The immunosuppressed cohort (n=31) had significantly higher mortality rates (aHR=2.1, 95%CI 1.2-3.6).

Vaid et al. (Sept 9, 2020). Clinical Characteristics and Outcomes of Immunosuppressed Patients Hospitalized with COVID-19: Experience from London. Journal of Internal Medicine.
<https://pubmed.ncbi.nlm.nih.gov/32902028>

Mental Health and Personal Impact

- Among a sample of US adults (n=565), personal experiences related to the diagnosis of COVID-19, death of an acquaintance, and COVID-19 associated stress were associated with a greatly elevated risk of emotional disorder, indicating that the COVID-19 pandemic may result in increased demand for mental health services. COVID-19 experiences were consistently associated with higher odds of probable anxiety and depression diagnoses (ORs ≥ 3.0). COVID-19 associated stress was associated with anxiety, depression, health anxiety, and functional impairment.

Gallagher et al. (Aug 29, 2020). The Impact of Covid-19 Experiences and Associated Stress on Anxiety, Depression, and Functional Impairment in American Adults. Cognitive Therapy and Research. <https://doi.org/10.1007/s10608-020-10143-y>

- [Pre-print, not peer reviewed] In a survey of Australians aged >18 years who were employed in a paid job prior to the COVID-19 pandemic (n=2,603), the loss of work during the pandemic was associated with mental and physical health problems, and the association was moderated by social interactions and financial resources. Poor mental health was more common than poor physical health. The odds of high psychological distress (aOR=5.43-8.36), poor mental (aOR=1.92-4.53), and physical health (aOR=1.93-3.90) were increased in those reporting fewer social interactions or financial resources.

Griffiths et al. (Sept 9, 2020). The Impact of Work Loss on Mental and Physical Health during the COVID-19 Pandemic Findings from a Prospective Cohort Study. Pre-print downloaded Sept 10 from <https://doi.org/10.1101/2020.09.06.20189514>

Public Health Policy and Practice

- [Pre-print, not peer reviewed] A cross-sectional survey of US adults (n=1000) collected in May 2020 found that nearly 50% of respondents either planned not to receive a COVID-19 vaccine or were unsure, signaling potential problems with vaccine uptake. Higher likelihood of intention to receive the vaccine versus uncertainty and refusal was more common among respondents with a college

education or greater, those of non-Hispanic white racial-ethnic identity, those older than age 60, and more liberal (versus conservative) ideology.

Carpiano et al. (Sept 9, 2020). Demographic Differences in US Adult Intentions to Receive a Potential Coronavirus Vaccine and Implications for Ongoing Study. Pre-print downloaded Sept 10 from <https://doi.org/10.1101/2020.09.07.20190058>

- Public health efforts in response to the COVID-19 pandemic were followed by a sustained increase in calls to the Regional Center for Poison Control and Prevention serving Massachusetts and Rhode Island (MARI PCC) regarding exposure to household cleaners. Misinformation on social media was associated with intermittent spikes in calls. Overall, calls significantly increased during the study period by 34% as compared to the previous 8 years, mostly reporting unintentional ingestions with no serious effects. The daily volume of tweets and retweets was significantly correlated with daily call rates to MARI PCC for the surrounding 7-10 days.

Chary et al. (Sept 9, 2020). Geospatial Correlation between COVID-19 Health Misinformation and Poisoning with Household Cleaners in the Greater Boston Area. Clinical Toxicology.

<https://doi.org/10.1080/15563650.2020.1811297>

- By June 30, 2020, because of concerns about COVID-19, an estimated 41% of US adults (n=4975) had delayed or avoided medical care, including urgent or emergency care (12%) and routine care (32%). Avoidance of urgent or emergency care was more prevalent among unpaid caregivers for adults, persons with underlying medical conditions, Black adults, Hispanic adults, young adults, and persons with disabilities.

Czeisler et al. (Sept 11, 2020). Delay or Avoidance of Medical Care Because of COVID-19–Related Concerns — United States, June 2020. MMWR. <https://doi.org/10.15585/mmwr.mm6936a4>

- An analysis of the Behavioral Risk Factor Surveillance System found high prevalence of medical conditions that increase risk for severe COVID-19 illness among home health aides, other health care support workers, and nursing home, trucking, and transit industry workers, all of whom may have increased risk of SARS-CoV-2 exposure through their work. The authors recommend prioritizing health care access and exposure controls for all essential workers, and particularly those at high risk because of underlying medical conditions.

Silver et al. (Sept 11, 2020). Prevalence of Underlying Medical Conditions Among Selected Essential Critical Infrastructure Workers — Behavioral Risk Factor Surveillance System, 31 States, 2017–2018. MMWR. <https://doi.org/10.15585/mmwr.mm6936a3>

Other Resources and Commentaries

- [Schools Are Not Islands Balancing COVID-19 Risk and Educational Benefits Using Structural and Temporal Countermeasures](#) – medRxiv (Sept 10)
- [Regardless of Age, Obesity and Hypertension Increase Risks With COVID-19](#) – JAMA Internal Medicine (Sept 9)
- [An Analysis of Government Communication in the United States During the COVID-19 Pandemic: Recommendations for Effective Government Health Risk Communication](#) – World Medical & Health Policy (Aug 27)
- [Measuring Mobility to Monitor Travel and Physical Distancing Interventions: A Common Framework for Mobile Phone Data Analysis](#) – The Lancet Digital Health (Sept 1)
- [Trained Innate Immunity, Epigenetics, and Covid-19](#) – New England Journal of Medicine (Sept 10)

- [Clinical Outcomes of Critically Ill Patients with COVID-19 by Race](#) – medRxiv (Sept 9)
- [Age-Adjusted Risk Factors Associated with Mortality and Mechanical Ventilation Utilization Amongst COVID-19 Hospitalizations-a Systematic Review and Meta-Analysis](#) – SN Comprehensive Clinical Medicine (Aug 29)
- [Obesity and Hypertension in the Time of COVID-19](#) – JAMA (Sept 9)
- [Audio Interview: Guidelines for Covid-19 Vaccine Development](#) – The New England Journal of Medicine (Sept 10)
- [Prison Population Reductions and COVID-19: A Latent Profile Analysis Synthesizing Recent Evidence from the Texas State Prison System](#) – medRxiv (Sept 10)
- [“Immune Boosting” in the Time of COVID: Selling Immunity on Instagram](#) – Allergy, Asthma, and Clinical Immunology (Sept 3)
- [The Emergence of SARS-CoV-2 in Europe and North America](#) – Science (Sept 10)
- [COVID-19 Transmission Dynamics and Effectiveness of Public Health Interventions in New York City during the 2020 Spring Pandemic Wave](#) – medRxiv (Sept 9)

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