



2019-nCoV Literature Situation Report (Lit Rep) September 9, 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

- **Universal masking and universal SARS-CoV-2 testing for patients at admission decreased high risk exposures to SARS-CoV-2 among healthcare workers by 68% and 77%. [More](#)**
- **People experiencing homelessness in Atlanta, Georgia who were living in shelters had higher SARS-CoV-2 prevalence compared to those living unsheltered (2% vs. 0.5%). Subsequent testing in shelters found a decline in prevalence, indicating that facility-wide testing and isolation could interrupt SARS-CoV-2 transmission. [More](#)**
- **A meta-analysis of 142 studies including 49,048 hospitalized COVID-19 patients found that acute kidney injury was associated with 4.6-fold increased mortality. [More](#)**
- **Young adults (18-34 years) who were hospitalized with COVID-19 in US hospitals experienced substantial rates of adverse outcomes, which were more common among those with morbid obesity, hypertension, or diabetes. [More](#)**

Non-Pharmaceutical Interventions

- Implementation of universal masking and universal SARS-CoV-2 testing at admission at an academic referral medical center in the Southeastern US dramatically decreased high risk exposures to SARS-CoV-2 (e.g. exposures without appropriate personal protective equipment) for healthcare workers. Universal masking decreased the per patient day rate of high risk exposures by 68% and universal testing further decreased those exposures by 77%.

Walker et al. (Sept 8, 2020). Decreasing High Risk Exposures for Healthcare-Workers through Universal Masking and Universal SARS-CoV-2 Testing upon Entry to a Tertiary Care Facility. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1358>

Transmission

- In Atlanta, Georgia, people experiencing homelessness who were living in shelters had higher SARS-CoV-2 prevalence compared with those living unsheltered (2% vs. 0.5%). These findings were based on a survey of 2,860 individuals at 24 shelters and 9 unsheltered outreach events undergoing SARS-CoV-2 testing (April 7-May 6, 2020). Prevalence by shelter ranged from 0% to 28%. Repeat testing 3-4 weeks later at 4 shelters documented decreased SARS-CoV-2 prevalence (0%-4%). The authors suggest that facility-wide testing in congregate settings for identification and isolation of COVID-19 cases is an important strategy to interrupt SARS-CoV-2 transmission.

Yoon et al. (Sept 8, 2020). COVID-19 Prevalence among People Experiencing Homelessness and Homelessness Service Staff during Early Community Transmission in Atlanta, Georgia, April-May 2020. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1340>



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Testing and Treatment

- Use of non-steroidal anti-inflammatory drugs (NSAIDs) in patients with SARS-CoV-2 infection was not associated with 30-day mortality, hospitalization, ICU admission, mechanical ventilation, or renal replacement therapy in a study of 9,236 SARS-CoV-2-positive Danish residents, of whom 3% filled an NSAID prescription. [EDITORIAL NOTE: A summary of a pre-print version of this manuscript appeared in the Lit Rep on June 2]

Lund et al. (Sept 8, 2020). *Adverse Outcomes and Mortality in Users of Non-Steroidal Anti-Inflammatory Drugs Who Tested Positive for SARS-CoV-2: A Danish Nationwide Cohort Study*. *PLOS Medicine*. <https://doi.org/10.1371/journal.pmed.1003308>

- An ultra-sensitive assay can detect SARS-CoV-2 S1 subunit and nucleocapsid antigens in plasma and saliva of COVID-19 patients, with higher concentrations associated with ICU admission and intubation within one day. The authors state that while these antigens have been detected previously in nasopharyngeal swab specimens, this is the first report of their detection in plasma.

Ogata et al. (Sept 8, 2020). *Ultra-Sensitive Serial Profiling of SARS-CoV-2 Antigens and Antibodies in Plasma to Understand Disease Progression in COVID-19 Patients with Severe Disease*. *Clinical Chemistry*. <https://doi.org/10.1093/clinchem/hvaa213>

Clinical Characteristics and Health Care Setting

- Young adults age 18 to 34 years who were hospitalized with COVID-19 in the US (n=3,222) experienced substantial rates of adverse outcomes, including 21% who required intensive care, 10% who required mechanical ventilation, and 3% who died. Morbid obesity, hypertension, and diabetes were common among hospitalized young adults with COVID-19 and were associated with 1.5 to 2.3-fold increased risks of death or mechanical ventilation. These data were collected and de-identified in a database that includes 1,030 US hospitals and healthcare systems.

Cunningham et al. (Sept 9, 2020). *Clinical Outcomes in Young US Adults Hospitalized With COVID-19*. *JAMA Internal Medicine*. <https://doi.org/10.1001/jamainternmed.2020.5313>

- US children with COVID-19 or seasonal influenza had similar rates of hospitalization, intensive care unit admission, and mechanical ventilator use. Song et al. found that among 315 children with laboratory-confirmed COVID-19 and 1,402 children with laboratory-confirmed influenza A or B there was no difference in the level of hospitalization (17% vs 21%), intensive care unit admission (6% vs 7%), or use of mechanical ventilators (3% vs. 2%). More patients with COVID-19 than with influenza were age 15 years or older (37% vs. 6%) or had underlying medical conditions (65% vs 42%). Patients hospitalized with COVID-19 reported more clinical symptoms at the time of diagnosis than patients with seasonal influenza.

Song et al. (Sept 8, 2020). *Comparison of Clinical Features of COVID-19 vs Seasonal Influenza A and B in US Children*. *JAMA Network Open*.

<https://doi.org/10.1001/jamanetworkopen.2020.20495>

- A meta-analysis of 142 studies (49,048 hospitalized COVID-19 patients) reported a pooled incidence of acute kidney injury (AKI) of 29% (95%CI 20%-40%) in the US and Europe (20 studies) and 6% (95%CI 4%-7%) in China (62 studies). Overall AKI was associated with 4.6-fold increased mortality.

Fu et al. (Sept 2, 2020). *Acute Kidney Injury and Kidney Replacement Therapy in COVID-19: A Systematic Review and Meta-Analysis*. *Clinical Kidney Journal*.

<https://doi.org/10.1093/ckj/sfaa160>

- Healthcare personnel who had non-aerosol-generating contact with COVID-19 patients were more likely to be infected with SARS-CoV-2 (aOR 1.4, 95%CI 1.0-1.9). The proper use of appropriate PPE was associated with lower risk of infection. These findings were based on an online survey of 1,130 healthcare personnel (244 cases with laboratory-confirmed COVID-19, 22%) from 67 countries.
Lentz et al. (Sept 9, 2020). Assessing COVID-19 Transmission to Healthcare Personnel: The Global ACT-HCP Case-Control Study. Infection Control and Hospital Epidemiology.
<https://doi.org/10.1017/ice.2020.455>
- A study among 131 patients hospitalized with COVID-19 in Wuhan, China (median age 64, IQR 56-71) found that the neutrophil-to-lymphocyte ratio (NLR) at admission was higher (13.9 vs. 2.0) among non-survivors (n=12) when compared to survivors (n=111). The using a NLR of 3.39 or higher was had a sensitivity of 100% and a specificity of 84% for predicting mortality.
Wang et al. (Sept 9, 2020). Ratios of Neutrophil-to-Lymphocyte and Platelet-to-Lymphocyte Predict All-Cause Mortality in Inpatients with Coronavirus Disease 2019 (COVID-19): A Retrospective Cohort Study in A Single Medical Center. Epidemiology and Infection.
<https://doi.org/10.1017/S0950268820002071>

Mental Health and Personal Impact

- Adults in the US (n=3,052) survey in April 2020 and who were physically active prior to CsCOVID-19 reported reductions in physical activity (mean decrease 32%) and increases in sitting and screen time (20%-40%) associated with COVID-19 public health restrictions. Activity levels were unchanged among previously inactive participants. No longer meeting physical activity guidelines and increased screen time were associated with worse depression, loneliness, and stress. Self-isolation/quarantine was associated with higher depressive and anxiety symptoms compared to social distancing.
Meyer et al. (Sept 5, 2020). Changes in Physical Activity and Sedentary Behavior in Response to COVID-19 and Their Associations with Mental Health in 3052 US Adults. International Journal of Environmental Research and Public Health. <https://doi.org/10.3390/ijerph17186469>

Public Health Policy and Practice

- US counties with the highest fraction of Black residents received \$126 more COVID-19 relief funding per resident (\$506 vs. \$380, p<0.001) than other counties. However, for a given level of relief funding, disproportionately Black counties had significantly higher COVID-19 burden and worse hospital finances.
- The authors conclude that the method used to allocate relief funding, which includes prior hospital revenue, should align funding more closely with measures of need.
Kakani et al. (Sept 8, 2020). Allocation of COVID-19 Relief Funding to Disproportionately Black Counties. JAMA. <https://doi.org/10.1001/jama.2020.14978>
- Between February 1 to August 22, 2020, COVID-19 mortality data from CDC showed that across all elder age groups (55-64, 65-74, 75-84, 85+), Latino adults had lower age-specific death rates for non-COVID-19 causes of death (RR 0.78 to 0.81) and higher age-specific death rates for COVID-19 deaths compared to non-Latino White adults (RR 1.6 to 6.0).
Sáenz and Garcia. (Sept 8, 2020). The Disproportionate Impact of COVID-19 on Older Latino Mortality: The Rapidly Diminishing Latino Paradox. The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences. <https://doi.org/10.1093/geronb/gbaa158>

Other Resources and Commentaries

- [Face Masks are Beneficial Regardless of the Level of Infection in the Fight Against COVID-19](#) – Disaster Medicine and Public Health Preparedness (Sept 9)
- [COVID-19 Precautions Helped Limit Cases Linked to Milwaukee Primary](#) – JAMA (Sept 8)
- [Recommendations for Prevention and Control of Influenza in Children, 2020-2021](#) – Pediatrics (Sept 1)
- [The Mental Health Impact of the Covid-19 Pandemic on Healthcare Workers, and Interventions to Help Them: A Rapid Systematic Review](#) – Psychiatry Research (Sept 1)
- [Testing for SARS-CoV-2 \(COVID-19\): A General Review](#) – Rhode Island Medical Journal (Sept 4)
- [Factors Associated with Adherence to Self-Isolation and Lockdown Measures in the UK: A Cross-Sectional Survey](#) – Public Health (Sept 6)
- [Escalation of Sleep Disturbances amid the COVID-19 Pandemic: A Cross-Sectional International Study](#) – Journal of Clinical Sleep Medicine (Sept 9)
- [Nasal Disinfection for the Prevention and Control of COVID-19: A Scoping Review on Potential Chemo-Preventive Agents](#) – International Journal of Hygiene and Environmental Health (Aug 18)

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