



2019-nCoV Literature Situation Report (Lit Rep)

August 13, 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

- **The mean daily COVID-19 incidence rate decreased 4 days after implementation of statewide physical distancing measures in the US, with a decrease of 1% per day, according to a time series analysis. COVID-19-attributed mortality rates decreased 7 days after measures were implemented by 2% per day.** [More](#)
- **A survey of US adults found that 41% reported an adverse mental or behavioral health condition related to the COVID-19 pandemic, with younger adults, racial/ethnic minorities, essential workers, and unpaid adult caregivers reporting worse mental health outcomes.** [More](#)
- **A survey of older adults in Chicago with one or more chronic conditions found that 70% had awareness of symptoms and preventive actions for COVID-19, but only 38% reported social distancing themselves and only 29% reported obtaining prescription medication to prepare for the outbreak.** [More](#)
- **There were 4.2-fold more total deaths in New York City during the first 2 months of the COVID-19 outbreak compared to the same period in 2017-2019, which was considerably higher than the 2.8-fold increase during the peak of the 1918 H1N1 influenza pandemic.** [More](#)

Non-Pharmaceutical Interventions

- Siedner et al. reported the mean daily COVID-19 incidence rate decreased beginning 4 days after implementation of statewide social distancing measures in the US by 1% per day. The COVID-19-attributed mortality rate decreased beginning 7 days after implementation by 2% per day. The authors emphasize caution in interpreting these results due to potential bias resulting from the aggregate nature of the ecological data, potential confounding by contemporaneous changes, and spillover effects from neighboring states.
Siedner et al. (Aug 11, 2020). Social Distancing to Slow the US COVID-19 Epidemic: Longitudinal Pretest-Posttest Comparison Group Study. PLoS Medicine.
<https://doi.org/10.1371/journal.pmed.1003244>
- *[Preprint, not peer-reviewed]* A time series analysis showed a temporal relationship between the implementation of universal masking in healthcare facilities in Massachusetts and flattening of the incidence in healthcare settings, while incidence continued to increase in the general population. The first case of COVID-19 in the Massachusetts healthcare system was reported on March 17 and universal masking in the healthcare system was implemented on March 26. The peak COVID-19 incidence in the state was on April 20, and the state implemented public masking on May 6. The

authors conclude that this analysis provides additional evidence that universal masking contributed to reduced transmission of SARS-CoV-2 in healthcare facilities.

Lan et al. (Aug 13, 2020). Effects of Universal Masking on Massachusetts Healthcare Workers' COVID-19 Incidence. Pre-print downloaded Aug 13 from <https://doi.org/10.1101/2020.08.09.20171173>

- Camacho-Rivera et al. examined the associations between COVID-19 related preventive behaviors and chronic conditions using data from 2,190 US adult participants in the COVID-19 Household Impact Survey. They found that the prevalence of key COVID-19-related preventive measures was high in general (washing or sanitizing hands: 92%; maintaining 6-ft social distancing in public: 85%; avoiding public or crowded places: 80%; and wearing a face mask: 78%). Individuals with cardiometabolic disease, respiratory disease, obesity, allergies or immune conditions, were 1.4-to-2.9 times more likely to engage in such behaviors compared to individuals without those conditions.
Camacho-Rivera et al. (Aug 5, 2020). Associations Between Chronic Health Conditions and COVID-19 Preventive Behaviors Among a Nationally Representative Sample of U.S. Adults: An Analysis of the COVID Impact Survey. Health Equity. <https://doi.org/10.1089/heq.2020.0031>

Transmission

- Among 16 adult male patients who were hospitalized with confirmed SARS-CoV-2 infection in Turkey, no semen samples collected during the acute phase of infection tested positive for SARS-CoV-2 by PCR, providing a data point for exploring the risk of sexual transmission of SARS-CoV-2.
Kayaaslan et al. (Aug 11, 2020). Investigation of SARS-CoV-2 in Semen of Patients in the Acute Stage of COVID-19 Infection. Urologia Internationalis. <https://doi.org/10.1159/000510531>

Testing and Treatment

- Garnett et al. compared the performance of 6 swabs and 4 transport mediums commonly used in primary and tertiary health care settings for their efficacy in molecular detection of SARS-CoV-2. They reported no clinically significant difference in viral yield from different swabs and most transport mediums for the collection and detection of SARS-CoV-2, indicating swab and medium alternatives could be used if supplies are unavailable.
Garnett et al. (Aug 8, 2020). Comparison Analysis of Different Swabs and Transport Mediums Suitable for SARS-CoV-2 Testing Following Shortages. Journal of Virological Methods. <https://doi.org/10.1016/j.jviromet.2020.113947>

Clinical Characteristics and Health Care Setting

- During the early phase of the COVID-19 outbreak in New York City (61 days, March 11-May 11, 2020) the all-cause mortality rate (202 per 100 000 person-months) was 4.2-fold higher than corresponding periods in 2017-2019. In comparison, during the peak of the 1918 H1N1 influenza outbreak (61 days in October-November 1918), the all-cause mortality (287 per 100 000 person-months) was 2.8 times higher than corresponding periods in 1914-1917.
Faust et al. (Aug 13, 2020). Comparison of Estimated Excess Deaths in New York City During the COVID-19 and 1918 Influenza Pandemics. JAMA Network Open. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2769236>
- Shah et al. assessed the use of home pulse oximetry as a monitoring tool to identify the need for hospitalization among 77 patients with initially non-severe COVID-19 in Chicago, including 22 (29%)

who subsequently required hospitalization. They found that low resting oxygen saturation (SpO₂ <92%) was associated with an increased likelihood of hospitalization (RR=7.0, 95%CI 3.4-14.5). Half of patients who required hospitalization had SpO₂ < 92% without worsening symptoms.

Shah et al. (July 23, 2020). Novel Use of Home Pulse Oximetry Monitoring in COVID-19 Patients Discharged From the Emergency Department Identifies Need for Hospitalization. Academic Emergency Medicine. <https://doi.org/10.1111/acem.14053>

Mental Health and Personal Impact

- During June 24–30, 2020, 41% of a cohort of 5,470 US adults reported an adverse mental or behavioral health condition related to the COVID-19 pandemic, including anxiety or depression (31%), trauma-and stressor-related disorder symptoms (26%), started or increased substance use to cope with stress or emotions (13%), and seriously considered suicide in the preceding 30 days (11%). Younger adults, racial/ethnic minorities, essential workers, and unpaid adult caregivers reported having experienced worse mental health outcomes, increased substance use, and elevated suicidal ideation.

Czeisler et al. (Aug 14, 2020). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020. MMWR.

<https://doi.org/10.15585/mmwr.mm6932a1>

Modeling and Prediction

- *[Preprint, not peer-reviewed]* Liu et al. modeled the effectiveness of several non-pharmaceutical interventions (NPIs) in reducing SARS-CoV-2 transmission using publicly available data from 178 countries during January 1 - June 22, 2020. They reported 2 NPIs (school closure and internal movement restrictions) were significantly effective and that their effectiveness increased with greater intensity of the intervention. Three NPIs (workplace closure, income support, and debt/contract relief) were effective, but their effectiveness did not increase with greater intensity, and 2 NPIs (public events cancellation, restriction on gatherings) were effective only at their maximum intensity (i.e., restricting gathers of 10 people or more).

Liu et al. (Aug 12, 2020). The Impact of Non-Pharmaceutical Interventions on SARS-CoV-2 Transmission across 130 Countries and Territories. Pre-print downloaded Aug 13 from

<https://doi.org/10.1101/2020.08.11.20172643>

Public Health Policy and Practice

- Using data from WHO reports over 133 days, Chen et al. categorized 6 countries (China, South Korea, Japan, Italy, US, and Brazil) by their COVID-19 mitigation effectiveness (estimated from time to reach the peak of daily new confirmed cases and the maximum drop rate), and pandemic severity (estimated from prevalence and mortality). They report that South Korea and China had relatively higher mitigation effectiveness and lower pandemic severity, while the USA and Brazil had the opposite.

Chen et al. (Aug 6, 2020). An Examination on the Transmission of COVID-19 and the Effect of Response Strategies: A Comparative Analysis. International Journal of Environmental Research and Public Health. <https://doi.org/10.3390/ijerph17165687>

- O’Conor et al. conducted a survey among older adults who had at least one chronic condition (n=673, average age 63 years) to characterize their knowledge of COVID-19 symptoms, prevention strategies, and prevention behaviors. Although 70% of participants were aware of symptoms and

preventive actions, only 38% reported social distancing themselves, and only 29% reported obtaining prescription medication to prepare for the outbreak. The authors concluded that consistent messaging and the provision of tangible resources may improve future adherence to safety recommendations.

O'Connor et al. (Aug 11, 2020). Knowledge and Behaviors of Adults with Underlying Health Conditions During the Onset of the COVID-19 U.S. Outbreak: The Chicago COVID-19 Comorbidities Survey. Journal of Community Health.
<https://doi.org/10.1007/s10900-020-00906-9>

Other Resources and Commentaries

- [Defining COVID-19 As A Disaster Helps Guide Public Mental Health Policy](#) – Disaster Medicine and Public Health Preparedness (Aug 12)
- [A Negative COVID-19 Test Does Not Mean Recovery](#) – Nature (Aug 13)
- [The Build-Up of Droplet Aerosols Carrying the SARS-CoV-2 Coronavirus in Confined Spaces](#) – medRxiv (Aug 12)
- [K-12 Virtual Schooling, COVID-19, and Student Success](#) – JAMA Pediatrics (Aug 11)
- [Public Health Lessons Learned from Biases in Coronavirus Mortality Overestimation](#) – Disaster Medicine and Public Health Preparedness (Aug 12)
- [Russia's Fast-Track Coronavirus Vaccine Draws Outrage over Safety](#) – Nature (Aug 11)
- [The Microbial Coinfection in COVID-19](#) – Applied Microbiology and Biotechnology (Aug 11)
- [Filtration Efficiency, Effectiveness, and Availability of N95 Face Masks for COVID-19 Prevention](#) – JAMA Internal Medicine (Aug 11)
- [SARS-CoV-2 Seroprevalence Survey among 18000 Healthcare and Administrative Personnel at Hospitals Pre-Hospital Services and Specialist Practitioners in the Central Denmark Region](#) – medRxiv (Aug 12)
- [Universal Public Mask Wear during COVID-19 Pandemic: Rationale, Design and Acceptability](#) – Respiriology (Aug 6)
- [Obesity as a Contributor to Immunopathology in Pregnant and Non-Pregnant Adults with COVID-19](#) – American Journal of Reproductive Immunology (Aug 11)
- [Saliva Sampling for Diagnosing SARS-CoV-2 Infections in Symptomatic Patients and Asymptomatic Carriers](#) – Journal of Clinical Virology (Aug 5)
- [Prevalence of SARS-CoV-2 Antibodies in Health Care Personnel in the New York City Area](#) – JAMA (Aug 6)
- [Risk Factors of Severe Cases with COVID-19: A Meta-Analysis](#) – Epidemiology and Infection (Aug 12)
- [COVID-19 in Pregnancy: Placental and Neonatal Involvement](#) – American Journal of Reproductive Immunology (July 17)
- [Precision Public Health as a Key Tool in the COVID-19 Response](#) – JAMA (Aug 12)
- [Key Questions for Modelling COVID-19 Exit Strategies](#) – Proceedings of the Royal Society Biological Sciences (Aug 12)
- [Emerging Infectious Disease and the Challenges of Social Distancing in Human and Non-Human Animals](#) – Proceedings of the Royal Society Biological Sciences (Aug 12)

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