



2019-nCoV Literature Situation Report (Lit Rep)

August 24, 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

- **Jails and prisons in Massachusetts report an incidence of COVID-19 that is 2.9-fold higher than among the Massachusetts general population and 4.8-fold higher than the US general population.** [More](#)
- **There was no association between race or ethnicity and COVID-19-associated morbidity and mortality after controlling for demographic and clinical characteristics among a cohort of 379 COVID-19 patients admitted to nine Massachusetts hospitals.** [More](#)
- **An estimated 51% of teachers and 54% of adults living with school-aged children have definite or possible risk factors for severe COVID-19.** [More](#)

Transmission

- As of July 8, 1,032 confirmed cases of COVID-19 were reported among incarcerated individuals (n=664) and staff (n=368) in state and county jails and prisons in Massachusetts. The incidence of 44.3 cases per 1000 people is 2.9-fold higher than among the Massachusetts general population and 4.8-fold higher than the US general population.
- Many county facilities had lower testing rates than state facilities, and systems with higher testing rates had higher case rates, suggesting that testing is not adequate to estimate the true rates of infection.
- Cases appeared to decline among both incarcerated people and staff at county jails after 35% of the incarcerated population was released.
Jiménez et al. (Aug 21, 2020). Epidemiology of COVID-19 Among Incarcerated Individuals and Staff in Massachusetts Jails and Prisons. JAMA Network Open.
<https://doi.org/10.1001/jamanetworkopen.2020.18851>
- Bae et al. report a single incidence of possible transmission of COVID-19 during an evacuation flight from Italy to South Korea. After airport screening, 299 asymptomatic passengers took an 11-hour flight to South Korea, during which most of them wore N95 respirators at all times. They were tested for SARS-CoV-2 by RT-PCR on days 1 and 14 during their subsequent quarantine period.
- Six passengers tested positive when the plane arrived in South Korea. One patient tested positive on day 14. She reported wearing an N95 mask at all times on the flight except for when she used a toilet. She was seated three rows away from one of the patients who tested positive on day 1 and used the same toilet during the flight.

- All 18 members of the cabin crew and medical staff tested negative at both day 1 and day 14 of quarantine after the flight.
Bae et al. (Nov 2020). Asymptomatic Transmission of SARS-CoV-2 on Evacuation Flight. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2611.203353>
- Chamie et al. tested 3,953 people who live or work within a census block in San Francisco and found a point prevalence of SARS-CoV-2 infection (by PCR) of 2% and an estimated cumulative incidence (by antibody testing) of 6%. Among those with positive PCR tests, 95% were Latinx and 53% were asymptomatic when tested. Among those with positive antibody tests, 67% were Latinx. The census district has a population of 5,174 people, of whom 58% are Latinx, 34% are white/Caucasian, 5% are Asian/Pacific Islander, and 1% are Black/African American.
- Risk factors for recent infection were Latinx ethnicity, inability to shelter-in-place and maintain income, frontline service work, unemployment, and household income under \$50,000 per year.
[EDITORIAL NOTE: A related pre-print for this article was included in the Lit Rep on June 17th, 2020.]
Chamie et al. (Aug 21, 2020). SARS-CoV-2 Community Transmission Disproportionately Affects Latinx Population during Shelter-in-Place in San Francisco. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1234>

Testing and Treatment

- [pre-print, not peer-reviewed] Rogers et al. found no significant difference in the risk of in-hospital mortality among patients with severe COVID-19 who received convalescent plasma (n=64) and patients with severe COVID-19 (n=177) who did not receive it in an observational study.
- Although there was no significant difference in the overall rate of hospital discharge, a subgroup analysis of patients 65-years old or greater who received convalescent plasma showed a significantly higher hospital discharge rate among these patients (RR 1.86). Two patients who received convalescent plasma had probable transfusion reactions with symptoms that resolved within several hours after stopping the infusions.
Rogers et al. (Aug 21, 2020). Convalescent Plasma for Patients with Severe COVID-19 a Matched Cohort Study. Pre-print downloaded August 21 from <https://doi.org/10.1101/2020.08.18.20177402>

Vaccines and Immunity

- By analyzing data from birth cohorts born just before and just after a 1975 policy change that discontinued BCG vaccine in Sweden, de Chaisemartin et al. conclude that the vaccine does not have a protective effect against COVID-19. The authors assessed COVID-19 cases and hospitalizations among 1,026,304 people with the BCG vaccine and 1,018,544 people without the vaccine.
de Chaisemartin and de Chaisemartin. (Aug 23, 2020). BCG Vaccination in Infancy Does Not Protect against COVID-19. Evidence from a Natural Experiment in Sweden. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1223>

Clinical Characteristics and Health Care Setting

- [pre-print, not peer-reviewed] In a cohort of children and adolescents who had close contact with a person with known SARS-CoV-2 infection (n=382), SARS-CoV-2-infected children (n=293) were more likely to be Hispanic (88% vs 57%), less likely to have asthma (6% vs 17%), and more likely to have an infected sibling contact (49% vs 29%), compared to uninfected children (n=89). Children between 6 and 13 years were frequently asymptomatic (39%) and less likely to have respiratory symptoms

(29%) than younger children (48%) or adolescents (60%). Adolescents were more likely than children 6 to 13 to report flu-like (61% vs 39%), gastrointestinal (27% vs 9%), and sensory symptoms (42% vs 9%), and they had more prolonged symptom duration (7 days vs 4 days). No differences were found in nasopharyngeal viral load either by age or between symptomatic and asymptomatic children.

Hurst et al. (Aug 21, 2020). SARS-CoV-2 Infections Among Children in the Biospecimens from Respiratory Virus-Exposed Kids (BRAVE Kids) Study. Pre-print downloaded August 21 from <https://doi.org/10.1101/2020.08.18.20166835>

- Laboratory values indicating hyperinflammation were associated with poor outcomes among patients admitted to hospitals in the UK with COVID-19 (n=269). Patients with hyperinflammation (n=90) had a younger median age (66 vs 71 years) and lower median Charlson Comorbidity Index score (1 vs 2), but a higher proportion of them died during the 28-day follow-up period (40% vs 26%) than patients without hyperinflammation (n=179). Meeting the COVID-19-associated hyperinflammation criteria was significantly associated with the risk of next-day escalation of respiratory support or death (HR=2.24) after adjustment for age, sex, and comorbidity.

Manson et al. (Aug 2020). COVID-19-Associated Hyperinflammation and Escalation of Patient Care: A Retrospective Longitudinal Cohort Study. *The Lancet Rheumatology*. [https://doi.org/10.1016/S2665-9913\(20\)30275-7](https://doi.org/10.1016/S2665-9913(20)30275-7)

- McCarty et al. found no association between race or ethnicity and COVID-19-associated morbidity and mortality after controlling for demographic and clinical characteristics (including age, gender, obesity, cardiopulmonary comorbidities, hypertension, and diabetes) among a cohort of patients with COVID-19 (n=379) patients admitted to nine Massachusetts hospitals.

McCarty et al. (Aug 22, 2020). How Do Presenting Symptoms and Outcomes Differ by Race/Ethnicity Among Hospitalized Patients with COVID-19 Infection? Experience in Massachusetts. *Clinical Infectious Diseases*. <https://doi.org/10.1093/cid/ciaa1245>

Mental Health and Personal Impact

- Liu et al. report that the overall percentage of American adults experiencing COVID-19-associated discrimination more than doubled from 4% to 10% between March and April of 2020. In particular, non-Hispanic Black and Asian people were more likely to report experiencing discrimination, as were people who reported wearing facemasks in public.
- Experiencing COVID-19-associated discrimination was associated with higher levels of mental distress.

Liu et al. (July 2020). Perceived Discrimination and Mental Distress Amid the COVID-19 Pandemic: Evidence From the Understanding America Study. *American Journal of Preventive Medicine*. <https://doi.org/10.1016/j.amepre.2020.06.007>

- Among 502 students at three state-funded college campuses in Texas, 35% reported experiencing food insecurity in the previous 30 days. The strongest predictors of food insecurity were change in current living arrangement (OR = 2.7), being furloughed (OR = 3.2), laid off (OR = 4.1), or losing part-time work (OR = 5.7) due to the COVID-19 pandemic. These conditions were widespread, with over half of the students indicating that their employment status had been directly affected by the pandemic and 25% reporting a change in their living situation.

Owens et al. (Aug 20, 2020). Prevalence and Social Determinants of Food Insecurity among College Students during the COVID-19 Pandemic. *Nutrients*. <https://doi.org/10.3390/nu12092515>

Modeling and Prediction

- Bilinski et al. developed a model to examine the potential for contact tracing to reduce the spread of SARS-CoV-2 and tested scenarios including relaxation of physical distancing measures. When all individuals identified through contact tracing were tested and isolation and quarantine measures were at 90% efficacy, R_t was reduced by 46%. When community detection of symptomatic index cases and tracing of contacts were less than 50%, simulated contract tracing programs did not reduce R_t by more than 10%.

Bilinski et al. (Aug 21, 2020). Modeling Contact Tracing Strategies for COVID-19 in the Context of Relaxed Physical Distancing Measures. JAMA Network Open.

<https://doi.org/10.1001/jamanetworkopen.2020.19217>

- *[pre-print, not peer-reviewed]* Modeling by Quilty et al. found that for known contacts of COVID-19 cases, a quarantine period of at least ten days, combined with a PCR test on day nine, may yield similar results to a 14-day quarantine period in terms of averted transmission potential from secondary cases. Fourteen days of quarantine averted approximately 84% of transmission, while ten days and a test on day 9 averted approximately 81%. However, the model assumes a relatively short period (less than 4.5 days, on average) from the index case's symptom onset to tracing of secondary contacts.

Quilty et al. (Aug 24, 2020). Quarantine and Testing Strategies in Contact Tracing for SARS-CoV-2. Pre-print downloaded August 21 from <https://doi.org/10.1101/2020.08.21.20177808>

- Stutt et al. report modeling results that show that when facemasks are used universally, R_e can be reduced below one without the use of further mandated lockdowns or other non-pharmaceutical interventions. They conclude that lockdowns in combination with universal facemask use could substantially reduce R_e and prevent subsequent waves of disease transmission.

Stutt et al. (June 10, 2020). A Modelling Framework to Assess the Likely Effectiveness of Facemasks in Combination with 'Lock-down' in Managing the COVID-19 Pandemic. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences.

<https://doi.org/10.1098/rspa.2020.0376>

Public Health Policy and Practice

- A nationally representative survey in the US shows that 40% of teachers have “definite” risk factors for severe COVID-19 illness (according to CDC criteria) and 51% have “definite” or “possible” risk factors, based on results from the 2018 National Health Interview Survey. Among adults living with school-aged children, 41% have definite and 54% have definite or possible risk factors for severe illness.
- Adults living with children in low-income households are more likely to be at risk than those in higher-income households, as were those residing with Black children.

Gaffney et al. (Aug 21, 2020). Risk for Severe COVID-19 Illness Among Teachers and Adults Living With School-Aged Children. Annals of Internal Medicine. <https://doi.org/10.7326/M20-5413>

Other Resources and Commentaries

- [Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2020–21 Influenza Season](#) – MMWR (Aug 21)

- [Special Article: Mitigating Misinformation and Changing the Social Narrative](#) – The Journal of Allergy and Clinical Immunology: In Practice (Aug 18)
- [The COVID-19 Pandemic and Its Effect on Mental Health in USA – A Review with Some Coping Strategies](#) – Psychiatric Quarterly (Aug 23)
- [Novel Antiviral Strategies in the Treatment of COVID-19: A Review](#) – Microorganisms (Aug 13)
- [So Much at Stake: Ethical Tradeoffs in Accelerating SARSCoV-2 Vaccine Development](#) – Vaccine (Aug 11)
- [Letter from New Zealand](#) – Respiriology (Aug 22)
- [A Review on Remdesivir: A Possible Promising Agent for the Treatment of COVID-19](#) – Drug Design, Development and Therapy (Aug 6)
- [If Not Now, When? COVID-19, Lived Experience, and a Moment for Real Change](#) – The Lancet Psychiatry (Aug 18)
- [The Looming Storm: Blood and Cytokines in COVID-19](#) – Blood Reviews (Aug 18)
- [Natural Killer Cell Immunotypes Related to COVID-19 Disease Severity](#) – Science Immunology (Aug 21)
- [CD8+ T Cells Remember Same Bits of SARS-CoV-2](#) – Nature Reviews Immunology (Aug 21)
- [Efficacy of Remdesivir in COVID-19](#) – JAMA (Aug 21)
- [Leveraging Media and Health Communication Strategies to Overcome the COVID-19 Infodemic](#) – Journal of Public Health Policy (Aug 21)
- [“It’s Absurd”: Coronavirus Researcher Shut down by US Funding Agency Vents Frustrations](#) – Nature (Aug 21)
- [Testing for Coronavirus \(SARS-CoV-2\) Infection in Populations with Low Infection Prevalence the Largely Ignored Problem of False Positives and the Value of Repeat Testing](#) – medRxiv (Aug 22)
- [The Impact of Physical Activity on Psychological Health during Covid-19 Pandemic in Italy](#) – Heliyon (June 24)

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