

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 SARS-CoV-2 B.1.1.7 variant may be 65-82% more transmissible than earlier strains, according to a model fitted to COVID-19 data from the UK around the time of the variant's emergence. The authors estimate that COVID-19 related deaths and hospitalizations in England in 2021 could exceed those in 2020 in the absence of a substantial vaccine-rollout (2 million people fully vaccinated per week), even with stringent non-pharmaceutical interventions. [More](#)**
- **US youth soccer clubs reported a relatively low incidence of COVID-19 among their players, which was 49% lower than the incidence in children nationally over the same time period. [More](#)**
- **Cardiac screening among professional athletes with mild COVID-19 or asymptomatic SARS-CoV-2 infection identified fewer than 1% with imaging findings of cardiac inflammation that resulted in restriction from play. [More](#)**

Non-Pharmaceutical Interventions

- Implementation of nonpharmaceutical interventions (NPIs), measured as the percentage of electronic devices staying at home, led to a reduction in COVID-19 cases among US counties. Implementing one NPI was associated with a reduction of the daily COVID-19 growth rate by 176 cases per 100,000, with a stronger reduction in counties with a higher proportion of non-white residents (210 cases per 100,000). The strongest reduction in cases came from NPIs targeting the general population and businesses. The study also found that when NPI measures were lifted, NPIs targeting vulnerable populations were associated with the largest increase in cases. After counties lifted NPIs, benefit from reduced mobility outside of the home during the lockdown was short-lived. *Singh et al. (Mar 23, 2021). Impacts of Introducing and Lifting Nonpharmaceutical Interventions on COVID-19 Daily Growth Rate and Compliance in the United States. Proceedings of the National Academy of Sciences. <https://doi.org/10.1073/pnas.2021359118>*

Testing and Treatment

- In a randomized clinical trial among patients with symptomatic, laboratory-confirmed SARS-CoV-2 infection (n=400), a 5-day course of ivermectin did not significantly improve the time to symptom resolution compared with placebo (10 vs 12 days, HR=1.07, 95%CI: 0.87-1.32). Fifteen (7.5%) patients in the ivermectin group versus 5 (2.5%) in the placebo group discontinued treatment due to an adverse event.

López-Medina et al. (Mar 4, 2021). Effect of Ivermectin on Time to Resolution of Symptoms Among Adults With Mild COVID-19. JAMA. <https://doi.org/10.1001/jama.2021.3071>

- In a study of patients with COVID-19 using non-steroidal anti-inflammatory drugs (NSAIDs) or acetaminophen, there was no significant difference in all-cause mortality between the groups (4% vs 3%, HR=1.33, 95% CI: 0.63-2.88) after using propensity score matching to create comparable groups of treated and untreated patients (n=397 data pairs). There were also no significant differences in usage of mechanical ventilation between NSAID and acetaminophen groups (HR=1.60; 95% CI: 0.53–5.30). The authors suggest that NSAIDs may be used safely among COVID-19 patients.

Park et al. (Mar 3, 2021). Non-Steroidal Anti-Inflammatory Agent Use May Not Be Associated with Mortality of Coronavirus Disease 19. Scientific Reports. <https://doi.org/10.1038/s41598-021-84539-5>

Vaccines and Immunity

- A case series of 12 patients reported delayed large local reactions (skin redness, tenderness and swelling) in response to the Moderna vaccine within 4 to 11 days (median 8 days) after the first dose. In all cases, the reactions appeared near the injection site after complete resolution of the initial local and systemic symptoms associated with vaccination. 5 of the 12 reactions were 10 cm or larger in diameter. Most patients received treatment, and symptoms resolved within 2 to 11 days of onset (median 6 days). After receiving the second vaccine dose, 3 patients had recurrent reactions similar to the reaction after the first dose and 3 patients had lower grade reactions.

Blumenthal et al. (Mar 3, 2021). Delayed Large Local Reactions to MRNA-1273 Vaccine against SARS-CoV-2. New England Journal of Medicine. <https://doi.org/10.1056/NEJMc2102131>

Clinical Characteristics and Health Care Setting

- Cardiac screening among professional athletes recovering from mild COVID-19 or asymptomatic SARS-CoV-2 infection (n=789) identified 5 athletes (0.6%) with imaging evidence of inflammatory heart disease that resulted in restriction from play. Screening occurred a median of 19 days after a positive SARS-CoV-2 PCR test, though 202 (26%) athletes were diagnosed by antibody testing alone. 460 (58%) athletes had symptomatic COVID-19 and 329 (42%) were asymptomatic or minimally symptomatic. Screening procedures included a blood test for troponin, electrocardiogram, and resting echocardiogram. Athletes with abnormal screening tests were referred for additional testing, including cardiac magnetic resonance imaging and/or stress echocardiography.

Martinez et al. (Mar 4, 2021). Prevalence of Inflammatory Heart Disease Among Professional Athletes With Prior COVID-19 Infection Who Received Systematic Return-to-Play Cardiac Screening. JAMA Cardiology. <https://doi.org/10.1001/jamacardio.2021.0565>

- A cohort study in a hospital system in Delaware found an increase in rates of alcohol withdrawal (AW) during 2020 compared to 2019. Incidence in 2020 peaked at 1.8-fold higher than 2019 during the last 2 weeks of the stay-at-home order. AW rates remained elevated during the reopening period.

Sharma et al. (Mar 3, 2021). Alcohol Withdrawal Rates in Hospitalized Patients During the COVID-19 Pandemic. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2021.0422>

Modeling and Prediction

- A transmission model fitted to COVID-19 epidemiological data from the UK around the time of the emergence of the B.1.1.7 variant suggest that the variant is 65-82% more transmissible, but has similar risk of hospitalization, critical illness, and death compared to earlier variants. Simulations done while removing a more transmissible variant from the model could not reproduce the observed

epidemiological dynamics, indicating that changing contact patterns alone could not explain the rapid spread. The model also suggests that without a substantial vaccine-rollout (2 million people fully vaccinated per week), the number of COVID-19 cases, hospitalizations, ICU admissions and deaths in 2021 could exceed those in 2020, even with stringent non-pharmaceutical interventions in place. [EDITORIAL NOTE: A Pre-print related to this manuscript was summarized on December 28, 2020]

Davies et al. (Mar 3, 2021). Estimated Transmissibility and Impact of SARS-CoV-2 Lineage B.1.1.7 in England. *Science*. <https://doi.org/10.1126/science.abg3055>

- [Pre-print, not peer-reviewed] A modeling study suggests that student adherence to testing and isolation is likely to contribute more to reducing SARS-CoV-2 transmission than staggering return dates, based on data from the first term of the 2020/2021 academic year in universities in the UK. The authors suggest that in the presence of the more transmissible B.1.1.7 variant, frequent asymptomatic testing among all students (every 3 days) may be necessary to prevent major outbreaks.

Enright et al. (Feb 2021). Sars-Cov-2 Infection in Uk University Students: Lessons from September-December 2020 and Modelling Insights for Future Student Return. Pre-print downloaded Mar 4 from <https://www.newton.ac.uk/files/preprints/ni20004.pdf>

Public Health Policy and Practice

- A higher number of meatpacking plants and bakeries within a hospital reference region (HRR) or a metropolitan statistical area (MSA) was associated with a higher number of COVID-19 related deaths in the US through May 2020. After adjusting for demographics and socioeconomic characteristics, an additional plant within an HRR and MSA was associated with 21% and 16% more cases, respectively, and 7% more deaths within an HRR. An additional bakery establishment was associated with 14% and 9% more cases, and 13% and 10% more deaths within an HRR and MSA, respectively. In contrast, the addition of a skilled nursing facility or retirement and assisted living facility within an HRR and MSA was not associated with higher cases and deaths.

Asher et al. (Feb 24, 2021). Nursing Facilities, Food Manufacturing Plants and COVID-19 Cases and Deaths. *Economics Letters*. <https://doi.org/10.1016/j.econlet.2021.109800>

- Among 336 (57%) of the 591 eligible US soldiers deployed to New York City (NYC) between March to April 2020 at the height of the SARS-CoV-2 outbreak, prevalence of current or prior SARS-CoV-2 infection by late April was 1.7% (6 of 336) as determined by RT-PCR and antibody testing. Among those involved in direct patient care (n=223), prevalence was 0.9%. The authors suggest that the lower infection prevalence among soldiers deployed to NYC compared to other health care personnel cohorts was due to a well-designed and implemented infection control plan as well as adequate PPE.

Clifton et al. (Mar 5, 2021). SARS-CoV-2 Infection Risk Among Active Duty Military Members Deployed to a Field Hospital — New York City, April 2020. *MMWR*. <https://doi.org/10.15585/mmwr.mm7009a3>

- A retrospective seroprevalence study among children and adolescents <18 years of age in Mississippi suggests that cumulative incidence of SARS-CoV-2 infection may be more than 10-times higher than reported cases. 11% of 1,603 serum specimens collected for routine clinical testing from persons aged <18 years during May to September 2020 tested positive for SARS-CoV-2 antibodies, suggesting a population-weighted prevalence of 16%, which would correspond to 113,842 cases among young persons by mid-September. In contrast, only 8,993 confirmed or probable COVID-19 cases among young persons had been reported to the state Department of Health by August 2020.

Hobbs et al. (Mar 5, 2021). Estimated SARS-CoV-2 Seroprevalence Among Persons Aged <18 Years — Mississippi, May–September 2020. MMWR. <https://doi.org/10.15585/mmwr.mm7009a4>

- US youth soccer clubs reported a relatively low incidence of COVID-19 among their players in a retrospective cohort study of 119 US youth soccer clubs representing 91,007 players with a median duration of 73 days since restarting group activities. Soccer players reported a 49% lower incidence than children nationally over the same time period (254 vs 477 cases per 100,000). After adjusting for local COVID-19 incidence, there was no relationship between club COVID-19 incidence and phase of return. Clubs reported using a median of 8 COVID-19 risk reduction strategies. [EDITORIAL NOTE: A Pre-print related to this manuscript was summarized on September 28, 2020]
Watson et al. (Mar 3, 2021). COVID-19 in Youth Soccer During Summer 2020. Journal of Athletic Training. <https://doi.org/10.4085/610-20>

Other Resources and Commentaries

- [Vaccination plus Decarceration — Stopping Covid-19 in Jails and Prisons](#) – New England Journal of Medicine (Mar 3)
- [Ensuring Equitable Access to Vaccines for Refugees and Migrants during the COVID-19 Pandemic](#) – Bulletin of the World Health Organization (Jan 1)
- [Choices in a Crisis — Individual Preferences among SARS-CoV-2 Vaccines](#) – New England Journal of Medicine (Mar 3)
- [Covid-19: Schedule Breast Screening before Vaccine or 4 to 6 Weeks after to Avoid False Positives, Says Guidance](#) – BMJ (Mar 3)
- [Are COVID-19 Vaccines Safe in Pregnancy](#) – Nature Reviews Immunology (Mar 3)
- [The Potential Future of the COVID-19 Pandemic](#) – JAMA (Mar 3)
- [Rapid Antigen Screening of Asymptomatic People as a Public Health Tool to Combat COVID-19](#) – Canadian Medical Association Journal (Mar 2)
- [An Uncertain Public — Encouraging Acceptance of Covid-19 Vaccines](#) – New England Journal of Medicine (Mar 3)
- [COVID-19 Contact Tracing as an Enduringly Important Public Health Tool](#) – JAMA Health Forum (Mar 3)
- [Implementing Digital Passports for SARS-CoV-2 Immunization in Canada](#) – Canadian Medical Association Journal (Mar 2)
- [COVID Is Amplifying the Inadequacy of Research-Evaluation Processes](#) – Nature (Mar 3)

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