



2019-nCoV Literature Situation Report (Lit Rep)

October 2, 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

- **A study of viral genomes from Washington State indicated that the timing of mitigation strategies and repeated introductions of viral lineages into the state likely shaped the relative distribution of different lineages of SARS-CoV-2, rather than differences in transmissibility between variants of the virus.** [More](#)
- **Multisystem inflammatory syndrome (MIS), a complication of SARS-CoV-2 infection best described in children and adolescents, was also summarized in a case series of 27 adults.** [More](#)
- **The COVID-19 pandemic was associated with changes in primary care delivery during the second quarter of 2020, with visits decreasing overall and evaluations of blood pressure and cholesterol becoming less frequent.** [More](#)

Transmission

- *[Pre-print, not peer reviewed]* The 614G viral variant of SARS-CoV-2 has been hypothesized to be more transmissible than other strains, but findings from Washington State indicate that the increasing dominance of 614G in the state is more likely due to mobility patterns and the effect of control measures rather than viral transmissibility factors. Sequencing of 3,940 SARS-CoV-2 viral genomes from Washington State identified an increase over time in the proportion of infections due to the viral variant 614G and multiple introductions of this variant into Washington State. At an individual level, the study found evidence of higher viral loads in patients infected with the 614G variant; however, there was no evidence that the 614G variant affected clinical severity or patient outcomes.

Mueller et al. (Sept 30, 2020). Viral Genomes Reveal Patterns of the SARS-CoV-2 Outbreak in Washington State. Pre-print downloaded Oct 2 from <https://doi.org/10.1101/2020.09.30.20204230>

Testing and Treatment

- A rapid systematic review of both SARS-CoV-2 virus and antibody testing found a sensitivity of 87.8% for an initial RT-PCR test, while sensitivity of antibody tests ranged from 18.4% to 96.1% and specificity ranged from 88.9% to 100%. The authors note that estimates of diagnostic accuracy should be interpreted cautiously due to the lack of a clear reference standard to diagnose or rule out SARS-CoV-2 infection. Additionally, the authors found high or unclear risks of bias in the majority of studies, due to unclear methods of patient selection and testing or use of a reference standard that may not definitively diagnose COVID-19.

Jarrom et al. (Oct 1, 2020). Effectiveness of Tests to Detect the Presence of SARS-CoV-2 Virus, and Antibodies to SARS-CoV-2, to Inform COVID-19 Diagnosis: A Rapid Systematic Review. *BMJ Evidence-Based Medicine*. <https://doi.org/10.1136/bmjebm-2020-111511>

Vaccine and Immunity

- Nearly 75% of respondents in an online survey in France said they were likely to get a COVID-19 vaccine, and almost half indicated they might agree to participate in a clinical trial for the vaccine. The anonymous online survey indicated that healthcare workers were more likely to report that they would get vaccinated or participate in a clinical trial.

Detoc et al. (Sept 2020). Intention to Participate in a COVID-19 Vaccine Clinical Trial and to Get Vaccinated against COVID-19 in France during the Pandemic. *Vaccine*.

<https://doi.org/10.1016/j.vaccine.2020.09.041>

- A decrease in anti-RBD antibodies was observed over time in a study of individuals who had recovered from SARS-CoV-2 and who gave repeated blood donations. The study determined that the decline was not due to repeated donations, but rather that the anti-RBD response wanes over time of convalescence. The response was found to be relatively stable over the first 10 weeks after disease onset.

Perreault et al. (Oct 2020). Waning of SARS-CoV-2 RBD Antibodies in Longitudinal Convalescent Plasma Samples within Four Months after Symptom Onset. *Blood*.

<https://pubmed.ncbi.nlm.nih.gov/33001206>

Clinical Characteristics and Health Care Setting

- Morris et al. report 27 cases of multisystem inflammatory syndrome (MIS) associated with SARS-CoV-2 infection in adults that have been reported to CDC or published in the literature. MIS has been previously described among children and adolescents. MIS differs from typical manifestations of severe COVID-19 in that patients with MIS have minimal respiratory symptoms, hypoxemia, or radiographic abnormalities. The interval between infection and development of MIS in adults is unclear, adding to uncertainty regarding whether MIS in adults represents a manifestation of acute infection or a different, post-acute phenomenon. Antibody testing was required to identify SARS-CoV-2 infection in 9 of the 27 individuals.

Morris et al. (2020). Case Series of Multisystem Inflammatory Syndrome in Adults Associated with SARS-CoV-2 Infection — United Kingdom and United States, March – August 2020.

<https://dx.doi.org/10.15585/mmwr.mm6940e1>

- Among sailors who disembarked from the USS Theodore Roosevelt, 736 out of 4,085 (18%) were positive for SARS-CoV-2, of whom 590 (80%) were symptomatic. Six sailors were hospitalized and one died. Loss of taste and smell were reported commonly. The authors note that in confined areas with young essential workers, COVID-19 symptoms may not be distinguishable from other respiratory infections, and that asymptomatic spread may limit the effectiveness of symptom-based screening in the absence of testing, masking, and social distancing.

Alvarado et al. (Oct 1, 2020). Symptom Characterization and Outcomes of Sailors in Isolation After a COVID-19 Outbreak on a US Aircraft Carrier. *JAMA Network Open*.

<https://doi.org/10.1001/jamanetworkopen.2020.20981>

- A study of 28 hospitalized pediatric patients with COVID-19 in Turin, Italy found that all participants had nasal swabs negative for SARS-CoV-2 by PCR one month after discharge. Lung ultrasound findings had normalized within 5 weeks from hospital discharge in the majority of patients. 20 out of

24 patients developed anti-SARS-CoV-2 IgG at the follow-up visit at a mean of 35 days following discharge. No patients had manifestations of COVID-19-related sequelae 4 months after discharge. The authors highlight the need for an extended follow-up to determine the status of such patients in the long-term.

Denina et al. (Sept 29, 2020). Sequelae of COVID-19 in Hospitalized Children. Pediatric Infectious Disease Journal. <https://doi.org/10.1097/INF.0000000000002937>

- A retrospective study of 22 asymptomatic patients infected with SARS-CoV-2 and 234 symptomatic patients with COVID-19 who were hospitalized in Hangzhou, China found that asymptomatic patients tended to be younger (28 years vs. 48 years), female (77% vs 36%), and had fewer coexisting diseases (5% vs 38%) than symptomatic patients.

Dai et al. (Sept 19, 2020). Clinical Characteristics of Asymptomatic Patients with SARS-CoV-2 in Zhejiang: An Imperceptible Source of Infection. Canadian Respiratory Journal. <https://doi.org/10.1155/2020/2045341>

Mental Health and Personal Impact

- The proportion of patients treated for traumatic injuries caused by physical child abuse at the Johns Hopkins Children's Center during the COVID-19 pandemic was significantly higher compared to the previous two years. During the COVID-19 period, the median age of patients with injuries due to physical child abuse was 11.5 months, and 38% were male.

Kovler et al. (Sept 2020). Increased Proportion of Physical Child Abuse Injuries at a Level I Pediatric Trauma Center during the Covid-19 Pandemic. Child Abuse & Neglect. <https://doi.org/10.1016/j.chiabu.2020.104756>

Public Health Policy and Practice

- Social distancing policies in response to the COVID-19 pandemic in Singapore were temporally associated with a 37% increase in the number of dengue cases from baseline in a model controlling for climatic variables associated with mosquito abundance. The authors hypothesize that people may be more likely to be bitten in homes that are often naturally ventilated than in workplaces that are often air-conditioned. Increased time spent at home due to social distancing mandates may explain the finding.

Lim et al. (Sept 2020). Increased Dengue Transmissions in Singapore Attributable to SARS-CoV-2 Social Distancing Measures. The Journal of Infectious Diseases. <https://pubmed.ncbi.nlm.nih.gov/33000172/>

- There was a statistically significant increase in domestic violence assaults during the COVID-19 lockdown, particularly during the period after school closures, according to a retrospective review of all emergency department patients who presented to an American College of Surgeons verified rural level one trauma center. The increase in cases was observed particularly among white males, and most patients had suffered penetrating injuries inflicted by partners or nonfamily members.

Rhodes et al. (Aug 26, 2020). COVID-19 Resilience for Survival: Occurrence of Domestic Violence During Lockdown at a Rural American College of Surgeons Verified Level One Trauma Center. Cureus. <https://doi.org/10.7759/cureus.10059>

- Changes in influenza vaccination intentions for 2020 differed significantly between parents whose children received the 2019 influenza vaccine compared to those whose children did not. Among parents whose children did not receive the 2019 vaccine, 34% reported that the COVID-19 pandemic

made them less likely to have their child receive the 2020 vaccine. Among those whose children did receive the 2019 vaccine, this figure was 24%.

- Conversely, only 21% of parents whose children did not receive the 2019 vaccine reported that the COVID-19 pandemic made them more likely to have their child receive the 2020 vaccine, compared to 39% of the parents whose children did receive it. As a result, the COVID-19 pandemic alone may not be sufficient to encourage the uptake of the pediatric seasonal influenza vaccine.

Sokol and Grummon. (Sept 30, 2020). COVID-19 and Parent Intention to Vaccinate Their Children Against Influenza. Pediatrics. <https://doi.org/10.1542/peds.2020-022871>

- An evaluation of 10 different web-based COVID-19 symptom checkers found that the number of COVID-19 cases that were assessed correctly varied considerably between different checkers, with Symptoma performing the best. The study assessed 50 COVID-19 case reports along with 410 non-COVID-19 controls and found that only two symptom checkers achieved a good balance between sensitivity and specificity.

Munsch et al. (June 15, 2020). Diagnostic Accuracy of Web-Based COVID-19 Symptom Checkers: Comparison Study (Preprint). Journal of Medical Internet Research. <https://doi.org/10.2196/21299>

- A cross-sectional analysis of more than 125 million primary care visits between 2018 and 2020 indicated that the COVID-19 pandemic was associated with changes in the structure of primary care delivery during the second quarter of 2020, with the content of telemedicine visits differing from that of in-person visits. Primary care visits decreased by 21% during the second quarter of 2020 compared with the average quarterly visit volume from previous years, and evaluations of blood pressure and cholesterol decreased as a result of the less frequent assessment during telemedicine visits.

Alexander et al. (2020). Use and Content of Primary Care Office-Based vs Telemedicine Care Visits During the COVID-19 Pandemic in the US. <https://doi.org/10.1001/jamanetworkopen.2020.21476>

- An overview of Seattle's early experience with the COVID-19 response from 6 regional hospitals revealed coordination between many aspects of the healthcare system, including EMS, hospitals and health systems, outpatient networks, public health officials, and government leaders. Seattle implemented triage processes, continuously updated PPE guidelines and isolation measures, increased the availability of testing, and is continuously assessing treatment options for hospitalized patients.

Miller et al. (Apr 19, 2020). COVID-19 in Seattle—Early Lessons Learned. Journal of the American College of Emergency Physicians Open. <https://doi.org/10.1002/emp2.12064>

Other Resources and Commentaries

- [Antibodies at work in the time of severe acute respiratory syndrome coronavirus 2](#) – Cytotherapy (Aug 2020)
- [Emergency Mail-in Voting in Rhode Island: Protecting Civic Participation During COVID-19 and Beyond – Rhode Island Medical Journal](#) (Oct 2020)
- [Home Sample Self-Collection for COVID-19 Patients](#) – Advanced Biosystems (Oct 2020)
- [Unicorn Poo and Blessed Waters: COVID-19 Quackery and FDA Warning Letters](#) - Therapeutic Innovation & Regulatory Science (Oct 2020)
- [Ensuring Uptake of Vaccines against SARS-CoV-2](#) – New England Journal of Medicine (Oct 2020)

- [Concrete Recommendations for Cutting Through Misinformation During the COVID-19 Pandemic](#) - American Journal of Public Health (Oct 2020)
- [A plea to apply principles of quarantine ethics to prisoners and immigration detainees during the COVID-19 crisis](#) – Journal of Law and the Biosciences (Aug 2020)
- [Recent advances, approaches and challenges in targeting pathways for potential COVID-19 vaccines development](#) – Immunologic Research (Oct 2020)
- [Symptoms of a broken system: the gender gaps in COVID-19 decision-making](#) – BMJ Global Health (Oct 2020)
- [THE EFFECT OF COVID-19 ON RAMADAN FASTING IN PEOPLE WITH DIABETES IN EAST LONDON 2020: THE EAST LONDON DIABETES IN RAMADAN SURVEY](#) - Diabetes Research and Clinical Practice (Sept 2020)
- [Inner Workings: Researchers race to develop in-home testing for COVID-19, a potential game changer](#) - Proceedings of the National Academy of Sciences (Sept 2020)
- [CDC Deployments to State, Tribal, Local, and Territorial Health Departments for COVID-19 Emergency Public Health Response](#) - United States, January 21-July 25, 2020 – MMWR (Oct 2020)
- [Using implementation science to mitigate worsening health inequities in the United States during the COVID-19 pandemic](#) - International Journal for Equity in Health (Oct 2020)
- [USS Theodore Roosevelt, COVID-19, and Ships: Lessons Learned](#) – JAMA Network Open (Oct 2020)

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