



2019-nCoV Literature Situation Report (Lit Rep)

August 26, 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

- **Four overnight camps in Maine (1,022 attendees from 41 states) implemented multilayered prevention and mitigation strategies that were successful in identifying and isolating three asymptomatic persons with SARS-CoV-2 infection and in preventing secondary transmission.** [More](#)
- **Follow-up of patients with COVID-19 after hospital discharge shows that most patients still have persistent symptoms 110 days after being discharged, especially fatigue (55%) and shortness of breath (42%).** [More](#)
- **An assessment of strategies to prevent transmission of SARS-CoV-2 from infected travelers estimated that 80% of infected travelers are infectious upon arrival and that testing and 7-day quarantine could prevent 88% of secondary cases while 14-day quarantine without testing could prevent 84% of secondary cases.** [More](#)

Non-Pharmaceutical Interventions

- During the 2020 summer camp season, four overnight camps in Maine with 1,022 attendees from 41 states and international locations implemented a multilayered prevention and mitigation strategy that was successful in identifying and isolating three asymptomatic persons with SARS-CoV-2 infection and preventing secondary transmission. The four summer camps, which had similar sizes, session duration, and camper and staff member characteristics, opened with uniform non-pharmaceutical interventions, including pre-camp quarantine, pre- and post-arrival testing and symptom screening, cohorting, and physical distancing between cohorts. In addition, camps required use of face coverings, enhanced hygiene measures, enhanced cleaning and disinfecting, maximal outdoor programming, and early and rapid identification of infection and isolation.

Blaisdell et al. (Aug 26, 2020). Preventing and Mitigating SARS-CoV-2 Transmission — Four Overnight Camps, Maine, June–August 2020. MMWR.

https://www.cdc.gov/mmwr/volumes/69/wr/mm6935e1.htm?s_cid=mm6935e1_w

- An assessment of the risk of exportation of active SARS-CoV-2 cases from 153 countries with confirmed COVID-19 cases across six importation risk reduction strategies revealed that testing and isolation of those who test positive is the most effective strategy as long as good testing practices are in place. If testing is not feasible, the authors conclude that quarantining for a minimum of 14 days is recommended, with strict adherence measures in place. It was estimated that an average of 80% of infected travelers are infectious upon arrival. The authors estimate that a combination of testing and 7-day quarantining would prevent 88% of expected secondary cases. Quarantining for 7-



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days without testing would prevent 30% of expected secondary cases and quarantining for 14-day without testing would prevent 84% of secondary infections.

Dickens et al. (Aug 25, 2020). Strategies at Points of Entry to Reduce Importation Risk of COVID-19 Cases and Re-Open Travel. Journal of Travel Medicine. <https://doi.org/10.1093/jtm/taaa141>

Testing and Treatment

- *[pre-print, not peer-reviewed]* In a retrospective observational study of SARS-CoV-2 infected non-hospitalized patients (n=1,274), hydroxychloroquine exposure was associated with a decreased rate of hospitalization from COVID-19 in a 1,067 patient propensity score matched cohort (OR=0.53, 95%CI 0.29, 0.95). Among outpatients treated with hydroxychloroquine 22% with were hospitalized compared to 32% who did not receive hydroxychloroquine.

Ip et al. (Aug 25, 2020). Hydroxychloroquine in the Treatment of Outpatients with Mildly Symptomatic COVID-19 A Multi-Center Observational Study. Pre-print downloaded Aug 26 from <https://doi.org/10.1101/2020.08.20.20178772>

- Pasomsub et al. showed that pooling of either five or ten saliva samples for testing by SARS-CoV-2 RT-PCR did not compromise the detection of SARS-CoV-2.

Pasomsub et al. (Aug 25, 2020). Saliva Sample Pooling for the Detection of SARS-CoV-2. Journal of Medical Virology. <https://doi.org/10.1002/jmv.26460>

- *[pre-print, not peer-reviewed]* Comparing the diagnostic performance of nasopharyngeal swab (NS) to nasopharyngeal aspirate (NPA) for the detection of SARS-CoV-2 in children (n=300 paired samples), NS was found to have a low sensitivity in detecting SARS-CoV-2 in children when referred to NPA. The authors recommend that in children under 6 years of age, NS should be the preferred test whenever possible.

Di Pietro et al. (Aug 25, 2020). Diagnosis of SARS-CoV-2 in Children Accuracy of Nasopharyngeal Swab Compared to Nasopharyngeal Aspirate. Pre-print downloaded Aug 26 from <https://doi.org/10.1101/2020.08.20.20178012>

Clinical Characteristics and Health Care Setting

- In a single-center study assessing post-discharge persistent symptoms and health-related quality of life of COVID-19 patients (n=279), most patients still had persistent symptoms 110 days after being discharged, especially fatigue (55%) and shortness of breath (42%). Twenty percent of patients, primarily women, reported significant hair loss. Among the participants who were actively working prior to infection (n=56), 69% had gone back to work. Among the patients who engaged in regular sports activities prior to hospitalization (n=39), 72% have been able to resume physical activity, but at a lower level for 46% of them.

Garrigues et al. (Aug 26, 2020). Post-Discharge Persistent Symptoms and Health-Related Quality of Life after Hospitalization for COVID-19. Journal of Infection. <https://doi.org/10.1016/j.jinf.2020.08.029>

- Takahashi et al. found immune responses to SARS-CoV-2 infection differ by sex, suggesting potential factors that contribute to observed sex-based disparities in COVID-19. Among patients with moderate disease who had not received immunomodulatory medications (n=98), male patients had higher plasma levels of innate immune cytokines (e.g., IL-8 and IL-18), along with more robust induction of non-classical monocytes, whereas female patients mounted significantly more robust T

cell activation than male patients during SARS-CoV-2 infection, which was sustained in old age. A poor T cell response was negatively correlated with patients' age and was associated with worse disease outcome in male patients, but not in female patients. Conversely, higher levels of innate immune cytokines were associated with worse disease progression among female patients, but not among males.

Takahashi et al. (Aug 26, 2020). Sex Differences in Immune Responses That Underlie COVID-19 Disease Outcomes. Nature. <https://doi.org/10.1038/s41586-020-2700-3>

- Measurement of inflammatory markers among hospitalized COVID-19 patients (n=1,484) found that high serum IL-6, IL-8, and TNF- α levels at the time of hospitalization were strong and independent predictors of patient survival. IL-6 and TNF- α serum levels remained significant predictors of disease severity and death after adjustment for disease severity, common laboratory inflammation markers, hypoxia and other vital signs, demographics, and a range of comorbidities.

Del Valle et al. (Aug 24, 2020). An Inflammatory Cytokine Signature Predicts COVID-19 Severity and Survival. Nature Medicine. <https://doi.org/10.1038/s41591-020-1051-9>

Immunity and Vaccines

- Patients with severe COVID-19 (n=191) enrolled in the LOTUS China trial testing lopinavir for suppression of SARS-CoV-2 nearly all (>90%) developed IgM and IgG antibodies against nucleocapsid (N), spike protein (S), and the receptor-binding domain (RBD), and also produced neutralizing antibodies (NABs), but these did not correlate clearly with clinical outcomes. The levels of IgG antibodies against N, S and RBD were related to viral clearance. The NABs titers increased over time in both survivors and non-survivors and correlated with IgG antibodies against N, S and RBD, but NABs titers were not associated with viral load or survival, indicating that NABs might not be sufficient for the viral clearance of SARS-CoV-2 during disease progression.

Ren et al. (Aug 25, 2020). Antibody Responses and Clinical Outcomes in Adults Hospitalized with Severe COVID-19: A Post Hoc Analysis of LOTUS China Trial. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1247>

Modeling and Prediction

- *[pre-print, not peer-reviewed]* By combining phylogenetic data of 5,198 SARS-CoV-2 genomes with the timing of non-pharmaceutical interventions in 57 countries, Rasigade et al. found that home containment and education lockdown had the largest independent impacts on preventing transmission and were predicted to reduce the reproduction number by 35% and 26%, respectively. However, in contexts with a reproduction number >2, the authors conclude that no individual intervention is sufficient to stop the epidemic and increasingly stringent intervention combinations may be required.

Rasigade et al. (Aug 26, 2020). SARS-CoV-2 Phylodynamics Differentiates the Effectiveness of Non-Pharmaceutical Interventions. Pre-print downloaded Aug 26 from <https://doi.org/10.1101/2020.08.24.20180927>

Public Health Policy and Practice

- A UK-based retrospective cohort study including people tested for SARS-CoV-2 at university hospitals (n=4051) found that individuals from ethnic minority communities and larger households had an increased likelihood of SARS-CoV-2 PCR positivity. After adjustment, compared to people with white ethnicity, people with South Asian (aOR=2.4, 95%CI 2.0-3.0), Black (aOR=2.6, 95%CI 1.7-

3.8), and other (aOR=2.5, 95%CI 1.7-3.7) ethnicities were more likely to test positive, as were those with a larger estimated household size (aOR=1.01, 95%CI 1.0-1.1).

Martin et al. (July 17, 2020). Socio-Demographic Heterogeneity in the Prevalence of COVID-19 during Lockdown Is Associated with Ethnicity and Household Size: Results from an Observational Cohort Study. EClinicalMedicine. <https://doi.org/10.1016/j.eclinm.2020.100466>

Corrections

- Correction to: “Outcomes of Cardiovascular Magnetic Resonance Imaging in Patients Recently Recovered From Coronavirus Disease 2019 (COVID-19),” published in JAMA Cardiology on July 27, 2020 and summarized in the Lit Rep on July 30, 2020. The authors provided missing data from the original cardiovascular magnetic resonance images and corrected data entry errors, resulting in minor changes in the area under the receiver operating characteristic curve values in Table 2 and a change in the comparison of left ventricular mass index between participants with COVID-19 and healthy controls from a significant to non-significant association. In addition, the authors clarified in the Methods section that the cutoff values for abnormal native T1 and T2 values were based on previously derived sequence-specific standard deviations above the respective means in a healthy population and not based on the current healthy control group.

Nagel and Puntmann. (Aug 25, 2020). Errors in Statistical Numbers and Data in Study of Cardiovascular Magnetic Resonance Imaging in Patients Recently Recovered From COVID-19. JAMA Cardiology. <https://doi.org/10.1001/jamacardio.2020.4661>

Other Resources and Commentaries

- [The Disillusioned Comfort with COVID-19 and the Potential of Convalescent Plasma and Cell Therapy – Cell Transplantation](#) (Aug 25)
- [Sociodemographic Disparities in Knowledge Practices and Ability to Comply with COVID-19 Public Health Measures in Canada](#) – medRxiv (Aug 26)
- [Russian SARS-CoV-2 Vaccine](#) – BMJ (Clinical Research Ed.) (Aug 24)
- [The Unequal Scramble for Coronavirus Vaccines - by the Numbers](#) – Nature (Aug 24)
- [Not Just Antibodies: B Cells and T Cells Mediate Immunity to COVID-19](#) – Nature Reviews Immunology (Aug 24)
- [Two Metres or One: What Is the Evidence for Physical Distancing in Covid-19?](#) – BMJ (Clinical Research Ed.) (Aug 25)
- [The Effect of Area Deprivation on COVID-19 Risk in Louisiana](#) – medRxiv (Aug 26)
- [Policing in Pandemics: A Systematic Review and Best Practices for Police Response to COVID-19](#) – International Journal of Disaster Risk Reduction: IJDRR (Aug 20)
- [Science at Warp Speed: Medical Research, Publication, and Translation During the COVID-19 Pandemic](#) – Journal of Bioethical Inquiry (Aug 25)
- [Covid-19: US Approves Emergency Use of Convalescent Plasma despite Warnings over Lack of Evidence](#) – BMJ (Clinical Research Ed.) (Aug 25)
- [Can We Test Our Way Out of the COVID-19 Pandemic?](#) – Journal of Clinical Microbiology (Aug 25)
- [Lifting the Mask on Neurological Manifestations of COVID-19](#) – Nature Reviews Neurology (Aug 24)
- [Difficult to Determine Herd Immunity Threshold for COVID-19](#) – JAMA (Aug 25)
- [A Pediatric Infectious Disease Perspective of SARS-CoV-2 and COVID-19 in Children](#) – Journal of the Pediatric Infectious Diseases Society (Aug 25)

- [Cluster of SARS-CoV-2 Infections Linked to Music Clubs in Osaka, Japan: Asymptomatically Infected Persons Can Transmit the Virus as Soon as 2 Days after Infection](#) – The Journal of Infectious Diseases (Aug 25)
- [US Racial Inequality May Be as Deadly as COVID-19](#) – Proceedings of the National Academy of Sciences of the United States of America (Aug 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