

2019-nCoV Literature Situation Report (Lit Rep)

August 31, 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

- **Serious adverse events were rare (<1%) among a sample of more than 20,000 patients with COVID-19 who received a convalescent plasma transfusion.** [More](#)
- **Data from two studies, each with a single patient who had two infection episodes with genetically-distinct SARS-CoV-2 viruses, suggest that re-infection can occur.** [More](#) and [More](#)
- **The risk of acquiring SARS-CoV-2 from an infected health care worker was low in a study that tested patients exposed to 60 health care workers with unrecognized SARS-CoV-2 infection.** [More](#)
- **A majority (69%) of American adults are willing to get a COVID-19 vaccine.** [More](#)

Non-Pharmaceutical Interventions

- Self-reported individual behaviors to protect against SARS-CoV-2 exposure (e.g. wearing a facemask, maintaining physical distance from others, etc.) were nearly identical across white, African American, and Latino respondents in a nationally representative survey (n=1,395) of American households. Relative to white participants, African American and Latino participants were less likely to install an app that asked about COVID-19 symptoms or to use other technology to track potential exposure. Men were less likely to engage in prevention control measures than women, regardless of race.
- Saucedo et al. conclude that individual behaviors may not explain disparities in COVID-19 cases between racial and ethnic groups.

Saucedo et al. (Aug 29, 2020). Findings from a Probability-Based Survey of U.S. Households about Prevention Measures Based on Race, Ethnicity, and Age in Response to SARS-CoV-2. The Journal of Infectious Diseases. <https://doi.org/10.1093/infdis/jiaa554>

Testing and Treatment

- Among people retested for SARS-CoV-2 by RT-PCR within 7-days of a negative test (n=1,113), 2% had a positive result. Challener et al. conclude that the decision to repeat a SARS-CoV-2 PCR should involve the revised probability of COVID-19 based on the initial negative test, an assessment of whether an alternate specimen type may provide a higher diagnostic yield, and the impact on patient care if a laboratory diagnosis is not secured.

Challener et al. (Sept 2020). Low Utility of Repeat Real-Time PCR Testing for SARS-CoV-2 in Clinical Specimens. Mayo Clinic Proceedings. <https://pubmed.ncbi.nlm.nih.gov/32861337>

- Severe adverse events related to transfusion of convalescent plasma were rare (<1%) among a sample of 20,000 adult patients with severe or life-threatening lab-confirmed COVID-19 who received convalescent plasma treatment. A total of 141(<1%) people experienced serious adverse events (SAEs) related to the transfusion of convalescent plasma within four hours of the procedure and an additional 1,247 (6%) SAEs were reported within seven days of transfusion.

Joyner et al. (Sept 2020). Safety Update: COVID-19 Convalescent Plasma in 20,000 Hospitalized Patients. Mayo Clinic Proceedings. <https://pubmed.ncbi.nlm.nih.gov/32861333/>

- Wyllie et al. found that self-collected saliva specimens have similar sensitivity to clinician-collected nasopharyngeal specimens for the detection of SARS-CoV-2 during hospitalization. At 1 to 5 days after diagnosis by RT-PCR testing on nasopharyngeal swabs (n=70), 81% of the saliva samples were positive, compared to 71% of the nasopharyngeal swab samples.

Wyllie et al. (Aug 28, 2020). Saliva or Nasopharyngeal Swab Specimens for Detection of SARS-CoV-2. New England Journal of Medicine. <https://doi.org/10.1056/NEJMc2016359>

Vaccines and Immunity

- Tillett et al. found evidence of SARS-CoV-2 re-infection by identifying two viruses with distinct genetic sequences corresponding to two different periods of illness in the same person. The two positive specimens were collected 48 days apart from a patient in Nevada. In between collection of the two positive samples, the patient made a full symptomatic recovery and had two negative SARS-CoV-2 tests.
- The person involved was not using any immunosuppressive medications and does not have any significant immunological conditions.

Tillett et al. (Aug 27, 2020). Genomic Evidence for a Case of Reinfection with SARS-CoV-2. SSRN. <https://ssrn.com/abstract=3681489>

- A second episode of infection following recovery from an initial SARS-CoV-2 infection was observed in a patient from Hong Kong who was re-infected after traveling to Europe. The two episodes were confirmed by sequencing of the viral strains from each episode, which occurred 4.5 months apart. The patient was described as being in good health at the time of the initial infection. During the first episode, the patient presented with cough and sputum, sore throat, fever and headache for 3 days. The second episode was detected by routine entry screening upon return to Hong Kong and the patient was asymptomatic.

To et al. (Aug 25, 2020). COVID-19 Re-Infection by a Phylogenetically Distinct SARS-Coronavirus-2 Strain Confirmed by Whole Genome Sequencing. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1275>

- Examining both IgG and IgM against multiple SARS-CoV-2 antigens may better inform vaccine studies than focusing on a single antibody. Among patients with lab-confirmed COVID-19 infections, IgM levels increased early after symptom onset for those with either mild (n=15) or severe (n=28) COVID-19 disease, but IgG levels increased early only in those with severe disease.

Hu et al. (Dec 2020). Antibody Profiles According to Mild or Severe SARS-CoV-2 Infection, Atlanta, Georgia, USA, 2020. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2612.203334>

- Sixty-nine percent of respondents to an online survey targeting American adults (n=2,006) were willing to get a COVID-19 vaccine. Participants were more likely to get vaccinated if they thought their healthcare provider would recommend vaccination (RR=1.73) or if they described their political

affiliation as moderate (RR=1.09) or liberal (RR=1.14) compared to people who identified as conservative. Higher perceived susceptibility to COVID-19, perceived severity of the disease, and perceived efficacy of the vaccine were also positively associated with willingness to be vaccinated (RR=1.05, 1.08, and 1.46, respectively). Participants were less likely to be willing to get vaccinated if they were non-Latinx Black (RR=0.81) or reported a higher level of perceived potential vaccine harms (RR=0.95).

- Thirty percent of respondents were not willing to pay any amount out of pocket for a COVID-19 vaccine.

Reiter et al. (Aug 2020). Acceptability of a COVID-19 Vaccine among Adults in the United States: How Many People Would Get Vaccinated? Vaccine.

<https://doi.org/10.1016/j.vaccine.2020.08.043>

Clinical Characteristics and Health Care Setting

- Baker et al. found a low risk to patients of acquiring SARS-CoV-2 infection from an infected health care worker. They tested 226 of 238 patients exposed to SARS-CoV-2 by 60 infected health care workers at a large hospital in Boston between March 1 and June 10, 2020 and found that only 2 patients tested positive 14 days after exposure. Of these, one had an intimate household contact who also tested positive on the same day that they were exposed to the infected healthcare worker. The other was exposed to a physician for 30 minutes on the day the physician's symptoms began while neither the patient nor physician were masked.

Baker et al. (Aug 28, 2020). Low Risk of COVID-19 among Patients Exposed to Infected Healthcare Workers. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1269>

- Among 3,248 healthcare workers who regularly had direct patient contact in hospital-based units caring for adults with COVID-19, 194 (6%) had antibody evidence of previous SARS-CoV-2 infection. Of these, 29% were asymptomatic in the preceding months, and 69% had not previously received a diagnosis of SARS-CoV-2 infection.
- Prevalence of SARS-CoV-2 antibodies was lower among personnel who reported always wearing a face covering while caring for patients (6%), compared with those who did not (9%). Seropositivity was lower among women (5%) than among men (7%).

Self et al. Seroprevalence of SARS-CoV-2 Among Frontline Health Care Personnel in a Multistate Hospital Network — 13 Academic Medical Centers, April–June 2020. MMWR.

<https://doi.org/10.15585/mmwr.mm6935e2>

Mental Health and Personal Impact

- Among 1,390 Chinese citizens who responded to two online surveys taken during two successive waves of COVID-19 infections, fear and stress related to the pandemic decreased significantly, while depression increased significantly. Younger people, people with lower incomes, and people with a recent experience of quarantine due to known or suspected infection all were more likely to experience more severe depression during the second wave.

Duan et al. (Aug 2020). Impact of the COVID-19 Pandemic on Mental Health in the General Chinese Population: Changes, Predictors and Psychosocial Correlates. Psychiatry Research.

<https://doi.org/10.1016/j.psychres.2020.113396>

- A survey of people working in the energy sector in the US (n=333) suggested that women, people of color, people living in multi-generational households, and people with childcare concerns were less

willing to return to work in person during the continuing COVID-19 pandemic than others. One-fifth of workers surveyed preferred unpaid time off over returning, and a small percentage (5%) indicated that they would quit if forced to return in person. However, anticipated organizational provision of personal protective equipment for use on the job was positively associated with a willingness to return.

Liu et al. (Aug 26, 2020). I Don't Want to Go Back: Examining the Return to Physical Workspaces During COVID-19. Journal of Occupational & Environmental Medicine.

<https://pubmed.ncbi.nlm.nih.gov/32858556>

Other Resources and Commentaries

- [Surveillance Is Underestimating the Burden of the COVID-19 Pandemic](#) – Lancet (Aug 27)
- [The Impact of COVID-19 on Food Systems, Safety, and Security-a Symposium Report](#) – Annals of the New York Academy of Sciences (Aug 28)
- [U.S. Public Health Resources for COVID-19 That Are Relevant to Allergy/Immunology](#) – Annals of Allergy, Asthma & Immunology : Official Publication of the American College of Allergy, Asthma, & Immunology (Aug 24)
- [Revisiting Health Care System Data Priorities to Improve Population Health and Address Inequity](#) – JAMA Health Forum (Aug 28)
- [Ethics of Digital Contact Tracing and COVID-19: Who Is \(Not\) Free to Go?](#) – Ethics and Information Technology (Aug 24)
- [COVID-19 Vaccine Trials Should Seek Worthwhile Efficacy](#) – Lancet (Aug 27)
- [Stability of SARS-CoV-2 on Surfaces](#) – BioRxiv (Aug 30)
- [Geocode Maps Spotlight Disparities in Telehealth Utilization During the COVID-19 Pandemic in New York City](#) – Telemedicine and E-Health (Aug 26)
- [The Transformational Effects of COVID-19 on Medical Education](#) – JAMA (Aug 26)
- [COVID-19 Patients in Earlier Stages Exhaled Millions of SARS-CoV-2 per Hour](#) – Clinical Infectious Diseases (Aug 28)
- [Is There a Rationale for Using Bacillus Calmette–Guerin Vaccine in Coronavirus Infection?](#) – Viral Immunology (Aug 26)
- [Sharing the Sacrifice, Minimizing the Pain: Optimal Wage Reductions](#) – Economics Letters (Aug 25)
- [Universal Shelter-in-Place Versus Advanced Automated Contact Tracing and Targeted Isolation](#) – Mayo Clinic Proceedings (June 21)
- [The Impact of Influenza Vaccination on the COVID-19 Pandemic? Evidence and Lessons for Public Health Policies](#) – Vaccine (Aug 19)
- [Cellular Immune Response to SARS-CoV-2 Infection in Humans a Systematic Review](#) – medRxiv (Aug 29)

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