



2019-nCoV Literature Situation Report (Lit Rep) March 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

- 📄 **A study on transmission of SARS-CoV-2 in a public bath center in China found that transmission can still arise in an environment with high temperature and humidity.**
- 📄 **Further studies support the use of antibody testing in combination with RT-PCR testing for diagnosis of COVID-19.**
- 📄 **The CDC COVID-19 Response Team reported that 6% of patients with confirmed COVID-19 in the U.S. had underlying health conditions as of March 28.**
- 📄 **Diabetes may not increase the risk of SARS-Cov-2 infection, but can worsen the outcome of COVID-19.**

Transmission

- Based on this study of ocular abnormalities in 38 COVID-19 patients in China, the authors suggest that while the prevalence of SARS-CoV-2 in tears is low, it may be possible to transmit through the eyes.
Wu et al. (Mar 31, 2020). Characteristics of Ocular Findings of Patients with Coronavirus Disease 2109 in Hubei Province, China. JAMA Ophthalmol
<https://jamanetwork.com/journals/jamaophthalmology/fullarticle/2764083>
- While previous studies have demonstrated that the transmission rate of a virus is significantly weakened in environments with high temperature and humidity, a study on transmission of SARS-CoV-2 in a public bath center in China found that transmissibility showed no signs of weakening in warm and humid conditions.
Luo et al. (Mar 30, 2020). Possible Transmission of SARS-CoV-2 in a Public Bath Center in Huai'an, Jiangsu Province, China. JAMA.
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2763473>

Testing and Treatment

- The authors describe the essential role of ACE2 in vascular and organ protection functions, and postulate that protein-based vaccine and drugs enhancing ACE2 activity may become one of the most promising approaches for the treatment of COVID-19.

Cheng et al. (Mar 27, 2020). *Organ-protective Effect of Angiotension-converting Enzyme 2 and Its Effect on the Prognosis of COVID-19*. *Journ of Medical Virology*
<https://onlinelibrary.wiley.com/doi/abs/10.1002/jmv.25785>

- Several new studies demonstrate that antibody tests have important diagnostic value in addition to RNA tests.
- Ying et al found an IgG/IgM combined test was easy to use, had adequate sensitivity and specificity, short turnaround time and no specific requirements for additional equipment or skilled technicians. They suggest it could be used for mass testing in combination with RT-PCR testing.

Ying et al. (Mar 27, 2020). *Diagnostic Indexes of a Rapid IgG/IgM Combined Antibody Test for SARS-CoV-2*. Pre-print downloaded Mar 30 from <https://doi.org/10.1101/2020.03.26.20044883>

Clinical Characteristics and Health Care Setting

- In this MMWR the CDC COVID-19 Response Team provides preliminary estimates of the prevalence of underlying health conditions among COVID-19 patients in the U.S. Of the 122,653 cases reported by state and territories as of March 28, 6% had data on underlying health conditions. The most commonly reported conditions were diabetes mellitus, chronic lung disease and cardiovascular disease.
- Consistent with findings from China and Italy, higher percentages of patients with underlying conditions were admitted to the hospital and to an ICU than patients without reported underlying conditions.

Chow et al. (Mar 31, 2020). *Preliminary Estimates of the Prevalence of Selected Underlying Health Conditions Among Patients with Coronavirus Disease 2019—United States February 12-March 28, 2020*. *MMWR*. <https://www.cdc.gov/mmwr/volumes/69/wr/mm6913e2>

- This multicenter case study in the Seattle region describes the clinical outcomes of 24 critically ill COVID-19 patients admitted for acute hypoxemic respiratory failure. The majority had chronic illness prior to admission. Seventy-five percent of these patients needed mechanical ventilation and the case fatality rate was 50%. These findings highlight the importance of planning for mass critical care during the pandemic.
- Additionally, only half had fever at the time of hospital admission, which suggests that diagnostic algorithms that require fever for COVID-19 testing may delay diagnosis and treatment.

Bhatraju et al. (Mar 30, 2020). *Covid-19 in Critically Ill Patients in the Seattle Region—Case Series*. *NEJM*. <https://www.nejm.org/doi/full/10.1056/NEJMoa2004500>

- Fadini et al conducted a meta-analysis of 12 studies reporting the prevalence of diabetes among 2,108 Chinese patients with COVID-19, and its impact on disease progression and severity. Their findings suggest that diabetes may not increase the risk of SARS-CoV-2 infection, but can worsen the outcome of COVID-19.

Fadini et al. (Mar 28, 2020). *Prevalence and impact of diabetes among people infected with SARS-CoV-2*. *Journ of Endocrinol Investigation*. <https://doi.org/10.1007/s40618-020-01236-2>

- The authors outline selected studies on infants with COVID-19. They highlight that experts do not recommend use of antiviral agents for the treatment of non-severe pediatric cases due to lack of evidence regarding the effectiveness.

- They suggest children may be less susceptible to COVID-19 because they have a more innate immune response and healthier respiratory tracts due to lesser exposure to cigarette smoke and air pollutants compared to adults.

Abdelmaksoud et al. (Mar 27, 2020). COVID-19 in the Pediatric Population. Dermatol Therapy
<https://doi.org/10.1111/dth.13339>

Mental Health and Personal Impact

- This article describes the challenges of delivering dementia care during the pandemic and provides suggestions for care delivery. The authors emphasize the importance of multidisciplinary teams to provide physical protection from the virus, and mental health and psychosocial support for people living with dementia.

Wang et al. (Mar 30, 2020). Dementia care during COVID-19. Lancet
[https://doi.org/10.1016/S0140-6736\(20\)30755-8](https://doi.org/10.1016/S0140-6736(20)30755-8)

Other Resources and Commentaries

- [COVID-19 through the lens of gerontology](#) – Journals of Gerontology (Mar 31)
 - The authors discuss ethics in making decisions on withholding and rationing life-savings interventions based on age, and advise caution about the narrative linking the pandemic to older people.
- [Safety Recommendations for Evaluation and Surgery of the Head and Neck During the COVID-19 Pandemic](#)—JAMA Otolaryngology (Mar 31)
- [Surgical Considerations for Tracheostomy During the COVID-19 Pandemic](#)—JAMA (Mar 31)
- [Surviving Sepsis Campaign: guidelines on the management of critically ill adults with COVID-19](#)—Intensive Care Med (Mar 28)
 - The Surviving Sepsis Campaign COVID-19 panel issued 54 statements on: (1) infection control, (2) Lab diagnosis and specimens, (3) hemodynamic support, (4) ventilator support, and (5) COVID-19 therapy.
- [Audio Interview: Practical Measures to Help COVID-19](#)—NEJM (Mar 25)
 - This interview with Dr. Erin Rubin and Dr. Lindsey Baden discusses transmission and prevention of SARS-CoV-2, particularly among HCWs.
- [The Importance of Addressing Advanced Care Planning About Do-Not Resuscitate Orders During COVID-19](#)—JAMA (Mar 27)
 - Curtis et al propose an informed assent framework for decision-making about Do-Not-Resuscitate Orders when the clinician believes CPR is not indicated.