2019-nCoV Literature Situation Report (Lit Rep)
September 17, 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

- One-quarter of the pregnant women who were hospitalized with symptomatic COVID-19 had a severe disease course, including ICU admission, mechanical ventilation, or death. More

- A study among 105 pregnant women with COVID-19 reported the prevalence of pre-pregnancy obesity and gestational diabetes were significantly higher among those hospitalized for COVID-19–related illness than among those originally admitted for obstetric reasons. More

- An open-ended survey reported that 35% of participating US youth (n=950) experienced difficulty accessing essential resources due to COVID-19. More

- There was a 61% decrease in the number of respiratory specimens sent for influenza testing and a 98% decrease in test positivity during the COVID-19 pandemic period (March 1–May 16), which may indicate that COVID-19 mitigation measures can prevent influenza in the US, but the authors emphasize that influenza vaccination remains very important. More

Non-Pharmaceutical Interventions

- Wearing a facemask at all times when in contact with someone with COVID-19 was associated with a significantly lower risk of SARS-CoV-2 infection (aOR=0.23) among close contacts of people with COVID-19 in Thailand. The case-control study (211 cases and 839 controls) also found that maintaining physical distance (aOR=0.15), shorter duration of contact (aOR=0.24), and handwashing (aOR=0.33) were also independently associated with lower risk of infection. Doung-ngern et al. (Sept 14, 2020). Case-Control Study of Use of Personal Protective Measures and Risk for Severe Acute Respiratory Syndrome Coronavirus 2 Infection, Thailand. Emerging Infectious Diseases. https://doi.org/10.3201/eid2611.203003

- Eyeglass wearers were underrepresented among COVID-19 patients, providing some evidence that eyeglasses could provide some protection against SARS-CoV-2 infection. A cohort study of COVID-19 patients conducted in Suizhou, China found that 6% of patients wore eyeglasses for extended periods. In comparison, a previous study estimated that 32% of the general population wore glasses. Zeng et al. (Sept 16, 2020). Association of Daily Wear of Eyeglasses With Susceptibility to Coronavirus Disease 2019 Infection. JAMA Ophthalmology. https://doi.org/10.1001/jamaophthalmol.2020.3906
Transmission

- Many people with mild or asymptomatic COVID-19 (n=300) had prolonged SARS-CoV-2 RNA positivity with intermittent negative tests in a study in Korea. 23% had SARS-CoV-2 detected more than 3 weeks after the initial positive RT-PCR test, and 14% had positive results for more than 4 weeks. Overall, 37% (152/405) of negative results were positive or indeterminate in the next day's test, and 43% (123/283) of negative results were followed by a positive or indeterminate result within 3 weeks of diagnosis.


Testing and Treatment

- [Pre-print, not peer reviewed] Self-collected saline mouth rinse/gargle samples and saliva samples had a sensitivity of 98% (39/40) and 79% (26/33), respectively, compared to healthcare worker (HCW)-collected nasopharyngeal swab samples among 40 people with SARS-CoV-2. Both types of self-collected samples showed stable viral RNA detection after 2 days of storage at room temperature and demonstrated higher user acceptability ratings than HCW-collected NP swabs.


- Anti-SARS-CoV-2 antibody levels declined over 60 days among all 19 health care personnel in Tennessee who had anti–SARS-CoV-2 antibodies at baseline. In 11 (58%), antibody levels declined substantially enough that they tested negative at 60 days, while 8 (42%) remained seropositive after 60 days. The authors conclude that cross-sectional seroprevalence studies may underestimate rates of prior infections because antibodies may only be transiently detectable following infection.


Clinical Characteristics and Health Care Setting

- Among 598 pregnant women hospitalized with COVID-19 during March 1–August 22, 2020 in the US, 272 (45%) were symptomatic at admission, among whom 69 (25%) had severe illness during COVID-19-related hospitalizations, including ICU admissions (n=44), mechanical ventilation (n=23), and death (n=2). Ten women (7 symptomatic and 3 asymptomatic) experienced pregnancy losses.


- Prevalence of pre-pregnancy obesity and gestational diabetes were higher among pregnant women hospitalized for COVID-19–related illness than among women admitted for obstetric reasons and later found to have COVID-19 (44% vs. 31%, and 26% vs. 8%, respectively). These findings were among 105 pregnant women hospitalized with SARS-CoV-2 in the US from March 1–May 30, 2020.

• Older age (≥70 years) and a high serum lactate dehydrogenase (LDH) level significantly predicted mortality among hospitalized COVID-19 patients with diabetes in South Korea. Diabetes was present in 55 (17%) of 324 patients who were hospitalized with COVID-19 at two tertiary healthcare facilities. The mortality rate was much higher among patients with diabetes than among those without (20% vs 5%). The authors suggest that COVID-19 patients with diabetes should be closely considered at high risk of COVID-19 mortality.


• Female gender, being a nurse, reporting a shortage of ICU nurses and powered air-purifying respirators, as well as poor communication from supervisors were found to be positively associated with emotional distress or burnout among healthcare providers (n=2,700) for critically ill patients with COVID-19. These results were obtained from an electronic 41-question survey administered to health care workers in 77 countries during April 23-May 7, 2020. In addition, 16% of respondents reported limiting mechanical ventilation and 66% reported changes in cardiopulmonary resuscitation practices. The authors addressed a need for targeted interventions to support HCPs on the front lines.


• During April–June 2020, serial facility-wide testing at two Minnesota skilled nursing facilities (SNFs) identified COVID-19 cases among 64% of residents (N=259) and 33% of health care personnel (N=341). Genetic sequencing found facility-specific clustering of viral genomes from healthcare professionals’ and residents’ specimens, suggesting intra-facility transmission.

Taylor et al. (Sept 18, 2020). Serial Testing for SARS-CoV-2 and Virus Whole Genome Sequencing Inform Infection Risk at Two Skilled Nursing Facilities with COVID-19 Outbreaks — Minnesota, April–June 2020. MMWR. https://doi.org/10.15585/mmwr.mm6937a3

• There was a considerably higher proportion of positive SARS-CoV-2 test results among residents and staff in long-term care facilities when testing was conducted in response to an initial confirmed case of COVID-19 compared to preventive testing done before cases were detected.

• In Fulton County, Georgia, testing in response to an initial case in long-term care facilities (n=15) resulted in positive tests in 28% of residents and 7% of staff, increasing to 42% of residents and 12% of staff at 4-week follow-up testing. By comparison, when testing was conducted preventively (n=13 facilities), only 1% of residents and staff tested positive, increasing to 2% after 4 weeks. The authors conclude that proactive testing for residents and staff members might prevent large COVID-19 outbreaks through early identification and timely response. [EDITORIAL NOTE: A version of this article was previously summarized as a pre-print on July 2, 2020]

Telford et al. (Sept 18, 2020). Preventing COVID-19 Outbreaks in Long-Term Care Facilities Through Preemptive Testing of Residents and Staff Members — Fulton County, Georgia, March–May 2020. MMWR. https://doi.org/10.15585/mmwr.mm6937a4

Mental Health and Personal Impact

• A sizable proportion of US youth reported experiencing unmet needs and negative emotions due to COVID-19. An open-ended survey conducted in March 2020 among 950 US youth (age 14-24 years) found that 35% reported difficulty accessing or unavailability of essential resources (e.g., food, household supplies, cleaning supplies, money/work). One-fifth of respondents reported symptoms
of anxiety and depression. Commonly reported coping strategies included staying connected and maintaining positivity.


- Perceived vulnerability to COVID-19 was positively related to COVID-19-related worries, social isolation, and traumatic stress, and both COVID-19-related worries and social isolation were significant mediators of the relationship between perceived vulnerability to COVID-19 and traumatic stress. These associations were reported in a study including 747 US adults recruited through an online survey during March 26-April 6, 2020.


Public Health Policy and Practice

- There was a 61% decrease in the US in the number of respiratory specimens submitted for influenza testing during the COVID-19 pandemic (49,696 per week during September 29, 2019–February 29, 2020 vs. 19,537 during March 1–May 16, 2020). The rate of test positive decreased by 98% (19% vs. 0.3%) and has remained at historically low inter-seasonal levels (0.2% in 2020 vs. 1–2% in 2017-2019). The authors state that some of the mitigation measures for the COVID-19 pandemic might have a role in preventing influenza in future seasons, but that influenza vaccination of all persons aged ≥6 months remains especially important in the United States this fall and winter when SARS-CoV-2 and influenza virus might co-circulate.

Olsen et al. (Sept 18, 2020). Decreased Influenza Activity During the COVID-19 Pandemic — United States, Australia, Chile, and South Africa, 2020. MMWR. https://doi.org/10.15585/mmwr.mm6937a6

- An online survey (n=11,242) found that US adults used an average of 6.1 sources for COVID-19 information, with 91% using traditional media and 70% using mainstream media during March-April 2020. A larger number of sources used was reported by men (vs women), those aged 40-59 or ≥60 (vs 18-38 years), those not working (vs working), and Republican (vs Democrat). Respondents with higher educational attainment reported using fewer sources. Government websites were reported to be the largest individual information source (88%). Men and elder people (aged 40-59 and ≥60 years) were less likely to trust government websites.


Other Resources and Commentaries

- Researchers Highlight ‘Questionable’ Data in Russian Coronavirus Vaccine Trial Results – Nature (Sept 15)
- COVID-19 and the “Film Your Hospital” Conspiracy Theory: Social Network Analysis of Twitter Data. – Journal of Medical Internet Research (Sept 16)
- A Pandemic within a Pandemic — Intimate Partner Violence during Covid-19 – NEJM (Sept 16)
• **Eye Protection and the Risk of Coronavirus Disease 2019: Does Wearing Eye Protection Mitigate Risk in Public, Non-Health Care Settings?** – JAMA Ophthalmology (Sept 16)

• **Occupational Safety and Health Administration (OSHA) and Worker Safety During the COVID-19 Pandemic** – JAMA (Sept 16)

• **Suboptimal US Response to COVID-19 Despite Robust Capabilities and Resources** – JAMA (Sept 16)

• **Audio Interview: Operation Warp Speed and Covid-19 Therapeutics** – NEJM (Sept 17)

• **Investigating Whether Blood Type Is Linked to COVID-19 Risk** – JAMA (Sept 16)

*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*