



2019-nCoV Literature

Situation Report (Lit

Rep)

October 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

- **In some areas of the US, COVID-19 has likely become the leading cause of death among young adults aged 25-44 during substantial outbreaks, surpassing unintentional overdoses.** [More](#)
- **An outbreak of COVID-19 cases in Ireland was linked to 13 passengers on an international flight that resulted in 59 cases around the country. The proportion of infected contacts ranged from 10% to 18%.** [More](#)
- **Lifetime tobacco use was associated with mortality among veterans with COVID-19 after adjusting for age, sex, and endocrine and pulmonary disease.** [More](#)

Transmission

- An analysis of an outbreak of laboratory-confirmed cases of COVID-19 from across Ireland in the summer of 2020 linked the outbreak to an international flight. Onward transmission from 13 passenger cases on the flight resulted in a total of 59 cases in six of eight health regions in Ireland. Attack proportions among contacts were estimated to range from 10% to 18% despite low flight occupancy (17%) and well-spaced passenger seating on-board. The authors note that some individuals may have contracted the virus during the flight, while others were incubating or infected after the flight, and they recommend rapid contact tracing when a positive SARS-CoV-2 infection is linked to a flight.

Murphy et al. (Oct 22, 2020). A Large National Outbreak of COVID-19 Linked to Air Travel, Ireland, Summer 2020. Eurosurveillance. <https://doi.org/10.2807/1560-7917.ES.2020.25.42.2001624>

- Basile et al performed SARS-CoV-2 cell-based culture assays to assess infectivity of patients with COVID-19 and compare results to PCR. They found that viable SARS-CoV-2 was significantly more likely to be isolated from samples collected from inpatients and ICU patients compared with outpatients, and in samples with lower cycle threshold (i.e. higher viral load). The authors suggest that viral culture could be used to remove isolation requirements for patients who have clinically recovered from COVID-19 but remain positive for SARS-CoV-2 by PCR, but acknowledge a limitation that many clinical labs do not have capacity to safely culture SARS-CoV-2.

Basile et al. (Oct 24, 2020). Cell-Based Culture of SARS-CoV-2 Informs Infectivity and Safe de-Isolation Assessments during COVID-19. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1579>



- Results from a study in Leipzig, Germany during the first wave of SARS-CoV-2 infections did not find pollen to be a carrier for virus particles, nor that bioaerosol samples were infectious. While the authors note that aggregate findings from the study could suggest a correlation between *Corylus* pollen species and COVID-19 cases, none of the identified pollen samples carried or transmitted SARS-CoV-2. They further note that a low number of cases in Leipzig may make it difficult to detect virus in the air, and that different cities with higher infection rates may observe different results.

Dunker et al. (Oct 2020). No SARS-CoV-2 Detected in Air Samples (Pollen and Particulate Matter) in Leipzig during the First Spread. Science of The Total Environment. <https://doi.org/10.1016/j.scitotenv.2020.142881>

Geographic Spread

- A cross-sectional study of healthy adults in Wuhan, China (n=35,040) with no prior history of COVID-19 found that the seroprevalence was 3.9% among the study population in samples taken eight weeks following the peak infection period. Most individuals tested positive for SARS-CoV-2 IgG antibodies only, indicating previous infection. Seropositive prevalence was higher in urban areas than rural or suburban areas (4.4% vs 2.9%), and higher in women than men (4.4% vs 3.3%). It was also significantly higher among elderly individuals (9.2%) compared with other age groups.

Liu et al. (Oct 23, 2020). Seropositive Prevalence of Antibodies Against SARS-CoV-2 in Wuhan, China. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.25717>

Testing and Treatment

- *[conference abstract, not peer-reviewed]* Taking a two-week course of hydroxychloroquine did not prevent SARS-CoV-2 infection among household members of people with SARS-CoV-2 in a national, household-randomized trial in the US. Among participants who were SARS-CoV-2 negative at enrollment, there were 46 new infections among participants randomized to hydroxychloroquine (n=381) and 43 in the control participants (n=400)(aHR=0.99, 95% CI 0.64-1.52). There was no difference between groups in symptomatic COVID-19 or adverse event frequency.

Barnabas et al. (Oct 24, 2020). Efficacy of hydroxychloroquine for post-exposure prophylaxis to prevent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection: a blinded, randomized, controlled trial. <https://www.eventscribe.net/2020/IDWeek/fsPopup.asp?Mode=presInfo&PresentationID=798021>

Vaccines and Immunity

- Communities with a greater use of social media to organize offline political actions had more public concerns about vaccine safety in a cross-national analysis of social media and vaccine hesitancy. Additionally, foreign disinformation campaigns were found to be significantly associated with declining vaccination rates. The study found that a one-point shift upward in the five-point disinformation scale was associated with a 2% drop in mean vaccination coverage and a 15% increase in tweets containing negative content about vaccines. The study findings were not specific to SARS-CoV-2 vaccines, though the authors emphasize the importance of combating disinformation during the COVID-19 pandemic.

Wilson and Wiysonge. (Oct 2020). Social Media and Vaccine Hesitancy. BMJ Global Health. <https://gh.bmj.com/content/bmjgh/5/10/e004206.full.pdf>

Clinical Characteristics and Health Care Setting

- Veterans with COVID-19 who reported using tobacco at the time of their illness or at any time prior had a higher risk of mortality, even after controlling for other health and social factors. Other factors

positively related to the relative risk of death were older age, male sex, immunodeficiency, and endocrine and pulmonary diseases. Results were obtained from retrospective chart reviews of 440 veterans (81% African American/Black) who tested positive for SARS-CoV-2 at a large, southeastern Veterans Affairs hospital.

Raines et al. (Feb 2021). Correlates of Death among SARS-CoV-2 Positive Veterans: The Contribution of Lifetime Tobacco Use. Addictive Behaviors. <https://doi.org/10.1016/j.addbeh.2020.106692>

- An analysis of COVID-19 hospitalization data from the US found that 6% of adults hospitalized for COVID-19 were health care professionals, of whom 67% were expected to have direct patient contact and 36% were in nursing-related occupations. 90% of health care professionals hospitalized with COVID-19 had at least one underlying condition, of which obesity (73%), hypertension (41%), and diabetes (31%) were the most common.
- The authors note that COVID-19–associated illness among health care professionals has the potential to decrease the workforce capacity of the health care system.

Kambhampati et al. (Oct 26, 2020). COVID-19–Associated Hospitalizations Among Health Care Personnel — COVID-NET, 13 States, March 1–May 31, 2020. MMWR. <https://doi.org/10.15585/mmwr.mm6943e3>

- HIV-positive status was associated with an increased risk of day-28 mortality among patients hospitalized for COVID-19 in a study across more than 200 centers in the UK. Individuals presenting to the clinics who were HIV-positive were younger (median 56 versus 74 years) and had fewer comorbidities, more systemic symptoms and higher lymphocyte counts and C-reactive protein levels. Nearly 92% of HIV-positive participants were taking antiretroviral therapy. While the overall cumulative day-28 mortality was similar for HIV-positive and HIV-negative groups (27% vs. 32%), among individuals younger than 60, HIV-positive status was associated with greater mortality (21% vs. 10%), and mortality was higher among people with HIV after adjusting for age (aHR = 1.47).

Geretti et al. (Oct 23, 2020). Outcomes of COVID-19 Related Hospitalization among People with HIV in the ISARIC WHO Clinical Characterization Protocol (UK): A Prospective Observational Study. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1605>

- Results from a national cohort study in England indicated that type 2 diabetes may be an independent prognostic factor for death in people with severe COVID-19 requiring critical care treatment. Young people were found to have the greatest risk increase associated with type 2 diabetes. While patients with type 2 diabetes across all ages were at increased risk of death (aHR = 1.23), the relative mortality risk associated with type 2 diabetes decreased with higher age (age 18–49 years aHR = 1.50, age 50–64 years aHR = 1.29, and age ≥65 years aHR = 1.18).

Dennis et al. (Oct 23, 2020). Type 2 Diabetes and COVID-19–Related Mortality in the Critical Care Setting: A National Cohort Study in England, March–July 2020. Diabetes Care. <https://doi.org/10.2337/dc20-1444>

Mental Health and Personal Impact

- US parents experienced high levels of stressors and associated negative mental health effects during the COVID-19 pandemic. Survey responses from April 2020 from US parents of healthy children (n=300) and parents of children with chronic medical conditions (n=300) indicated that parents were moderately to highly stressed due to factors including school closures and job losses. Rates of clinical anxiety (45%) and depression (42%) were high. Parents of children with chronic conditions reported higher levels of stress and worse mental health, but did not differ from other parents in marital satisfaction, dealing with stress or interruptions in work, or schooling.

A.L. van Tilburg et al. (Oct 21, 2020). *High Levels of Stress Due to the SARS-CoV-2 Pandemic among Parents of Children with and without Chronic Conditions across the USA*. *Children*. <https://doi.org/10.3390/children7100193>

Public Health Policy and Practice

- A cross-sectional study using daily state-level data on COVID-19 cases, tests, and fatalities from March to May 2020 found that stay-at-home orders (SAHOs) were associated with reductions in cumulative COVID-19 case rates and subsequent fatality rates. Had no SAHOs been implemented, estimated cumulative case rates would have been more than 200% higher, and fatalities 22% higher. States with larger African American populations were associated with higher case rates and fatalities, and the authors highlight the need to address racial disparities during the pandemic.

Padalabalanarayanan et al. (Oct 23, 2020). Association of State Stay-at-Home Orders and State-Level African American Population With COVID-19 Case Rates. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.26010>

- *[Pre-print, not peer-reviewed]* In some areas of the US, COVID-19 has likely become the leading cause of death among young adults aged 25-44 during periods of substantial COVID-19 outbreaks, surpassing unintentional overdoses. An observational cohort study of all-cause mortality among adults age 25-44 during the COVID-19 pandemic in the US found that 14,155 more deaths occurred in this age group from March 1 to July 31 than during the same period of 2019, representing a 23% relative increase (incident rate ratio 1.23). In states including New York, New Jersey, Arkansas, Louisiana, New Mexico, Oklahoma, Texas, Arizona, California, Hawaii, and Nevada, COVID-19 deaths exceeded 2018 unintentional opioid overdose deaths during at least one month. A combined 2,450 COVID-19 deaths were recorded in these three regions during the pandemic period, compared to 2,445 opioid deaths during the same period of 2018.

Faust et al. (Oct 25, 2020). Mortality among Adults Ages 25-44 in the United States During the COVID-19 Pandemic. Pre-print downloaded Oct 26 from <https://doi.org/10.1101/2020.10.21.20217174>

Other Resources and Commentaries

- [Evidence synthesis communities in low-income and middle-income countries and the COVID-19 response](#) – The Lancet (Oct 2020)
- [Facial Masking for COVID-19](#) – New England Journal of Medicine (Oct 2020)
- [Research response to COVID-19 needed better coordination and collaboration: a living mapping of registered trials](#) – Journal of Clinical Epidemiology (Oct 2020)
- [Chemical disinfectants of COVID-19: An Overview](#) – Journal of Water and Health (Oct 2020)
- [The Use of Renin-Angiotensin-Aldosterone System \(RAAS\) Inhibitors is Associated with a Lower Risk of Mortality in Hypertensive COVID-19 Patients: A Systematic Review and Meta-Analysis](#) – Journal of Medical Virology (Oct 2020)
- [Factors Associated With Mental Health Disorders Among University Students in France Confined During the COVID-19 Pandemic](#) – JAMA Network Open (Oct 2020)
- [Rapid Antibody-Based COVID-19 Mass Surveillance: Relevance, Challenges, and Prospects in a Pandemic and Post-Pandemic World](#) – Journal of Clinical Medicine (Oct 2020)
- [The Race to Make COVID Antibody Therapies Cheaper and More Potent](#) – Nature (Oct 2020)
- [Hydroxychloroquine: A Comprehensive Review and its Controversial Role in Coronavirus Disease 2019](#) – Annals of Medicine (Oct 2020)

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