



2019-nCoV Literature

Situation Report (Lit

Rep)

December 16, 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

- **The COVID-19 pandemic was associated with substantial increases in all-cause mortality among US adults aged 25-44 years from March to July of 2020. In multiple regions, deaths due to COVID-19 in this age range were similar to or exceeded unintentional opioid deaths that occurred during corresponding months in 2018.** [More](#)
- **Analysis of data from geolocation-enabled cell phones demonstrated that a higher rate of shared connections between nursing homes (via shared staff and contractors) was associated with a larger number of reported COVID-19 cases.** [More](#)
- **Among residents of Maryland who identified as Black, the number of deaths due to suicide appeared to double during the COVID-19 pandemic compared to 2017-2019. Suicide deaths among white residents nearly halved during the same time period.** [More](#)
- **Neuroimaging from 38 children infected with SARS-CoV-2 in 8 countries found central nervous system abnormalities, including immune-mediated disseminated encephalomyelitis-like changes of the brain (n=16), myelitis (n=8), and neural enhancement (n=13).** [More](#)

Non-Pharmaceutical Interventions

- A study of the impacts of shelter-in-place policies in Texas found that the growth rate of COVID-19 cases and deaths decreased when a large percentage of the population stayed home. The greatest number of people sheltering occurred during the first week of the policy implementation, and steadily declined thereafter. The study did not find evidence that a top-down restrictive policy increased the number of people who practiced social distancing, and the authors suggest that shelter-in-place policies may be more effective at the local level.

Castaneda and Saygili. (Nov 26, 2020). The Effect of Shelter-in-Place Orders on Social Distancing and the Spread of the COVID-19 Pandemic: A Study of Texas. Frontiers in Public Health. <https://doi.org/10.3389/fpubh.2020.596607>

Transmission

- A higher degree of connectedness between nursing homes via shared staff and contractors was associated with reporting COVID-19 cases. A large-scale analysis of nursing home connections via shared staff and contractors that used smartphone geolocation data found that 5% of smartphone users who visited a nursing home for at least one hour also visited another facility during the 11-week study period following the nationwide restrictions on nursing home visitors implemented in March. The analysis indicated that on average, nursing homes share connections with 7.1 other



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facilities, and that the number and strength of connections between nursing homes, as well as the home's network centrality, were strongly predictive of the presence of COVID-19 cases after controlling for location, demographic variables, number of beds, and CMS quality ratings.

Chen et al. (Jan 2021). Nursing Home Staff Networks and COVID-19. Proceedings of the National Academy of Sciences of the United States of America. <https://www.pnas.org/content/118/1/e2015455118>

Vaccines and Immunity

- A study assessing the durability of neutralizing antibody responses (nAb) and factors to streamline plasma donor selection found that nAb titers correlated with COVID-19 severity (aOR=6.59), age (aOR=1.03 per year), and male sex (aOR=2.08). Functional levels declined over time and a small number of individuals (2.8%) who recovered from COVID-19 lacked adaptive immune responses. Of 250 people studied a mean of 67 days after symptom onset, 97% were seropositive on at least one assay.

Boonyaratanakornkit et al. (Dec 15, 2020). Clinical, Laboratory, and Temporal Predictors of Neutralizing Antibodies to SARS-CoV-2 among COVID-19 Convalescent Plasma Donor Candidates. Journal of Clinical Investigation. <https://doi.org/10.1172/JCI144930>

- A descriptive study of target populations for SARS-CoV-2 vaccination among member states of the WHO found that target population sizes vary by vaccination goal and geographic region. Europe has a high share of essential workers (63 million, 9%) and people with underlying conditions (266 million, 37%) who may be important to vaccinate to maintain societal function and reduce severe COVID-19 cases. Southeast Asia has a high proportion of healthy adults (775.5 million, 59%) that may be key targets for vaccination to reduce community transmission. The study highlights that based on a literature review, 68% of the global population would be willing to receive the vaccine, which translates to about 3.7 billion adults.

Wang et al. (Dec 15, 2020). Global, Regional, and National Estimates of Target Population Sizes for Covid-19 Vaccination: Descriptive Study. BMJ. <https://doi.org/10.1136/bmj.m4704>

- A retrospective observational study of sustained SARS-CoV-2 RT-PCR positivity in children found that of 989 pediatric patients who had tested positive, 172 had multiple subsequent tests over months, of whom 68 had two or more consecutive positive tests (median interval 14 days), and 27 of those 68 had sustained-positive status (median 26 days). In addition, four patients were suspected to have been reinfected, defined as testing positive within one to three weeks of testing negative.

Patwardhan. (Dec 10, 2020). Sustained Positivity and Reinfection With SARS-CoV-2 in Children: Does Quarantine/Isolation Period Need Reconsideration in a Pediatric Population? Cureus. <https://doi.org/10.7759/cureus.12012>

Clinical Characteristics and Health Care Setting

- A study of neuroimaging manifestations in 38 children from 8 countries identified acute- and delayed-phase SARS-CoV-2-related central nervous system abnormalities ranging from mild to severe. The most common imaging patterns observed were immune-mediated disseminated encephalomyelitis-like changes of the brain (n=16), myelitis (n=8), and neural enhancement (n=13). Splenic lesions (n=7) and myositis (n=4) were predominantly observed in children with multisystem inflammatory syndrome. While most children had favorable outcomes, fatal atypical CNS co-infections were observed in four previously health children.

Lindan et al. (Dec 16, 2020). Neuroimaging Manifestations in Children with SARS-CoV-2 Infection: A Multinational, Multicentre Collaborative Study. The Lancet Child & Adolescent Health. [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642\(20\)30362-X/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(20)30362-X/fulltext)

Mental Health and Personal Impact

- A study of suicide patterns in Maryland during the COVID-19 pandemic found that completed suicides approximately doubled in residents who identified as Black whereas completed suicides were approximately halved in white residents. The authors reached their conclusions by comparing medical examiner records from 2020 to records from 2017 to 2019. Population size did not change substantially between 2017 and 2019. The authors highlight the need for policy interventions and targeted resource allocation to mitigate disparities impacting Black residents.

Bray et al. (Dec 16, 2020). Racial Differences in Statewide Suicide Mortality Trends in Maryland During the Coronavirus Disease 2019 (COVID-19) Pandemic. JAMA Psychiatry. <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/10.1001/jamapsychiatry.2020.3938>

Public Health Policy and Practice

- The COVID-19 pandemic was associated with increases in all-cause mortality among US adults aged 25-44 from March to July of 2020. 38% of all-cause excess deaths in this age group were attributed directly to COVID-19, and while the remaining excess deaths are unexplained, the authors posit that inadequate SARS-CoV-2 testing likely contributed to the discrepancy. During surges in COVID-19 in HHS Region 2 (New York, New Jersey), the incident rate of all-cause mortality was increased by 130% relative to pre-pandemic levels and 80% of deaths were related to COVID-19. In Region 6 (Arkansas, Louisiana, New Mexico, Oklahoma, Texas) there was a 46% increase in the mortality rate and 48% were related to COVID-19. In Region 9 (Arizona, California, Hawaii, Nevada) there was a 47% increase in mortality and 40% were attributed to COVID-19. Deaths due to COVID-19 were similar to or exceeded unintentional opioid deaths that occurred during several corresponding months in 2018 in several regions.

Faust et al. (Dec 16, 2020). All-Cause Excess Mortality and COVID-19–Related Mortality Among US Adults Aged 25–44 Years, March–July 2020. JAMA. <https://jamanetwork.com/journals/jama/fullarticle/2774445>

Other Resources and Commentaries

- [Trust in Health Care in the Time of COVID-19](#) – JAMA (Dec 15 2020)
- [Maximizing the Uptake of a COVID-19 Vaccine in People With Severe Mental Illness](#) – JAMA Psychiatry (Dec 15 2020)
- [Changes in Outpatient Buprenorphine Dispensing During the COVID-19 Pandemic](#) – JAMA (Dec 15 2020)
- [Efficacy and safety of COVID-19 vaccines in older people](#) – Age and Ageing (Dec 2 2020)
- [A Global Infectious Disease Surveillance and Case-Tracking Model for COVID-19: An Implementation that is Designed on the Block-chain and HL7 FHIR International Patient Summary](#) – JMIR Medical Informatics (Dec 15 2020)
- [Addressing Health Disparities in the Rural United States: Advocacy as Caregiving among Community Health Workers and Promotores de Salud](#) – International Journal of Environmental Research and Public Health (Dec 10 2020)
- [Experts Discuss COVID-19: Vaccine Allocation, Placebo Groups, and More](#) – JAMA (Dec 15 2020)
- [Behavioral Immune System Responses to Coronavirus: A Reinforcement Sensitivity Theory Explanation of Conformity, Warmth Toward Others and Attitudes Toward Lockdown](#) – Frontiers in Psychology (26 Nov 2020)
- [Estimating the unknown: greater racial and ethnic disparities in COVID-19 burden after accounting for missing race and ethnicity data](#) – Epidemiology (Nov 2020)
- ["Why Couldn't I Go in To See Him?" Bereaved Families' Perceptions of End-of-Life Communication During COVID-19](#) – Journal of the American Geriatrics Society (Dec 2020)

- [A new kind of gatekeeper: The increasing prevalence of Advanced Practice Nurses as case managers in US hospitals](#) – Health (Dec 2020)
- [Treatment of Opioid Use Disorder Among Commercially Insured Patients in the Context of the COVID-19 Pandemic](#) – JAMA (Dec 15 2020)

Report prepared by the UW Alliance 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