



2019-nCoV Literature

Situation Report (Lit

Rep)

February 19, 2021

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

- **Monitoring of the U.S. vaccination effort using the Vaccine Adverse Events Reporting System indicates reassuring safety profiles for both the Pfizer and Moderna COVID-19 vaccines.** [More](#)
- **Provisional life expectancy at birth in the United States for the first six months of 2020 was the lowest level since 2006 among the total population. Non-Hispanic Blacks experienced the greatest decline in life expectancy, and life expectancy for the Hispanic population was the lowest recorded for this population since first estimates were produced in 2006.** [More](#)
- **A shorter quarantine protocol with testing at day 9 among contacts of students with confirmed COVID-19 reduced loss of instruction by 3,649 days (31%) compared to a conventional 14-day quarantine without testing.** [More](#)

Non-Pharmaceutical Interventions

- 46% of non-remote, non-health care workers used hazard controls to prevent COVID (e.g., physical barriers, masks, and other personal protective equipment). Although 56% of workers surveyed reported required use at work, higher-income workers were more likely to report required use and to use hazard controls than were lower-income workers. Among workers not using hazard controls, 8% were prohibited from using them, 15% could not obtain them, and 77% did not believe they were needed.

Billock et al. (Feb 19, 2021). Required and Voluntary Occupational Use of Hazard Controls for COVID-19 Prevention in Non-Health Care Workplaces - United States, June 2020. MMWR. Morbidity and Mortality Weekly Report. <https://doi.org/10.15585/mmwr.mm7007a5>

Testing and Treatment

- A study of people with confirmed SARS-CoV-2 infection suggests that self-collected oral fluid is significantly less sensitive for diagnosis than self-collected nasal-oropharyngeal specimens, especially after five days have passed since the onset of symptoms. Of the samples, which were matched by patient, 60 were concordantly negative, 45 concordantly positive, and 66 were discordant (63 nasal-OP pos/oral neg and 3 nasal-OP neg/oral pos). The SARS-CoV-2 RNA estimates, obtained using PCR, were generally higher in nasal-OP samples. The authors conclude that their data do not support the routine use of oral fluid collection for diagnosis of SARS-CoV-2 despite the greater ease of collection.



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Manabe et al. (Feb 1, 2021). Self-Collected Oral Fluid Saliva Is Insensitive Compared With Nasal-Oropharyngeal Swabs in the Detection of Severe Acute Respiratory Syndrome Coronavirus 2 in Outpatients. *Open Forum Infectious Diseases*. <https://doi.org/10.1093/ofid/ofaa648>

- A prospective multi-center study conducted in Spain found that the Panbio™ COVID-19 Ag Rapid Test Device, which tests for SARS-CoV-2 using nasopharyngeal swabs, has an overall sensitivity of 91% and specificity of 99%. Among the 128 asymptomatic participants who had close contact with a COVID-19 patient, there was full concordance in the 31 (24%) who were positive by RT-PCR and in the 97 that were negative.

Merino et al. (Feb 2021). Multicenter Evaluation of the Panbio™ COVID-19 Rapid Antigen-Detection Test for the Diagnosis of SARS-CoV-2 Infection. *Clinical Microbiology and Infection*. <https://doi.org/10.1016/j.cmi.2021.02.001>

- Among student contacts of confirmed COVID-19 cases in Florida between August and November 2020, a protocol requiring a negative RT-PCR test as early as day 9 of quarantine reduced the loss of instruction days compared to a conventional 14-day quarantine without testing. The number of missed days decreased by 3,649 days with the 9-day testing protocol compared with a theoretical 14-day quarantine (8,097 days vs 11,746 days). Of the 839 student contacts tested on days 9 to 14, 40 were positive for SARS-CoV-2 infection. Among the 799 students who tested negative, only 1 student became symptomatic after returning to school and received a positive test on day 14 after initially testing negative on day 9. The viral sequence identified from this participant was genetically distinct from the sequence of the case isolated from the known exposure.

Nelson et al. (Feb 19, 2021). SARS-CoV-2 Positivity on or After 9 Days Among Quarantined Student Contacts of Confirmed Cases. *JAMA*. <https://doi.org/10.1001/jama.2021.2392>

Vaccines and Immunity

- During the first week after the national COVID-19 emergency declaration in March 2020, weekly vaccination rates for bacterial pneumonia, tetanus-diphtheria-pertussis, and shingles among Medicare beneficiaries over the age of 65 declined by 25% to 62% compared with the corresponding period in 2019. Vaccination rates among racial and ethnic minority adults were lower than were those among white adults. By mid-April 2020, vaccination rates reached low points of 70% to 89% below 2019 rates. Vaccination rates partially recovered gradually during the period between May and July 2020, when data collection ended.

Hong et al. (Feb 19, 2021). Decline in Receipt of Vaccines by Medicare Beneficiaries During the COVID-19 Pandemic - United States, 2020. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7007a4>

- Both the Moderna and Pfizer vaccines had an acceptable safety profile, according to an analysis of the Vaccine Adverse Event Reporting System (VAERS). A total of 13,794,904 COVID-19 vaccine doses were administered in the U.S from December 14, 2020 to January 13. There were 6,994 reports of COVID-19–associated adverse events to VAERS during the period, with 91% of these events classified as non-serious.
- VAERS received 113 reports of death after COVID-19 vaccinations. Two thirds of these deaths were among residents of long-term care facilities and a review did not indicate an unexpected pattern that might suggest a causal relationship with vaccination. There were 35 reports of deaths in people not in long-term care facilities. For the 16 reported deaths where records were reviewed, death certificates or other data indicated underlying heart disease, cancer, stroke, probable pulmonary embolism, and otherwise frail health as the cause of death.

Gee et al. (Feb 19, 2021). First Month of COVID-19 Vaccine Safety Monitoring — United States, December 14, 2020–January 13, 2021. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7008e3>

- A study examining antibody kinetics of multiple immunoglobulins in patients hospitalized with acute SARS-CoV-2 infection showed that nucleocapsid protein (NCP)-specific IgA and IgG antibodies are detected earlier, while higher spike (S)1-specific IgA antibody levels occur in severely ill patients. The analysis was conducted using a microarray, eleven different commercial immunoassays (ELISA and CLIA), and one rapid test by seven manufacturers. NCP-specific IgA and IgG antibodies continuously displayed higher detection rates than S1- and S2-specific ones, though S1-specific IgG antibodies reached higher peak values. Detection rates by commercial immunoassays generally resembled those of the microarray (corresponding to the target antigen) but sensitivities and specificities varied among all tests.

Semmler et al. (Feb 18, 2021). Assessment of S1, S2 and NCP-Specific IgM, IgA, and IgG Antibody Kinetics in Acute SARS-CoV-2 Infection by a Microarray and Twelve Other Immunoassays. *Journal of Clinical Microbiology*. <https://doi.org/10.1128/JCM.02890-20>

- A clinical and laboratory investigation of potential SARS-CoV-2 reinfection reported to CDC by clinicians in the US did not confirm any cases of reinfection within 90 days of the initial infection, supporting current CDC guidance about retesting for people recovered from COVID-19. Among 73 potential reinfection patients with available records, 70% of patients either had recurrent COVID-19 symptoms explained by alternative diagnoses or remained asymptomatic after recovery but were incidentally found to have recurrent or persistent RT-PCR positivity through surveillance and contact investigations. The 19 patients who developed recurrent symptoms but did not receive an alternative non-COVID diagnosis were mostly healthcare workers. However, laboratory investigation of nine samples from this group could not confirm reinfection.

Lee et al. (Feb 18, 2021). Clinical and Laboratory Findings in Patients with Potential SARS-CoV-2 Reinfection, May-July 2020. *Clinical Infectious Diseases*. <https://pubmed.ncbi.nlm.nih.gov/33598716/>

Clinical Characteristics and Health Care Setting

- People living with HIV (PWH) with COVID-19 were more likely to be admitted from the emergency department when compared to patients without HIV (91% vs 71%), according to a retrospective cohort study in New York. After admission, there was no statistically significant difference in 30-day mortality rate or mechanical ventilation rate. Clinical characteristics, including age, comorbidity profile, temperature, duration of symptoms, laboratory measures, and oxygen rank severity were all similar between people with and without HIV. Of the 32 PWH who had viral load assessed, 90% had fewer than 200 copies/mL.

Laracy et al. (Feb 1, 2021). HIV-1 Infection Does Not Change Disease Course or Inflammatory Pattern of SARS-CoV-2-Infected Patients Presenting at a Large Urban Medical Center in New York City. *Open Forum Infectious Diseases*. <https://doi.org/10.1093/ofid/ofab029>

- A large-scale retrospective cohort study in Israel found that individuals with schizophrenia (n = 25,539) were twice as likely to be hospitalized for COVID-19 (OR = 2.2), even after controlling for sociodemographic and clinical risk factors (OR = 1.9). They were also three times more likely to experience COVID-19 mortality (OR = 3.3) compared to people without schizophrenia. Exploratory analyses of the characteristics of individuals who were hospitalized or deceased indicated that hospitalized patients with schizophrenia were predominantly males at a higher mean age and with a higher prevalence of smoking, obesity, diabetes, and COPD.

Tzur Bitan et al. (Feb 2021). COVID-19 Prevalence and Mortality Among Schizophrenia Patients: A Large-Scale Retrospective Cohort Study. *Schizophrenia Bulletin*. <https://pubmed.ncbi.nlm.nih.gov/33604657/>

- Mild COVID-19 among pregnant people may not contribute to higher risk of developing fetal growth restriction, according to a single-center case-control analysis. Researchers monitored fetal growth and other factors in 49 pregnancies in patients with mild PCR+ cases diagnosed at a median of 31 weeks gestation to a control group of pregnant people who tested negative by PCR. There was no difference in head circumference, abdominal circumference, femur length, or estimated fetal weight z-score between the cases and controls at the second and third trimester scans.

Rizzo et al. (Feb 18, 2021). Effect of SARS-CoV-2 Infection during the Second Half of Pregnancy on Fetal Growth and Hemodynamics: A Prospective Study. *Acta Obstetrica et Gynecologica Scandinavica*. <https://doi.org/10.1111/aogs.14130>

Mental Health and Personal Impact

- A review of electronic health records from a database that includes health information for >10 million individuals in the UK found a substantial reduction in primary care contacts for both acute physical and mental conditions in the four months following the introduction of movement restrictions to prevent transmission of SARS-CoV-2. The largest relative reductions when compared to previous years' records were observed for diabetic emergencies (OR 0.35), depression (0.53), and self-harm (0.56). With the exception of acute alcohol-related events, there was evidence of a reduction in care-seeking behavior for all conditions studied.

Mansfield et al. (Feb 19, 2021). Indirect Acute Effects of the COVID-19 Pandemic on Physical and Mental Health in the UK: A Population-Based Study. *The Lancet Digital Health*. [https://www.thelancet.com/journals/landig/article/PIIS2589-7500\(21\)00017-0/fulltext](https://www.thelancet.com/journals/landig/article/PIIS2589-7500(21)00017-0/fulltext)

Public Health Policy and Practice

- 30% of healthcare visits at 1,382 Health Resources and Services Administration-funded health centers occurred via telehealth between June 26 and November 6, 2020. Telehealth visits declined as the number of new COVID-19 cases decreased but plateaued as the number of cases increased. Health centers in the South and rural areas consistently reported the lowest average percentage of weekly telehealth visits. The authors note that health centers in the South and in rural areas have disproportionately experienced challenges to telehealth implementation, including the logistics, lack of partners or providers, and limited broadband access.

Demeke et al. (Feb 19, 2021). Trends in Use of Telehealth Among Health Centers During the COVID-19 Pandemic — United States, June 26–November 6, 2020. *MMWR. Morbidity and Mortality Weekly Report*. <https://doi.org/10.15585/mmwr.mm7007a3>

- Provisional life expectancy at birth in the United States reached its lowest level since 2006 in the first six months of 2020, with the life expectancy of the Hispanic population reaching a level lower than any in its recorded history. The life expectancy for both the total population (77.8 years) and for males (75.1) was the lowest level since 2007. Life expectancy for the non-Hispanic Black population (72.0) declined the most, and was the lowest estimate seen since 2001. The Hispanic population experienced the second largest decline in life expectancy (79.9).

Arias et al. (2021). Provisional Life Expectancy Estimates for January through June, 2020. <https://www.cdc.gov/nchs/data/vsrr/VSR10-508.pdf>

- An estimated 20.5 million years of life have been lost as a result of COVID-19-attributable deaths globally. As of January 6, 2021, years of life lost (YLL) in heavily affected countries, including the

United States, are 2–9 times the average losses from seasonal influenza. Three quarters of the YLL result from deaths in ages below 75 and almost a third from deaths below 55. Men have lost 45% more life-years than women. The authors note that a more complete picture of the effect of the pandemic would be obtained by additionally estimating the years lived with disability from effects of COVID-19.

Pifarré I Arolas et al. (Feb 2021). Years of Life Lost to COVID-19 in 81 Countries. Scientific Reports. <https://pubmed.ncbi.nlm.nih.gov/33603008/>

Other Resources and Commentaries

- [Could Mutations of SARS-CoV-2 Suppress Diagnostic Detection?](#) – Nature Biotechnology (Feb 18)
- [Ivermectin Shows Clinical Benefits in Mild to Moderate COVID19: A Randomised Controlled Double-Blind, Dose-Response Study in Lagos](#) – QJM: An International Journal of Medicine (Feb 18)
- [Measuring the Success of the US COVID-19 Vaccine Campaign—It’s Time to Invest in and Strengthen Immunization Information Systems](#) – American Journal of Public Health (Feb 18)
- [Unmet Social Needs And Worse Mental Health After Expiration Of COVID-19 Federal Pandemic Unemployment Compensation](#) – Health Affairs (Feb 18)
- [The “False-Positive” Conundrum: IgA Reference Level Overestimates the Seroprevalence of Antibodies to SARS-CoV-2](#) – Journal of Global Health (Jan 16)
- [What Every Reader Should Know About Studies Using Electronic Health Record Data but May Be Afraid to Ask \(Preprint\)](#) – Journal of Medical Internet Research (July 13)
- [Molecular Features Similarities between SARS-CoV-2, SARS, MERS and Key Human Genes Could Favour the Viral Infections and Trigger Collateral Effects.](#) – Scientific Reports (Feb 18)
- [Ensuring Continued Progress for Development of COVID-19 Therapeutics in Children.](#) – Pediatric Research (Feb 18)
- [Review Study of Digital Health-Related Solutions to Control COVID-19 Pandemic: Analysis for the 10 Highest Prevalent Countries.](#) – Journal of Medical Internet Research (Feb 18)
- [Mapping Inequality in SARS-CoV-2 Household Exposure and Transmission Risk in the USA](#) – Journal of General Internal Medicine (Feb 18)
- [COVID Vaccines and Safety: What the Research Says.](#) – Nature (Feb 18)
- [The Price of Success-How to Evaluate COVID-19 Vaccines When They’re Available Outside of Clinical Trials.](#) – JAMA (Feb)
- [The FDA’s Experience with Covid-19 Antibody Tests](#) – New England Journal of Medicine (Feb 18)
- [Clinical Manifestation and Maternal Complications and Neonatal Outcomes in Pregnant Women with COVID-19: A Comprehensive Evidence Synthesis and Meta-Analysis.](#) – The Journal of Maternal-Fetal & Neonatal Medicine (Feb)
- [Money Is Not Everything: Experimental Evidence That Payments Do Not Increase Willingness to Be Vaccinated against COVID-19.](#) – Journal of Medical Ethics (Feb)
- [The Role of Influence of Presumed Influence and Anticipated Guilt in Evoking Social Correction of COVID-19 Misinformation](#) – Health Communication (Feb 18)
- [COVID-19 and Its Consequences on Mental Health \(Review\)](#) – Experimental and Therapeutic Medicine (Jan 22)
- [Global Health Education Amidst COVID-19: Disruptions and Opportunities.](#) – Annals of Global Health (Feb 2)

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