

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

- **Rates of pediatric hospitalization for COVID-19 varied considerably across states from May to November 2020. In May, rates ranged from 0 per 100,000 (HI and RI) to 5.4 per 100,000 (NJ) and in November ranged from 3.4 per 100,000 (NH) to 32.8 per 100,000 (AZ). Some states experienced a rapid increase in rates, with Utah experiencing a 5,067% increase (from 0.3 to 15.5 per 100,000) within 3 months. [More](#)**
- **Among 130 symptomatic COVID-19 cases in London (July and September 2020), 32% attended the workplace after symptom onset. Men were less likely than women to attend the workplace after onset of COVID-19 symptoms. Age and occupation were not associated with workplace attendance after symptom onset. [More](#)**
- **Modeling indicates that that bi-directional contact tracing could reduce the effective reproductive number for SARS-CoV-2 transmission by 2-fold compared to conventional forward-tracing alone. Bi-directional contact tracing identifies potential infectors of known cases, which could lead to identification of additional cases arising from the potential infectors. [More](#)**

### Non-Pharmaceutical Interventions

- European countries that implemented stricter mitigation policies during the beginning of the pandemic tended to report fewer COVID-19 deaths through the end of June 2020, according to data from 37 European countries. Using the Oxford Stringency Index (OSI) to measure the stringency of policies (higher number corresponds to stricter policies), a 1-unit increase in the OSI standard deviation (22.9 unit increase in the OSI) was associated with a decrease of 12.5 deaths per 100,000. The authors conclude that the countries that could have averted the most deaths if they had implemented stricter policies include the UK, France, and Spain.

*Fuller et al. (Jan 12, 2021). Mitigation Policies and COVID-19–Associated Mortality — 37 European Countries, January 23–June 30, 2020. MMWR. <https://doi.org/10.15585/mmwr.mm7002e4>*

### Testing and Treatment

- A systematic review and meta-analysis (37 studies with 7,332 paired nasopharyngeal swab and saliva samples) found that while saliva samples had slightly lower sensitivity to detect SARS-CoV-2, they could be more cost-effective. Against a reference standard of a positive result on either sample, saliva sensitivity was 7.9% lower than nasopharyngeal swab sensitivity among persons without previous SARS-CoV-2 infection and 1.5% higher among persons with a previous SARS-CoV2 diagnosis.

However, taking into account personnel, transportation and laboratory costs, nasopharyngeal swab had an incremental cost per additional infection detected of \$8,093 compared to saliva.

*Bastos et al. (Jan 12, 2021). The Sensitivity and Costs of Testing for SARS-CoV-2 Infection With Saliva Versus Nasopharyngeal Swabs. Annals of Internal Medicine. <https://doi.org/10.7326/M20-6569>*

## Vaccines and Immunity

- No association was observed between Influenza and Tdap vaccination status and clinical presentation of SARS-CoV-2 and/or severity of symptoms in a cohort of SARS-CoV-2 positive pregnant women in Spain (n=1,150). However, low vaccination adherence was observed among the subgroup of women who reported Latin-American ethnicity, which could have implications for the SARS-CoV-2 vaccination campaign.

*de la Cruz Conty et al. (Jan 8, 2021). Impact of Recommended Maternal Vaccination Programs on the Clinical Presentation of SARS-CoV-2 Infection: A Prospective Observational Study. Vaccines. <https://doi.org/10.3390/vaccines9010031>*

- Lower vaccine acceptance was associated with younger age (18-49) and lower income (<20,000 per year or undisclosed) in a nationally representative survey conducted in October among US respondents (n=525). Additionally, survey participants who reported not having anyone close to them directly affected by COVID-19 showed significantly more negative COVID-19-related health behavior such as not avoiding crowds. Using the Health Belief Model, the authors suggest that individual perceived benefits and perceived barriers directly affect vaccine intention.

*Mercadante and Law. (Dec 2020). Will They, or Won't They? Examining Patients' Vaccine Intention for Flu and COVID-19 Using the Health Belief Model. Research in Social and Administrative Pharmacy. <https://doi.org/10.1016/j.sapharm.2020.12.012>*

## Modeling and Prediction

- A modeling study found that bi-directional contact tracing could double the reduction in effective reproductive number ( $R_{eff}$ ) compared to conventional forward-tracing alone. Bi-directional contact tracing identifies potential infectors of known cases, which could lead to identification of additional cases arising from the potential infectors. The authors also suggest expanding the tracing window from 2-6 days pre-symptom onset or implementing high-uptake smartphone based notification.

*Bradshaw et al. (Jan 11, 2021). Bidirectional Contact Tracing Could Dramatically Improve COVID-19 Control. Nature Communications. <https://doi.org/10.1038/s41467-020-20325-7>*

## Public Health Policy and Practice

- Rates of pediatric hospitalization for COVID-19 showed significant variation across 22 states from May to November 2020. In May, Hawaii and Rhode Island had the lowest pediatric hospitalization rates (0 per 100,000) while New Jersey and Colorado had the highest (5 and 4.4 per 100,000 children, respectively). In November, Hawaii and New Hampshire had the lowest rates (4.3 and 3.4 per 100,000 respectively) and South Dakota and Arizona had the highest rates (33.7 and 32.8 per 100,000 respectively). Significant variation between states in the magnitude of change was also observed. For instance, Utah experienced the most significant growth within 3 months, from 0.3 to 15.5 per 100,000 (5,067% increase), while New Hampshire only saw a 42% increase (from 2.4 to 3.4 per 100,000) in the same time period.

*Levin et al. (Jan 11, 2021). Trends in Pediatric Hospitalizations for Coronavirus Disease 2019. JAMA Pediatrics. <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2775008>*

- 32% of workers diagnosed with COVID-19 went to the workplace even after the onset of symptoms, based on a cohort of 130 symptomatic COVID-19 cases in London. Compared to females, males were 66% less likely to attend the workplace after onset of COVID-19 symptoms. Age and occupation were not associated with workplace attendance after symptom onset.

*Jain et al. (Jan 12, 2020). Attendance at London Workplaces after Symptom Onset: A Retrospective Cohort Study of Staff Members with Confirmed COVID-19. Journal of Public Health. <https://academic.oup.com/jpubhealth/advance-article/doi/10.1093/pubmed/fdaa239/6082829>*

- Minority groups experienced higher rates of SARS-CoV-2 positivity compared to white patients in Washington State during the first wave of the pandemic (n=18,667). Latinx patients had nearly a 5-fold risk of positivity compared to white patients, while Black patients had nearly a 2-fold risk of positivity. Notably, 22% of Latinx patients had self-pay insurance compared to 8-16% of other ethnic groups, and were the only ethnic minority with higher odds than white patients for COVID-19 hospitalization.

*Pflugeisen and Mou. (Jan 11, 2021). Empiric Evidence of Ethnic Disparities in Coronavirus Positivity in Washington State. Ethnicity & Health. <https://pubmed.ncbi.nlm.nih.gov/33428455/>*

- A decrease in total weekly emergency medical visits was observed following social distancing mandates in Sao Paulo, Brazil in March 2020. While emergency medical visits due to trauma, abdominal pain, chest pain, and the common cold saw a decrease, emergency medical visits due to other conditions such as acute appendicitis, acute myocardial infarction, and stroke remained the same. No significant increase in the number of deaths associated with non-SARS-CoV-2 emergencies was observed following pandemic onset and social distancing mandates.

*Steinman et al. (Dec 30, 2020). The Burden of the Pandemic on the Non-SARS-CoV-2 Emergencies: A Multicenter Study. The American Journal of Emergency Medicine. <https://doi.org/10.1016/j.ajem.2020.12.080>*

- During April 2020, 40 states and New York City experienced fewer stroke-related emergency calls and an excess cerebrovascular mortality during April 2020. Decreased stroke-related emergency calls were associated with excess stroke deaths 1-2 weeks later. Among 23 states and New York City, a 10% increase in time spent at home was associated with a 4% increase in stroke deaths after adjusting for COVID-19 deaths.

*Sharma et al. (Jan 12, 2021). Excess Cerebrovascular Mortality in the United States During the COVID-19 Pandemic. Stroke. <https://doi.org/10.1161/STROKEAHA.120.031975>*

- A nationwide cohort study in Sweden found that births occurring between April to May 2020 were not at elevated risk of preterm birth and stillbirth compared to births occurring during the same period in 2019. Excluding mothers with COVID-19 produced similar results. Among mothers in the cohort, the mean number of maternal healthcare visits (2.3) was the same between April to May 2020 and the same time period in 2019.

*Pasternak et al. (Jan 12, 2021). Preterm Birth and Stillbirth During the COVID-19 Pandemic in Sweden: A Nationwide Cohort Study. Annals of Internal Medicine. <https://doi.org/10.7326/M20-6367>*

## Other Resources and Commentaries

- [Successful Multimodal Measures Preventing COVID-19 Outbreaks Without Universal Frequent Testing within Long-Term Care Units in the Midwestern Veterans Health Care Network](#) – Infection Control and Hospital Epidemiology (Jan 11)

- [Simulating Preventative Testing of SARS-CoV-2 in Schools: Policy Implications](#) – BMC Public Health (Jan 12)
- [SARS-CoV-2 Viral RNA Load Dynamics in the Nasopharynx of Infected Children](#) – Epidemiology and Infection (Jan 11)
- [Vitamin D and COVID-19: Why the Controversy?](#)– The Lancet (Jan 11)
- [Covid-19: Data on Vaccination Rollout and Its Effects Are Vital to Gauge Progress, Say Scientists](#) – BMJ (Clinical Research Ed.) (Jan 11)
- [Covid-19: UK Approves Moderna Vaccine to Be given as Two Doses 28 Days Apart](#) – BMJ (Clinical Research Ed.) (Jan 11)
- [Current State of the First COVID-19 Vaccines](#) – Vaccines (Jan 8)
- [Lessons Learned in Infection Prevention for Ebola Virus Disease and the COVID-19 Pandemic- Principles Underlying Prevention](#) – Infection Control and Hospital Epidemiology (Jan 11)
- [Routine Surveillance of Asymptomatic Healthcare Personnel for SARS-CoV-2: Not A Prevention Strategy](#) – Infection Control and Hospital Epidemiology (Jan 11)
- [Advanced Care Planning during the COVID-19 Pandemic: Ceiling of Care Decisions and Their Implications for Observational Data](#) – BMC Palliative Care (Jan 11)

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