

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

- **SARS-CoV-2 may have been introduced in the US earlier than previously recognized based on the detection of antibodies reactive to SARS-CoV-2 found in archived samples from routine blood donations in 9 states from December 2019 and January 2020.** [More](#)
- **A cross-sectional study representing 34 million US adults found that receiving unemployment benefits was associated with a lower likelihood of having unmet health-related social needs, delaying healthcare, and experiencing depressive and anxiety symptoms.** [More](#)
- **A US-based model using a scenario with 40% vaccination coverage that prioritizes healthcare workers and high-risk individuals and excludes children under 18 could reduce the SARS-COV-2 attack proportion to 1.6% and decrease hospitalizations and deaths by 85% and 88%, respectively.** [More](#)

### Transmission

- In an observational study of 12 SARS-CoV-2 positive children isolating with their uninfected guardians in hospital rooms in Korea, none of the guardians became SARS-CoV-2 positive despite frequent close contact. All guardians complied with wearing PPE, including gloves and a variety of masks, while only 4 children complied well with mask use. Two guardian-child pairs kept a distance of >1m during isolation.  
*Lee et al. (Nov 30, 2021). Absence of SARS-CoV-2 Transmission from Children in Isolation to Guardians, South Korea. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2701.203450>*

### Geographic Spread

- Analysis of archived samples from routine Red Cross blood donations collected December 13, 2019 to January 17, 2020 from donors in nine states, including Washington, suggests SARS-CoV-2 was introduced in the US prior to the first identified case in January 19, 2020. Among 7,389 samples, 106 contained antibodies reactive to the SARS-CoV-2 spike protein and 84 out of 90 available for further testing had neutralizing activity against live SARS-CoV-2. Antibody positive samples were found in all nine states during this period, including 16 from Washington collected in December 2019.  
*Basavaraju et al. (Nov 30, 2020). Serologic Testing of U.S. Blood Donations to Identify SARS-CoV-2-Reactive Antibodies: December 2019-January 2020. Clinical Infectious Diseases. <https://doi.org/10.1093/cid/ciaa1785>*

## Testing and Treatment

- Large-scale one-time testing of over 12,000 asymptomatic healthcare personnel (HCP) in the San Francisco Bay Area during April-June 2020 found low SARS-CoV-2 prevalence (0.2% by RT-PCR and 0.9% by serology tests). Most SARS-CoV-2-infected HCP were involved with direct patient care. One asymptomatic person with high viral load was identified, which, although rare, highlights the potential for mass asymptomatic testing to prevent further transmission.

*Hogan et al. (Nov 30, 2021). Large-Scale Testing of Asymptomatic Healthcare Personnel for Severe Acute Respiratory Syndrome Coronavirus 2. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2701.203892>*

## Vaccines and Immunity

- *[Pre-print, not peer reviewed]* Willingness to receive a SARS-CoV-2 vaccine declined from 71% in April to 54% in October among US adults, according to longitudinal data from a nationally representative sample (n=7,547). The decline was primarily driven by an increase in participants undecided about being vaccinated and unwilling to be vaccinated. Participants without a college degree, Black participants, and females were more likely to be undecided or unwilling. Among those unwilling to be vaccinated, 65% were concerned about lasting health problems compared to 27% of those willing to be vaccinated.

*Daly and Robinson. (Nov 30, 2020). Willingness to Vaccinate against COVID-19 in the US Longitudinal Evidence from a Nationally Representative Sample of Adults from April-October 2020. Pre-print downloaded Dec 1 from <https://doi.org/10.1101/2020.11.27.20239970>*

- *[Pre-print, not peer reviewed]* Online survey data from 1,062 college students in South Carolina suggest that perceived severity and fear of COVID-19 were positively associated with COVID-19 vaccine acceptance, while a higher level of risk exposures and negative attitude toward vaccines in general were associated with low COVID-19 vaccine acceptance.

*Qiao et al. (Nov 30, 2020). Risk Exposures Risk Perceptions Negative Attitudes toward General Vaccination and COVID-19 Vaccine Acceptance among College Students in South Carolina. Pre-print downloaded Dec 1 from <https://doi.org/10.1101/2020.11.26.20239483>*

- Among 177 SARS-CoV-2 positive individuals from the UK, 15 (9%) did not seroconvert during the entire 60-day follow-up period, suggesting that a minority of infected persons may not develop detectable IgG against SARS-CoV-2. Persons who seroconverted were older compared to those who did not seroconvert (median age 66 vs 41 years) and were more likely to have comorbidities and higher levels of inflammatory markers.

*Staines et al. (Nov 30, 2021). IgG Seroconversion and Pathophysiology in Severe Acute Respiratory Syndrome Coronavirus 2 Infection. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2701.203074>*

## Clinical Characteristics and Health Care Setting

- In a systematic review (n=70 studies) including 1,457 pregnant women with COVID-19, 39 newborns tested positive for SARS-CoV-2. Among mothers, the most frequent comorbidities were obesity, hypertensive disorders, and gestational diabetes. Premature birth (n=64) and maternal death (n=15) were the most common adverse maternal outcomes, while intrauterine fetal distress (n=28) and intrauterine fetal death and neonatal death (n=16) were the most common adverse fetal and neonatal outcomes.

*Amaral et al. (Nov 24, 2020). Maternal Coronavirus Infections and Neonates Born to Mothers with SARS-CoV-2: A Systematic Review. Healthcare. <https://doi.org/10.3390/healthcare8040511>*

- *[Pre-print, not peer reviewed]* Among 11 countries, the age distribution of COVID-19 deaths was similar in the first and second waves. During the second wave, Western European countries and the US tended to have a larger share of deaths among individuals younger than 50 years old (<45 years old in the US). Among 9 countries with nursing home data, the proportion of COVID-19 deaths who were nursing home residents decreased in most countries during the second wave, although the proportion increased in Australia.  
*Ioannidis et al. (Nov 30, 2020). Second versus First Wave of COVID-19 Deaths Shifts in Age Distribution and in Nursing Home Fatalities. Pre-print downloaded Dec 1 from <https://doi.org/10.1101/2020.11.28.20240366>*
- Analysis of routine public health surveillance data from March to June 2020 identified an overrepresentation of Black children among those with COVID-19-associated multi-system inflammatory syndrome in children (MIS-C) in New York City (n=223). While Black children constitute 22% of the New York City population, 34% of patients were Black. Additionally, compared with white children, a higher incidence of MIS-C and a higher rate of hospitalization were observed among Black and Hispanic children.  
*Lee et al. (Nov 30, 2020). Race/Ethnicity Among Children With COVID-19–Associated Multisystem Inflammatory Syndrome. JAMA Network Open. <https://doi.org/10.1001/jamanetworkopen.2020.30280>*
- A cluster of 34 patients infected with an antibiotic-resistant pathogen primarily associated with hospital-acquired infections was observed in a New Jersey hospital during a surge of COVID-19 hospitalizations in late May 2020. The cluster was linked to deviations in infection prevention and control practices due to pandemic-related resource challenges. Fewer incident cases were reported in June 2020, once normal operations resumed as COVID-19 hospitalizations decreased.  
*Perez et al. (Dec 1, 2020). Increase in Hospital-Acquired Carbapenem-Resistant Acinetobacter Baumannii Infection and Colonization in an Acute Care Hospital During a Surge in COVID-19 Admissions — New Jersey, February–July 2020. MMWR. <https://doi.org/10.15585/mmwr.mm6948e1>*

## Modeling and Prediction

- *[Pre-print, not peer reviewed]* In a model parametrized to US demographics and age-specific COVID-19 outcomes, vaccination with 40% coverage prioritizing healthcare workers and high-risk individuals and excluding children under 18 was shown to reduce the overall attack proportion from 7.1% to 1.6%. Vaccination also reduced adverse outcomes, with hospitalizations and deaths decreasing by 85% and 88%, respectively. Though they were accounted for in the model, the authors note that a vaccine uptake of 40% or lower would likely not eliminate the need for non-pharmaceutical interventions.  
*Moghadas et al. (Nov 30, 2020). The Impact of Vaccination on COVID-19 Outbreaks in the United States. Pre-print downloaded Dec 1 from <https://doi.org/10.1101/2020.11.27.20240051>*

## Public Health Policy and Practice

- People living in a household that received unemployment benefits were less likely to have unmet health-related social needs, less likely to have delayed health care, and less likely to be experiencing depressive and anxiety symptoms relative to comparable people not receiving unemployment benefits. These findings were drawn from a cross-sectional study of 68,911 individuals representing 34 million people in the US. While recognizing the limitations of these data, the authors conclude that unemployment insurance benefits may help mitigate economic disruption caused by the pandemic.

Berkowitz and Basu. (Nov 30, 2020). *Unemployment Insurance, Health-Related Social Needs, Health Care Access, and Mental Health During the COVID-19 Pandemic*. *JAMA Internal Medicine*. <https://doi.org/10.1001/jamainternmed.2020.7048>

- While people living with HIV/AIDS (PLWHA) were not overrepresented among COVID-19 cases in New York City (NYC), a greater proportion of PLWHA experienced adverse COVID-19-related outcomes. Lab-confirmed COVID-19 case and death data matched against the NYC HIV surveillance registry identified 2,410 PLWHA (1% of all reported COVID-19 cases vs. 1.5% HIV prevalence in NYC). A higher proportion of PLWHA with COVID-19 were older, male, Black or Latino, and living in high-poverty neighborhoods compared to all NYC PLWHA and all NYC COVID-19 cases. Compared with all NYC COVID-19 cases, a higher proportion of PLWHA with COVID-19 experienced hospitalization, intensive care unit admission and/or death.

Braunstein et al. (Nov 30, 2020). *COVID-19 Infection among People with HIV in New York City: A Population-Level Analysis of Linked Surveillance Data*. *Clinical Infectious Diseases*. <https://doi.org/10.1093/cid/ciaa1793>

- [Pre-print, not peer reviewed] Following population-wide implementation of COVID-19 interventions in Hamilton, Ontario, the proportion of samples that tested positive for influenza A and B dropped rapidly to 0% by the week of March 15-21. During the 2010-2019 influenza seasons, the proportion of positive tests reached 0% on a median of the week of May 30-June 6. Data were collected from all nasopharyngeal swab specimens (n=57,503) submitted for routine respiratory virus testing between January 2010 and June 2020.

Zhang et al. (Nov 30, 2020). *Rapid Disappearance of Influenza Following the Implementation of COVID-19 Mitigation Measures in Hamilton Ontario*. Pre-print downloaded Dec 1 from <https://doi.org/10.1101/2020.11.27.20240036>

## Other Resources and Commentaries

- [Lessons from BCG for SARS-CoV-2 Vaccine Candidates](#) – The Journal of Infectious Diseases (Nov 30)
- [Toward Superhuman SARS-CoV-2 Immunity?](#) – Nature Medicine (Nov 30)
- [SARS-CoV-2 Risk Misclassification Explains Poor COVID-19 Management](#) – The Lancet (Oct 22)
- [The Winter Respiratory Viral Season During the COVID-19 Pandemic](#) – Journal of the American Medical Directors Association (Oct 26)
- [Vaccinating the UK against Covid-19](#) – BMJ (Nov 30)
- [Incentivising Wealthy Nations to Participate in the COVID-19 Vaccine Global Access Facility \(COVAX\): A Game Theory Perspective](#) – BMJ Global Health (Nov 30)
- [How COVID Vaccines Are Being Divvied up around the World](#) – Nature (Nov 30)
- [Audio Interview: New Studies of Covid-19 Transmission](#) – New England Journal of Medicine (Nov 26)
- [Negative Conversion Rate of SARS-CoV-2 Infection](#) – JAMA Internal Medicine (Nov 30)

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