



2019-nCoV Literature

Situation Report (Lit

Rep)

December 2, 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 Korea, reopening schools with good adherence to mitigation measures among students did not lead to significant increases in the proportion of pediatric cases with COVID-19 in the nation (7% by May 20 and 7.2% by July 31).** [More](#)
- **An interim analysis of the large WHO Solidarity randomized trial found that remdesivir, hydroxychloroquine, lopinavir, and interferon each had little or no effect on mortality, initiation of mechanical ventilation, or duration of hospital stay among hospitalized patients with COVID-19.** [More](#)
- **Higher viral load of SARS-CoV-2 RNA in anal swab samples was associated with 20-30% higher risks of severe outcomes including death, ICU admission and need for invasive mechanical ventilation in a cohort of 188 hospitalized COVID-19 patients in China.** [More](#)

Non-Pharmaceutical Interventions

- A nationally representative survey of 4000 citizens in Spain during early stages of the COVID-19 pandemic reported that 49% of respondents wore protective masks either occasionally or very frequently, 10% rarely wore a mask, and 41% never wore a mask. People who were young, had higher educational attainment, reported a lower concern about infection, and with an introverted personality were less likely to wear a mask.
Barceló and Sheen. (Dec 1, 2020). Voluntary Adoption of Social Welfare-Enhancing Behavior: Mask-Wearing in Spain during the COVID-19 Outbreak. PloS One. <https://doi.org/10.1371/journal.pone.0242764>
- *[Preprint, not peer reviewed]* Molecular experiments of several commercially available mouth rinses and antiseptics (Listerine, chlorhexidine gluconate, povidone-iodine, and Colgate Peroxy) found that all products inactivated replication of competent SARS-CoV-2 viruses and pseudotyped viruses expressing spike proteins. The prolonged effect of mouth rinse induced cytotoxicity may impact anti-viral activity.
Xu et al. (Dec 1, 2020). Differential Effects of Antiseptic Mouth Rinses on SARS-CoV-2 Infectivity in Vitro. Pre-print downloaded Dec 2 from <https://doi.org/10.1101/2020.12.01.405662>
- School opening with good adherence to mitigation measures among students in Korea did not cause significant school-related COVID-19 outbreaks. Following the implementation of social distancing



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strategies on February 29, 2020, in-person classes convened between May 20 and June 8 at four steps with high school senior students (grade 12) back to school first. As of July 31, more than 13,000 students and staff were tested from 38 institutions, and 44 COVID-19 cases among students were identified (from 14 high schools, 6 middle schools, 13 elementary schools, and 6 kindergartens). Only one elementary student was infected from the same classroom. There was no sudden increase in the number of pediatric patients or the proportion of pediatric patients among all confirmed cases in the nation after school reopened (7% by May 20 and 7.2% by July 31).

Yoon et al. (Nov 30, 2020). *Stepwise School Opening and an Impact on the Epidemiology of COVID-19 in the Children*. *Journal of Korean Medical Science*. <https://doi.org/10.3346/jkms.2020.35.e414>

Transmission

- A COVID-19 outbreak investigation at a restaurant in Jeonju, Korea revealed that one of three incident cases was infected by droplets from the index case 6.5m away within 5 minutes of exposure based on TV surveillance, interviews, and cell phone data. There was no direct or indirect contact with the index case. Ceiling-type air conditioners were in the restaurant.

Kwon et al. (Nov 23, 2020). *Evidence of Long-Distance Droplet Transmission of SARS-CoV-2 by Direct Air Flow in a Restaurant in Korea*. *Journal of Korean Medical Science*. <https://doi.org/10.3346/jkms.2020.35.e415>

Testing and Treatment

- In a randomized trial of 11,330 adult inpatients with COVID-19 from 30 countries, with 2750 assigned to remdesivir, 954 to hydroxychloroquine, 1411 to lopinavir (without interferon), 2063 to interferon (including 651 to interferon plus lopinavir), and 4088 to no trial drug, all trial drugs had little or no effect on overall mortality, initiation of ventilation, and duration of hospital stay.

[EDITORIAL NOTE: This manuscript was previously summarized as a pre-print on Oct 16].

WHO Solidarity Trial Consortium (Dec 2, 2020). *Repurposed Antiviral Drugs for Covid-19 — Interim WHO Solidarity Trial Results*. *The New England Journal of Medicine*.

<https://doi.org/10.1056/NEJMoa2023184>

Vaccines and Immunity

- Serological testing among 1847 active workers in France showed declining antibody responses to SARS-CoV-2 4-8 weeks after the first sampling. Overall, 11% of workers were positive for IgG against SARS-CoV-2-specific proteins and 9.5% had evidence of viral neutralization. Among these, 21% were asymptomatic. In sera obtained 4–8 weeks after the first sampling, anti-N and anti-S IgG titers and neutralization activity declined by 31%, 17% and 53%, respectively. [EDITORIAL NOTE: This manuscript was previously summarized as a pre-print on Oct 28].

Anna et al. (Dec 1, 2020). *High Seroprevalence but Short-lived Immune Response to SARS-CoV-2 Infection in Paris*. *European Journal of Immunology*. <https://doi.org/10.1002/eji.202049058>

Clinical Characteristics and Health Care Setting

- Higher viral load of SARS-CoV-2 RNA in anal swab samples was associated with severe COVID-19 outcomes including death (OR=1.4), ICU admission (OR=1.2) and need for invasive mechanical ventilation (OR=1.3) among a cohort of 188 hospitalized COVID-19 patients in China. The period from symptom onset to positive virus detection was also significantly shorter in non-survivors than in survivors (median 14 vs. 19 days, p=0.007).

Li et al. (Dec 1, 2020). High Anal Swab Viral Load Predisposes Adverse Clinical Outcomes in Severe COVID-19 Patients. *Emerging Microbes & Infections*. <https://doi.org/10.1080/22221751.2020.1858700>

Modeling and Prediction

- *[Preprint, not peer reviewed]* A modified SEIR model using data from the Johns Hopkins University COVID-19 Dashboard estimated that 66% of global SARS-CoV-2 cases were asymptomatic; each symptomatic and asymptomatic case could infect 2 and 6 other people, respectively. 10% of cases were super-spreaders, who had a 2-fold higher risk of transmission rate than average. Mitigation strategies with a stringency index of $\geq 60\%$ were required to reduce the reproduction ratio below 1. Without mitigation strategies, the mean maximum infection rate was 0.9 cases/day (inter-country range 0.6-1.4).
Lemuel-Diot et al. (Dec 2, 2020). A COVID-19 Transmission Model Informing Medication Development and Supply Chain Needs. Pre-print downloaded Dec 2 from <https://doi.org/10.1101/2020.11.23.20237404>
- *[Preprint, not peer reviewed]* A modeling study using an SEIRS model reported that more effective COVID-19 interventions would require a lower proportion of people to comply with them to achieve complete suppression of SARS-CoV-2 spread among US populations. For an intervention with 50% efficacy, at least 95% compliance is required; for an intervention with 70% efficacy, at least 92% compliance is required; for a 99% effective vaccine, still greater than 80% compliance is required, indicating the overall impact was disproportionately affected by noncompliant individuals.
Stoddard et al. (Dec 2, 2020). Model-Based Evaluation of the Impact of Noncompliance with Public Health Measures on COVID-19 Disease Control. Pre-print downloaded Dec 2 from <https://doi.org/10.1101/2020.11.29.20240440>

Other Resources and Commentaries

- [Potential Impact of the COVID-19 Pandemic on Communication and Language Skills in Children](#) – Otolaryngology–Head and Neck Surgery (Dec 1)
- [Solutions to COVID-19 Data Sharing](#) – The Lancet Digital Health (Dec 1)
- [A Global Health Action Agenda for the Biden Administration](#) – The Lancet (Dec 1)
- [Altered Nutrition Behavior during COVID-19 Pandemic Lockdown in Young Adults](#). – European Journal of Nutrition (Dec 1)
- [Fragmented Health Systems in COVID-19: Rectifying the Misalignment between Global Health Security and Universal Health Coverage](#) – The Lancet (Dec 1)
- [A Practical and Economic Approach for Assessing Potential SARS-CoV-2 Transmission Risk in COVID-19 Patients](#) – Clinical Infectious Diseases (Dec 1)
- [Rallying All Resources: A Multidisciplinary Innovation to Plan for the Projected COVID-19 Inpatient Surge](#). – Journal of Nursing Care Quality (Nov 23)
- [Placebo-Controlled Trials of COVID-19 Vaccines – Why We Still Need Them](#) – The New England Journal of Medicine (Dec 2)

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