

## 2019-nCoV Literature Situation Report (Lit Rep)

October 15, 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 an ongoing randomized controlled phase 1 trial of RNA-vaccine candidates BNT162b1 and BNT162b2, both vaccine candidates elicited similar SARS-CoV-2 neutralizing titers. BNT162b2 was associated with a lower incidence and severity of systemic reactions than BNT162b1, particularly among older adults. [More](#)**
- **An indoor hockey game was associated with a SARS-CoV-2 outbreak in which 14 of 21 players (including the index case) experienced COVID-19 symptoms, 13 of whom tested positive for SARS-CoV-2. [More](#)**
- **Significant decreases in neutralizing antibody titers in 18 SARS-CoV-2 positive patients in South Korea were measured between 2 and 5 months after infection. [More](#)**

### Non-Pharmaceutical Interventions

- Among 4,817 US adults responding to an internet-based survey administered in June, 85% reported frequent hand hygiene (handwashing or hand sanitizing) after contact with public surfaces. Males, young adults (age 18-24), respondents less concerned about risk for SARS-CoV-2 infection, and respondents who did not personally know someone who had received a positive SARS-CoV-2 test reported less frequent hand hygiene.

*Czeisler et al. (Oct 16, 2020). Demographic Characteristics, Experiences, and Beliefs Associated with Hand Hygiene Among Adults During the COVID-19 Pandemic — United States, June 24–30, 2020. MMWR. Morbidity and Mortality Weekly Report.*

<https://doi.org/10.15585/mmwr.mm6941a3>

- *[Pre-print, not peer reviewed]* A cross-sectional study used data from 2 contact diaries from employees from 2 consulting companies and 1 university department in Georgia to measure the number of contacts per person per day between April and June. Among 3835 employees, 304 (8%) completed both diaries and had a median of 2 contacts per day per person; 55% of which involved conversation only, 64% occurred at home, and 38% were >4 hours. Most contacts were repeated, and within the same age groups, though substantial inter-generational mixing with children was reported among participants aged 30-59.

*Kiti et al. (Oct 15, 2020). Social Contact Patterns among Employees in 3 U.S. Companies during Early Phases of the COVID-19 Pandemic April to June 2020. Pre-print downloaded Oct 15 from*

<https://doi.org/10.1101/2020.10.14.20212423>

## Transmission

- A SARS-CoV-2 outbreak was identified in an indoor hockey game in Tampa, Florida in June. The index case experienced symptoms one day after the game; 2 days later he received a positive antigen test. Overall, 62% (13 of 21) players experienced illness 2-5 days after the game (8 teammates, 5 members of the other team), as did one rink staff member. Thirteen of 15 people, including the index case, had positive SARS-CoV-2 tests (11 PCR, 2 antigen). Two on-ice referees and one spectator were asymptomatic but did not seek testing.

*Atrubin et al. (Oct 16, 2020). An Outbreak of COVID-19 Associated with a Recreational Hockey Game — Florida, June 2020. MMWR. Morbidity and Mortality Weekly Report.*

<https://doi.org/10.15585/mmwr.mm6941a4>

## Clinical Characteristics and Health Care Setting

- *[Pre-print, not peer reviewed]* A network cohort analysis of 8,598 pregnant women from France, Spain, and the US with COVID-19 found that women who were eventually hospitalized were more likely to have kidney impairment and anemia. Compared to a cohort of 27,510 pregnant women diagnosed with influenza during the 2017-2018 flu season, pregnant women with COVID-19 had a higher prevalence of shortness of breath and loss of smell (anosmia), while also experiencing higher frequency of C-section, preterm delivery, and poorer maternal outcomes.

*Lai et al. (Oct 14, 2020). Clinical Characteristics Symptoms Management and Health Outcomes in 8598 Pregnant Women Diagnosed with COVID-19 Compared to 27510 with Seasonal Influenza in France Spain and the US a Network Cohort Analysis. Pre-print downloaded Oct 15 from*

<https://doi.org/10.1101/2020.10.13.20211821>

- *[Pre-print, not peer reviewed]* A cohort study of 136 healthcare workers in the UK found that 90% of the 76 workers with mild or asymptomatic SARS-CoV-2 infection had detectable neutralizing antibodies at the beginning of the lockdown and 66% of the same workers had them after 16-18 weeks. T-cell responses tended to be lower among asymptomatic participants, while neutralizing antibody titers were maintained irrespective of symptoms, suggesting that healthcare workers may retain some functional protection for at least 4 months after experiencing mild or asymptomatic infection.

*Reynolds et al. (Oct 14, 2020). Healthcare Workers with Mild Asymptomatic SARS-CoV-2 Infection Show T Cell Responses and Neutralising Antibodies after the First Wave. Pre-print downloaded Oct 15 from*

<https://doi.org/10.1101/2020.10.13.20211763>

## Vaccines and Immunity

- Geometric mean SARS-CoV-2 neutralizing antibody titers of 18 SARS-CoV-2 positive patients in South Korea decreased from 219.4 at 2 months to 143.7 at 5 months ( $p=0.03$ ) after infection, indicating a waning antibody response. The decline was significantly associated with antibody levels at 2 months and happened more frequently in symptomatic patients who developed pneumonia ( $n=11$ ), while none of the 7 asymptomatic participants experienced waning neutralizing antibody response.

*Choe et al. (Oct 13, 2021). Waning Antibody Responses in Asymptomatic and Symptomatic SARS-CoV-2 Infection. Emerging Infectious Diseases. <https://doi.org/10.3201/eid2701.203515>*

- In a randomized placebo-controlled phase 1/2 trial of a SARS-CoV-2 vaccine candidate, BBIBP-CorV, 192 healthy adults were randomized to receive vaccine (2, 4, or 8 µg) or placebo in a 3:1 ratio, stratified by age (18-59 and ≥60) in phase 1. Adverse reactions within the first 7 days of inoculation were reported by 42 (29%) of 144 vaccine recipients; all were mild or moderate. Neutralizing antibody titers were higher at day 42 among 18-59 year-olds than those ≥60, and demonstrated a dose response. In phase 2, 448 were randomized to receive a single 8 µg injection or two 4 µg injections. All adverse reactions remained mild or moderate. Neutralizing antibody titers were significantly higher on day 28 among all two-dose 4 µg schedules than the single 8 µg dose (p<0.0001).

*Xia et al. (Oct 15, 2020). Safety and immunogenicity of an inactivated SARS-CoV-2 vaccine, BBIBP-CorV: a randomised, double-blind, placebo-controlled, phase 1/2 trial. The Lancet Infectious Diseases. [https://doi.org/10.1016/S1473-3099\(20\)30831-8](https://doi.org/10.1016/S1473-3099(20)30831-8)*

- In an ongoing randomized controlled phase 1 trial of RNA-vaccine candidates BNT162b1 and BNT162b2 (n=195), both vaccine candidates elicited similar dose-dependent SARS-CoV-2 neutralizing titers, which were similar to titers of a panel of SARS-CoV-2 convalescent serum samples. BNT162b2 was associated with a lower incidence and severity of systemic reactions than BNT162b1, particularly in older adults, supporting its selection for advancement to phase 2-3 evaluations.

*Walsh et al. (Oct 14, 2020). Safety and Immunogenicity of Two RNA-Based Covid-19 Vaccine Candidates. New England Journal of Medicine. <https://doi.org/10.1056/NEJMoa2027906>*

#### Other Resources and Commentaries

- [Scientific Consensus on the COVID-19 Pandemic: We Need to Act Now](#) – The Lancet (Oct 15)
- [Funding and COVID-19 Research Priorities - Are the Research Needs for Africa Being Met](#) – MedRxiv (Oct 14)
- [Clinical Characteristics and Outcomes among Hospitalized Adults with Severe COVID-19 Admitted to a Tertiary Medical Center and Receiving Antiviral, Antimalarials, Glucocorticoids, or Immunomodulation with Tocilizumab or Cyclosporine: A Retrospective Observational Study \(COQUIMA cohort\)](#) – EClinicalMedicine (Oct 15)
- [Epidemiological Changes on the Isle of Wight after the Launch of the NHS Test and Trace Programme: A Preliminary Analysis](#) – The Lancet Digital Health (Oct 14)
- [How Anti-Ageing Drugs Could Boost COVID Vaccines in Older People](#) – Nature (Oct 15)
- [What Is the Evidence for Transmission of COVID-19 by Children in Schools A Living Systematic Review](#) – MedRxiv (Oct 14)

*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*