



2019-nCoV Literature Situation Report (Lit Rep)

October 7, 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

- **The BLAZE-1 clinical trial found that a combination of two monoclonal antibodies showed evidence of efficacy for treatment of mild-to-moderate COVID-19. These findings are based on a press release and have not been peer reviewed. [More](#)**
- **Comparing trends in COVID-19 cases over time between US states with differing approaches to mask mandates indicates that mask use and other mitigation measures can counteract increases in COVID-19 cases and deaths in response to reopening of businesses. [More](#)**
- **A representative survey of the US population found that a majority (68%) were supportive of being vaccinated for COVID-19. Respondents were more likely to accept vaccination if the hypothetical vaccine had a longer period of clinical testing, had higher efficacy, and was developed in the US. [More](#)**

Non-Pharmaceutical Interventions

- Comparing trends in COVID-19 cases over time between states with differing approaches to mask mandates indicates that mask use and other mitigation measures can counteract increases in COVID-19 cases and deaths in response to reopening of businesses. Based on an interrupted time series quasi-experimental study, in states that reopened indoor dining rooms before implementing a mask mandate, the number of excess cases was 10 times higher after 8 weeks on average and excess deaths from COVID-19 was 5 times higher than in states that reopened with mask mandates in place. The authors also estimate that if all 50 states and the District of Columbia had implemented mask mandates prior to reopening, the excess cases could have been reduced by 90% and excess deaths reduced by 80%.
Kaufman et al. (Oct 6, 2020). Comparing Associations of State Reopening Strategies with COVID-19 Burden. Journal of General Internal Medicine. <https://doi.org/10.1007/s11606-020-06277-0>
- *[Pre-print, not peer-reviewed]* Face coverings were found to be more effective than face shields at blocking the small aerosol particles propelled by a cough aerosol simulator. The efficacy of blocking aerosols was 99% with an N95 respirator, 59% with a procedure mask, 51% with a 3-ply cloth face mask, 47% with a polyester neck gaiter and 2% with a face shield.
Lindsay et al. (Oct 7, 2020). Efficacy of Face Masks Neck Gaiters and Face Shields for Reducing the Expulsion of Simulated Cough-Generated Aerosols. Pre-print downloaded Oct 7 from <https://doi.org/10.1101/2020.10.05.20207241>

Testing and Treatment

- *[Press release, not peer-reviewed]* A combination of two monoclonal antibodies showed evidence of efficacy for treatment of mild-to-moderate COVID-19. A randomized, double-blind, placebo-controlled Phase 2 trial (BLAZE-1 trial) showed that combination therapy with two of Lilly's SARS-CoV-2 neutralizing antibodies (LY-CoV555 and LY-CoV016) administered to patients with mild-to-moderate COVID-19 (112 received antibody, 156 received placebo) reduced viral load, symptoms, and COVID-related hospitalization and emergency room visits. The combination therapy has been generally well tolerated with no drug-related serious adverse events.

Lilly. (Oct 7, 2020). Lilly Provides Comprehensive Update on Progress of SARS-CoV-2 Neutralizing Antibody Programs. <https://investor.lilly.com/news-releases/news-release-details/lilly-provides-comprehensive-update-progress-sars-cov-2>

Vaccines and Immunity

- *[Pre-print, not peer-reviewed]* Administration of two inoculations of an inactivated SARS-CoV-2 vaccine was evaluated as safe and immunogenic in a phase I study in China. A double-blinded trial randomly assigned 192 healthy adults to receive one of the three doses of the vaccine or the placebo at an interval of 14 days or 28 days. Compared to the placebo group, the seroconversion rates of the neutralizing antibodies in the low-, medium- and high-dose groups reached 92%, 100% and 96% at day 14, and reached 80%, 96% and 92% at day 28, respectively. There were no abnormal variations in the serum samples of immunized subjects, and no severe adverse reactions were observed.

Pu et al. (Oct 6, 2020). An In-Depth Investigation of the Safety and Immunogenicity of an Inactivated SARS-CoV-2 Vaccine. Pre-print downloaded Oct 7 from <https://doi.org/10.1101/2020.09.27.20189548>

- *[Pre-print, not peer-reviewed]* A substantial proportion of individuals who lacked serological evidence of SARS-CoV-2 exposure showed antibody reactivity against SARS-CoV-2 antigens, possibly due to cross-reactivity of antibodies against other coronaviruses. Among 276 adults tested for SARS-CoV-2 antibodies during the second wave of the COVID-19 pandemic in Vancouver, Canada (May 17- June 19, 2020), 3 participants tested positive for SARS-CoV-2 antibodies using a commercially-approved assay. Among the 273 individuals who tested negative on the commercial assay, participants showed some antibody reactivity to SARS-COV-2 RBD (7%), N protein (49%), and spike protein (82%), potentially due to cross-reactivity.

Majdoubi et al. (Oct 7, 2020). Antibody Reactivity to SARS-CoV-2 in Adults from the Vancouver Metropolitan Area Canada. Pre-print downloaded Oct 7 from <https://doi.org/10.1101/2020.10.05.20206664>

Clinical Characteristics and Health Care Setting

- In June-July 2020, nearly half (47%) of nursing home facilities in the US reported a shortage of personal protective equipment (PPE) and/or staff needed to protect residents and staff from COVID-19. Thirty percent of facilities reported at least one week of staffing shortage, and 28% reported at least one week of PPE shortage. These data were obtained from the Nursing Home COVID-19 Public File released on July 31, 2020 (n=13,445 facilities).

Gibson and Greene. (Oct 6, 2020). State Actions and Shortages of Personal Protective Equipment and Staff in U.S. Nursing Homes. Journal of the American Geriatrics Society. <https://doi.org/10.1111/jgs.16883>

Mental Health and Personal Impact

- *[Pre-print, not peer-reviewed]* A narrative synthesis of 25 meta-analyses including 692 primary studies with more than 3 million individuals indicated that social isolation is associated with a range of poor physical and mental health outcomes, including chronic physical symptoms, frailty, coronary heart disease, malnutrition, hospital readmission, reduced vaccine uptake, early mortality, depression, social anxiety, psychosis, cognitive impairment in later life, and suicidal ideation.
Morina et al. (Oct 7, 2020). A Potential Impact of Physical Distancing on Physical and Mental Health. A Rapid Narrative Umbrella Review of Meta-Analyses on the Link between Social Isolation and Health. Pre-print downloaded Oct 7 from <https://doi.org/10.1101/2020.10.06.20207571>

Modeling and Prediction

- *[Pre-print, not peer-reviewed]* A modeling study found that accounting for variations in contact patterns throughout the US leads to a lower estimate of the threshold for herd immunity to SARS-CoV-2 compared to models that assume even mixing of populations.
Sheils et al. (Oct 6, 2020). Updating Herd Immunity Models for the U.S. in 2020 Implications for the COVID-19 Response. Pre-print downloaded Oct 7 from <https://doi.org/10.1101/2020.10.05.20207100>
- A modeling study estimated that during the shelter-in-place period (11 April–29 May 2020), most US states and the District of Columbia maintained the SARS-CoV-2 effective reproduction number below 1. Following relaxations of social-distancing measures, by 22 July 2020, 42 states and the District of Columbia had >75% probability of a rebound period of increased transmission of SARS-CoV-2. Curtailing the epidemic in this scenario with testing and isolation would require at least a 3.5-fold increase in coverage of these mitigation measures. An addition of contact-tracing coverage of 50–75% would be required to prevent epidemic rebound with full societal reopening.
Chiu et al. (Oct 6, 2020). State-Level Needs for Social Distancing and Contact Tracing to Contain COVID-19 in the United States. Nature Human Behaviour. <https://doi.org/10.1038/s41562-020-00969-7>

Public Health Policy and Practice

- In a survey of 316 respondents selected to reflect the US population, the majority (68%) were supportive of being vaccinated for COVID-19, but side effects of vaccination, questions about vaccine efficacy, and time spent in clinical testing remained concerns. Longer clinical testing of a hypothetical vaccine, increased efficacy, and having a vaccine that was developed in the US were significantly associated with increased vaccine acceptance.
- The authors note these results may not reflect the potential impacts of the CDC announcement of accelerated vaccine deployment and the pause of a major vaccine trial due to safety concerns, both of which occurred after the survey.
Pogue et al. (Oct 3, 2020). Influences on Attitudes Regarding Potential COVID-19 Vaccination in the United States. Vaccines. <https://doi.org/10.3390/vaccines8040582>
- An online survey conducted in April found that 28% of US respondents (n=1,007) reported an employment reduction (job loss or reduced earnings). Participants who experienced COVID-19 employment reduction were significantly more likely to seek assistance from safety net programs

than those who did not (46% vs. 12%) and more likely to have enrolled in unemployment insurance (29% vs. 5%) and federally funded programs (17% vs. 3%).

Saloner et al. (Oct 6, 2020). Access and Enrollment in Safety Net Programs in the Wake of COVID-19: A National Cross-Sectional Survey. PLOS ONE. <https://doi.org/10.1371/journal.pone.0240080>

Other Resources and Commentaries

- [Dying in a Leadership Vacuum](#) – NEJM (Oct 7)
- [Covid-19, Ebola, and HIV — Leveraging Lessons to Maximize Impact](#) – NEJM (Oct 7)
- [Resilience and Physical Activity in People under Home Isolation Due to COVID-19: A Preliminary Evaluation](#) – Mental Health and Physical Activity (Oct 2)
- [Business Shutdowns and COVID-19 Mortality](#) – MedRxiv (Oct 7)
- [The COVID-19 Social Media Infodemic](#) – Scientific Reports (Oct 6)
- [SARS-CoV-2-Specific T-Cells in Unexposed Humans: Presence of Cross-Reactive Memory Cells Does Not Equal Protective Immunity](#) – Signal Transduction and Targeted Therapy (Oct 6)
- [Insight on Sex-Based Immunity Differences, With COVID-19 Implications](#) – JAMA (Oct 6)
- [Risk of Mortality in Elderly Coronavirus Disease 2019 Patients With Mental Health Disorders: A Nationwide Retrospective Study in South Korea](#) – The American Journal of Geriatric Psychiatry (Sept 28)
- [Implementation of Environmental Surveillance for SARS-CoV-2 Virus to Support Public Health Decisions: Opportunities and Challenges](#) – Current Opinion in Environmental Science & Health (Oct 1)
- [Implementing a Negative Pressure Isolation Space within a Skilled Nursing Facility to Control SARS-CoV-2 Transmission](#) – American Journal of Infection Control (Oct 7)
- [Multi-Clonal Live SARS-CoV-2 In Vitro Neutralization by Antibodies Isolated from Severe COVID-19 Convalescent Donors](#) – BioRxiv (Oct 6)
- [More Than a Statistic: A Qualitative Study of COVID-19 Treatment and Prevention Optimization for Black Americans](#) – Journal of General Internal Medicine (Oct 6)
- [When Should Asymptomatic Persons Be Tested for COVID-19?](#) – Journal of Clinical Microbiology (Oct 6)
- [Inference of Person-to-Person Transmission of COVID-19 Reveals Hidden Super-Spreading Events during the Early Outbreak Phase](#) – Nature Communications (Oct 6)

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