SEPTEMBER 8, 2020

The scientific literature on COVID-19 is rapidly evolving and these articles were selected for review based on their relevance to 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.

The COVID-19 Literature Report is researched, compiled, and edited daily by students and faculty in the University of Washington Schools of Public Health and Medicine. The editors are Brandon Guthrie PhD and Jennifer Ross MD MPH. Contributors include Diana Tordo MPH, Julianne Meisner BVM&S MS, Lorenzo Tolentino MPH, Wenwen Jiang MPH, Sherrilynne Fuller PhD FACMI, Dylan Green MPH, Diana Louden MLib, Ashley Tseng MPH and Jessie Seiler MPH.

Today's summary is based on a review of 816 articles (726 published, 90 in preprint).

KEY TAKEAWAYS

- Non-randomized phase 1/2 studies in Russia of adenovirus recombinant vaccines, rAD5 and rAd26, were well tolerated with no serious adverse events. All participants (n=38 per vaccine) produced antibodies to the vaccines, and humoral and cellular immune responses were strong. More

- Compared to past flu seasons, hospitalizations for acute respiratory illnesses among young children in rural Alaska dropped dramatically in April, coinciding with control measures in response to the COVID-19 pandemic. More

- Cost modeling suggests that extensive social distancing with masks on college campuses could prevent up to 87% of COVID-19 cases at a cost of $168 per infection prevented. Addition of asymptomatic testing every 3 days could prevent 96% of cases, but could markedly increase the cost, depending on the price of the tests. More

- Convalescent plasma transfusion was not associated with a reduction in mortality or progression to severe COVID-19 in a randomized clinical trial among participants with moderate COVID-19 in India. More

Non-Pharmaceutical Interventions

- People who expressed higher levels of self-efficacy, perceived severity of COVID-19 illness, and a belief that prevention measures would be effective were more likely to
plan to engage in eight behaviors designated as critical by the CDC for the prevention of COVID-19. The authors suggest that public health messaging should focus on the severity of COVID-19 and the relative ease of engaging in the preventative methods.


### Testing and Treatment

- [Pre-print, not peer-reviewed] COVID-19 convalescent plasma infusion was not associated with a reduction in mortality or progression to severe COVID-19 at 28 days post-enrollment (aOR=1.1, 95% CI: 0.7, 1.8) in a randomized trial among persons with moderate COVID-19 in India (n=464). Death or progression to severe disease occurred in 18.7% of participants in the intervention arm and 17.9% in the control arm.
- Participants in the intervention arm received two doses of 200 mL convalescent plasma that were transfused 24 hours apart. An analysis limited to participants who received infusions within three days of symptom onset also found no significant difference in the composite outcome between intervention and control groups (aOR=0.6, 95% CI 0.2, 1.2).

Agarwal et al. (Sept 8, 2020). Convalescent Plasma in the Management of Moderate COVID-19 in India An Open-Label Parallel-Arm Phase II Multicentre Randomized Controlled Trial (PLACID Trial). Pre-print downloaded Sep 8 from https://doi.org/10.1101/2020.09.03.20187252

### Vaccines and Immunity

- Findings from two, non-randomized phase 1/2 studies (n=38 per study) conducted in Russia of recombinant vaccines based on adenovirus type 5 (rAd5) and type 26 (rAd26) show that both vaccine formulations were well tolerated with no serious adverse events reported.
- All participants produced SARS-CoV-2 antibodies, and the vaccines induced strong humoral and cellular immune responses in participants.


### Clinical Characteristics and Health Care Setting

- There were no vertical transmissions of SARS-CoV-2 from mother to neonate nor differences in clinical manifestations, radiological and biochemical results among neonates born to 15 women with confirmed and 17 with suspected COVID-19 who delivered in Hubei Province in China.


### Mental Health and Personal Impact
• US parents responding to an online survey reported that the most common physical activities during April to May 2020 for children (n=211, mean age=8.3 years) were free play/unstructured activity (90%) and going for a walk (55%). Children engaged in about 90 min of school-related sitting and over 8 hours of leisure-related sitting per day. Parents of children ages 9-13 years were more likely to perceive a greater decrease of physical activity compared to parents of children ages 5-8.


• Cross-sectional surveys in Singapore, China, and Italy (n=4,505) show that respondents reported high awareness of COVID-19 and its symptoms, and similarly high levels of information sufficiency, adherence, and acceptance to public health control measures. Higher self-efficacy was associated with lower anxiety levels, while superstition, fatalism, and considering messaging apps as the most trustworthy sources were associated with higher anxiety levels.


• Based on a screening questionnaire for post-partum depression, 15% of women (n=223) whose last trimester of pregnancy overlapped with national lockdowns in Turkey and gave birth in a tertiary care center with strong hospital restrictions were considered at risk for postpartum depression, compared to an estimate of 8% of postpartum women in a period prior to the pandemic. These women also had lower Maternal Attachment Inventory scores than women who were not at risk for postpartum depression.


Modeling and Prediction

• [Pre-print, not peer-reviewed] Cost modeling indicates that implementing extensive social distancing with masks on college campuses could prevent up to 87% of COVID-19 cases at a cost of $168 per case prevented. Adding lab testing of asymptomatic students every 3 days would prevent up to 96% of cases, but would raise the cost to $8,300 per case prevented for tests that cost $10 per test. Using a $1 test would cost $275 per case prevented.

Losina et al. (Sept 5, 2020). College Campuses and COVID-19 Mitigation Clinical and Economic Value. Pre-print downloaded Sep 8 from https://doi.org/10.1101/2020.09.03.20187062

• Based on a modeling study based on Ontario, Canada, enacting lockdown policies at the county level would cause significantly fewer person-days of closure compared to enacting them at the province level, even under the same trigger threshold for cases and in a scenario with high intercounty travel. The authors conclude that these
findings suggest local strategies may be better suited for handling the tail-end of the pandemic.

https://doi.org/10.1073/pnas.2014385117

• [Pre-print, not peer-reviewed] In the context of outbreak control on university campuses, Bergstrom et al. modeled the potential trade-offs of testing accuracy, frequency, and delay of results and found that even with a false negative rate of 30%, testing every second day can reduce R0 from 2.5 to below 1 given a one day delay of results.  
• Even if tests are done daily, a 2-day delay would not be able to lower R0 below 1.

Bergstrom et al. (Sept 8, 2020). Frequency and Accuracy of Proactive Testing for COVID-19. Pre-print downloaded Sep 8 from https://doi.org/10.1101/2020.09.05.20188839

Public Health Policy and Practice

• Hospitalizations of young children due to acute respiratory illnesses (ARI) dropped dramatically in April 2020 in rural Alaska, in contrast to the past 10 seasons, when the seasonal decline began in June. Among 26 seasons of data, no season prior to the COVID-19 pandemic season also had a four-week stretch with no ARI admissions, demonstrating the potential secondary benefits of physical distancing and travel restrictions.

https://doi.org/10.1093/cid/ciaa1328

• Compared to white respondents, Black respondents to a Pew survey (n=10,624) had a 1.4-fold higher odds of reporting that they had used telehealth as a result of the COVID-19 pandemic. The association was particularly strong among respondents who perceived the COVID-19 pandemic to be a minor threat (aOR=1.92).

https://doi.org/10.1093/jamia/ocaa221

• The Cornell Farmworker Program, in partnership with Finger Lakes Community Health, implemented an approach to support farmworkers by creating a language concordant text messaging system that reached over 3,000 farmworkers and a webinar to communicate COVID-19 information regarding safety and regulations in which over 500 farmworkers participated.

https://doi.org/10.1080/1059924X.2020.1815625
• [Pre-print, not peer-reviewed] As of July 2020, only 16 states had recommended asymptomatic testing of the public, while 9 states actively recommended against it. The per capita rate of COVID-19 tests reported in each state correlated with more permissive testing recommendations and with higher epidemic intensity. Higher per capita testing was weakly associated with more complete reporting of COVID-19 deaths.


OTHER RESOURCES AND COMMENTARIES

COVID-19 Exacerbates Violence against Health Workers – The Lancet (Sept 5)
Inmunological Considerations for COVID-19 Vaccine Strategies – Nature Reviews Immunology (Sept 4)
COVID-19: A New Lens for Non-Communicable Diseases – The Lancet (Sept 5)
US University Workers Fight a Return to Campus as COVID-19 Cases Grow – Nature (Sept 4)
Attitudes Toward a Potential SARS-CoV-2 Vaccine: A Survey of U.S. Adults – Annals of Internal Medicine (Sept 4)
Presenting Characteristics, Smoking versus Diabetes and Outcome among Patients Hospitalized with COVID-19 – Journal of Medical Virology (Sept 4)
Humor in the Age of COVID-19 Lockdown: An Explorative Qualitative Study – Psychiatria Danubina (Sept 5)
Decreased Case Fatality Rate of COVID-19 in the Second Wave: A Study in 53 Countries or Regions – Transboundary and Emerging Diseases (Sept 6)
Factors Associated with Nursing Homes’ Late Participation in COVID-19 Reporting – Journal of the American Geriatrics Society (Sept 7)
Asymptomatic SARS Coronavirus 2 Infection: Invisible yet Invincible – International Journal of Infectious Diseases (Sept 3)
Interdisciplinary Information for Infectious Disease Response: Exercising for Improved Medical/Public Health Communication and Collaboration – Disaster Medicine and Public Health Preparedness (Sept 8)
SARS-CoV-2 RNA in Plasma Is Associated with ICU Admission and Mortality in Patients Hospitalized with COVID-19 – Clinical Infectious Diseases (Sept 5)
Years of Life Lost Associated with COVID-19 Deaths in the United States – Journal of Public Health (Sept 7)
COVID-19 and HIV Spotlight the U.S. Imperative for Permanent Affordable Housing – Clinical Infectious Diseases (Sept 5)
Beneficial and Harmful Outcomes of Tocilizumab in Severe COVID-19 A Systematic Review and Meta-Analysis – medRxiv (Sept 8)
The COVID-19 Lit Rep is currently prepared by the UW MetaCenter for Pandemic Preparedness and Global Health Security and the START Center in collaboration with and on behalf of the Washington State Department of Health. The Lit Rep was originally developed and disseminated by the WA DOH COVID-19 Incident Management Team to support evidence-based decision making throughout the region.