



2019-nCoV Literature Situation Report (Lit Rep) March 18, 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

- ② **Prisons, youth detention centers and immigration detention centers are high-risk settings for COVID-19 outbreaks and should be integrated in COVID-19 public health responses.**
- ② **Allowing some SARS-CoV-2 infections to occur, may be necessary to prioritize interventions that protect vulnerable populations from COVID-19 if containment and social distancing measures cannot be sustained.**
- ② **An article highlights the need for more data on first and second trimester pregnancy, and calls for routine detection of COVID-19 and monitoring during the first two trimesters.**
- ② **In line with current knowledge, two MMWR articles discuss the vulnerability of elderly persons to COVID-19 and provide guidelines for clinicians, family members and public health interventions.**

Non-Pharmaceutical Interventions

- If containment and social distancing measures cannot be sustained, it may be necessary to move towards herd immunity and allow some SARS-CoV-2 infections to occur, and prioritize interventions that protect vulnerable populations from getting infected.
- The authors discuss how school closures potentially reduces infections in low risk groups while shifting the burden to the higher risk groups.
Handel et al. (March 17, 2020). If Containment is not possible, how do we minimize mortality for COVID-19 and other emerging infectious disease outbreaks? Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.13.20034892>
- This article suggests that increasing medical resources, in particular hospital beds, and implementing residential lockdowns in addition to city lockdowns may result in more effective epidemic control.
Shao (March 17, 2020). Impact of city and residential lockdowns on prevention and control of COVID-19. Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.13.20035253>

Geographic Spread

- By developing a model that could provide a risk assessment of the global spread of COVID-19, the study demonstrates the importance of lowering the incidence at source regions and implementing strict control measures in the susceptible regions.

Hossain et al. (March 17, 2020). *The effects of border control and quarantine measures on global spread of COVID-19*. Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.13.20035261>

Testing and Treatment

- This article demonstrates that the measures taken in hospitals in Hubei Province and Wuhan to increase medical resources such as more aided health workers, additional makeshift beds and acute care beds may have played a critical role in reducing mortality rates and improving recovery rates.
- This may provide useful guidance to countries grappling with overwhelmed local health care systems.

Zhang et al. (March 17, 2020). *Wuhan and Hubei COVID-19 mortality analysis reveals the critical role of timely supply of medical resources*. Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.13.20035410>

Clinical Characteristics and Health Care Setting

- This MMWR article provides a description of outcomes among patients with COVID-19 in the US that are similar to findings in China: fatality was highest in persons aged ≥ 85 (10% to 27%), followed by 3% to 11% among persons aged 65–84 years, 1% to 3% among persons aged 55–64 years, <1% among persons aged 20–54 years, and no fatalities among persons aged ≤ 19 years.
- This article has important guidance for clinicians and family members of persons at high risk.

Bialek et al. (March 18, 2020). *Severe Outcomes Among Persons with Coronavirus Disease 2019 (COVID-19) —United States, February 12– March 16, 2020*. CDC MMWR. <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6912e2-H.pdf>

- McMichael et al describe the rapid spread of COVID-19 in a long-term care facility in Washington State, and calls for public health interventions focused on surveillance, infection control and mitigation efforts in long-term care facilities to prevent introduction of COVID-19.

McMichael et al. (March 18, 2020). *COVID-19 in a Long-Term Care Facility—King County, Washington, February 27 – March 9, 2020*. CDC MMWR. <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6912e1-H.pdf>

- The authors observed a negative association between COVID-19 daily mortality counts and temperature and humidity, and a positive association with diurnal temperature range (DTR).
- This study suggests implications that temperature variation and humidity may affect COVID-19 mortality.

Ma et al. (March 18, 2020). *Effects of temperature variation and humidity on the mortality of COVID-19 in Wuhan*. Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.15.20036426>

- While there are some studies that suggest no specific COVID-19 effect on late pregnancy, Jiao highlights the need for more data on effects of COVID-19 on first and second trimester pregnancy since hormone levels and immune status differs between trimesters and could affect neonatal and maternal outcomes.
- The author calls for routine detection and monitoring of early and mid-term pregnancy, and addressing work-place policies for pregnant medical staff.

Jiao (March 17, 2020). *Under the epidemic situation of COVID-19, should special attention to pregnancy women be given? Jour of Med Virology*. <https://doi.org/10.1002/jmv.25771>

- A hospital in Italy outlined the preventative measures they took in selecting transplant patients during the COVID-19 outbreak and in performing transplants.

Andrea et al. (March 17, 2020). Coronavirus Disease 2019 and Transplantation: a view from the inside. American Journal of Transplantation. <https://doi.org/10.1111/ajt.15853>

Modelling and Prediction

- Dowd et al used demographic projections of age-specific COVID-19 fatalities in Italy and South Korea to illustrate the effect of age structure on mortality in countries with similar sized populations but different age structures.
- The study suggests that demographically informed projections will better predict the COVID-19 burden, help inform policy-making and government targeted action (e.g. finding childcare solutions to avoid inadvertently bringing children and grandparents in closer contact due to school closures).

Dowd et al. (March 18, 2020). Demographic science aids in understanding the spread and fatality rates of COVID-19. Pre-print downloaded Mar 18 from <https://doi.org/10.1101/2020.03.15.20036293>

Public Health Policy and Practice

- This article discusses the importance of including prisons, youth detention centers and immigration detention centers in the broader COVID-19 public health response. These settings have high levels of risk factors with facilities that are often overcrowded, poorly ventilated and unsanitary, and limited access to healthcare services.

Kinner et al. (March 17, 2020). Prisons and custodial settings are part of a comprehensive response to COVID-19. Lancet Public Health. [https://doi.org/10.1016/S2468-2667\(20\)30058-X](https://doi.org/10.1016/S2468-2667(20)30058-X)

Other Resources and Commentaries

- [The spread of the COVID-19 coronavirus](#)—Science and Society (Mar 17)
 - Hunter discusses lessons learned from SARS and the growing optimism over vaccines and other therapies against the COVID-19 virus.
- [Tabletop exercise to prepare institutions of higher education for an outbreak of COVID-19](#)—Jour of Emergency Mgmt (Mar 18)
 - This manual designed to promote competencies in public health emergency preparedness is mainly targeted for universities, but may also be adapted by non-academic organizations, societies and large businesses.