



2019-nCoV Literature Situation Report (Lit Rep)

March 6, 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

- 📄 **New age-specific case fatality estimates from Hubei Province show a sharp incline in case fatality after age 60, reaching 36% among those aged 80 and older compared to just 3.3% (2.9-2.8) among symptomatic cases and only 1.6% (1.4-1.8) across symptomatic and asymptomatic cases combined.**
- 📄 **Two new studies underscore the psychological effects that many healthcare workers on the frontlines of the COVID-19 outbreak are experiencing.**
- 📄 **A new evaluation of forehead and wrist temperature measurements suggests that wrist measurements may be more reliable for people who are or have recently been outside.**

Non-Pharmaceutical Interventions

- 528 participants were included in a study assessing the accuracy and precisions of forehead and wrist temperatures measurements. Wrist measurements appear to be more stable under different circumstances for people outdoors. Both measurements were accurate for people indoors.
Chen et al. (Mar 6, 2020). Validity of Wrist and Forehead Temperature in Temperature Screening in the General Population During the Outbreak of 2019 Novel Coronavirus: a prospective real-world study. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.02.20030148>

Clinical Characteristics and Health Care Setting

- While the effects of COVID-19 on kidney function and subsequent effects of renal failure on broader multi-organ failure have been previously discussed, this study suggests that acute renal failure may also serve as a good prognostic indicator. Furthermore, the infection of kidney tubules may indicate the potential for transmission via urine, though further study is needed.
Diao et al. (Mar 6, 2020) Human Kidney is a Target for Novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.04.20031120>
- Severe COVID-19 illness has been documented differently across age groups, but case fatality estimates have not previously accounted for differences by age. This report estimates an overall case fatality of 1.6% (1.4-1.8) in Hubei across both symptomatic and asymptomatic cases. Among

those with symptoms, the case fatality is estimated at 3.3% (2.9-2.8) with a dramatic increase after 60 years, rising to 36% among those over 80 years old.

Riou et al. (Mar 6, 2020). Adjusted age-specific case fatality ratio during the COVID-19 epidemic in Hubei, China, January and February 2020. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.04.20031104>

- A new study out of China compared symptoms at admission during early and late periods of the current COVID-19 outbreak. The authors report differences in symptom (e.g., systemic symptoms, such as fever, were more common in the early group but more severe in the later), suggesting that viral mutation may be responsible for changing symptom profiles.
- However, tremendous caution should be used in interpreting these results as the authors were not able to account for changes in diagnostic procedures, care seeking patterns, or other external factors that may explain these results.

Chen et al. (Mar 6, 2020). Caution: The clinical characteristics of COVID-19 patients at admission are changing. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.03.20030833>

- In a review of 101 fatal COVID-19 cases, respiratory failure was noted in 100/101 cases while acute cardiac and kidney damage or failure were also identified as key factors in cause of death.

Shi et al. (Mar 6, 2020). Clinical characteristics of 101 non-surviving hospitalized patients with COVID-19—A single center, retrospective study. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.04.20031039>

- 36 fatal COVID-19 cases are described. All cases progressed to acute respiratory distress syndrome (ARDS) with a median time from onset to ARDS of 11 days.

Huang et al. (Mar 5, 2020). Clinical characteristics of 36 non-survivors with COVID-19 in Wuhan, China. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.02.27.20029009>

- While men and women appear to have the same susceptibility to COVID-19, men appear to be at greater risk of higher severity and death, in line with prior reports and historical data for SARS-CoV.

Jin et al. (Mar 5, 2020). Gender differences in patients with COVID-19: Focus on severity and mortality. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.02.23.20026864>

Mental Health and Personal Impact

- Several studies in recent weeks have touched on the psychological effects of the current outbreak on healthcare workers (HCWs), especially in China. Two new questionnaire-based studies have evaluated psychological distress in HCWs.
- Dai et al found that the top concerns among HCWs were infection of colleagues and family members, protective measures, and medical violence. 39.1% reported psychological distress, with more distress reported by those working in Wuhan, serving as frontline medical providers, and those who had experienced isolation themselves or had friends or colleagues infected.
- Xing et al compared HCW reports of psychological symptoms to national averages and found significantly more among HCWs. However, interpersonal sensitivity was quite high, indicating good cohesion and unity among clinical providers during emergencies.

Dai et al. (Mar 6, 2020). Psychological impact of the coronavirus disease 2019 (COVID-19) outbreak on healthcare workers in China. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.03.20030874>

Xing et al. (Mar 6, 2020). Study of the mental health status of medical personnel dealing with new coronavirus pneumonia. Pre-print downloaded Mar 6 from <https://doi.org/10.1101/2020.03.04.20030973>

Other Resources and Commentaries

- Xiao and Torok describe five steps that have been taken around the world in response to the COVID-19 outbreak and explain why some are evidence-based and others are not.

Xiao and Torok (Mar 5, 2020). Taking the right measures to control COVID-19. *Lancet Infect Dis.* [https://doi.org/10.1016S1473-3099\(20\)30152-3](https://doi.org/10.1016S1473-3099(20)30152-3)