



2019-nCoV Literature Situation Report (Lit Rep) February 21, 2020

Key Takeaways

- Preliminary evidence from hospital-based studies indicates that kidney impairment and acute respiratory distress syndrome are associated with a greater likelihood of death among hospitalized COVID-19 patients.
- Researchers seem to be converging on the theory that while bats are the most likely origin of 2019-nCoV, pangolins are the most likely intermediary host.
- A new survey of roughly 1,000 Chinese residents indicates that perceived unclear communication from government officials regarding COVID-19 is associated with increased anxiety.

Transmission and Global Spread

- Singapore's proactive public health response to COVID-19 is described with reference to seven critical issues that require global attention to further curb the spread of the outbreak. Among these are improved understanding of the epidemiological and clinical features of the virus, identification of effective treatment options and vaccines, and better communication and support strategies for the public and frontline health care workers.

Wong et al. (Feb 20, 2020). COVID-19 in Singapore—Current Experience: Critical Global Issues That Require Attention and Action. JAMA.

<https://jamanetwork.com/journals/jama/fullarticle/2761890>

- Accounting for potential unrecorded migration, these authors estimate the scope of COVID-19 importations in countries outside of China. They compare reported and estimated number of cases and describe countries that may be at elevated risk of local transmission. The U.S. is among the countries with higher estimated risk of a local outbreak.

Sun et al. (Feb 20, 2020). Estimating number of global importations of COVID-19 from Wuhan, risk of transmission outside mainland China and COVID-19 introduction index between countries outside mainland China. Pre-print downloaded Feb 21 from

<https://doi.org/10.1101/2020.02.17.20024075>.

Modelling and Prediction

- Diao et al. estimate the cure rate and case fatality for COVID-19 patients in Wuhan and the rest of mainland China using data on hospital discharges to support more precise modelling. They estimate that in mainland China, 93% of patients recover compared to 87% in Wuhan. These numbers suggest a case fatality among known patients of around 7% which is comparable to previous SARS estimates.

Diao et al. (Feb 20, 2020). Estimating the cure rate and case fatality rate of the ongoing epidemic COVID-19. Pre-print downloaded Feb 21 from <https://doi.org/10.1101/2020.02.18.20024513>

Clinical Characteristics and Health Care Setting

- Among critically ill COVID-19 pneumonia patients, mortality is high, especially for those with comorbidities. Survival after ICU admission appears to be around 1-2 weeks among these patients.
Yang et al. (Feb 21, 2020). Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. The Lancet Respir Med. [https://www.thelancet.com/lancet/article/S2213-2600\(20\)30079-5](https://www.thelancet.com/lancet/article/S2213-2600(20)30079-5)
- A study of 710 COVID-19 patients found elevated prevalence of kidney impairment and a higher risk of in-hospital death among those with kidney impairment.
Cheng et al. (Feb 20, 2020). Kidney impairment is associated with in-hospital death of COVID-19 patients. Pre-print downloaded Feb 21 from <https://doi.org/10.1101/2020.02.18.20023242>
- Clinical characteristics are described for 109 COVID-19 patients admitted to Central Hospital of Wuhan. Patients with acute respiratory distress syndrome (ARDS) were more likely to have co-existing conditions, such as diabetes and cerebrovascular and chronic kidney disease than patients without ARDS. Severity of ARDS was also associated with higher risk of death.
Liu et al. (Feb 20, 2020). Clinical Characteristics and Progression of 2019 Novel Coronavirus-1 Infected Patients 2 Concurrent Acute Respiratory Distress Syndrome. Pre-print downloaded Feb 21 from <https://doi.org/10.1101/2020.02.17.20024166>

Public Health Policy and Practice

- In London, public health officials are piloting a new in-home COVID-19 test among people determined not to require immediate hospitalization.
Mahase (Feb 14, 2020). Coronavirus: home testing pilot launched in London to cut hospital visits and ambulance use. BMJ. <https://doi.org/10.1136/bmj.m621>

Mental Health and Personal Impact

- 510 persons from Wuhan and 501 persons from Shanghai completed phone interviews asking about symptoms of anxiety and also changes in behaviors related to COVID-19, such as increased hand washing, use of masks, and avoidance of going out.
- Citizens near the epicenter (Wuhan) reported significantly greater symptoms of moderate to severe anxiety than those in Shanghai (major city with transportation ties to Wuhan). Perception of risk and severity of disease were positively associated with behavior change, and enhanced by governmental enforcement and messaging. However, confusion about the accuracy of information provided led to increased anxiety.
Qian et al. (Feb 20, 2020). Psychological responses, behavioral changes and public perceptions during the early phase of the COVID-19 outbreak in China: a population based cross-sectional survey. Pre-print downloaded Feb 21 from <https://doi.org/10.1101/2020.02.18.20024448>

Other Resources

- This commentary describes the views of several public health leaders on the potential role of artificial intelligence technology in responding to COVID-19.
McCall (Feb 20, 2020). COVID-19 and artificial intelligence: protecting health-care workers and curbing the spread. The Lancet Digital Health. [https://doi.org/10.1016/S2589-7500\(20\)30054-6](https://doi.org/10.1016/S2589-7500(20)30054-6)

- Mowbray describes misinformation circulating in China about prevention, testing, and treatment of COVID-19 in the absence of evidence-based answers from both Chinese and Western medicine.
Mowbray (Feb 19, 2020). Letter from China: covid-19 on the grapevine, on the internet, and in commerce. BMJ. <https://doi.org/10.1136/bmj.m643>