



## 2019-nCoV Literature Situation Report (Lit Rep) February 26, 2020

### Key Takeaways

- ▣ **New studies continue to find that older age and comorbidities, especially hypertension, are associated with an elevated risk of COVID-19 illness, increased symptom severity, and death.**
- ▣ **Several papers discuss COVID-19 considerations and outcomes for a range of vulnerable populations, including cancer patients and those in hemodialysis centers and psychiatric in-patient facilities.**
- ▣ **Neurological symptoms in COVID-19 patients appear to be more common among those with severe illness and include acute cerebrovascular diseases, consciousness impairment, and skeletal muscle symptoms. This is the first study to explore the neurological effects of the illness.**

### Transmission Dynamics

- This meteorological study found that there may be some effect of temperature on the transmission of COVID-19, which may also help to explain the initial cluster of cases in cases in Wuhan. The authors suggest there may be a nonlinear dose-response relationship between temperature and virus transmission and that colder climates will require stricter control measures.  
*Wang et al. (Feb 25, 2020). Temperature significant change COVID-19 Transmission in 429 cities. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.22.20025791>*

### Clinical Characteristics and Health Care Setting

- 1,524 cancer patients were evaluated from Dec 30-Feb 17, of whom 12 developed COVID-19, representing a two-fold greater risk than the general population. Only five of these patients were undergoing cancer treatment, suggesting that hospital visits were likely the most relevant risk factor. Severe illness was not higher than in the general population. Considerations for appropriate isolation protocols for cancer patients undergoing treatment are discussed.  
*Yu et al. (Feb 25, 2020). SARS-CoV-2 transmission in cancer patients of a tertiary hospital in Wuhan. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.22.20025320>*
- Clinical data were reviewed for 214 hospitalized patients with COVID-19 at three designated care hospitals in Wuhan to evaluate the presence of neurological symptoms. Overall, 36.4% of patients had neurologic manifestations, though they were more common among those with severe illness, including acute cerebrovascular diseases, consciousness impairment, and skeletal muscle symptoms.  
*Mao et al. (Feb 25, 2020). Neurological Manifestations of Hospitalized Patients with COVID-19 in Wuhan, China: a retrospective case series study. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.22.20026500>*
- Zhu et al. discuss several factors that may increase the risk of COVID-19 transmission in psychiatric in-patient settings and offer recommendations that may help mitigate the effects of an outbreak.

Zhu et al (Feb 25, 2020). *The Risk and Prevention of Novel Coronavirus Pneumonia Infections Among Inpatients in Psychiatric Hospitals. Neuroscience Bulletin.*

<https://doi.org/10.1007/s12264-020-00476-9>

- Two clinicians reviewed clinical records, lab findings, and radiologic data of 25 COVID-19 deaths at one Wuhan hospital. Overall, older age and underlying diseases were common among decedents. Average disease duration 10.56 days (SD 4.42 days). All patients died of respiratory failure and all had underlying diseases: hypertension (64%), diabetes (40%), heart disease (32%), kidney disease (20%), cerebral infarction (16%), and others less frequently.
- Authors point to the potential role of bacterial infections, malnutrition, and multiple organ dysfunction as important clinical considerations. They also suggest several metabolic markers that may be used as indicators of disease progression.

*Li et al. (Feb 25, 2020). Clinical characteristics of 25 death cases infected with COVID-19 pneumonia: a retrospective review of medical records in a single medical center, Wuhan, China. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.19.20025239>*

- Authors describe a COVID-19 outbreak in a hemodialysis center in Wuhan that began Jan 14 and ended fully on Feb 17. Upgrading prevention and protection procedures and starting universal screening and isolation were effective in controlling the outbreak. Overall, this appears to be a highly susceptible population that may be particularly vulnerable to cardiovascular events during infection. Patient clinical details are provided.

*Ma et al. (Feb 25, 2020). 2019 novel coronavirus disease in hemodialysis (HD) patients: Report from one HD center in Wuhan, China. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.24.20027201>*

- Researchers describe novel efforts to generate polyclonal and monoclonal COVID-19 antibodies and test a potential serologic diagnostic tool.

*Li et al. (Feb 25, 2020). Generation of antibodies against COVID-19 virus for development of diagnostic tools. Pre-print downloaded Feb 25 from <https://doi.org/10.1101/2020.02.20.20025999>.*

- While men and women appear to be equally susceptible to COVID-19, men tend to have more severe illness, similar to SARS-CoV. Older age and more comorbidities were also associated with higher COVID-19 illness severity in this review of public data from China.

*Jin et al. (Feb 25, 2020). Higher severity and mortality in male patients with COVID-19 independent of age and susceptibility. Pre-print downloaded Feb 25 from <https://doi.org/10.1101/2020.02.23.20026864>*

- This meta-analysis of clinical studies on COVID-19 included 50,466 patients. In addition to previously reported symptoms, 18.1% of cases were deemed severe and case fatality was 4.3%.

*Sun et al. (Feb 25, 2020). Clinical characteristics of 50466 patients with 2019-nCoV infection. Pre-print downloaded Feb 25 from <https://doi.org/10.1101/2020.02.18.20024539>*

- Specific recommendations and considerations are provided for administering respiratory support that maximizes patient wellness and staff safety.

*Cheung et al. (Feb 24, 2020). Staff safety during emergency airway management for COVID-19 in Hong Kong. *Lancet Respir Med.* [https://doi.org/10.1016/S2213-2600\(20\)30084-9](https://doi.org/10.1016/S2213-2600(20)30084-9)*

- This commentary reviews practical considerations for isolation and quarantine in the healthcare setting for suspected, but not confirmed, COVID-19 cases.  
*Zosia (Feb 21, 2020). Rules on isolation rooms for suspected covid-19 cases in GP surgeries to be relaxed. BMJ. <https://www.bmj.com/content/bmj/368/bmj.m707.full.pdf>*
- Authors present the role of radiology in responding to the current COVID-19 outbreak through early detection and assessment of disease course.  
*Zu et al. (Feb 21, 2020). Coronavirus Disease 2019 (COVID-19): A Perspective from China. Radiology. <https://doi.org/10.1148/radiol.2020200490>*

## Non-Pharmaceutical Interventions

- Predictive modelling and simulations were used to evaluate different control strategies used to limit COVID-19 transmission. The most effective appears to be comprehensive quarantine in hospitals and quarantine stations. Ineffective quarantine efforts on the Diamond Princess Cruise ship and the initial cluster of cases tied to the Huanan Seafood Market underscore the importance of implementing sound control measures, including eliminating crowded gatherings. Incomplete home isolation may be driving ongoing disease transmission in Wuhan, along with spread in clinic lines and within families.  
*Zhou et al. (Feb 25, 2020). Characterizing the transmission and identifying the control strategy for COVID-19 through epidemiological modeling. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.24.20026773>*
- Using dynamic modelling techniques, the authors estimate shifts in the SARS-CoV-2 reproductive number over time and across provinces in China, concluding that the public health interventions implemented in Wuhan have been effective in slowing and preventing outbreaks in Hubei Province and other provinces.  
*Lin et al. (Feb 25, 2020). Trends in Transmissibility of 2019 Novel Coronavirus-infected Pneumonia in Wuhan and 29 Provinces in China. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.21.20026468>*
- Containment efforts in Singapore, including social distancing and active case finding efforts, appear to be successfully limiting the spread of COVID-19.  
*Tariq et al. (Feb 25, 2020). Real-time monitoring the transmission potential of COVID-19 in Singapore, February 2020. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.21.20026435>*

## Mental Health and Personal Impact

- Mental health professionals from the National Mental Health Center in Korea have been deployed to offer counseling to hundreds of individuals under quarantine. National hospitals and community mental health centers are also providing services. Accurate information on common emotional responses to infectious disease outbreaks, recommendations for evaluation, and advice on coping strategies have been distributed via leaflet throughout the country.
- The authors agree with Chinese colleagues who propose three factors as part of an effective mental health response: multi-disciplinary mental health teams; clear communication with regular and accurate updates on COVID-19; and establishment of secure ways to provide support via electronic and apps.

*Park and Park (Feb 25, 2020). Mental Health Care Measures in Response to the 2019 Novel Coronavirus Outbreak in Korea. Psychiatry Investigation. <https://doi.org/10.30773/pi.2020.0058>*

- In a study of 5,393 healthcare workers from all provinces in China (excluding Hong Kong and Taiwan), conducted between Feb 9-15, 2020, participants self-reported on symptoms of depression, anxiety, and insomnia using scales validated for Chinese populations and on perceived social support. Insomnia was the most common symptom (34.3% of respondents) followed by depression (28%) and anxiety (5.9%). Risk factors for emotional stress were highest in female nurses, those who had contact with suspected or confirmed infectious patients, mid-career clinicians, those reporting lower levels of social support, and those who had contact “primary” with patients, including working in respiratory wards, ICU, and isolation wards. The authors concluded that social support may reduce the impact of stress on healthcare providers.

*Siyu et al. (Feb 25, 2020). Mental health status and coping strategy of medical workers in China during The COVID-19 outbreak. Pre-print downloaded Feb 26 from <https://doi.org/10.1101/2020.02.23.20026872>*

- The author describes the difficulties of accessing timely psychological intervention during the COVID-19 outbreak, particularly when patients are under quarantine. He suggests a potential method to address this issue via what is described as “Structured Letter Therapy”.
- The author emphasizes that this method is meant for brief consultation only, and is not an appropriate modality for conventional psychological counseling. It also carries the risk of being unable to respond to psychological crises and would not be recommended for acute issues. The method should be further standardized, but may be a way to assist with access to care.

*Xiao (Feb 25, 2020). A Novel Approach of Consultation on 2019 Novel Coronavirus (COVID-19)-Related Psychological and Mental Problems: Structured Letter Therapy. Psychiatry Investigation. <https://doi.org/10.30773/pi.2020.0047>*