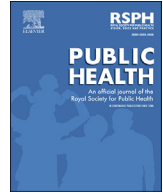




Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Letter to the Editor

## Is home isolation appropriate for preventing the spread of COVID-19



At the end of 2019, the coronavirus disease 2019 (COVID-19) epidemic broke out in Wuhan, China.<sup>1</sup> In the early stages, it was thought that the epidemic could be controlled; however, on January 20 2020, a Chinese expert group confirmed that the spread of the virus is characterised by human-to-human transmission.<sup>2</sup> The spread of COVID-19 cannot be prevented by simply wearing facial masks. The only way to control this disease is to cut-off the route of transmission. After the confirmation of human-to-human transmission, the Wuhan Municipal Government announced travel restrictions in Wuhan, and population migration in Hubei Province continues to be monitored. The entire country is actively trying to prevent the spread of the epidemic.

The outbreak of COVID-19 occurred during the Chinese Spring Festival<sup>3</sup> when large numbers of Wuhan's population travelled to other areas, resulting in extensive spread of the infection. However, with the active efforts of the Chinese government, the epidemic has been well controlled, and the overall situation of the epidemic has improved in China.

At the beginning of the epidemic, there were insufficient hospital beds for the patients in Wuhan, and a large number of patients were required to self-isolate at home. However, patients with COVID-19 under home isolation will transmit the virus to other people in the house via human-to-human transmission. This can lead to the entire household being infected with COVID-19. Therefore, home isolation poses significant risks to the population.

The recent incident of the Diamond Princess cruise ship has served as an unintended case study.<sup>4,5</sup> The cruise ship has 1337 rooms and was carrying 2666 passengers from more than 50 different countries, as well as 1045 crew members. When an 80-year-old passenger was diagnosed with COVID-19 on February 1

2020, all passengers and crew (>3700 people) on the ship were ordered to remain on board in quarantine. By February 17 2020, 1219 people on board had been tested for the virus, of which 355 were infected. Of the 355 confirmed patients, 111 were asymptomatic. The number of infected persons accounted for 29% of the total population on the ship. This result suggests that if both infected and uninfected people are isolated in the same space, transmission cannot be prevented.

The Chinese government found that home isolation was not the best course of action in Wuhan, and that all patients should be brought to a hospital for further treatment. Therefore, the government quickly built two large hospitals within a matter days, namely Leishenshan Hospital and Huoshenshan Hospital.<sup>6</sup> Since then, mobile cabin hospitals have also been established. Chinese medical staff members from outside of Wuhan continue to arrive in Wuhan to help in these new medical facilities (Fig. 1). There are currently sufficient beds and medical staff members to provide the best conditions for the infected population and the route of transmission from person-to-person has been cut-off. At present, the number of infections in China is gradually declining.

China's COVID-19 epidemic prevention and control is currently in a relatively good situation. However, this epidemic has now spread to other countries. At present, the number of COVID-19 patients in Korea and Japan is gradually increasing.<sup>7</sup> It is suggested that mobile cabin hospitals are rapidly established in countries with insufficient hospital beds to treat the infected population and that home isolation should not be implemented for patients. All suspected patients should be sent to a hospital for further confirmation, monitoring and treatment.

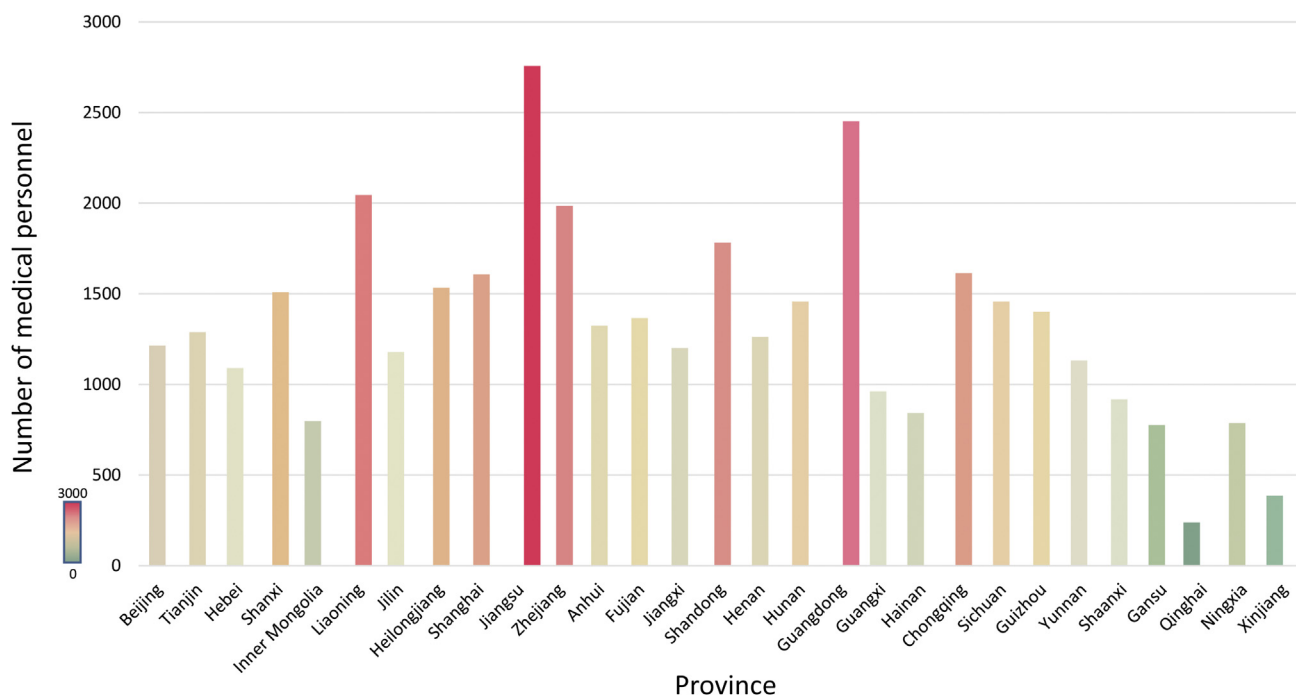


Fig. 1. Chinese medical personnel against the 2019-nCoV.

## References

- Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. China novel coronavirus investigating and research team. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med* 2020;**382**(8):727–33 [PubMed:31978945].
- Hui DS, I Azhar E, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health - the latest 2019 novel coronavirus outbreak in Wuhan, China. *Int J Infect Dis* 2020;**91**: 264–6 [PubMed:31953166].
- Special Expert Group for Control of the Epidemic of Novel Coronavirus Pneumonia of the Chinese Preventive Medicine Association. An update on the epidemiological characteristics of novel coronavirus pneumonia (COVID-19). *Zhonghua Liuxingbingxue Zazhi* 2020;**41**(2):139–44 [PubMed:32057211].
- Davis WUS. To evacuate Americans from virus-struck Diamond princess cruise ship. 2020. <https://www.whqr.org/post/us-evacuate-americans-virus-struck-diamond-princes.S-cruise-ship>.
- Tan KW. Canada to evacuate passengers from virus-hit Diamond Princess cruise ship. 2020. [https://klse.i3investor.com/blogs/kianweiaritcles/2020-02-16-story-h1483824197-Canada\\_to\\_evacuate\\_passengers\\_from\\_virus\\_hit\\_Diamond\\_Princess\\_cruise\\_sh.jsp](https://klse.i3investor.com/blogs/kianweiaritcles/2020-02-16-story-h1483824197-Canada_to_evacuate_passengers_from_virus_hit_Diamond_Princess_cruise_sh.jsp).
- Wang J. Hospital to add 1,000 beds for 2019-nCoV patients. 2020. [http://www.eyeshenzhen.com/content/2020-02/19/content\\_22881763.htm](http://www.eyeshenzhen.com/content/2020-02/19/content_22881763.htm).
- Lim J, Jeon S, Shin HY, Kim MJ, Seong YM, Lee WJ, et al. Case of the index patient who caused tertiary transmission of COVID-19 infection in Korea: the application of Lopinavir/Ritonavir for the treatment of COVID-19 infected pneumonia monitored by quantitative RT-PCR. *J Kor Med Sci* 2020;**35**(6):e79 [PubMed: 32056407].

Z.-H. Feng<sup>1</sup>

Department of Neurology, Affiliated Hospital of Guizhou Medical University, Guiyang, China

Y.-R. Cheng<sup>1</sup>

Zhejiang Academy of Medical Sciences, Hangzhou, 310012, China  
Hangzhou Medical College, Hangzhou, 311300, China

L. Ye

Basic Medical College, Guizhou Medical University, Guizhou, 550004, China

M.-Y. Zhou

Hangzhou Medical College, Hangzhou, 311300, China

M.-W. Wang, J. Chen\*

Affiliated Hospital of Hangzhou Normal University, Hangzhou, 310015, China

\* Corresponding author. Tel.: +86 0571 88303590.  
E-mail address: [chenjuan564453@163.com](mailto:chenjuan564453@163.com) (J. Chen).

8 March 2020

Available online 8 April 2020

<sup>1</sup> Zhan-hui Feng and Yong-ran Cheng contributed equally to this work.