

Letter to the Editor

Effective actions against the second wave of COVID-19: the front-line experience from China

Dear Editor,

Since 31 December 2019 and as of 22 September 2020, 31,132,906 cases and 962,008 deaths of the coronavirus disease 2019 (COVID-19) have been reported worldwide, and the numbers are still growing¹. In contrast to other countries, the overall situation in China is relatively under well control. The existing active cases, as of 22 September 2020, are 166 in China, although over 80,000 cases and 4634 deaths have ever been reported since December 2019². The Chinese cities are gradually unsealed off from lockdowns, and the economy begins to restore vitality.

Although the initial epidemic (December 2019-April 2020) was largely brought under control, several cities or regions of China, including Peking, Dalian, and Xinjiang Uyghur Autonomous Region, have experienced a second wave of COVID19 with a record-setting resurgence in case numbers during this June to August (Figure 1)³. The second coronavirus wave in Peking (368 cases; 11 June – 5 July) and Dalian (92 cases, 22 July – 06 August) were associated with a seafood market⁴ and a seafood processing company⁵, respectively. Before the onset of the symptoms, all traced patients in both cities have no travel history to other cities and no contact history to either COVID-19 cases or foreign personnel. Among the 368 persons isolated and treated in Peking's second wave, 272 (74%) had epidemiologic links to the market as market workers (46%) or visitors (28%), and the remaining 96 (26%) were close contacts of the other cases⁴. Among the 169 market workers, 79 (47%) were seafood vendors of frozen fish products tested positive for the coronavirus. Similarly, among the 92 cases in Dalian's second wave, 60 cases (65%) are workers of the seafood processing company. The second wave in Xinjiang (1064 cases, 18 July – 18 August)⁶ was initiated from one single source and with similar virus gene sequences as the viral strains obtained in the second outbreaks of both Peking and Xinjiang.

To control this second wave of COVID-19, the Chinese government has therefore initiated several actions in the past months, which were proved to be effective on the front-line, including but not limited to:

- Immediate localized lockdown. Compared to the citywide lockdown in Wuhan, the authorities in cities of the second wave took only localized lockdown within the high-risk area, such as apartment blocks and housing compounds close to the epicenter. For the medium-risk areas, people from specific streets or neighborhoods were encouraged to stay home and maintain social distancing. Movement in and out of specific neighborhoods was meticulously managed to stop the virus from spreading beyond the affected cities.
- Pinpointed tracing, testing, and isolating people. The local governments have pinpointed places and people with high risks and then applied targeted measures to prevent infections. Testing and isolation were also initiated with a focus on the most vulnerable as well as those with a higher risk due to their professions. The symptomatic cases have been immediately admitted ensuring a timely treatment, while asymptomatic cases with or without positive nucleic acid test results were proceeded with a 14-day centralized medical observation. Massive testing campaigns were undertaken among residents in low-risk areas of the city within a short time after the outbreak. For example, over one million tests a day were accomplished after the Peking's second wave⁷.



Figure 1. First and Second Wave of the COVID-19 in China. **A**, The curve of daily newly diagnosed COVID-19 cases with the first wave between December 2019 and April 2020 and the second wave between June 2020 and August 2020. **B**, The curve of the cumulative COVID-19 cases shows a slight resurgence in case numbers in the second wave.

- Restrain strict self-protection and social distance. The central government has issued guidelines on normalized epidemic prevention and control measures, including wearing masks in public places, promoting of health tracking QR codes, and allowing entertainment places to reopen with a reservation system and client-limiting measures. Real-time epidemic information was updated via WeChat, Weibo, and other social networking platforms.
- Quarantining visitors from abroad. Strict preventive measures for travelers who came from severely affected areas have been taken. Overseas arrivals are mandatorily requested to undergo a 14-day quarantine and to receive a nucleic acid test. After such a mandatory quarantine with a negative nucleic acid test result, travelers are still recommended to monitor daily body temperature and report to the local community if they show any symptoms.

The second wave of COVID-19 seems to be inevitable not only in China but also in other countries. European countries are now facing a new major spike in infections, with tens of thousands of new cases reported every day (12,903 cases at the peak; September 19). South Korea (441 cases; August 27) and Japan (1,998 cases; August 03) have also confirmed their second wave of infections¹.

In sum, COVID-19 is still a great threat to the world. We need to keep vigilant and prepare for the resurgence of COVID-19 cases with unprecedented personal, national, and international actions. We also hope that these practical actions against the second wave in China would provide a useful reference for other countries to continuously slow down the virus transmissions, prevent infections, and save lives.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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