

Commentary

Persevere in the Dynamic COVID-Zero Strategy in China to Gain a Precious Time Window for the Future

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According to the report of the World Health Organization (WHO), as of April 20, 2022, the cumulative number of confirmed cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the world had exceeded 500 million, with 6.20 million deaths and over 580,000 new confirmed cases on that day (1). As many countries have announced to relax quarantine policies, China is facing increasing pressure from overseas imports. All 31 provincial-level administrative divisions (PLADs) of China have reported a total of 191,112 local confirmed cases, with 2,761 new confirmed cases, 17,166 new asymptomatic infections, and 7 new deaths (all in Shanghai Municipality) on April 19 (2). Recently, several local outbreaks in clusters have appeared in China, presenting a grim and complex situation with multiple spots, wide coverage, and frequent occurrence (3).

Omicron Spreads Quickly and Is Harmful to Those at Risk

The current epidemic was mainly caused by Omicron variant BA.2, which has a short incubation period, strong transmissibility, short serial interval, and a large ability of immune escape (4–5). It was found that the basic regeneration number (R_0) of Omicron variant was about 9.5, and its maximum incubation period was about 9 days (4–5). The median incubation period was about 3 days, which was significantly shorter than that of the Delta variant (4.3 days) and other variants (5.0 days) (4–5). Its median serial interval was about 2.8 days (4–5).

It is reported that the proportion of asymptomatic infections of Omicron variant was relatively high (4). There are some reasons for this phenomenon. First, the characteristics of Omicron variant caused a higher proportion of asymptomatic infections than that of other variants. Second, some people did not develop symptoms even after being infected because of the coronavirus disease 2019 (COVID-19) vaccination. Third, early detection can find infections at early stages when symptoms have not yet appeared. In addition, the training of medical staff to improve their ability to

correctly conduct diagnosis and treatment, scientifically and reasonably determinate the asymptomatic and confirmed cases, also needed to be strengthened. According to the Statistics on the 5th Wave of COVID-19 in Hong Kong, the population-wide mortality rate caused by Omicron variant was 799 per million and for people over 80 years old was 10,408 per million ((6–7). According to the real-world data in Hong Kong, the fatality rate of the Omicron variant (0.76%) was significantly higher than that of influenza (0.1%), and it reached 10.4% among people over 80 years old (6–7). The elderly, people with underlying diseases, and those who had not been vaccinated were at high risk of severe illness and death. Of the 8,973 patients who died (0–112 years old) in Hong Kong, 96% were the elderly, and 88% were not fully vaccinated. Fortunately, a large real-world study in Hong Kong showed that three doses of either vaccination against COVID-19 offered very high levels of protection against severe illness and death caused by the Omicron variant (vaccine effectiveness 98.1%, 95% confidence interval: 97.1%, 98.8%) (8). Although the total vaccine coverage in the mainland of China is high, compared with adults, the two-dose or booster vaccination rate of the elderly and children was relatively low. In Shanghai, for example, the two-dose vaccination rate for people over 80 years old is only about 15% (9). There are still a large proportion of susceptible people.

The Dynamic COVID-Zero Strategy Is Still Required

China should still persevere in the Dynamic COVID-Zero Strategy. Putting people's lives and health first is the fundamental starting point and goal of all prevention and control measures in China. Because of the large population, unbalanced regional development, and insufficient total medical resources, China will face the risk of serious runs of medical and health resources if the "lying flat" strategy is adopted (10). The health of many patients with underlying diseases, the elderly, children, and pregnant women

will be seriously threatened, and the steady economic and social development will be seriously affected (10).

Dynamic COVID-Zero Strategy is the general guideline for China's fight against COVID-19, which is also a summary of previous experiences in fighting against dozens of domestic clusters of outbreaks since 2020. The multiple rounds of COVID-19 have proved that the Dynamic COVID-Zero Strategy is in line with China's national conditions and is the best option for China to fight the epidemic, which is based on the concept of "people first, life first." China has the capability, the foundation, the conditions, and the toolkits to implement this strategy. Also, China has strong institutional advantages, professional teams, and the support of the public, which will form the greatest protection for life.

The core of the dynamic zero strategy lies in early detection, rapid containment, and cutting off transmission to prevent continuous spread and large-scale rebound of the epidemic (11). This is not about "zero infection" or "zero tolerance" of COVID-19, but about science and precision. The premise of precision is to be effective. In the face of the virus, we need to stay ahead. Zero community transmission refers to newly discovered infected persons being comprehensively found in quarantined and controlled populations without the possibility of spreading to the rest of society. The temporary inconveniences in some areas are for longer-term normal life and socioeconomic development of the population more broadly. We need to take a systematic approach and a long-term view to do the best to strike a better balance between epidemic prevention and control with socioeconomic development.

Seize the Opportunities to Gain Precious Time Window for the Future

At present, China has entered the fourth stage of comprehensive epidemic prevention and control, namely, "scientific, accurate, and dynamic COVID-zero" (10). Facing the rapidly spreading Omicron, in order to stop the spread of the epidemic in the community as soon as possible, we are supposed to make coordinated efforts to control the outbreak at early stages, including control of at-risk populations, detection, epidemiological investigation, transport, isolation, treatment, and other aspects (10). The Dynamic COVID-Zero Strategies adopted by China have won a precious time window for the future. China should seize this opportunity to speed up research and development of specific drugs and

vaccines, accelerate the two or three-dose vaccination of the population, especially for the elderly and children, and strengthen the preparedness of resources for the future to finally defeat the virus at a minimal cost.

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REFERENCES

1. World Health Organization. WHO Coronavirus (COVID-19) Dashboard. World Health Organization; 2022. <https://covid19.who.int/>. [2022-4-20].
2. National Health Commission. Up to April 19th, the latest situation of COVID-19: National Health Commission; 2022. <http://www.nhc.gov.cn/xcs/yqfkdt/202204/378f7fc3484e4b41bb845a0854552a6c.shtml>. [2022-4-20]. (In Chinese).
3. National Health Commission. Transcript of the press conference of the joint prevention and control mechanism of the State Council on April 19, 2022. National Health Commission; 2022. <http://www.nhc.gov.cn/xcs/fkdt/202204/71904942749945c9a460aed122484c3d.shtml>. [2022-4-20]. (In Chinese).
4. Wu Y, Liu J, Liu M, Liang WN. Epidemiological characteristics of SARS-CoV-2 Omicron Variant and the scientific control suggestions. <http://dx.doi.org/10.16462/j.cnki.zhbjkz.2022.05.001>.
5. Wu Y, Liu J, Liu M, Liang WN. Epidemiologic features and containment of SARS-CoV-2 omicron variant. *Chin General Pract* 2022;25(1):14–9. <http://dx.doi.org/10.12114/j.issn.1007-9572.2021.00.348>.
6. Smith DJ, Hakim AJ, Leung GM, Xu WB, Schluter WW, Novak RT, et al. COVID-19 mortality and vaccine coverage — Hong Kong special administrative region, China, January 6, 2022–March 21, 2022. *China CDC Wkly* 2022;71(15):545–8. <http://dx.doi.org/10.15585/mmwr.mm7115e1>.
7. Centre for Health Protection of the Department of Health and the Hospital Authority. The Statistics on 5th Wave of COVID-19 in Hong Kong. Centre for Health Protection of the Department of Health and the Hospital Authority; 2022. https://www.covidvaccine.gov.hk/pdf/5th_wave_statistics.pdf. [2022-4-20]. (In Chinese).
8. McMenamin ME, Nealon J, Lin Y, Wong JY, Cheung JK, Lau EHY, et al. Vaccine effectiveness of two and three doses of BNT162b2 and CoronaVac against COVID-19 in Hong Kong. medRxiv 2022. <http://dx.doi.org/10.1101/2022.03.22.22272769>.
9. Shen ST. Improve the prevention and control measures and strengthen the treatment force. *The People's Daily*. 2022 Apr 14. https://wap.peopleapp.com/article/6628510/6504148?share_token=c108dba5-8bdb-45ca-9153-006916645c70. (In Chinese).
10. Ma XW. Curb the spread of the epidemic as soon as possible and resolutely consolidate the hard won achievements in prevention and control. *Study Times* 2022;1774:1–4. http://paper.cntheory.com/html/2022-04/18/nw.D110000xxsb_20220418_1-A1.htm. (In Chinese).
11. Liu J, Liu M, Liang WN. The dynamic COVID-Zero strategy in China. *China CDC Wkly* 2022;4(4):74–5. <http://dx.doi.org/10.46234/ccdcw2022.015>.