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COVID−19 management in Shanghai, China

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COVID-19 is by far the most serious global pandemic that human beings have experienced in the past 100 years. By March 2022, more than 500 million confirmed cases have been reported globally, resulting in about 6 million deaths. SARS-CoV-2, the culprit agent for COVID-19, has been mutating constantly with ever-changing prevailing main variants across the globe, mainly including the Alpha, the Delta, and the present Omicron variant. The Omicron variant is about 3-4 fold more infectious than the Delta variant but is 91% less lethal and has a 51% lower risk of hospitalization[1]. Since the beginning of March 2022, the Omicron clusters in China have gradually unfolded in Shanghai for almost two months. The current outbreak in Shanghai has reported 57 986 confirmed COVID-19 patients with 588 deaths from February 26 to May 29, 2022[2]. and brought enormous challenges for the public health and medical care in Shanghai and even China as a whole.

Looking back on various epidemics that had occured in Shanghai, we could learn that the ultimate effective response was attributed to identifying the main cause or source of transmission and containing the outbreak with specific mitigation measures. For example, diphtheria, measles, and influenza, which have led to all respiratory epidemics over the recent histories, are transmitted through close-range air droplets[3], and the transmission route is simple and controllable. Those epidemics were quickly resolved by quarantining infectious patients, wearing protective masks, combined with treatment (globulin and oral anti-influenza drugs). Some people have attributed the present long-lasting Omicron outbreak in Shanghai to its dense population and high mobility. Although Shenzhen, Hong Kong, Singapore and other metropolises are of the same characteristics, the situations were handled differently in those cities. So it is necessary to further explore more features for current Shanghai epidemic.

The number of the cases in Shanghai has risen rapidly this time, mainly because the circulating Omicron strain BA.2 is more transmissible than its original strain BA.1, and the transmission of virus outcompetes the quarantine practice. As of April 7, 2022, BA.2 has accounted for 72.2% of new cases in the United States[4], becoming the dominating virus strain. It is known that the hospitalized and critically ill cases due to BA. 2 are similar to BA.1[5]. BA.2 basically does not attack the lungs, so it is less likely to cause severe illness and death[6]. In theory, the outbreak could be properly controlled with its outbreak peak being put off through restricted movement of people for 3-4 incubation periods.

Dynamic zero-COVID measurement is a public health policy that has been implemented in Shanghai, which involves using public health measures such as contact tracing, mass testing, border quarantine, lockdowns, and mitigation measures in order to stop community transmission of COVID-19 as soon as it is detected. It is estimated that it will lead to about 1.5 million deaths if China implements no preventive measures[1]. The reason for the prevalence of the COVID-19 epidemic in Shanghai may be mainly due to the lack of targeted improvement of preventive measures against the highly contagious Omicron BA.2 variant under the premise of dynamic zero-COVID. Therefore, I would like to advocate implementations of antigen self-test, self-quarantine at home, strengthening the vaccination of the vulnerable elderly people, and early treatment.

At present, the fatality rate of cases infected with Omicron BA.2 is close to 0.1% in Japan and other places[6], similar to that

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of the seasonal influenza. I would suggest we should use the hospitalization rate, ICU rate, and case fatality rate, rather than the number of infection and the mobility rate, to indicate the degree of epidemic, within the aim of zero-COVID in the social community. So far, Shanghai has a low morbidity and mortality rate, and even there are no cases of direct death from COVID-19 (as the variant rarely attacks the lungs), reflecting the factual situation of Omicron BA.2. We could probably consider the option that the COVID has been transformed into an endemic disease. By doing so, we should gradually lift lock-down, reopen the hospitals, strengthen vaccination and personal protection. If the fatality rate of COVID-19 infection is similar to that of seasonal influenza, it is recommended that the National Health Commission should change the current management of COVID-19 from "class-B infectious diseases with class-A prevention and control measures" to both class-C infectious disease and prevention and control measures, falling in the same category of seasonal influenza.

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Conflict of interest statement

The authors claim there is no conflict of interest.

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