

The strategy behind Japan's response to COVID-19 from 2020-2021 and future challenges posed by the uncertainty of the Omicron variant in 2022

Peipei Song¹, Takashi Karako^{2,*}

¹ Center for Clinical Sciences, National Center for Global Health and Medicine, Tokyo, Japan;

² International Health Care Center, National Center for Global Health and Medicine, Tokyo, Japan.

SUMMARY Japan has experienced five waves of the COVID-19 pandemic so far. Four states of emergency were declared, and the Tokyo 2020 Olympic (July 23-August 8, 2021) and Paralympic Games (August 24-September 5, 2021) were held during the fifth wave of the pandemic. Although a record 5,773 new cases were reported in Tokyo on August 13, the number abruptly decreased afterwards, and only 9 new cases were confirmed in Tokyo on November 1, 2021. The high vaccination rates (79.2% of the total population has received the first dose and 77.8% has received the second dose as of December 24, 2021) and behavioral changes (such as mask wearing rate in public places remains close to 100%) are considered to be important factors in curbing the spread of the virus. However, the new Omicron variant poses future challenges due to its uncertainty. A cumulative total of 231 cases of the Omicron variant were reported in Japan between November 30 and December 25, 2021. Preliminary data indicated that the Omicron variant could be more contagious but less deadly than the Delta variant. Since mankind may be forced to coexist with COVID-19, efforts such as vaccination campaigns will need to continue and behavioral changes will become increasingly important as the "new normal" to reduce population density and contact with people. This is evinced at least in Japan's successful practices in fighting the past five waves of the pandemic.

Keywords COVID-19, SARS-CoV-2, Delta variant, Omicron variant, vaccination, behavioral changes, Japan

COVID-19 has spread around the world since the first case was identified in December 2019, and has become a public health emergency of international concern (1-3). In Japan, the first domestic case of COVID-19 transmission was reported on January 16, 2020 (4), and the pandemic is about to enter its third year. COVID-19 was designated as a designated infectious disease as of February 1, 2020 and then classified under pandemic influenza as of February 13, 2021 (5). Japan's basic policy for COVID-19 is to curb the outbreak of infection, maintain the medical care provision system, and focus on dealing with the severely ill.

Japan has experienced five waves of the COVID-19 pandemic so far (Figure 1). As one of the most important response strategies, four states of emergency have been declared since April 2020, three of which were declared in 2021. During this period, Japan hosted the Tokyo 2020 Olympic (July 23-August 8, 2021) and Paralympic Games (August 24-September 5, 2021) and began a massive vaccination campaign.

Instead of a complete lockdown since the outbreak of

COVID-19, Japan has been trying to control the infection through self-restraint request policy. Thankfully, personal protective measures were thoroughly implemented, such as wearing masks, handwashing, and avoiding confined spaces, crowded places, and close-contact settings. More importantly, the behavioral changes adopted to contain COVID-19 during the four declared states of emergency reduced population density and contact with people, including teleworking and staggered office hours, curbing the flow of people during vacation week (6,7); facilities, shops, restaurants and bars that were considered to be at higher risk for COVID-19 transmission (e.g., those associated with nighttime activities) were requested to close or reduce their business hours.

During the Tokyo Summer Olympics, Japan experienced its fifth wave of the pandemic, with a high number of new infections each day; a record 5,773 new cases were reported in Tokyo on August 13, and 25,975 new infections were reported nationwide on August 20, 2021 (8). But with the lifting of the fourth national state of emergency on September 30, 2021, the nationwide

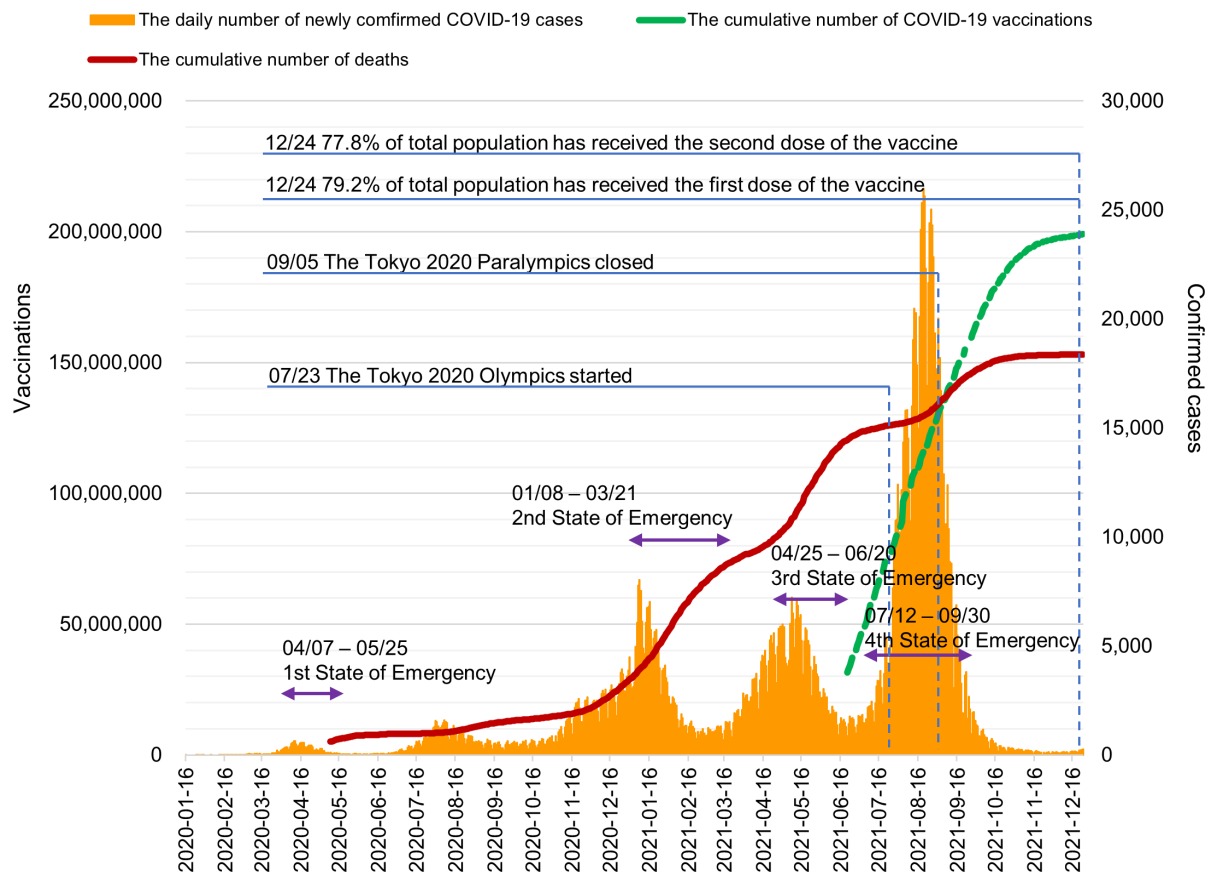


Figure 1. Number of cases reported with COVID-19 and the national response to the pandemic in Japan. Data source: <https://www.mhlw.go.jp/stf/covid-19/kokunainohasseijoukyou.html>

pandemic was effectively contained and the number of new confirmed cases abruptly decreased. According to the Ministry of Health, Labour, and Welfare (8), the number of confirmed COVID-19 cases in Japan fell below 1,000 per day starting on October 7, and 227 cases were confirmed across Japan on October 31, 2021. In Tokyo, only 9 new cases were confirmed on November 1, 2021.

Many experts have agreed that the reasons for the decrease in the number of infections were "effective decrease in human flow", "thorough infection control measures", "the effectiveness of vaccines", and "weather conditions" (9). High vaccination rates and the universal wearing of masks in particular are considered to be important factors in curbing the spread of the virus.

Although the vaccination campaign in Japan started late, the pace of progress has been impressive. According to data from Prime Minister's Office of Japan (10), the total number of vaccine doses administered as of December 24, 2021 has reached 199,120,144. Nationwide, 79.2% of the total population has received the first dose of the vaccine and 77.8% has received the second dose; 92.0% of the population age 65 or older received the first dose of vaccine and 91.7% of that population received the second dose. Vaccination campaigns are actively encouraging a third dose, and 385,209 people have received the third dose.

Another factor is the universal wearing of masks. In fact, "being courteous when coughing", "complying with social distancing", and "wearing masks" seem to ingrained habits that are followed during flu season in Japan. Since the outbreak of COVID-19, the government has been urging the general public through websites, television, and other media to thoroughly implement personal protective measures, including wearing masks. This was requested by the government and not mandated for the general public to obey (e.g., fines were not imposed), but thankfully these patterns of behavior have been fully adopted and the current rate of mask wearing among the public is still close to 100%. Such a pattern of behavior, consciously adopted by the general public in Japan, differs from some countries that have dropped requirements for face coverings indoors and in other settings.

Although the past five waves of the pandemic have been effectively contained nationwide, the new Omicron variant poses future challenges because of its uncertainty. Since the first case of infection with the Omicron strain was reported by South Africa to the WHO on November 24, 2021, the Omicron variant had been identified in 110 countries across all six WHO Regions as of December 22, 2021 (11). In Japan, the first case of infection with the Omicron strain was confirmed on November 30, 2021 (12); who entered the country from Namibia in

Southern Africa. As of December 25, 2021, Japan had reported a cumulative total of 231 cases of the Omicron variant (13), with the majority of those detected through airport and quarantine testing. Concerns are building again in Japan as more infections involving the Omicron variant continue to emerge.

Data on experimental evaluation of and epidemiological information on the Omicron strain is mounting but nonetheless limited. Preliminary data indicated that the transmission of the Omicron strain is much higher than that of the Delta strain in countries with documented community transmission, with a doubling time of 2-3 days (11). Although the severity of the disease in individuals infected with the Omicron strain needs to be studied further over a sufficient period of observation while determining factors such as age, history of SARS-CoV-2 infection, and vaccination history, initial research suggests that it is less deadly than the Delta variant. This means Omicron may be less risky for each of us (lower severity), but riskier for all of us (higher transmissibility). Given the persistent mutation of the virus, if the SARS-CoV-2 virus becomes more transmissible and it continues to coexist with human beings over the long term, then presumably the disease's severity will decrease and it will become akin to "another type of influenza".

In Japan, the uncertainty of the Omicron variant and a potential sixth wave of the pandemic represent challenges for the future. National measures will continue, including vaccination campaigns, border quarantine, domestic surveillance of mutant strains via PCR testing, and genomic surveillance. In addition, the Japanese Government and experts in Japan continue to highly recommend basic infection control measures by individuals.

Since mankind may be forced to coexist with COVID-19, efforts such as vaccination campaigns will need to continue and behavioral changes will become increasingly important as the "new normal" to reduce population density and contact with people. This is evinced at least in Japan's successful practices in fighting the past five waves of the pandemic.

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**Address correspondence to:*

Takashi Karako, International Health Care Center, National Center for Global Health and Medicine, Tokyo, 1-21-1 Toyama Shinjuku-ku, Tokyo 162-8655, Japan.
E-mail: politang-ky@umin.ac.jp

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