

# PROVING THE VALUE OF A WIDER TESTING NET

In Japan, **MASSIVE PCR SCREENING** reveals the true levels of COVID-19 infection at the start of the pandemic.

**Since the COVID-19 pandemic began,** Japan and the Asia-Pacific region were notable for their relatively low prevalence of infection, compared to countries such as the United Kingdom or the United States.

During the first year of the pandemic, for example, while Europe and the Americas were struggling with between approximately 29 to 58,000 cases per million people, Asian countries such as Japan were dealing with significantly fewer<sup>1</sup>.

While the lower number of positive cases in Japan was attributed to differences in how the pandemic was managed, experts had questioned the validity of the data. "There was criticism that the amount of testing and the population tested were not adequate to determine the infection situation in the city," recalls Yuko Takano, a senior consultant at the Mitsubishi Research Institute, Inc. (MRI), in Tokyo, Japan.

At the start of the pandemic, only symptomatic individuals and close contacts of those infected with the SARS-CoV-2 virus were tested for infection in Japan. Therefore, there was a possibility that the actual infections, such as asymptomatic infections, were not being adequately captured. "In order not to miss the spread of infection, it was necessary to test asymptomatic individuals, including high-risk groups, to identify signs of the spread of infection," says Takano, who also leads the MRI initiatives for the Japanese government's Cabinet Secretariat's COVID-19 AI & Simulation Project.



▲ Saliva samples were obtained from volunteers in Tokyo, Japan, as part of a sentinel screening programme run by the Mitsubishi Research Institute.

## UNCOVERING ASYMPTOMATIC CASES

To address this issue, and based on recommendations from the AI Advisory Board of the COVID-19 AI & Simulation Project, the Japanese government commissioned MRI to run a large-scale sentinel screening program based on sampling of the general population of Japan.

Approximately 1 million people, who had no SARS-CoV-2 symptoms, were tested for the virus between February and December 2021. Saliva samples were obtained from voluntary participants in multiple locations with a high risk of infection, including offices, train stations, airports, downtown areas, business offices, factories, construction

sites, kindergartens, schools, and student dormitories, and were PCR tested by private laboratories.

The team found that 0.03% of survey participants were asymptotically infected during periods without surges, and 0.33% during peak surges, thus confirming previous observations: Japan indeed hosted a very low rate of the SARS-CoV-2 infection during 2021<sup>1</sup>. The team posits that multiple factors may have driven this low rate of infection, including high compliance with public health measures, like wearing face masks.

The success of this large-scale PCR survey also prompted changes in the management plan for future pandemics in Japan. "The importance of

testing asymptomatic people was recognized through this project, and testing started nationwide in Japan, free of charge to asymptomatic individuals. It also led to the consideration of new methods of monitoring infection trends, such as sewage surveillance," says Takano. ■

## REFERENCE

1. Suzuki, T. *et al.*, *JAMA Netw Open*. **5**, e2247704 (2022).

COVID-19  
AI & Simulation Project

[www.covid19-ai.jp/en-us](http://www.covid19-ai.jp/en-us)

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