

# How Japan's slow acknowledgement of COVID's airborne spread has hampered its response

It was thought to be the end of a monthslong COVID-19 controversy in Japan. The National Institute of Infectious Diseases announced its determination late last month that the coronavirus spreads when one inhales virus-laden aerosols, or tiny particles mixed with water floating in the air for an extended period of time, confirming a view long held by much of the scientific community. The NIID's March 28 statement said the virus is mainly transmitted three ways: breathing in virus-containing aerosols traveling over long distances; having relatively large droplets land on the mouth, nose or eyes through a sneeze or cough; and touching the eyes, nose or mouth with virus-infected hands. Previous reports issued by the health ministry-affiliated institute ruled out the possibility of aerosol transmission and referred only to the other two.

But for many health experts in Japan, the revision didn't go far enough and failed to outline how this should affect antiviral measures.

The health ministry is still sticking to the idea that there is a "clear distinction" between "aerosol transmission" and "airborne transmission," denying the possibility that the coronavirus can spread through the latter.

The difference between the two, as explained by a health ministry official last week, is that aerosol transmission contains water but airborne transmission does not. "Airborne transmission occurs in measles and tuberculosis, for example," the official said. "We do not think, at this point, that the coronavirus spreads through airborne transmission."

The reluctance to admit that the coronavirus is airborne — in contrast with the World Health Organization — as well as the slow acknowledgment of aerosol transmission, has marred Japan's response to the pandemic by making indoor air safety seem less essential, some experts say. Experts counter the government's view that Japan has stressed the importance of ventilation by urging the public to avoid closed spaces, saying that the lack of clear guidance on aerosol and airborne transmission has led to confusion. The experts argue

that has put elderly people in nursing homes and front-line care workers particularly at risk of “cluster” infections.

Not only that, this attitude might have led to excessive regulatory emphasis on surface cleaning and plastic partitions as preventive measures, when in fact infections via close-range droplets and contact may be rarer than once thought.

Over the course of the two-year-old pandemic, the international scientific community has come to a broad consensus that the coronavirus is airborne. In December, more than a year after some scientists flagged that the virus may be airborne, the WHO updated its website entry on how COVID-19 is spread. It now refers to “aerosol transmission” and “airborne transmission” synonymously and says this is a primary way the disease is passed on to others.

To take basic antivirus precautions, such as properly ventilating restaurants and homes, people need to know how the virus spreads, says Tsuyoshi Hondou, an associate professor of theoretical physics at Tohoku University. | BLOOMBERG Tsuyoshi Hondou, an associate professor of theoretical physics at Tohoku University who has promoted efforts to have Japanese authorities acknowledge aerosols as a vehicle of COVID-19’s spread, hailed the NIID’s March 28 announcement, saying it’s a “step in the right direction.” But he says the institute and the health ministry should be more vocal in addressing the risks of — and tools to fight — the virus-laden aerosols.

In August 2021, at the height of the fifth wave of infections amid the spread of the delta variant, Hondou and 37 other scientists from across the nation released an urgent message calling for measures “based on the latest scientific findings” on airborne transmission.

The scientists, in particular, pushed for the use of tight-fitting, single-use nonwoven fabric masks and mechanical ventilation systems, such as air filters and heat exchangers, given that the scorching summer heat at that time made it difficult for people to open their windows and doors to let fresh air in.

Then in February, Hondou and nine others sent an open letter to NIID director Takaji Wakita, questioning a report by the institute issued the previous month that said the main transmission routes for the omicron variant were through contact and droplet transmissions. The group said the institute’s omission of aerosols “contradicted the global consensus.”

“(Government officials) say we should take all kinds of measures,” Hondou said. “But we are all busy and have limits in our budgets and time. That’s why we must have information on which of the three is the most important. They are not providing that information.”

To take basic precautions such as wearing tightly fitted nonwoven fabric masks and constantly ventilating restaurants and homes, people need to know how the virus spreads, he said.

“Why are (restaurant staff) wiping a chair every time somebody leaves? People also need to know why they need to have their masks fit tightly with no space.”

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The health ministry, for its part, says they have always stressed the need for good ventilation. And there’s some truth to that — Japan prides itself on advocating from early in the pandemic the importance of avoiding the three Cs: crowded places, close-contact settings and closed spaces. Avoiding closed spaces has also come with a call for rooms to be well-ventilated.

But Hideki Yamazaki, a psychiatrist and director of Seizankai, a medical corporation based in Miyagi Prefecture that operates 50 nursing homes and other facilities mostly for elderly people with dementia, says measures against aerosols aren’t mandated on the ground, saying many care workers are not aware of the danger of infectious viral particles in the air.

So far, Yamazaki’s group has reported 18 COVID-19 cases among patients and staff, but no “cluster” infections, which refers to an outbreak of more than five people in the same area at the same time. In addition to in-house PCR testing and a system that supports staff when they become infected or become close contacts, the group has mandated proper ventilation and the use of N95 masks among staff working in the “red zone,” where infected patients are cared for.

At care facilities in general, however, N95 masks are probably used less than half the time, he said. At other facilities where his staff have been dispatched as emergency helpers, red-zone workers in protective gowns and face shields were

scrambling to disinfect their hands and the floors while their surgical masks were loosely fitted, he noted.

“Workers at care facilities and restaurants would understand the importance of ventilation far better if they are told the virus is airborne, rather than having the minute differences between droplets, droplet nuclei, microscopic droplets and aerosols explained to them,” Yamazaki said, citing the explanation on particles of different sizes currently provided by the ministry.

While it’s unclear why Japan is reluctant to admit the virus is airborne, Hondou speculated that public health officials — mostly comprised of licensed medical doctors — may have a hard time breaking away from the traditional mindset they adopted from medical textbooks that airborne transmission typically occurs in diseases that are far more infectious than the coronavirus, such as measles, tuberculosis and chicken pox.

There are also dissenting views among scientists on how often airborne COVID-19 transmission takes place. Academics also seem divided on the exact definition of aerosol transmission.

Differing views aside, government guidelines for facilities caring for the elderly, who are most vulnerable, should be urgently updated, reflecting the best science available so far, Yamazaki said.

Yamazaki pointed to a recent feature in the journal Nature that probed why the WHO itself took two years to say the coronavirus is airborne, citing a quote from a historian and public policy expert who said that the organization failed in two respects: “Being reluctant to change your mind, and being reluctant to tell people you changed your mind.”

“The health ministry is committing a sin of omission by explaining that aerosol transmission is different from airborne transmission,” Yamazaki said. “To me, it runs parallel to the failures of the WHO.”