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GLOBAL PANDEMIC

How Japan survived covid-19

The world's third biggest economy seems to have emerged from the pandemic comparatively unscathed. Priyanka Borpujari speaks to health workers who survived the frontlines about how, and at what cost

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On 20 February 2020, the Diamond Princess cruise ship docked in Yokohama, 36 km south of the Japanese capital Tokyo, and turned into the world's largest cluster of people infected with a new disease: covid-19.[1]

Hospitals in Yokohama had trouble admitting all the passengers, especially since many of them were in severely ill, needing mechanical ventilation or extracorporeal membrane oxygenation.

The biggest challenge, says Norio Ohmagari, who leads research at the National Centre for Global Health and Medicine in Tokyo, was the low number of available beds. "It was quite obvious that we could not accommodate all covid patients," Ohmagari says. "The Tokyo governor requested private hospitals to accommodate them [70% of hospitals in Japan are privately run], but they were scared of this novel disease, with not much information, no vaccine, paucity of PPE [personal protective equipment], and no treatment."

"A national health crisis sadly cannot be separated from politicisation," says Kenji Shibuya, director of a covid vaccination medical centre in Soma city in Fukushima prefecture and research director at Tokyo Foundation for Policy Research. "For the countries that did well in managing the pandemic, the primary factor was their trust in the government. Unfortunately, that trust in the government and experts from the medical community was eroded in Japan."

Japan recorded its first case of covid-19 in January 2020. Two years later, the world's third biggest economy and 11th most populous has recorded five million cases and 23 633 deaths—far lower than many other high income countries. But the exact reasons for the island country's low numbers (box 1), and the effectiveness of the government's pandemic response, are still debated.

Box 1: Why did Japan's covid-19 numbers remain relatively low?

Among the reasons cited are a public willingness to adhere to measures, as well as Japan's early adoption of the "3Cs" (avoiding close contact, closed spaces, and close conversations)—built on the country's traditional approach to infectious disease control—that anticipated what scientists now understand of the airborne nature of SARS-CoV-2 transmission.

In addition, facemasks were prevalent even before the pandemic, and most experts think a culture of politeness while travelling on public transport—such as distancing and a hesitancy to talk aloud on the phone—helped limit virus transmission, even as the country's vast train and subway systems continued to be crowded during the peak hours. Japan's low obesity rate has also been posited as a factor.[2]

Winter 2020

The Japanese government declared its first "state of emergency" on 7 April 2020,[3] which lasted in some form throughout the rest of the year. It was one of the first countries to close schools nationally (in February 2020) and it also closed borders to foreign visitors and limited entry for Japanese residents from abroad.

Though there was criticism of the government's confusing messaging,[4] Japan got through 2020 with just 239 000 officially confirmed cases and around 3500 deaths as the public largely complied with requests to work from home and refrain from travel and going out.

But December 2020 saw rising case numbers as new variants emerged. For the first time, Tokyo logged 10 000 cases in a month.[5] Ohmagari remembers that ambulances were not able to secure hospital beds for their patients. At the time, rules stated that anyone who tested positive had to be admitted to hospital. Even though a considerable number of beds were allotted for covid-19 patients at the National Centre for Global Health and Medicine, it was not enough. Subsequently, the Tokyo metropolitan government ordered public hospitals to secure non-intensive care unit beds to accommodate covid-19 patients with moderate infection.

Ohmagari says that what happened was beyond anyone's expectation. "[The authorities] did not know that to accommodate moderate to severe patients, the whole healthcare system had to undergo a change [in the rules] and adjust to new restrictions. We had to modify the patient care flow for non-covid patients, and that was quite complicated."

Ohmagari also points to the many infected people who could not be admitted and whose health was deteriorating at home. "We should have had an observation system for them: an efficient system that would ensure that they would find a bed if their health worsens. But our existing system was overwhelmed," he says. Eventually, in February 2021, the law was changed to ensure that private hospitals could be given directives to accommodate covid patients.[6]

Vaccines in the nick of time

Japan began rolling out covid-19 vaccinations in February 2021, with health workers first in line.[7] With the delayed Olympic Games now approaching, the then prime minister, Yoshihide Suga—the second of what would be three prime ministers in two years—stepped up efforts to massively expand vaccine coverage.[8]

In early May 2021, about 3% of the Japanese population was fully vaccinated, with 250 000 doses administered daily. But by 25 June—a month before the summer Olympics opened—the country was administering a million doses a day.[9] Two-dose vaccination now stands at 80% of the population.[10]

It was not an easy process for the public to get vaccinated, however. Because responsibility for vaccinating fell to each municipal government, the vaccination schedule was erratic across the country. Residents were required to secure a vaccination inoculation ticket number online, and then wait for a voucher and another form to arrive by post.

But the website for access was complicated, phone lines were busy, and vaccination sites ran out of vaccines. Universities and corporations tried to fill the gap. Working with patients in all age groups at three clinics across Tokyo—as well as foreign residents in Japan—Eiji Kusumi says that the multiple hurdles of online reservation, language barrier (the website was in Japanese only), and the lack of IT skills among all populations "worked well for the government," in the sense that there were only a small number of vaccines available at the time. "Later, it made citizens feel that they are ignored by the government, especially the younger people, since they were not able to get vaccinated anytime soon," says Kusumi.

Delta

The Tokyo Olympics arrived in July 2021, and so did the delta variant. Once again, there were not enough beds in Tokyo's hospitals.[11] "Public hospitals were not accepting covid patients. Funds were given to the National Health Organisation and the Japan Community Healthcare Organisation, but they were not accepting covid-19 patients," says Kusumi.

His disappointment with the two medical bodies can be best understood in the way in which GPs like him were able to test patients but unable to admit them. "One of my patients, who was in his 50s, died in his home, while we were trying to secure a hospital bed for him with the local health office of Shinjuku," says Kusumi, adding that since only younger people were seeking online consultations, there is a high possibility that many older people died in their homes without having seen any doctor.

During the early days of the delta variant, Tokyo governor Yuriko Koike blamed the city's adult entertainment industry for the rapid transmission.[12] "This pushed people working late at night in these businesses to avoid vaccination, as a show of resistance, for being blamed as the enemy of the public," says Kusumi.

With the Olympics in full swing—albeit with no spectators[13]—Masataka Inokuchi, a vice chair of the Tokyo Medical Association, declared the capital's circumstances as "a disaster level emergency situation that is out of control," worrying about the medical system and paramedic response.[14] Even as Tokyo's metropolitan government tried to increase hospital capacity and prepare rooms in empty hotels as temporary facilities for patients who needed to isolate, the situation worsened with a paucity of medical staff.[15]

Takuro Endo, who was among the first doctors to treat covid-19 patients while working at Yokohama's St Marianna Hospital, says that at first, the severely ill patients were predominantly older people. Japan has the largest proportion (29%) of over 65 year olds in the world. Then came the delta variant, and by September 2021, Japan's extracorporeal membrane oxygenation cases were the highest globally.[16]

Burnout

Naoko Suzuki (name changed) was an intensive care unit nurse in Yokohama when the *Diamond Princess* docked. Throughout 2020, she did not meet her family, let alone friends. "I watched anime at home. I did not go out to play basketball. Among my colleagues, none of us wanted to be the first one to be infected," she said.

Her hospital had 18 intensive care unit beds, of which only four were reserved for covid-19 patients. "There was just one nurse to care for two covid patients. That meant that each time we had to look at the other patient, we had to change our PPE. This was toughest during the night shifts, which are 16 hours at a stretch, and we had to change the PPE every four hours," Suzuki said. According to the health ministry, Japan needed around 8000 nurses capable of treating covid-19 patients, but only about 3000 are qualified.[17]

Kusumi says he often dreamt of patients not finding beds. "The biggest stress was the powerlessness. Fortunately, none of my staff quit, because I was always telling them that we were doing the right thing: testing patients, providing online consultations, and doing the best we could."

"Positive PCR [polymerase chain reaction] tests exceeded 60% at my clinics—that was 12 times more covid patients than the government data. But since only severely ill people were being sent to the hospital, such data were not recorded," says Kusumi, adding that the 30 doctors across his three clinics were mostly consulting patients online and could only prescribe medication to control the symptoms.

Shibuya says, "Even before the pandemic hit, we needed a radical reform, to restrict the working hours of doctors as well as to consolidate real time information of available beds across hospitals. After two years, neither has progressed, and a huge number of doctors and nurses have suffered burnout."

Studying healthcare systems across the world, Endo identifies three weaknesses in Japan's healthcare system that affected its response to the pandemic: an inefficient emergency ambulance service; the absence of a centralised health system and the inability of the government to issue directives to private hospitals; and finally, a non-digitised health system and no inter-hospital communication, which prevents real time sharing of patient information.

Shibuya also blames the strict adherence to Japan's 120 year old infectious diseases law, which he says was "written keeping quarantine in mind." For instance, mass testing was restricted because of the law's cluster control approach, which aimed to minimise the size of outbreaks. Suzuki told *The BMJ* she was first asked to take a covid-19 test in February 2021—after a whole year of treating covid patients—only when one of her colleagues developed a fever. Until then only temperature was checked regularly.

Endo thinks that, in the beginning, the government avoided mass testing because of lack of capacity, while assuming that the healthcare system could manage all levels of cases. "Later, that decision turned out to be not perfect. But it could not be criticised [at the time]. The strategy was based on what outcomes they were

trying to pursue [avoiding a high number of infections and keeping the economy functioning]."

Shibuya identifies further issues. "There was no coordination of allocation of beds, what severity of patients to be admitted, who is being treated where, transfer of cases, and the exact responsibility of municipalities. A complete disconnect between what the public health experts were saying and the medical practitioners." The former health minister Yasuhisa Shiozaki chaired a working group by the ruling Liberal Democratic Party—which Shibuya was part of in an unofficial capacity—that submitted a series of revisions for discussion in parliament, though Shibuya says none have been implemented so far.

As a member of the Japanese Society of Internal Medicine, Takashi Yamada (name changed), a doctor in Otaru, the third largest city in Japan's northernmost prefecture Hokkaido, says that the government had consulted doctors about the way forward with the pandemic, but their advice for a lockdown was rejected "in favour of keeping the economy alive." Ohmagari says it was frustrating: "I was invited by the government to give advice, but nobody takes the advice."

Early 2022 has seen another wave of cases fuelled by the omicron variant. But deaths remain low compared with previous waves, despite hospital occupancy rates in Tokyo in February reaching the 50% benchmark for declaring another state of emergency.[18] At the time of writing, cases are subsiding, and the limited restrictions remaining were lifted on 21 March.

Public opinion polls hint at ongoing caution among the Japanese, however, many of whom would prefer some form of restrictions to remain.[19] Shibuya says that a lot of Japan's "success" can be put down to the public's compliance (box 1), but that cannot be sustainable for this pandemic or the next. Kusumi puts it more bluntly: "We did not succeed. We merely got lucky."

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