

Reopening Singapore

Looking Back, Looking Forward

Text and photos by A/Prof Lim Poh Lian

FEATURE

If 2020 was the year when members of the public became amateur epidemiologists, 2021 made many more into amateur vaccinologists, as countries rolled out massive COVID-19 vaccination campaigns. We are entering the third year of this once-in-a-century pandemic, and already 2022 promises more twists and turns in the story.

The great vaccine rollout of 2021

When the Expert Committee on COVID-19 Vaccination was convened by the Ministry of Health in October 2020, we faced the daunting prospect of vaccinating the entire population, giving over ten million vaccine doses within a year. The vaccines were being developed – using novel technologies and at breath-taking speed, with results of clinical trials pending – and were to be administered in the midst of an ongoing respiratory virus pandemic. The scientific, medical, operational and communicational challenges seemed overwhelming. We had to review the effectiveness and safety data from overseas; consider ultra-cold chains and multi-dose vials; and plan for safe distancing before and after vaccination. We had to build information technology systems to make appointments, record vaccinations and track consumables; explain the vaccines to an anxious public and field thousands of queries; educate providers on the specific details of giving vaccines, and advise stakeholders on employee policies.

Yet, we did it. By National Day 2021, barely ten months later, over 80% of the eligible population had been

vaccinated. This was an unprecedented achievement, made possible by many people working together. Leaders publicly encouraged vaccination and led by example. Government agencies and expert committees worked together to evaluate, procure and bring in the best vaccines possible. Healthcare workers and logistics support teams administered vaccines and assessed side-effects. Mobile teams and volunteers went door to door.

Then came Delta, the hammer

So, when the Delta surge started shortly afterwards, peaking in October 2021, many of us were dismayed. As one healthcare worker puts it, “We felt like we had completed a gruelling marathon, only to be told we had to run yet another one.” Singapore went from around 60,000 cases accumulated over 18 months, to a cumulative total of over 250,000 cases within three months. The absolute number of deaths went up over ten-fold, and because COVID-19 transmission was in the community, rather than concentrated in the migrant worker dormitories, more elderly persons with medical co-morbidities got infected and died.

The campaign to give a third dose as a booster shot started on 18 September 2021, rolling out in rapid succession to those over 60, then 50, then healthcare and front-line workers, many of whom were already seven to nine months out from their primary vaccine series. It was this nation-wide vaccination effort and rapid booster rollout that allowed Singapore to reopen its borders.

Several previous attempts at reopening had been made. Travel bubbles with Hong Kong were proposed – and pricked – as cases surged in one or the other location. But as local data and overseas studies showed that vaccinated persons are over ten times less likely than the unvaccinated to fall severely ill and fill ICU beds, governments around the world have gradually reduced travel restrictions in fits and starts.

Oh, my! Omicron – to stop or to go?

Singapore’s cautious reopening with Vaccinated Travel Lanes (VTL) started in November 2021, as the Delta surge waned. There was barely a breather of one month before news broke about a new variant of concern (VOC) – Omicron. Similar to Christmas 2020 when the UK reported the first VOC, Alpha, the initial response was to impose travel restrictions on southern African countries reporting the variant while its public health impact was being rapidly assessed. But as many more countries began to detect and report Omicron cases, such travel restrictions became patently futile and have since been lifted.

COVID-19 case numbers are now surging to new highs across all continents. This is occurring due to multiple factors: holiday travels and community gatherings; the Northern Hemisphere’s winter season, which is the usual respiratory virus season; the higher transmissibility of Omicron; and waning immunity from two doses of vaccine. At the time of writing, Omicron appears to infect primarily the upper rather than the lower respiratory tract,

thereby causing less severe disease. Hospitalisation rates have increased, even in developed countries with good vaccination rates, but without a concomitant rise in ICU occupancy.

However, with many countries' vaccine uptake lagging far behind the global goal of 70% vaccination rates, and a far more transmissible variant, we may well see a larger number of deaths, particularly in resource-limited settings or countries whose healthcare systems become overwhelmed. With this as background, it is a fair question to ask, "Should Singapore continue to reopen, or should we hit the pause button?"

Travel is the lifeblood of Singapore. Although a country of just five million people, about 45 million people passed through Singapore Changi Airport annually, before COVID-19. Singaporeans travelled a lot. The Travellers' Health and Vaccination Clinic at Tan Tock Seng Hospital, which I head, administered over 50,000 doses of various vaccines in 2019, mostly to outbound travellers.

For many people, including myself, the introduction of VTL travel was met with great relief. Borders had been closed for almost two years, and healthcare workers were not allowed to travel in order to maintain staffing in hospitals. Quarantine requirements at the destination country and upon return to Singapore meant that a one-week trip could consume five weeks of annual leave, and thousands of dollars for compulsory sojourns in quarantine quarters. Holiday travel became limited to staycations and cruises to nowhere, and "overseas" travel

meant a trip to Sentosa or a ferry ride to Pulau Ubin. Many people have not been able to see their families. Some felt compelled to resign, so they could return home to spouses and children. Others were unable to attend to personal matters overseas.

As a case in point, my mother passed away in Kuala Lumpur (KL), Malaysia several months before the pandemic hit, for which I was grateful because we were able to attend her funeral. We were finally able to sell her house in late 2021. I needed to go to KL to pack up everything and say goodbye to our family home of 48 years. So, it was with tremendous gratitude that I boarded a Scoot flight on November 29, the first day the Singapore-Malaysia VTL (Air) opened.

Travel has become more complicated and costly. Pre-departure and on-arrival PCR tests for outbound and return trips meant that COVID-19 tests cost more than my actual airfare. There was a three-hour wait at KL International Airport for those who paid 350 MYR (113 SGD) for the on-arrival PCR test, as compared to those who waltzed out after an hour if they were willing to pay 470 MYR. Travel insurance is required, and organising time-sensitive COVID-19 tests in another country can be stressful. But it was great to travel again.

What are other countries doing?

Singapore is not alone in trying to figure out the calculus of public health risk versus economic and social benefits of resuming travel.

Thailand, which is highly dependent on tourism and has larger informal sectors in its economy, had moved forward with lifting travel restrictions in November 2021. Its "Test and Go" programme allowed vaccinated travellers from over 60 countries to enter, quarantine for one night while waiting for their on-arrival test to be negative, before resuming travel. But the Thai government closed that programme to new applicants from 22 December 2021 due to Omicron concerns as their COVID-19 cases increased.

Malaysia and Singapore have continued their VTL arrangements with added ART testing, but temporarily suspended bus ticket sales for the land VTL ahead of the Lunar New Year. South Korea had VTL arrangements with Singapore, but new applications are now also suspended. Australia continues to allow quarantine-free travel for fully vaccinated persons coming from Singapore, South Korea and Japan.

Since November 2021, the US has allowed entry for vaccinated international travellers who are not citizens or permanent residents. With the advent of Omicron, pre-departure COVID-19 testing requirements have been shortened to one day before travel; testing three to five days after travel is recommended. However, there is no mandatory quarantine for incoming travellers. The UK does not require quarantine or pre-departure testing for fully vaccinated travellers entering the country, but an on-arrival COVID-19 test is required. For travellers who are not fully vaccinated, pre-departure and on-arrival testing is required, along with ten days of self-quarantine.

The European Union countries participating in the Schengen Agreement (which allowed free movement of persons before the pandemic) have now fragmented into a patchwork of individual country requirements. Most allow fully vaccinated travellers to enter with negative pre-departure test results. Unvaccinated travellers generally have to quarantine. However, with a one-day tally of over a million cases on 5 January 2022, many European nations are tightening COVID-19 precautions domestically and for incoming travellers.

China has possibly some of the strictest travel restrictions in the world, as

1





it strives to maintain its zero-COVID-19 policy. It requires pre-departure testing consisting of PCR and serology (IgM) tests performed within 48 hours of departure. International travellers must be fully vaccinated. China recognises vaccines such as Pfizer BioNTech, Moderna and others on the World Health Organization Emergency Use Listing, in addition to the Chinese vaccines Sinovac and Sinopharm. In addition to the minimum 14-day quarantine in a government-designated facility, China may also require an additional seven days of self-quarantine and health monitoring, depending on the region the traveller is from. Furthermore, restrictions on domestic travel within China can arise suddenly if a city or area is deemed to be high risk for COVID-19. The authorities can impose lockdowns, transportation disruptions and mass testing as needed.

Public health considerations

From a public health standpoint, governments have a duty to protect the health of their populations. The terrible death toll seen in India from the Delta wave in April 2021 underscores the importance of keeping healthcare systems from being overwhelmed.

To do this, several key indicators must be monitored closely. One of the most important indicators is ICU capacity, which is more than just counting ICU beds. ICU capacity includes ventilators, supplies of medical oxygen, inotropes, COVID-19 therapeutics (antivirals as well as monoclonal antibody products), but most of all, ICU-trained staff.

Another key indicator is the absolute case numbers. Although some have said that case numbers don't matter if most cases are non-severe or even

asymptomatic, even a small percentage of a very large number can translate into a large number in absolute terms. Furthermore, our experience with the Delta wave showed that COVID-19 infections can badly destabilise the health and functional ability of older people and those with medical conditions. We had COVID-19 patients who needed to stay an extra week or two for rehabilitation, physical therapy, or titration of their insulin regimen. Multiply that by 10,000 patients and it becomes a huge number of bed-days that can completely bog down our acute hospitals and COVID-19 recovery facilities.

If safe-distancing measures have been likened to the brakes in a bicycle careening downhill, border controls function more like the damper in a wood oven, where opening the damper to let in oxygen causes the fire to burn more fiercely. As countries continue to settle into endemic mode, we must learn to live with COVID-19. We cannot keep the damper shut tight; the COVID-19 fire may go out completely but with huge disruptions. We must learn how to operate the damper mechanism in order to limit the damage this pandemic does to our communities medically, socially and economically. To use a different metaphor, we need to avoid an uncontrolled fast boil, and aim for a slower, more sustainable simmer.

A third key indicator is R, the effective reproductive number. The basic reproductive number R_0 is different for each variant, with the R_0 for Delta estimated at 5 to 8. Omicron is considered even more transmissible than Delta. R is what we observe of R_0 after it has been modified by our public health interventions such as masking,

testing, tracing and travel restrictions. So, if R continues to increase, we will have to avail ourselves of both mechanisms – tighter safe-distancing measures as well as tighter restrictions on incoming travellers, but these interventions should be used sparingly and judiciously.

COVID-19 redux?

This pandemic sometimes feels like an endless *Terminator* sequel. Every time we think we've killed it, it returns with renewed ferocity. For most infectious diseases brought under control, such as measles or polio, we achieved that outcome through population-wide vaccination campaigns, and they were all multi-dose vaccines. A few respiratory viruses we fight to a standstill, like respiratory syncytial virus, but we pay the price of repeated bouts of infection in order to gain enough individual immunity to shrug them off. We may need to go a few more rounds with SARS-CoV-2 before humanity achieves some kind of equilibrium with this virus. Our connections across this world – nurtured through travel, personal ties and professional networks – are both a strength and a vulnerability in our battle to end this pandemic. So, we may just need to press ahead with reopening Singapore and adapt our COVID-19 two-step to the changing beat of an evolving virus. ♦

Information is accurate as at time of writing.

Legend

1. Kuala Lumpur International Airport 2 on 4 December 2021 – almost completely empty
2. Vaccinating returning travellers in Stay-Home Notice in January 2021

A/Prof Lim heads the Travellers' Health and Vaccination Clinic at Tan Tock Seng Hospital. She is also the director of the High-Level Isolation Unit at the National Centre for Infectious Diseases, a member of the Expert Committee on COVID-19 Vaccination and the Independent Allocation of Vaccines Group for the COVID-19 Vaccine Global Access Facility.

