

# Covid vaccination and the quest for herd immunity in Singapore

Poll suggests it would be challenging as over 20 per cent would refuse to be vaccinated

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Throughout the coronavirus pandemic, Singapore has relied on a series of stringent measures.

These include a near complete lockdown – termed the “circuit breaker” – as well as travel restrictions, quarantine measures, mandates on mask wearing, social distancing and extensive contact tracing.

The result of these measures is a low rate of infection. But this has come at a significant cost.

Not only is Singapore’s gross domestic product down 12 per cent compared with one year ago, but there are other non-quantifiable costs, including higher rates of anxiety and depression.

As the virus is showing no signs of abating, the one hope is a safe and effective vaccine.

There are 154 Covid-19 vaccine candidates in pre-clinical evaluation, 44 in clinical evaluation and a few in late-stage development, including one being developed through a partnership between Arcturus Therapeutics and Duke-NUS Medical School. Thus, it is possible that a vaccine may be available early next year.

We trust that regulators will not approve any drug they do not feel is safe and effective, but the reality is that there will not be evidence on long-term safety and efficacy upon approval. As a result, many individuals may opt to wait until longer-term data is available before getting vaccinated or decide against any vaccination.

Evidence suggests that for herd immunity – the threshold at which the virus can no longer replicate in the population – to occur, roughly 70 per cent of the population would need to be immune, either through vaccination or through prior exposure.

Given the low exposure rate in Singapore, having a vaccination level below 70 per cent may not be successful in stopping the spread of the coronavirus.

Yet, a recent international Ipsos poll that did not include Singapore revealed that the rate of refusing to be vaccinated when a vaccine first becomes available is predicted to far exceed 30 per cent in many countries. Many are hesitant to vaccinate due to safety concerns.

Uptake rate depends on many factors, not least is the price of the vaccine, which is expected to be highly subsidised, if not free, when first available.

To provide evidence of uptake rates for Singapore, we added questions to a local online panel survey fielded to 515 participants



between Sept 11 and 24. We asked the participants about perceptions of their risk of getting Covid-19 and whether or not they would get vaccinated if a vaccine that the Government believed was safe and effective became available.

The findings showed that, despite the low rates of infection and death in Singapore, most respondents still felt that their risk of getting Covid-19 was high and that, if infected, their outcomes were likely to include hospitalisation and, potentially, death.

Specifically, half of the respondents believed that they had at least a one-in-four chance of getting Covid-19, and more than a third believed that their risk of dying from Covid-19 was 2.5 per cent or more, which is five times the Covid-19 death rate in Singapore to date.

One might expect that these perceived high death and infection rates should spur a high demand for a vaccine that the Government deems safe and effective.

In the survey, a hypothetical vaccine was offered to participants: They had the option to get a fully subsidised (free) vaccine immediately, or wait two months and pay a market price that was randomly varied to test price sensitivity, or never be vaccinated.

The survey found that at a market price of \$100, 42 per cent stated

that they would choose to be vaccinated for free immediately, 35 per cent would choose to pay the \$100 and be vaccinated after two or more months assuming the vaccine remained safe and worked as expected, and 22 per cent stated that they would never get vaccinated.

When market prices were stated to be in thousands of dollars after two months of free access, some of those who originally said they would wait would now take their chances and be vaccinated immediately, whereas those who were more risk-averse went to the other extreme and would not be vaccinated.

At the highest subsequent price of \$6,000, 52 per cent of respondents opted for the immediately available free vaccine. Among those with young children, more than two-thirds would definitely or probably vaccinate their children if the vaccine were offered free of charge. Still others chose to wait and see.

In all scenarios considered, 22 per cent or more stated that they would never be vaccinated. These results suggest that achieving a 70 per cent vaccine uptake rate appears unlikely without a mandate.

For policymakers, the results reveal that just having a safe and effective vaccine available is not enough for a return to normal life.

Short of a mandate, getting individuals to be vaccinated at high enough levels to generate herd immunity is going to be a major challenge.

Making the vaccine free will help, but the survey results suggest that keeping it that way indefinitely may not be the best strategy, as many will choose to wait and see how well the vaccine works. Making it free for a given interval and then letting prices rise after a window period is likely to generate greater uptake in the short term, and should be considered.

Even then, more will need to be done. Uptake could be increased by public health messaging campaigns reminding Singaporeans that although vaccination is an individual choice, vaccination benefits all of us due to herd immunity.

Combating Covid-19 – by heeding measures such as keeping a safe distance from others and wearing masks – is truly a community effort.

So is getting as many people as possible to say yes to vaccination.

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Evidence suggests that for herd immunity – the threshold at which the virus can no longer replicate in the population – to occur, roughly 70 per cent of the population would need to be immune, either through vaccination or through prior exposure. Given the low Covid-19 exposure rate in Singapore, having a vaccination level below 70 per cent may not be successful in stopping the spread of the disease, say the writers.  
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