

# Covid 19: What does rise of BA.2 Omicron subtype mean?

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(Morton, 2022)

Case numbers and hospitalisations continue to surge across the country. Video / NZ Herald.



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Science Reporter

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BA.2 appears to be overtaking its Omicron cousin in New Zealand's ongoing outbreak – but a virologist says it's still not clear the ascendant subtype causes even worse infection.

As officials report nearly 24,000 community cases today, ESR scientists have confirmed that, for the first time, BA.2 cases outnumber BA.1 among sequenced genomes.

That was to be expected, given the same trend has been seen overseas – something likely due to a transmission advantage that BA.2 had over the original subtype.

"The interplay of BA.1 and BA.2 lineages is one of the key pieces of data that ESR is monitoring across New Zealand," ESR's Professor Mike Bunce and Dr Joep de Groot said in a joint statement.

As at late last month, BA.2 accounted for around one in five of all Covid-19 cases sequenced globally.

The subtype shares 32 mutations with BA.1 – but many others set it apart.

Whereas BA.1 is commonly identified because it's missing one of three target genes used in standard PCR tests, BA.2 has been nicknamed "stealth Omicron" because it doesn't have that telltale missing target gene.

That's left scientists to instead track it using genomic data, in the same way they did with earlier variants like Delta.

Why BA.2 appeared to have a growth advantage over BA.1 in some countries – estimates have put it at between 30 per cent to 50 per cent more contagious – still remained largely unclear.

In a [February report](#), the UK Health Security Agency found it was "plausible" that higher transmissibility and a shorter serial interval – a duration between when one infected person starts to show symptoms to when the next person infected becomes symptomatic – were factors behind its higher spread.

Importantly, the agency [also reported](#) no great difference in vaccine effectiveness against the two types; in fact, protection against symptomatic disease was slightly higher for BA.2 (74 per cent after two to four weeks) than BA.1 (69 per cent).

While studies have suggested BA.2 may be more resistant to monoclonal antibody treatments, there wasn't yet enough firm data to show it made people sicker.

Some early "pre-print" studies, released ahead of peer review, have indicated there may be a higher risk of severe illness.

One [such paper](#), led by Japanese researchers and using hamsters, found BA.2 may cause heavier lung infection than BA.1 – while carrying an effective reproductive number 1.4-fold higher.

But Otago University virologist Dr Jemma Geoghegan said any suggestion of greater disease severity with BA.2 wasn't translating to real-world observations.

"I think it would be sensible to say that, if BA.2 was more severe, we would be seeing that play out, because we know BA.2 has increased worldwide, and is now dominant in a lot of countries," she said.

"Epidemiologically, we would be seeing differences in mortality and severity."

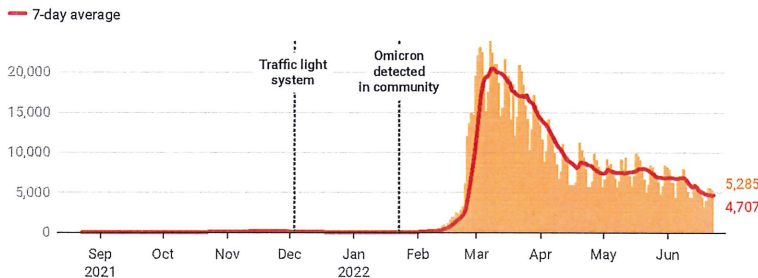
Geoghegan stressed that, while individual Omicron infections didn't appear to be as severe as Delta, it nonetheless posed a significant health risk – particularly to those unvaccinated or unboosted.

"It's definitely not something I'd say that I wouldn't be too worried about. It's something to be concerned about."

As well, a higher infection rate meant more acute cases, more people in hospital, and more people dying.

Asked whether the latest sequencing results indicated BA.2 rates in the wider community, Geoghegan said that fact all cases were no longer being recorded through PCR testing made it difficult to say for sure.

### Daily new Covid-19 community cases



Counts based on the Ministry of Health's daily 1pm update  
Created with [Datawrapper](#)

"It's not a perfect random sample, but we can probably assume that it's random enough to reflect what's going on."

### Hospital cases best indicator of Omicron wave

To explore what variants were circulating, and which were turning up at the border and in hospitals, Bunce and de Ligt said that, rather than process every case, ESR was now taking a "countrywide" approach to whole-genome sequencing.

"In other words, we are now in a genomics surveillance mode; in the past genomics was also deployed to assist in contact tracing."

Another of New Zealand's key Covid-19 surveillance tools – wastewater testing – was also changing in response to the Omicron wave.

"For the first time in this pandemic, the case numbers are sufficient to enable quantisation of the virus in wastewater," they said.

"Previously we were at the limits of detection which prevented a gauge on how much virus was present – it was always low."

But they stressed that extrapolating wastewater concentrations into case numbers was difficult and imprecise – notably due to differences in flow rates, and stormwater and population density differences between catchments.

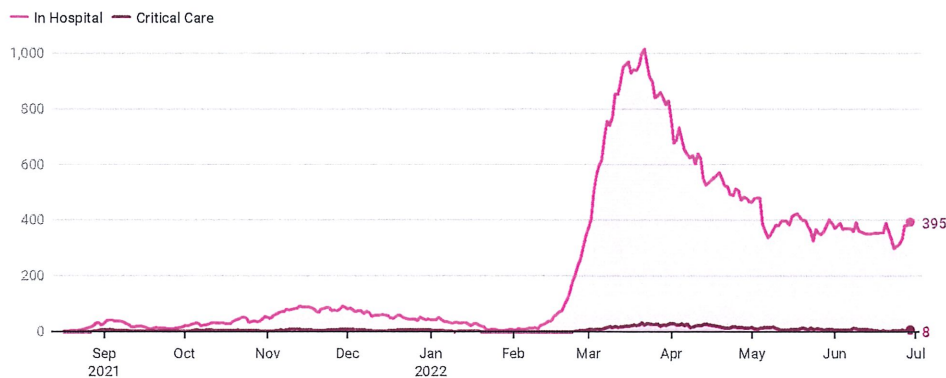
"Trends in wastewater concentrations over a few weeks do provide an indication if Covid-19 is increasing, stable, or falling within a given catchment," they said.

"It is hoped that when used with other data - case positivity rates and case numbers – that wastewater monitoring will play an increasing part in tracking infection waves."

Right now, hospital case numbers were likely giving a better picture of infection in our communities.

A total 23,894 new Covid-19 cases were today, with 9081 of them in Auckland. Director of Public Health Dr Caroline McElnay said 756 people were in hospital with Covid-19, and 16 were in ICU or HDU.

## How many people with Covid-19 are in hospital?



Critical Care includes Intensive Care (ICU) and High Dependency Units (HDU)

Created with [Datawrapper](#)

Covid-19 Response Minister Chris Hipkins has suggested real daily infections could be close to 100,000 – but Professor Michael Plank, of Covid-19 Modelling Aotearoa, said this picture was hard to gauge.

"There's quite a wide range. If I was to hazard a guess, I'd say something like one in four cases, on average, get reported – but it could be between one in three, one in five, or one in six."

Plank said hospitalisations were a more useful indicator because they didn't depend on recent changes in testing.

"Our case numbers at the moment are very dependant on how many people actually go out and get a test, whereas hospital numbers aren't so sensitive to that."

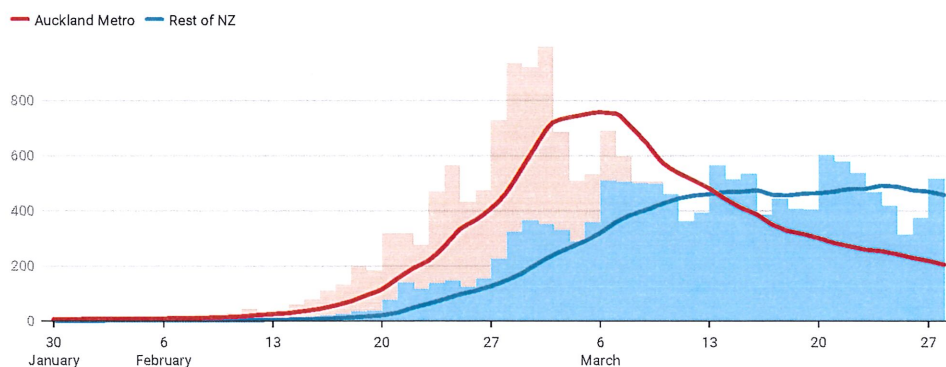
But Plank added hospital numbers still represented a lag of perhaps a week.

"It's important to keep in mind that it takes time for people to get ill enough to need hospital treatment."

Modelling by Plank and others has suggested the outbreak could peak at around 1000 cases – but he added that this depended on how it panned out at different parts of the country.

## Daily Auckland cases compared with rest of New Zealand

Daily Covid-19 cases per 100,000 people. Lines show the 7-day average.



Auckland Metro includes Waitematā, Auckland and Counties Manukau DHBs

As at March 29, 2022

Source: [Ministry of Health](#) - Created with [Datawrapper](#)

"The bigger the difference between when different regions experience outbreaks, the lower the national peak will be," he said.

"So the national number isn't the only thing that matters, but also pressure on hospitals in particular areas.

"At the moment, Auckland hospitals are very, very busy – whereas in other parts of the country, they're less so, but cases there are likely to increase in the next couple of weeks."

Overall, he said the wider outbreak would likely peak some time in the next two to three weeks.

"It's also important to remember that, probably just as many people, if not more, will get infected on the down-slope than the up-slope. We're likely to see a longer tail."

Massey University scientist Distinguished Professor Nigel French agreed it was difficult to tell how New Zealand's infections were actually tracking.

"Under-reporting is likely to have increased markedly with the change to widespread use of RATs and self-reporting," he said.

"If we rely on community case data alone we are likely to have a very inaccurate picture of how the Omicron outbreak is progressing - and this is not good for planning how best to respond."

French said combining all of the available data from all surveillance sources would help plan effectively.

"This will enable us to determine more accurately the true force of infection in the community, identify when new community cases have peaked, and how hospitalisations are likely to track over time."