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The next big wave is coming

Cases of covid-19 are climbing sharply again, and China in particular faces a potential disaster if it fails to contain its biggest outbreak since 2020, reports Michael Le Page

SOME think the covid-19 pandemic is over – but it most certainly isn’t. On the contrary, around the world, the number of confirmed cases is rising rapidly again. The most concerning situation is in China, where many older people still have no immune protection of any kind and which is currently battling a major outbreak. So why are cases on the rise again, how bad will it be and what could happen next?

The omicron variant that first started spreading in November 2021 caused by far the biggest wave of the pandemic to date. Globally, reported covid-19 cases peaked towards the end of January this year, and they were falling nearly as fast as they shot up. But now they have begun to rise sharply again, up by 8 per cent in the week ending 13 March according to the World Health Organization (WHO).

Because many countries are doing less testing than they did at the peak of the omicron wave, the actual increase could be even bigger than this, said WHO director-general Tedros Adhanom Ghebreyesus during a briefing on 16 March. Deaths are still declining globally, but they are expected to rise again too; deaths usually lag cases by around three weeks.

The situation isn’t the same everywhere. In some nations that had big omicron waves, including the UK, Germany and France, are seeing a resurgence before the previous wave has even subsided.

Breakdowns of case numbers by which virus variant is responsible show that while the initial wave of omicron was mainly caused by one of its subvariants called BA.1, the BA.2 subvariant is driving the resurgence. The term omicron refers to a whole family of related variants that appeared around the same time, rather than to one specific variant. BA.2 has been around from the start and is even better at spreading than BA.1.

“This is the most transmissible variant we have seen of the SARS-CoV-2 virus to date,” said Maria Van Kerkhove at the WHO during the briefing on 16 March. A study in Denmark found that people can be infected by BA.2 less than two months after having BA.1, but this is rare and may not be a major element in the overlapping waves.

BA.2 isn’t the only factor involved. “We’ve dropped all measures, so a resurgence is not very surprising,” says Aris Katzourakis at the University of Oxford, referring to the situation in England. “Lifting of the use of masks, lifting of physical distancing, lifting of restrictions limiting people’s movement, this provides the virus an opportunity to spread,” said Van Kerkhove.

In contrast to some countries in Europe, South Africa has been maintaining measures, such as mask wearing in public spaces, and this might be helping to limit the BA.2 wave there. BA.2 has become the dominant variant, but it hasn’t caused enough cases to increase overall case numbers.

But there is no way to be sure that maintaining measures is why the BA.2 wave is smaller in South Africa, says Katzourakis. The nation also differs from European countries in other ways, he says – for instance, most people there have acquired immunity from infection rather than vaccination.

People may also be taking fewer precautions because of the misperception that the pandemic is over and that omicron is mild, said Van Kerkhove. Omicron is less likely to cause severe disease
in those infected than the delta variant. But because it is more transmissible, more people died in the US in the omicron wave than during the delta wave – there have been more than 150,000 deaths in the US since December 2021.

A third factor that some experts have suggested is involved is the waning of immunity. However, in England, different age groups were vaccinated at different times, but cases in the latest wave began rising in all age groups at the same time. This suggests that waning immunity isn’t a major factor.

How bad will it get?
The severity of this second wave of omicron, in terms of deaths and hospitalisations, will depend mainly on vaccination rates. For instance, Australia reported twice as many cases during its omicron wave as the US, but despite people having no prior immunity from past infection, it had half the death rate. Around 82 per cent of people in Australia are fully vaccinated compared with 65 per cent in the US.

The situation in Hong Kong shows just how bad things can get when the BA.2 variant starts spreading in a population with little immune protection. Because Hong Kong’s zero-covid policy had previously been effective, people had no immunity from infection before the omicron wave, and only 30 per cent of those over 80 had been fully vaccinated. When omicron started spreading widely in February, many older people became severely ill, overwhelming hospitals and causing deaths to skyrocket.

The big question now is whether something similar could happen in mainland China, where vaccination rates are also low in older people, and which is struggling to contain its biggest outbreak since the pandemic first began in Wuhan. Tens of millions of people have been put under lockdowns since the start of March.

“If they do fail to continue to suppress the virus, they’re in big, big trouble,” says Katzourakis. “It would be a humanitarian catastrophe.” While nearly 90 per cent of China’s population is vaccinated, only 51 per cent of people over 80 have had two shots and just 20 per cent of this group have had a booster, said health officials in Beijing at a news briefing on 18 March.

“The outbreak in Hong Kong is a particularly profound lesson for us, an example that if the vaccination rate for the elderly is low, the rate of severe cases and deaths will be high,” said Wang Hesheng at the National Health Commission in China.

What’s more, China has been vaccinating people with locally made vaccines that are less effective at preventing infections than the mRNA vaccines used in many other countries. However, it appears that at least one of these – the CoronaVac vaccine made by China-based firm Sinovac – does still give fairly high protection against severe disease.

If China rapidly vaccinates far more of its oldest people, it should be able to avoid a repeat of Hong Kong even if it fails to suppress the virus, says Ben Cowling at the University of Hong Kong, who has studied the effectiveness of the CoronaVac and BioNTech/Pfizer vaccines used there.

He found that in people over 60, neither vaccine provided any protection against infection by omicron, but that two doses of CoronaVac are 65 per cent effective against severe disease, rising to 96 per cent with a booster. For Pfizer, it is 86 per cent and 97 per cent respectively.

What is certain is that this latest wave of coronavirus cases will subside, as all the other waves have done. Even if no other new variants evolved, there could still be a series of future waves of omicron as immunity wanes.

But there definitely will be new variants. In fact, researchers recently found a recombinant coronavirus with genetic material from both the omicron and delta lineages that arose when someone was infected by both at once. This “XD” recombinant isn’t expected to be a major problem because it looks like omicron to the immune system, but recombination could create more problematic variants.

There is no guarantee that future variants will be less dangerous, says Katzourakis. It was a coincidence that omicron was less likely to cause severe disease in those infected, he says.

What’s more, omicron not only largely evaded people’s immune protection against infection, it also slightly evaded their immune protection against severe disease. As future variants evolve in a world where most people have immunity, we could see the rapid evolution of variants that easily evade protection against severe disease.

“The next omicron may take less time to arrive than omicron itself,” says Katzourakis. “The hope is that this time is long enough that we can up our game in terms of vaccines and therapeutics.”

“That’s the optimistic scenario,” he says. “The pessimistic one is that we give up on developing and deploying vaccines now that we think it’s all over, and a variant comes along in a year’s time that we’re totally unprepared to deal with.”