Medical Xpress

The 'Kraken' subvariant XBB.1.5 sounds scary. But behind the headlines are clues to where COVID's heading

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The XBB.1.5 subvariant, known informally as "Kraken," is the latest in a menagerie of Omicron subvariants to dominate the headlines, following increasing detection in the United States and United Kingdom.

But there have been few cases of XBB.1.5 in Australia so far. And its nickname—a mythical sea monster—may be causing unnecessary fear.

Yet XBB.1.5 and other subvariants do signal a change in how the virus is mutating. Here's what this means for Australia and globally.

We've had multiple omicron waves

From Australia's first major wave of transmission in the summer of 2021/22 through to late 2022, we have had a series of COVID waves, each dominated by a single omicron subvariant: BA.1, then BA.2 and then BA.5.

Although each new subvariant has played an important role in driving these waves of transmission, we should expect waves like this even in the absence of new variants.

This cyclical pattern of waves of increased infections alternating with periods of much lower transmission is an expected feature of endemic infections that confer short-term immunity, such as COVID.

This pattern arises because the natural protection we develop against the virus from infection declines or "wanes" over time. Markers of the immune response that protects against initial infection (especially antibodies) can be clearly observed to decline with time.

Reassuringly though, the protection we develop against severe outcomes is sustained for much longer.

Then there was a shift

In late 2022, following the rise of BA.5 around the globe, we started to

see a shift in the evolution of SARS-CoV-2, the virus that causes COVID.

The result has been an explosion of subvariants, sometimes called a "variant soup." This has led to the emergence of a plethora of genetically diverse omicron subvariants: BA.4.6, BA.2.75, BQ.1, XBB, and on the list goes.

The recent evolution of the virus is markedly different to what we saw earlier in the pandemic. Before this proliferation of subvariants, there were complete shifts from wild-type (the original viral strain) to alpha, delta, omicron and the earlier omicron subvariants (BA.1, BA.2 and BA.5)—each with substantially different effects on COVID transmission and immune protection.

This brings us to XBB.1.5

XBB.1.5 was first detected in the US in October 2022. Since then, it has spread steadily, and has now been detected in more than 50 countries. In some countries, such as the UK and US, its share of COVID cases is increasing. Although importantly, in the UK the total number of sequenced XBB.1.5 cases remains small and there is uncertainty around these growth estimates at this early stage.

The potential of XBB.1.5 to outcompete other subvariants and take a bigger piece of infection pie is likely driven by its ability to evade parts of the immune system that prevent us getting infected. This is due to a specific mutation that might help it to better enter the human cells it first comes in contact with.

These properties have led to its monstrous social media moniker "Kraken". It joins other subvariants given mythical nicknames, including "Centaurus" (BA.2.75) and "Aeterna" (BA.4.6).

Some argue these names make these subvariants easier to remember and more accessible to the general public than the often cumbersome official scientific terms used to describe these subvariants.

However, we must also acknowledge the considerable fear still associated with COVID, which could be exacerbated by attributing such terrifying names to each new form of the virus that emerges.

While a high level of concern may have been appropriate—or even beneficial—during the COVID-zero phase of our response, we now need to look to sustainable policies as we transition out of the emergency phase of our response.

So how about Australia?

At the time of writing, only 29 XBB.1.5 sequences have been recorded across Australia, making predictions about its trajectory uncertain.

For XBB.1.5 to become established in Australia, it would have to outcompete a range of established subvariants, including two that appear to be more common here than overseas: BR.2 and XBF.

In countries in which XBB.1.5 is established and contributing a substantial proportion of samples, such as the US and UK, the number of COVID cases and hospitalizations already appear to be declining.

What can we expect next in Australia?

We can expect recurrent waves of infection in Australia, even without the emergence of dramatically different variants.

However, the health-care burden of these waves should get progressively

less severe, due to high levels of hybrid population immunity (from vaccination, natural infection or both).

XBB.1.5 may come to be the dominant circulating subvariant, although it is very unlikely we will need to introduce restrictive measures to curb transmission.

As time goes on, it is likely that transmission waves will settle into a somewhat more predictable or cyclical pattern.

For other coronaviruses, this manifests as a winter epidemic every one to two years, and a pattern like this would also fit with the characteristics of COVID.

However, we are not there yet, as subvariants such as XBB.1.5 contribute to transmission waves and the epidemic continues to wax and wane unpredictably.

What should we do next?

Given this background of endemic transmission with fluctuating levels of transmission, our public health response needs to focus on sustainable measures, including through optimizing population immunity.

This should include focusing on vaccines and medicines to protect the most vulnerable, as well as shifting towards considering how recently a person was last vaccinated rather than just the total number of vaccines, as proposed in the US.

A sustainable response also requires continued investment in surveillance systems to monitor COVID, its evolution and impact.

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