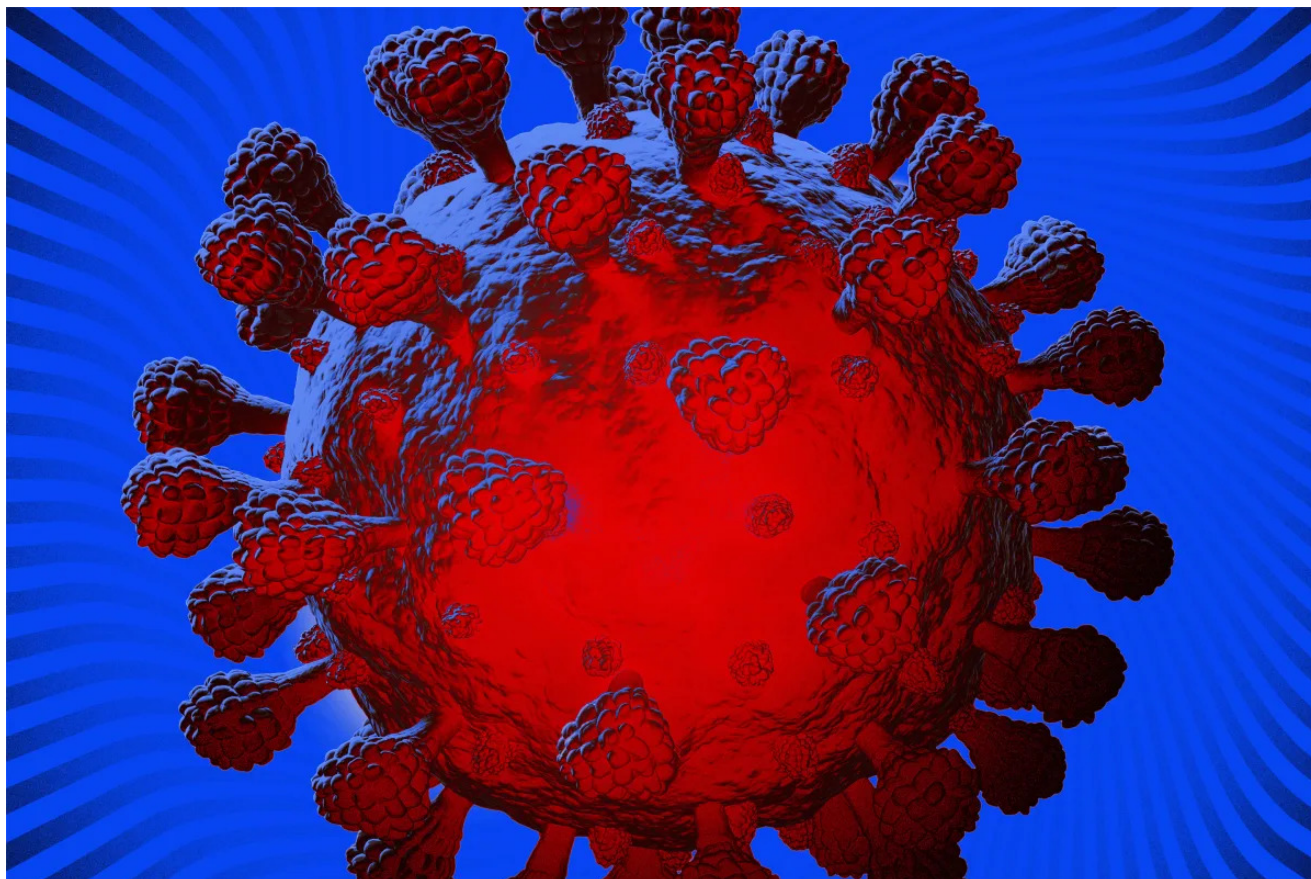


# What's CH.1.1? Meet 'Orthrus,' a new wildcard Omicron strain with a concerning Delta mutation

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January 28, 2023 · 6 min read

Omicron spawn XBB.1.5, also known as “Kraken,” now dominates the U.S. COVID variant scene, comprising an estimated 61% of cases, according to federal health data released Friday.

But there's now a new player being tracked by the U.S. Centers for Disease Control and Prevention that could give Kraken a run for its money. CH.1.1, or “Orthrus,” was estimated to comprise 1.5% of U.S. cases as of Friday. Another Omicron spawn, it was named after a mythical two-headed cattle dog killed by Hercules, by Australian variant tracker [Mike Honey](#).

Not much is known about the relatively new strain, levels of which have been rising globally since November. Like other “high flying” COVID variants, it has the potential to be more transmissible, evade immunity from vaccine and infection, and cause more severe disease.

What's more, it features a concerning mutation seen in the deadly Delta variant that generally isn't seen in Omicrons—one that could make it even more daunting of a foe. While CH.1.1 isn't a "Deltacron"—a recombinant, or combination, of Delta and Omicron—it's a prime example of convergent evolution, a process through which COVID variants evolve independently but pick up the same mutations.

It's anyone's best guess as to how CH.1.1 will play out in various countries throughout the world, including the U.S., Dr. Michael Osterholm, director of the University of Minnesota's Center for Infectious Disease Research and Policy (CIDRAP), tells *Fortune*.

"I don't think we have a real sense of what variants to be concerned about and which not to be," he says.

Case in point: XBB.1.5, which "started out looking like it was going to be a very serious challenge, in terms of COVID" in the U.S. But after attaining dominance in the Northeast, "it just began to peter out throughout the rest of the country," where it hasn't risen as swiftly, he says.

"We've seen this before: What might appear to be a challenging variant turns out not to be a real challenge."

The bottom line, according to Osterholm: Anyone who thinks they can tell you what the future of the pandemic looks like—and make no mistake, we're still in a pandemic, he says—"probably has a bridge to sell you."

Lack of crystal ball aside, here's what we know about the variant under monitoring by the World Health Organization.

## Where and when was it discovered?

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CH.1.1 emerged in Southeast Asia this fall and is now responsible for more than a quarter of infections in parts of the United Kingdom and New Zealand, according to a [preprint paper released last week](#) by researchers at Ohio State University.

Its prevalence has risen sharply since November, and it now comprises about 10% of COVID samples sequenced each day around the globe, [according to outbreak.info](#), a community repository of COVID information.

The variant is among those being monitored by the WHO, the international health organization [said in a Wednesday report](#).

## What countries has it been located in?

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New Zealand is seeing the bulk of CH.1.1 cases right now, [according to outbreak.info](#). There, it's responsible for more than a third of sequenced cases. Other hotspots include Hong Kong and Papua New Guinea—it comprises around a quarter of cases in each country. It's behind slightly less than a fifth of cases in Cambodia and Ireland.

## Why is it so concerning?

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XBB.1.5 continues to be the most transmissible COVID strain yet, according to a [Jan. 19 report from variant tracker Cornelius Romer](#), computational biologist at the University of Basel in Switzerland, and others. But CH.1.1 is worth watching, he says. Like XBB.1.5, it's highly transmissible, with levels doubling every two weeks or so.

CH.1.1 also binds well to ACE2 receptors, the site where COVID infects human cells, according to Ohio State researchers. That means it has the potential to override—at least partially—antibody immunity from prior infection and vaccination, as well as to cause more severe disease. It may be able to out-perform other competitive Omicron strains in these arenas due to a concerning L452R mutation seen in Delta, but generally not in Omicron.

The Ohio State researchers used a lab-created version of CH.1.1 and examined how well serum from 14 healthcare workers—who had received between two and four doses of the original vaccine, and the new Omicron booster—neutralized it. They found that the workers' sera created 17 times fewer antibodies against CH.1.1 as they did against BA.4 and BA.5.

CH.1.1 and another new variant, CA.3.1, are more immune evasive than XBB and BQ subvariants, the researchers wrote, calling the finding “astonishing.”

## How did it evolve?

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CH.1.1 is a descendent of BA.2.75, a variant that was [dubbed “Centaurus” this summer](#) but eventually fizzled out.

Most dominant COVID strains right now are descendents of either BA.5, which swept the world this summer, or BA.2.75. The variant “family” is important to note, experts say, as recent exposure to BA.2.75 or BA.5—or one of their spawn—may offer some temporary protection against infection from that family.

For example: If you were recently exposed to a BA.5 variant, you may be less vulnerable to new BA.5 variants for a time, but more vulnerable to BA.2.75 variants, and vice versa. (Of note, XBB.1.5 is also a descendent of BA.2.75.)

But with COVID, there are exceptions to every rule, it seems: [Japan](#) just saw back-to-back BA.5 waves that caused deaths there to skyrocket to an all-pandemic high, Osterholm notes.

## Will the new Omicron COVID booster protect me?

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Protection offered by the original COVID vaccine is waning, the Ohio State researchers wrote. They recommended the new Omicron booster but noted that it will offer less protection against CH.1.1 and CA.3.1 than it will against other variants like XBB and BQ.1.1.

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