## The XBB.1.5 "Kraken" subvariant of Omicron takes hold in the US

## Benjamin Mateus 8 January 2023

For more than a year, the Omicron "alphabet soup" subvariants have seen a myriad of sub-lineages rapidly emerge and disappear, giving rise to subsequent waves of infections. XBB.1.5, the latest iteration of the variant of concern, has garnered significant attention from the health officials, epidemiologists, and the world press.

At the press briefing by the World Health Organization last week, lead scientist Dr. Maria Van Kerkhove called XBB.1.5 "the most transmissible Omicron subvariant detected yet."

She added, "We do expect further waves of infection around the world, but that doesn't have to translate into further waves of death because our countermeasures continue to work." What this optimistic assertion conceals is that XBB.1.5 will lead to more infections and reinfections, these will inundate health systems, and people will die unnecessarily.

Additionally, allowing SARS-Cov-2 to continue its rampage unimpeded by any efforts on the part of national and international health agencies to bring the pandemic to an end means that the virus will continue to mutate genetically in ways that will enable it to bypass the current immunity built up in the population and potentially evolve into a more pathogenic form, making it deadlier and more virulent.

XBB.1.5 was given the moniker "Kraken"—the name for the Norwegian mythological sea monster—by Dr. Ryan Gregory, a professor of biology from Canada, to distinguish the ever-growing complex designations of Omicron. As he noted in his December 28, 2022, Twitter post, "XBB.1.5 definitely earns a nickname with its record-setting growth advantage and both very high immune escape and ACE2 binding."

XBB (Gryphon) and XBB.1 (Hippogryph), recent ancestors of XBB.1.5, were first identified in mid-August in India. They quickly spread across different regions of Asia, becoming predominant in India and causing a massive wave of infection in the highly vaccinated city-state of Singapore. The latest subvariant has been detected in close to two dozen countries including the US, where it was first identified in early October.

With BA.5 on its way out, and BQ.1.1 (34.4 percent as of January 7, 2023) in decline, XBB.1.5 is quickly displacing all other subvariants across the country. accounting for 27.6 percent (revised estimate down from last week's 40 percent) of all tracked lineages.

It surpassed the one percent threshold of all subvariants at the end of November, a level which requires the Centers for Disease Prevention and Control (CDC) to report its weekly prevalence as a subvariant of interest. However, the public health agency only confirmed its presence after an insider at the CDC leaked the number to epidemiologist Dr. Eric Feigl-Ding, who in turn tweeted his concerns on social media on December 29. This was not the first time that the CDC has suppressed such information only to confirm it after the information was divulged, as a matter of damage control.

Dr. Ashish Jha, White House's COVID Response Coordinator, took to social media last week, admitting that the jump in the number of cases attributed to XBB.1.5 was "stunning." The word "stunning" is intended to convey surprise and to evade responsibility for the sudden growth of this subvariant, which has caused the number of elderly people hospitalized in the Northeast US to grow rapidly. Yet, given the vast global resources at their disposal, such terminology is abhorrent and indefensible for any genuine public health advocate.

Dr. Jha wrote, "More inherently contagious? Maybe. It binds more tightly to the human ACE receptor." He acknowledged this might affect contagiousness, and then quickly downplayed the dangers and recommended the bivalent COVID booster vaccines as "your best protection against both infection and serious illness." At present, only 34 percent of the US population have received a booster dose and, according to the CDC, only 15.4 percent of people over the age of five have received the updated bivalent shot since it was first introduced in September.

With his usual cavalier and glib manner, Dr. Jha concluded, "So, am I concerned about XBB.1.5? Yes. Am I worried this represent some huge setback? No. We can work

together to manage the virus. And if we all do our part, we can reduce the impact it will have on our lives." The oftused phrases "work together" and "all do our part" sound more like empty campaign promises. In other words, this translates to "nothing to see here" and "move on."

Meanwhile, there is a significant surge of COVID infections passing through the country with its epicenter presently located in the Northeast, where XBB.1.5 accounts for 70 percent of sequenced variants. The Northeast has always set the pace for the rest of the country and soon every other region will find COVID cases climbing again.

Hospitalizations for those 70 years and older across the US have risen to 16 daily admissions per 100,000, the thirdhighest peak in the pandemic. There are close to 50,000 people hospitalized with COVID, a 17 percent increase over 14 days. Deaths are up 20 percent at 514 per day, with 90 percent of those dying aged 65 and older.

Professor of Immunology and Biology at Yale School of Medicine Akiko Iwasaki, who has studied and written extensively on the immunology of the coronavirus and is working on developing mucosal sterilizing vaccines against it, warned in a recent tweet, "Please protect yourselves and others by wearing N95 masks. I am truly concerned about the Long COVID wave that follows this infection. I'm concerned because the putative ability of XBB.1.5 to have increased capacity to infect cell types that express even lower levels of ACE2. This will increase tropism and possibly persistence in cell types that are long lived [neurons]."

XBB.1.5 is a recombinant strain created through the fusion of two BA.2 variants, BJ.1 (BA.2.10.1.1) and BM.1.1.1 (BA.2.75.3.1.1.1). Dr. Emma Hodcroft, British-American molecular epidemiologist at the Institute for Social and Preventive Medicine at the University of Bern, explained that at some point they both infected the same person, and recombined and swapped genetic material, creating XBB.

Dr. Eric Topol, founder and director of the Scripps Research Translational Institute in California, wrote on December 23, 2022, "Now it appears that in New York State, XBB evolved further to XBB.1.5, with new mutations, which was aptly first noted by JP Weiland [in a December 15, 2022, tweet] a couple of weeks ago, coincident with the beginning of a steep rise of hospitalizations there."

Dr. Topol's commentary on XBB.1.5 highlights the significance of the F486P mutation that *Kraken* has acquired giving it the advantage over its ancestral lineages. SARS-CoV-2 is in effect playing a patient game of tinkering with the genetic mutations needed to circumvent current immunity and has hit on a key protein like a thief playing with the keys of a lock trying to break into the safe.

Lead and senior authors from the Department of

Microbiology and Immunology at Columbia University, New York, wrote on this subject in their paper published in the journal *Cell*, titled, "Alarming antibody evasion properties of rising SARS-Cov-2 BQ and XBB subvariants."

They wrote, "Our data demonstrate that these new subvariants were barely susceptible to neutralization by sera from vaccinated individuals with or without prior infection, including persons recently boosted with the new bivalent mRNA vaccines. The extent of the antigenic drift or shift measured herein is comparable to the antigenic leap made by the initial Omicron variant from its predecessors one year ago." In layman's language, XBB.1.5 is the equivalent of an entirely new variant.

The winter wave of COVID is upon the US once more. Data is lacking on the severity related to XBB.1.5 but time will tell, very soon. The "let it rip" policy of governments and lead public health agencies across the world means that the world's population is being subjected to an ongoing "gain of function" experiment, in which mass mutation of the SARS-CoV-2 virus poses the increasing danger of a new and even more terrible wave of the pandemic.

Adding to the crisis is the complete reopening of China, with its 1.4 billion people, to the coronavirus, after the ending of the country's highly successful zero-COVID policy.

Along with abandoning essentially every mitigation measure, surveillance, and sequencing by countries of new variants had dropped by 90 percent at the beginning of 2023 and continues to fall as the world enters the fourth year blindfolded.

*The Economist* took careful measure of these developments, writing, "Dismantling the testing, sequencing and surveillance capacity built up in the past three years risks leaving the world unprepared for the next pandemic. Hopes that politicians might, at last, see pandemic illness in the way that they see the defense of the realm, as something requiring the maintenance of a permanent establishment ready to counter threats, seem to be fading."



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