

Quick and stealthy 'Scrabble variants' are poised to drive a winter Covid-19 surge

By Brenda Goodman, CNN Updated 8:43 AM EDT, Thu October 20, 2022











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(CNN) - A flurry of new Covid-19 variants appears to be gaining traction globally, raising fears of a winter surge.

In the United States, these are BQ.1, BQ.1.1, BF.7, BA.4.6, BA.2.75 and BA.2.75.2. In other countries, the recombinant variant XBB has been rising quickly and appears to be fueling a new wave of cases in Singapore. Cases are also rising in Europe and the UK, where these variants have taken hold.

Dr. Peter Hotez, who co-directs the Center for Vaccine Development at Texas Children's Hospital, says he thinks of them collectively as the Scrabble variants because they use letters that get high scores in the board game like Q, X and B.



Updated Covid-19 boosters are 'most important thing' Americans can do for their health today, official says

As the US moves into the fall, Covid-19 cases are dropping. Normally, that would be a reason for hope that the nation could escape the surges of the past two pandemic winters. But virus experts fear that the downward trend may soon reverse itself, thanks to this gaggle of new variants.

Lumped together, the variants accounted for almost 1 in 3 new Covid-19 infections nationwide last week, according to the latest estimates from the US Centers for Disease Control and Prevention.

The updated bivalent booster vaccines and antiviral drugs like Paxlovid are expected to continue to be protective against severe outcomes from Covid-19

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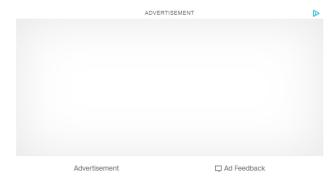
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But the new variants are particularly devastating for millions of Americans who have weakened immune systems. New research suggests that changes in these variants make them impervious to the last lab-created antibodies available to help treat and prevent severe cases of Covid-19, and the US government has run out of money to incentivize the creation of new ones.

A crowded field of rising variants

It's not clear whether this gang of new variants will continue to run around together, each sharing a piece of the Covid-19 infection pie, or whether one will rise to outcompete the others, as has happened in previous surges.

Though they each descend from slightly different branches of the Omicron family tree, these new offshoots have evolved to share many of the same mutations, a phenomenon known as convergent evolution.



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Some experts think this convergence means we've entered a new phase of the evolution of the virus, one that will see circulation of several variants at the same time.

"What is likely to happen is that we have several co-circulating, semidominate lineages going into the winter season," said Nathan Grubaugh, an associate professor of epidemiology at the Yale School of Public Health.

"That's because with convergent evolution, perhaps several different lineages can independently obtain similar transmissibility levels versus a single new variant taking over.

"This is what predominantly happens for most pathogens, such as the flu and RSV," Grubaugh wrote in an email. "Now that the virus has adapted pretty well to human transmission, most of what is circulating has high fitness."

Maria Van Kerkhove, the Covid-19 response technical lead for the World Health Organization, said Wednesday that the large mix of new variants was becoming more difficult for WHO to assess because countries were dialing back on their surveillance.

"So we need to be prepared for this. Countries need to be in a position to conduct surveillance, to deal with increases in cases and perhaps deal with increases and hospitalizations. We don't see a change in severity yet. And our vaccines remain effective, but we have to remain vigilant," she said.

Inaction gives the virus an edge

For now, the Omicron subvariant BA.5 still holds the top spot in the US. According to CDC estimates, it caused about 68% of new infections in the US last week, but it is quickly being outcompeted by several new sublineages – notably BQ.1 and BQ.1.1.

The BQs each caused just 6% of new infections in the US last week, but in recent weeks, the share of new Covid-19 infections caused by these viruses has doubled every six to seven days – a rapid rate of growth against BA.5, which is already a highly fit virus, says Dr. Anthony Fauci, who directs the National Institute of Allergy and Infectious Diseases.

And these are just two of the new crop of Omicron descendants making a move.



"The projections vary a little, but generally, most people feel somewhere in the middle of November that they'll wind up being a substantial proportion and have bumped BA.5 off as the dominant variant," Fauci told CNN.



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These variants are different from BA.4 and BA.5, but they're descended from those viruses, the result of genetic drift. So they share many parts of their genomes with that virus.

Their changes aren't on the scale of what happened when the original Omicron arrived on the scene in November 2021. That strain of the virus, which is now long gone, came out of genetic left field, leaving researchers

and public health officials scrambling to catch up.

Fauci says that this time, we are as ready as we could be for the latest batch of variants.

"It isn't that different from BA.5 that it would completely escape the protection that you would get from vaccine" - if people would just get the shot, Fauci said.

The bivalent booster vaccine, authorized in September, protects against the original strain of the coronavirus as well as the BA.4 and BA.5 subvariants.

"We have a BA.5 bivalent updated vaccine as a booster that we're pushing people to do. It's matched against the still-dominant variant, which is BA.5, and almost certainly will have a reasonably good degree of cross-protection against the BQ.1.1 and the others, and yet the uptake of these vaccines, as we are already in the middle of October, is disappointing," he said.



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According to the latest data from the CDC, 14.8 million people have gotten an updated bivalent booster six weeks into the campaign promoting it. That's less than 10% of the population that's eligible to get one.

The poor uptake of the new boosters, combined with the immune evasiveness of the new variants and the waning of population immunity, is almost surely a recipe for rising cases and hospitalizations in the weeks ahead.

"It's probably going to be significantly bigger than the BA.5 wave, at least that's what I expect," said Mark Zeller, a project scientist who monitors variants at the Scripps Research Institute. But Zeller says he doesn't expect

this winter's surge to reach heights of January's Omicron wave.

Hotez says people shouldn't panic about this news but should pay attention.

"We're underperforming as a nation with people getting their bivalent boosters," Hotez said.

The genetic changes these variants share appear to help them escape the immunity created by vaccines and past infections - a recipe for reinfections and breakthrough infections, particularly for people who haven't had an updated booster.

Critical therapies could soon stop working

Crucially, some of the variants also appear to be impervious to the last lab-created antibodies available to ward off severe Covid-19 infections: an antibody treatment called bebtelovimab, which is made by Eli Lilly, and the combination of two long-acting antibodies in Evusheld, a shot made by AstraZeneca that helps keep people who are immunocompromised from getting sick in the first place.

If these antibodies stop working against the virus, the United States will still have Covid-19 antiviral drugs like Paxlovid, molnupiravir and remedsivir to help those at risk of severe complications.



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But antibody therapies are particularly important for people with immune function that has been blunted by drugs, disease or age. These are the same people whose bodies don't respond robustly to vaccines.

The antibodies are also needed to help people who can't take antiviral therapies because of possible reactions with other medications.

White House Covid-19 Response Coordinator Dr. Ashish Jha says the federal government has been spurring the development of new monoclonal antibodies during the pandemic by promising to purchase new therapies after

they're made.

The government can't do that anymore, he said, because Congress has declined to pass additional funding for the Covid-19 response.

As a result, development of new antibodies - and other new therapeutics - is lagging.

"So even if we got money today, it would take us many months to bring a monoclonal into the marketplace, and we don't have the money today anyway," Jha told CNN.



Jha said that means the nation is facing fall and winter with a smaller arsenal against the virus, just when it needs to expand its options.



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"There is not a monoclonal sitting ready to go tomorrow that we could just buy off the shelf," he said.

Antibodies are a losing proposition for companies because it takes millions of dollars of investment to make them and because the virus is evolving so fast, they might be effective for only a few months.

"That is a terrible business model," Jha said.

The administration has been thinking about ways to commercialize some parts of the Covid-19 response to get out of the business of buying vaccines and therapies - ultimately passing the costs on to consumers and insurers. But Jha says the process has to be guided by "the needs on the ground and the realities of the virus."

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He says current realities require that the government continue to incentivize the production of new therapies, and he expects that the Biden administration will again try to ask Congress to pass more funding to do that.

"And the truth is that if we want monoclonals to protect high-risk people which we do - then at this point, given the speed of viral evolution, the US government has to be a major player in that role," Jha said. "The market cannot take care of it by itself."

CNN's Carma Hassan contributed to this report.

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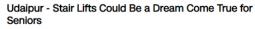


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