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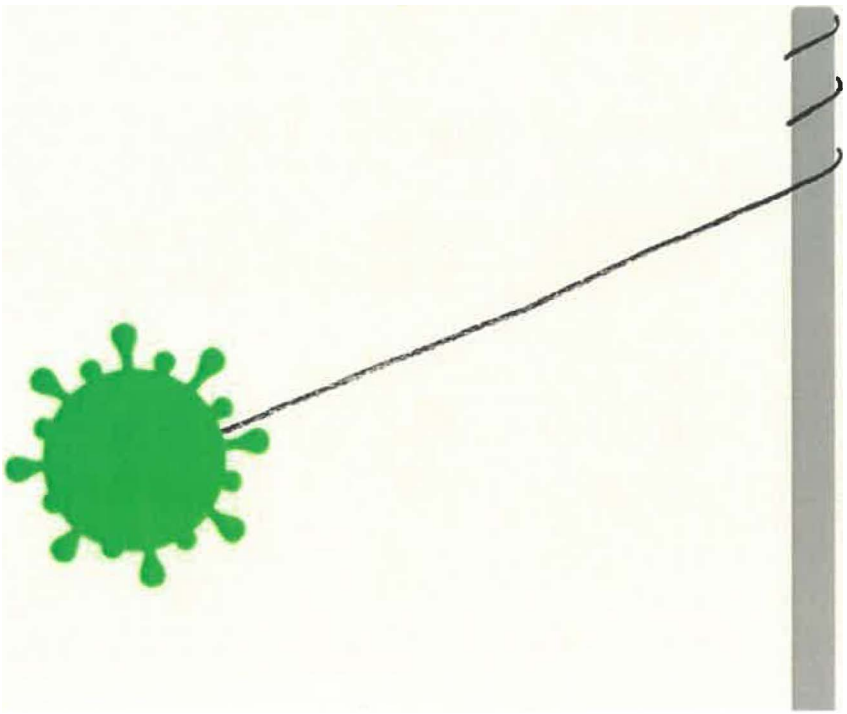
HEALTH

Will We Get Omicron'd Again?

It's been a year since Omicron changed everything. Experts say a repeat is unlikely, but not impossible.

By Katherine J. Wu



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In COVID terms, the middle of last autumn looked a lot like this one. After a rough

summer, SARS-CoV-2 infections were down; hospitalizations and deaths were in a relative trough. Kids and workers were back in schools and offices, and another round of COVID shots was rolling out. Things weren't great … but they weren't the most terrible they'd ever been. There were vaccines; there were tests; there were drugs. The worst winter development the virus might produce, some experts thought, might involve the spawning of some nasty Delta offshoot.

Then, one year ago this week, Omicron appeared. The first documented infection with the variant was identified from a specimen collected in South Africa on November 9, 2021; by December 1, public-health officials had detected cases in countries all around the globe, including the United States. Twenty days later, Omicron had unseated Delta as America's dominant SARS-CoV-2 morph. The new, highly mutated variant could infect just about anyone it encountered—even if they'd already caught a previous version of the virus or gotten several shots of a vaccine. At the beginning of December, and nearly two years into the pandemic, researchers estimated that roughly one-third of Americans had contracted SARS-CoV-2. By the middle of February this year, that proportion had nearly doubled.

Omicron's arrival and rapid spread around the world was, and remains, this crisis's largest inflection point to date. The variant upended scientists' expectations about SARS-CoV-2's evolution; it turned having COVID into a horrific norm. Now, as the U.S. approaches its Omicronniversary, conditions may seem ripe for an encore. Some experts worry that the emergence of another Greek-letter variant is overdue. "I'm at a loss as to why we haven't seen Pi yet," says Salim Abdool Karim, an epidemiologist at the Centre for the AIDS Programme of Research in South Africa. "I think there's a chance we still will."

A repeat of last winter seems pretty unlikely, experts told me. But with a virus this unpredictable, there's no guarantee that we won't see disaster unspool again.

A lot has changed since last year. For one thing, population immunity to SARS-CoV-2 is higher. Far more people have received additional doses of vaccine, many of them quite recently, with an updated formula that's better tailored to the variants du jour. Plus, at this point, nearly every American has been infected at least once—and most of them with at least some subvariant of Omicron, says Shaun Truelove, an

epidemiologist and a modeler at Johns Hopkins University. These multiple layers of protection make it more challenging for the average SARS-CoV-2 spin-off to severely sicken people. They also raise transmission obstacles for the coronavirus in whatever form it takes.

Omicron does seem to have ushered in "a different phase of the pandemic," says Verity Hill, an evolutionary virologist at Yale. The variants that took over different parts of the world in 2021 rose in a rapid succession of monarchies: Alpha, Beta, Gamma, Delta. But in the U.S. and elsewhere, 2022 has so far been an oligarchy of Omicron offshoots. Perhaps the members of the Omicron lineage are already so good at moving among hosts that the virus hasn't needed a major upgrade since.

If that's the case, SARS-CoV-2 may end up a victim of its own success. The Omicron subvariants BQ.1 and BQ1.1 appear capable of spreading up to twice as fast as BA.5, according to laboratory data. But their takeover in the U.S. has been slow and halting, perhaps because they're slogging through a morass of immunity to the Omicron family. That alone makes it less likely that any single Omicron subvariant will re-create the sudden surge of late 2021 anytime soon. In South Africa and the United Kingdom, for instance, different iterations of Omicron seem to have triggered just modest bumps in sickness in recent months. (That said, those countries—with their distinct demographics and vaccination and infection histories—aren't a perfect bellwether for the U.S.)

For an Omicron 2021 redux to happen, SARS-CoV-2 might need to undergo a

substantial genetic makeover—which Abdool Karim thinks would be very difficult for the virus to manage. In theory, there are only so many ways that SARS-CoV-2 can scramble its appearance while retaining its ability to latch onto our cells; by now, its options should be somewhat slimmed. And the longer the Omicron line of succession persists, the tougher it may be to upend. "It's just getting harder to compete," Hill told me.

But the world has gotten overconfident before. Even if SARS-CoV-2 doesn't produce a brand-new version of itself, low uptake of the bivalent vaccine could allow our defenses to wither, driving a surge all the same, Truelove told me. Our transmission-dampening behaviors, too, are slacker than they've been since the pandemic's start. This time last year, 50 to 60 percent of Americans were regularly wearing masks. The latest figures, many of them several months old, are closer to 30 percent. "The more opportunities you give the virus to get into somebody," Hill said, "the more chances you give it to get the group of mutations that could help it take off." Immunocompromised people who remain chronically infected with older variants, such as Alpha or Delta, could also become the sites of new viral offshoots. (That may be how the world got Omicron to begin with.)

Going on probability alone, "it seems more likely that we'll keep going with these subvariants of Omicron rather than dealing with something wholly brand-new," says Maia Majumder, an epidemiologist at Boston Children's Hospital. But Lauren Ancel Meyers, an infectious-disease modeler at the University of Texas at Austin, warns that plenty of uncertainty remains. "What we don't have is a really data-driven model right now that tells us if, when, where, and what kind of variants will be emerging in the coming months and years," she told me. Our window into the future is only getting foggier, too, as fewer people submit their test results—or take any test at all—and surveillance systems continue to go offline.

It wouldn't take another Omicron-type event to hurl us into disarray. Maybe none of the Omicron subvariants currently jockeying for control will surge ahead of the pack. But several of them might yet drive regional epidemics, Majumder told me, depending on the local nitty-gritty of who's susceptible to what. And as winter looms, some of the biggest holes in our COVID shield remain unpatched. People who are immunocompromised are losing their last monoclonal-antibody treatments, and although powerful drugs exist to slash the risk of severe disease and death, useful preventives and treatments for long COVID remain sparse.

Our nation's capacity to handle new COVID cases is also low, Majumder said. Already, hospitals around the country are being inundated with other respiratory viruses—RSV, flu, rhinovirus, enterovirus—all while COVID is still kicking in the background. "If flu has taken over hospital beds," says Srini Venkatramanan, an infectious-disease modeler at the University of Virginia, even a low-key wave will "feel like it's having a much bigger impact."

As the country approaches its second holiday season with Omicron on deck, this version of the virus may "feel familiar," Majumder pointed out. "I think people perceive the current circumstances to be safer than they were last year," she said—and certainly, some of them *are.* But the fact that Omicron has lingered is not entirely a comfort. It is also, in its way, a reminder of how bad things once were, and how bad they could still get.