

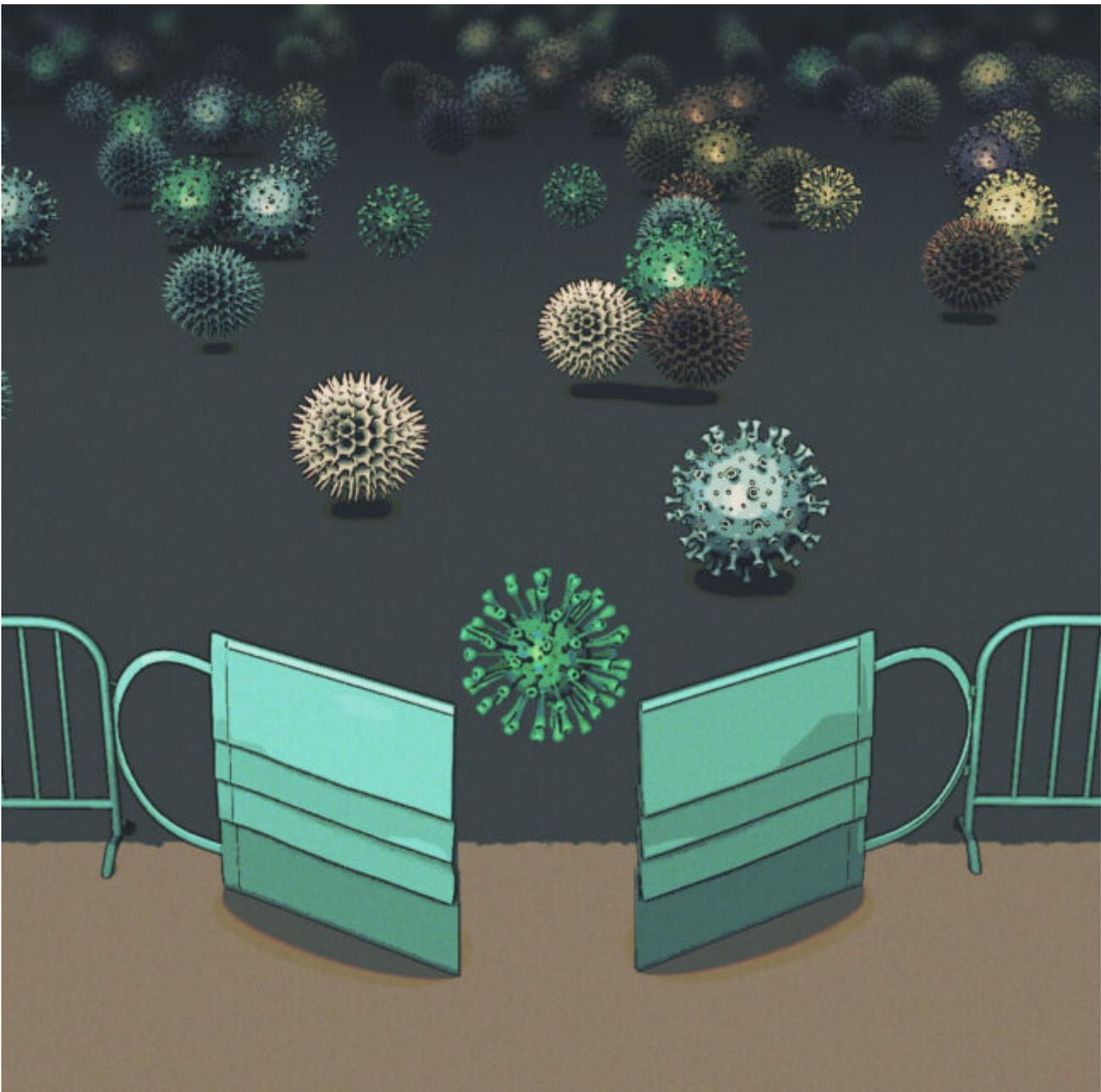
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STAT

Viruses that were on hiatus during Covid are back — and behaving in unexpected ways



By [Helen Branswell](#) May 25, 2022



Alex Hogan/STAT

For nearly two years, as the Covid pandemic disrupted life around the globe, other infectious diseases were in retreat. Now, as the world rapidly dismantles the measures put in place to slow spread of Covid, the viral and bacterial nuisances that were on hiatus are returning — and behaving in unexpected ways.

Consider what we've been seeing of late.

The past two winters were among the mildest influenza seasons on record, but flu hospitalizations have picked up in the last few weeks — in May! Adenovirus type 41, previously thought to cause fairly innocuous bouts of gastrointestinal illness, may be triggering [severe hepatitis](#) in healthy young children.

Respiratory syncytial virus, or RSV, a bug that normally causes disease in the winter, touched off large outbreaks of illness in kids last summer and in the early fall in the United States and Europe.

And now [monkeypox](#), a virus generally only found in West and Central Africa, is causing an unprecedented [outbreak](#) in more than a dozen countries in Europe, North America, the Middle East, and Australia, with the United Kingdom alone reporting more than 70 cases as of Tuesday.

These viruses are not different than they were before, but we are. For one thing, because of Covid restrictions, we have far less recently acquired immunity; as a group, more of us are vulnerable right now. And that increase in susceptibility, experts suggest, means we may experience some ... wonkiness as we work toward a new post-pandemic equilibrium with the bugs that infect us.

Larger waves of illness could hit, which in some cases may bring to light problems we didn't know these bugs triggered. Diseases could circulate at times or in places when they normally would not.

“I think we can expect some presentations to be out of the ordinary,” said Petter Brodin, a professor of pediatric immunology at Imperial College London. “Not necessarily really severe. I mean it’s not a doomsday projection. But I do think slightly out of the normal.”

Marion Koopmans, head of the department of viroscience at Erasmus Medical Center in Rotterdam, the Netherlands, said she believes we may be facing a period when it will be difficult to know what to expect from the diseases that we thought we understood.

“I do think that’s possible,” Koopmans said.

This phenomenon, the disruption of normal patterns of infections, may be particularly pronounced for diseases where children play an important role in the dissemination of the bugs, she suggested.

Little kids are normally germ magnets and germ amplifiers. But their lives were profoundly altered during the pandemic. Most went for stretches of time without attending day care, or in-person school. Many had far less exposure to people outside their households, and when they did encounter others, those people may have been wearing masks.

And babies born during the pandemic may have entered the world with few antibodies passed on by their mothers in the womb, because those mothers may have been sheltered from RSV and other respiratory pathogens during their pregnancies, said Hubert Niesters, a professor of clinical virology and molecular diagnostics at the University Medical Center, in Groningen, the Netherlands.

Koopmans said a study her team did looking for antibodies in the blood of young children showed the impact of what she calls an “infection honeymoon.”

“You really see that children in the second year of the pandemic have far less antibodies to a set of common respiratory viruses. They just got less

exposed,” she said.

Such factors may help explain the recent rash of unusual hepatitis cases in young children. Scientists investigating the cases think they may be caused, at least in part, by adenovirus type 41, because it has been found in a significant number of the affected children. The possibility is puzzling, because the virus hasn’t been seen to cause this type of illness in the past.

But some scientists theorize that this virus may have always been responsible for a portion of the small number of unexplained pediatric hepatitis cases that happen every year. Maybe, the thinking goes, there have been a lot more adenovirus type 41 infections over the past eight months because of increased susceptibility among children. That, in turn, could be making visible something that wasn’t spotted before.

“I think sometimes to connect the dots of rare complications of common illnesses you just need enough cases out there to start to put the pieces together,” said Kevin Messacar, a pediatric infectious diseases specialist at Children’s Hospital Colorado. “And there is some suspicion that that could be going on with the hepatitis cases.”

The pandemic-induced disruption of normal mixing patterns means that even adults haven’t been generating the levels of antibodies that would normally be acquired through the regular exposure we have to bugs, creating ever larger pools of susceptible people.

Flu experts, for instance, worry that when influenza viruses return in a serious way, a buildup of people who haven’t had a recent infection could translate into a very bad flu season.

Koopmans said some studies suggest that after a one- or two-year period in which flu transmission is low, there could be a sizeable reduction in the number of people who have flu antibodies that are at levels high

enough to be considered protective. “So also, potentially, a bigger, more susceptible group in adults,” she said.

“We’re talking about endemic diseases that had a certain pattern of predictability. And that pattern in part was seasonal but in part was also driven by the size of the immune or non-immune population. And the last bit has, of course, increased,” Koopmans said.

How will this play out? All eyes will be trained this fall on children’s hospitals to see whether there will be a surge in cases of a [polio-like condition](#) called acute flaccid myelitis, or AFM, which is thought to be caused by infection with [enterovirus D68](#).

Messacar, who is also an associate professor at the University of Colorado, has been studying AFM for the past eight years, since the first of a series of biennial waves of cases occurred in the late summer and early autumn of 2014, 2016, and 2018.

Then in 2020, nothing. Same in 2021. Does that mean the fall of 2022 could see a much higher crest of cases, because more children are potentially susceptible to enterovirus D68? We need to be prepared for that possibility, Messacar said, while stressing he doesn’t know what to expect.

“Now we have four years of children who haven’t seen that virus. We don’t know what’s going to happen. We don’t know when it comes back. But when it does come back, there are more susceptible children out there that would not be expected to have immunity,” he said. “That’s what we’re watching with a variety of different viruses.”

Thomas Clark, deputy director of the division of viral diseases at the Centers for Disease Control and Prevention, said people in public health have been fearing there could be outbreaks of vaccine-preventable

diseases due to the fact that many children around the world missed getting [childhood vaccinations](#) during the pandemic.

But he said he now understands that isn't the only way the pandemic may influence infectious diseases.

“We're very focused on **under-vaccinated children** with routine childhood immunizations because it's the set-up for introduction of measles. But then there have also been a lot of kids who haven't gotten the usual kind of viruses they might have been exposed to.”

Clark said we may see differences in severity of some illnesses, because young children who were sheltered from bugs during the early stages of the pandemic may now catch them when they are older. Some illnesses cause more serious symptoms if they are contracted when one is older.

“Whether we will see that kind of thing over such a short period of time I think is a big question mark,” said Koopmans. “But I think it is certainly something that is worth really watching closely.”

An accumulation of susceptible people isn't the only way the pandemic may have affected patterns of disease transmission, some experts believe.

David Heymann, who chairs an expert committee that advises the Health Emergencies Program at the World Health Organization, said the lifting of pandemic control measures could have helped fuel the spread of monkeypox in the current outbreak in Europe, North America, and beyond. Many of the monkeypox cases have been diagnosed in men who have sex with men.

After two years of limited travel, social distancing and public gatherings, people are throwing off the shackles of Covid control measures and embracing a return to pre-pandemic life. [Media reports](#)

have suggested recent raves in Spain and Belgium have led to transmission of the virus among some attendees.

Heymann, who is a professor of infectious disease epidemiology at the London School of Hygiene and Tropical Medicine, mused that the monkeypox outbreak could have been smoldering at low levels in the United Kingdom or somewhere else outside of Africa for quite a while, but may have only come to public attention when international travel picked up again.

“If you look at what’s been happening in the world over the past few years, and if you look at what’s happening now, you could easily wonder if this virus entered the U.K. two to three years ago, it was transmitting below the radar screen, [with] slow chains of transmission,” said Heymann, who worked on smallpox eradication early in his career. “And then all of a sudden everything opened up and people began traveling and mixing.”

While all this could make for an unsettling time over the next couple of years, things will eventually quiet down, Brodin predicted.

“I think once you’ve infected a number of people herd immunity ensues and the virus goes away,” he said, referring to viruses in generally. “We haven’t fundamentally changed the rules of infectious diseases.”

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