

Simple, familiar tactics can rein in the COVID variant

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Steep declines in delta variant outbreaks in India and, more recently, the U.K., are likely not due to the nations reaching "herd immunity" or viral behavior, but rather because of shifts in human behavior prompted by

mounting cases and deaths, Harvard experts say.

Those outbreaks appeared to follow similar courses: a rapid increase in cases followed by an equally [rapid decline](#). In India, that progression took roughly three months. Cases began rising in March, took off in April, and declined in May and June, settling at levels slightly higher than those in the spring, according to World Health Organization data. In the U.K., meanwhile, cases rose relatively rapidly in June, peaked in July, and then declined before reaching a rough plateau in recent weeks that, though significantly lower, remains high enough to be a matter of concern to experts.

William Hanage, associate professor of epidemiology at the Harvard T.H. Chan School of Public Health, dismissed speculation that the declines were due to a combination of delta infections, vaccinations, and prior infections that pushed the U.K. past the herd immunity threshold, at which a sufficient number of people have developed resistance to infection, stifling transmission rates.

"When you see huge morbidity and mortality, people change their behavior," Hanage said. "You need to mandate those non-pharmaceutical interventions in order to prevent the really, really bad outcomes because people generally don't do them until really bad outcomes are already baked in. You could see that in India, when people started doing that [adopting non-pharmaceutical interventions], the delta starts to come down quite quickly."

Kasisomayajula "Vish" Viswanath, the Lee Kum Kee Professor of Health Communication and head of the Chan School's India Research Center, said that as cases and deaths mounted in India, people responded by redoubling efforts to mask, distance, and stay home.

"It is fairly clear that what I call the mitigation measures, that includes a

set of behaviors and community actions, seem to be working," Viswanath said. "In India, people were wearing masks; people were staying home because of the density of the population. ... It doesn't mean it has eradicated the disease because it's still there, but to a large extent an even larger number of people would have ended up in the hospitals [without the behavior change]."

Viswanath said that pandemic fatigue—people letting their guards down after months of working to stay safe—played a role in delta's rapid rise. India was enjoying relatively low case numbers in the late winter and [early spring](#) before the new variant tore through the country with little warning. The U.K. was also experiencing a bout of pandemic optimism, with vaccination numbers rising and restrictions relaxing. Even in Massachusetts, Viswanath said, despite rising case numbers today, people are largely still going about their business as they did in the spring, when vaccine campaigns provided the mirage of the pandemic's end.

"I spend a lot of my time studying human behavior under conditions of public health emergencies," Viswanath said. "And I can tell you that this complacency and fatigue is the most unpredictable part."

Hanage said the declines in India and the U.K. should be viewed as good news in the U.S., as it means that despite its greater infectivity and ability to cause breakthrough infections in those already vaccinated, delta, like other variants, is susceptible to widely available non-pharmaceutical interventions. In the U.K., Hanage said there were two major drivers of the surge. One was reopened schools with few pandemic precautions. That meant when delta arrived, there was a large, unvaccinated population of schoolchildren vulnerable to infection. The second factor, he said, was a major soccer tournament, the Euro Cup, which not only filled stadiums but also brought people out to pubs and house parties to watch matches. When schools went on summer vacation

and the tournament ended, levels subsided, Hanage said.

"It's not that surprising that delta came down quickly [in India]," Hanage said. "It actually suggests that delta is very, very dependent upon contact networks. And that is consistent with what we saw in the U.K. That tells you that those combinations of contact networks really produce the opportunity for adults to spread it."

Hanage said another example, that of The Netherlands, reinforces the idea that the variant is susceptible to the kinds of non-pharmaceutical interventions that appear to have been effective against different strains. The Netherlands, Hanage said, opened up widely and then suffered a rapid spike in delta cases. The government immediately imposed what Hanage described as moderate, targeted controls, like closing nightclubs and curbing late hours for restaurants.

"The other interventions in The Netherlands were relatively small, and delta cases just collapsed really quickly," Hanage said. "We have to be careful about ascribing causation, but I think that, with the combination of the U.K. and India, shows how vulnerable delta is to changes in human contact networks."

The lesson for the U.S., Hanage said, is that we shouldn't be fatalistic about delta's arrival and spread. Despite its increased contagiousness, which has led to soaring cases in some states, we still can be in control of the pandemic, he said. But we have to be willing to take the necessary steps.

"Fatalism is not going to help, especially when the natural history of the outbreaks in places as diverse as India and Scotland, England, Netherlands illustrates that there are things we can do," Hanage said.

Viswanath said the India Research Center is working to reinforce best

practices around non-pharmaceutical interventions. The center has run several webinars recently with hundreds of attendees about proper mask use, physical distancing, and other steps, as well as topics such as when—and when not—to go to the hospital after testing positive for COVID-19. The problem, he said, is if people with mild cases go to the hospital unnecessarily, it can spread the virus, since Indian clinics are often crowded and people are likely to be accompanied by family members.

In the U.S., meanwhile, cases are still rising rapidly amid calls to vaccinate more people and an ongoing nationwide argument about the need to again mask up. According to figures from the U.S. Centers for Disease Control and Prevention, the seven-day moving average of new cases nationally surpassed 100,000 this month and has since risen to 140,000, a level that outstrips three of the four earlier surges and is surpassed only by January's seven-day average peak of more than 250,000.

One positive trend so far is that though deaths have likewise risen in recent weeks from 150 in early July to a seven-day national average about 750 over the most recent period, they have yet to match the heights of earlier surges.

Hanage said delta's ability to infect even those who are vaccinated, while worrisome, "is very, very far from catastrophic" because the vaccines retain their ability to protect against severe illness. The speed with which delta can infect large numbers of people means, however, that there is a race between infection and vaccination, and those considering vaccination should keep in mind that protective immune responses after inoculation take weeks to build.

"If you were unvaccinated and in a place where delta is surging and you want to get your first shot of mRNA vaccine, there would still be quite

some time before you were fully vaccinated," Hanage said. "There's a lot delta can do in a few weeks."

With just half of U.S. adults fully vaccinated, there are still potential vaccination gains to be made, Viswanath said. He's conducted surveys that show that only about 15 percent of the population is determined to remain unvaccinated, while the rest can still be persuaded, including those who said they'd get a vaccine if mandated by their workplaces.

"We are learning some things that are working, like masking still works against delta; physical distancing still works; vaccinations still seem to work," Viswanath said. "There will be surprises, but the nastiness component has been somewhat muted because of the vaccines."

Hanage said since the alpha variant became widespread in early 2021, the idea that the pandemic would end by eliminating COVID-19 has faded. Instead, the most likely outcome is one in which virtually everyone has been vaccinated, infected, or both, and consequently severe COVID-19 cases would become relatively rare and within the capacity of the health care system to handle.

"Delta makes that a virtual certainty," Hanage said. "I said at one point that the quickest route toward not wearing a mask is getting a shot. That was before [delta](#), unfortunately."

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