

[Health & Science](#)

Although the number of Zika cases has fallen, the virus is unlikely to vanish



The mosquito-borne Zika virus is on the wane in many places. (Philippe Huguen/AFP/Getty Images)

By Aimee Cunningham November 4

Less than a year after the World Health Organization declared that Zika is no longer a public health emergency, the virus seems to have fallen from public consciousness, at least outside heavily affected areas. The mosquito-borne virus staged a [massive assault on the Western Hemisphere in 2015 and 2016](#), but this year, Zika appears to be in retreat.

In the hardest-hit nations, data from each country's department of health shows a striking drop in locally acquired cases — that is, ones caused by bites from local, infected mosquitoes. For instance:

- Brazil had more than 216,000 probable cases in 2016; as of early September, the new cases for 2017 were around 15,500.
- Colombia tallied more than 106,000 suspected and confirmed cases from 2015 to the end of 2016. This year, new cases have plummeted, with around 1,700 by mid-October.
- Mexico went from about 8,500 confirmed cases in 2015 and 2016 combined to around 1,800 by early October of this year.

The numbers have also dropped in the United States and its territories. In Puerto Rico, Zika cases hit nearly 35,000 in 2016, the Centers for Disease Control and Prevention reports. But this year, fewer than 500 cases had been tallied as of the middle of October. In the 50 states, the CDC counted about 5,100 cases in 2016. Most were in travelers who had been to places where Zika was active, although 224 were locally acquired in Florida and Texas. So far in 2017, only about 300 cases had been reported as of mid-October, mostly from travelers. Local transmission seems to have come to a standstill, with one suspected case in Texas and one case confirmed in Florida.

That doesn't mean Zika's days are numbered. If Zika behaves like other arboviruses, such as chikungunya and dengue, it will probably stick around. Arbovirus diseases tend to be cyclical, says public health researcher Ernesto Marques of the University of Pittsburgh. "You have big booms, then they drop. Then a few years later, they come back again," he said.

Why the dramatic rise and fall? The likely answer is herd immunity, said epidemiologist Albert Ko of the Yale School of Public Health. “Zika came in like a bulldozer,” he said, and many people in the Americas who coexist with *Aedes* mosquitoes, which transmit Zika, were infected. Now that “there are so many people who’ve already been exposed to the virus and are presumably immune, it kind of protects indirectly the people who haven’t been infected. So that’s probably happened.”

For every virus, a certain portion of the population must be infected before herd immunity takes hold, said David Morens, senior scientific adviser to the director of the National Institute of Allergy and Infectious Diseases. It depends on how transmissible the pathogen is. For example, the measles virus easily leaps from person to person, so at least 92 to 95 percent of a community must have immunity (typically through vaccination) to prevent outbreaks.

Zika transmission is more complicated because mosquitoes are involved, Morens said. Other factors — such as how dense the human population is in an area, mosquito abundance and climate — also play a part. “But it’s clear there is some level of herd immunity,” he added. “We see it with all of these arboviruses that cause epidemics. They burn out because the virus can’t find enough people to infect.”

It’s difficult to assess what percentages of populations across the Americas have been exposed to Zika. While the virus is [linked to birth defects](#) and to neurological problems in adults, most cases lead to mild or no symptoms. Some infected people probably don’t get medical assistance, leading to missed cases. And diagnostic tests looking for antibodies against Zika can’t always tell the difference between Zika and dengue infections.

It’s also unclear for mosquito-borne diseases how widespread infection needs to be before herd immunity kicks in. Scott Weaver, a virologist at the

University of Texas Medical Branch in Galveston, noted that in places where chikungunya immunity was measured, “typically from 20 to 50 percent of the population became infected as the outbreak swept through a given region.” At those levels, “we don’t see very efficient transmission.”

Although the downtick in Zika cases is evidence of herd immunity, whether a person’s past infection leads to lifelong immunity is unknown. The general understanding of Zika’s close relative dengue is that, once someone has had an infection with one type of dengue virus, that person is protected from further infections from that type. But a 2016 study found that reinfections are possible. So Zika immunity might wane over time, perhaps leading to reinfections, said pediatrician and microbiologist Peter Hotez of Baylor College of Medicine in Houston.

Health/Science alerts

Breaking news on health, science and the environment.

Sign up

It’s also possible that Zika will find an animal host in the Western Hemisphere, providing the virus a way station of sorts until the human population is more susceptible again. Researchers have detected Zika in capuchin monkeys and common marmosets, which both reside near humans in Brazil.

All of the unknowns make it hard to predict when Zika will reemerge. There may be epidemics here and there, and then years later it pops up “in a place, in a time you can’t predict,” Morens said. “The Zika virus will be around indefinitely.”