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Zika Epidemic in Brazil Sparks Global Panic

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An obscure virus correlated with a birth defect and temporary paralysis syndrome has become a fast-growing concern in Latin America since it became an epidemic in Brazil, attracting the attention of global health officials in a race to understand, treat, and immunize against the disease.

The mosquito-borne Zika virus appears to correlate with an unusually high incidence rate of microcephaly, a condition in which babies are born with abnormally small heads, and with occurrences of Guillain-Barré syndrome, which temporarily paralyzes the hands and feet, and in extreme cases can cause death from respiratory failure. Thus far, three deaths in Brazil have been attributed to Zika. Officials have warned pregnant women and women of childbearing age to take extreme precautions to avoid becoming afflicted with Zika.

The virus is carried by the Aedes aegypti mosquito and is now present in 21 Brazilian states and the federal district. It has spread to many of Brazil’s neighboring countries, as well as to nearly all of Central America and the Caribbean. The Pan American Health Organization anticipates that Zika will eventually reach every country in the Western Hemisphere except for Chile and Canada. On Feb. 1, the World Health Organization declared a global health emergency over the Zika pandemic.

President Dilma Rousseff has urged a massive mobilization campaign to eliminate breeding grounds for the Aedes aegypti mosquito in an effort to stem the spread of the virus. The mosquito also transmits dengue fever, another tropical disease that has spiked in Brazil in recent years. However, Zika’s impact on pregnant women has prompted extra attention as Brazil partners with universities in the United States in the race for a cure.

“Here in Brazil, we will now start a serious fight against the Zika virus,” Rousseff said on Jan. 26, speaking on the sidelines of the Community of Latin American and Caribbean States (CELAC) summit in Quito, Ecuador. “Even if today we don’t have a vaccine, we are certain that we will have one, but it will take time. The best vaccine against Zika is the fight that each one of us, the government, and society puts toward it, eliminating all the places where the mosquito lives and reproduces.”

From benign to malignant

The Zika virus was first isolated in Uganda in 1947, and for the last 70 years had been largely confined to a narrow equatorial stretch of Africa and Asia, rendering it largely obscure in the annals of tropical medicine. In 2007, there was an outbreak in the Micronesian island of Yap, resulting in 8,187 cases. In 2013, another outbreak struck French Polynesia and caused 8,264 suspected cases. Zika appears to have traveled from the Pacific to Brazil the next year, either during the 2014 World Cup that brought millions of foreigners to the country (NotiSur, Aug. 1, 2014), or later that year during the Va’a World Sprint Championships canoe race in Rio de Janeiro, in which French Polynesia competed.

A few weeks after the World Cup ended in July 2014, the first reported cases of Zika trickled into public hospitals in Natal, the capital of Rio Grande do Norte, a city that hosted several World Cup
games. Only one in five people infected with Zika show symptoms, which are similar to dengue and include fever, rashes, bloodshot eyes, headaches, and joint pain. The virus spread throughout the northeast and eventually reached Recife and Salvador, the region’s two largest cities, and became known as the “mysterious disease” because it could not be identified. Finally, in April 2015, virologists at the Federal University of Bahia determined it was Zika.

Initially, the medical community in Brazil thought the outbreak was relatively minor compared to dengue, which kills hundreds each year. “Zika virus doesn't worry us, it's a benign disease,” said then health minister Arthur Chioro during a May 2015 press conference. It now appears he spoke too soon. Over the second half of 2015, doctors in Recife, capital of the northeastern state of Pernambuco, compared notes on cases of microcephaly. Obstetricians were seeing multiple cases in a day, which was far beyond statistically normal rates of the birth defect, where newborns have flattened foreheads and smaller craniums.

Doctors alerted the Health Ministry, which in turn tasked the Fundação Oswaldo Cruz (Fiocruz), a national scientific research institution, with investigating the issue. Fiocruz epidemiologists enlisted a global roster of medical experts, ultimately zeroing in on the suspected link between Zika and microcephaly by the end of 2015. Meanwhile, Zika could potentially infect tens of millions of people as it spreads across 33 countries with a total population of 600 million.

A race for the cure and a battle at home

Although individuals infected with the Zika virus acquire immunity, Brazilian officials are eager to find a vaccine that could prevent the potentially deadly virus from affecting more people, especially vulnerable women. The northeast is Brazil’s poorest region, and many mothers arriving at urban public hospitals with cases of microcephalic infants come from modest means in impoverished rural areas. Media accounts abound of young women unsure of how they will provide for children who will require lifelong care because of the condition.

On Feb. 11, Health Minister Marcelo Castro announced a US$1.9 million partnership between the Brazilian government and the University of Texas. The partnership will connect researchers at the Instituto Evandro Chagas in the state of Pará with the US university, which is the World Health Organization’s main collaborator for vaccine research into emerging infectious diseases.

“The timeline for research and development is two years, but our scientists and those at the University of Texas are optimistic and believe that they can do it in one year,” Castro said. “But development doesn’t mean a vaccine ready to be used. First, it must be tested on animals and humans, and this takes time.”

The partnership resulted in part from bilateral talks between Brazil and the US, including a phone call between Rousseff and US President Barack Obama on Jan. 29. Meanwhile, on the home front, Rousseff has effectively declared war on the Zika virus, which could help her political prospects at a time when she faces an impeachment battle and a sagging economy (NotiSur, April 10, 2015, and Aug. 14, 2015). “There will be no lack of funding,” she told a joint session of Congress on Feb. 1.

Already, the government has mobilized 500,000 people, including 220,000 military troops, to help eliminate mosquito breeding grounds and to educate inhabitants of infected areas. On Feb. 13, as part of a “Zero Zika” campaign, the troops went on a door-to-door campaign with the hope of reaching 3 million homes in 350 Brazilian cities, NPR reported. Health ministers from 14 South
American countries met in Uruguay on Feb. 3 to discuss strategies and responses. On Feb. 9, Rousseff met with Christian leaders to urge churches to take up the fight against Zika. Although abortion is illegal in Brazil, pro-choice activists have seized on Zika as a justification for legalizing the practice. Catholic and evangelical groups, however, remain opposed to any changes to the law.

The show must go on at Carnival and Olympics

Despite the recent discovery that in addition to mosquito bites, Zika virus can be transmitted sexually and potentially via saliva and urine, Brazil’s Carnival celebrations this month proceeded largely unaffected. The Instituto Brasileiro de Turismo (Embratur) estimated 80% hotel occupancy in the country’s five largest Carnival destinations, with four of every 10 Carnival tourists coming from overseas.

Meanwhile, the impending Summer Olympic Games in Rio de Janeiro (NotiSur, Sept. 11, 2015) have sparked further fears of mass infection. While there is no sustained chorus yet to cancel or postpone the games, medical directors for many Olympic committees are taking extra precautions, and prominent female athletes have publicly expressed concern about the risk of contracting Zika. Members of the US women’s Olympic soccer team, for example, have made headlines saying that if the Rio Games were held today, they wouldn’t attend.

Rio de Janeiro Mayor Eduardo Paes dismisses such concerns as exaggeration. “The period of the Olympics is the time of year when the transmitting mosquito doesn’t procreate, isn’t in the environment,” he said on Feb. 12 during an inspection visit to the Maria Link Aquatic Park. “August and July are drier months. They aren’t as hot, so you have fewer incidents of the transmitting mosquito. It falls on us to take the necessary precautions, to show that we are doing everything to avoid the risk of any athlete or visitor coming to Rio having a problem with Zika virus. I think there is a degree of exaggeration. More people die of the flu every year than of dengue, much less of Zika virus. I don’t want to minimize it, I think we need to deal with the problem, but I think there’s a certain exaggeration at the moment.”

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