

Life at Zika epicenter a struggle for afflicted family

January 29 2016, by Mauricio Savarese And Jenny Barchfield



In this Jan. 26, 2016 photo, Daniele Ferreira dos Santos holds her son Juan Pedro, who was born with microcephaly, outside her house in Recife, Pernambuco state, Brazil. Santos was never diagnosed with Zika, but she blames the virus for her son's defect and for the terrible toll it has taken on her life. (AP Photo/Felipe Dana)

Around the fifth month of her pregnancy, Daniele Ferreira dos Santos fell ill with a high fever and angry red splotches on her skin.

She soon recovered.

But weeks later, when she went to the hospital for a prenatal exam, the news was horrific: The baby she was carrying likely had a [severe brain injury](#). When Juan Pedro Campos dos Santos came into the world in December, the circumference of his head was just 26 centimeters, about 20 percent smaller than normal.

Santos was never diagnosed with Zika, but she blames the virus for her son's defect and for the terrible toll it has taken on her life. Living in Recife in the northeastern state of Pernambuco, she is at the epicenter of the Zika outbreak, and Pedro's is among 3,400 suspected cases of microcephaly that may be connected to the virus, though no link has yet been proven.

Originally from Africa, Zika spread to Asia and was first registered in Brazil in the middle of last year, spreading like wildfire through the northeast thanks in part to the region's widespread poverty, equatorial heat and chronic infestations of the *Aedes aegypti* mosquito, which also spreads dengue fever and chikungunya.



In this Jan. 26, 2016 photo, Daniele Ferreira dos Santos, center, holds her son Juan Pedro as she walks with her older daughter Jennipher Karine near her house in Recife, Pernambuco state, Brazil. Around the fifth month of her pregnancy, Daniele Ferreira dos Santos fell ill with a high fever and angry red splotches on her skin. She soon recovered. But weeks later, when she went to the hospital for a prenatal exam, the news was horrific: The baby she was carrying likely had a severe brain injury. (AP Photo/Felipe Dana)

"It's the proverbial perfect storm," said Dr. Albert Ko, a professor of epidemiology with the Yale School of Public Health, adding the region was likely at least one of the initial points of entry for the disease—which researchers theorize may have been introduced to Brazil by tourists visiting the country during the 2014 World Cup or an international canoeing event the same year.

"It may have been one of many introductions, but this is the one that took off," said Ko. "In Brazil, infestation rates (of the mosquito) are

highest in the northeast because of climactic reasons and socio-economic reasons, so it makes sense that ... it really took off there."

Mosquitoes have long been an inescapable part of the lives of the Santos family and their neighbors in a slum in Recife's Apipucos neighborhood, where raw sewage flows in ditches, rain water from the frequent downpours in this equatorial city accumulates in fetid puddles, and the shores of a nearby pond are dotted with trash. Each soda bottle, yoghurt container and margarine tub provides an ideal breeding ground for *Aedes*.



Daniele Ferreira dos Santos holds her son Juan Pedro as he undergoes visual exams at the Altino Ventura foundation in Recife, Pernambuco state, Brazil, Thursday, Jan. 28, 2016. Santos is at the epicenter of the Zika outbreak, and Pedro's is among 3,400 suspected cases of microcephaly that may be connected to the virus, though no link has yet been proven. (AP Photo/Felipe Dana)

"The mosquito is in all Recife. If I didn't get it here, I got it at the place I work," said Santos, a receptionist. "We all know that the risk (of contracting a mosquito-borne illness) is high."

But it wasn't always this way. Brazil once succeeded in eliminating the Aedes, which is well adapted to humans, lives within people's homes and can breed in just a bottle cap of stagnant water. Massive eradication efforts in the 1940s and 1950s allowed the country to be declared free of the mosquito in 1958, but over the decades the insect returned, slowly encroaching from neighboring countries and finding fertile [breeding ground](#) in Brazil's sprawling, unplanned cities, with their limited potable water systems and garbage collection.

"Because of irregular water distribution, many people, especially in poorer areas collect water in tanks ... creating ideal breeding grounds for the mosquitoes," said Dr. Ceuci Nunes, an infectologist at the Couto Maia Hospital in the northeastern city of Salvador. "The same goes with trash, which often goes uncollected."



In this Jan. 27, 2016 photo, homes are lit by the setting sun in Ibura, one of the neighborhoods with the highest numbers of suspected cases of children born with microcephaly in Recife, Pernambuco state, Brazil. The Zika virus is the suspected culprit of 3,400 cases of microcephaly in the country. (AP Photo/Felipe Dana)

Nunes also said regional officials' laissez-faire attitude toward eradication also helped fan the mosquito's proliferation, which also resulted in as record numbers of dengue cases in recent years.

"There has been a lot of carelessness combating the mosquito," she said, adding that many municipalities simply "failed to adopt adequate mosquito-fighting measures."

In the face of the spiraling [public health](#) crisis, President Dilma Rousseff has declared war on Aedes, with the government promising to deploy some 220,000 members of the Armed Forces to go door-to-door to help

educate the population about how to prevent the mosquito's spread.



In this Jan. 26, 2016 photo, Daniele Ferreira dos Santos, center right, stands outside her house as her ex-husband holds their son Juan Pedro, who was born with microcephaly, outside her house in Recife, Pernambuco state, Brazil. Almost from birth, Pedro cried ceaselessly, as do many babies with microcephaly. Her husband was annoyed by the baby's constant fussing, which distracted him from his television show, she said, and then within weeks of the baby's arrival, left the house with the family's flat screen TV. (AP Photo/Felipe Dana)

Still, officials on the ground in the epicenter of the crisis worry Rouseff's declaration might be hollow.

Recife's health secretary, Jailson Correia, an infectologist, said the city asked the federal government for \$ 7 million for Aedes eradication

programs back in November, as the link between Zika and microcephaly was emerging. The payout only came in January, he said, and it was only \$300,000.

Area researchers are also exploring whether another type of mosquito endemic to Brazil's northeast could also be a Zika carrier, and if so, whether it too may somehow lead to microcephaly. The carrier of West Nile virus, the *Culex quinquefasciatus* mosquito, is up to 20 times more prevalent in the region than *Aedes*, which could help explain the intensity of the Zika outbreak there.



In this Jan. 28, 2016 photo, Jennipher Karine looks inside a room as her brother Juan Pedro, who was born with microcephaly, undergoes exams at the Altino Ventura foundation in Recife, Pernambuco state, Brazil. Originally from Africa, Zika spread to Asia and was first registered in Brazil in the middle of last year, spreading like wildfire through the northeast thanks in part to the region's widespread poverty, equatorial heat and chronic infestations of the *Aedes aegypti* mosquito, which also spreads dengue fever and chikungunya. (AP

Photo/Felipe Dana)

If the hypothesis proves true, staunching Zika's spread could prove more difficult than previously thought, said Constancia Ayres, a researcher with the Fiocruz Institute in Recife.

"If that's the case, the problem is more complex. Only a proper sanitation system would help," she said. "Culex reproduces in dirty waters, unlike Aedes."

For the moment, the best way to avoid infection remains avoiding mosquito bites—a tall order in Recife, where worry over Zika's effects has sparked widespread runs on mosquito repellents. And in the few spots where it's still available, frenetic demand has helped push the price for what was already a costly product into the stratosphere. In Recife's airport, a small bottle was running for \$8—a fortune in a region where the per capita household income is around \$160 per month, according to the IBGE statistics agency.



Daniele Ferreira dos Santos holds her son Juan Pedro as he undergoes visual exams at the Altino Ventura foundation in Recife, Pernambuco state, Brazil, Thursday, Jan. 28, 2016. Santos was never diagnosed with Zika, but she blames the virus for her son's defect and for the terrible toll it has taken on her life (AP Photo/Felipe Dana)

The Brazilian government is now pledging to hand out repellent to low-income pregnant women, but the gesture is cold comfort to new mother Santos.

Asked whether she had any repellent, she just laughed. She has little reason to laugh these days.

Almost from birth, Pedro cried ceaselessly, as do many babies with microcephaly. He stops only the few hours when he's asleep. During those precious hours, Santos keeps her fingers close to his chest so he has something of her to grab onto. Without that, he pinches himself

awake with his tiny fingers.



In this Jan. 27, 2016 photo, Gabriel plays next to a tank used to collect water, a potential *Aedes aegypti* mosquito breeding site, outside his house in Recife, Pernambuco state, Brazil. The mosquito is a vector for the proliferation of the Zika virus currently spreading throughout Latin America. (AP Photo/Felipe Dana)

Her husband was annoyed by the baby's constant fussing, which distracted him from his television show, she said. He was also deeply chagrined to have a son born imperfectly.

So a few weeks after Pedro came home, his father left. He took with him the flat-screen TV that was the centerpiece of their tiny home.



In this Jan. 26, 2016 photo, a municipal worker sprays insecticide to combat the *Aedes aegypti* mosquitoes that transmit the Zika virus, at the Imbiribeira neighborhood in Recife, Pernambuco state, Brazil. Brazil once succeeded in eliminating the *Aedes*, which is well adapted to humans, lives within people's homes and can breed in just a bottle cap of stagnant water. Massive eradication efforts in the 1940s and 1950s allowed the country to be declared free of the mosquito in 1958, but over the decades the insect returned (AP Photo/Felipe Dana)



In this Jan. 26, 2016 photo, a municipal worker sprays insecticide to combat the *Aedes aegypti* mosquitoes that transmits the Zika virus, at the Imbiribeira neighborhood in Recife, Pernambuco state, Brazil. In the face of the spiraling public health crisis, President Dilma Rousseff has declared war on *Aedes*, with the government promising to deploy some 220,000 members of the Armed Forces to go door-to-door to help educate the population about how to prevent the mosquito's spread. (AP Photo/Felipe Dana)



In this Jan. 27, 2016 photo, Gleyse Kelly da Silva, 27, holds her daughter Maria Giovanna, who was born with microcephaly, outside their house in Recife, Pernambuco state, Brazil. Mosquitoes have long been an inescapable part of the slum in Recife's Apipucos neighborhood, where raw sewage flows in ditches, rain water from the frequent downpours in this equatorial city accumulates in fetid puddles, and the shores of a nearby pond are dotted with trash. Each soda bottle, yoghurt container and margarine tub provides an ideal breeding ground for the *Aedes aegypti*, a vector for the Zika virus. (AP Photo/Felipe Dana)

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