Addressing misinformation about Zika in Brazil

March 2 2016, by Silvana Russo

An event in the 2016 Brazilian “Zika Zero” public education campaign. Campo Grande/MS 19/02/2016. Mobilização Nacional da Educação Zika Zero. Credit: Ubirajara Machado

Some Brazilians escape from Carnival. And when they escape and travel abroad, they are often asked "why in hell are you here instead of

celebrating Carnival?"

I'm used to answering this question every February when I visit Washington DC but this year was an exception. 2016 was a Zika year for Brazilians, and my escape from Carnival also means I get to become the unofficial spokesperson of all things Zika and how it's affecting the Brazilian population.

The questions first emerged at the AAAS conference and the DC Science Writers Association (DCSWA) dinner. The scientists in attendance were curious about the virus, but the journalists in attendance were intrigued on what and how to report.

Our little table became known as the Zika information center, and I found that answering their questions was difficult. Several times I had to counter misconceptions or correct random information propagated about Zika by the mainstream media. For example, I had to point that I live in southern Brazil, whereas the epidemic is spreading in the northeast—a distance analogous to the space between Toronto and Miami. So, once I was back home post-Carnival, I started to research the extent of the Zika information getting out and how it correlates with the actual clinical reports from Brazilian doctors. I surveyed PubMed and discussed with colleagues.

Back in the DCSWA party, one editor of a scientific publication basically summarized everyone's questions in two parts when he asked: (1) Was the epidemic as bad as they say? and (2) Was it Zika or some insecticide that was responsible for the surge in microcephaly?

For a brief background, Zika is an virus carried by mosquito Aedes aegypti, which originated in Africa. The mosquito favors tropical climates, where its larvae can breed in dirty, standing water. The mosquito's favorite habitats are typically in tropical climates and

developing countries, for instance, in Brazil, only 60% of the population have access to reasonable waste disposal. In northeastern Brazil, where the Zika epidemic is spreading, this number narrows to just 30%.

Answering question (1) how bad is the epidemic? may seem counterintuitive at first. Why is Zika so bad? One in five people affected experience the symptoms of the common cold. The other four remain asymptomatic. A small percentage of Zika-infected people develop the neurologic syndrome Guillain-Barre, which generally resolves without major complications. Until now, only three people have died.

But what about for babies exposed to the Zika virus? Well, that's the bad part of the story.

Pediatricians in northeastern Brazil were the first to notice that hospitals were filling with severely microcephalic babies. The connection between the virus and the neurologic condition was drawn early. The neuropediatricians treating those infants found it extremely unusual that they were seeing the same amount of anomalies in a one-week span that they usually saw in a whole year. The doctors warned the authorities.

After that, Brazilian researchers could identify the virus and were able to infer a causal link between Zika and microcephaly.

The Brazilian government reported 508 confirmed babies and 3,935 awaiting laboratory confirmation.

And to answer to question (2) is the insecticide Pyriproxyfen the culprit? The Argentinian organization Reduas first claimed Pyriproxyfen was the cause of the microcephaly outbreak in South America. However, the World Health Organization (WHO) recommends Pyriproxyfen be used in tropical countries in the developing world that lack proper clean water infrastructure. The WHO seems to feel it is safe to use the efficient and

inexpensive insecticide to protect the population that lacks sources of water and sanitation hygiene and the diseases that accompany inefficient WASH.

Furthermore, Dr. Peter Hotez, dean of the National School of Tropical Medicine at Baylor College of Medicine in Houston and editor-in-chief of PLOS Neglected Tropical Diseases, said that "research on Zika and the birth defect 'overwhelmingly point to a virus as the cause of microcephaly,'" in USA Today.

I feel the organization that claimed the correlation between Pyriproxyfen and the microcephaly epidemic was irresponsible when making that point. This claim reaches the level of anti-vaxxers in the US: It is the type of misinformation that can cause harm. After all, when blaming the insecticide they absolve the virus, which may cause people to stop taking mosquito precautions (such as deciding not to travel to endemic locations).

Hotez quotes Ernesto Marques, a microbiology professor, with a sentiment that I share: "These guys come out of the blue, and people believe them, with no evidence at all. It really shows the lack of science education among the public."

And if you are asking yourself, why in hell did I come to Washington DC instead of celebrating Carnival in Brazil? The answer is I like to escape from the noise. But I still bring my Brazilian culture with me, even if it's in answering questions and clarifying misinformation about the epidemic.

This story is republished courtesy of PLOS Blogs: blogs.plos.org.