Zika could soon infect 4 million; U.S. impact likely to be much smaller

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The Zika virus continues to spread, with the potential to infect up to 4 million people throughout the Americas.

But although locally transmitted infections are all almost certainly inevitable in the United States, federal health officials don't expect large-scale infections.

"We do expect to see local transmission, but we are not likely to see widespread outbreaks," Dr. Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases, said during a press briefing on Jan. 28. "We think these would occur in pockets, similar to what we now see with dengue and chikungunya. We are not being cavalier about this; we are preparing. But large-scale outbreaks are not something we are likely to see, based on our experience with dengue and chikungunya."

Dr. Fauci's comments were in contrast to warnings issued simultaneously by the World Health Organization and the Pan American Health Organization (PAHO), WHO's South American arm.

On Jan. 28, the WHO announced it would convene a meeting of its International Health Regulations Emergency Committee. WHO Director-General Margaret Chan said the virus is now present in 23 countries and territories in the region, as well as in parts of the South Pacific.

"The level of alarm is extremely high," she said during the meeting. Although a causal link between the virus and outbreaks of microcephaly and Guillain-Barré syndrome is yet unproven, she said it is strongly suspected. "The possible links, only recently suspected, have rapidly changed the risk profile of Zika, from a mild threat to one of alarming proportions."

Dr. Marcos Espinal, PAHO's director of communicable diseases and health analysis, outlined the potential spread. His agency expects to see 3-4 million cases throughout North and South America, which could occur in any region that has endemic dengue fever. Both viruses are carried by mosquitoes of the Aedes genus. Two of these, the Asian tiger mosquito and the yellow fever mosquito, are commonly found in the United States, particularly in warmer regions.

Thus far, 31 cases of Zika virus have been confirmed in the United States (11 states and Washington), Dr. Anne Schuchat, principal deputy director for the Centers for Disease Control and Prevention, said in that agency's briefing. All of these cases have been associated with travel to endemic areas, she said. She was unable to say how many cases had occurred in pregnant women.

There have been 19 confirmed cases in Puerto Rico and 1 in the U.S. Virgin Islands. These could be locally acquired cases, although that has not been confirmed. However, Zika infection is now a notifiable illness and any confirmed cases must be reported to CDC, she said.

Nearly a million cases have been laboratory confirmed in South America since 2015, Dr. Espinal noted. The vast majority of those have caused mild, transient symptoms. But in Brazil alone – the epicenter of the epidemic – there has been a substantial increase in newborn microcephaly. Almost 4,000 cases of this rare birth defect have been identified since October, when tracking began. Although the cases coincide with the rise of Zika infections, no one knows how many were related or what pathology could be mediating the association.

This is just one question muddying the Zika waters right now, Dr. Chan of the WHO said. Several difficult-to-address issues are hampering an effective response, including the widespread range of the mosquito vectors, which allows international spread; a lack of population immunity; and the absence of rapid diagnostic tests, effective treatment, and any vaccine.

Another concern is the potential for illness-potentiating coinfection. In the lab, Zika virus has shown cross-reactions with dengue types 1-4, yellow fever, and West Nile virus – all of which are carried by Aedes mosquitoes.

Scientists at the CDC and National Institutes of Health are working on the problem now, Dr. Fauci said. Efforts include the creation of animal models to study disease transmission and its effect on pre- and postnatal outcomes, and of diagnostic platforms that could easily and quickly identify Zika infections. These would quickly differentiate Zika from dengue infections, which are also caused by a strain of flavivirus.

An effective vaccine will not be quickly forthcoming, he cautioned, although a phase I trial is in the works and could begin later this year. The candidate is a DNA-based vaccine similar to the one now used to protect against dengue. It would almost certainly not be approved in less than 2 years, Dr Fauci added.

Until some of these questions have been answered, or until the epidemic slows, the CDC continues to caution pregnant women against travel to endemic areas. For those who do travel or who live in endemic areas, Dr. Schuchat reiterated CDC's long-held advice to take precautions against mosquito bites: long-sleeved shirts and long pants; staying inside; and using an effective insect repellent. Those containing DEET are most effective and are safe for pregnant women to use, Dr. Schuchat said.

For now, the CDC's Zika travel alert includes Puerto Rico, Barbados, Bolivia, Brazil, Cape Verde, Colombia, Ecuador, El Salvador, French Guiana, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Martinique, Mexico, Panama, Paraguay, Saint Martin, Samoa, Suriname, Venezuela, the U.S. Virgin Islands, and the Dominican Republic.

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