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### UPDATE ON THE ZIKA VIRUS IN THE REGION OF THE AMERICAS

#### Background

1. Zika virus (ZIKV) is a vector-borne virus transmitted, similar to the dengue and chikungunya viruses, by *Aedes aegypti* and *Aedes albopictus* mosquitoes. The virus was first isolated in Uganda in 1947 in a sentinel rhesus monkey and was first identified in human beings in 1952.
2. Following the reemergence of Zika virus in the Western Pacific region in 2007 on the island of Yap (Federated States of Micronesia), a cluster of autochthonous transmission of the virus was confirmed in Easter Island, Chile, in 2014 concurrent with circulation on several other islands in the Pacific.
3. In February 2015, health authorities in Brazil began investigating cases of rash illness in the country's northeastern states. The investigation led to laboratory confirmation of autochthonous transmission of Zika virus in May 2015, representing the first documented transmission on the continental platform of the Americas.
4. The purpose of this report is to provide an update on the epidemic in the Region of the Americas as well as on the response of the Pan American Health Organization (PAHO).

#### Situation Analysis

5. Although the detection of Zika virus disease in the northeastern states of Brazil was confirmed in May 2015, a retrospective analysis of specimens revealed that the virus may have circulated in the Americas much earlier—molecular clock phylogeny points toward an introduction in Brazil as early as May 2013.
  6. Before 2013, Zika virus disease had been described as a mild, self-limiting illness associated with fever, rash, joint pain, and conjunctivitis. However, during the outbreak of ZIKV in French Polynesia, it became apparent that there was a marked spatial and
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temporal association between ZIKV and Guillain-Barré syndrome (GBS). Similarly, by July 2015 the northeastern state of Bahia in Brazil, which reported extensive circulation of ZIKV, also detected increases in neurological anomalies including GBS.

7. During August 2015, obstetricians and pediatricians from three states in northeastern Brazil (Pernambuco, Paraiba, and Rio Grande do Norte) reported a perceived increase in cases of microcephaly in their clinical practices. These anecdotal reports were corroborated in October 2015, when a significant increase in detection of cases of microcephaly was confirmed in Pernambuco. In addition, there was compelling evidence that many of the mothers of the children with microcephaly reported experiencing a febrile rash during their pregnancies.

8. The geographical range of ZIKV has rapidly expanded, and as of 17 May 2016 mosquito-borne transmission of the virus had been detected in 39 countries and territories in the Americas. In addition, five countries have reported non-vector-borne transmission of ZIKV, likely through sexual contact.

9. As countries experience widespread transmission of the virus, increased detection of GBS and/or detection of ZIKV among cases of GBS has been reported in 13 countries and territories in the Region of the Americas: Brazil, Colombia, the Dominican Republic, El Salvador, French Guiana, Haiti, Honduras, Martinique, Panama, Paraguay, Puerto Rico, Suriname, and Venezuela. Cases of microcephaly or congenital malformations believed to be associated with congenital ZIKV infection have also been detected in six countries and territories in the Region (Brazil, Colombia, Martinique, Panama, Puerto Rico, and the United States of America).

10. The rapid expansion of the virus, along with increasing evidence associating ZIKV with a cluster of microcephaly in Brazil and other adverse neurological outcomes, led to the declaration by the World Health Organization (WHO) of a Public Health Emergency of International Concern (PHEIC) on 1 February 2016.

11. Considering the possible complications observed with ZIKV infection, the impact of this virus has been and could continue to be substantial. Most importantly, the treatment of serious complications associated with infection could pose an important burden on provision of health services.

### **Response of the Pan American Health Organization**

12. Within days of the confirmation of ZIKV in Brazil, PAHO issued an epidemiological alert, “Zika virus infection,”<sup>1</sup> describing the infection and giving Member States recommendations for leveraging existing dengue and chikungunya surveillance systems to increase their sensitivity in detecting possible cases of ZIKV infection. The alert aimed to prepare countries for potential introduction of the new virus. This initial publication primed the massive effort undertaken to provide the latest information and technical guidance to Member States as the epidemic unfolded, including

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<sup>1</sup> Available at: <http://bit.ly/1JSNjj8>.

posting of weekly epidemiological updates describing the epidemic's evolution and geographic spread.

13. At the end of 2015, the Pan American Sanitary Bureau substantially intensified activities to support States Parties in responding to the introduction of Zika virus in the Region, which culminated in December 2015 with the activation of an Organization-wide Incident Management Structure (IMS) including the release of funds from the PAHO Epidemic Emergency Fund. During the following months, the PASB IMS, in close coordination with the equivalent structure established at WHO headquarters in February 2016, triggered the release of funds from the WHO Contingency Fund for Emergencies, and the roll out of activities outlined in the "Strategy for Enhancing National Capacity to Respond to Zika Virus Epidemic in the Americas." The strategic framework revolves around the following elements: *a*) timely monitoring of the evolution of the epidemic in its multifaceted aspects; *b*) risk reduction through vector control; *c*) enhancement of response capacity with a focus on health services (including blood safety), risk communication, and mass gatherings; and *d*) development of a regional research agenda on Zika virus to address the growing gaps in knowledge.

14. The evolving nature of the virus required that the Organization implement an agile and reactive mechanism to respond to a PHEIC affecting most of the Member States and territories within the Region. Using knowledge gained through its response to other arbovirus outbreaks (with particular reference to chikungunya, dengue, and urban yellow fever) and analyzing the emerging information from Brazil, the Organization deployed multidisciplinary technical field missions, in some cases on multiple occasions, involving the mobilization of over 80 staff and external experts, including through the Global Outbreak Alert and Response Network (GOARN) and WHO collaborating centers. The expertise represented in the in-country mission teams spanned several technical areas: antenatal care, clinical management, entomology and vector control, epidemiology, health and laboratory services, neonatology, neurology, public health, radiology services, and risk communication. Various missions related to preparations for the XXXI Summer Olympics and Paralympics Games, to be held in Rio de Janeiro, Brazil, from 5 August to 21 September 2016, were also conducted.

15. Since the declaration of the PHEIC, the Organization has concluded 30 technical cooperation missions to 20 countries (Aruba, Bolivia, Brazil, Colombia, Cuba, Dominica, the Dominican Republic, Ecuador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Paraguay, Peru, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, and Venezuela), four regional meetings (on health system organization, clinical surveillance, pregnancy management, and risk communications), and four subregional workshops (three laboratory workshops in Central and South America and the Caribbean and one vector control workshop in Central America). The technical cooperation missions included broad, integrated missions across the pillars of the response as well as others with a specific focus on key country support issues.

16. Through subregional training initiatives and country missions, the Organization reached 7/8 of its key countries and focused on additional priority countries. In addition,

almost every country in the Region drew upon the Organization's guidance in responding to Zika's new effects. Fifteen new or revised WHO/PAHO technical guidelines are available to guide Member States' health services. These include: standard guidelines, case definitions, and clinical care and case management algorithms to help clinicians manage, monitor, and understand Zika virus in pregnant women, patients with neurological syndromes, and neonates with congenital anomalies. Examples of other efforts are the distribution of laboratory reagents to 20 countries for detection of Zika virus by polymerase chain reaction (PCR), including an instrumental partnership with the United States Centers for Disease Control and Prevention; coordination of research endeavors, including organization of the meeting "Towards the Development of a Research Agenda for Characterizing the Zika Virus Outbreak and Its Public Health Implications in the Americas," held in Washington, D.C., on 1-2 March 2016; and the development of a dedicated Zika virus PAHO portal presenting information tailored to a variety of audiences.<sup>2</sup>

17. Through the efforts noted above, supplemented through other activities, the Organization's focus for detection included improving the understanding of the distribution, spread, and nature of Zika virus infection and trends in microcephaly and GBS; ensuring uniform case definitions and clinical and data collection protocols; and reinforcing existing disease surveillance systems. Furthermore, important laboratory efforts reinforced and upgraded national capacity, increased access to and use of real-time PCR tests and other diagnostics tools, and established a Zika diagnostic algorithm.

18. Tremendous efforts were invested to ensure that effective, consistent, and trustworthy public health risk communication materials were shared with key stakeholders through systematically updated information; news and social media channels were monitored and analyzed to identify audience concerns, knowledge gaps, rumors, and misinformation; and key messages were shared through a range of channels, including public service announcements, partner networks, and media briefings.

19. Recognizing existing challenges with vector control strategies, the Organization developed innovative approaches toward protecting pregnant women while also ensuring that new vector control technologies undergo the necessary assessment and evaluation to ensure both efficacy and safety. In addition, the Organization worked with partners to support assessments of insecticide resistance and pesticide procurement.

20. Taking into consideration the new effects of the Zika virus, health professionals, working with Ministries of Health, were trained to implement new clinical management practices and provide advice and specialized counseling to those affected by Zika virus disease. Lastly, recognizing the important, integrated role of health system response, the Organization worked with Member States to plan for reinforcing family planning and antenatal care services as well as social services for families affected by Zika.

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<sup>2</sup> The Zika virus PAHO portal is available at: [http://www.paho.org/hq/index.php?option=com\\_content&view=article&id=11585&Itemid=41688&lang=en](http://www.paho.org/hq/index.php?option=com_content&view=article&id=11585&Itemid=41688&lang=en).

21. While the introduction of ZIKV in the Americas is enabling a better understanding of the full spectrum of disease caused by this virus, over 500 million people in the Americas are living in areas at risk for transmission of the virus, and its spread could pose a significant burden to public health and to health systems as a whole.

**Action Necessary to Improve the Situation**

22. As the spread of ZIKV is progressively unfolding, the virus is unveiling its multifaceted public health implications and challenges. The response has required coordination at both the national and regional levels and spanning disciplines and sectors. Similar to the Ebola virus disease outbreak in West Africa, the spread of Zika virus is testing the application of the International Health Regulations and again emphasizing that efficient responses to rapidly emerging and evolving risks require resilient health systems.

23. Similarly, as with the dengue epidemics in the Region over the past 30 years and the establishment of chikungunya virus transmission in all countries and territories in the Americas where *Aedes aegypti* is present over a 12-month period, the Zika virus epidemic is offering the opportunity to integrate the surveillance of arboviruses of public health importance in the Americas (in particular dengue, chikungunya, Zika, and yellow fever) and to revive the integrated vector control efforts outlined in the Strategy for Arboviral Disease Prevention and Control (Item 4.10 of the provisional agenda of the 158th Session of the Executive Committee).

**Action by the Executive Committee**

24. The Executive Committee is invited to take note of this report and provide any recommendations it may have.

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