ZIKA
STRATEGIC RESPONSE PLAN QUARTERLY UPDATE

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World Health Organization

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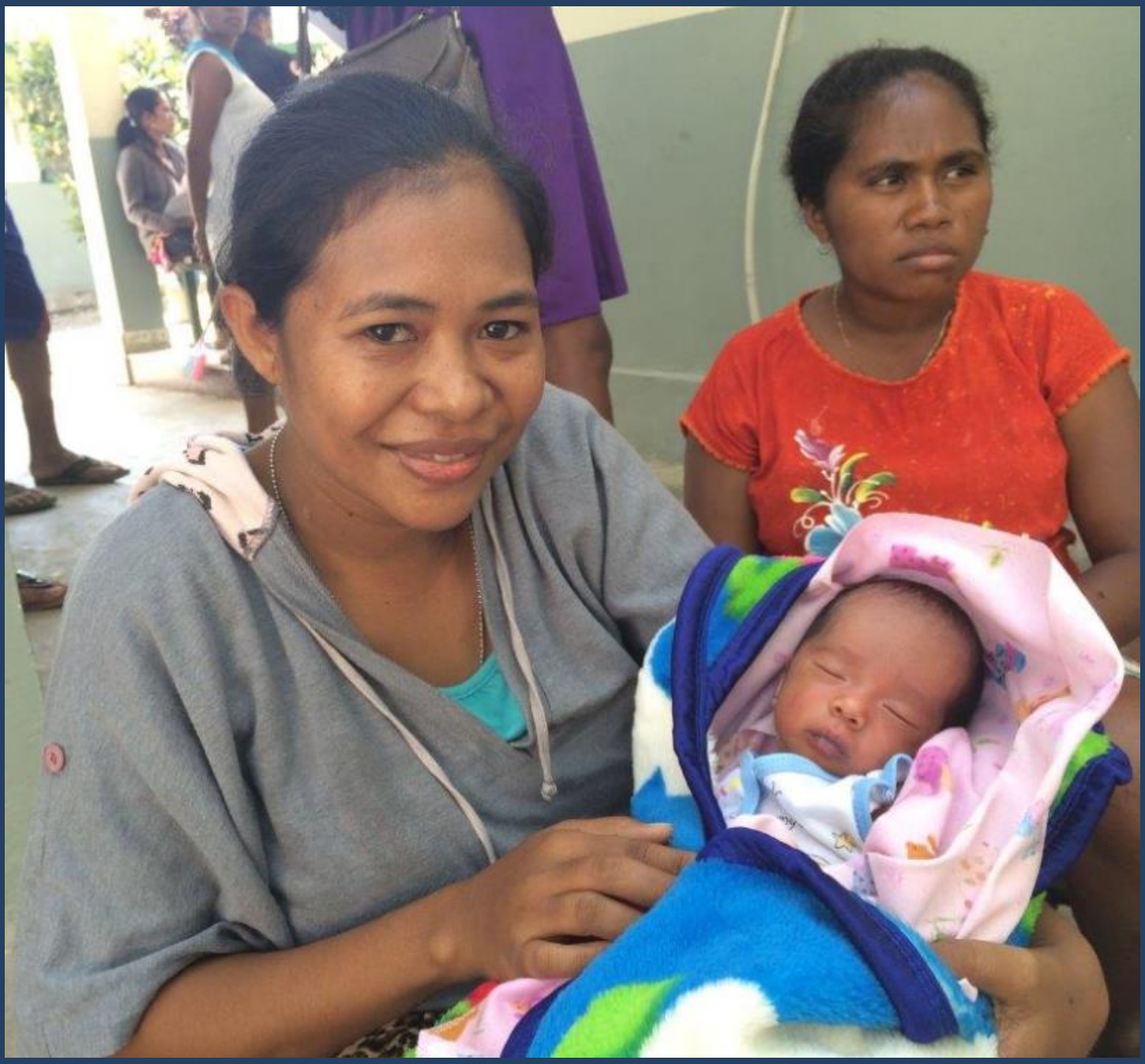

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ABOUT THIS QUARTERLY UPDATE

The *Zika Strategic Response Plan, Revised for July 2016 – December 2017*, updated the previous *Strategic Response Framework and Joint Operations Plan, January – June 2016*, to guide the continuing international response to Zika virus infection, its complications and consequences. The plan continues to provide the basis for coordination and collaboration among WHO and its partners so that countries' preparedness and response capacities are supported to the fullest extent possible.

This *Quarterly Update* gives key information on the situation, the response and updated funding information for organizations working as part of the response. In accordance with standardized planning best practice it provides an update of progress against the *Zika Strategic Response Plan, Revised for July 2016 – December 2017*, which remains the main strategy document.

Zika Strategic Response Plan Quarterly Update
25 October 2016
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FOREWORD

WHO EXECUTIVE DIRECTOR OF HEALTH EMERGENCIES PROGRAMME

On 1 September 2016, the Fourth IHR Emergency Committee on Zika virus and associated complications was convened. Having considered the evidence presented, the Committee agreed that Zika virus infection and its associated congenital and other neurological disorders continue to be a Public Health Emergency of International Concern. This is because Zika virus continues to expand to new geographic areas and because we face persisting and new gaps in understanding Zika and its consequences. The Committee applauded the considerable efforts that have been taken to date by Member States, WHO and partners in response to this emergency and emphasized the need for a better scientific understanding of Zika virus epidemiology.

Zika virus continues to spread geographically to areas where competent mosquitoes are present. From 2015 onwards, mosquito-borne transmission has been reported in four out of six WHO regions: Africa, the Americas, South-East Asia and the Western Pacific. Countries in the Western Pacific Region continue to report new Zika virus cases as seen in Malaysia, Philippines, Singapore and Viet Nam.

Prior to this update, only the Western Pacific Region and the Region of the Americas had documented Zika-associated microcephaly. On 1 October, Thailand notified WHO of two babies born with microcephaly associated with Zika virus, the first such cases in the WHO South-East Asia Region. In Africa, Guinea-Bissau is currently investigating 5 cases of microcephaly to determine if these are associated with Zika virus.

The geographic spread of Zika, although anticipated by WHO, raises pressing questions, especially for women and couples planning or expecting a child. Critical questions for scientists and policy-makers include the public health implications of Zika endemicity and population immunity, the potential of different Zika virus strains to cause complications, and a better understanding of the full spectrum of congenital Zika virus syndrome.

These issues are part of the WHO-coordinated Zika virus research agenda, which aims to generate the scientific evidence needed to strengthen essential public health guidance and the associated actions of WHO, partners and Member States. Researchers need to work with responders to identify critical research needs and translate the findings into improved public health actions.

As part of this far-reaching collaborative effort, many partners have played an active role in contributing to the global Strategic Response Plan for Zika, through the implementation of a range of activities in the areas of detection, prevention, care and support and research across the globe. This quarterly report update compiles examples from the past few months from partners across the globe.

While the overarching strategy developed and agreed with partners in June holds strong, it is critical that we continue to sustain these efforts as part of a longer term strategy focused on strengthening preparedness in the most vulnerable countries to manage Zika and associated consequences. WHO and partners will continue to work with Member States to ensure care and support to families affected by Zika virus, to drive forward all aspects of the research agenda and to strengthen health systems to deal with this and future outbreaks.

I would like to take this opportunity to recognize and thank all the partners involved for their collaboration and considerable efforts in response to this global challenge to public health.

Dr Peter J. Salama

Executive Director

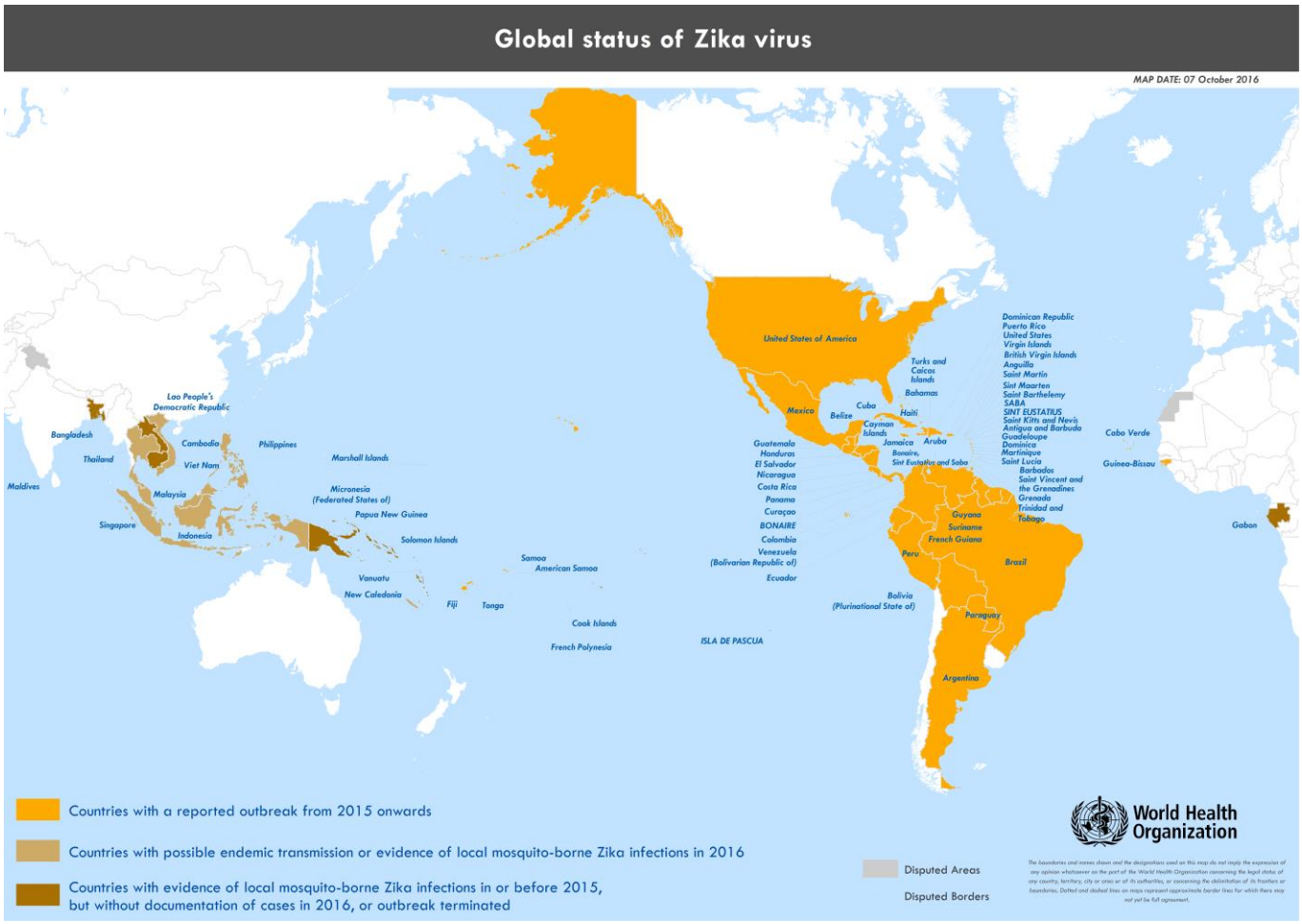
WHO Health Emergencies Programme

THE STRATEGIC RESPONSE PLAN

QUARTERLY UPDATE

ZIKA VIRUS

Fig. 1. Countries, territories and areas showing the distribution of Zika virus, 2013-2016



PART I: SITUATION UPDATE

The *Zika Strategic Response Plan - Revised for July 2016 to December 2017*, comprised of the *Strategic Response Framework* and *Joint Operations Plan*, has been developed to guide the international response and joint actions against Zika virus infection, its complications and consequences. It provides the basis for coordination and collaboration with partners so that countries' preparedness and response capacities are supported to the fullest extent possible. The document will be updated regularly.

WHAT IS ZIKA VIRUS?

Introduction

Zika virus is a mosquito-borne flavivirus[1] that was first identified in Uganda in 1947 in monkeys through a network that monitored yellow fever. It was later identified in humans in 1952 in Uganda and the United Republic of Tanzania. From the 1960s to 1980s, human infections were found across Africa and Asia, typically accompanied by mild illness. The first large outbreak of disease caused by Zika virus infection was reported from the Island of Yap (Federated States of Micronesia) in 2007. In July 2015, Brazil reported an association between Zika virus infection and Guillain-Barré syndrome (GBS). In October 2015, Brazil reported an association between Zika virus infection and microcephaly. Outbreaks of Zika virus disease (ZVD) have now been recorded in Africa, the Americas, Asia and the Pacific.

Key facts

- ZVD is caused by a virus transmitted primarily by *Aedes* mosquitoes.
- People with ZVD can have symptoms including mild fever, skin rash, conjunctivitis, muscle and joint pain, malaise or headache. These symptoms normally last for 2-7 days.
- There is scientific consensus that Zika virus is a cause of microcephaly and a trigger of Guillain-Barré syndrome. Links to other neurological complications are also being investigated.

Signs and symptoms

The incubation period (the time from exposure to symptoms) of ZVD is not clear, but is likely to be a few days. The symptoms are similar to other arbovirus[2] infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise and headache. These symptoms are usually mild and last for 2-7 days.

Complications of Zika virus infection

Zika virus infection during pregnancy is a cause of congenital brain abnormalities, including microcephaly (a condition where a baby is born with a small head or the head stops growing after birth, often associated with neurological defects); and that Zika virus is a trigger of Guillain-Barré syndrome (a rare condition in which a person's immune system attacks the peripheral nerves which can result in temporary muscle weakness and loss of sensation in the legs and/or arms, occasionally causing life-threatening paralysis).

Transmission

Zika virus is primarily transmitted to people through the bite of an infected mosquito from the *Aedes* genus, mainly *Aedes aegypti*. *Aedes* mosquitoes usually bite during the day, peaking during early morning and late afternoon/evening. This is the same mosquito that transmits dengue, chikungunya and yellow fever. Sexual transmission of Zika virus can also occur. Other modes of transmission such as blood transfusion have been observed.

[1] Flaviviruses are a family of viruses including dengue virus, West Nile virus, yellow fever virus and Zika virus.

[2] Arboviruses are a group of viruses that are transmitted by mosquitoes, ticks, or other arthropods. They include the viruses that cause yellow fever and Zika.

Diagnosis

Infection with Zika virus may be suspected based on symptoms and relevant epidemiological links including recent history of travel (for example, residence in or travel to an area with active Zika virus transmission, sexual history with someone with Zika or returned from a Zika-affected area or recipient of a blood transfusion). A diagnosis of Zika virus infection can only be confirmed through laboratory tests on blood or other body fluids, such as urine, saliva or semen.

Treatment

ZVD is usually mild and requires no specific treatment. People sick with ZVD should get plenty of rest, drink enough fluids and treat pain and fever with common medicines. If symptoms worsen, they should seek medical care and advice. There is currently no vaccine available.

EPIDEMIOLOGICAL UPDATE

From 2015 onwards, the geographical range of Zika virus has expanded rapidly, with mosquito-borne transmission of the virus reported in 67 countries predominantly in the Americas Region but more recently spreading to countries in Africa and Asia.

Countries in the South-East Asia and the Western Pacific Regions continue to report new cases of Zika as seen in Malaysia, the Philippines, Singapore, Thailand and Viet Nam. It is not clear whether the apparent recent increase in the number of reported Zika cases is due to an actual increase in numbers or whether this is the result of enhanced surveillance, testing or awareness.

Since 2015, a total of 23 countries and territories in Africa, the Americas, South-East Asia and the Western Pacific Regions have reported microcephaly and other central nervous system (CNS) malformations potentially associated with Zika virus infection or suggestive of congenital infection. As of 6 October 2016, twenty countries in the Region of the Americas have reported an increased incidence of GBS and/or laboratory confirmation of a Zika virus infection among GBS cases.

Causality

Based on a systematic review of the literature up to 30 May 2016, WHO has concluded that Zika virus infection during pregnancy is a cause of congenital brain abnormalities, including microcephaly and that Zika virus is a trigger of Guillain-Barré syndrome.

Congenital Zika virus syndrome (CZVS)

The spectrum of abnormalities associated with Zika virus exposure in utero is known as congenital Zika virus syndrome (CZVS). In addition to microcephaly, a range of manifestations of varying severity has been reported among newborns and infants where there has been exposure to Zika virus in utero. These include malformations of the head, seizures, irritability, swallowing problems, limb contractions, hearing and sight abnormalities and brain anomalies detected on neuroimaging. Other outcomes associated with Zika virus infection in utero may involve miscarriages and stillbirths.

Failure to observe signs of CZVS, particularly when assessed in utero, does not necessarily mean that the fetus or newborn does not have abnormalities. For example, some abnormalities such as hearing and sight problems may not be detected in utero but only after birth. Some signs such as seizures may develop only after birth.

The full extent of CZVS is yet to be described but the presentation is expected to be moderate to severe in infants with severe microcephaly. Defining the full spectrum of CZVS, including the long-term effects of asymptomatic congenital Zika virus infection, is part of the WHO-coordinated Zika virus research agenda which includes preparing technical documents to describe the syndrome as new evidence becomes available.

Sexual transmission

Zika virus can be transmitted through sexual intercourse. This is of concern due to an association between Zika virus infection and adverse pregnancy and fetal outcomes.

For regions with active transmission of Zika virus, all people with Zika virus infection and their sexual partners (particularly pregnant women) should receive information about the risks of sexual transmission of Zika virus. WHO recommends that sexually active men and women be correctly counselled and offered a full range of contraceptive methods to be able to make an informed choice about whether and when to become pregnant to prevent possible adverse pregnancy and fetal outcomes. Women who have had unprotected sex and do not wish to become pregnant due to concerns about Zika virus infection should have ready access to emergency contraceptive services and counselling.

For men and women returning from areas of active transmission to areas with no active transmission, WHO recommends practising safer sex or abstinence for a period of six months to prevent Zika virus infection through sexual intercourse.

Sexual partners of pregnant women, living in or returning from areas where local transmission of Zika virus occurs, should practise safer sex or abstain from sexual activity throughout the pregnancy.

Zika virus lineages[3]

Phylogenetic analysis[4] of Zika virus sequences to date has identified two major lineages: the "African" and the "Asian" lineage.

As of 21 October 2016, the neurological complications Guillain-Barré syndrome and/or microcephaly have only been linked to post-2007 strains of the "Asian" lineage. These post-2007 strains have been isolated from French Polynesia since 2013, the Region of the Americas from 2015 onwards and from Cabo Verde in 2016. To date, Zika strains that belong to the "African" or "Asian" lineage prior to 2013, have not been linked to severe neurological complications. These complications may just not have been observed at the time, and we may not be able to conduct retrospective studies for historic cases.

In August 2016, genetic sequencing of Zika virus isolated from four samples collected in Guinea-Bissau has identified that these are related to the "African" lineage. Although the "African" lineage has not previously been associated with microcephaly and other neurological complications, further surveillance is needed as there have been very few confirmed cases of the "African" lineage. At this point it is still too early to dismiss this possibility.

In September 2016, phylogenetic analysis of Zika virus sequences from the outbreak in Singapore were classified

Thailand recently reported two locally acquired cases of Zika-related microcephaly. Since it was not possible to conduct genetic sequencing of this virus, it is not known whether the mothers were infected with a strain of virus related to those previously isolated in South-East Asia, or if there has instead been local transmission of a virus strain imported from the Americas. Thailand established a programme for active surveillance of microcephaly in February 2016 which is in the process of being integrated into routine arrangements for surveillance of birth defects.

If a Zika virus strain circulating in South-East Asia prior to 2013, or in Africa, were found to be linked to microcephaly or other complications, it would have significant impact on the global risk assessment. It would demonstrate that Zika-associated complications are not limited to the "Asian" strain circulating since 2007 in the Western Pacific Region, the Region of the Americas and Cabo Verde.

Further research is needed to better understand the relationship between Zika virus lineages and strains and their effect on neurological complications, as well as immunity to infection conferred by previous exposure to the virus or co-factors involved in causing microcephaly or triggering GBS.

WHO encourages Member States to continue to report cases of Zika virus infection, congenital Zika virus syndrome and Guillain-Barré syndrome to help support the global understanding of Zika virus circulation, including lineages and strains, and causality.

RISK ASSESSMENT

The global risk assessment has not changed. Zika virus continues to spread geographically to areas where competent mosquitoes are present, including to countries in the South-East Asia and the Western Pacific Regions