



LATIN AMERICA AND CARIBBEAN Zika Virus Epidemic

	Not required	Low	Moderate	Significant	Major
Need for international assistance		X			
Expected impact	Very low	Low	Moderate	Significant	Major

Crisis overview

The Zika virus epidemic in Latin America and the Caribbean is most affecting Brazil, with over one million cases estimated. Colombia reports over 18,000 confirmed and 2,000 suspected cases and anticipates over 650,000. El Salvador reports over 6,000 suspected cases. Venezuela reports over 4,500 confirmed cases, however unofficial estimates are thought to be as high as 400,000 (AFP 30/01/2016; AFP 01/02/2016; AP 29/01/2016).

An alert to the first confirmed case of Zika virus in Brazil was issued in May 2015 by the Pan American Health Organization (PAHO). As of 1 February, Zika has been confirmed in 23 countries in South and Central America and the Caribbean (New Scientist 28/01/2016). The spread of the disease is likely to continue as the vector species, the *Aedes* mosquito, is widely distributed in the region (ECDC 10/12/2015).

On 1 February 2016 the World Health Organization (WHO) declared Zika a public health emergency, following a significant increase in the number of reported cases since the start of the year. The last time WHO declared a global health emergency was during the Ebola outbreak. The current Zika outbreak is unlikely to present a crisis of the same scale; the declaration has been issued to fast-track aid and further research, particularly due to a potential link with neurological disorders and congenital birth defects.

Link with microcephaly and Guillain-Barré Syndrome (GBS)

People who become ill after Zika infection usually develop mild symptoms, which include fever, rash, joint pain, and conjunctivitis. However, the virus is causing alarm due to its potential association with an increase in babies born with microcephaly (an unusually

small head circumference and often impaired brain development) and Guillain-Barré Syndrome (GBS), a degenerative neurological disorder. A causal relationship is strongly suspected but has not been established: investigations are ongoing (WHO 01/02/2016; IFRC 02/01/2016). So far, most microcephaly cases have been reported in Brazil, with an increase from an average of 163 annually to over 4,000 suspected cases since October 2015. Some 225 cases of GBS have been reported in Venezuela since the start of the Zika outbreak (AP 29/01/2016; Telesur 31/01/2016).

Country	Confirmed and suspected Zika cases	Estimated Zika cases	GBS cases	Microcephaly cases
Brazil	-	1,500,000	-	4,000
Colombia	20,000	-	41	-
El Salvador	6,000	-	46	-
Guatemala	205	-	-	-
Honduras	3,650	-	-	-
Venezuela	4,700	400,000	255	-

Key information about the current outbreak

80% of people infected by Zika do not get sick. The actual caseload in affected countries is therefore estimated to be much higher than the number of reported cases. South America reported its first case of Zika in Brazil in May 2015 (IFRC 02/02/2016).

Brazil: As many as 1.5 million people are estimated to have been infected with Zika since May 2015. Over 4,000 cases of microcephaly have been reported since October, including 76 infant deaths, either during pregnancy or just after birth. In 2014 Brazil reported just 147 cases of microcephaly.

700 of the microcephaly cases reported since October have been discarded as unrelated to Zika or a misdiagnosis. As of 3 February, 400 cases of microcephaly are suspected to be linked to Zika: a rise from 270 suspected cases from the previous week. (Washington Post 29/01/2016; BBC 03/01/2016; New Scientist 28/01/2016).

Colombia: More than 18,000 cases of Zika have been confirmed since detection of the virus in October 2015, and 2,000 cases are suspected (Al Jazeera 01/02/2016; Reuters 29/01/2016). Over 2,000 cases are among pregnant women. As of 30 January, no cases of microcephaly are reported, but as such birth defects do not show until later stages of pregnancy, the situation is being monitored (New York Times 30/01/2016; Washington Post 02/02/2016). 41 cases of GBS have been reported since the beginning of the outbreak,

corresponding to 2.3 cases of GBS per 1,000 Zika patients. Based on forecasts of up to 657,000 Zika cases, authorities expect to see more than 1,500 cases of GBS (AFP 01/02/2016).

EL Salvador: Over 6,000 suspected cases of Zika, including 2,500 in 2016. In January, 46 cases of GBS were reported: this is three times the average number of cases per month (BBC 01/02/2016; The Conversation 03/02/2016).

Venezuela: Around 4,700 cases of Zika; however, unofficial estimates are much higher, at 400,000. As of 28 January, no cases of microcephaly are reported. Since 3 December Venezuela has recorded 255 cases of GBS. 350–550 cases are usually recorded in the country per year (abc NEWS 29/01/2016; Telesur 31/01/2016).

Honduras: 3,650 cases of Zika have been confirmed since mid-December. The number of cases tripled over the first days of February (France 24 28/01/2016; AFP 02/02/2016).

Guatemala: 105 cases of Zika have been confirmed, including two cases in pregnant women. A further 100 cases are suspected. More than half of these cases have been detected this year (Redhum 30/01/2016; Telegraph 04/02/2016).

Other countries: In the past two months cases have also been confirmed in Barbados, Bolivia, Costa Rica, Curacao, Dominican Republic, Ecuador, Guadeloupe, Guyana, Haiti, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Puerto Rico, and Suriname (ECDC 03/02/2016).

Zika cases have been confirmed in Europe, Australia, and the United States: all cases are among people who have recently returned from South or Central America (BBC 03/01/2016).

In the United States, a case of Zika transmitted through sexual intercourse has been confirmed. The person had not travelled to an affected area but their partner had recently returned from Venezuela (BBC 03/01/2016).

Anticipated scope and scale of the event

WHO estimates four million people across the Americas could be infected by the end of the year (Al Jazeera 01/02/2016). According to the European Centre for Disease Prevention and Control, transmission is increasing in at least 13 countries in South and Central America (ECDC 03/02/2015).

In Europe, the risk of transmission is low during winter. However, the presence of Aedes mosquitoes in several European countries, especially in the Mediterranean area, means the risk will increase with the onset of spring and summer, as mosquitoes find better breeding grounds in higher temperatures (WHO 29/01/2016).

Crisis impact

Immediate needs

The most important protective measures are the control of mosquito populations and the prevention of mosquito bites in at-risk individuals, especially pregnant women (WHO 01/02/2016).

In Venezuela, a general shortage of medicine has been reported, including a lack of fever relievers and insect repellents. There is also a lack of medication to relieve the symptoms of the 255 people diagnosed with GBS (Reuters 04/02/2016).

Factors affecting efforts to control the outbreak

There is no vaccine against the virus and there is a lack of rapid and reliable diagnostic tests. Tracking the spread of the virus is difficult, as 80% of those infected do not develop symptoms. In addition, the Zika virus is related to other mosquito-borne diseases, including chikungunya and dengue, and may be misdiagnosed (WHO 01/02/2016; Reuters 30/01/2016; IBT 29/01/2016).

There are reports that parts of the affected population are unaware of Zika virus and are therefore not taking preventative measures (Time Live 28/01/2016).

In an attempt to reduce the number of cases of microcephaly, women have been advised to avoid pregnancy in the affected countries. In many instances, however, people lack access to contraceptives and family planning services, and information about such services is not openly available (HRW 26/01/2016; BBC 01/02/2016; New York Times 30/01/2016).

Vulnerable groups affected

Pregnant women are suspected to be the most vulnerable to the effects of Zika virus due to the potential link with microcephaly and other birth defects. There is a risk that an increasing number of cases of microcephaly will give rise to a higher number of unsafe and illegal abortions. South and Central America has some very strict abortion laws, particularly in El Salvador, where a 1998 law criminalises all abortions, with no exceptions (Reuters 29/01/2016; Open Society Foundations 28/11/2015).

Women in low-income areas are particularly vulnerable as they have less access to contraception and family planning services than those from wealthier backgrounds (BBC 29/01/2016). Women in low-income areas are also more at risk due to a lack of sanitation facilities. Standing water provides ideal breeding conditions for mosquitoes (IFRC 02/02/2016).

Aggravating factors

El Niño: The impact of El Niño is expected to increase the spread of mosquito populations in many areas. Warmer temperatures and increased rainfall across many parts of South and Central America create ideal mosquito breeding grounds. The El Niño phenomenon has a history of causing an increase in infectious diseases (News Scientist 28/01/2016; PBS Newshour 06/01/2016).

Lack of immunity: As this is the first outbreak of Zika virus in the region, there is an absence of population immunity (WHO 02/02/2016).

Water storage: In Venezuela, people are reportedly responding to a water shortage by stockpiling water in containers in their homes. Left uncovered, these containers create an ideal breeding ground for mosquitoes (AFP 30/01/2016).

Contextual information

Cause and symptoms

Zika virus can cause mild illness, with most common symptoms including fever, rash, joint pain, and conjunctivitis (red eyes), which usually last from a few days to a week. Of those who are infected with Zika, only about 20% become ill. The time between exposure to the virus and onset of symptoms (incubation period) is not known, but is thought to be several days to a week. The virus generally stays in the blood for a few days after infection. Severe disease or death resulting from the virus are rare (CDC 29/01/2016).

Transmission

Zika virus is a vector-borne disease spread to humans through bites from the Aedes mosquito. In the first week of infection, the virus circulates in the blood and, through mosquito bites, can be passed on to another mosquito, which can subsequently infect other people (CDC 29/01/2016; ECDC 21/01/2016). The Aedes mosquito is endemic in areas of Asia, Africa, the Americas, and Europe. Warm temperatures and stagnant water present good conditions for reproduction and consequently increase mosquito populations (WHO 29/01/2016).

There are reports of Zika virus found in semen more than two weeks after recovery from illness, and possible cases of sexual transmission of Zika virus have been reported, with one case of sexual transmission confirmed in the US (ECDC 21/01/2016; BBC 03/01/2016).

Diagnosis

A Zika virus infection can be diagnosed clinically as dengue-like syndrome, as the symptoms are similar to those of dengue and chikungunya. Laboratory tests can detect the virus in the blood to confirm infection. No rapid diagnostic tests are available (S. Iloos, H.P. Mallet, et al. 04/07/2014).

Treatment and prevention

There is no vaccine against Zika, and no specific medications to treat the infection. Symptoms can be treated by taking rest, preventing dehydration, and taking paracetamol to relieve pain and reduce fever (CDC 29/01/2016). The most effective forms of prevention are guarding against mosquito bites with long clothes and repellent, and decreasing mosquito breeding reservoirs by reducing stagnant water (ECDC 21/01/2016).

Previous outbreaks

Zika virus was originally endemic in areas of Africa and Asia, and in 2007 it was detected for the first time in the Pacific Islands region. The largest outbreak was reported in 2013 in French Polynesia with over 30,000 cases (WHO 01/2016). The virus has the potential to spread to new areas where the Aedes mosquito is present. Since May 2015, widespread transmission has been reported in Latin America and the Caribbean (ECDC 21/01/2016).

Zika virus was discovered in 1947 in Zika forest, Uganda – first in a monkey, and then in the Aedes mosquito the following year. The first human case was recorded in Nigeria in 1952.

Other consequences

In the current outbreak, Zika has been linked to the neurological disorder GBS, and microcephaly among babies born to women infected with Zika. Congenital central nervous system malformations could increase the chance of early termination of pregnancy, stillbirths, and neonatal death. Though research is ongoing, no causal relationship between Zika virus and congenital birth defects or neurological disorders has yet been established yet. A possible association between GBS and Zika was first reported in 2014 in French Polynesia (ECDC 21/01/2016). A rise in birth defects was seen following an outbreak of Zika in French Polynesia in 2013 and 2014 (UNOG 22/01/2016).

Response capacity

Local and national response capacity

Research on the effects of Zika in pregnant women is underway in at least three countries: Brazil, Colombia, and El Salvador (*New York Times* 01/02/2016).

Across the Americas, homes are being fumigated to control the growth of the mosquito population. In Brazil, 220,000 soldiers have been deployed to help clear mosquito breeding grounds and disseminate information to the public about how to counter the spread of Zika (*IBT* 29/01/2016; *BBC* 26/01/2016; *GoV* 20/01/2016).

International response capacity

United Nations agencies, the International Federation of Red Cross (IFRC) and NGOs are working in actions related to vector control, resource mobilisation and dissemination of key messages aimed at prevention (*REDLAC* 01/02/2016). PAHO has been working closely with affected countries since May 2015 (*WHO* 28/01/2016).

Lessons learned

Experience in responding to outbreaks of dengue, malaria, and chikungunya demonstrate that imperative preventative measures include strengthening community health systems, public communication around hygiene, and improving environmental conditions, including waste management and decreasing standing water (*IFRC* 28/01/2016).

While both the Zika virus epidemic and the Ebola epidemic are international health emergencies, most of the characteristics of the Ebola outbreak that created a major humanitarian crisis in West Africa do not apply in the current Zika outbreak:

- Zika rarely requires hospitalisation. Therefore, it is unlikely health services will be overstretched the way they were in the Ebola outbreak.
- Currently affected countries generally have stronger health systems than those affected by the Ebola outbreak. The increased risk Ebola poses for health workers further limited the health systems' capacity to combat the epidemic. However, the potential link between birth defects and Zika virus infection of pregnant women could lead to increased pressure on reproductive health services.
- Zika is a vector-borne disease, and even with the evidence for sexual transmission of Zika, containment measures such as quarantines and movement restrictions are

not necessary, and an impact on people's access to services (health, protection, and education) and sources of income is unlikely.

- Though Zika is a new disease in the affected region, symptoms are similar to other endemic diseases, such as dengue and chikungunya. During the Ebola outbreak, the severity of the symptoms and the high fatality rate contributed to fear of the disease, which had detrimental effects on service usage, and created rumours and panic. Similar effects are unlikely with Zika infection, as severe disease and death are very rare.