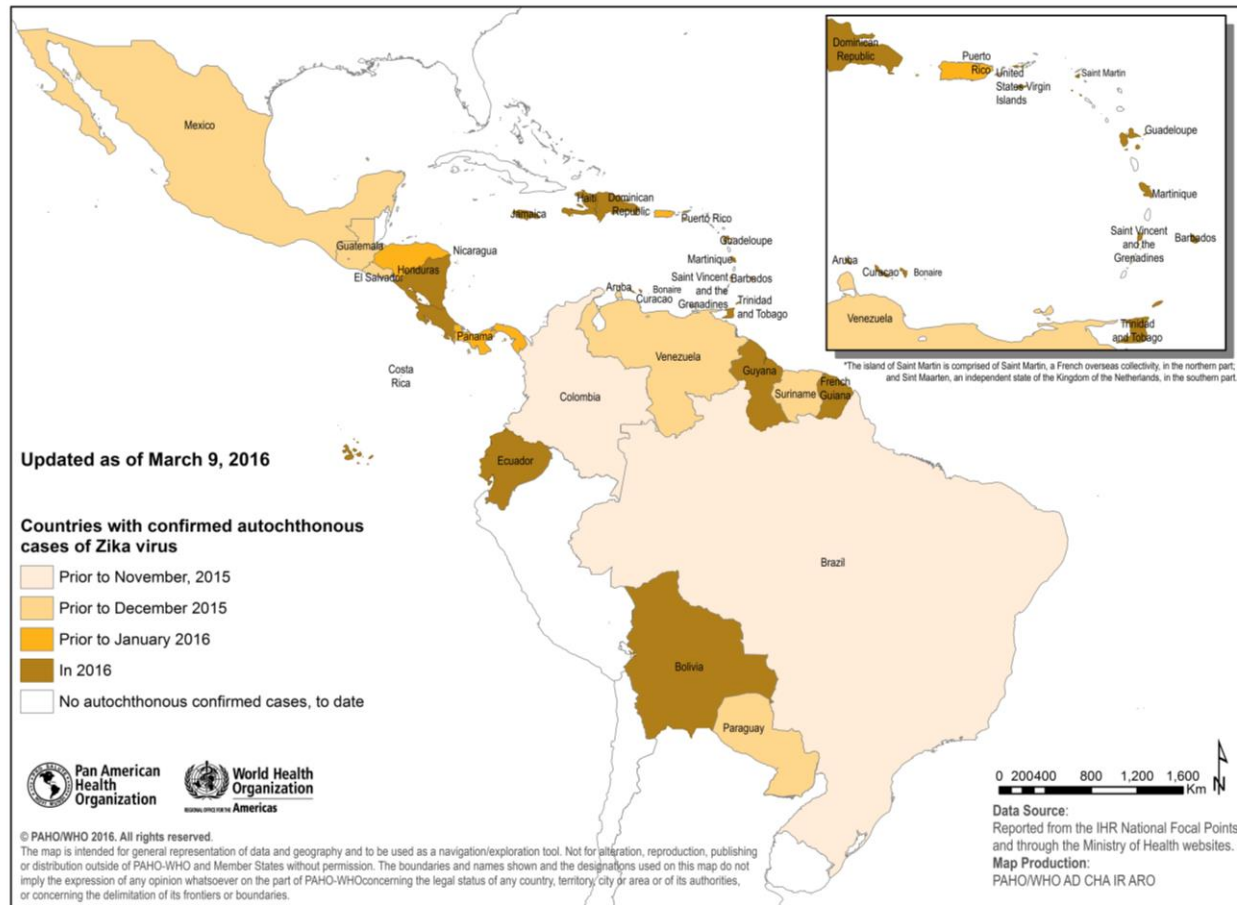


Zika virus (ZIKV) incidence and trends

Since last update (3 March 2016), no additional countries/territories have reported autochthonous (locally acquired) confirmed cases of Zika virus (ZIKV) infection in the Region of the Americas. Thirty-one countries/territories in the Americas have confirmed autochthonous cases of ZIKV infection (**Figure 1**).

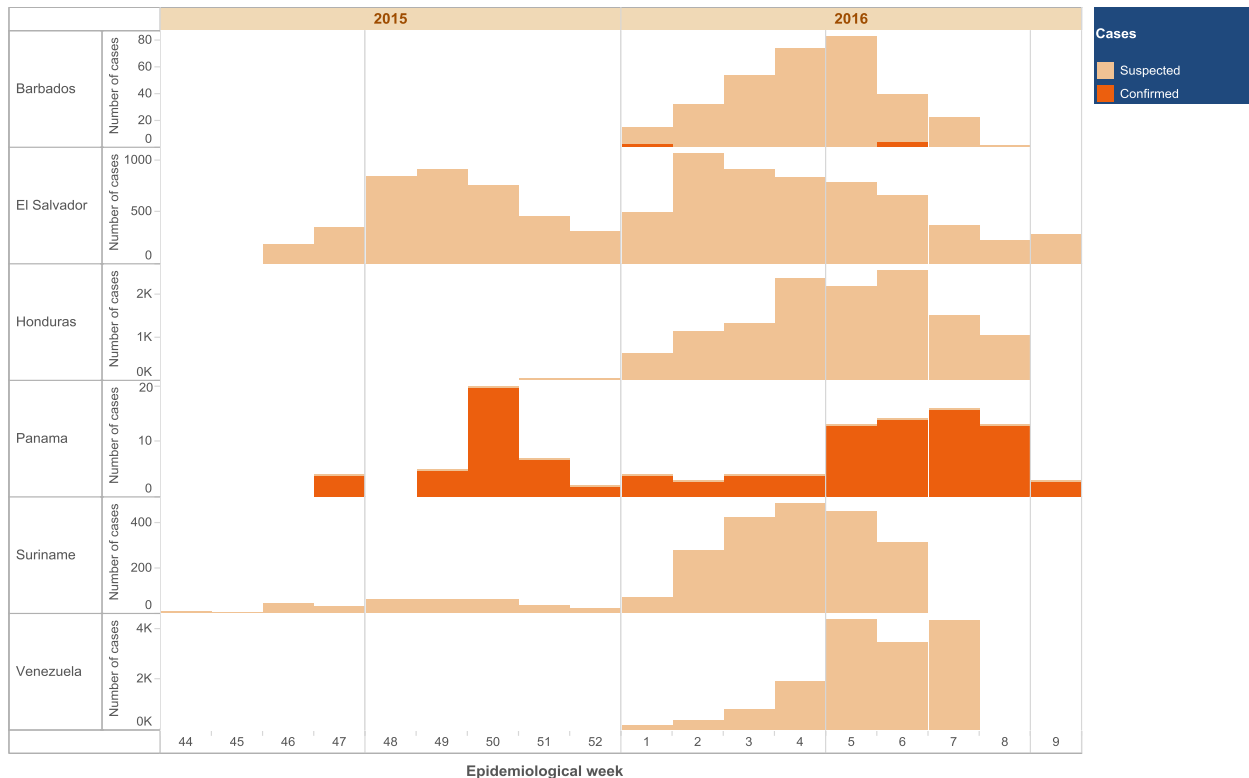
Figure 1. Countries and territories in the Americas with autochthonous, confirmed Zika virus cases, 2015-2016 (as of 10 March 2016)



Available data suggests that some countries (Venezuela and Panama) are experiencing an increase in ZIKV reports whereas others (El Salvador and Honduras) are showing a decreasing

trend (**Figure 2**). Nevertheless, as the geographical range of the virus expands to new areas, the overall epidemic appears to be increasing in the Region of the Americas.

Figure 2: Suspected and confirmed Zika cases reported by countries and territories in the Americas, 2015-2016. New cases by epidemiological week (EW). Updated on 10 March 2016, with data received by 9 March 2016



Source: Cases reported by the IHR National Focal Points to the WHO IHR Regional Contact Point for the Americas and through the Ministry of Health websites, 2016.

On 9 March, the Ministry of Health of Venezuela (Bolivarian Republic of) provided an epidemiological update of ZIKV in the country. Between EW 41 of 2015 and EW 6 of 2016, 23 federal entities of the Bolivarian Republic of Venezuela reported a total of 16,942 suspected Zika cases. Of the 801 samples tested for ZIKV by RT-PCR, 352 (44%) were positive. Of the total of suspected Zika cases, 941 are pregnant women (9.4%). From EW 1 to EW 6 of 2016, a total of 226 samples of pregnant women with suspected Zika virus infection were tested by RT-PCR for ZIKV, of which 153 (67.7%) were positive.

Reported increase of congenital microcephaly and other central nervous system disorders

To date, Brazil is the only country/territory in the Region that has officially reported an increase of congenital microcephaly. In addition, United States of America has identified ZIKV-associated microcephaly.

Congenital microcephaly in Brazil

According to the Ministry of Health of Brazil, as of 9 March, there had been reports of 6,158 suspected cases of microcephaly or other nervous system malformation among newborns across the country since 22 October 2015. Of these, 1,927 cases (31%) had been investigated, revealing 745 confirmed cases of microcephaly and/or other central nervous system (CNS) malformations with evidence suggestive of congenital infection.

Confirmed microcephaly cases have been identified in 18 out of 27 Federal Units, but 80% of suspected cases and 97% of confirmed cases are reported from the Northeast region. As noted in the last update, the detection of microcephaly cases in the Northeast region, as of 27 February, appeared to be slowing, while the trend is not yet clear in other regions of Brazil.

As of 5 March, there have been 157 deaths (including miscarriages or stillbirths) reported among microcephaly and/or CNS malformation cases. [See full report.](#)

Review of microcephaly cases identified in Brazil during 2015.

A recent article reviewed microcephaly cases that had been identified, up to December 2015, in Brazil. The analysis of 574 cases of microcephaly, detected through a newly established ad-hoc microcephaly surveillance system, identified temporal, and geospatial evidence linking the occurrence of febrile rash illness consistent with ZIKV disease during the first trimester of pregnancy with the increased prevalence of microcephaly at birth. The prevalence of microcephaly in 15 Federal Units with laboratory-confirmed ZIKV transmission (2.8 cases per 10,000 live births) significantly exceeded that in four states without confirmed ZIKV transmission (0.6 cases per 10,000 live births). The suggested link between maternal exposure to ZIKV infection during the first trimester of pregnancy and the increased birth prevalence of microcephaly provide additional evidence for congenital infection with ZIKV. [See full report.](#)

ZIKV Infection in Pregnant Women in Rio de Janeiro — Preliminary Report

A report from the follow up of a cohort of pregnant women with rash illness was published in the past week. Preliminary findings suggest that ZIKV infection during pregnancy appears to be associated with serious outcomes, including fetal death, placental insufficiency, fetal growth restriction, and CNS injury.

A total of 88 pregnant women were enrolled from September 2015 through February 2016; of these 88 women, 72 (82%) tested positive for ZIKV in blood, urine, or both. The timing of acute ZIKV infection ranged from 5 to 38 weeks of gestation. Fetal ultrasonography was performed in 42 ZIKV-positive women (58%) and in all ZIKV-negative women. Fetal abnormalities were detected by Doppler ultrasonography in 12 of the 42 ZIKV-positive women (29%) and in none of the 16 ZIKV-negative women. Adverse findings included fetal deaths at 36 and 38 weeks of gestation (2 fetuses), in utero growth restriction with or without microcephaly (5 fetuses), ventricular calcifications, or other central nervous system (CNS) lesions (7 fetuses), and abnormal amniotic fluid volume or cerebral or umbilical artery flow (7 fetuses). To date, 8 of the 42 women in whom fetal ultrasonography was performed have delivered their babies, and the ultra-sonographic findings have been confirmed. The evidence published in this article illustrates the possibility of neurological abnormalities without microcephaly, associated with Zika virus during pregnancy regardless of gestational age at infection. These findings are consistent with clinical observations reported by pediatricians in Brazil and may have implications regarding the spectrum of neurological abnormalities caused by Zika virus

infection during pregnancy. Ongoing studies will elucidate the impact of these findings, as well as implications for clinical and public health practice. [See full report.](#)

Congenital microcephaly in Venezuela

On 26 January 2016, Venezuela notified that a case of microcephaly in a 9-day old newborn detected in the Capital District tested negative for ZIKV by RT-PCR.

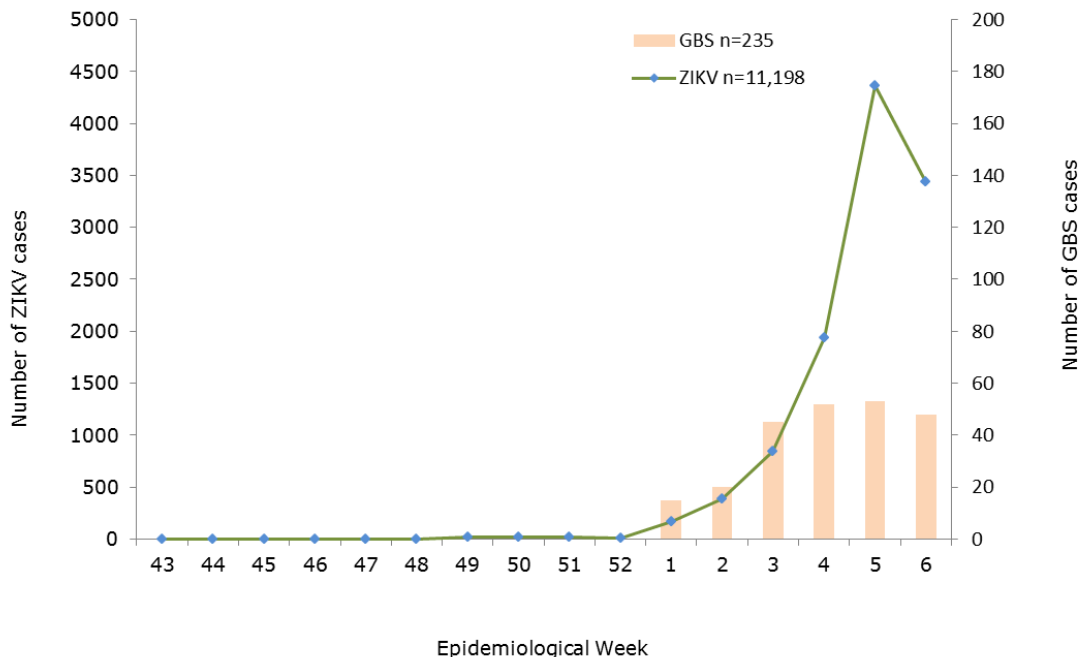
Guillain-Barre syndrome (GBS) and other neurological disorders

To date, six countries/territories in the Region have reported an excess of GBS (Brazil, Colombia, El Salvador, Honduras, Suriname, and Venezuela), and three other countries/territories have identified ZIKV-associated cases of GBS (Martinique, Panama, and Puerto Rico).

ZIKV-associated GBS and other neurological disorders in Venezuela

In Venezuela, between EW 49 in 2015 and EW 6 in 2016 there were 578 GBS cases reported, from which 235 have presented symptoms of ZIKV infection. Of note, the first confirmed GBS case with RT-PCR lab confirmation for ZIKV was detected in November 2015. In 2016 (EW 1 to 6), 27 samples from patients with GBS were tested, from which 6 (22.2%) have been positive. Detection of GBS has been on an upward trend since EW 1 of 2016, following the pattern of the epidemic curve for reported cases of ZIKV illness

Figure 3. Cases of GBS and ZIKV by EW. Venezuela (Bolivarian Republic of). EW 49 of 2015 to EW 7 of 2016.



Source: Venezuela Ministry of Popular Power for Health

Furthermore, one case of facial paralysis and 10 cases of unspecified neurological disorders were reported as testing positive for ZIKV by RT-PCR.

ZIKV-associated central nervous system disorder in young adult

A recent case study describes a 15-year-old girl in Guadeloupe who sought care for acute ZIKV infection, complaining of headaches, conjunctival hyperemia, and left arm pain. Seven days later she was hospitalized with weakness and intense pain in one side of the body. The girl showed urinary retention on her second day in hospital. The left-side hemiplegia and pain became worse and the doctors recorded a loss of sensation in the legs.

The researchers detected high concentrations of Zika virus in the serum and cerebrospinal fluid (CSF) on the second day following admission (9 days after onset of symptoms) by real-time RT-PCR. Tests for shingles, chickenpox, herpes virus, legionellosis and *Mycoplasma pneumonia* were negative. The patient improved over 5 days of treatment with methylprednisolone.

According to the authors, this case "highlights the existence of neurological complications in the acute phase of [Zika] infection, while Guillain Barré syndromes are post-infectious complications." [See full report.](#)

Novel Findings

Neurotropism of the Zika virus

A recently-published study showed that a strain of ZIKV efficiently infects human neural progenitor cells. The study also provides a model to investigate the impact and mechanism of ZIKV on human brain development and provide a platform to screen therapeutic compounds. [See full report.](#)