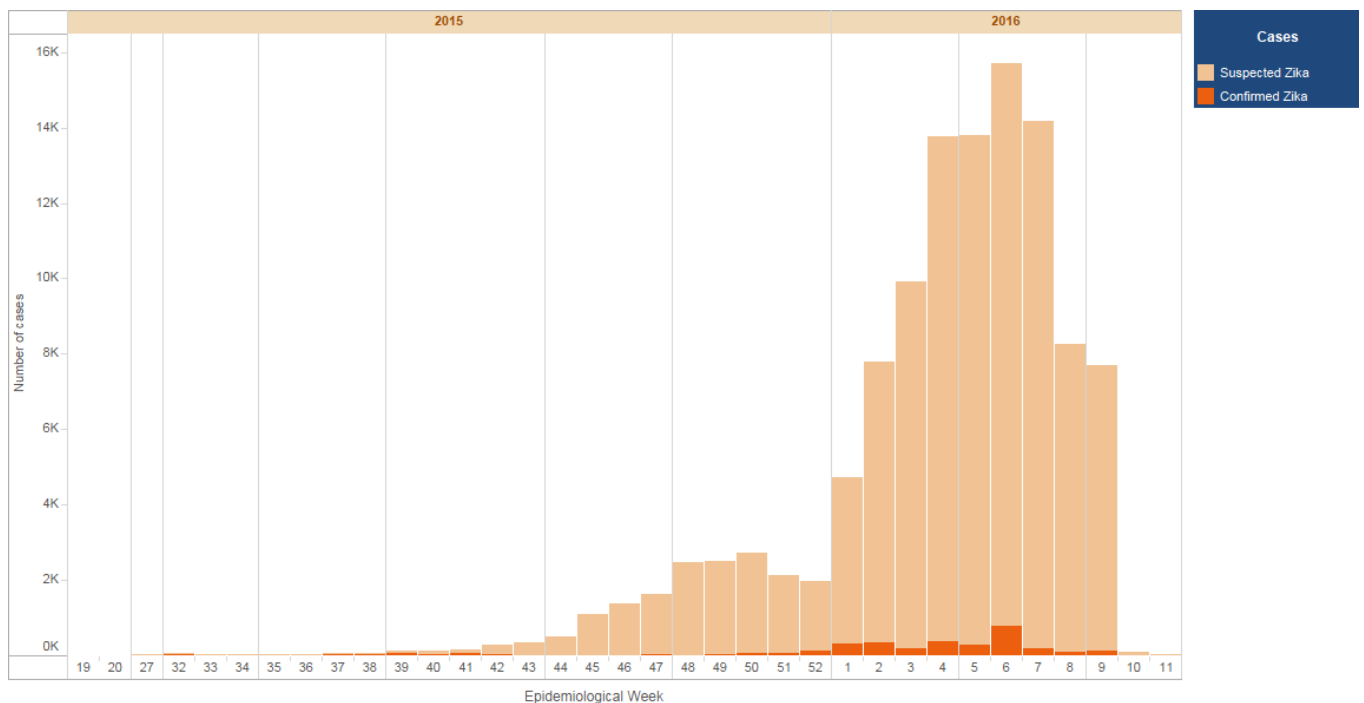


## Zika virus – Incidence and trends

Available data reported suggests a downward trend in reporting of Zika virus cases in the Region of the Americas (**Figure 1**). However, some countries and territories (Dominican Republic, French overseas collectivities in the Americas, Haiti, and Venezuela) are experiencing an increase in Zika virus reports. Due to delays in reporting and further geographic spread of Zika virus to areas that have the vector-mosquito capable of transmission, the epidemiological curve is subject to change.

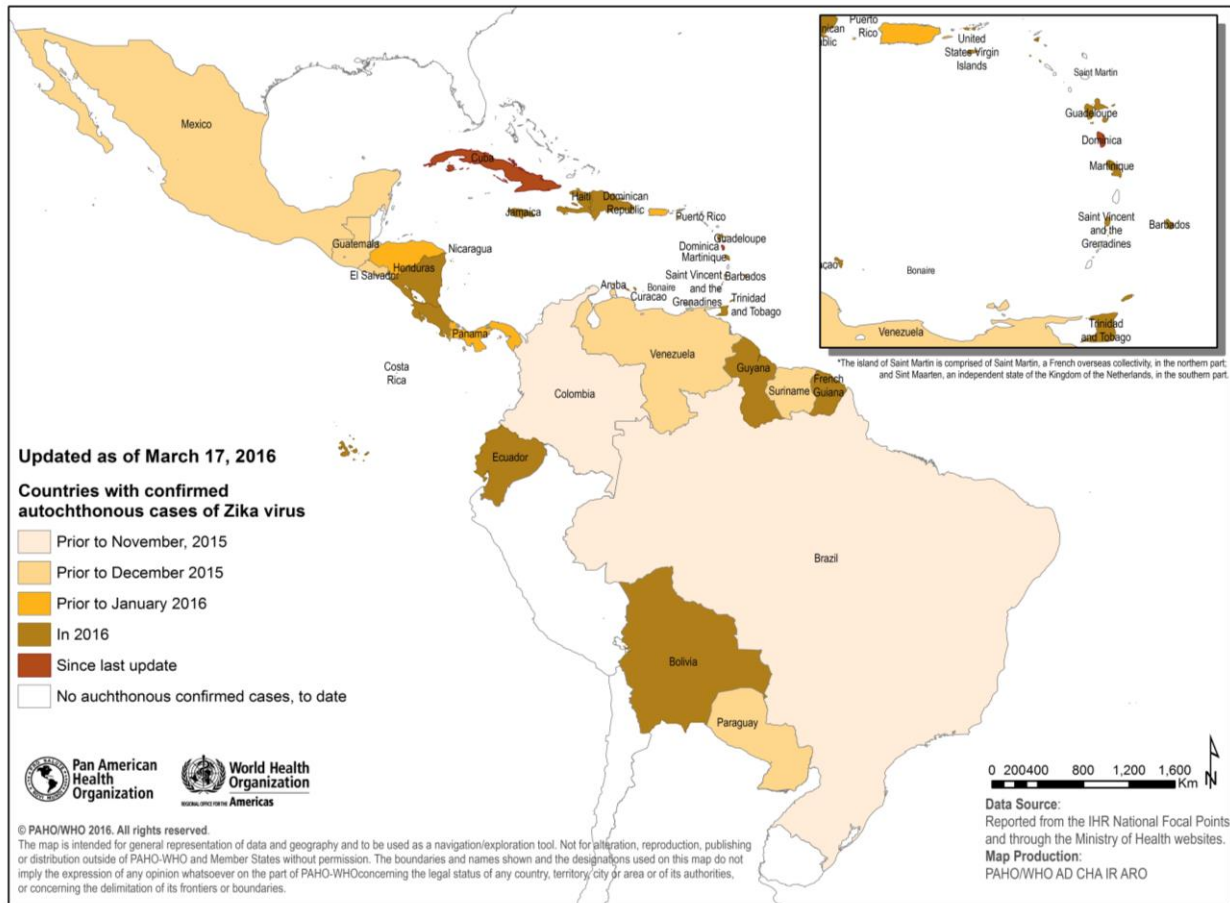
**Figure 1:** Suspected and confirmed Zika virus cases reported by countries and territories in the Americas, by epidemiological week (EW) 2015-2016.



**Source:** Cases reported by the IHR National Focal Points (NFPs) to the WHO International Health Regulations (IHR) Regional Contact Point for the Americas and through the Ministry of Health websites.

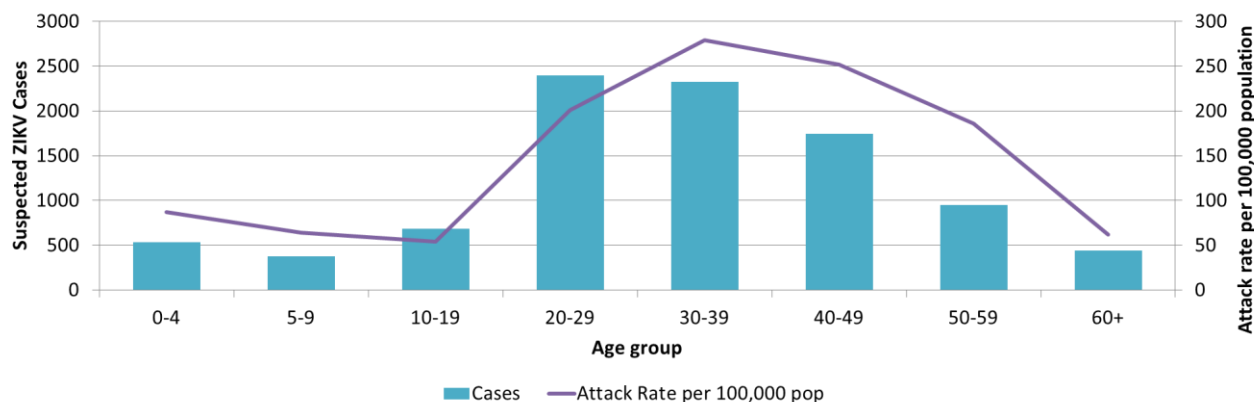
On 15 March, **Dominica** and **Cuba** reported the first autochthonous (locally-acquired) confirmed cases of Zika virus infection in their countries, bringing the total to 33 countries or territories reporting local, vector-borne transmission of Zika virus in the Region of the Americas (**Figure 2**).

**Figure 2:** Countries and territories in the Americas with autochthonous, confirmed Zika virus cases, 2015-2016 (as of 17 March 2016)



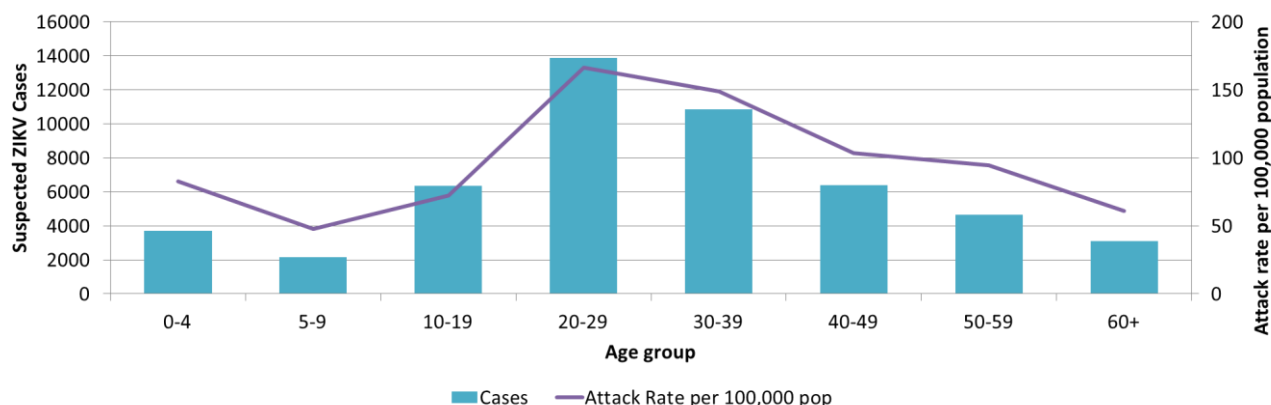
Analysis of age-specific attack rates for suspected Zika virus infection for Colombia and El Salvador (**Figures 3 and 4**) show that the highest attack rate for both countries is observed in the age group of 20-29 years; however, the highest attack rate is observed in adults aged 20-39 in Colombia and 20-49 in El Salvador.

**Figure 3:** Suspected Zika virus cases by age group and age group-specific attack rates, **El Salvador**, EW 45 of 2015 to EW 8 of 2016



**Source:** Ministry of Health, El Salvador

**Figure 4:** Suspected Zika virus cases by age group and age group-specific attack rates, **Colombia**, EW 45 of 2015 to EW 8 of 2016



**Source:** Ministry of Health, Colombia

**Note:** For the calculation of the attack rates, the age-specific population used included all of Colombia, not only those from municipalities under 2,200 meters above sea level.

As of 5 March 2016, there have been a total of 241 suspected cases of Zika virus in pregnant women in El Salvador (63 cases in 2015 and 178 in 2016). Of the 225 still being monitored as of EW 8, 18% were infected in their first trimester, 46% in the second trimester, and 36% in the third trimester. Ultrasonography was performed in 63% of the women being monitored and all were found to be normal. Thirty-five cases have already given birth and no complications have been detected.

## Reported increase of congenital microcephaly and other central nervous system disorders

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

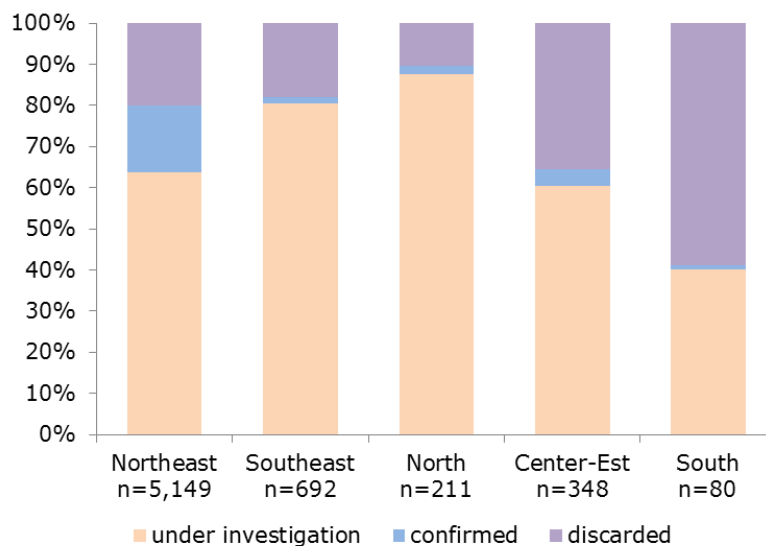
associated microcephaly in a woman who resided in an area with Zika virus transmission during her pregnancy.

### Congenital microcephaly in Brazil

According to the Ministry of Health of Brazil, as of EW 10 of 2016, there had been reports of 6,480 suspected cases of microcephaly or other nervous system malformation among newborns across the country since 22 October 2015. Of these, 2,212 cases (34%) had been investigated, revealing 863 confirmed cases of microcephaly and/or other central nervous system (CNS) malformations with evidence suggestive of congenital infection. Out of the total reported cases, 1,349 cases were discarded as being due to non-infectious causes or not fitting the case definition, and 4,268 remain under investigation.

The confirmed cases of microcephaly are distributed in 19 out of 27 Federal Units, but 97% of confirmed cases and 79% of suspected cases are reported from the Northeast region (**Figure 5**).

**Figure 5:** Cases of Microcephaly by classification and sub-national region of Brazil, EW 2 to 10 of 2016



**Source:** Brazil Ministry of Health

There have been 182 deaths (including miscarriages or stillbirths) reported among microcephaly and/or CNS malformation cases. [See full report.](#)

### Guillain-Barré syndrome (GBS) and other neurological disorders

To date, six countries and territories in the Region have reported an increase in cases of Guillain-Barré syndrome (GBS) (Brazil, Colombia, El Salvador, Honduras, Suriname, and Venezuela). Five other countries and territories have identified Zika virus-associated cases of GBS (French Guiana, Haiti, Martinique, Panama, and Puerto Rico) (**Table 1**). Guadeloupe has also detected one case of myelitis with Zika virus detected in cerebrospinal fluid (CSF).

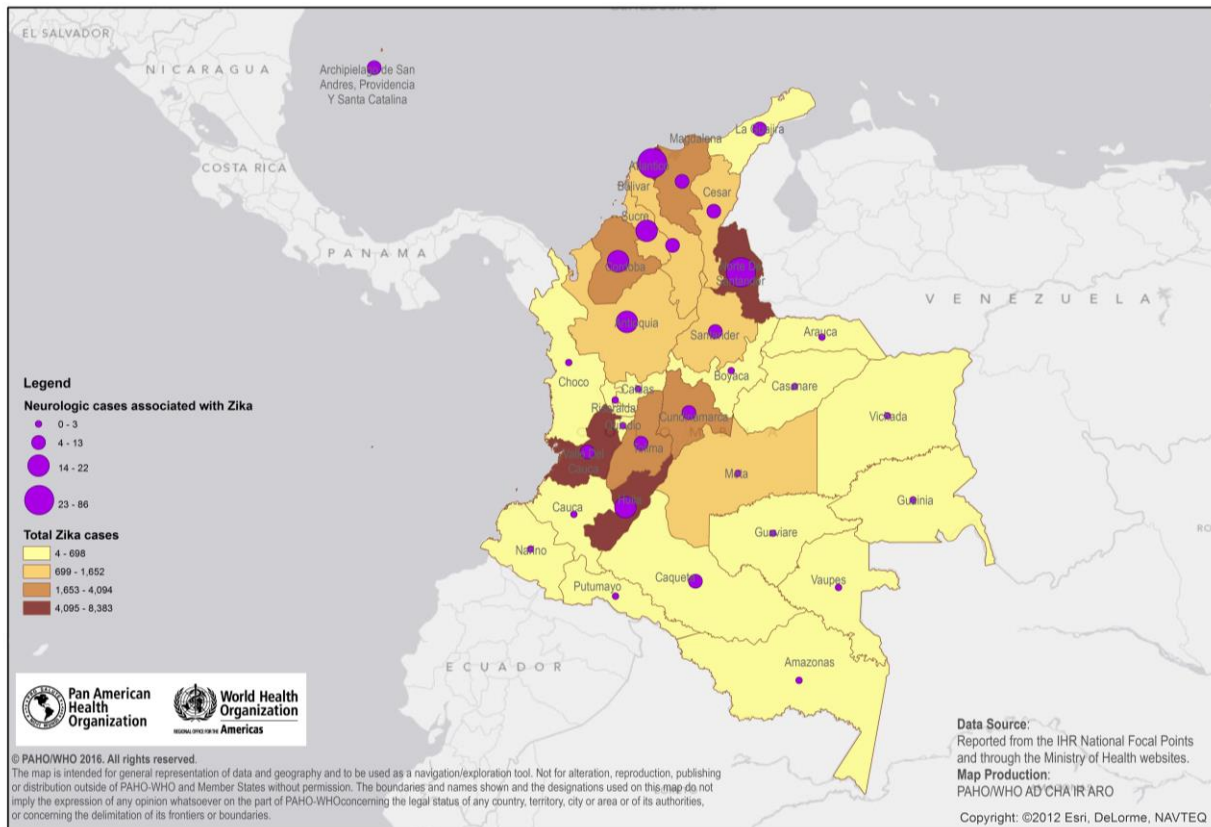
**Table 1:** Countries and territories in the Americas with GBS in the context of Zika virus circulation (as of 17 March 2016)

Increase in GBS	Increase in GBS plus Zika virus lab confirmation in at least one case of GBS	Zika virus lab confirmation in at least one case of GBS
Colombia	Brazil	French Guiana
Honduras	El Salvador	Haiti
	Suriname	Martinique
	Venezuela	Panama
		Puerto Rico

### Increase of GBS and other neurological disorders in Colombia

During the period of enhanced surveillance for neurological syndrome from December 2015 up to EW 9 of 2016, Colombia detected 327 cases of neurological syndrome with history of Zika virus symptoms including 220 cases of GBS and other similar neurological conditions such as ascending polyneuropathy. Of these, 58.1% were male (190 cases), and the highest number of cases were in the age group of > 69 years (40 cases) followed by 45-49 years and 35-39 years (35 cases each). The highest number of cases of neurological syndrome is reported from Norte Santander (69 cases), where there is the highest number of Zika virus cases in the country. High number of neurological cases is also reported from Barranquilla (57) and Atlántico (29) in the Caribbean region in Colombia, where the first Zika virus outbreaks were detected in the country. The geographic distribution of cases of neurological syndrome by Departments indicates that there is a spatial association with states also reporting high number of Zika virus cases (**Figure 6**). In addition, a temporal association has also been observed (See Epidemiological Update – 10 March 2016)

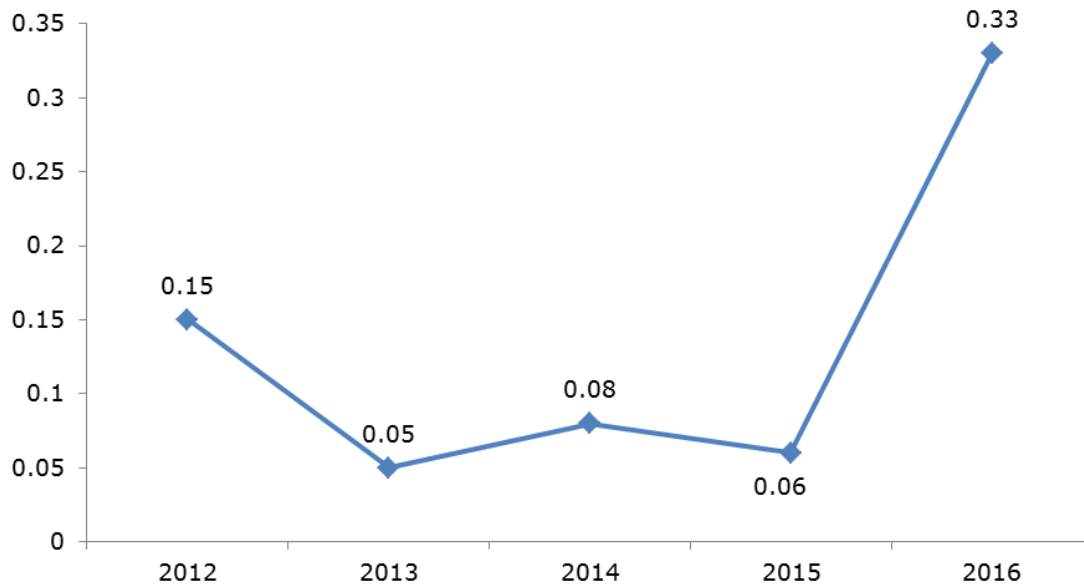
**Figure 6:** Territorial Entities with reported Zika virus cases and neurological syndrome, Colombia, December 2015 to 5 March 2016



Furthermore, during 2016, an increase in acute flaccid paralysis (AFP) cases was observed in Colombia.<sup>1</sup> Up to EW 9 of 2016, an AFP rate of 0.33 cases per 100,000 children under 15 years old was observed, while the expected rate is 0.17 per 100,000 (**Figure 7**). During the Zika virus epidemic between EW 38 of 2015 and EW 9 of 2016, 26 AFP cases were reported in children who had Zika-like illnesses prior to the onset of paralysis. A similar increase in AFP rates can be observed in Venezuela (**Figure 8**).

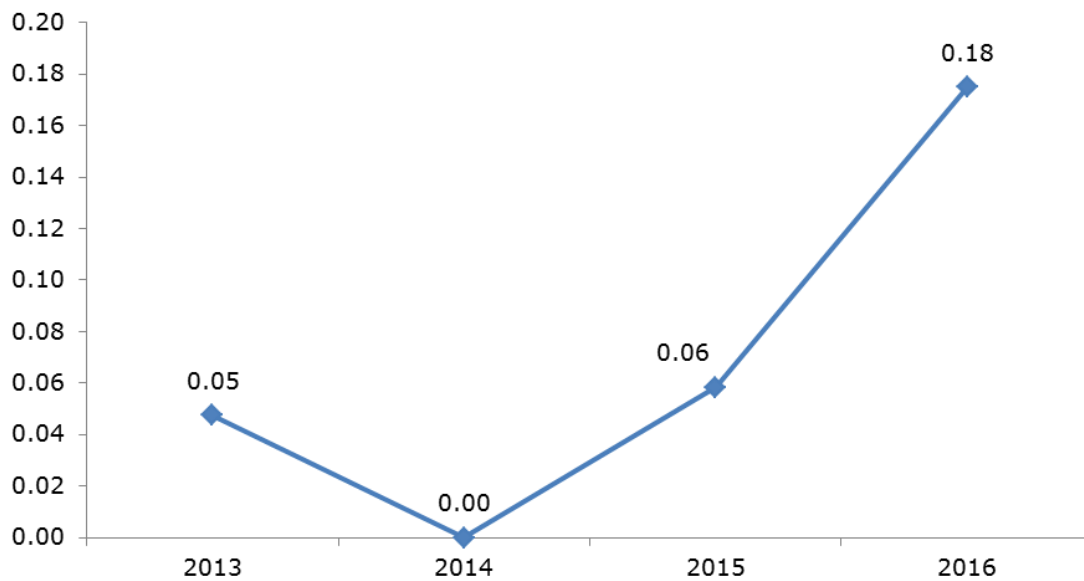
<sup>1</sup> Surveillance of acute flaccid paralysis (AFP) is conducted only in children under 15 years old.

**Figure 7:** Observed rate of AFP cases per 100,000 (<15 years old) **Colombia**, for EW 1 to EW 9 in 2013 – 2016



**Source:** Colombia National Institute of Health epidemiological bulletin. [See full report.](#)

**Figure 8:** Observed rate of AFP cases per 100,000 (<15 years old) **Venezuela**, for EW 1 to 9 in 2013 – 2016



**Source:** PAHO/WHO Polio Weekly Bulletin. [See full report.](#)

### **GBS with previous Zika virus infection with history of travel**

The United States reported two cases of GBS with confirmed Zika virus infection in two travelers returning from countries with autochthonous transmission of Zika virus.

The first case is an elderly male resident of the United States with recent travel to Central America. He developed an acute febrile illness shortly after returning to the U.S. and was subsequently hospitalized in January with progressive ascending weakness of the extremities and diminished reflexes. The patient tested positive for Zika virus infection by polymerase chain reaction (PCR). He improved following treatment and was ready to be discharged. However, he experienced a sudden subarachnoid hemorrhage due to a ruptured aneurysm and died.

The second case is a resident of Haiti who had onset of facial weakness, difficulty swallowing and numbness of fingers in early January. He traveled to the U.S. for medical care after the numbness spread to his lower extremities, and lumbar puncture showed elevated protein and one white blood cell in the CSF. Zika virus IgM and neutralizing antibodies were identified in serum and CSF.

### **GBS and other neurological disorders with previous Zika virus infection in Panama**

Panama reported one additional case of GBS in a 13-year-old girl who had onset of fever on 19 February and weakness on lower extremities on 29 February. Lumbar puncture showed elevated protein in the CSF, and Zika virus was detected in CSF and urine. To date, Panama has reported 2 GBS cases with previous Zika virus infection.

### **Increase of GBS and other neurological disorders in El Salvador**

Between EW 48 of 2015 and EW 9 of 2016, El Salvador reported 136 cases of GBS in all 14 departments. On average El Salvador reported 169 cases annually.

The cases range from 3 – 88 years old, with the highest concentration of GBS cases in the age range of 30-39. All 136 patients were hospitalized and treated with plasmapheresis or immunoglobulin. In 22 patients for whom information was available, 12 patients (54%) presented with a febrile rash illness between 7 and 15 days prior to the onset of GBS symptoms. Three patients died, including one patient who had multiple underlying chronic illnesses. None of the three deaths had history of febrile rash illness.

### **Increase of GBS and other neurological disorders in Honduras**

On average, 112 cases of GBS have been reported in the country between 2010 and 2015 according to hospital discharge records. However, from the beginning of 2016 up to EW 9, Honduras reported 57 cases of GBS with the highest number of cases distributed in San Pedro Sula (21), Tegucigalpa (10), and Cortes (5). This includes one death due to GBS that was not laboratory confirmed for Zika virus.

Increase in reports of other neurological syndrome associated with Zika virus, and the detection of Zika virus in the CSF of GBS and other neurological syndrome patients, along with the observed increase of GBS in countries with Zika virus transmission demonstrate a need to broaden the surveillance of neurological conditions in the context of Zika virus epidemic in the Region.