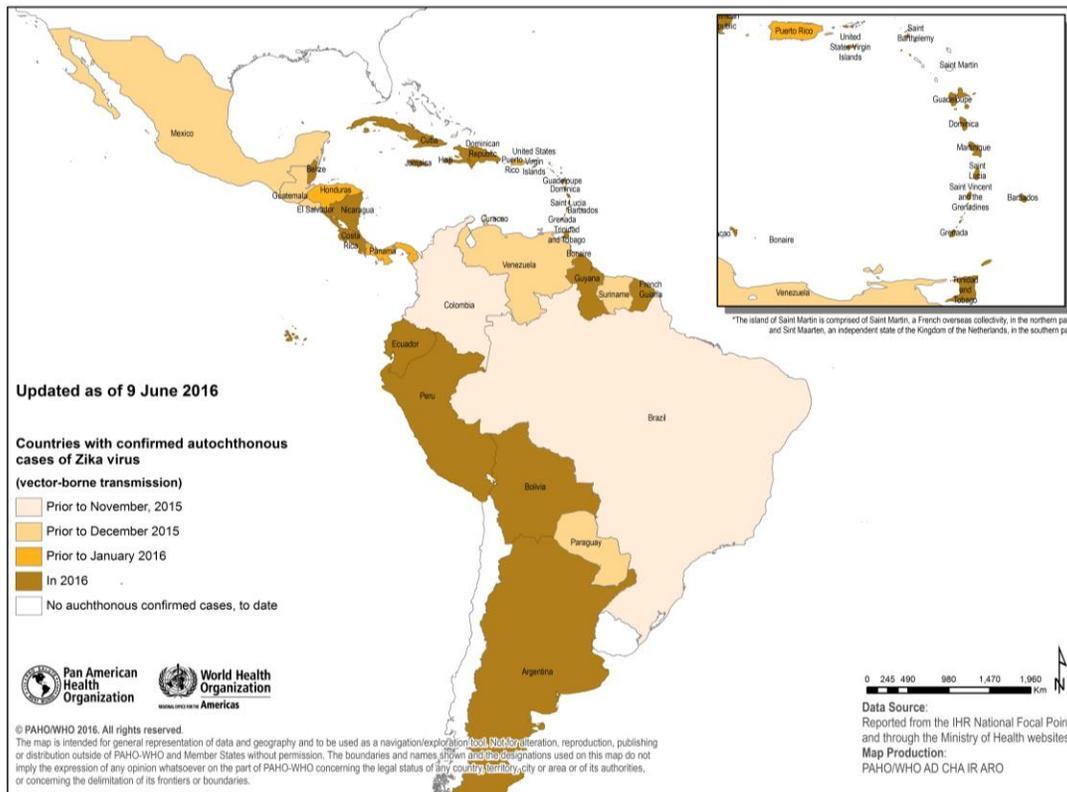


Zika virus – Incidence and trends

To date, 39 countries and territories have confirmed local, vector-borne transmission of Zika virus disease in the Region of the Americas since 2015 (**Figure 1**). Since the last Pan American Health Organization/ World Health Organization (PAHO/WHO) [Zika Epidemiological Update on 2 June 2016](#), no additional countries or territories confirmed vector-borne autochthonous transmission of Zika virus.

Figure 1. Countries and territories in the Americas with confirmed autochthonous (vector-borne) Zika virus cases, 2015-2016.



As mentioned in previous Epidemiological Updates, due to the seasonality of diseases transmitted by mosquitoes in Central and South America, the trend of cases of Zika virus disease continues to decline. At the same time, most of the countries and territories of the Caribbean continue to experience an upward trend in cases.

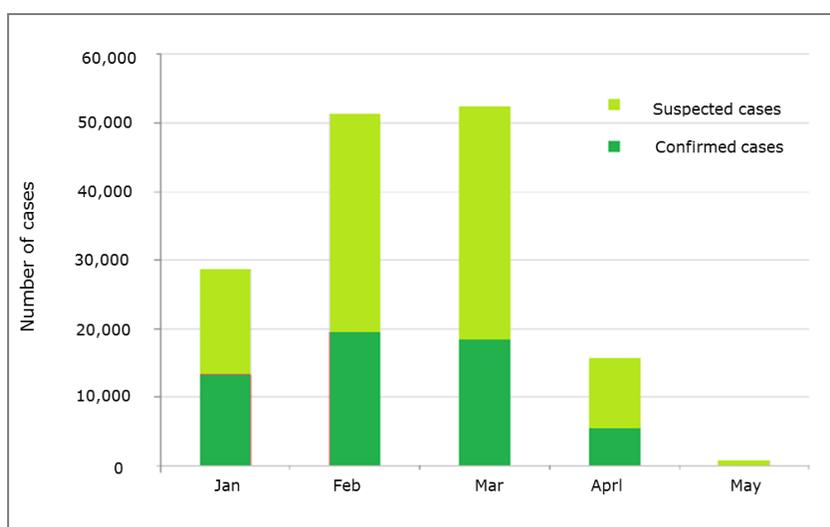
Highlighted below is the Zika virus disease epidemiological situation in Brazil and the Dominican Republic.

Brazil

Brazil confirmed the first autochthonous transmission of Zika virus disease there in April 2015. Since epidemiological week (EW) 1 of 2016 to EW 20, there were 148,905 suspected cases of Zika virus disease reported in Brazil (**Figure 2**), including three deaths (two in Minas Gerais and one in Rio de Janeiro). In 2015, there were three deaths recorded as well (one in Maranhao, one in Rio Grande do Norte, and one in Para). The median age of the deceased was 20 years.

Regarding the geographical distribution of cases, the suspected cases were distributed across 1,605 municipalities. The highest case incidence rate was registered in the Center-West region with 130.2 cases per 100,000 inhabitants, followed by the Northeast region with 76 cases per 100,000 inhabitants. Both regions exceed the national incidence rate (58.8 per 100,000 inhabitants). [See full report.](#)

Figure 2. Suspected and confirmed Zika virus disease cases. Brazil. January to May 2016.

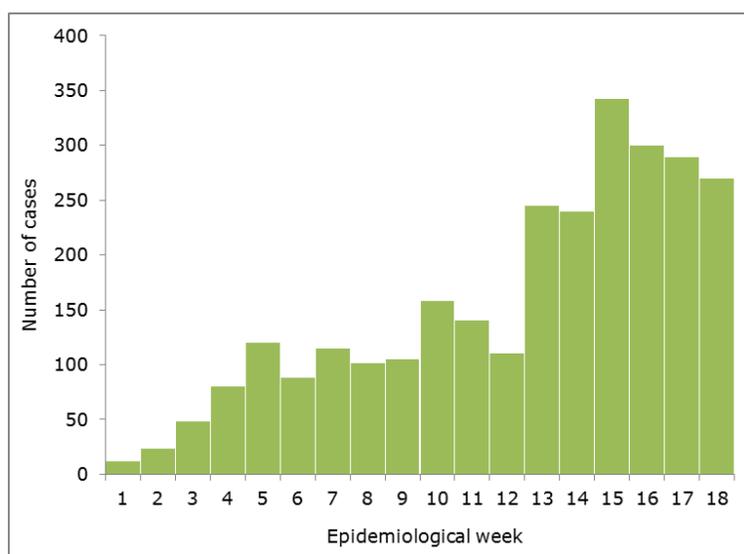


Source: Data provided by the Brazil Ministry of Health to PAHO/WHO

Dominican Republic

Since the notification of the first Zika virus disease case in EW 3 of 2016 to EW 19, a total of 2,987 suspected Zika virus disease cases and 123 associated Guillain-Barré syndrome (GBS) cases have been reported. In the preceding four weeks, on average, 274 suspected Zika virus disease cases and 13 associated GBS cases were registered weekly. The trend of cases continues to rise, albeit with a slight decrease in the previous two weeks which may be related to delays in notification. The highest incidence rates were recorded in Independence, the National District, Santo Domingo, Azua, and Valverde.

Figure 3. Suspected and confirmed cases of Zika virus disease. Dominican Republic. EW 1 to EW 18 of 2016.



Source: Data published by the Dominican Republic Ministry of Health and reproduced by PAHO/WHO

Zika virus disease in pregnant women

There are 21 countries and territories in the Americas reporting confirmed and suspected cases of Zika virus disease in pregnant women (**Table 1**).

Table 1. Countries and territories in the Americas reporting confirmed and suspected cases of Zika virus disease in pregnant women.

Countries and territories reporting Zika virus disease in pregnant women			
Barbados	Dominican Republic	Honduras	Puerto Rico
Brazil	Ecuador	Martinique	Saint Martin
Bolivia	El Salvador	Mexico	Venezuela
Colombia	French Guiana	Nicaragua	
Costa Rica	Guadeloupe	Panama	
Dominica	Guatemala	Paraguay	

Highlighted below are the surveillance results of pregnant women with Zika virus disease in Brazil and in the Dominican Republic.

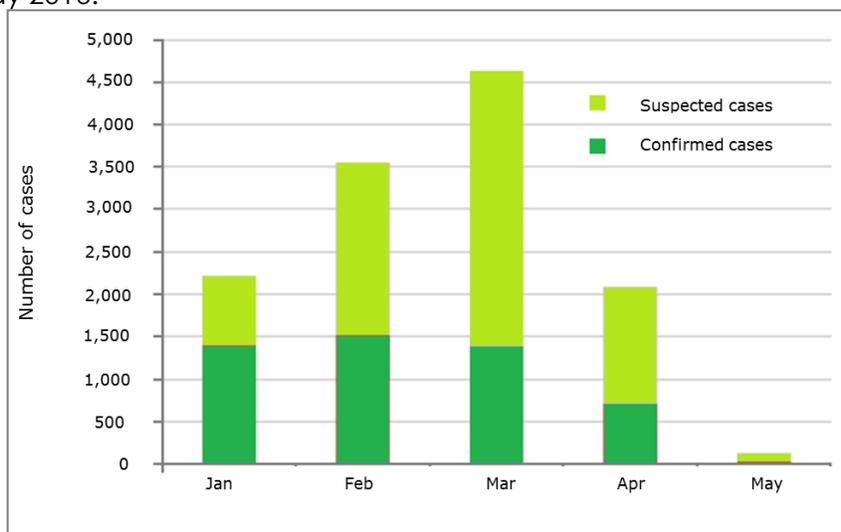
Brazil

Between EW 1 of 2016 and EW 20, a total of 12,612 pregnant women suspected of having Zika virus disease have been reported. Of these, 1,454 were laboratory confirmed.

In **Figure 2**, above, and in **Figure 4** the epidemiological curves of suspected and confirmed Zika virus disease cases in the overall population and in pregnant women are shown. To

date, in Brazil, there have been 1,551 confirmed cases of congenital syndrome associated with Zika virus infection.

Figure 4. Suspected and confirmed Zika virus disease cases in pregnant women. Brazil. January to May 2016.

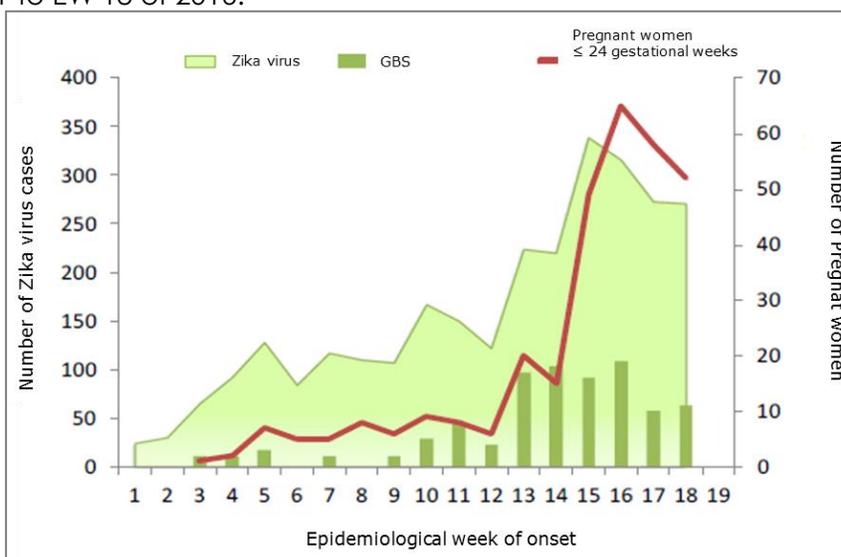


Source: Data provided by the Brazil Ministry of Health to PAHO/WHO

Dominican Republic

Since the beginning of the epidemic up to EW 19 of 2016, a total of 348 suspected cases of Zika virus disease were reported in pregnant women. All of the pregnant women contracted the illness in the first 24 weeks of gestation.. As seen in the general population, the trend presents a general increase, albeit with a slight decrease in the past two weeks which may be related to delays in reporting (**Figure 5**).

Figure 5. Suspected and confirmed Zika virus disease cases in pregnant women. Dominican Republic. EW 1 to EW 18 of 2016.



Source: Data published by the Dominican Republic Ministry of Health and reproduced by PAHO/WHO

Congenital syndrome associated with Zika virus infection¹

No new countries or territories have reported cases of congenital syndrome associated with Zika virus infection (**Table 2**) since the last PAHO/WHO [Zika Epidemiological Update on 2 June 2016](#).

Table 2. Countries and territories in the Americas with reported congenital syndrome associated with Zika virus infection.

Countries reporting congenital syndrome associated with Zika virus	Number of confirmed cases to date
Brazil	1,551
Colombia	7
Martinique ²	4
Panama	5
Puerto Rico ³	1
United States ⁴	2

Brazil

According to Brazil's Ministry of Health, between 22 October 2015 and 4 June 2016, a total of 7,830 suspected cases of microcephaly and other congenital malformation of the central nervous system (CNS) have been reported as per Brazil's Surveillance and Response Protocol.⁵ Of these, Brazil's Ministry of Health confirmed 1,551 cases of microcephaly by clinical, radiological, and/or laboratory methods (224 have been confirmed by laboratory criteria). Out of the total reported cases, 3,262 cases were discarded as being due to non-infectious causes or not fitting the case definition, and 3,017 remain under investigation. The confirmed cases occurred in 556 municipalities, located in 26 out of 27 Federal Units of Brazil.

Between EW 3 and EW 22 of 2016, the median number of cases investigated (confirmed and discarded) was 209, with a range between 80 (EW 12) and 381 (EW 4).

The trend in cases of newborns with microcephaly and / or CNS malformation shows an upward trend since early 2015 to EW 47 of 2015, followed by a consistently decreasing trend up to EW 17 of 2016 (**Figure 6**).

¹ Case definition available at: <http://bit.ly/1TpcVIS>

² Two microcephaly cases and one other fetal anomaly; these were detected by ultrasound in mothers with laboratory confirmed Zika virus infection. Note the 28 April 2016 report indicated that one previously detected microcephaly case (by ultrasound) was discarded after birth. This data does not include that case. [See full report](#).

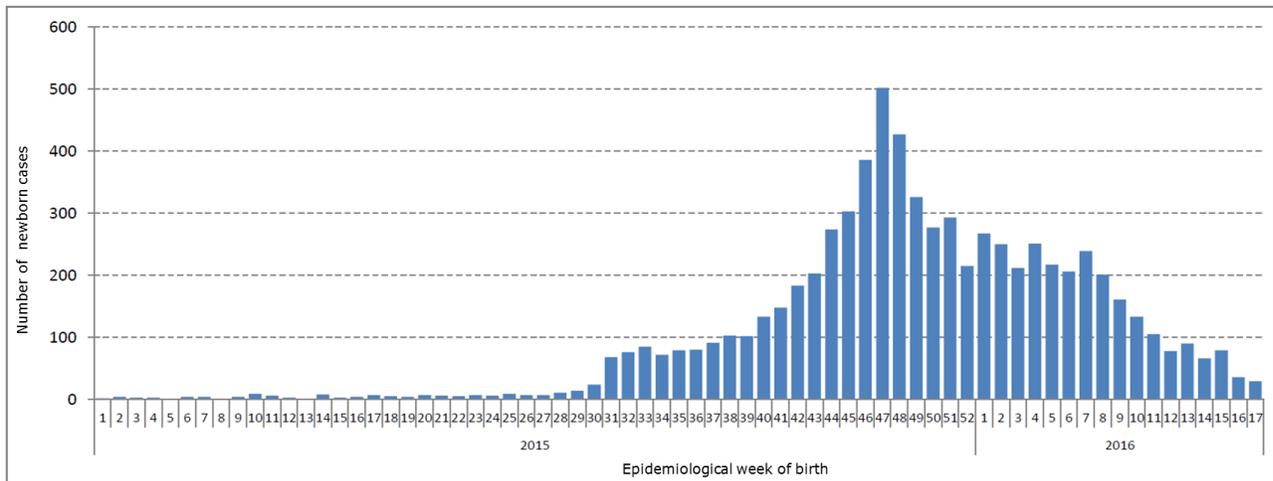
³ This is a congenital anomaly case. [See full report](#).

⁴ Imported cases; one case linked to a stay in Brazil ([see full report](#)) and one case is linked to a brief stay of the mother in Belize, Guatemala and Mexico ([see full report](#)).

⁵ Surveillance and Response Protocol. [See Protocol](#).

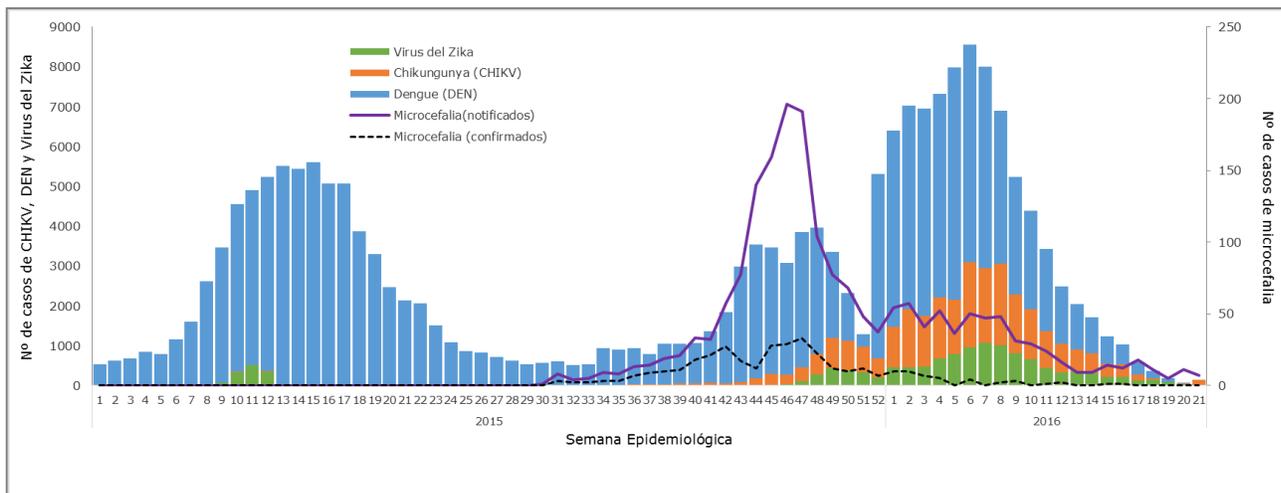
Similarly to that observed at the national level, in the state of Pernambuco, the epidemiological curve of reported microcephaly cases shows an increasing trend between EW 30 and EW 47 of 2015, followed by a decreasing trend up to EW 19 of 2016 (**Figure 7**). The figure shows the transmission dynamics of the three arboviruses circulating in 2015 and 2016.

Figure 6. Number of newborns with microcephaly or other congenital malformations of the central nervous system in Brazil by epidemiological week of birth. EW 1 of 2015 to EW 17 of 2016.



Source: Data provided by the Brazil Ministry of Health to PAHO/WHO

Figure 7. Dengue, chikungunya, Zika virus disease, and microcephaly cases reported in the state of Pernambuco, by EW. Brazil. 2015-2016.



Source: Data provided by the Pernambuco State Secretary of Health to PAHO/WHO

Guillain-Barré syndrome (GBS) and other neurological disorders

To date, 9 countries and territories in the Region have reported an increase in cases of Guillain-Barré syndrome (GBS) with at least one case laboratory confirmed for Zika virus. Paraguay has reported an increase in GBS cases, although none of those cases have been

confirmed with Zika virus infection. Three other countries and territories have not recorded an increase in GBS but have identified Zika virus-associated cases of GBS (**Table 3**).

Table 3. Countries and territories in the Americas with GBS in the context of Zika virus circulation.

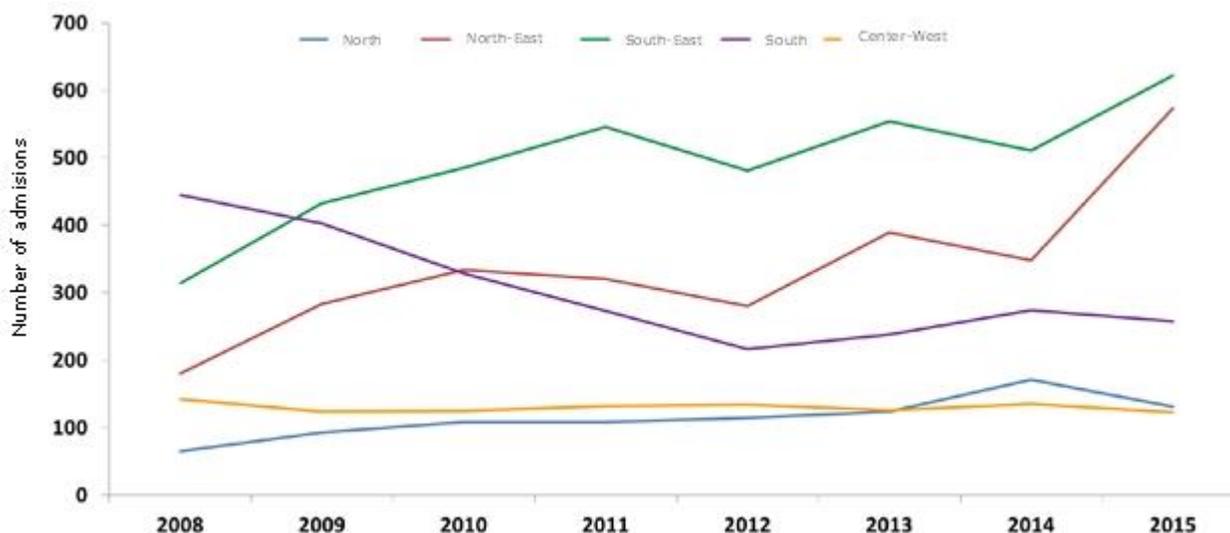
Increase in GBS plus Zika virus lab confirmation in at least one case of GBS	Zika virus lab confirmation in at least one case of GBS	Increase in GBS with no Zika virus lab confirmation in any of the cases
Brazil	Haiti	Paraguay
Colombia	Panama	
Dominican Republic	Puerto Rico	
El Salvador		
French Guiana		
Honduras		
Martinique		
Suriname		
Venezuela		

Highlighted below is information on the situation regarding Guillain-Barré syndrome (GBS) in Brazil and the Dominican Republic.

Trend of Guillain-Barré syndrome (GBS) in Brazil

The distribution of hospitalized GBS cases in Brazil from 2008 to 2015 (2015 data from January to November) is demonstrated in **Figure 8**. The Southeast and Northeast regions show an increasing trend between 2014 and 2015, with the greatest number of cases registered from 2010 onwards. Meanwhile, the South region presents a decreasing trend between 2008 and 2012, with a slight increase from then on. In contrast in the other regions (North and Center-West) stable curve is shown, albeit with a light increase in 2014 in the North region.

Figure 8. Hospitalized GBS cases by geographic region, Brazil, 2008 to 2016.



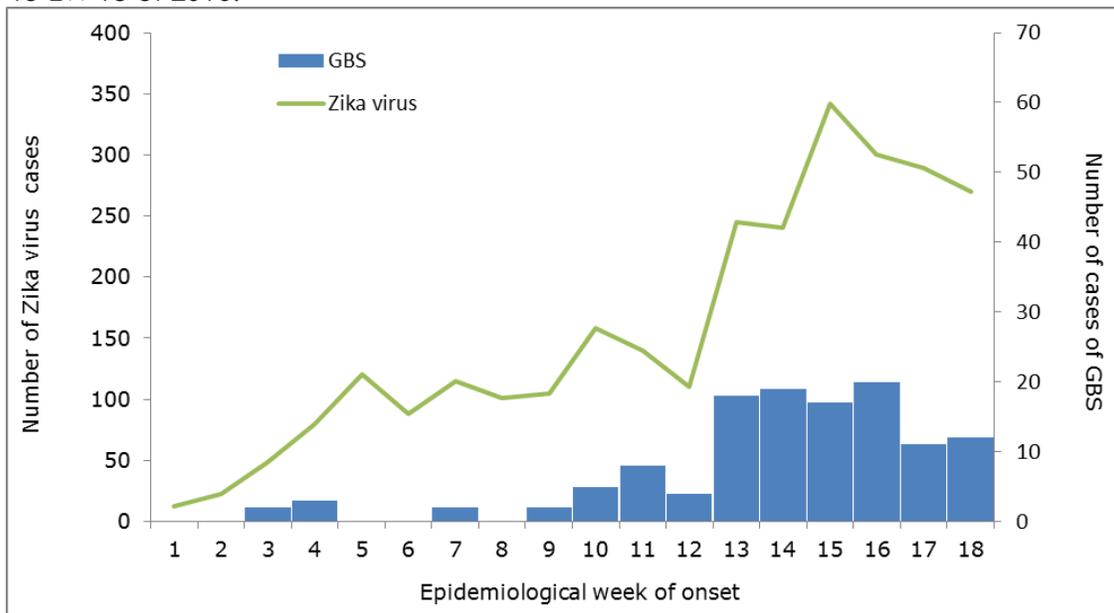
Source: Data provided by the Brazil Ministry of Health to PAHO/WHO

Trend of Guillain-Barré syndrome (GBS) in the Dominican Republic

Since the confirmation of the first cases of Zika virus disease in the Dominican Republic in EW 3 of 2016, GBS cases have also been registered. Since EW 3 of 2016, an increasing trend of GBS cases has been observed and in the previous four weeks there was an average of 13 cases per week. As of EW 19 of 2016, a total of 123 GBS cases associated with Zika virus infection have been registered (Figure 9).

Of the GBS cases registered, 70% (86/123) are older than 30 years of age (median = 38, range 1-84 years) and 58% (71/123) are female. There have been a total of 9 deaths as a result of GBS associated with Zika virus disease. The median age of the deceased is 60 years (range 33-83 years) and 56% (5/9) were female.

Figure 9. GBS cases suspected to be associated to Zika virus disease. Dominican Republic. EW 1 to EW 18 of 2016.



Source: Data published by the Dominican Republic Ministry of Health and reproduced by PAHO/WHO