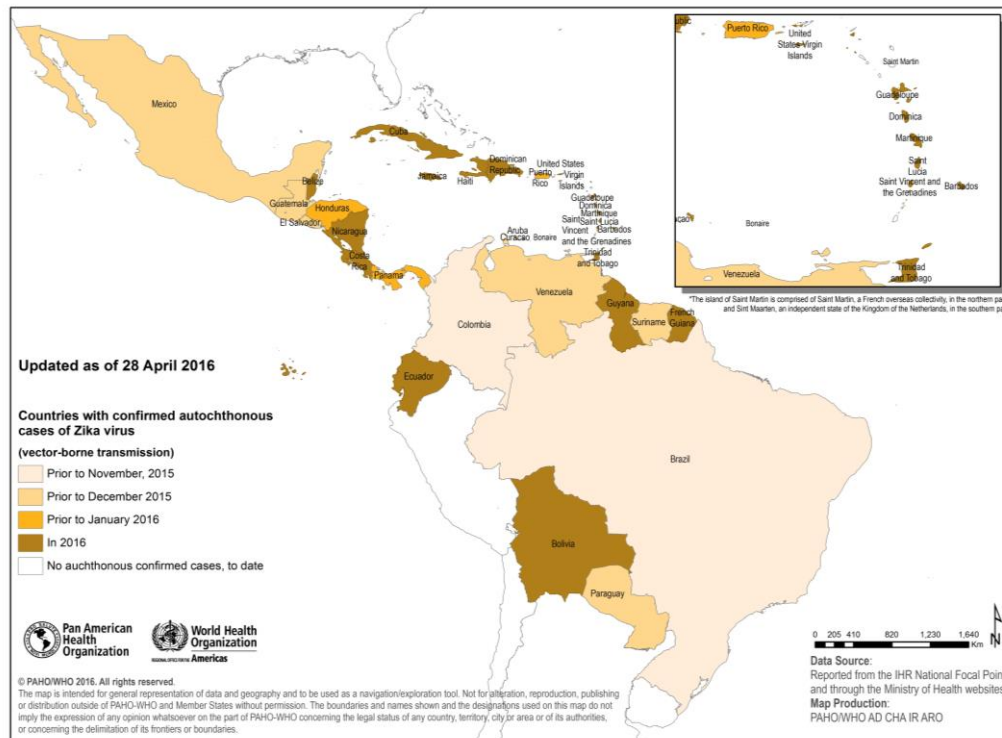


Zika virus – Incidence and trends

To date, 35 countries and territories have confirmed local, vector-borne transmission of Zika virus 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 21 April](#), no new countries or territories have 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.



Suspected and confirmed Zika virus cases have been showing a downward trend in some countries in the Americas, consistent with trends that have been observed in corresponding periods in previous years for other mosquito-borne diseases. Conversely, the trend of cases is still increasing in countries and territories in the Americas for which the outbreak started later, such as the Dominican Republic and Guadeloupe which are highlighted below.

Suggested citation: Pan American Health Organization / World Health Organization. Zika Epidemiological Update, 28 April 2016. Washington, D.C.: PAHO/WHO; 2016

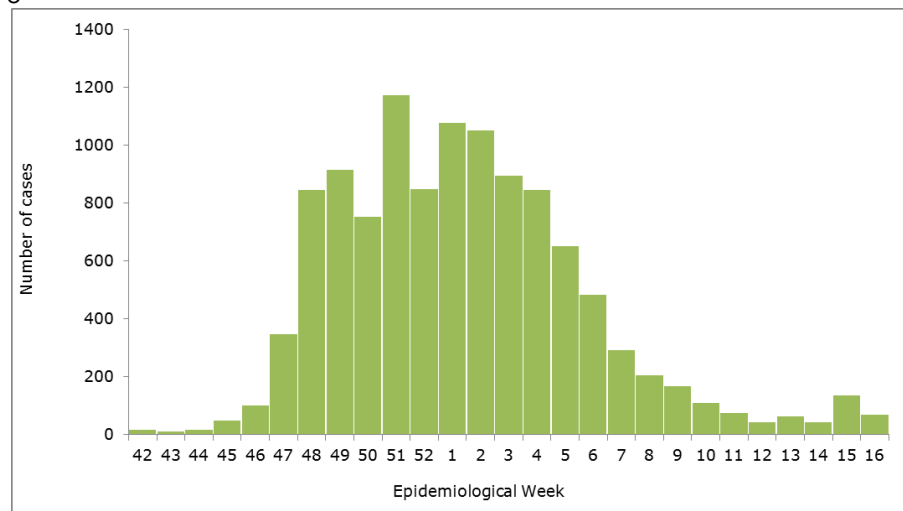
In **Brazil**, report of Zika cases has been mandatory since February 2016 and as of epidemiological week (EW) 13 of 2016, a total of 91,387 probable Zika cases were recorded at national level (incidence rate of 44.7 cases per 100,000 population). The southeast region reported the highest number of accumulative probable cases (35,505) which may due to the more recent start of the outbreak in the states of that region. The region reporting the second highest number of probable cases (30,286) is the Northeast. The highest incidence rate is reported by the Center-West region (113.4 /100,000) followed by the Northeast (53.5 cases/100,000). In addition, three deaths linked to Zika virus were confirmed in São Luis (Maranhão State), Benevides (Pará State), and Serrinha (Rio Grande do Norte State), as reported previously. [See full report.](#)

Illustrated below is the decreasing trend of reported cases of Zika virus in **El Salvador** and **Jamaica**, countries and territories whose outbreaks began in 2015. In contrast, the increasing trend in the number of suspected cases of Zika virus for countries and territories whose outbreaks began in 2016, the **Dominican Republic** and **Guadeloupe**, is illustrated below.

El Salvador

Since the beginning of the outbreak in November 2015 through the end of 2015, suspected Zika virus cases had increased in El Salvador, followed by a decreasing trend until EW 12 of 2016. A slight increase is observed between EW 12 and EW 13; this may be attributed to underreporting during Easter holidays which occurred during EW 12. This trend is similar to the one observed in Martinique and described in the [Zika Epidemiological Update on 21 April](#). This epidemiological curve is subject to change as cases are retroactively reported (**Figure 2**).

Figure 2. Suspected and confirmed cases of Zika virus disease reported in El Salvador, as of EW 16 of 2016



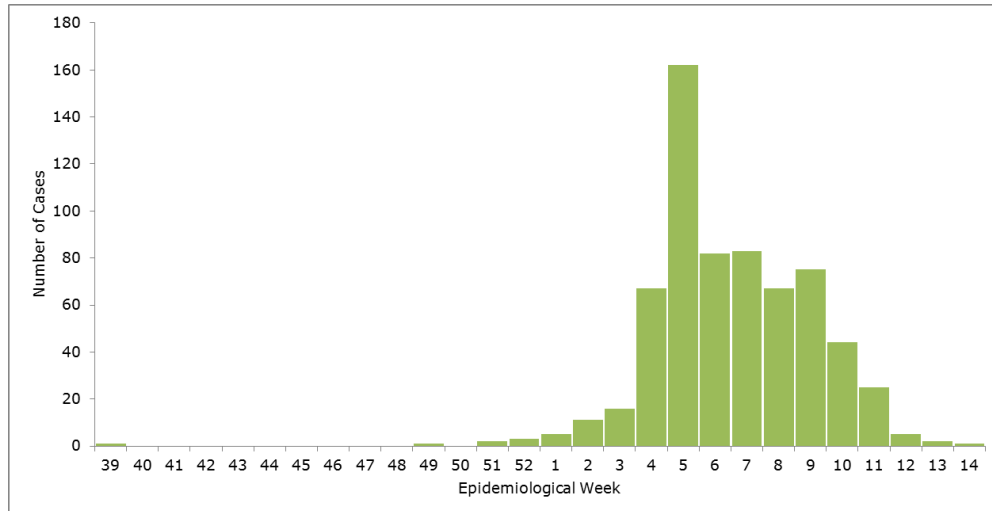
Source: Surveillance data provided to PAHO/WHO from the El Salvador Ministry of Health

Jamaica

Similarly, Jamaica the number of suspected Zika virus cases is decreasing in **Jamaica** after an increase observed since the initial reports of Zika virus in EW 39 of 2015. The highest

number of suspected cases was recorded in EW 5 of 2016, followed by a decreasing trend of suspected cases through EW 14 (**Figure 3**).

Figure 3. Suspected and confirmed cases of Zika virus disease reported in Jamaica, as of EW 14 of 2016.

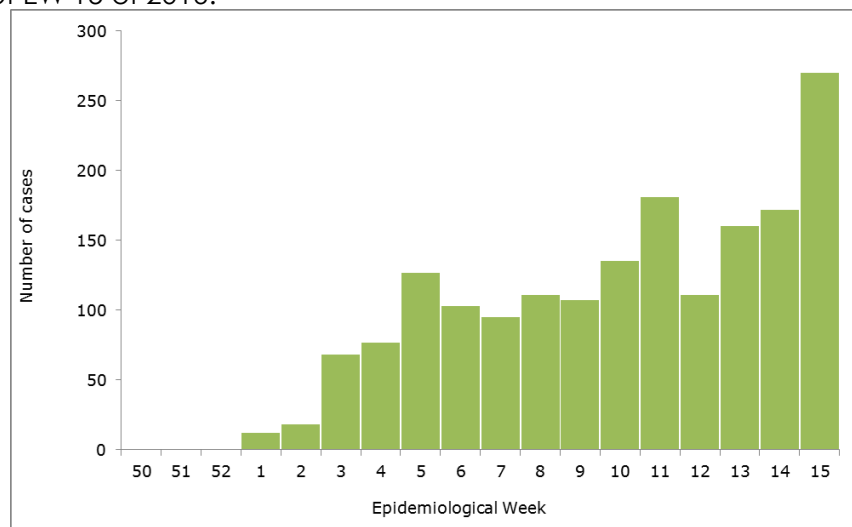


Source: Surveillance data provided to PAHO/WHO from the Jamaica Ministry of Health

Dominican Republic

Since the beginning of the outbreak in EW 49 of 2015 to EW 15 in 2016, an increasing trend of suspected and confirmed Zika virus cases is observed in the Dominican Republic. A decrease in cases was reported in EW 12, but may be attributed to underreporting of Zika virus during the Easter holidays. In EW 15, the highest number of Zika virus cases was recorded (**Figure 4**). Similarly an increasing trend is observed with the rash febrile illness data collected by the Dominican Republic in correlation with the period starting from EW 1 through EW 15 of 2016.

Figure 4. Suspected and confirmed cases of Zika virus disease reported in the Dominican Republic, as of EW 15 of 2016.

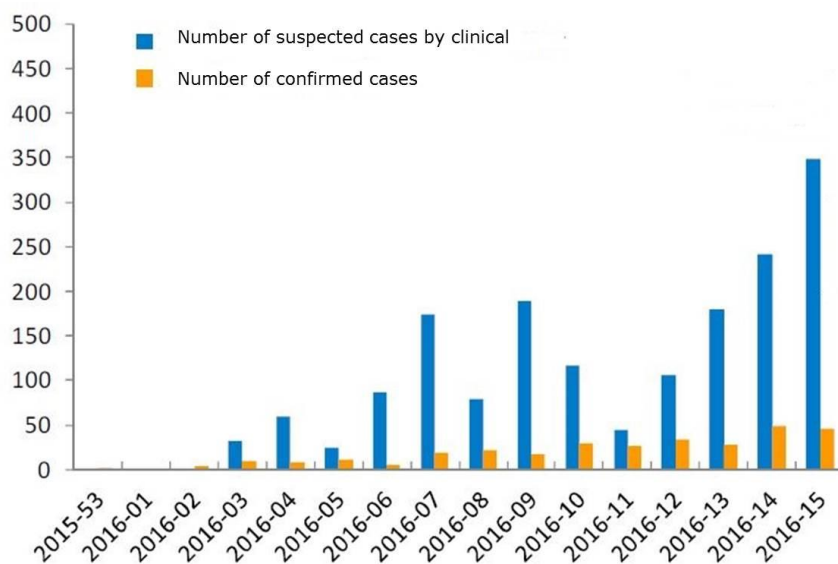


Source: Data published by the Dominican Republic Ministry of Health and reproduced by PAHO/WHO

Guadeloupe

In Guadeloupe, since the first reports of Zika virus cases in EW 2 of 2016, the trend of Zika virus cases has steadily increased. The temporary decrease of cases observed between EW 10 and EW 12 of 2016 is similar to that observed in El Salvador and the Dominican Republic (Figure 5).

Figure 5. Suspected and confirmed cases of Zika virus disease reported in Guadeloupe, as of EW 14 of 2016.



Source: Data published by the French Institute of Public Health Surveillance (Institut de Veille Sanitaire- InVS) and reproduced by PAHO/WHO

Zika virus infection in pregnant women

Detection of Zika virus infection in pregnant women is being heightened in countries in the Region due to risk of congenital Zika syndrome. Confirmed and suspected cases of Zika virus infection have been reported in pregnant women in 21 countries and territories of the Americas (Table 1). Results of the surveillance of pregnant women in both Brazil and Colombia are highlighted below.

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

Countries and territories reporting Zika virus 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	

Brazil

In **Brazil**, between February 2016 and 2 April 2016 a total of 7,584 probable Zika cases in pregnant women were registered at the national level, of which 2,844 were laboratory confirmed. To date, the largest number of microcephaly cases associated with Zika virus disease was reported in women who had the disease in their first trimester of pregnancy.

Colombia

In **Colombia**, a total of 12,802 pregnant women have been identified with suspected or confirmed Zika virus infection since the beginning of the outbreak up to EW 15 of 2016. Of these, 1,703 pregnant women have been laboratory confirmed with Zika virus; the remaining 11,099 presented with symptoms of Zika virus without laboratory confirmation.

Congenital syndrome associated with Zika virus infection¹

No new countries have reported cases of congenital syndrome associated with Zika virus (**Table 2**) since the last PAHO/WHO [Zika Epidemiological Update on 21 April](#).

During this week, **Panama** reported two additional cases of congenital syndrome associated with Zika virus infection under investigation. One case is an infant born with microcephaly from a mother who tested positive for Zika virus in urine sample by RT-PCR. The other case is a fetus at 36 weeks of gestation diagnosed with congenital malformations by ultrasonography, and laboratory results of the mother are pending.

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	1,198
Colombia	7
Martinique ²	3
Panama ³	4
United States ⁴	2

Brazil

According to the Ministry of Health of **Brazil**, between 22 October 2015 and 23 April 2016, a total of 7,228 suspected cases of microcephaly and other congenital malformation as per

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

² Two microcephaly and one other fetal anomaly. [See full report](#).

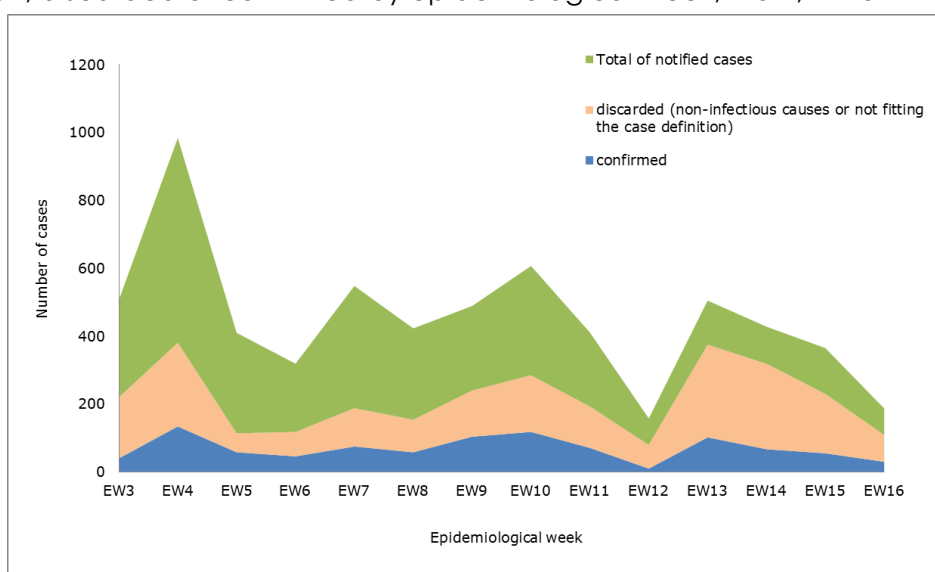
³ There is one additional suspected case of congenital malformations in a fetus diagnosed by ultrasonography under investigation.

⁴ Imported case from Brazil ([see full report](#)) and imported case where the mother had travel history to Belize, Guatemala and Mexico ([see full report](#)).

Brazil's Surveillance and Response Protocol⁵ have been reported in 1,356 out of 5,570 municipalities. Of these, the Brazil Ministry of Health confirmed 1,198 cases of microcephaly by clinical, radiological and/or laboratory methods (194 have been confirmed by laboratory criteria). Out of the total reported cases, 2,320 cases were discarded as being due to non-infectious causes or not fitting the case definition, and 3,710 remain under investigation. The confirmed cases (1,198) are distributed in 23 out of 27 Federal Units, with the Northeast region continuing to report the majority of the confirmed cases with 92% (1,098).

An average of 197 microcephaly cases were investigated (confirmed and discarded) weekly between EW 3 and EW 12 of 2016 and between EW 13 and 16 of 2016, there was an average of 250 cases investigated weekly (**Figure 6**).

Figure 6. Reported cases of microcephaly and other congenital malformation, under investigation, discarded or confirmed by epidemiological week, Brazil, EW 3 – EW 16 of 2016



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

As of EW 16 of 2016, there have been 251 reported deaths (including miscarriages or stillbirths), of which 54 were confirmed as microcephaly cases by clinical, radiological and/or laboratory methods. [See full report.](#)

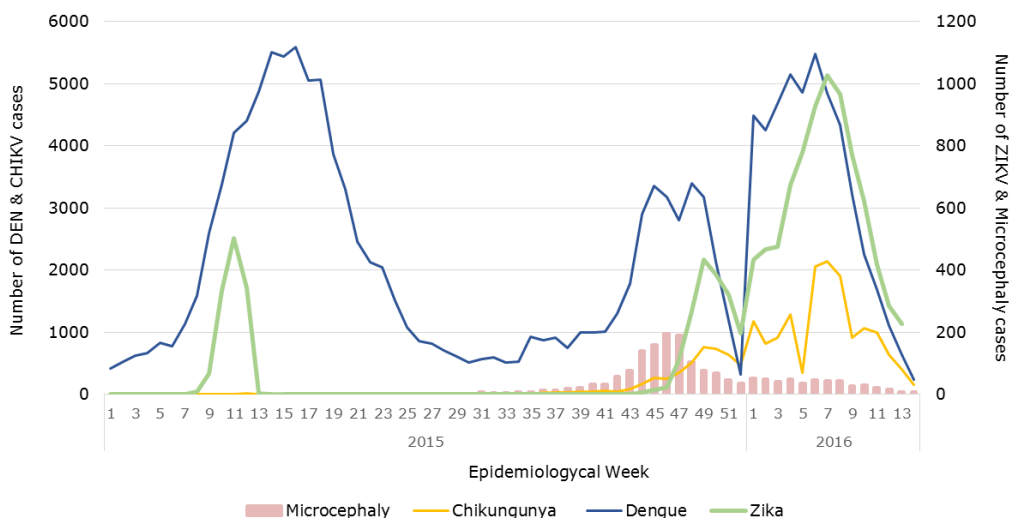
The trend of microcephaly and other congenital malformation in the northeastern state of Pernambuco, Brazil, along with reported cases of all three arboviruses (chikungunya, dengue and Zika) circulating is illustrated below (**Figure 7**).

Since the beginning of 2015 up to EW 16 of 2015, Pernambuco has experienced a large increase of dengue-like illness, during which chikungunya and first cases of Zika virus was registered. An increase of microcephaly cases can be seen 7-8 months after the first detection of Zika virus cases, reaching its peak in EW 46 of 2015. Reports of microcephaly cases started decreasing on EW 48 of 2015. Between EW 51 of 2015 and EW 12 of 2016, a weekly average of 39 microcephaly cases were registered. Between EW 13 and EW 16, the

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

weekly average decreased to 9 microcephaly cases. Data from preceding weeks should be considered preliminary due to delays in reporting. Compared to corresponding time period, Pernambuco has seen an increase of reported dengue, chikungunya and Zika between EW 43 of 2015 and EW 10 of 2016.

Figure 7. Reported cases of dengue, chikungunya, Zika virus and microcephaly in Pernambuco state, Brazil by EW, 2015 to 2016.



Source: Data published by the Pernambuco State Secretary of Health, Brazil.

Guillain-Barré syndrome (GBS) and other neurological disorders

To date, 7 countries 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, none of which have laboratory results confirming Zika virus infection. Five other countries and territories have not recorded increases but 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	French Guiana	Paraguay
Colombia	Haiti	
Dominican Republic	Panama	
El Salvador	Puerto Rico	
Honduras	Martinique	
Suriname		
Venezuela		

The following is new information on countries with updates.

GBS Trends in the Dominican Republic

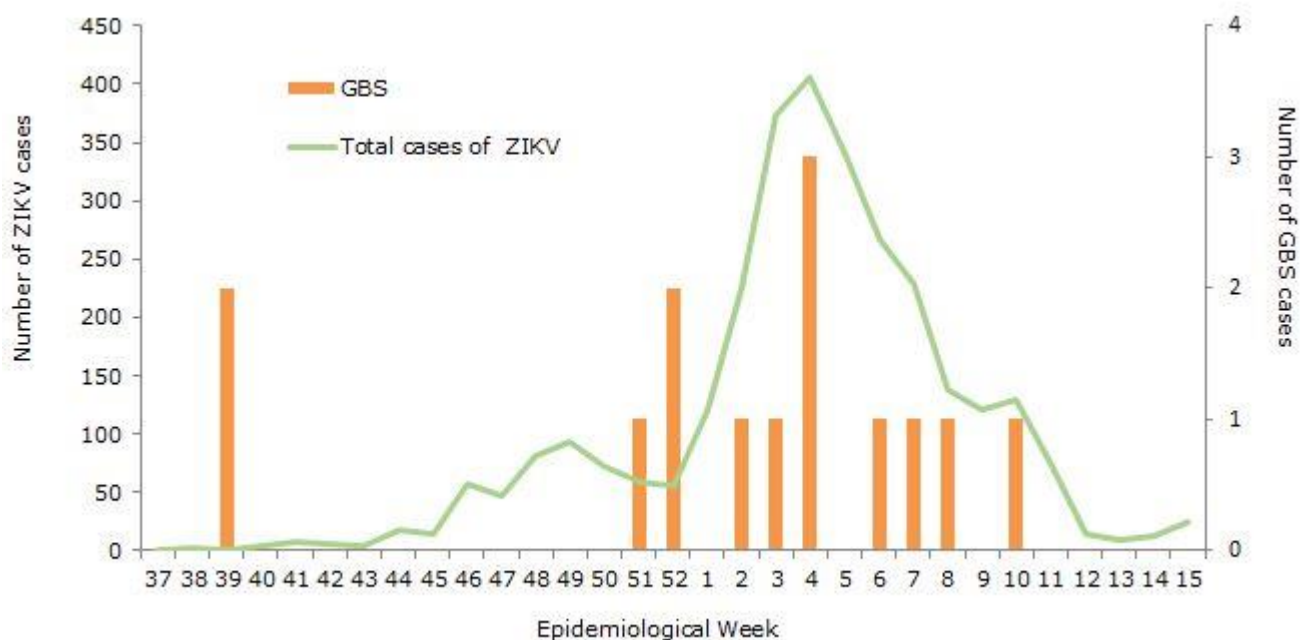
In EW 15 of 2016, there were 9 new cases of GBS with a history of suspected Zika virus disease reported in the Dominican Republic for a total of 48 cases from EW 1 to 15 of 2016. Of the total number of cases, 67% (32 cases) were reported in the last four weeks. This corresponds to the increase of Zika virus cases reported in EW 15.

GBS Trends in Suriname

Between EW 39 of 2015 and EW 15 of 2016, **Suriname** reported 14 cases of GBS, 9 of which were reported between EW 1 and EW 15 of 2016. Between 2010 and 2014, the annual average number of GBS was 5 cases, indicating a two-fold increase in the first four months of 2016.

A temporal relationship can be observed between the trends of Zika virus and GBS cases in Suriname with the highest number of GBS cases reported in EW 4, which coincides with the peak of Zika virus cases (**Figure 8**).

Figure 8. Reported cases Zika virus (suspected and confirmed) and GBS between EW 37 of 2015 and EW 15 of 2016 in Suriname.



Source: Surveillance data provided to PAHO/WHO from the Suriname Ministry of Health