



KEY UPDATES

- Countries and territories reporting mosquito-borne Zika virus infections for the first time in the past week:
 - None
- Malaysia has reported one locally acquired mosquito-borne Zika infection in the past week. Prior to this, the only evidence of Zika in Malaysia had been a scientific publication that had reported a case of Zika infection identified in Germany in an individual with travel history to Malaysia.
- Countries and territories reporting microcephaly and other central nervous system (CNS) malformations potentially associated with Zika virus infection for the first time in the past week:
 - None
- Countries and territories reporting Guillain-Barré syndrome (GBS) cases associated with Zika virus infection for the first time in the past week:
 - None
- The Netherlands reported evidence of person-to-person transmission of Zika virus (probably via a sexual route) for the first time in the past week.
- Operational updates from the WHO Regional Office for the Americas:
 - WHO convened a workshop in Barbados on clinical management of neurological complications.
 - A technical mission to Brazil by WHO/PAHO for laboratory assessment and strengthening of Zika diagnostic capacity of State laboratories was completed in August.
 - WHO facilitated two meetings in Panama for updating the strategic plan for vector surveillance and control.
 - WHO/PAHO carried out missions to Colombia and El Salvador to organize and help launch “Mosquito Awareness Week”.
 - In Haiti, WHO and the Ministry of Public Health and Population’s Division of Epidemiology, Laboratory and Research (DELR) held three train-the-trainer workshops on epidemiological surveillance of Zika and its complications in August.
- The results from the sequencing analysis of Zika virus cases in Singapore indicate that the virus belongs to the Asian lineage and likely evolved from the strain that was previously circulating in Southeast Asia. The recent cases in Singapore do not appear to

be the result of imported virus from South America.

- The 2016 Summer Paralympic Games opened in Rio de Janeiro, Brazil, on 7 September. WHO continues to provide technical support to the Ministry of Health to ensure the 2016 Summer Paralympic Games are as safe as possible for all athletes, volunteers, visitors and residents. There is a low, but not zero, risk of Zika transmission in this setting. All persons should continue to follow guidance on avoiding Zika infection.
- The fourth meeting of the Emergency Committee was held on 1 September 2016. Having considered the evidence presented, the Committee agreed that due to continuing geographic expansion and considerable gaps in understanding of the virus and its consequences, Zika virus infection and its associated congenital and other neurological disorders continues to be a Public Health Emergency of International Concern.
- Based on a systematic review of the literature, WHO has concluded that Zika virus infection during pregnancy is a cause of congenital brain abnormalities, including microcephaly, and that Zika virus is a trigger of GBS.
- Revised guidance on the prevention of sexual transmission was published on 6 September 2016.

ANALYSIS

- Overall, the global risk assessment has not changed.
- Countries in the Western Pacific Region have been reporting new cases as seen in the Philippines and Malaysia. A neighbouring country, Singapore, reported a new outbreak starting in August 2016. There has previously been circulation in Southeast Asia, so there is likely some population immunity in the area which could temper this outbreak.
- The Ministry of Health of Singapore has stated that the sequencing analysis of Zika virus cases in Singapore indicates that the virus belongs to the Asian lineage and likely evolved from the strain that was previously circulating in Southeast Asia, as opposed to being imported from South America (though those viruses are also Asian lineage). While there have not previously been reports of neurologic complications associated with Zika cases in Southeast Asia, continued vigilance is warranted, because the exact relationship between the evolution of the virus and its effect on neurologic complications has not been clarified. As with the findings of cases caused by the African strain in Guinea-Bissau, the absence of proof of neurologic complications should not be assumed to indicate proof of absence; there have not been sufficient numbers of investigated Zika cases in either Southeast Asia or Africa to definitively rule out the possibility of microcephaly or other congenital malformations, or GBS, in these settings. It is not yet clear what is driving the sudden increase in cases (>250 cases since 27 August) in Singapore, given the well-established circulation of the virus in the region over many years.

SITUATION

- 72 countries and territories (Fig. 1, Table 1) have reported evidence of mosquito-borne Zika virus transmission since 2007 (70 with reports from 2015):
 - 55 with a reported outbreak from 2015 onwards (Fig. 2, Table 1).
 - Five with having possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016.
 - Malaysia was previously listed in category 3 (outbreak terminated), however, a locally acquired Zika virus infection, without evidence of a larger outbreak, was reported on 3 September. The individual had no travel history to areas outside of Malaysia. Malaysia is thus reclassified into category 2.
 - 12 with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or with the outbreak terminated.
 - Malaysia has been removed from this category.
- Since February 2016, 12 countries have reported evidence of person-to-person transmission of Zika virus (Table 2).
- 20 countries or territories have reported microcephaly and other CNS malformations potentially associated with Zika virus infection or suggestive of congenital infection (Table 3). Four of the 20 countries reported microcephalic babies born from mothers in countries with no endemic Zika virus transmission but who reported recent travel history to Zika-affected countries.
- Outcomes of pregnancies with laboratory evidence of possible Zika virus in the United States of America¹:
 - 16 total liveborn infants with birth defects
 - Five total pregnancy losses with birth defects
- Outcomes of pregnancies with laboratory evidence of possible Zika virus in territories of the United States of America:
 - One total liveborn infant with birth defects
 - One total pregnancy loss with birth defects
- 18 countries and territories have reported an increased incidence of GBS and/or laboratory confirmation of a Zika virus infection among GBS cases (Table 4).
- In Guinea-Bissau, the investigation of five reported cases of microcephaly is ongoing.
- The fourth meeting of the Emergency Committee was held on 1 September 2016. Having considered the evidence presented, the Committee agreed that due to continuing geographic expansion and considerable gaps in understanding of the virus and its consequences, Zika virus infection and its associated congenital and other neurological disorders continues to be a Public Health Emergency of International Concern.² The Committee reaffirmed its previous advice that there should be no general restrictions on

¹ <https://www.cdc.gov/zika/geo/pregnancy-outcomes.html>

² <http://www.who.int/mediacentre/news/statements/2016/zika-fourth-ec/en/>

travel and trade with areas with Zika virus transmission, including the cities in Brazil that will be hosting the Paralympic Games. Acknowledging that the impact of Zika virus is a long term concern, the Committee recommended that the Director General considers developing an appropriate infrastructure and response plan within WHO to provide longer term coordination and accountability for ensuring an effective response. The Committee emphasized the need for a better scientific understanding of Zika virus epidemiology, clinical disease, and prevention. Recognizing the impact that Zika virus disease and its consequences will have on low resource health systems, the Committee also recommended that WHO provide appropriate guidance on effective surveillance and management of Zika virus disease in countries with high vulnerability, low capacity. The Committee will reconvene in three months.

- Based on a systematic review of the literature up to 30 May 2016, WHO has concluded that Zika virus infection during pregnancy is a cause of congenital brain abnormalities, including microcephaly, and that Zika virus is a trigger of GBS³. The findings, which emerge from a causality framework that WHO developed in February 2016 to appraise the strengths and weaknesses of available evidence about the causal relationships, also identify gaps in research and provide direction for further work.
- WHO has updated its interim guidance on the prevention of sexual transmission of Zika virus to take into account new evidence on the subject⁴. The notable changes include: for regions with active transmission of Zika virus, WHO recommends that sexually active men and women be correctly counselled and offered a full range of contraceptive methods to be able to make an informed choice about whether and when to become pregnant in order to prevent possible adverse pregnancy and fetal outcomes; for regions without active transmission of Zika virus, WHO recommends practising safer sex or considering abstinence for a period of six months for men and women who are returning from areas of active transmission.

³ <http://www.who.int/emergencies/zika-virus/causality/en/>

⁴ <http://www.who.int/csr/resources/publications/zika/sexual-transmission-prevention/en/>

Table 1. Countries and territories reporting mosquito-borne Zika virus transmission

Classification	WHO Regional Office	Country / territory	Total
Category 1: Countries with a reported outbreak from 2015 onwards [#]	AFRO	Cabo Verde; Guinea-Bissau	2
	AMRO/PAHO	Anguilla; Antigua and Barbuda; Argentina; Aruba; Bahamas; Barbados; Belize; Bolivia (Plurinational State of), Bonaire, Sint Eustatius and Saba – Netherlands*; Brazil; British Virgin Islands; Cayman Islands; Colombia; Costa Rica; Cuba; Curaçao; Dominica; Dominican Republic; Ecuador; El Salvador; French Guiana; Grenada; Guadeloupe; Guatemala; Guyana; Haiti; Honduras; Jamaica; Martinique; Mexico; Nicaragua; Panama; Paraguay; Peru; Puerto Rico; Saint Barthélemy; Saint Lucia; Saint Martin; Saint Vincent and the Grenadines; Sint Maarten; Suriname; Trinidad and Tobago; Turks and Caicos; United States of America; United States Virgin Islands; Venezuela (Bolivarian Republic of)	46
	WPRO	American Samoa; Fiji; Marshall Islands; Micronesia (Federated States of); Samoa; Singapore; Tonga	7
Subtotal			55
Category 2: Countries with possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016	SEARO	Indonesia; Thailand	2
	WPRO	Malaysia***; Philippines; Viet Nam	3
Subtotal			5
Category 3: Countries with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or outbreak terminated	AFRO	Gabon	1
	PAHO/AMRO	ISLA DE PASCUA – Chile**	1
	SEARO	Bangladesh; Maldives	2
	WPRO	Cambodia; Cook Islands**; French Polynesia**; Lao People's Democratic Republic; New Caledonia; Papua New Guinea; Solomon Islands; Vanuatu	8
Subtotal			12
Total			72

[#]The wording of category 1 has been revised in recognition of the fact that a country that has had a first outbreak since 2015 and in which that outbreak has since terminated, may again report a new outbreak or cases which would qualify the country to be re-included in Category 1.

*This includes confirmed Zika virus cases reported in BONAIRE – Netherlands, SINT EUSTATIUS and SABA – Netherlands.

***Malaysia moved from category 3 to category 2 because a locally-acquired Zika virus infection without evidence of an outbreak was reported on 3 September 2016.

**These countries and territories have not reported Zika virus cases in 2015 or 2016.

Category 1: Countries with a reported outbreak from 2015 onwards[#]

- A laboratory confirmed, autochthonous, mosquito-borne case of Zika virus infection in an area where there is no evidence of circulation of the virus in the past (prior 2015), whether it is detected and reported by the country itself or by another state party diagnosing returning travellers **OR**
- A laboratory confirmed, autochthonous, mosquito-borne case of Zika virus infection in an area where transmission has been previously interrupted. The assumption is that the size of the susceptible population has built up to a sufficient level to allow transmission again; the size of the outbreak will be a function of the size of the susceptible population **OR**
- An increase of the incidence of laboratory confirmed, autochthonous, mosquito-borne Zika virus infection in areas where there is on-going transmission, above two standard deviations of the baseline rate, or doubling the number of cases over a 4-week period. Clusters of febrile illnesses, in particular when epidemiologically-linked to a confirmed case, should be microbiologically investigated.

Category 2: Countries with possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016 with the reporting period beginning in 2007

- Countries or territories that have reported an outbreak with consistent presence of laboratory confirmed, autochthonous, mosquito-borne cases of Zika virus infection 12 months after the outbreak **OR**
- Countries or territories where Zika virus has been circulating for several years with consistent presence of laboratory confirmed, autochthonous, mosquito-borne cases of Zika virus infection or evidence of local mosquito-borne Zika infections in 2016. Reports can be from the country or territory where infection occurred, or from a third party where the case is first recorded according to the International Health Regulations (IHR 2005). Countries with evidence of infection prior to 2007 are listed in http://www.who.int/bulletin/online_first/16-171082.pdf

Category 3: Countries with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or outbreak terminated with the reporting period beginning in 2007

- Absence of confirmed cases over a 3-month period in a specific geographical area with climatic conditions suitable for year-round arbovirus transmission, or over a 12-month period in an area with seasonal vector activity.

Figure 1. Cumulative number of countries and territories by WHO region⁵ reporting mosquito-borne Zika virus transmission in years (2007–2014), and monthly from 1 January 2015 to 7 September 2016

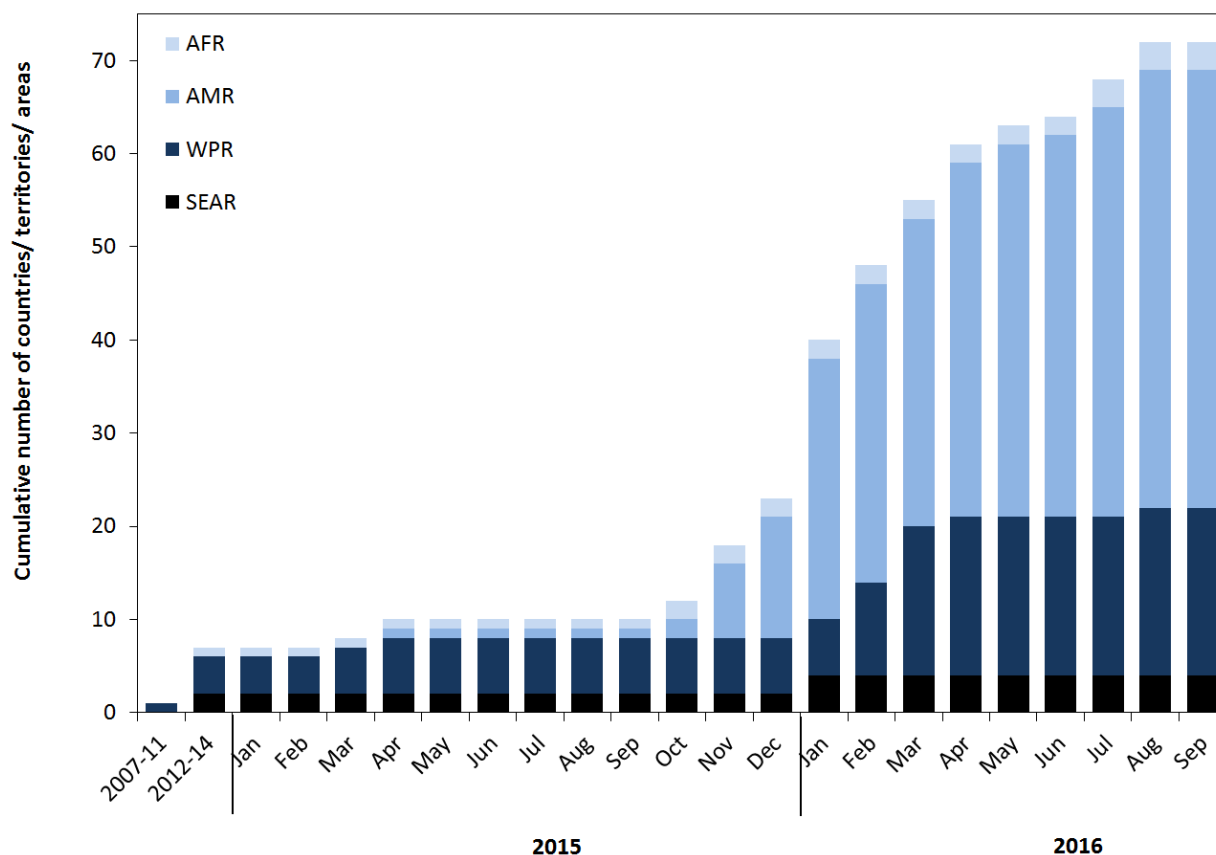
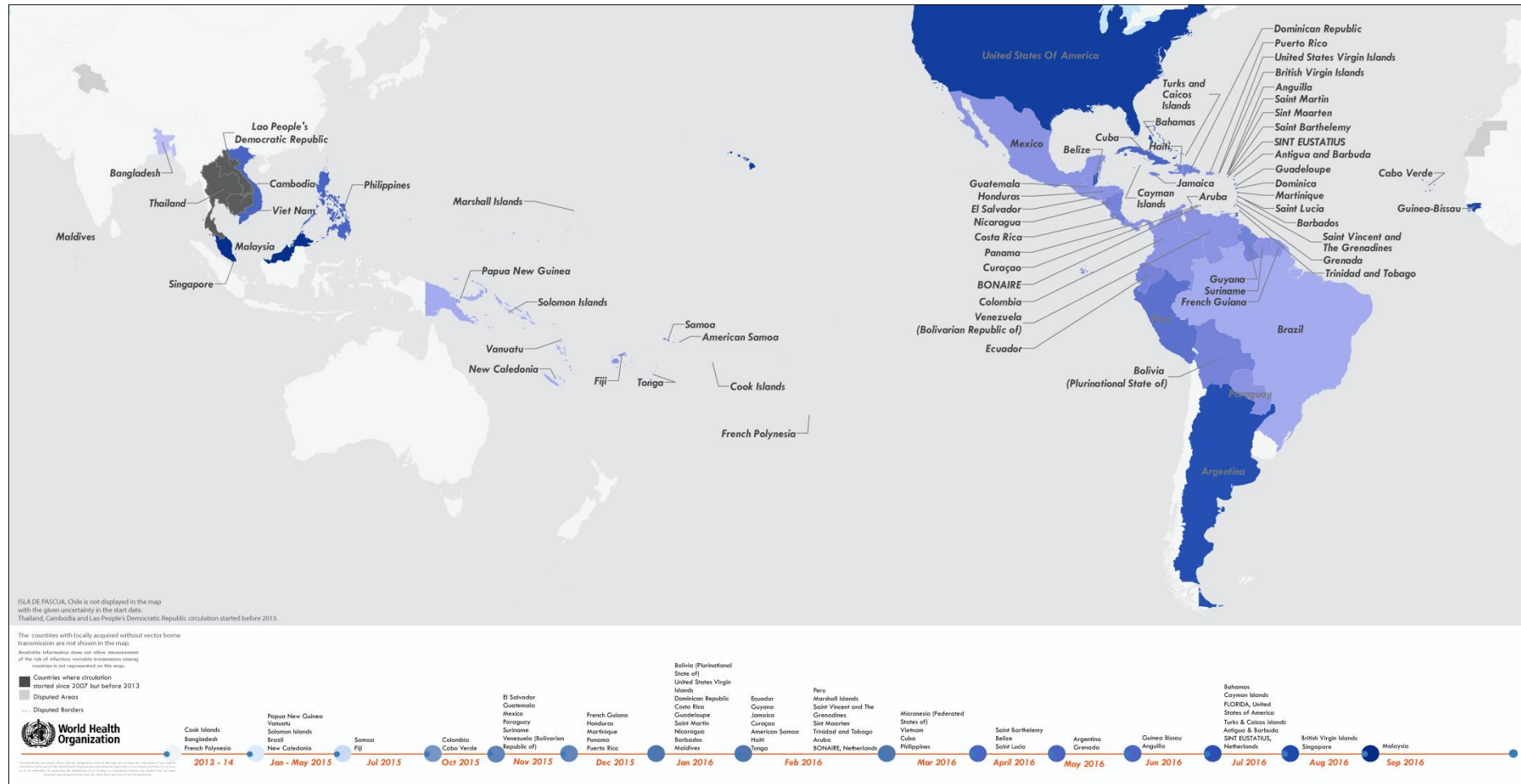


Table 2. Countries reporting non mosquito-borne Zika virus transmission since February 2016

Classification	WHO Regional Office	Country / territory	Total
Countries with evidence of person-to-person transmission of Zika virus, other than mosquito-borne transmission	AMRO/PAHO	Argentina, Canada, Chile, Peru, United States of America	5
	EURO	France, Germany, Italy, Netherlands, Portugal, Spain	6
	WPRO	New Zealand	1
Total			12

⁵ <http://www.who.int/about/regions/en/>

Figure 2. Global spread of Zika virus, 2013-2016



This map represents new Zika notifications since 2013. Countries may reappear in the timeline if there are periods with new cases separated by periods where the outbreak is terminated. ISLA DE PASCUA – Chile is not displayed in the map given uncertainty about the date of onset of the outbreak there. Circulation of Zika virus in Thailand, Cambodia and Lao People's Democratic Republic started before 2013. Countries where sexual transmission occurred are not represented in this map. Available information does not permit measurement of the risk of infection in any country; the variation in transmission intensity among countries is therefore NOT represented on this map. Zika virus is not necessarily present throughout the countries/territories shaded in this map.

Table 3. Countries and territories reporting microcephaly and/or CNS malformation cases potentially associated with Zika virus infection

Reporting country or territory	Number of microcephaly and/or CNS malformation cases suggestive of congenital Zika infections or potentially associated with a Zika virus infection	Probable location of infection
Brazil	1857 ⁶	Brazil
Cabo Verde	9	Cabo Verde
Canada	1	Undetermined
Costa Rica	1	Costa Rica
Colombia	38 ⁷	Colombia
Dominican Republic	3	Dominican Republic
El Salvador	4	El Salvador
French Guiana	3 ⁸	French Guiana
French Polynesia	8	French Polynesia
Haiti	1	Haiti
Honduras	1	Honduras
Marshall Islands	1	Marshall Islands
Martinique	10 ⁸	Martinique
Panama	5	Panama
Paraguay	2 ⁹	Paraguay
Puerto Rico	1	Puerto Rico
Slovenia	1 ¹⁰	Brazil
Spain	2	Colombia, Venezuela (Bolivarian Republic of)
Suriname	1	Suriname
United States of America*	21 ¹¹	Undetermined**

* US-CDC has modified the way information is displayed. To protect the privacy of the women and children affected by Zika, US-CDC is not reporting individual state, tribal, territorial or jurisdictional level data.

**The probable locations of three of the infections were Brazil (1 case), Haiti (1 case) and Mexico, Belize or Guatemala (1 case).

Table 4. Countries and territories reporting Guillain-Barré syndrome (GBS) potentially associated with Zika virus infection

Classification	Country / territory
Reported increase in incidence of GBS cases, with at least one GBS case with confirmed Zika virus infection	Brazil, Colombia, Dominican Republic, El Salvador*, French Guiana, French Polynesia, Honduras, Jamaica, Martinique, Suriname**, Venezuela (Bolivarian Republic of)
No increase in GBS incidence reported, but at least one GBS case with confirmed Zika virus infection	Costa Rica, Grenada ¹² , Guadeloupe ¹³ , Guatemala, Haiti, Panama, Puerto Rico

*GBS cases with previous history of Zika virus infection were reported by the International Health Regulations (2005) National Focal Point in United States of America.

**One case living in continental Netherlands was diagnosed in mid-January 2016 at the Erasmus Academic Medical Center and reported by the Netherlands.

⁶ <http://portalsaude.saude.gov.br/images/pdf/2016/setembro/05/informe-epidemiologico-n41-se34-2016.pdf>

⁷ <http://www.ins.gov.co/boletin-epidemiologico/Boletn%20Epidemiolgico/2016%20Boletin%20epidemiologico%20semana%2034.pdf>

⁸ <http://www.invs.sante.fr/Publications-et-outils/Points-epidemiologiques/Tous-les-numeros/Antilles-Guyane/2016/Situation-epidemiologique-du-virus-Zika-aux-Antilles-Guyane.-Point-au-21-juillet-2016>

⁹ <http://www.mspbs.gov.py/v3/paraguay-reporta-sus-dos-primeros-casos-de-microcefalia-asociados-al-zika/>

¹⁰ <http://www.nejm.org/doi/pdf/10.1056/NEJMoa1600651>

¹¹ <http://www.cdc.gov/zika/geo/pregnancy-outcomes.html>

¹² http://health.gov.gd/index.php?option=com_content&view=article&id=434:nine-confirmed-zika-cases-in-grenada&catid=83:latest-news&Itemid=932&lang=en

¹³ <http://www.invs.sante.fr/Publications-et-outils/Points-epidemiologiques/Tous-les-numeros/Antilles-Guyane/2016/Situation-epidemiologique-du-virus-Zika-aux-Antilles-Guyane.-Point-au-23-juin-2016>