World Health Organization

SITUATION REPORT

ZIKA VIRUS
MICROCEPHALY
GUILLAIN-BARRÉ SYNDROME
15 SEPTEMBER 2016

(DATA AS OF 14 SEPTEMBER 2016)

KEY UPDATES

- Countries and territories reporting mosquito-borne Zika virus infections for the first time in the past week:
  - None
- Countries in the Western Pacific Region have been reporting new cases as seen in Singapore, Philippines and 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 2016 Summer Paralympic Games continue in Rio de Janeiro, Brazil. 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.

ANALYSIS

- There are two major lineages of Zika virus: the “African” lineage and the “Asian” lineage. The “African” lineage has only been reported in Africa and was most recently identified through sequencing analysis of the seven confirmed Zika cases reported in Guinea-Bissau. The “Asian” lineage consists of strains that have been reported from Asia, the Western Pacific Region, the Region of the Americas and Cabo Verde.
- The “Asian” lineage viruses reported in Singapore likely evolved from the strain that was previously circulating in Southeast Asia and thus do not appear to be the result of imported virus from South America.
- To date, neurological complications have been linked only to post-2007 strains of the “Asian” lineage. These post-2007 strains have been isolated from French Polynesia since 2013, the Region of the Americas from 2015 onwards and from Cabo Verde in 2016.

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. 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 Guillain-Barré syndrome, in these settings.

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.
  - 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.
- 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.
- 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.
- 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 GBS[1]. 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.

[1] http://www.who.int/emergencies/zika-virus/causality/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 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 locally-acquired Zika virus infections without evidence of an outbreak were reported in the two weeks to 14 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/volumes/94/9/16-171082.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 region[2] reporting mosquito-borne Zika virus transmission for the first time in years (2007–2014), and monthly from 1 January 2015 to 14 September 2016

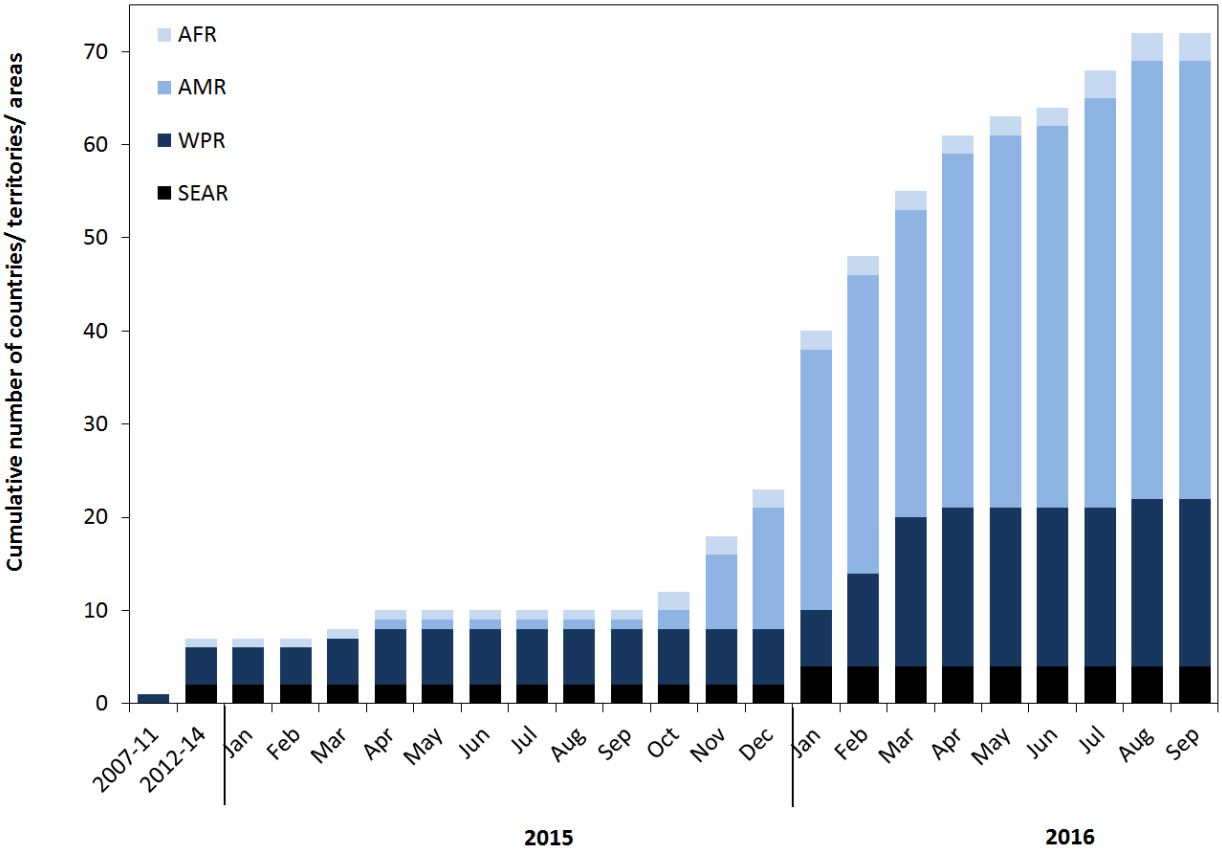
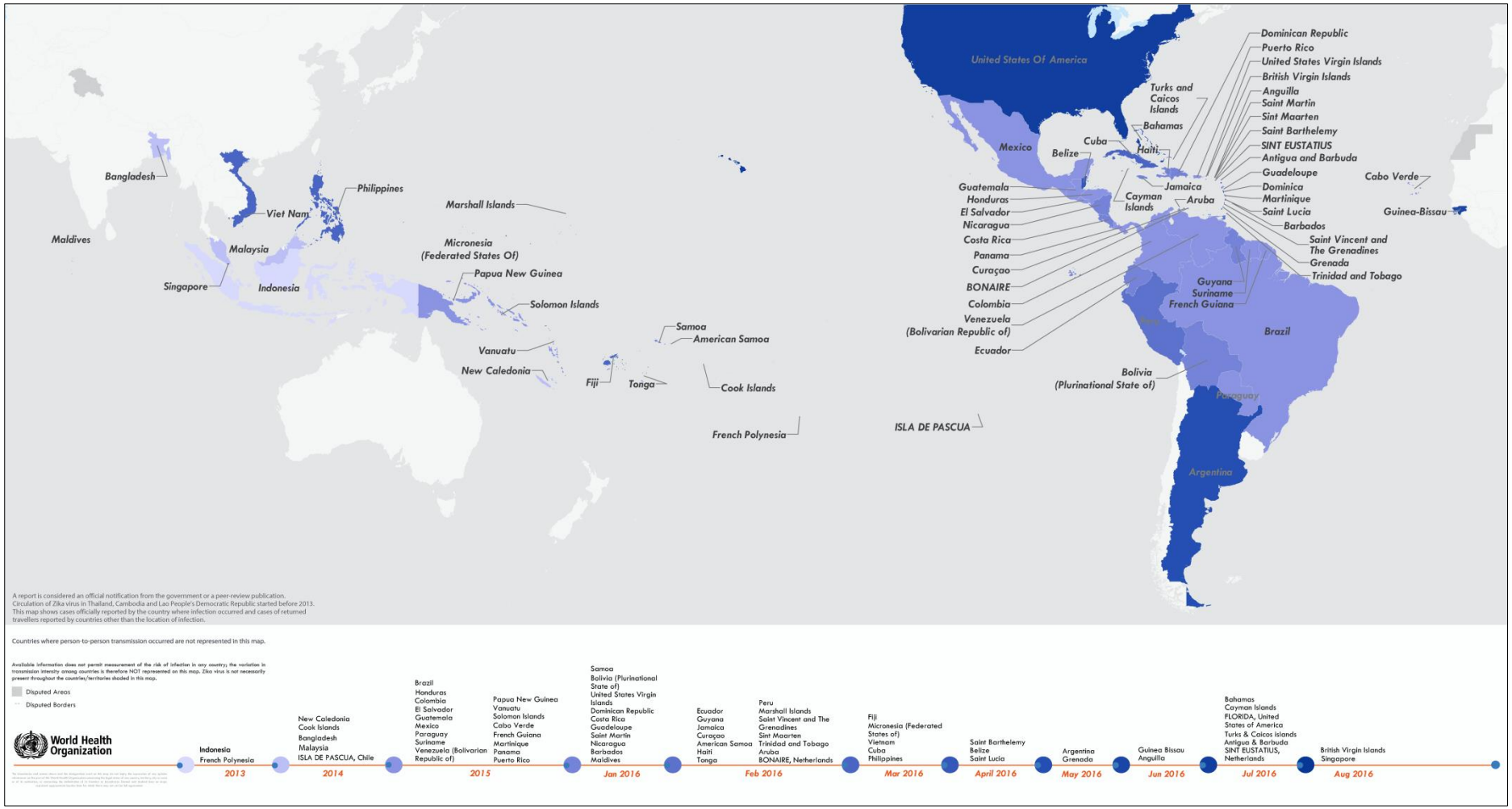


Table 2. Countries reporting non mosquito-borne Zika virus transmission since February 2016

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**

[2] http://www.who.int/about/regions/en/

Figure 2. Global spread of Zika virus from 2013 to 2016 according to the first report of a locally-acquired infection



A report is considered an official notification from the Ministry of Health or a peer-reviewed publication. According to these criteria some countries have been added to the timeline. Circulation of Zika virus in Thailand, Cambodia and Lao People's Democratic Republic started before 2013. This map shows cases officially reported by the country where infection occurred or cases of returned travellers reported by countries other than the location of infection. Countries where person-to-person 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	1888[3]	Brazil
Cabo Verde	9	Cabo Verde
Canada	1	Undetermined
Costa Rica	1	Costa Rica
Colombia	40[4]	Colombia
Dominican Republic	3	Dominican Republic
El Salvador	4	El Salvador
French Guiana	3[5]	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[6]	Paraguay
Puerto Rico	1	Puerto Rico
Slovenia	1[7]	Brazil
Spain	2	Colombia, Venezuela (Bolivarian Republic of)
Suriname	1	Suriname
United States of America*	22[8]	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[9], Guadeloupe[10], 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.*

[3] http://portalsaude.saude.gov.br/images/pdf/2016/setembro/08/Informe-Epidemiol--gico-n---42--SE-35-2016--06set2016.pdf
[4] http://www.ins.gov.co/boletin-epidemiologico/Boletn%20Epidemiolgico/2016%20Boletin%20epidemiologico%20semana%2035.pdf
[5] 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
[6] http://www.mspbs.gov.py/v3/paraguay-reporta-sus-dos-primeros-casos-de-microcefalia-asociados-al-zika/
[7] http://www.nejm.org/doi/pdf/10.1056/NEJMoa1600651
[8] http://www.cdc.gov/zika/geo/pregnancy-outcomes.html
[9] 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
[10] 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