



KEY UPDATES

- Countries and territories reporting mosquito-borne Zika virus infections for the first time in the past week:
 - None
- The investigation by the Ministry of Public Health of Thailand confirmed two cases of Zika-related microcephaly on 30 September 2016. This is the first time that Zika-related microcephaly cases have been confirmed in Southeast Asia. The mothers reported no travel history to areas outside of Thailand.
- 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:
 - Thailand
- Countries and territories reporting Guillain-Barré syndrome (GBS) cases associated with Zika virus infection for the first time in the past week:
 - Mexico

ANALYSIS

- Overall, the global risk assessment has not changed.
- The reporting of two locally acquired cases of Zika-related microcephaly in Thailand confirms that this complication may occur in Southeast Asia. Since attempts at genetic sequencing of this virus were unsuccessful, it is not known whether the mothers were infected with a strain of virus related to those previously isolated in Southeast Asia, or if there has instead been transmission of a virus strain imported from the Americas. A programme for active surveillance of microcephaly was established in February 2016 in Thailand, and is in the process of being integrated into routine arrangements for surveillance of birth defects. If a Zika virus strain previously circulating in Southeast Asia were found to be linked to microcephaly or other complications, it would have significant impact on the global risk assessment, as it would demonstrate that Zika-associated

complications are not limited to the “Asian” strain circulating since 2013 in the Western Pacific Region, the Region of the Americas, and Cabo Verde.

- The risk of Zika-associated complications in countries thought to be endemic for Zika virus remains largely unknown, due both to uncertainty about the risk associated with different Zika strains, and due to uncertainty about population immunity in these endemic settings. To address the latter question, seroprevalence studies are urgently needed.

SITUATION

- 73 countries and territories (Fig. 1, Table 1) have reported evidence of mosquito-borne Zika virus transmission since 2007 (67¹ with reports from 2015 onwards), of which:
 - 56 with a reported outbreak from 2015 onwards (Fig. 2, Table 1).
 - Seven with having possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016.
 - New Caledonia was previously listed in category 3; however, a review of the historical data indicates that Zika cases have been reported at least as recently as June 2016.
 - 10 with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or with the outbreak terminated.
 - New Caledonia has been removed from this category.
- Since February 2016, 12 countries have reported evidence of person-to-person transmission of Zika virus (Table 2).
- 22 countries or territories have reported microcephaly and other CNS malformations potentially associated with Zika virus infection or suggestive of congenital infection (Table 3).
- 19 countries and territories have reported an increased incidence of GBS and/or laboratory confirmation of a Zika virus infection among GBS cases (Table 4).
- Guadeloupe, which has previously reported GBS cases with confirmed Zika virus infections, has reported an increase in incidence of GBS cases in the last week. In Guinea-Bissau, the investigation of five reported cases of microcephaly is ongoing.
- Operational updates:
 - A WHO/PAHO technical mission to Haiti reviewed laboratory molecular detection and supported the implementation of Zika serological diagnosis at the National Public Health Laboratory in Port-au-Prince.
 - In Nicaragua, WHO/PAHO conducted a workshop with 70 participants which focused on care of pregnant women in the context of Zika virus.
 - In Peru, WHO/PAHO organized a workshop for training of clinical management of dengue, Chikungunya and Zika in Jaén city.

¹ The number of countries with reports from 2015 onward has been revised from 71 to 67 according to a review of historical data (see Table 1).

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 Kitts and Nevis; 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)	47
	WPRO	American Samoa; Fiji; Marshall Islands; Micronesia (Federated States of); Samoa; Singapore; Tonga	7
Subtotal			56
Category 2: Countries with possible endemic transmission or evidence of local mosquito-borne Zika infections in 2016	SEARO	Indonesia; Maldives; Thailand	3
	WPRO	Malaysia; New Caledonia; Philippines; Viet Nam	4
Subtotal			7
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**	1
	WPRO	Cambodia**; Cook Islands**; French Polynesia**; Lao People's Democratic Republic; Papua New Guinea; Solomon Islands; Vanuatu	7
Subtotal			10
Total			73

[#]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.

**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 region² reporting mosquito-borne Zika virus transmission for the first time in years (2007–2014), and monthly from 1 January 2015 to 5 October 2016

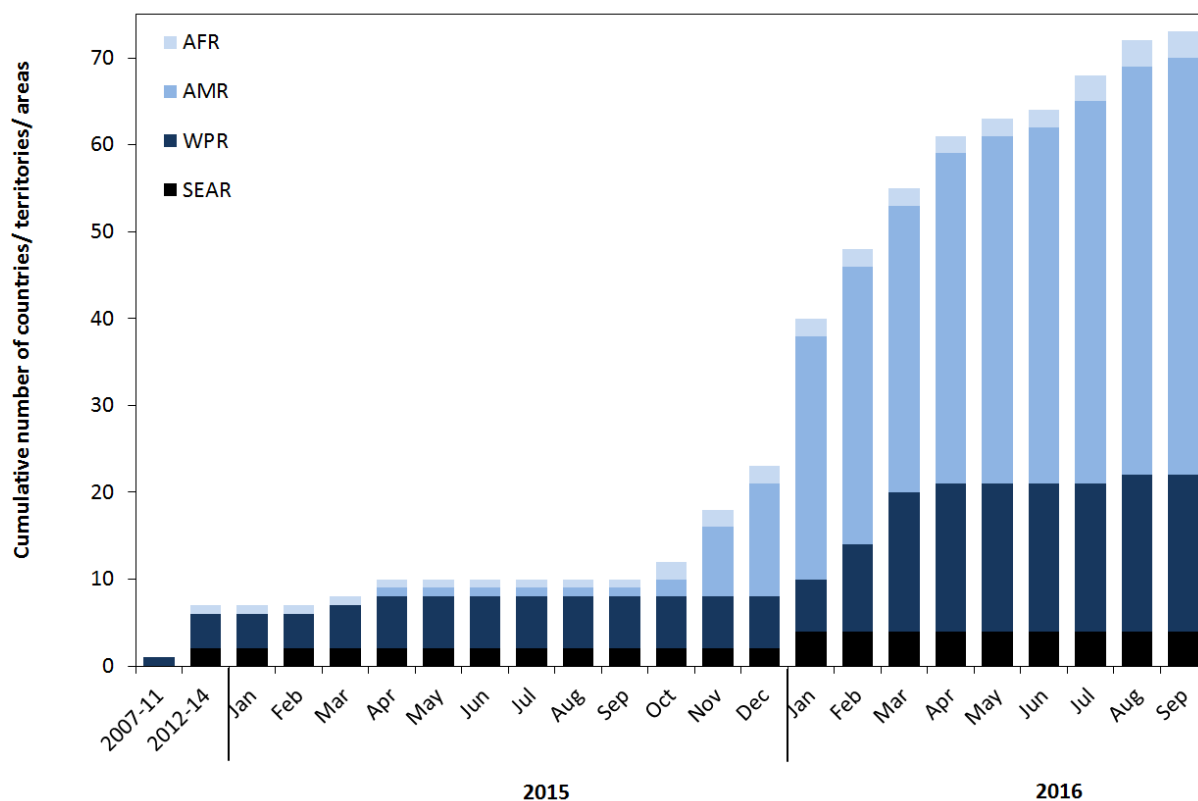
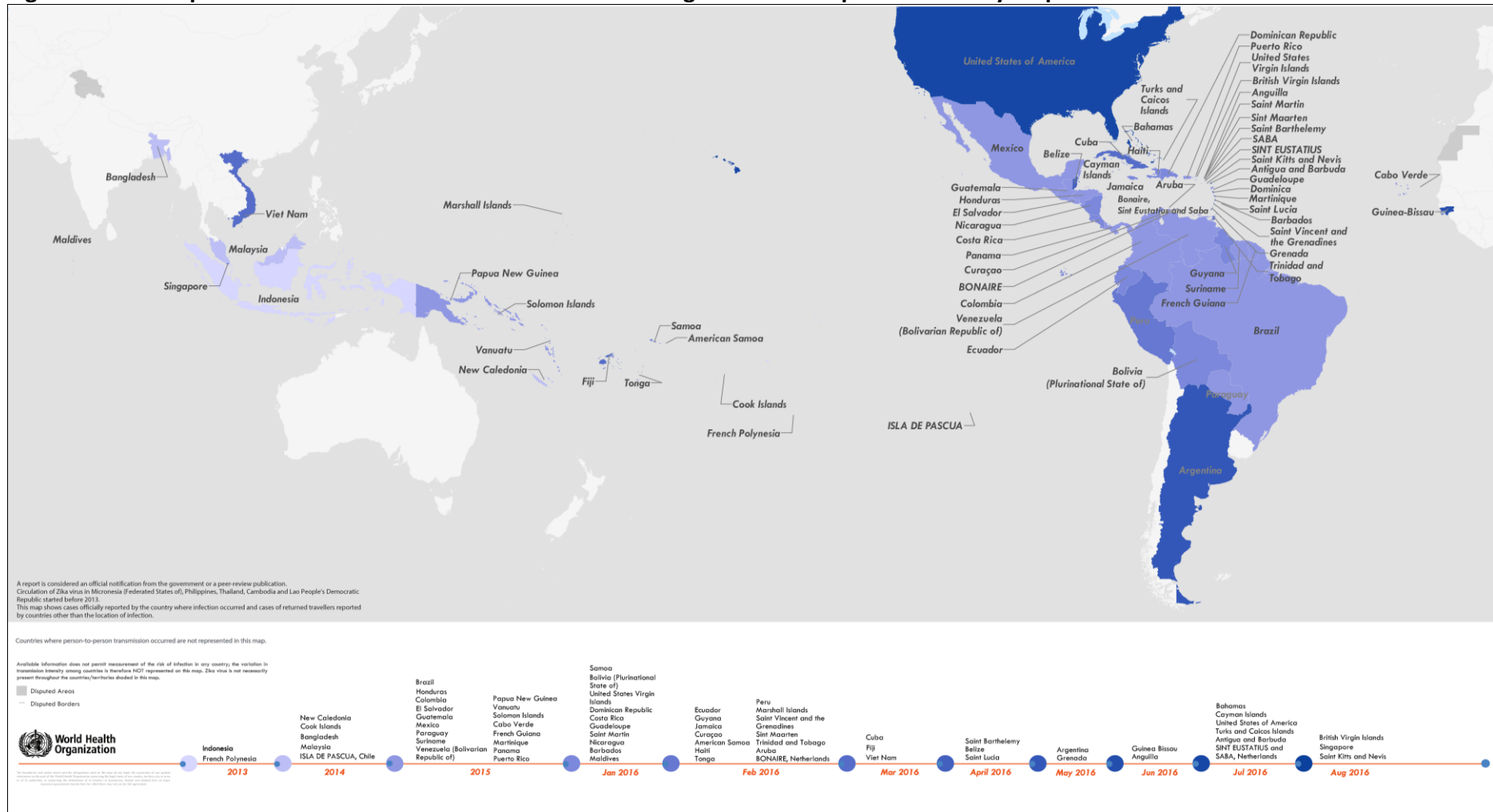


Table 2. Countries reporting non mosquito-borne Zika virus transmission since February 2016

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	1949 ³	Brazil
Cabo Verde	9	Cabo Verde
Canada	1	Undetermined
Costa Rica	1	Costa Rica
Colombia	42 ⁴	Colombia
Dominican Republic	10 ⁵	Dominican Republic
El Salvador	4	El Salvador
French Guiana	3 ⁶	French Guiana
French Polynesia	8	French Polynesia
Guatemala	17 ⁷	Guatemala
Haiti	1	Haiti
Honduras	1	Honduras
Marshall Islands	1	Marshall Islands
Martinique	12 ⁶	Martinique
Panama	5	Panama
Paraguay	2 ⁸	Paraguay
Puerto Rico	1	Puerto Rico
Slovenia	1 ⁹	Brazil
Spain	2	Colombia, Venezuela (Bolivarian Republic of)
Suriname	1	Suriname
Thailand	2	Thailand
United States of America	26 ¹⁰	Undetermined*

*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, Guadeloupe ¹¹ , 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 , Guatemala, Haiti, Mexico, Panama, Puerto Rico

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

**One case living in continental Netherlands was diagnosed in mid-January 2016 and reported by the Netherlands.

³ <http://portalsaude.saude.gov.br/images/pdf/2016/setembro/22/Informe-Epidemiol--gico-n---44--SE-37-2016--21set2016.pdf>

⁴ <http://www.ins.gov.co/boletin-epidemiologico/Boletn%20Epidemiol%202016%20Boletin%20epidemiologico%20semana%2038.pdf>

⁵ http://digeprisalud.gob.do/documentos/?drawer=Boletines%20epidemiol%C3%B3gicos*Boletines%20semanales*2016

⁶ http://digeprisalud.gob.do/documentos/?drawer=Boletines%20epidemiol%C3%B3gicos*Boletines%20semanales*2016

⁷ <http://www.mspas.gob.gt/index.php/en/mspas/noticias/1239-comunicado-ante-la-epidemia-del-virus-zika.html?tmpl=component&print=1&layout=default&page=>

⁸ <http://www.mspas.gob.gt/v3/paraguay-reporta-sus-dos-primeros-casos-de-microcefalia-asociados-al-zika/>

⁹ <http://www.nejm.org/doi/pdf/10.1056/NEJMoa1600651>

¹⁰ <http://www.cdc.gov/zika/geo/pregnancy-outcomes.html>

¹¹ <http://invs.santepubliquefrance.fr/Publications-et-outils/Points-epidemiologiques/Tous-les-numeros/Antilles-Guyane/2016/Situation-epidemiologique-du-virus-Zika-aux-Antilles-Guyane.-Point-au-15-septembre-2016>

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