



KEY UPDATES

- Countries and territories reporting mosquito-borne Zika virus infections for the first time in the past week:
 - None
- 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:
 - Bolivia, Trinidad and Tobago, and Viet Nam
- Countries and territories reporting Guillain-Barré syndrome (GBS) cases associated with Zika virus infection for the first time in the past week:
 - None
- The Ministry of Health and Sport of Myanmar reported a confirmed case of Zika virus. The case is under investigation as to determine if this is an autochthonous (locally-acquired) or imported case.

ANALYSIS

- Overall, the global risk assessment has not changed since last week.
- Viet Nam is the second country in South-East Asia to report microcephaly cases potentially linked with Zika virus. This follows the two microcephaly cases reported in Thailand in the 6 October Zika situation report. Similar to the cases reported in Thailand, genetic sequencing of the virus was not possible therefore it is not known whether the mother was infected with a virus related to the same lineage as previously isolated in South-East Asia, or if there has instead been transmission of a virus imported from another location. The mother of the baby with microcephaly reported in Viet Nam had no history of travel outside of the country. To date, there have been no imported Zika virus cases reported in Viet Nam.

SITUATION

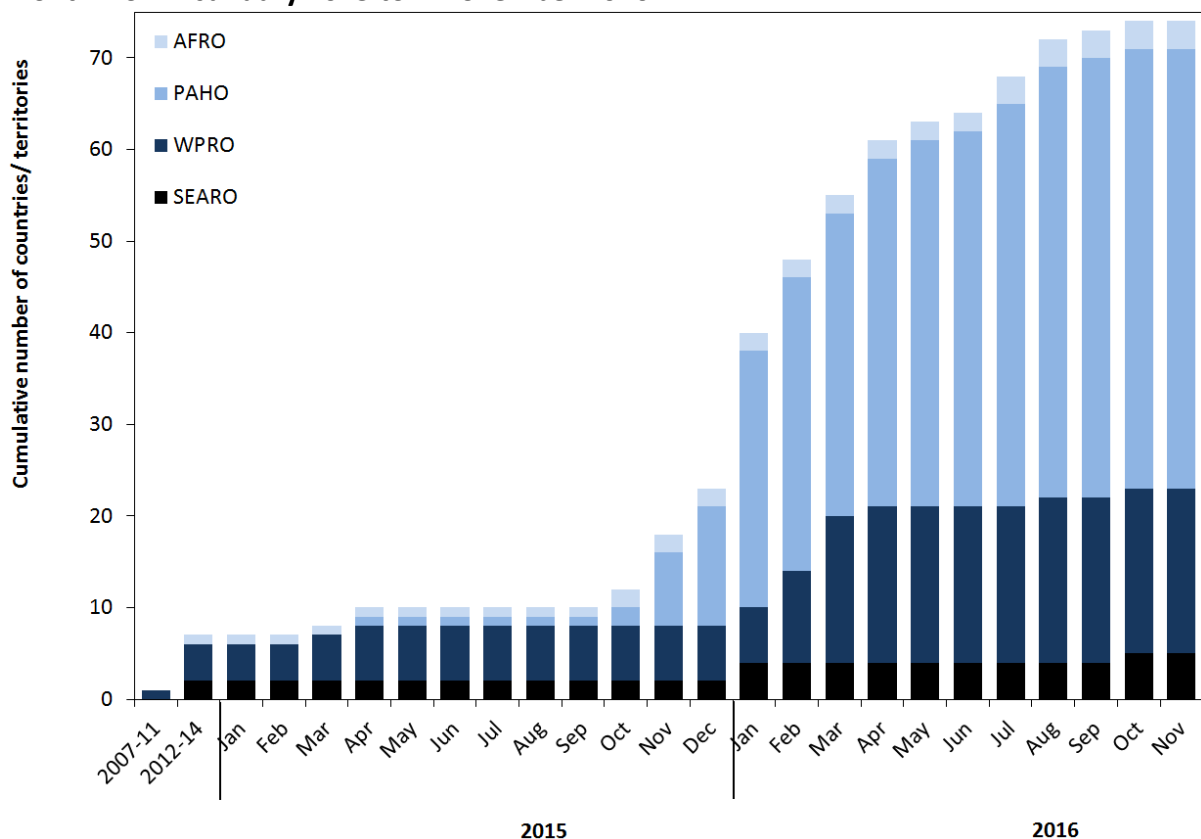
- Seventy-three countries and territories (Fig. 1, Table 1) have reported evidence of mosquito-borne Zika virus transmission since 2007 (67 with reports from 2015 onwards), of which:

- Fifty-six 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.
- Ten with evidence of local mosquito-borne Zika infections in or before 2015, but without documentation of cases in 2016, or with the outbreak terminated.
- Twelve countries have reported evidence of person-to-person transmission of Zika virus (Table 2).
- Twenty-six countries or territories have reported microcephaly and other CNS malformations potentially associated with Zika virus infection, or suggestive of congenital infection (Table 3). Bolivia, Trinidad and Tobago, and Viet Nam are the latest countries to report microcephaly potentially associated with Zika virus infection.
- Nineteen countries and territories have reported an increased incidence of GBS and/or laboratory confirmation of a Zika virus infection among GBS cases (Table 4). Guatemala, 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, six cases of microcephaly detected beginning in April 2016 are being investigated.
- PAHO, the WHO Regional Office for the Americas, and partners coordinated the following: a laboratory workshop and training in serology for Zika diagnosis for participants from eight different countries organized by PAHO Regional Office and the United States Centers for Disease Control and Prevention (CDC) in collaboration with the PAHO/World Health Organization Representative office in Peru (PWR-PER) and WHO (October 2016, National Health Institute, Ministry of Health, Peru), a technical meeting with the Ministry of Health and World Vision for the incorporation of knowledge, attitude and practice (KAP) survey results (October 2016 in Guatemala), a technical meeting to review KAP survey results carried out by the Secretary of Health (October 2016 in Honduras), focus groups were established in the Dominican Republic as part of operational research to determine individual barriers for preventing Zika and vector control in collaboration with the Ministry of Health and the Ministry of Environment (October 2016), and mosquito awareness week was held in Argentina and Colombia (October 2016). Activities in Colombia included training for women community leaders, a workshop for faith-based organisations, a clinical symposium, a presentation of case studies, a workshop for tourist sector on prevention measures and a lessons learned session with local and federal health authorities.
- The following activities are planned by PAHO and partners: a molecular biology workshop on Zika virus and other arboviruses diagnosis is planned (December 2016 in Brazil), a risk communication workshop (November 2016 in Suriname), a meeting to develop guidelines to support first-care level directives (November 2016), and a meeting to analyse mortality causes in GBS cases (November 2016 in Dominican Republic).
- The WHO Regional Office for Europe and partners are organizing the following: a training on mosquito identification (October 2016 in Armenia), a workshop on invasive

mosquitoes and reemerging vector-borne disease in the region (November 2016 in Croatia), a joint WHO, CDC and European Centre for Disease Prevention and Control (ECDC) meeting on the country classifications and data sharing (December 2016 in Denmark), and an expert consultation for developing guidance for vector control for ships (December 2016 in France).

- The WHO Regional Office for South-East Asia and partners held a workshop on Zika prevention and control in Thailand (October 2016) and are planning a workshop on strategic planning for mitigating the risk of Zika virus in India (November 2016).
- The WHO Regional Office for the Eastern Mediterranean and partners are planning the following: a consultative workshop to define the region’s Zika surveillance strategy (November 2016 in Pakistan), training workshops on the diagnosis of Zika virus (November 2016 and January 2017 in Jordan), a training on the incident management system for managing public health emergencies including Zika virus (January 2017 in Tunisia), and an interagency meeting regarding all hazards preparedness with a focus on Zika (2017).

Figure 1. Cumulative number of countries and territories by WHO region¹ reporting mosquito-borne Zika virus transmission for the first time by year (2007–2014), and by month from 1 January 2015 to 2 November 2016



¹ <http://www.who.int/about/regions/en/>

Table 1. Countries and territories that have reported 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.

Table 2. Countries reporting person-to-person 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

Table 3. Countries and territories that have reported 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 virus infections or potentially associated with a Zika virus infection	Probable location of infection
Bolivia	3 ²	Bolivia
Brazil	2079 ³	Brazil
Cabo Verde	9	Cabo Verde
Canada	1	Undetermined
Costa Rica	1	Costa Rica
Colombia	54 ⁴	Colombia
Dominican Republic	10 ⁵	Dominican Republic
El Salvador	4	El Salvador
French Guiana	10 ⁶	French Guiana
French Polynesia	8	French Polynesia
Grenada	1	Grenada
Guatemala	15 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	3 ⁹	Puerto Rico
Slovenia	1 ¹⁰	Brazil
Spain	2	Colombia, Venezuela (Bolivarian Republic of)
Suriname	2	Suriname
Thailand	2	Thailand
Trinidad and Tobago	1	Trinidad and Tobago
Viet Nam	1	Viet Nam
United States of America	28 ¹¹	Undetermined*

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

² <https://www.minsalud.gob.bo/1774-santa-cruz-ministerio-de-salud-confirma-tres-casos-de-zika-en-recien-nacidos>

³ http://portalsaude.saude.gov.br/images/pdf/2016/outubro/31/Informe_Epidemiologico_n49_SE_42_2016-25out2016_10h00.pdf

⁴ <http://www.ins.gov.co/boletin-epidemiologico/Boletn%20Epidemiologico/2016%20Boletin%20epidemiologico%20semana%2042.pdf>

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

⁶ <http://invs.santepubliquefrance.fr/fr/Publications-et-outils/Points-epidemiologiques/Tous-les-numeros/Antilles-Guyane/2016/Situation-epidemiologique-du-virus-Zika-aux-Antilles-Guyane.-Point-au-6-octobre-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=>

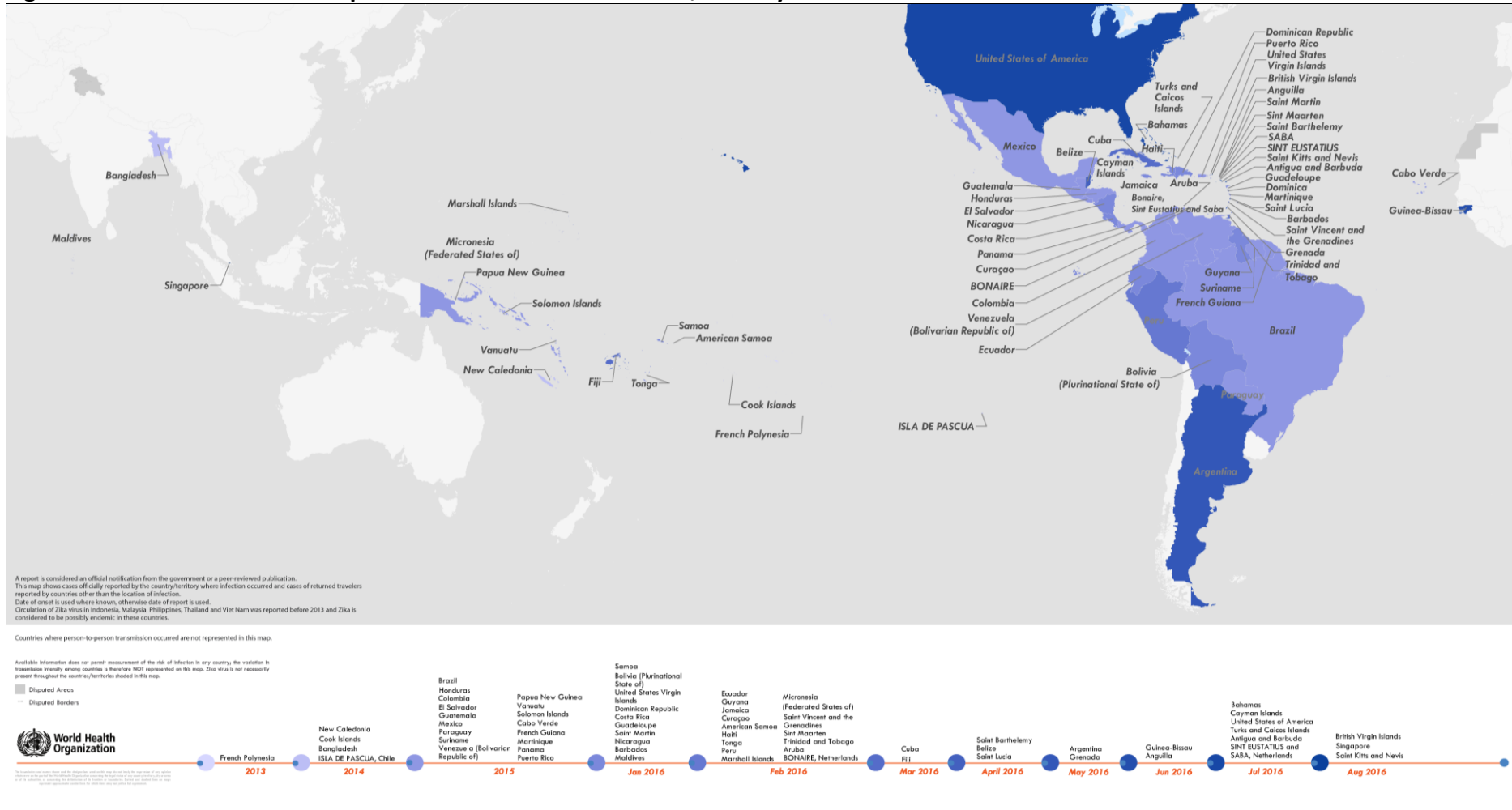
⁸ <http://www.mspbs.gov.py/v3/paraguay-reporta-sus-dos-primeros-casos-de-microcefalia-asociados-al-zika/>

⁹ <http://www.salud.gov.pr/Estadisticas-Registros-y-Publicaciones/Informes%20Arbovirales/Informe%20ArboV%20semana%2041-2016.pdf>

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

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

Figure 2. New detection of mosquito-borne Zika virus infections, January 2013–November 2016



A report is considered an official notification from the government or a peer-reviewed publication. This map shows cases officially reported by the country/territory where infection occurred, and cases of returned travellers reported by countries other than the location of infection. Date of onset is used where known, otherwise date of report is used. Circulation of Zika virus in Indonesia, Malaysia, Philippines, Thailand and Viet Nam was reported before 2013, and Zika is considered to be possibly endemic in these countries. 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 4. Countries and territories that have reported 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 ¹² , Guatemala, Honduras, Jamaica, Martinique, Puerto Rico ¹³ , 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 ¹⁴ , Haiti, Mexico, Panama

*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.

¹² <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>

¹³ http://www.salud.gov.pr/Estadisticas-Registros-y-Publicaciones/Informe%20Sndrome%20GillainBarr/Informe%20de%20Casos%20del%20S%C3%ADndrome%20de%20Guillain-Barr%C3%A9_7Oct2016.pdf

¹⁴ 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