

# ZIKA VIRUS

**What is Zika?**

Zika is a virus transmitted by the *Aedes* mosquito, which also transmits dengue and chikungunya.

**Zika can cause:**

- Mild illness (fever, rash, joint pain)
- In a small number of people, serious complications
- A very small number of people can develop complications after becoming ill with the virus

# Profesionales de la salud

Su papel es vital para cuidar a las personas y reducir los efectos del virus del Zika, el Chikungunya y el Dengue.

Comparten información y orientan a las personas sobre el uso de métodos de protección personal contra las picaduras de mosquitos y brindan información sobre cómo eliminar los criaderos de mosquitos en los hogares.

If you are **pregnant** and live in an area **without #Zika**, **avoid travelling** to places **with the virus**

www.paho.org/zikavirus

# WHO's response to Zika virus and its associated complications

## Report to donors December 2016

Organization:

### Parenthood is a unique experience!

Protect future generations: we are all responsible for their well-being. Join your partner during prenatal visits. Take an active role in promoting the health and well-being of your partner and child.

#AvoidTheBite #FightAedes

### Are you going on vacation?

Pack **pants** **long-sleeved shirts** and **repellent**

**Remember: if you don't get bitten, you won't get #Zika!**

www.paho.org/zikavirus

### ARE YOU PREGNANT? protect yourself AND your baby against Zika!

Use condoms during sexual intercourse and protect yourself from mosquito bites. Schedule prenatal check-ups every month and visit your local healthcare provider. Prenatal care is every woman's right and vital for ensuring a safe pregnancy.

### How to prevent mosquito breeding sites in and around your home

1. Empty, clean, turn over, cover and/or dispose of containers that can hold water, such as tires, buckets and flower pots, both inside and outside of dwellings to eliminate mosquito breeding sites.
2. Change the water in flower vases at least once a week, pouring the used water out over the ground.
3. Start over containers that cannot be thrown away and empty them every week.
4. Clean the water in pet bowls at least once a week.
5. Change all drains and gutters.
6. Keep grass short and weed-free, and keep your patio clean.
7. Keep swimming pools adequately treated with recommended products and frequency.
8. Safety dispose of any unused containers and objects that can accumulate water and serve as breeding sites.
9. Keep girths, shorts and weed-free, and keep your patio clean.

No breeding sites, no mosquitoes, no dengue, chikungunya or Zika

# ZIKA VIRUS

## How is Zika infection prevented?

To prevent mosquito bites that transmit Zika:

- 1. Cover skin with long-sleeve clothing, trousers and hats
- 2. Use insect repellent as recommended by health authorities
- 3. Sleep protected by mosquito nets
- 4. At least once a week, empty, clean, turn over, cover and/or dispose of containers that can hold water, such as tires, buckets and flower pots, both inside and outside of dwellings to eliminate mosquito breeding sites
- 5. Use screens or mosquito nets in windows and doors to reduce contact with mosquitoes
- 6. Controlling the breeding sites of *Aedes* mosquitoes reduces the likelihood of transmission of Zika, chikungunya, and dengue.

### PROFESSIONAIS de saúde

você não decide a ser mãe ou pai sozinho. Você decide com quem vai compartilhar a vida, a maternidade e o amor.

Se você precisa de informações, serviços de qualidade e métodos contraceptivos em áreas de saúde, ou se quiser saber mais sobre o Zika, chikungunya e dengue, procure um profissional de saúde.

### Mulher, em tempos de vírus zika, exerça os seus direitos.

**#ZIKAZERO #COMBATEAEDES #DIRETODASMULHERES**

A decisão de engravidar é sua. Busque informações e métodos contraceptivos nos serviços locais de saúde.

Mães com zika também podem amamentar. O leite materno contém anticorpos, protege o bebê do vírus. Durante a amamentação, o bebê não transmite o vírus para a mãe. Evite tocar o bebê ou compartilhar seus cuidados pessoais. Mantenha a amamentação, como antes de outras mães. Não caso em que o bebê não seja capaz de sugar, consulte um profissional de saúde para orientação e suporte.

www.paho.org/FightAedes

Pan American Health Organization  
World Health Organization

### Pregnancy is a personal decision!

It's Your Right! If you decide that now is not the right time, seek out information and contraceptive methods at your local health center. If you are pregnant, request information to help you and your baby healthy. If pregnant, protect yourself from Zika, avoid mosquito bites and use condoms.

### On vacation? Protect yourself!

Cover your skin, wear pants and long-sleeved shirts, and use repellent.

### Mosquitoes come out at dawn and at dusk

Remember: if you don't get bitten, you won't get #Zika!

### Lo que tienes que saber sobre el mosquito Aedes aegypti

*Aedes aegypti* is the vector principal para dengue, chikungunya y Zika.

1. Está presente en los Américas, Europa y Chile continental.
2. Tiene hábitos domiciliarios, vive dentro y en los alrededores de las casas.
3. Es negro con patas blancas, un dibujo en forma de triángulo en el abdomen.
4. Pica principalmente temprano por la mañana y al atardecer, pero puede picar también en otras horas.
5. Las hembras pican y son las que transmiten el virus de la enfermedad.
6. Necesita sangre humana para reproducirse.
7. Se reproduce en lugares con agua estancada.
8. Se reproduce en recipientes que acumulan agua.
9. El mosquito adulto puede vivir hasta 2 semanas.
10. Puede transmitir el virus de dengue, Zika y chikungunya.
11. Sus huevos pueden sobrevivir hasta 7 años en condiciones de sequía.
12. Un mosquito adulto puede vivir entre 4 y 6 semanas.

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Front cover images: selection of communication materials produced by WHO/PAHO. The materials are used to help inform communities about Zika virus.

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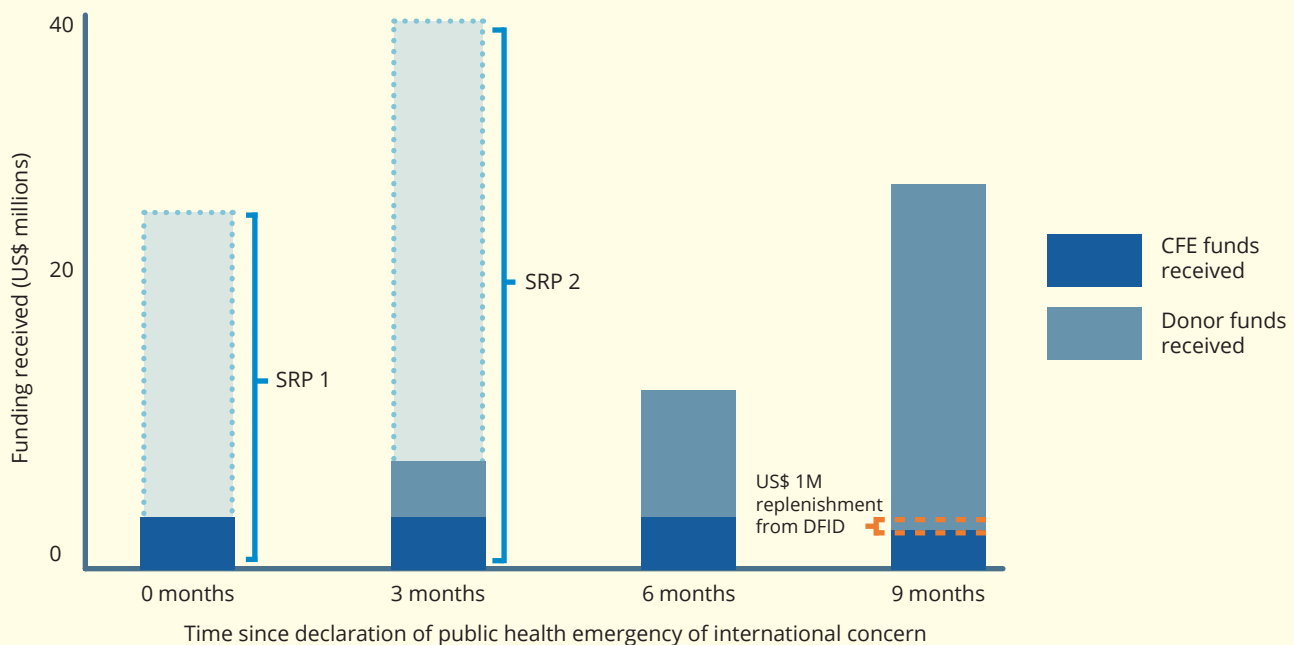
## About this document

On 1 February 2016 WHO Director-General Margaret Chan declared that the spread of Zika virus and its associated complications constituted a public health emergency of international concern (PHEIC). On 14 February, WHO launched a global [Strategic Response Framework and Joint Operations Plan](#), subsequently updated on 15 July, in which WHO and partners set out their strategy for preventing, detecting, and responding to Zika virus and its complications. Support from donors has ensured that this strategy has been realised.

Between February and November 2016 WHO/PAHO received **US\$ 23.9 million** in direct contributions from 13 donors (Annex 1). This document highlights some of WHO's key activities during this period, and points to priority areas for funding through to December 2017, including investment in research and development to foster a better understanding of Zika virus epidemiology, and how we can prevent and treat the adverse health outcomes associated with Zika virus infection.

The figure below shows how funds were received over time to pay for the response outlined in the Zika Strategic Response Plan. Funds from the WHO Contingency Fund for Emergencies (CFE) were disbursed within 24 hours of the declaration of the PHEIC, and were crucial in the early stages of the response, enabling a full Incident Management Structure (IMS) to be implemented in WHO headquarters in Geneva and all WHO regional offices. Without this bridge funding the response would have been delayed until the first contributions from Japan and Australia were received, 6 weeks after the declaration of the PHEIC. Eleven months after the declaration of the PHEIC, and thanks to the generosity of donors, funding has been secured for 60% of the activities set out in the revised [Zika Strategic Response Framework and Joint Operations Plan](#).

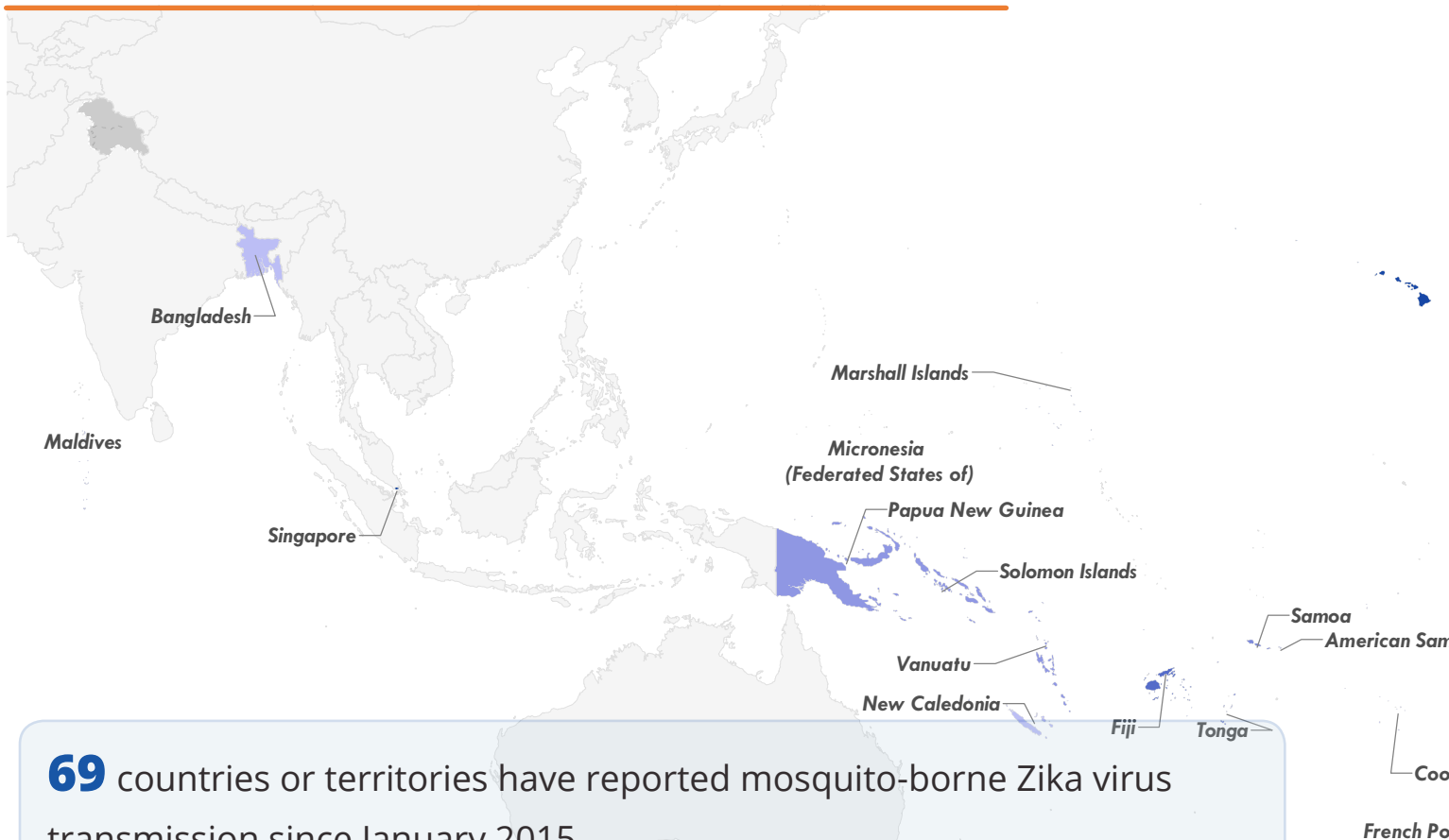
Total funds received (as of 14 December 2016) for Zika response versus time since declaration of public health emergency of international concern



SRP= strategic response plan. It took approximately 9 months before donor funds plus CFE funding matched the requirements of the first Zika Strategic Response Plan (SRP1).

## Zika virus: a long-term global threat

Zika virus was originally [identified in Africa in the 1940s](#), but the mosquito-borne disease had only been linked to a handful of human infections until relatively recently. Things changed in 2007, when a large outbreak on the Pacific Island of Yap, in the Federated States of Micronesia, resulted in an estimated 70% of the island's population of 11 250 being infected over a 3-year period—at that time by far the largest outbreak ever recorded. Between 2013 and 2014, four additional Pacific Island nations documented large outbreaks of Zika virus disease. Then, in early 2015, Zika virus was confirmed to have arrived in the Americas, after the Brazilian Ministry of Health confirmed that Zika virus was the cause of an outbreak of mild disease that had been reported in the northeast of the country since March.



**69** countries or territories have reported mosquito-borne Zika virus transmission since January 2015

**13** countries or territories have reported person-to-person transmission of Zika virus

**29** countries or territories have reported Zika virus congenital syndrome

**20** countries or territories have reported at least one case of Guillain-Barré syndrome associated with Zika virus infection

Darker shades indicate more recent date of first report of Zika virus infection

2013

2014

2015

Jan 2016

The arrival of Zika virus in Brazil, and subsequently other countries in the Americas, was associated with steep increases in the number of babies born with abnormally small heads and other associated developmental problems, now collectively termed Zika virus congenital syndrome. There was also an increase in cases of Guillain-Barré syndrome (GBS), a poorly understood condition in which the immune system attacks the nervous system, sometimes resulting in paralysis. As a result, on 1 February 2016 WHO Director-General Margaret Chan declared that the spread of Zika virus and its associated complications constituted a public health emergency of international concern under the International Health Regulations (2005).



## WHO's long-term global response

On 14 February, two weeks after the declaration of a public health emergency of international concern, WHO launched the global Zika [Strategic Response Framework and Joint Operations Plan](#) (updated on 15 July) to guide the international response. The strategy was initially developed with input from over 30 operational partners, and focused on coordinating activities in affected and at-risk countries across three core areas: **surveillance**, **response** and **research**. The global response to Zika is coordinated from WHO headquarters in Geneva through the Zika incident-management structure (IMS), which enables a dedicated incident manager to draw on expertise and resources from across the Organization. The IMS was replicated at regional level.

The WHO Regional Office for Europe convened a EURO Regional Technical Consultation on Zika virus in Lisbon, Portugal, in June 2016, following the publication of the [Zika Risk Assessment for European Region](#). As a result of the consultation EURO developed a training curriculum to increase awareness of invasive mosquitoes and vector-borne diseases. The curriculum was tested at a 5-day training workshop in October, and was subsequently revised and updated.

In December 2016 the WHO Regional Office for the Eastern Mediterranean held a training on the incident-command system for dealing with a potential Zika outbreak. WHO has also held workshops and training sessions throughout the region to strengthen the capacity of countries to detect birth defects and cases of Zika virus infection.



On 1 February WHO launched the *Pacific Zika Action Plan* in consultation with regional development partners. Following a regional risk-assessment exercise, WHO supported Zika preparedness and response in Fiji, the Federated States of Micronesia, Republic of the Marshall Islands, and Samoa, all of which experienced outbreaks of Zika virus disease in 2016. Activities included: direct technical assistance for the development of response action plans, integrated vector control, clinical guidelines and risk communication/community engagement; specimen shipment and laboratory diagnosis; and logistical support to WHO Division of Pacific Technical Support for the procurement and dispatch of vector control equipment and supplies.

In order to better coordinate the response at global, regional, and national level, WHO established an Emergency [4Ws Portal](#) on its website to provide a central point of reference for partners. The portal shows who is doing what, where, and when at the global, regional, and national level in real time. As of December 2016 there are over **600 activities by 60 partners** tracked through the tool, helping to deliver value for money by ensuring that efforts are directed to where they are most needed, and duplications and deficits are minimised.

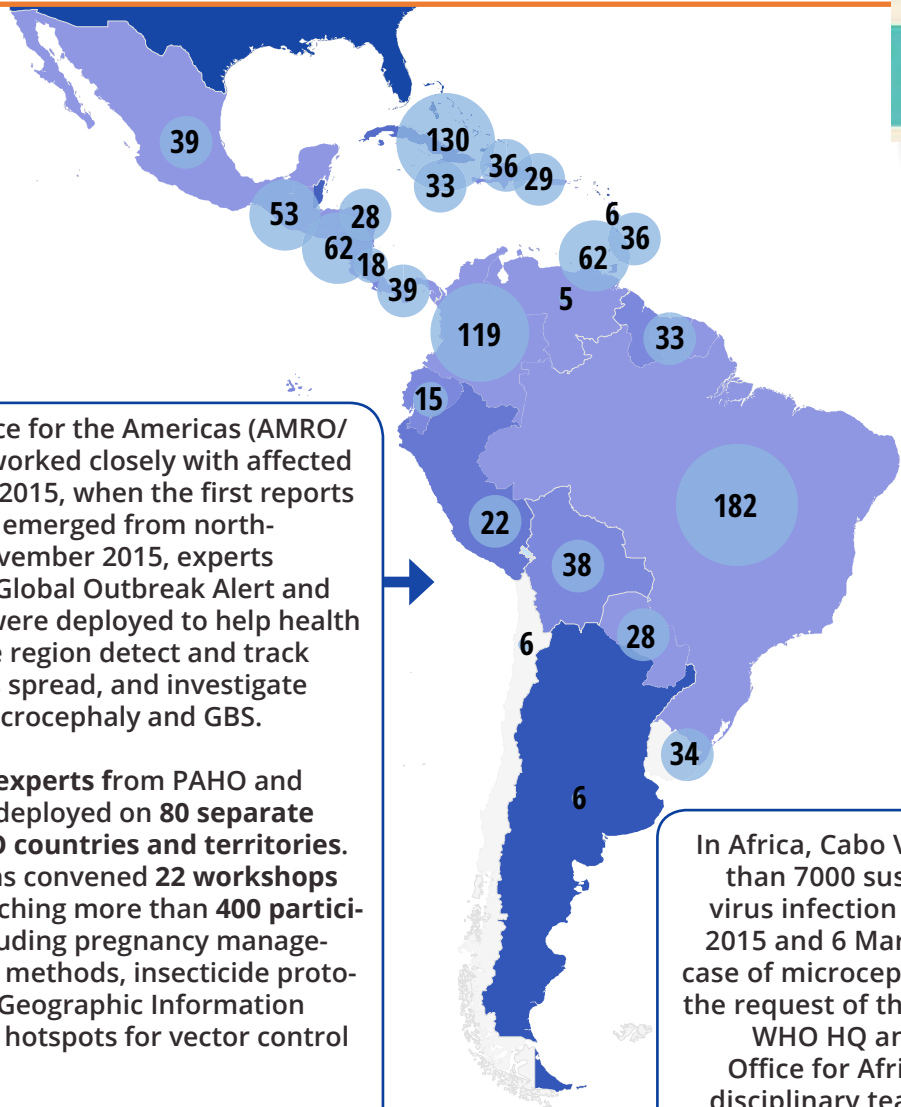
**ZIKA STRATEGIC RESPONSE**

To support national governments and communities to prevent and manage Zika and its complications.

**DETECTION**  
Develop, strengthen and implement surveillance to guide the response.

**PREVENTION**  
Prevent adverse health outcomes through mosquito control, risk communication and community engagement.

**CARE & SUPPORT**  
Strengthen health and social systems to provide services and support to individuals, families, and communities.



WHO's Regional Office for the Americas (AMRO/PAHO) had already worked closely with affected countries since May 2015, when the first reports of Zika virus disease emerged from north-eastern Brazil. In November 2015, experts from PAHO and the Global Outbreak Alert and Response Network were deployed to help health ministries across the region detect and track the virus, prevent its spread, and investigate possible spikes in microcephaly and GBS.

Since then over **175 experts** from PAHO and partners have been deployed on **80 separate missions** to **30 PAHO countries and territories**. In addition, PAHO has convened **22 workshops** at regional level, reaching more than **400 participants**, on topics including pregnancy management, vector control methods, insecticide protocols and how to use Geographic Information Systems in targeting hotspots for vector control activities.

PAHO has also played a key role in the distribution of laboratory reagents to improve the capacity of national and sub-national laboratories to detect Zika virus. For example, PAHO established a strategic warehouse in Barbados to distribute reagents and equipment to Eastern Caribbean Countries in response to an increase in GBS cases.

**X** = number of days deployment

In Africa, Cabo Verde reported more than 7000 suspected cases of Zika virus infection between 21 October 2015 and 6 March 2016, and its first case of microcephaly on 15 March. At the request of the Ministry of Health, WHO HQ and the WHO Regional Office for Africa deployed a multi-disciplinary team to identify operational gaps, support the country's response, and help to finalize a national response plan.

Guinea Bissau reported four cases of Zika virus infection in June 2016. In July and August WHO's Regional Office for Africa led a mission to the country to identify and remedy gaps in surveillance, preparedness, and response capacities.

## Research



Research and evidence are the foundation for sound health policies. On 25 October WHO published the [Zika Virus Research Agenda](#) to support the generation of the evidence needed to inform essential public health guidance and actions to prevent and limit the impact of Zika virus and its complications.

The Research Agenda identifies critical areas of research where WHO is uniquely placed to implement or coordinate global activities.

The Research Agenda is also intended to serve as a catalyst to align and mobilize partners to address core scientific questions about Zika virus. In doing so, it will strengthen relationships between healthcare professionals, researchers, response partners, donors and other stakeholders to advance our understanding of and ability to respond to Zika virus in a number of key areas:

- **Understanding and characterizing Zika virus infection and its complications** through epidemiological studies; clinical studies to determine causality and characterize complications; and laboratory diagnostics.
- **Prevention and control** through vaccine development, vector control, treatment, and regulatory support.
- **Women, communities and health systems** by developing a better understanding of perceptions and behaviours, and health system capacities.
- **Coordination and management** through the development of a common platform for standardized processes, protocols and tools, and for sharing specimens, data and information.



On 14 and 15 March 2016 WHO convened an emergency meeting of its Vector Control Advisory Group to review existing and potential tools for the control of Aedes mosquito populations. The group concluded that existing tools can be effective and should be promoted, and that two new tools—biological control with Wolbachia bacteria and the release of genetically modified male mosquitos—should be piloted on a small scale and rigorously monitored.



WHO and UNICEF led a global public consultation to reach an expert consensus on the desired characteristics for Zika diagnostic tests. These characteristics together make up a target product profile, or TPP. The [TPP for Zika diagnostics was published in April](#). To date, WHO has evaluated 17 different tests for emergency use, with two approvals. In addition, WHO International Standards for Zika Molecular Tests were established by the respective WHO expert committee in October 2016.



The development of a Zika vaccine for women and girls of childbearing age in emergencies remains the priority of Zika research and development. In June 2016, WHO convened regulators and vaccine developers for a first discussion on regulatory considerations for Zika vaccines. WHO has also collaborated with UNICEF and a working group of independent experts to develop [a Zika virus vaccine TPP](#) for use in a future outbreak scenario. And in collaboration with US National Institutes of Health WHO will hold a scientific consultation in early 2017 on Zika virus vaccine development. At present, [31 vaccine candidates](#) are under development.



## Keeping the world informed

Since the first reports of Zika virus in the Americas WHO has ensured that the public, health workers, researchers, and policy makers have been kept informed of all the latest developments.



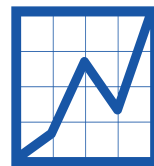
WHO's dedicated [Zika website](#) hosts a rich range of public information materials about Zika virus and its potential complications, including videos, Questions and Answers, factsheets and infographics.



Data are the basis for public health action, and rapid data sharing is critical during an unfolding health emergency. WHO has addressed deficiencies with existing data-sharing mechanisms by creating the [Zika Open repository](#) to allow open and early access to Zika-related research manuscripts that are awaiting publication in peer-reviewed journals.



WHO has rapidly produced and translated more than **20 expert guidance documents** on topics ranging from psychosocial support for mothers to surveillance guidance for entomologists. Guidance is regularly reviewed and updated.



Since the Zika outbreak was declared a Public Health Emergency of International Concern, WHO has published a [weekly situation report](#) on its dedicated Zika site, ensuring the latest epidemiological data are publicly available. PAHO also hosts a dedicated Zika portal featuring comprehensive information on regional activities, guidance, and communication materials.



WHO Zika [apps for android and IOS](#) mobile devices help keep health workers and the public connected to the latest guidance and developments.

## Next steps

On 1 February 2016 the world faced uncertainty over whether Zika virus was associated with microcephaly and GBS. It was largely due to this uncertainty that the outbreak was declared a public health emergency of international concern.

Today we are faced with a different situation. Many important questions have been answered. We know that Zika virus can cause a congenital syndrome that includes microcephaly. We know enough about the epidemiology of the virus to know that it will continue to spread to areas where there are mosquitos able to carry it.

There are, however, many aspects of Zika virus about which we are still in the dark. What is the absolute risk of Zika virus congenital syndrome, and what factors influence that risk? What are the risk factors for microcephaly? What is the extent of infection with ZIKV in areas with *Aedes* mosquitos? What is the risk of sexual transmission of Zika virus? What is the role of natural immunity particularly in the regions with previous outbreaks? These questions and many more are best answered by a sustained programme of work. It was this reasoning that led the fifth Emergency Committee on Zika and Microcephaly to recommend that WHO Director-General Margaret Chan declare the end of the public health emergency of international concern. And it is in this spirit that WHO will now initiate the transition from a response guided by an emergency Incident Management Structure to a long-term programme of work that, in many respects, will require an escalation of activity to ensure that all at-risk and affected countries are able to fight Zika virus and manage its complications.

WHO will continue to partner with countries to strengthen surveillance and develop national response plans. We will continue to co-ordinate the global activities of more than 60 partners. And through the Zika Virus Research Agenda we will continue to facilitate research in all areas, from characterization of the epidemiology of Zika virus, to looking at barriers to care, to fast-tracking the development of diagnostics, therapeutics, and vaccines.

After initial funding from the WHO Contingency Fund for Emergencies, support from donors was crucial in enabling WHO and partners to put the Zika Strategic Response Framework and Joint Operations Plan into action. It is equally important that the support from donors be maintained during and after the transition from an emergency programme, as a Zika Task Force formulates a Global Zika Strategy for the long-term management of the disease.



*Zika virus is here to stay and WHO will continue to work with countries so they're best prepared to deal with this acute public health priority, with new tools, with better data and with the best scientific advice possible to inform their response as we all collectively learn more about this public health threat.*



Peter Salama

Executive Director, WHO  
Health Emergencies  
Programme

In Tegucigalpa, Honduras, schoolchildren educate the local population about the benefits of vector control  
Credit: WHO/PAHO



# Annex 1

## Total funding (US\$ 23.9 million): February—December 2016

