

Epidemiological Update

Increase of malaria in the Americas

30 January 2018

Situation summary

Following a continued decrease in the number of malaria cases from 2005 to 2014 in the Region of the Americas, an increase was observed in 2015, 2016, and most recently in 2017. In 2016, 9 countries of the Region (**Colombia, Ecuador, El Salvador, Guyana, Haiti, Honduras, Nicaragua, Panama**, and the Bolivarian Republic of **Venezuela**) reported an increase in malaria cases.

In 2017, five countries reported an increase in malaria cases: **Brazil, Ecuador, Mexico, Nicaragua**, and **Venezuela**. In addition, **Cuba** and **Costa Rica** reported indigenous cases and **Honduras** reported malaria cases in an area where cases had not been detected recently. Following are summaries of the malaria situation in several countries of the Region.

In **Brazil**, the International Health Regulations (IHR) National Focal Point reported that between January and November of 2017, there were 174,522 malaria cases reported in the Amazon region, representing an increase in comparison to the same period of 2016 when 117,832 malaria cases were reported. In 2017, the same states, with the exception of Mato Grosso, presented an increase compared to 2016 (**Table 1**). The states reporting the most cases were Amazonas, Pará, and Acre. In 2017, 10% (17,411 cases) of the reported malaria cases in the Amazon region, correspond to malaria due to *P. falciparum* and mixed infections, representing a total higher than that reported for the same period in 2015 (14,084) and in 2016 (12,366).¹

Table 1. Malaria cases reported in the Amazon region, by state. Brazil. January to November of 2016 and 2017.

State	2016	2017	Differential percentage
Acre	31,297	32,463	4%
Amazonas	45,611	74,423	63%
Amapá	11,348	13,931	23%
Maranhão	700	888	27%
Mato Grosso	495	476	-4%
Pará	13,235	33,122	150%
Rondônia	6,817	7,182	5%
Roraima	8,307	11,966	44%
Tocantins	22	71	223%
Total	117,832	174,522	48%

Source: Information reported by the Brazil International Health Regulations (IHR) National Focal Point

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In **Costa Rica**, the Ministry of Health reported 12 indigenous cases of malaria in 2017, in the cantons of San Carlos (6 cases), Matina (3 cases), and Sarapiquí (3 cases). This represents an increase compared to 2016 when 4 indigenous cases were notified.^{1,2} The detection of cases in these localities highlights the risk of re-establishment of transmission in areas where ecological conditions persist.

In **Ecuador**, between epidemiological week (EW) 1 and EW 52 of 2017, a total of 1,279 malaria cases were reported, of these 72% correspond to *P. vivax* and 28% to *P. falciparum*.³ The number of cases reported in 2017 is higher than that reported in 2016 (926).⁴ The four provinces with the highest number of cases in 2017 were Morona Santiago (489), followed by Orellana (240), Pastaza (223), and Esmeraldas (215).

In **Honduras**, the IHR National Focal Point reported the first indigenous cases of *P. vivax* malaria on 30 August 2017 in the village of La Charamusca, municipality of Esquías, department of Comayagua. A total of 34 confirmed cases were reported with date of onset of symptoms between EW 27 and 37 of 2017. During the outbreak investigation, the presence of *Anopheles pseudopunctipennis* was reported as a vector that could be involved in the transmission. The low number of cases registered in the department of Comayagua in the last five years and the absence of transmission for several years in the affected locality, highlights the importance of maintaining surveillance and response capabilities in areas where transmission has been interrupted.

In **Mexico**, the Secretariat of Health notified 704 malaria cases between EW 1 to EW 50 of 2017, representing an increase from the 514 cases reported in the same period of 2016.⁵ The increase was particularly notable in the states of Chiapas, Chihuahua, and Tabasco, and highlighted are cases in territories without recent transmission (San Luis Potosí).

In **Nicaragua**, between EW 1 and EW 52 of 2017, there were 10,846 malaria cases reported, representing an increase compared to the same period in 2016 when 6,209 cases were reported.⁶ The majority of the cases have been reported from the North Caribbean Coast Autonomous Region.⁷

The **Venezuela**, IHR National Focal Point notified the Pan American Health Organization, Regional Office of the World Health Organization (PAHO/WHO), on 27 November 2017, that between EW 1 and EW 42 of 2017 there were 319,765 malaria cases reported between EW 1

¹ Costa Rica Ministry of Health. A health alert for malaria (14 September de 2017). Available at: <https://www.ministeriodesalud.go.cr/index.php/alertas/alertas-sanitarias/nacionales>

² Costa Rica Ministry of Health. Epidemiological Bulletin No.1 of 2018 (15 January 2018). Available at: <https://www.ministeriodesalud.go.cr/index.php/vigilancia-de-la-salud/boletines>

³ Ecuador Ministry of Health. Malaria - EW 52 of 2017. Available at: http://www.salud.gob.ec/wp-content/uploads/2016/09/vvMalaria-SE-52_2017.pdf

⁴ Ecuador Ministry of Health. Malaria - EW 52 of 2016. Available at: <http://www.salud.gob.ec/wp-content/uploads/2016/09/MALARIA-SE-52.pdf>

⁵ Mexico Department of Health. Epidemiological Bulletin No. 51, Week 51(1 January 2018). Available at: <https://www.gob.mx/cms/uploads/attachment/file/284466/sem51.pdf>

⁶ Nicaragua Ministry of Health. Weekly Epidemiological Bulletin No. 52 of 2017. Available at: <http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-Vigilancia-de-la-Salud-P%C3%B3blica/Boletines/Boletines-2017/Bolet%C3%ADn-Epidemiol%C3%B3gico-Semana-No.-52/>

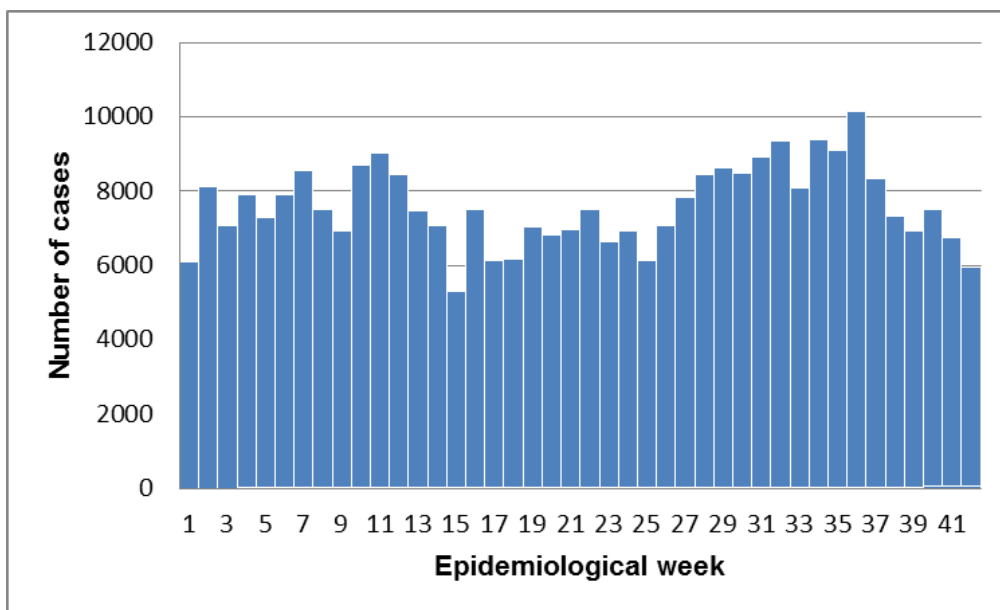
⁷ Nicaragua Ministry of Health. 2017 News: State of Emergency declared for malaria in the North Caribbean (19 May 2017). Available at: <http://www.minsa.gob.ni/index.php/component/content/article/106-noticias-2017/3497-declaran-estado-de-emergencia-por-malaria-en-el-caribe-norte>

and EW 42 of 2017 (**Figure 1**); representing an increase in comparison to the accumulated reported cases in 2016 (240,613).⁸

Of the cases reported in 2017, 77% were due to *P. vivax*, 17% due to *P. falciparum*, 6% due to mixed infections, and <1% due to *P. malariae*.

The number of malaria cases reported in 2017 was higher than the annual average recorded in the past 29 years (1988-2016).⁹

Figure 1. Malaria cases reported by epidemiological week. Venezuela, EW 1 to EW 42 of 2017



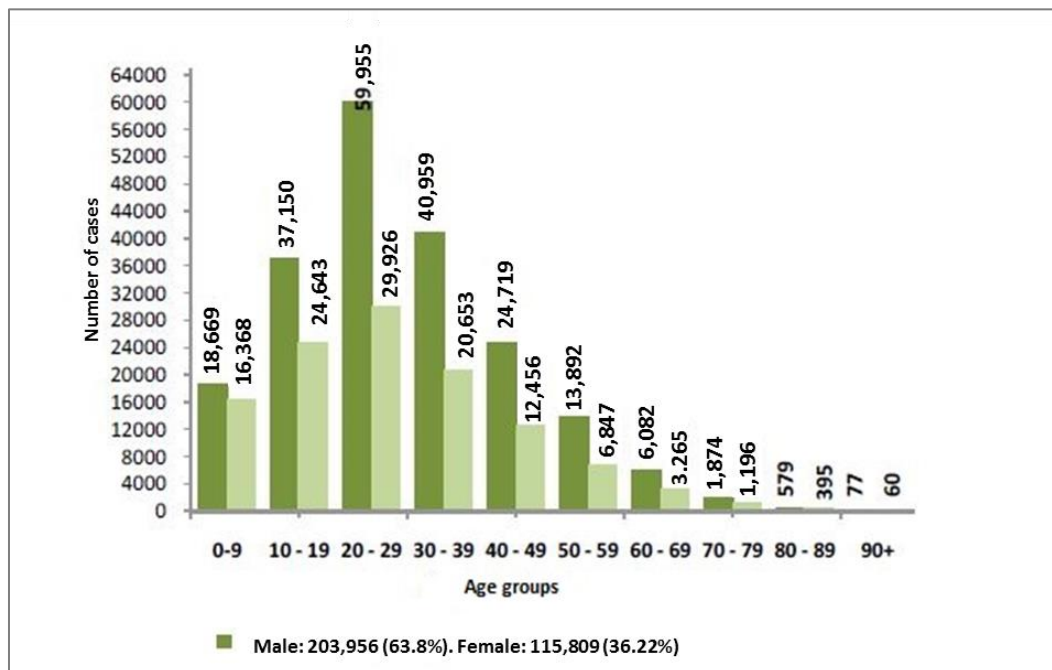
Source: Data provided by the Venezuela IHR National Focal Point and reproduced by PAHO/WHO.

The three states with the highest number of confirmed cases during 2017 were Bolívar (205,215), followed by Amazonas (52,471) and Sucre (45,622). The majority of municipalities in these three states are characterized as having very high and high risk of malaria transmission according to the annual parasitic incidence (API). The risk of malaria is highest in those of 20 to 39 years and account for nearly half of all the cases (47%), showing the risk related to economic activities. Of the total confirmed cases, 64% (203,956) are male and across all age groups more cases in males were reported than in females (**Figure 2**).

⁸ World malaria report 2017. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO. Disponible en: <http://apps.who.int/iris/bitstream/10665/259492/1/9789241565523-eng.pdf?ua=1>

⁹ Pan American Health Organization / World Health Organization. Epidemiological Alert: Increase in cases of malaria, 15 February 2017, Washington, D.C. OPS/OMS. 2017. Available at: <http://bit.ly/2jIR6L>

Figure 2. Malaria cases according to age group and sex. Venezuela. EW 1 to EW 42 of 2017



Source: Data reported by the Venezuela IHR National Focal Point and reproduced by PAHO/WHO.

Recommendations

At the beginning of 2017, the Pan American Health Organization / World Health Organization (PAHO / WHO) had alerted about the risk of having outbreaks, increased cases and deaths in endemic areas, as well as possible re-establishment of the disease in areas where transmission has been interrupted. It was emphasized that the achievements on the path towards eliminating malaria in the Region can be compromised if surveillance and malaria control interventions are not maintained or strengthened.

Although the Member States made efforts in response to PAHO/WHO's alert, the increase in cases during 2017 indicates the persistence of the constraints and gaps in the response. For this reason, PAHO/WHO urges the strengthening of actions for surveillance and control of malaria, especially measures related to the early detection of cases, the timely diagnosis, and the immediate initiation of treatment. The main intervention to control malaria is to shorten the time period between the onset of symptoms, the treatment of the case, and its investigation and response.¹⁰

PAHO / WHO recommends that in endemic areas, health care services intensify surveillance by improving the coverage of case diagnosis in health centres and providing diagnosis and complete treatment with antimalarials much closer to the communities at risk. In endemic areas with active transmission, periodic analysis of the data should allow the identification of clusters of cases and populations at risk to direct active case detection and improve the timeliness of diagnosis and treatment.

¹⁰ The T3 initiative against malaria. Available at: http://www.who.int/malaria/areas/test_treat_track/en/

In areas with low transmission, the occurrence of new cases should trigger investigation of each case, in order to determine its status as imported, introduced, or indigenous. It is essential that the investigation be carried out within a few days of detection to guide the response that must be directed to the interruption or prevention of the re-establishment of transmission. In this scenario, the reactive case detections, which refers case detection in people related to the diagnosed case or the cluster of cases, is an essential measure of the response.

PAHO/WHO urges Member States to ensure the quality of parasitological diagnosis and prevent the shortage of medicines. Antimalarial supply chain and case management policies should contemplate the permanent availability of medicines and training of personnel for the treatment of malaria (including severe cases).

The countries of Central America, Hispaniola or malaria free Caribbean- territories should consider the risk of the importation of chloroquine resistant *P. falciparum* strains from endemic areas in South America and other continents.

Vector control interventions should complement case detection and management strategies. Indoor residual spraying (IRS) and the mass distribution of long lasting insecticide treated nets (LLINs) are key interventions in the control of malaria vectors. Measures that mainly affect mosquito survival (IRS and LLINs) have a greater impact on the interruption of transmission than those actions that seek to reduce vector density,¹¹ such as larval control and spatial application of insecticides. Malaria larval control is effective in situations where mosquito breeding sites are few, fixed and findable, and where the density of the human population is sufficient to justify the resources that are necessary for this intervention.¹² Spatial applications of insecticides are not currently recommended because of their limited effect on malaria control.¹³

Malaria control in active foci and the prevention of the spread of the disease require proactive surveillance of the determinants and social phenomena that propagate transmission (movement of people related to economic activities, agricultural farms or mining). It also requires the mobilization of other actors in interventions adapted to the context of the affected populations.

PAHO/WHO urges national malaria programs and the agencies in the Ministries of Health to coordinate the health care and surveillance of at risk communities and address the barriers at local levels may be leading to delays in the detection, treatment, and follow-up of cases. Reducing the burden of disease and the risk of transmission at the national level depends upon malaria control in principal foci. PAHO/WHO emphasizes the need for Member States to continue efforts to achieve the goals of the *Plan of Action for the Elimination of Malaria 2016-2020* related to the interruption of local transmission, reduction of case incidence and associated mortality.

¹¹ WHO Decision making criteria and procedures for judicious use of insecticides. Available at: http://apps.who.int/iris/bitstream/10665/67365/1/WHO_CDS_WHOPES_2002.5_Rev.1.pdf

¹² WHO 2013. Larval source management: a supplementary measure for malaria vector control: an operational manual. Available at: http://apps.who.int/iris/bitstream/10665/85379/1/9789241505604_eng.pdf

¹³ WHO 2012. Global Plan for Insecticides resistance management in malaria vectors. Available at: http://apps.who.int/iris/bitstream/10665/44846/1/9789241564472_eng.pdf

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3. World Malaria Report 2016. Geneva: World Health Organization; 2016. License: CC BY-NC-SA 3.0 IGO. Available at: <http://www.who.int/malaria/publications/world-malaria-report-2016/report/en/>