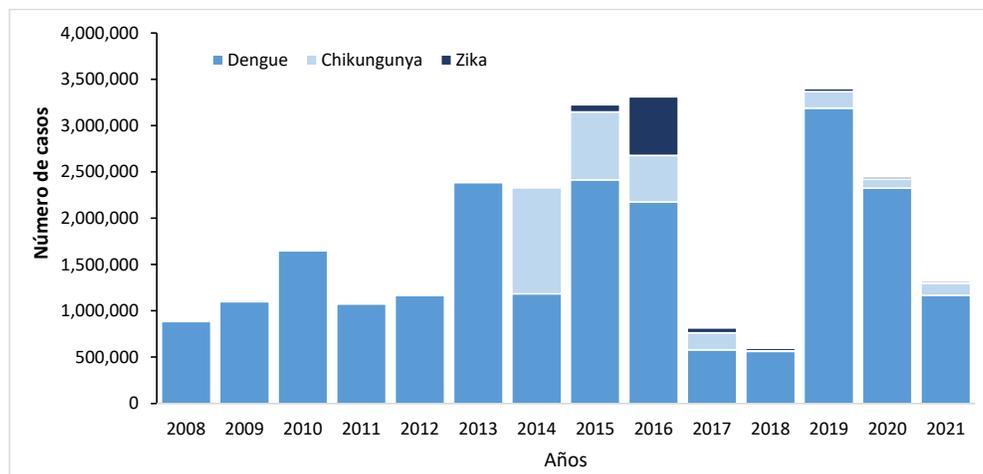


Situation summary

In the Region of the Americas, between epidemiological week (EW) 1 and EW 49 of 2021, a total of 1,324,108 cases¹ of arboviral diseases were reported. Of those, 1,173,674 (89%) were dengue cases, 131,630 were chikungunya cases, and 18,804 were Zika cases.

Figure 1 shows the circulation pattern of dengue, chikungunya and Zika in the last 14 years. Since 2014, the impact of the introduction of chikungunya (December 2013) is observed. Similarly, after the introduction of the Zika in 2015, there was a widespread circulation of the virus in 2016. However, the circulation of dengue has continued to predominate.

Figure 1. Distribution of reported cases of dengue, chikungunya, and Zika by year of report. Region of the Americas, 2008-2021 (up to EW 49⁴ of 2021).



Source: Data entered into the Health Information Platform for the Americas (PLISA, PAHO / WHO) by the Ministries and Institutes of Health of the countries and territories of the Region. Available at: <https://www.paho.org/data/index.php/en/>. Accessed on 21 December 2021.

In the Region of the Americas, the total number of cases of arboviral disease reported in 2021 as of EW 49 (1,324,108 cases) represents approximately a 45% relative decrease compared to the same period in 2020 (2,408,928 cases). In 2021, as of EW 49, in the Region of the Americas, during the first semester of 2021 an upward trend is observed in cases of dengue, chikungunya, and Zika, which reached their peak in EW 14, EW 22 and EW 26, respectively (**Figures 2-4**).

¹ Data available in the Health Information Platform for the Americas (PLISA, PAHO/WHO), accessed on 22 December 2021. Available at: <https://bit.ly/314Snw4>

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: Dengue, chikungunya and Zika in the context of COVID-19. 23 December 2021, Washington, D.C. PAHO / WHO. 2021

In the Region of the Americas, dengue is the arbovirus that causes the highest number of cases, with epidemics that occur cyclically every 3 to 5 years. In 2019, the highest number of dengue cases occurred in the Region of the Americas; more than 3.1 million cases were reported, including 28,203 severe dengue cases and 1,773 deaths. Additionally, the simultaneous circulation of other arboviruses, such as chikungunya and Zika, both transmitted by the same vector, *Aedes aegypti*, which is present in almost all the countries and territories of the Region of the Americas.

Since 2020, the circulation of the dengue virus and other arboviruses has been occurring simultaneously with the active transmission of the SARS-CoV-2 virus in endemic countries and territories in the Region of the Americas. Meanwhile, new variants of concern of SARS-CoV-2 are detected and inadequate coverage of the vaccine against COVID-19, in endemic areas of these arboviruses where the public health and social measures to prevent COVID-19 are relaxing, pose a complex epidemiological situation, a high demand in health services, as well as a constant challenge for health systems in all its components and levels, including epidemiological surveillance.

Additionally, in December, several countries in the Region could experience an increase in precipitation, which, depending on its magnitude and impact in the endemic areas of the aforementioned arboviruses, could constitute an additional burden of arbovirus diseases for health systems in affected areas.

The following is the epidemiological situation of dengue, chikungunya, and Zika in the Region of the Americas.

Dengue

Between EW 1 and EW 49¹ of 2021, a total of 1,173,674 cases of dengue were reported in the Region of the Americas, with a cumulative incidence rate of 118 cases per 100,000 population. The highest cumulative incidence rates have been reported in the following subregions², in decreasing order: the Southern Cone with 323 cases per 100,000 population, the Andean subregion with 89 cases per 100,000 population, and the Central American Isthmus and Mexico with 56 cases per 100,000 population.

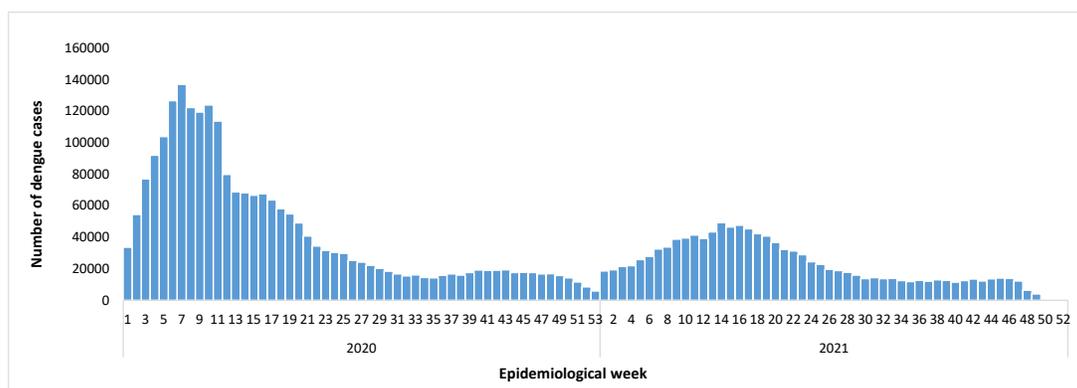
In 2021, as of EW 49, of the 1,173,674 cases reported in the Region, 492,418 (42%) were laboratory-confirmed, and 2,821 (0.24%) were classified as severe dengue. The highest number of severe dengue cases were reported by the following countries: Colombia with 864 cases, Honduras with 851 cases, and Brazil with 346 cases. Additionally, during the same period, a total of 387 deaths were reported in the Region (case-fatality rate: 0.033%).

All four dengue virus serotypes (DENV 1, DENV 2, DENV 3, and DENV 4) are present in the Americas Region. In 2021, as of EW49, co-circulation of all four serotypes was detected in Colombia, Guatemala, Mexico, and Venezuela while in French Guiana, and Martinique, serotypes DENV 1, DENV 2, and DENV 3 have been co-circulating, and in Argentina, Honduras, and Paraguay, DENV 1, DENV 2, and DENV 4 have been co-circulating³.

² Note: the subregions and the corresponding countries and territories follow the divisions described in the Health Information Platform for the Americas (PLISA), available at: <https://bit.ly/3lGwSwc>

³ More information on circulating serotypes by country is available at: PAHO/WHO Health Information Platform for the Americas (PLISA): <https://bit.ly/3l4Snw4>

Figure 2. Distribution of cases of dengue by epidemiological week (EW), Region of the Americas, 2020-2021 (up to EW 49⁴ of 2021).



Source: Data entered into the Health Information Platform for the Americas (PLISA, PAHO / WHO) by the Ministries and Institutes of Health of the countries and territories of the Region. Available at: <https://www.paho.org/data/index.php/en/>. Accessed on 21 December 2021.

The following is a summary of the epidemiological situation for dengue in subregions with the highest cumulative incidence rates in 2021:

Southern Cone ⁵

between EW 1 and EW 49 of 2021, a total of 936,004 cases of dengue were reported with a cumulative incidence rate of 323 cases per 100,000 population, including 346 cases classified as severe dengue and 234 deaths. The case-fatality rate was 0.025%. Between EW 1 and EW 14, there has been an upward trend in the number of reported cases, but it does not exceed the total number reported in 2020 during the same period in this subregion. During the same period, among the sub-regions in the Region of the Americas, the Southern Cone reported the highest number of dengue cases.

In 2021, as of EW 49, the countries with the highest incidence rates in this subregion are: **Brazil**⁴ (428 cases reported per 100,000 population) and **Paraguay** (220 cases per 100,000 population)¹.

Andean subregion ⁶

Between EW 1 and EW 49 of 2021, a total of 127,613 cases of dengue were reported, with a cumulative incidence rate of 89 cases per 100,000 population, including 1,106 cases classified as severe dengue and 101 deaths. The case-fatality rate was 0.08%. During the same period all four dengue virus serotypes were reported in Colombia and Venezuela. The number of cases reported per week remains below what was reported during the same period in 2020.

The countries with the highest incidence rates in this subregion are **Peru** (140 cases per 100,000 population), **Ecuador** (108 cases per 100,000 population), and **Colombia** (95 cases per 100,000 population).

⁴ In the PLISA platform, arboviruses data for Brazil is updated as of EW 47 of 2021. Out of the total cumulative number of cases of arboviral diseases reported in the Region of the Americas until EW 49 of 2021, 78% of dengue cases, 97% of chikungunya cases, and 85% of Zika cases correspond to Brazil.

⁵ Argentina, Brazil, Chile, Paraguay, and Uruguay.

⁶ Bolivia, Colombia, Ecuador, Peru, and Venezuela.

Central American Isthmus and Mexico subregion ⁷

Between EW 1 and EW 49 of 2021, a total of 101,824 cases of dengue were reported with a cumulative incidence rate of 56 cases per 100,000 population, including 1,160 cases classified as severe dengue and 26 deaths. The case-fatality rate was 0.03%. During the same period all four dengue virus serotypes were reported in Guatemala and Mexico. The number of cases reported per week remains below that reported during the same period in 2020.

In 2021, as of EW 49, the countries with the highest incidence rates in this subregion are **Nicaragua** (529 cases per 100,000 population), **Belize** (309 cases per 100,000 population) and **Honduras** (144 cases per 100,000 population).

Non-Latin Caribbean ⁸

Between EW 1 and EW 49 of 2021, a total of 4,200 cases of dengue were reported with a cumulative incidence rate of 20.5 cases per 100,000 population, including one case classified as severe dengue and no deaths were reported. The number of cases reported per week remains below that reported during the same period in 2020.

In 2021, as of EW 49, the territories with the highest incidence rates in this subregion are **Saint Barthelemy** (1,000 cases per 100,000 population), **French Guiana** (574 cases per 100,000 population), and **Saint Martin** (521 cases per 100,000 population).

Chikungunya

Between EW 1 and EW 49¹ of 2021, a total of 131,630 suspected chikungunya cases were reported, including 11 deaths, in 14 of the countries/territories in the Region of the Americas; this is higher than the number of cases reported during the same period in 2020 (101,518 cases, including 29 deaths) (**Figure 3**). During the same period, 99% of the cases were reported by the following 3 countries: **Brazil** with 127,487 suspected cases of chikungunya (97%), **Guatemala** with 1,951 (1.5%) cases, and **Belize** with 737 (0.6%)

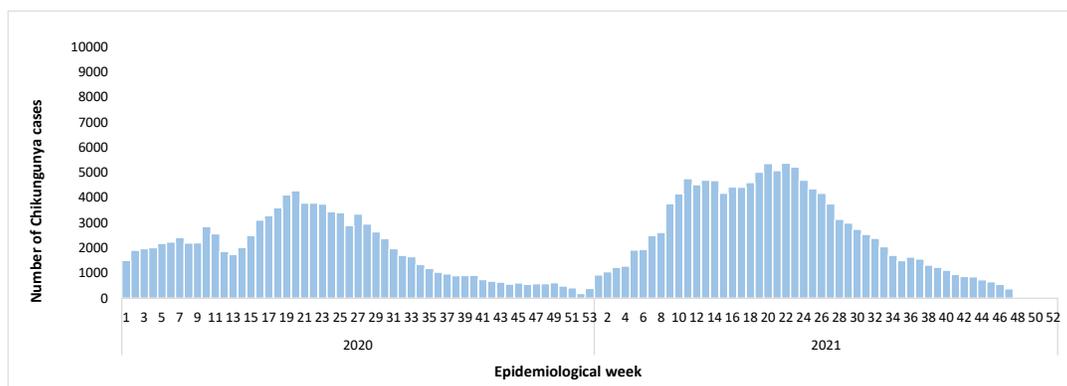
In 2021, between EW 1 and EW 49, the cumulative incidence rate in the Region was 13 cases per 100,000 population. The countries with the highest incidence rates were **Belize** with 182 cases per 100,000 population, **Brazil**⁴ with 60 cases per 100,000 population, and **Guatemala** with 11 cases per 100,000 population.

In 2021, as of EW 49, a total of 21 imported cases of chikungunya were reported in the Region of the Americas, all in the United States of America. During the same period, 11 deaths attributed to chikungunya infection were reported, all in Brazil.

⁷ Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

⁸ Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, Bermuda, Bonaire, St. Eustatius and Saba, the British Virgin Islands, the Cayman Islands, Curacao, Dominica, Grenada, Guadeloupe, Guyana, French Guiana, Haiti, Jamaica, Martinique, Montserrat, Saint Barthelemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos, and the US Virgin Islands.

Figure 3. Distribution of chikungunya and COVID-19 cases by epidemiological week (EW) of onset of symptoms. the Region of the Americas, 2020 and 2021 (as of EW 49⁴ of 2021).



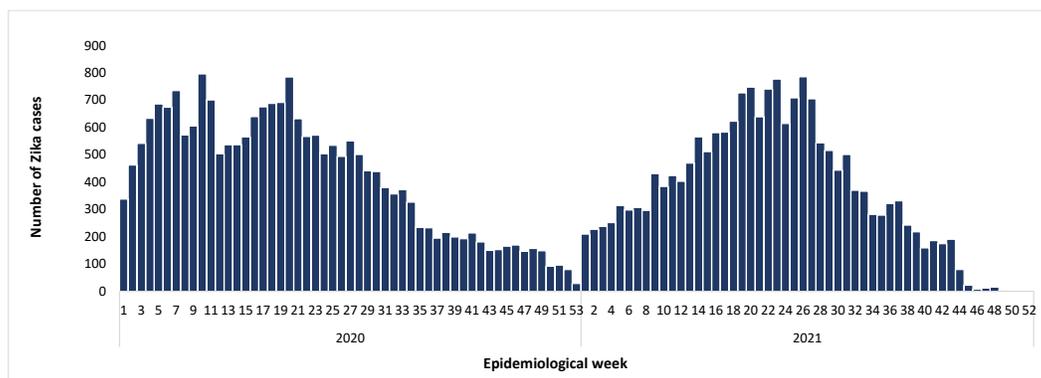
Source: Data entered the Health Information Platform for the Americas (PLISA, PAHO / WHO) by the Ministries and Institutes of Health of the countries and territories of the Region. More detailed information by country can be found at: <https://bit.ly/37byBn6> Accessed 21 December 2021.

Zika

Between EW 1 and EW 49 of 2021, a total of 18,804 cases of Zika have been reported, including two deaths (reported in Brazil), in the Region of the Americas; this is lower than the number of cases reported during the same period in 2020 (22,038 cases, including one death).

In 2021, as of EW 49, of the 18,804 cases of Zika reported, the highest proportion of cases in the Region was reported in **Brazil**⁴ with 15,903 cases (85%), followed by **Guatemala** with 1,902 cases (10%) and **Paraguay** with 474 cases (2.5%). Since the first detection of Zika in Brazil in March 2015, local transmission of Zika has been confirmed in all countries and territories in the Americas, except for continental Chile, Uruguay, and Canada. In 2016, a total of 652,207 cases were reported, and a significant reduction in transmission has been observed in the following years (**Figures 1 and 4**).

Figure 4. Distribution of reported cases of Zika by epidemiological week of onset of symptoms. Region of the Americas, 2020-2021 (up to EW 49⁴ of 2020).



Source: Data entered the Health Information Platform for the Americas (PLISA, PAHO / WHO) by the Ministries and Institutes of Health of the countries and territories of the Region. More detailed information by country can be found at: <https://bit.ly/2BFupAp> Accessed 21 December 2021.

Advice to Member States

Given the coexistence of COVID-19 with dengue and other arboviruses in several countries and territories of the Region of the Americas, the Pan American Health Organization/World Health Organization (PAHO/WHO) urges Member States to continue strengthening surveillance, diagnosis, triage, and adequate treatment during the syndemic due to COVID-19 and arboviruses in endemic areas. At the same time, Member States should establish strategies to facilitate access to health services for patients with dengue and other arboviruses, in addition to strengthening risk communication, so that patients with warning signs attend the health center in a timely manner. PAHO/WHO recommends the adequate triage of patients both for the timely detection of dengue warning signs and to reduce the risk of SARS-CoV-2 infections acquired in health care services.

PAHO/WHO reminds Member States of the guidelines published in the 10 June 2020 PAHO/WHO Epidemiological Update on dengue and other arboviruses, available at: <https://bit.ly/3mM1H36>, as well as those recommendations related to COVID-19 included in the PAHO/WHO Epidemiological Alerts and Updates on COVID-19, available at: <https://www.paho.org/en/epidemiological-alerts-and-updates>

Sources of information

1. PAHO / WHO Health Information Platform for the Americas (PLISA). Available at: <https://bit.ly/314Snw4>
2. WHO COVID-19 Dashboard. Available at: <https://covid19.who.int/>
3. PAHO/WHO. Methodology for evaluating national strategies for the prevention and control of arboviral diseases in the Americas. 23 November 2021. Available in Spanish at: <https://bit.ly/32hS8UO>
4. PAHO/WHO. Guidelines for the clinical diagnosis and treatment of dengue, chikungunya and Zika. 9 November 2021. Available in Spanish at: <https://bit.ly/3H1OFbv>
5. PAHO/WHO. Dengue Outbreak Early Warning and Response System: Operational Guide Based on Online Dashboard. 18 May 2021. Available in Spanish at: <https://bit.ly/3H1Oz3D>
6. PAHO/WHO. Epidemiological Update on COVID-19. 2 December 2021, Washington, D.C.: PAHO/WHO; 2020. Available at: <https://bit.ly/3EqaXUS>
7. PAHO/WHO. Epidemiological Update: Dengue and other Arboviruses. 10 June 2020, Washington, D.C.: PAHO/WHO; 2020. Available at: <https://bit.ly/3mM1H36>
8. WHO. Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic. Interim Guidance. 5 May 2020. WHO/2019-nCoV/Comm_health_care/2020.1. Available at: <https://bit.ly/2CO15bI>