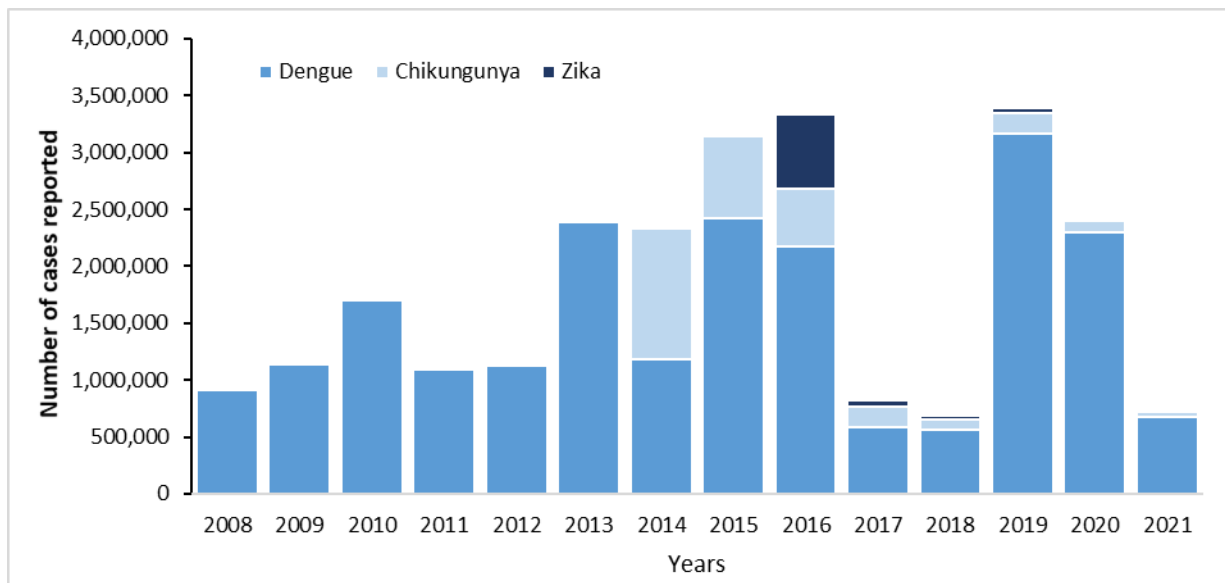


Situation summary

In the Region of the Americas, between epidemiological week (EW) 1 and EW 22 of 2021, a total of 728,831 cases¹ of arboviral disease were reported. Of those, 673,148 (92.3%) were dengue cases, 49,671 were chikungunya cases, and 6,012 were Zika cases (**Figure 1**).

Figure 1. Distribution of reported cases of dengue, chikungunya, and Zika by year of report. Region of the Americas, 2008-2021 (up to EW 22 of 2021).

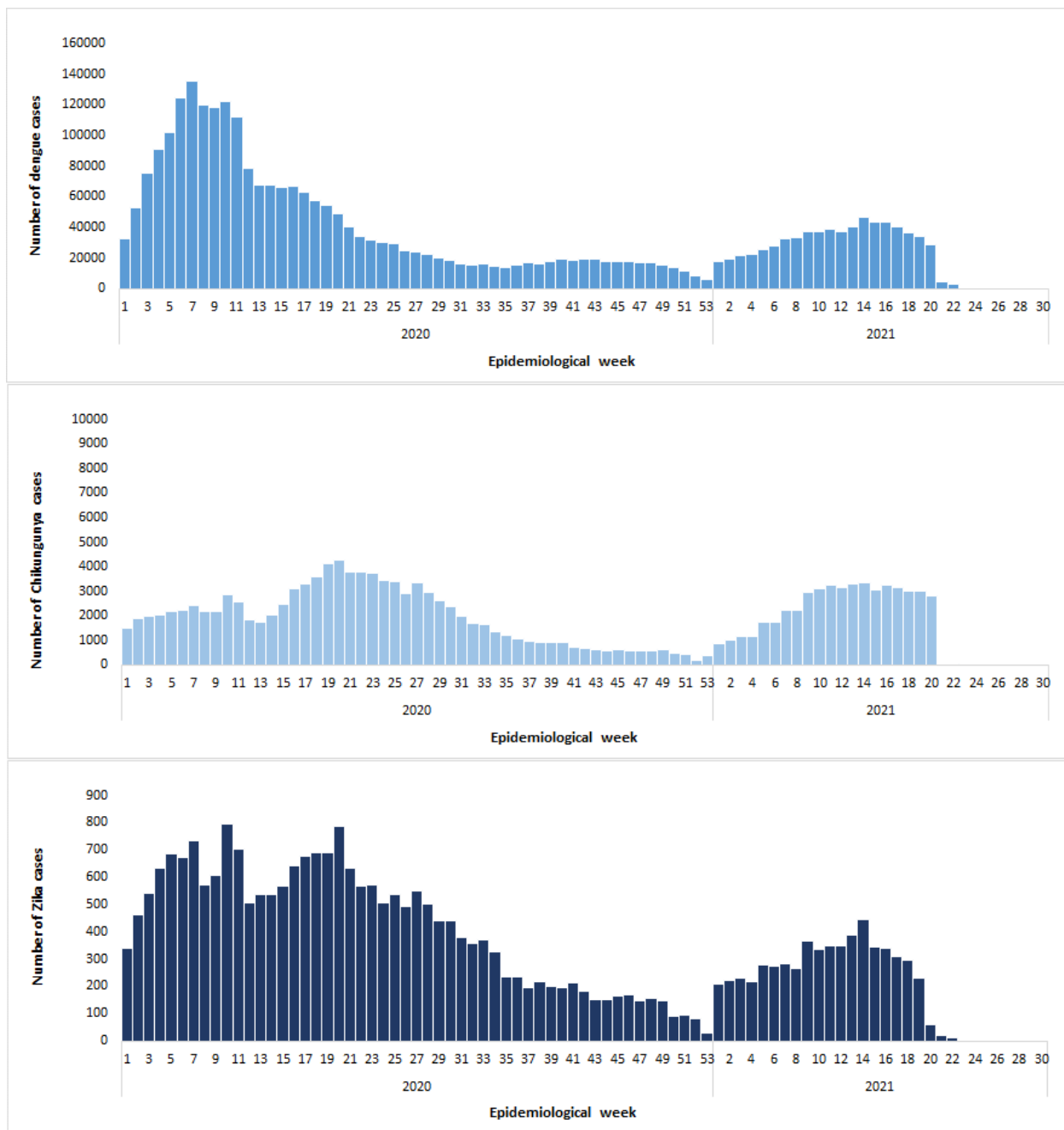


Source: Data entered into the Health Information Platform for the Americas (PLISA, PAHO / WHO) by the Ministries and Institutes of Health of the countries and territories of the Region. Available at: <https://www.paho.org/data/index.php/en/>. Accessed on 1 July 2021.

In the Region of the Americas, the total number of cases of arboviral disease reported in 2021 as of EW 22 (728,831 cases) represents approximately a 58% relative decrease compared to the same period in 2020 (1,734,951 cases), when the COVID-19 pandemic began (**Figure 2**).

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

Figure 2. Distribution of cases of dengue, chikungunya, and Zika by epidemiological week (EW), Region of the Americas, 2020-2021 (up to EW 22² 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 1 July 2021.

² In the PLISA platform, arboviruses data for Brazil is updated as of EW 20 of 2021. Out of the total cumulative number of cases of arboviral diseases reported in the Region of the Americas until EW 20 of 2021, 83% of dengue cases correspond to Brazil, as well as 97% of chikungunya cases and 85% of Zika cases.

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, vaccination campaigns against COVID-19 in the Region of the Americas is ongoing and public health measures are becoming more flexible. Therefore, while heterogeneous scenarios in different countries of the Region of the Americas must be considered, the syndemic of COVID-19 and arboviral diseases will most likely continue during the next epidemic period in arbovirus-endemic areas within the Region.

Based on previous experiences during dengue epidemics, the ongoing COVID-19 pandemic and the persistence of arboviral cases in endemic areas presents a challenge for health systems across all components and levels, including epidemiological surveillance.

During the COVID-19 and dengue syndemic, co-infection with the two viruses have been reported in countries and territories of the Region of the Americas (2, 3). According to the available evidence, the severity and prognosis of these coinfecting patients is not yet clear. However, it will be important to prepare health systems to respond adequately and in a timely manner to potential scenarios.

Additionally, the hurricane and tropical storm season in countries and territories of the Caribbean, Central America, and the East Coast of the United States began in June, which, depending on its magnitude and impact on dengue endemic areas, could constitute an additional burden 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 22¹ of 2021, a total of 673,148 cases of dengue were reported in the Region of the Americas, with a cumulative incidence rate of 68 cases per 100,000 population. The highest cumulative incidence rates have been reported in the following subregions³, in decreasing order: the Southern Cone with 197 cases per 100,000 population, the Andean subregion with 44 cases per 100,000 population, and the Central American Isthmus and Mexico with 20 cases per 100,000 population.

In 2021, as of EW 22, the highest proportion of dengue cases in the Region has been reported by Brazil with 559,587 cases (83%), followed by Peru with 28,086 cases (4%) and Nicaragua with 18,943 cases (3%). During the same period, the highest cumulative incidence rates have been reported in the following countries: Belize with 309 cases per 100,000 population, Nicaragua with 283 cases per 100,000 population, and Brazil² with 262 cases per 100,000 population.

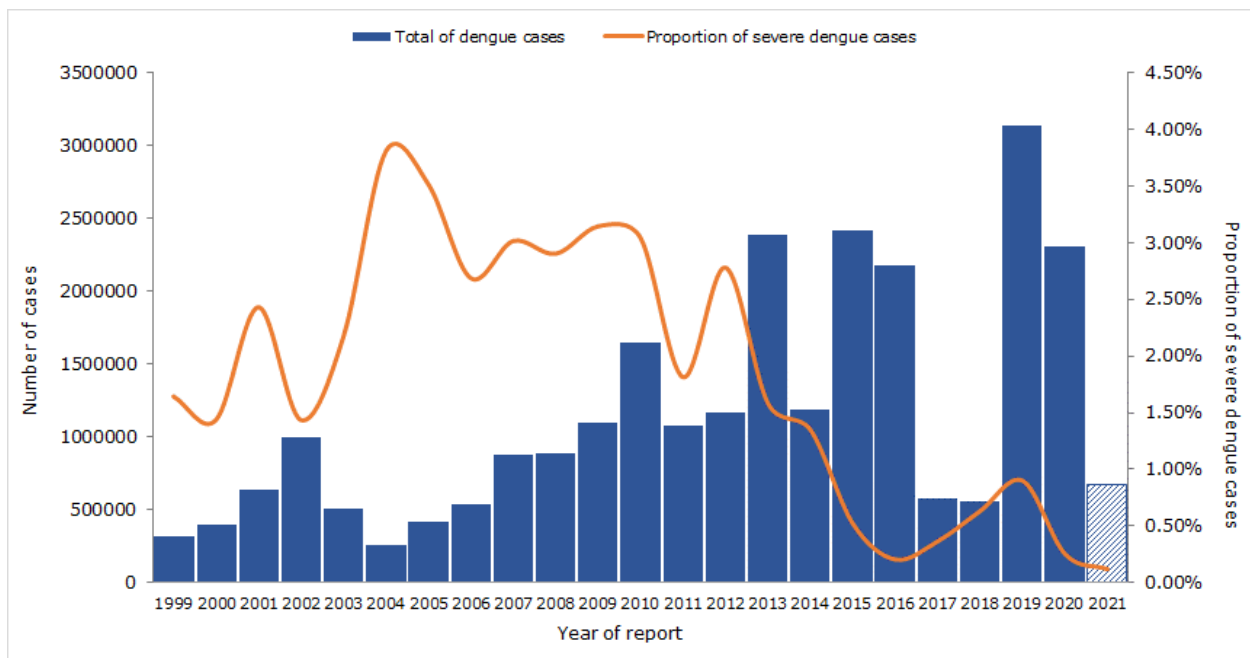
In 2021, of the 673,148 cases reported in the Region as of EW 22, 270,013 (40%) were laboratory-confirmed, and 772 (0.11%) were classified as severe dengue (**Figure 3**). The highest number of severe dengue cases were reported by the following countries: Colombia

³ 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/3IGwSwc>

with 212 cases, Brazil with 172 cases, and Honduras with 164 cases. Additionally, during the same period, a total of 149 deaths were reported in the Region (case-fatality rate: 0.022%).

All four dengue virus serotypes (DENV 1, DENV 2, DENV 3, and DENV 4) are present in the Americas Region. In 2021, co-circulation of all four serotypes was detected in Guatemala and Mexico, while in Colombia, French Guiana, and Martinique, serotypes DENV 1, DENV 2, and DENV 3 have been co-circulating, and in Paraguay, DENV 1, DENV 2, and DENV 4 have been co-circulating⁴.

Figure 3. Distribution of reported dengue cases and proportion of severe dengue cases, by year of report. Region of the Americas, 1999-2021 (up to EW 22 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/3cwV3b7>. Accessed on 1 July 2021.

In 2021, as of EW 22, the 10 countries and territories with the highest cumulative incidence rates in the Region of the Americas are the following:

⁴ More information on circulating serotypes by country is available at: PAHO/WHO Health Information Platform for the Americas (PLISA): <https://bit.ly/314Snw4>

Subregion	Country or territory	Cummulative incidence rate per 100,000 pop.	COVID-19 transmission scenario
Non-Latin Caribbean	Saint Barthelemy	1000	Clusters of cases
	Saint Martin	521	Community transmission
	Martinique	286	Community transmission
	French Guiana	136	Community transmission
	Guadeloupe	135	Community transmission
Central America Isthmus and Mexico	Belize	309	Community transmission
	Nicaragua	283	Community transmission
Southern Cone	Brazil	262	Community transmission
	Paraguay	152	Community transmission
Andean Subregion	Peru	85	Community transmission

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/3cwV3bZ>. Accessed on 1 July 2021. COVID-19 Weekly Epidemiological Update. Available at: <https://bit.ly/3wMZKbk> and the COVID-19 surveillance interim guidance. 27 May 2021. Available at: <https://bit.ly/3qdDHsz>

The following is a summary of the epidemiological situation for dengue in selected countries in subregions with the highest cumulative incidence rates in 2020:

In the **Southern Cone**^{1,5}, between EW 1 and EW 22² of 2021, a total of 570,569 cases of dengue were reported with a cumulative incidence rate of 197 cases per 100,000 population, including 172 cases classified as severe dengue and 110 deaths. The case-fatality rate was 0.02%. 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 (**Figure 4**). 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 22, the countries with the highest incidence rates in this subregion are: *Brazil*² (262 cases reported per 100,000 population) and *Paraguay* (152 cases per 100,000 population)¹.

In *Brazil*^{2,6}, between EW 1 and EW 20 of 2021, a total of 559,587 cases of dengue were reported. Of the total cases, 230,735 (41.2%) were confirmed⁷, including 110 confirmed deaths and 63 remain under investigation. Of the 230,735 confirmed cases, 172 (0.07%) were classified as severe dengue. During the same period, the case-fatality rate was 0.02%¹.

In 2021 as of EW 20 in Brazil, by geographical region, the highest incidence rate was reported in the Central-West with 367.5 cases per 100,000 population, followed by the South with 201.9 cases per 100,000 population, the Southeast with 174.1 cases per 100,000 population, the North with 129 cases per 100,000 population, and the Northeast with 80.3 cases per 100,000 population. Of the total, the highest proportion of probable dengue cases were reported in

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

⁶ Case definitions used in the epidemiological surveillance of arboviruses in Brazil. *Registered cases*: all cases entered in the information system (SINAN), includes notified, probable and confirmed cases; *reported cases*: all cases registered as suspects in SINAN; *probable cases*: all cases registered as suspects in SINAN, subtracting those that were discarded for dengue, chikungunya and Zika; and *confirmed cases*: all cases confirmed by laboratory criteria or clinical-epidemiological criteria.

⁷ The Brazil Ministry of Health in the epidemiological surveillance of dengue, includes cases confirmed by laboratory or clinical-epidemiological criteria, among the confirmed cases.

the Southeast Region with 44% (155,004 cases). In the Central-West Region, the federal units with the highest cumulative incidence rate in the country are: Goiás, (31,404 cases per 100,000 population), Mato Grosso (11,182 cases per 100,000 population), Mato Grosso do Sul (10,821 cases per 100,000 population), and the Federal District (7,451 cases per 100,000 population). In the Northern Region, Acre State reported 56.2% (13,521 cases) of the probable cases of dengue in that region.

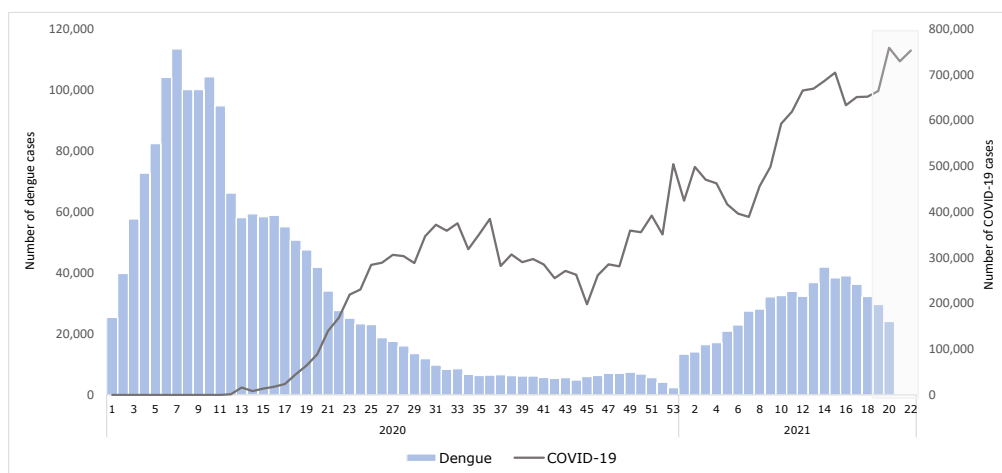
In 2021, as of EW 20, the highest incidence rates by age-group were reported among persons aged 20 to 29 years with 205.2 cases per 100,000 population, followed by persons aged 40 to 49 years with 202 cases per 100,000 population, and persons aged 30 to 39 years with 200.5 cases per 100,000 population.

In 2021, as of EW 20, the federal units with an incidence rate above the epidemic threshold are: Acre (1,511.6 cases per 100,000 population), Santa Catarina (226.7 cases per 100,000 population), Amazonas (134.1 cases per 100,000 population), and Rio Grande do Sul (71.1 cases per 100,000 population).

As of EW 20 of 2021, DENV 1 and DENV 2 are circulating in Brazil.

In the Southern Cone subregion, the COVID-19 pandemic had its first peak during EW 36 of 2020. In 2021, as of EW 9, the weekly number of COVID-19 cases is above what has been reported since the beginning of the pandemic (**Figure 4**). Additionally, community transmission of COVID-19 is recorded in all countries of this subregion.

Figure 4. Distribution of dengue and COVID-19 cases by epidemiological week (EW), Southern Cone, 2020 and 2021 (as of EW 22^{1,2} of 2021).



Source: Data available through the Health Information Platform for the Americas (PLISA, PAHO/WHO) and the WHO COVID-19 Dashboard. Available at: <https://bit.ly/314Snw4> and <https://covid19.who.int/>. Accessed 20 June 2021.

In the **Andean subregion**⁸, between EW 1 and EW 22 of 2021, a total of 62,949 cases of dengue were reported, with a cumulative incidence rate of 44 cases per 100,000 population,

⁸ Bolivia, Colombia, Ecuador, Peru, and Venezuela.

including 350 cases classified as severe dengue and 35 deaths. The case-fatality rate was 0.06%. The number of cases reported per week remains below what was reported during the same period in 2020 (**Figure 5**).

The countries with the highest incidence rates in this subregion are *Peru* (85 cases per 100,000 population), *Ecuador* (66 cases per 100,000 population), and *Bolivia* (47 cases per 100,000 population).

In *Peru*⁹, between EW 1 and EW 21 of 2021, a total of 28,086 cases of dengue were reported, of which 56% (15,643 cases) were laboratory-confirmed including 77 cases of severe dengue and 21 deaths. During the same period, 55% of the total of cases were reported in Ica, San Martín, Loreto, Huánuco, y Junín departments.

In 2021, as of EW 21, the cumulative national incidence rate of reported cases was 85 cases per 100,000 population, which is higher than the rate during the same period in 2020 (66.4 cases per 100,000 population). Of the 24 departments of the country, 11 had incidence rates above the national rate. The three departments with the highest incidence rates are as follows, in decreasing order: Madre de Dios (829 cases per 100,000 population), Ica (400.4 cases per 100,000 population) and Huánuco (396 cases per 100,000 population).

In 2021, as of EW 21, the highest incidence rates by age group were reported among persons aged 12 to 17 years with 116.7 cases per 100,000 population, followed by persons aged 18 to 29 years with 107.6 cases per 100,000 population and 30 to 59 years with 84.1 cases per 100,000 population.

Between EW 1 and EW 21 of 2021, the case-fatality rate at the national level was 0.07%. Deaths have been reported in the following departments: Madre de Dios (5), Junin (3), Ica (2), Loreto (2), Piura (2), Ucayali (2), Amazonas (1), Huánuco (1), La Libertad (1), Pasco (1), and San Martín (1).

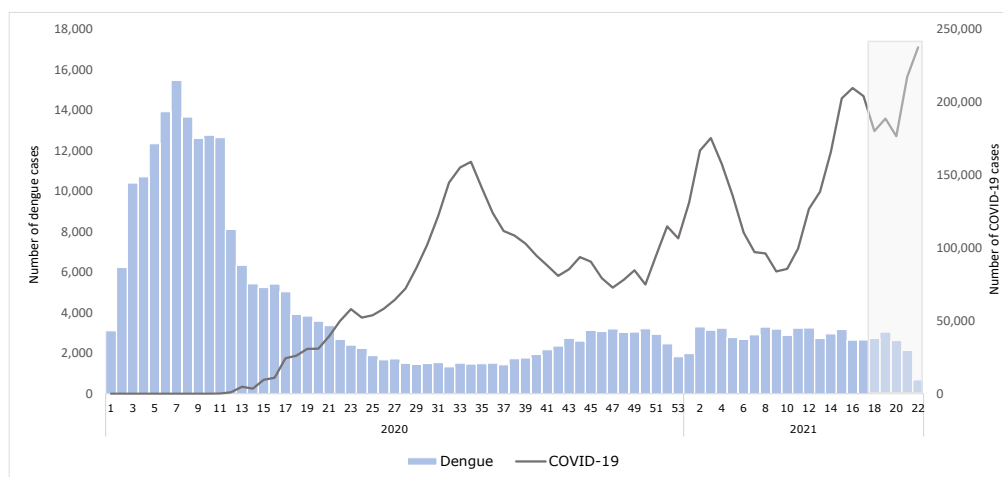
In the department of *Lima*, between EW 1 and EW 21 of 2021, a total of 1,196 probable cases of dengue were reported, higher than the number of probable cases reported during the same period of 2020 (309 cases) and above the historical trend since 2016. In 2021, there was an upward trend starting in EW 7 and a peak was observed in EW 13 of 2021, followed by a downward trend in the last 5 weeks. Between EW 1 and EW 21 of 2021, the districts that reported the highest proportion of cases were: Lurigancho (520 cases), Puente Piedra (146 cases), and Lima (125 cases).

In 2021 as of EW 21, serotypes DENV 1 and DENV 2 have been identified as circulating in Peru.

In the Andean subregion, the COVID-19 pandemic had its first major peak in EW 34 of 2020 and a second peak in EW 2 of 2021. Since EW 10 of 2021, there was an increasing trend in COVID-19 cases and, since EW 14, the weekly number of cases has been above that reported since the beginning of the pandemic (**Figure 5**). Additionally, community transmission of COVID-19 has been observed in all the countries of this subregion.

⁹ Epidemiological Situation report on dengue. CDC Peru. Available at: <https://bit.ly/2RadWbg>

Figure 5. Distribution of dengue and COVID-19 cases by epidemiological week (EW). Andean subregion, 2020 and 2021 (as of EW 22 of 2021).



Source: Data available through the Health Information Platform for the Americas (PLISA, PAHO/WHO) and the WHO COVID-19 Dashboard. Available at: <https://bit.ly/314Snw4> and <https://covid19.who.int/>. Accessed 20 June 2021.

In the **Central American Isthmus and Mexico subregion**¹⁰, between EW 1 and EW 22 of 2021, a total of 36,231 cases of dengue were reported with a cumulative incidence rate of 19.9 cases per 100,000 population, including 234 cases classified as severe dengue and 4 deaths. The case-fatality rate was 0.01%. The number of cases reported per week remains below that reported during the same period in 2020 (**Figure 6**).

The hurricane and tropical storm season typically begins in June in the countries of the Caribbean, Central America, and the East Coast of the United States. In 2020, between EW 45 and EW 47, two successive hurricanes¹¹ affected the Central American Isthmus, mainly Guatemala, Honduras, and Nicaragua, causing floods, landslides and damages to infrastructure, homes, and services, leading to overwhelmed healthcare services and the postponement of vector control activities.

In 2021, as of EW 22, the countries with the highest incidence rates in this subregion are *Belize* (309 cases per 100,000 population) and *Nicaragua* (283 cases per 100,000 population)¹.

In *Nicaragua*, between EW 1 and EW 22 of 2021, a total of 18,943 suspected cases of dengue were reported, of which 183 (0.96%) were laboratory-confirmed; no deaths were reported. Of the total suspected cases, 12 (0.06%) were classified as severe dengue.

Between EW 1 and EW 22 of 2021, the cumulative national incidence rate of reported cases was 283 cases per 100,000 population. The departments with the highest incidence rates are as follows, in decreasing order: Granada (804 cases per 100,000 population), Rivas (611 cases per 100,000 population), and León (544 cases per 100,000 population). During the same

¹⁰ Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

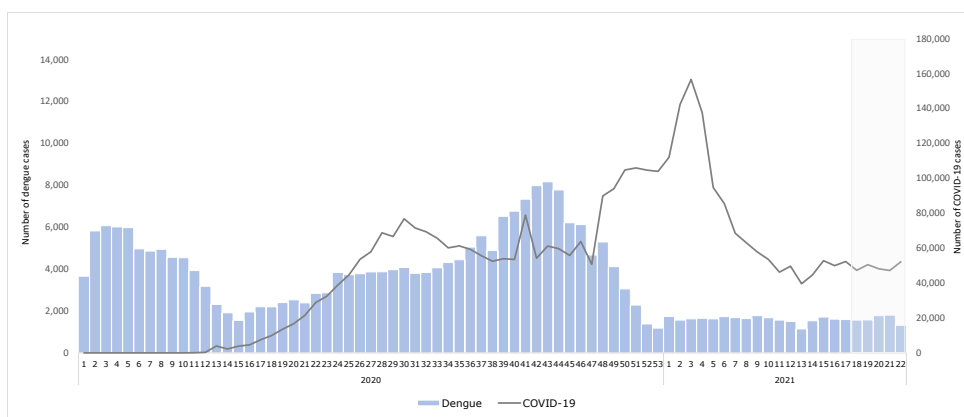
¹¹ Between 1 and 2 November 2020, Hurricane Eta, cataloged as Category 4, with winds of 150 mph (240 km/h). On 16 November 2020, Category 5 hurricane Iota appeared, with rainfall and maximum sustained winds close to 160 mph (260 km/h).

period, the highest incidence rates by age group were reported among persons aged 0 to 4 years with 1,085 cases per 100,000 population, followed by persons aged 5 to 9 years with 425 cases per 100,000 population and 10 to 14 years with 241 cases per 100,000 population.

In *Nicaragua*, as of EW 22 of 2021, serotype DENV 2 has been identified as circulating.

In the Central American Isthmus and Mexico subregion, the number of reported COVID-19 cases as of EW 48 of 2020 was above what was reported since the beginning of the pandemic, reaching its maximum peak on EW 3 of 2021 (**Figure 6**). Additionally, community transmission of COVID-19 is recorded in all the countries of this subregion.

Figure 6. Distribution of dengue and COVID-19 cases by epidemiological week (EW). The Central American Isthmus and Mexico subregion, 2020 and 2021 (as of EW 22 of 2021).



Source: Data available through the Health Information Platform for the Americas (PLISA, PAHO/WHO) and the WHO COVID-19 Dashboard. Available at: <https://bit.ly/314Snw4> and <https://covid19.who.int/>. Accessed 23 June 2021.

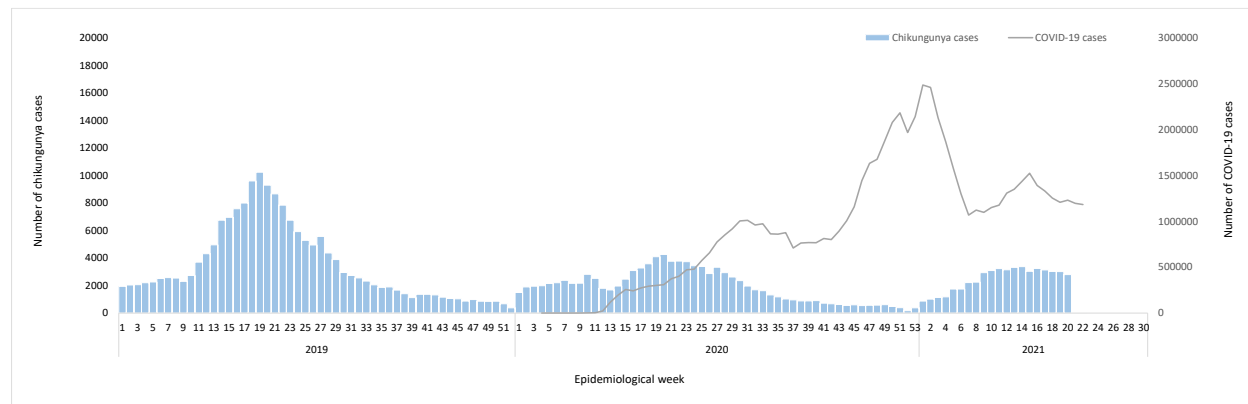
Chikungunya

Between EW 1 and EW 22 of 2021, a total of 49,671 suspected chikungunya cases were reported, including 3 deaths, in 13 of the countries/territories in the Region of the Americas; this is lower than the number of cases reported during the same period in 2020 (58,202 cases, including 15 deaths). In 2021 as of EW 22, 99% of the cases were reported by the following 3 countries: Brazil with 48,044 (97%) cases, Belize with 737 (1.5%) cases, and Peru with 415 (0.8%) cases. Since 2020, there has been a decrease in the number of chikungunya cases reported, coinciding with the beginning of the COVID-19 pandemic; overwhelmed healthcare services during the COVID-19 pandemic could have affected the arbovirus surveillance capacities. (**Figure 7**).

In 2021 between EW 1 and EW 22, the cumulative incidence rate in the Region was 5 cases per 100,000 population. The countries with the highest incidence rates were Belize with 182 cases per 100,000 population, Brazil⁶ with 22.4 cases per 100,000 population, and Bolivia with 1.9 cases per 100,000 population.

In 2021 as of EW 22, a total of 2 imported cases of chikungunya were reported in the Region of the Americas, both in the United States of America. During the same period, 3 deaths attributed to chikungunya infection were reported, all in Brazil.

Figure 7. Distribution of chikungunya and COVID-19 cases by epidemiological week (EW) of onset of symptoms. the Region of the Americas, 2019 and 2021 (as of EW 22² 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 23 June 2021.

In Brazil^{2,6}, between EW 1 and EW 20 of 2021, of the 48,044 reported cases, 35.5% (17,061 cases) were confirmed by laboratory or clinical-epidemiological criteria, including 3 confirmed deaths and 14 deaths under investigation. The Northeast Region had the highest incidence rate with 31.8 cases per 100,000 population, followed by the Southeast with 20.4 cases per 100,000 population and North with 3.1 cases per 100,000 population.

In 2021, between EW 1 and EW 20 of 2021, Brazil reported the highest increase in probable cases of chikungunya in the following states: São Paulo reported 12,747 probable cases (27.5 cases per 100,000 population), with an increase of 4,052.1 % , compared to the same period in 2020 (307 probable cases - 0.7 cases per 100,000 population); and Minas Gerais reported 4,039 probable cases (19 cases per 100,000 population), observing an increase of 165.9%, compared to the same period in 2020 (1,519 cases - 7.1 cases per 100,000 population).

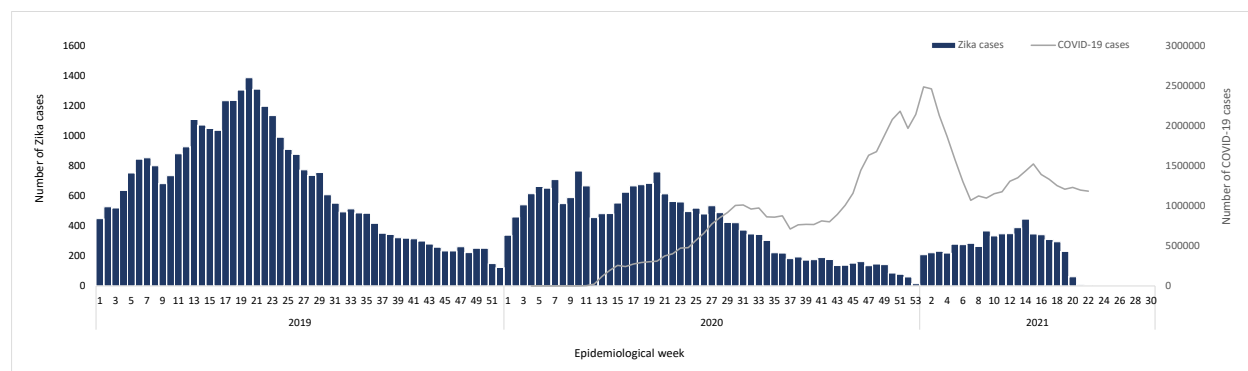
Zika

Between EW 1 and EW 22 of 2021, a total of 6,012 cases of Zika have been reported, including one death (reported in Brazil), in the Region of the Americas; this is lower than the number of cases reported during the same period in 2020 (13,624 cases, including one death).

In 2021, as of EW 22, of the 6,012 cases of Zika reported, the highest proportion of cases in the Region was reported in Brazil^{1,2} with 5,092 cases (85%), followed by Guatemala with 522 cases (9%) and Paraguay with 112 cases (2%). 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 651,590 cases were reported, and a significant reduction in transmission has been observed in the following years. Since 2020, there has been a decrease in the number of Zika cases reported, which coincided with the beginning of the COVID-19 pandemic; overwhelmed healthcare services

during the COVID-19 pandemic could have affected arbovirus surveillance capacities. (Figure 8).

Figure 8. Distribution of reported cases of Zika by epidemiological week of onset of symptoms. Region of the Americas, 2019-2021 (up to EW 22² 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/2BFupAp> Accessed 23 June 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>

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3. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report to PAHO/WHO received by email.
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6. CDC **Peru**. Epidemiological Situation report on dengue. Available at: <https://bit.ly/2RqdWbg>

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