

Dengue Situation Report Region of the Americas

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Executive Summary

- In the year 2023, between EW 1 and EW 49, a total of 4.2 million dengue cases (cumulative incidence rate of 657 cases per 100,000 population) including more than 6,500 severe dengue cases, and over 2,000 deaths were reported in the Region of the Americas. This marks an increase of over 52% relative to the reported cases in 2022 and a 108% increase relative to the average of the reported cases in the last 5 years.
- Both the highest total number of cases and incidence rates were reported from the Southern Cone subregion with over 3 million cases (1,050 cases per 100,000 population). This was followed by the Andean subregion, which reported 556,097 cases with an incidence rate of 388 cases per 100,000 population.
- Reported dengue cases reached their peak approximately during EW 15, EW 20, and EW 41 of 2023 in the Andean subregion, Southern Cone subregion, and Central American Isthmus and Mexico, respectively.
- There have been declining trends in most subregions over the last few weeks, however increasing trends have been observed in the Caribbean Islands as well as in some countries like Argentina and Paraguay, which necessitate continued monitoring.
- In 2023, all four serotypes of the dengue virus (DENV1, DENV2, DENV3, and DENV4) are circulating in 6 countries in the Central American Isthmus and Mexico, and 3 countries in South America.

General information

From EW 1 to EW 49 2023

(12:00 EST)

**Dengue cases
Total
> 4.2 million**

**Severe dengue
6,766**

**Dengue deaths
2,050**

**Cases reported in
EW 40 – 43: 161,295
EW 44 – 47: 49,507
Percent change: -69.3%**

Region of the Americas – an overview

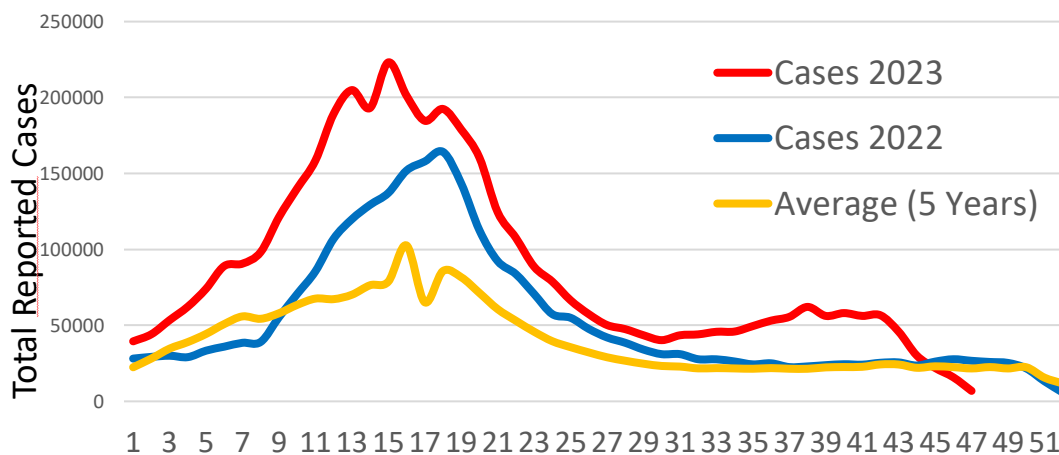
The Region of the Americas has seen over 4.2 million new cases of dengue fever reported in 2023, including more than 6,500 severe dengue cases and 2,050 deaths (1). This surpasses the previous record seen in 2019 (3.1 million cases), by over a million new cases (2).

Between EW 1 and EW 49, there have been 4,192,479 reported cases, with an incidence rate of 421 cases per 100,000 population. Of the reported cases, 1,898,640 were lab-confirmed, and

6,766 were classified as severe dengue. The highest number of cases were reported in Brazil¹ with 2,909,404 cases, Peru with 271,279 cases, and Mexico with 244,511 cases.

Of the 6,766 severe dengue cases, the highest number were seen in Colombia (1,504 cases), Brazil (1,474 cases), and Mexico (1,316 cases). A total of 2,050 reported deaths due to dengue resulted in a case fatality rate (CFR) of 0.049% for 2023.

Figure 1. Number of dengue cases in 2022, 2023, and last 5-year average. Region of the Americas. Up to EW 47 of 2023.

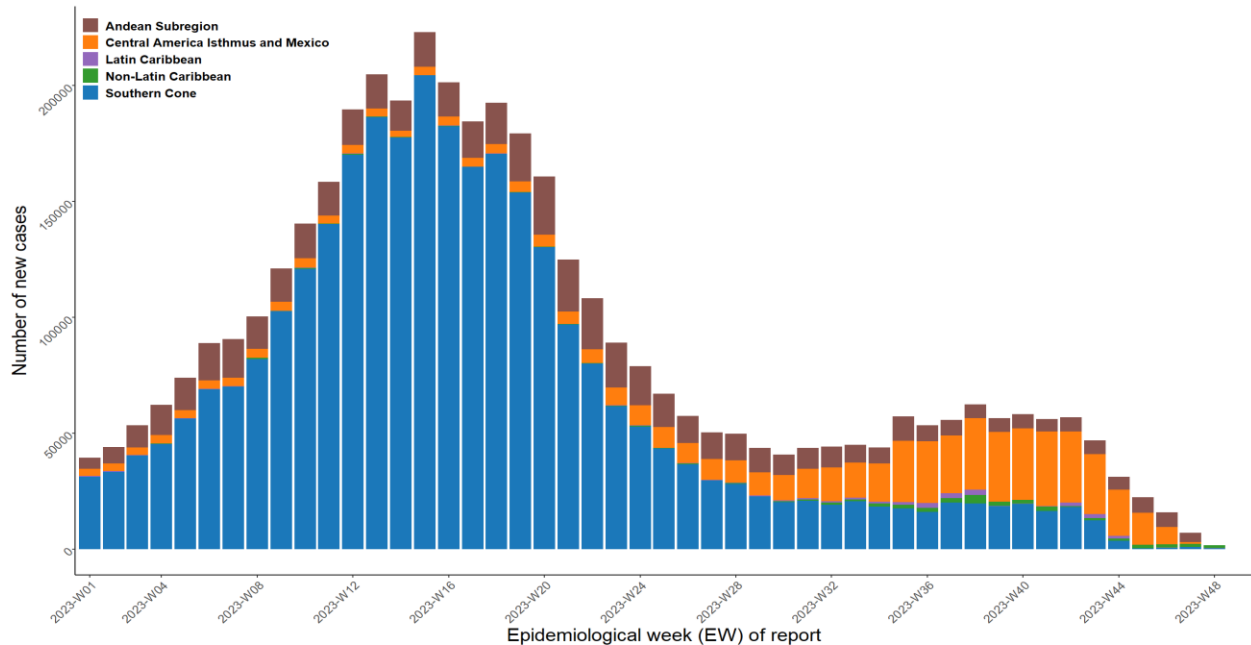


Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

As of EW 47, there is a 52% increase in reported dengue cases in 2023, relative to the same period in 2022, and a 108% increase relative to the average of the reported cases in the last 5 years. (Figure 1). However, during the 4 weeks from EW 44-47, there is a relative decrease of 69.3% in reported cases compared to EW 40-43, indicating a downward trend in cases in the Region. (Figure 2).

¹ Dengue cases reported in Brazil include suspected, probable, confirmed, ruled-out, dengue without or with warning signs, severe dengue, and deaths. The ruled-out cases are those that initially met the dengue case definition for surveillance purposes but were subsequently excluded due to clinical manifestations, a negative confirmatory laboratory test for dengue, or a positive confirmatory laboratory test for another disease.

Figure 2. Number of new dengue cases reported according to Epidemiological Week of Report in 2023. Region of the Americas



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

The beginning of 2023 saw a rapid increase in cases in South America, particularly in the Southern Cone, with a small rise in cases during the same period in the Andean subregion. An increasing trend was observed in the third trimester of the year in the Central American Isthmus and Mexico, while the Southern Cone has seen a decrease, followed by a plateauing of cases (**Figure 2**).

The subregions with the highest cumulative incidence rates are the Southern Cone with an incidence of 1,051 cases per 100,000 population, followed by the Andean subregion with an incidence of 389 cases per 100,000 population, and the Central American Isthmus and Mexico, with an incidence rate of 296 cases per 100,000 population.

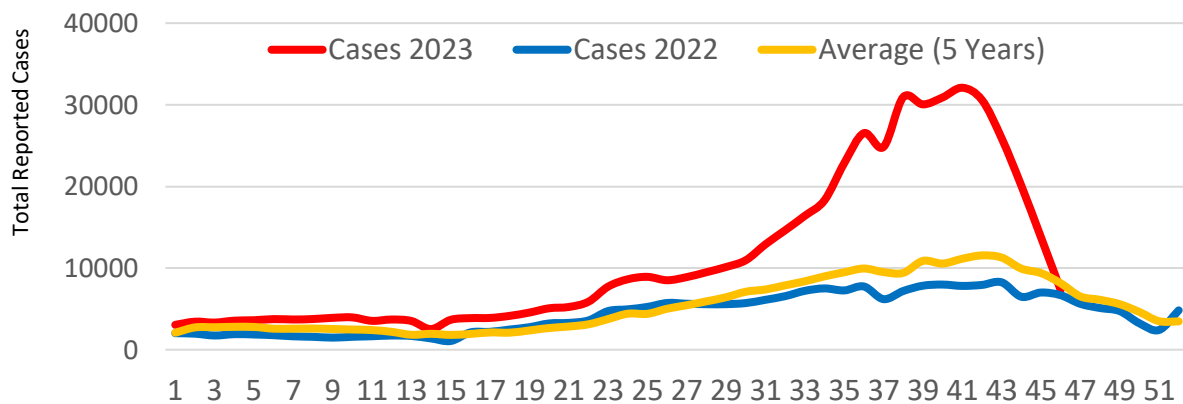
Map 1. Cumulative incidence rate of dengue fever in the countries and territories of the Region of the Americas, EW 49 2023.



Central American Isthmus and Mexico

Between EW 1 and EW 49 in 2023, the Central American Isthmus and Mexico reported a total of 541,204 new cases of dengue, with a cumulative incidence rate of 296 cases per 100,000 population. The highest cumulative incidence was seen in Nicaragua with 2,504 per 100,000 population, followed by Costa Rica with 474 per 100,000 population, Panama with 377 per 100,000 population, Belize with 357 per 100,000 population, and Guatemala with 294 per 100,000 population. Of the 541,204 cases reported, 78,248 (14.46%) were laboratory-confirmed, and 1,673 were classified as severe dengue (1).

Figure 3. Number of dengue cases in 2022, 2023, and last 5-year average – Central American Isthmus and Mexico. Up to EW 47 of 2023.

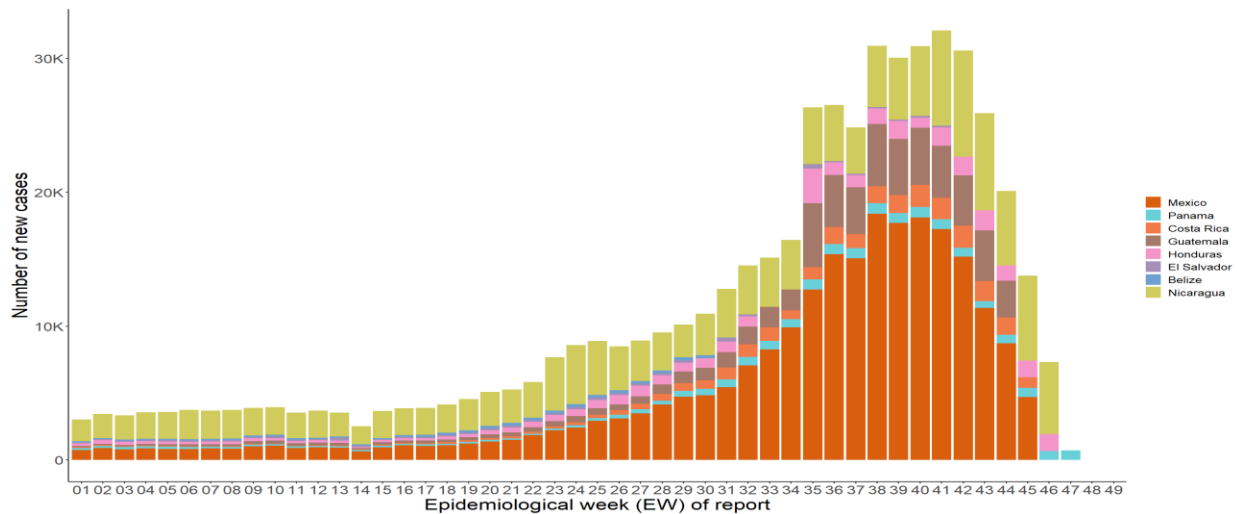


Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

As of EW 47, the Central American Isthmus and Mexico have seen a 144% increase in cases in 2023, relative to the same period in 2022, and a 102% increase relative to the average reported cases in the last 5 years (**Figure 3**).

There has been a 56% relative decrease in reported cases in the subregion in the 4 weeks from EW 44- 47, relative to EW 40-43 indicating the continuing downward trend seen in the 8 weeks.

Figure 4. Number of new dengue cases reported according to Epidemiological Week of Report in 2023. – Central American Isthmus and Mexico.



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

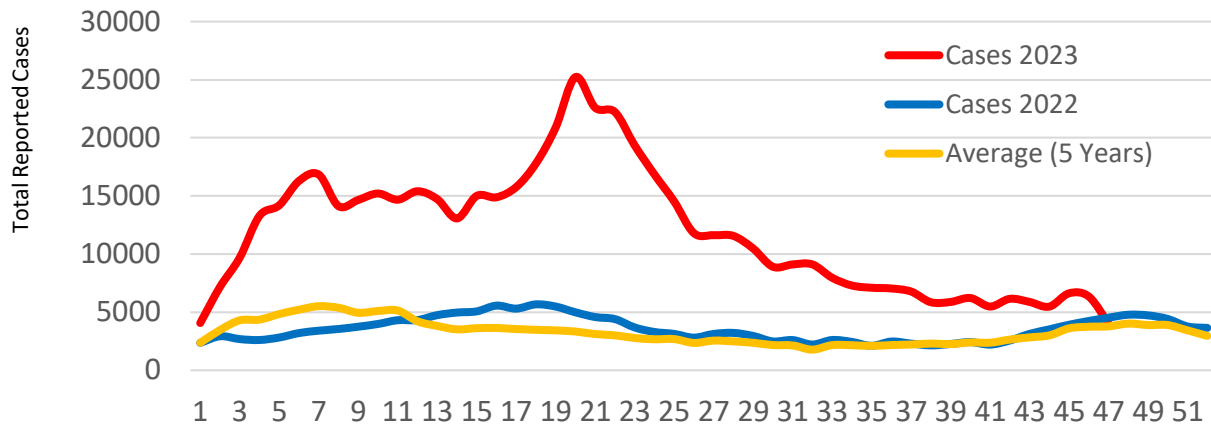
The highest cumulative number of cases was reported in Mexico with 244,511 cases, followed by Nicaragua with 167,801 cases, Guatemala with 53,705 cases, Honduras with 27,203 cases, and Costa Rica with 24,914 cases.

Mexico reported the largest number of severe dengue cases in 2023, with 1,316 cases, followed by Honduras with 181 severe cases, and Guatemala with 124 severe cases. A total of 267 deaths have been reported in the subregion with a case fatality rate (CFR) of 0.049%.

South America (Andean and Southern Cone subregions)

In 2023, between EW 1 and 49, a total of 3,601,139 cases of dengue have been reported, with a cumulative incidence rate of 822.2 cases per 100,000 population. Of the reported cases, 1,814,828 (50.4%) cases were laboratory-confirmed, with 4,796 being classified as severe dengue cases. During this period 1,747 deaths have been reported, with a case fatality rate (CFR) of 0.048% (1).

Figure 5. Number of dengue cases in 2022, 2023, and last 5-year average – Andean Subregion. Up to EW 47 of 2023.



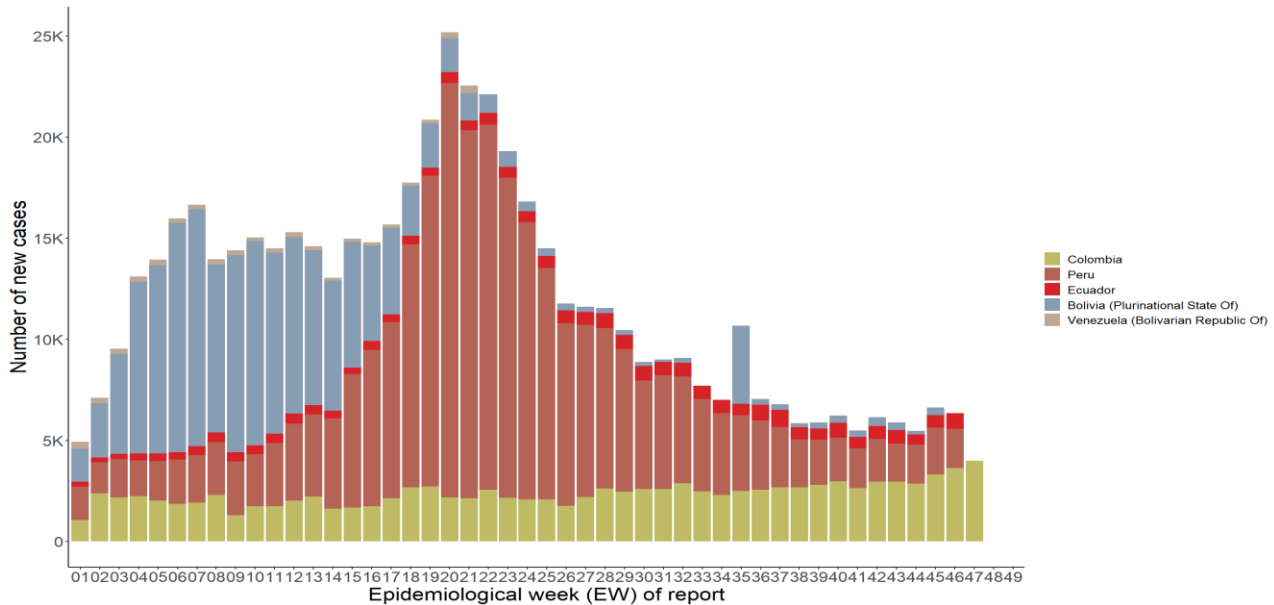
Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

As of EW 47, the Andean subregion has seen a 237% increase in cases in 2023, relative to the same period in 2022, and a 263% increase relative to the average reported cases in the last 5 years (**Figure 5**).

Comparing the reported cases between EW 44-47 with those reported between EW 40-43, we see a 3.1% relative decrease, continuing the subregional downward trend in case. However, Colombia reported a 28% relative increase in cases when comparing both periods (**Figure 6**).

In the Andean subregion, the largest cumulative incidence rate is seen in Bolivia with 1,217.5 per 100,000 population, followed by Peru with 813.2 per 100,000 population, and Colombia with 217.1 per 100,000 population.

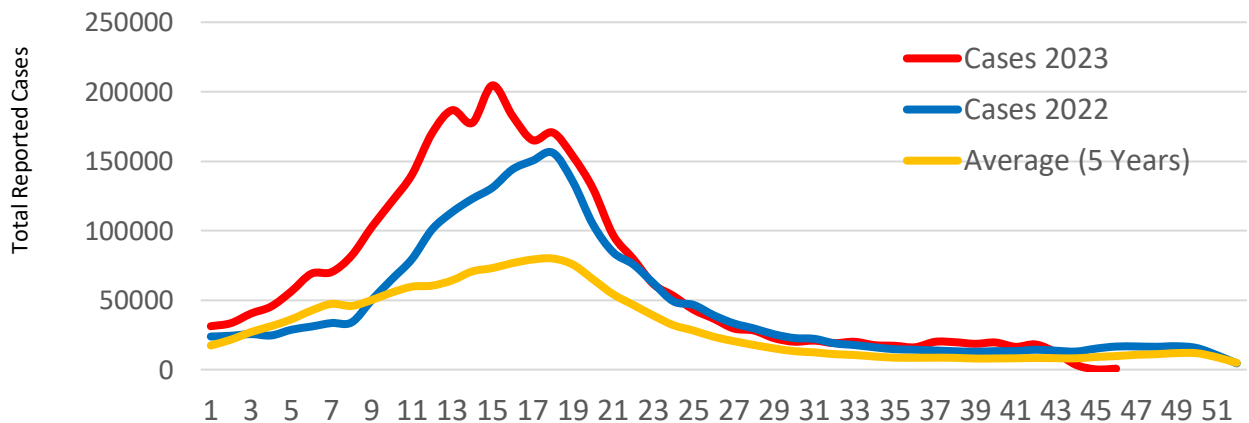
Figure 6. Number of new dengue cases reported according to Epidemiological Week of Report in 2023. – Andean Subregion.



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

The largest number of cases were reported by Peru with 271,279 cases, Bolivia with 144,065 cases, and Colombia with 111,307 cases of dengue fever. Colombia reported the highest number of severe dengue with 1,504 cases, along with Peru (1,065 cases), and Bolivia (640 cases).

Figure 7. Number of dengue cases in 2022, 2023, and last 5-year average – Southern Cone. Up to EW 47 of 2023.



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas,

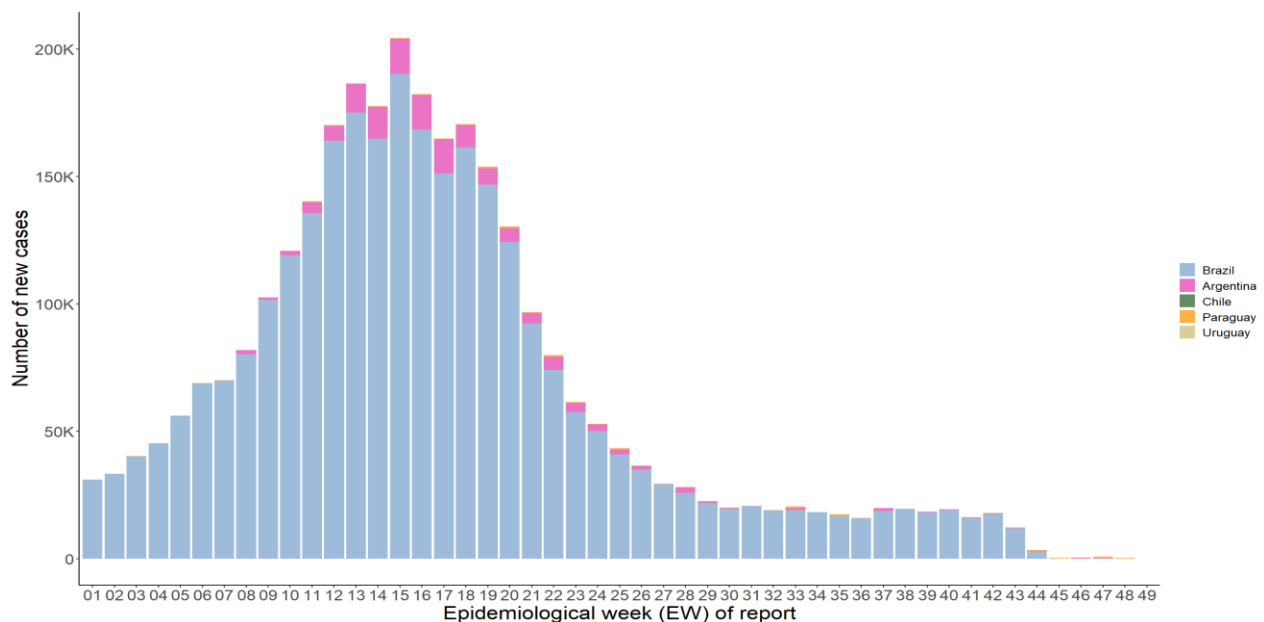
Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

As of EW 47, the Southern Cone has seen a 31% increase in cases in 2023, relative to the same period in 2022, and a 101% increase relative to the average reported cases in the last 5 years (**Figure 7**).

There is a general decreasing trend in reported cases for the entire subregion. However, Argentina (19.9% increase) and Paraguay (98.7% increase) show relative increases in case numbers comparing periods between EW 44-47 and EW 40-43 (**Figure 8**).

In the Southern Cone, the largest number of reported cases has been observed in Brazil (2,909,404 cases, and incidence rate of 1,360 per 100,000 population) and Argentina (124,295 cases, and incidence rate of 273 per 100,000 population). Paraguay has reported a cumulative 11,303 cases but is on an increasing trend over the last 8 weeks. Brazil is so far the only country in the subregion to report severe dengue, with a total of 1,474 cases.

Figure 8. Number of new dengue cases reported according to Epidemiological Week of Report in 2023. – Southern Cone.

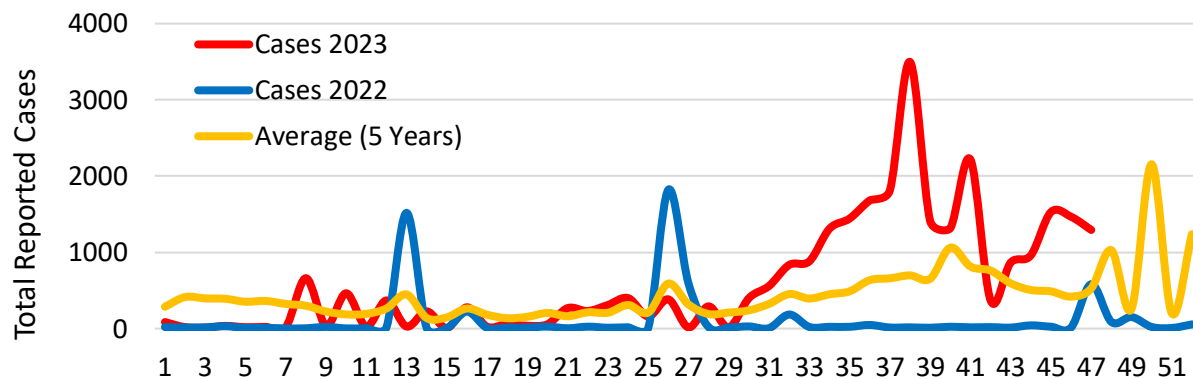


Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

Caribbean and Atlantic Ocean Islands (Latin Caribbean and Non-Latin Caribbean)

Between EW 1 and EW 49 of 2023, the Caribbean and Atlantic Ocean Islands have reported 49,045 cases of dengue fever, with a cumulative incidence rate of 214 cases per 100,000 population. Of the reported cases, 4,231 (8.6%) cases were lab-confirmed, with 280 cases being classified as severe dengue cases. 36 deaths due to dengue have been reported in this period, leading to a case fatality rate (CFR) of 0.075% (1).

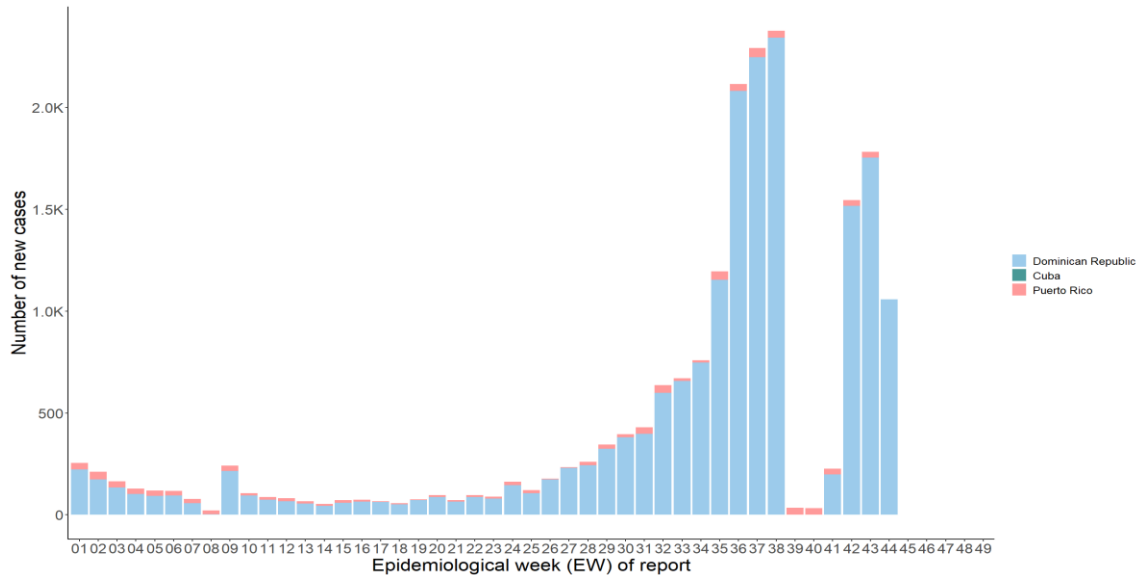
Figure 9. Number of dengue cases in 2022, 2023, and last 5-year average – Caribbean and Atlantic Ocean Islands. Up to EW 47 of 2023.



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

As of EW 47, the Caribbean and Atlantic Ocean Islands have seen a 57% increase in cases in 2023, relative to the same period in 2022, and a 180% increase relative to the average reported cases in the last 5 years (**Figure 9**).

Figure 10. Number of new dengue cases reported according to Epidemiological Week of Report in 2023 – Latin Caribbean Subregion.

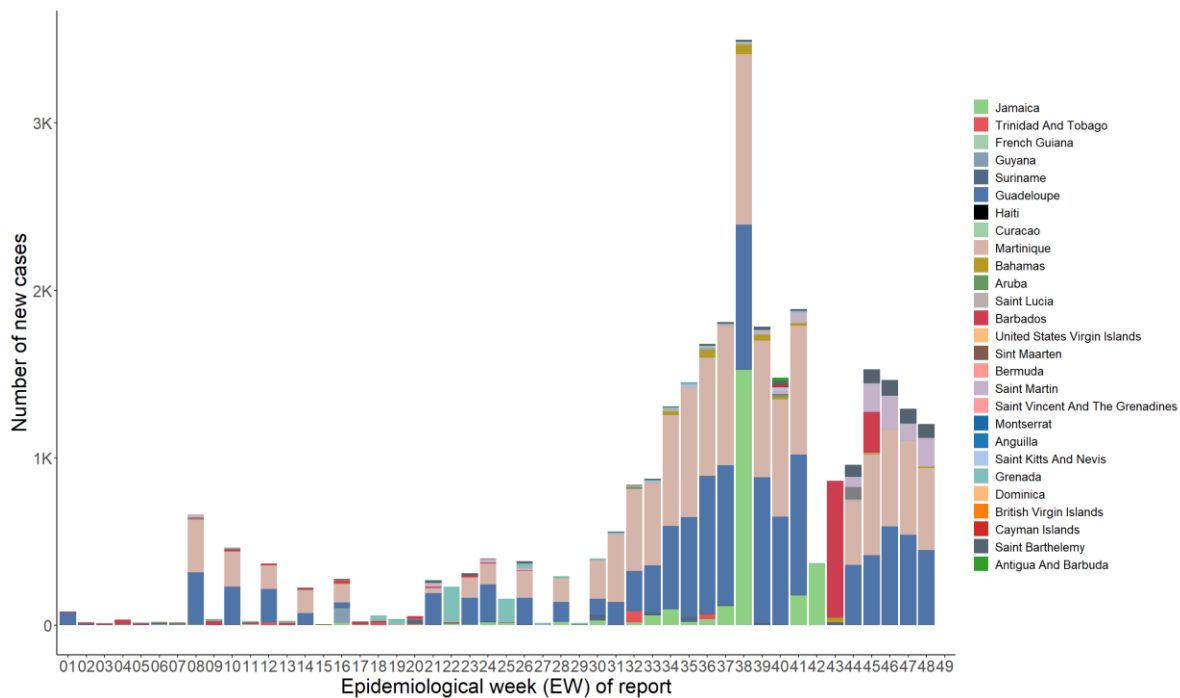


Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

In the Latin Caribbean islands, the Dominican Republic contributes the largest number of reported dengue fever cases, with 18,417 cases, and a cumulative incidence of 168 per 100,000 population. 168 cases of severe dengue have been reported, along with 19 deaths..

The Non-Latin Caribbean has reported a total of 29,595 dengue cases in 2023, with the largest number of cases reported in Martinique (11,969 cases), Guadeloupe (10,841 cases), and Jamaica (2,563 cases). Severe dengue cases have been reported in Guadeloupe (43 cases) and Martinique (26 cases). Guadeloupe (7 deaths), Martinique (6 deaths), Jamaica (2 deaths), Grenada (1 death), and the Bahamas (1 death) have reported deaths due to dengue in 2023.

Figure 11. Number of new dengue cases reported according to Epidemiological Week of Report in 2023 – Non-Latin Caribbean Subregion.



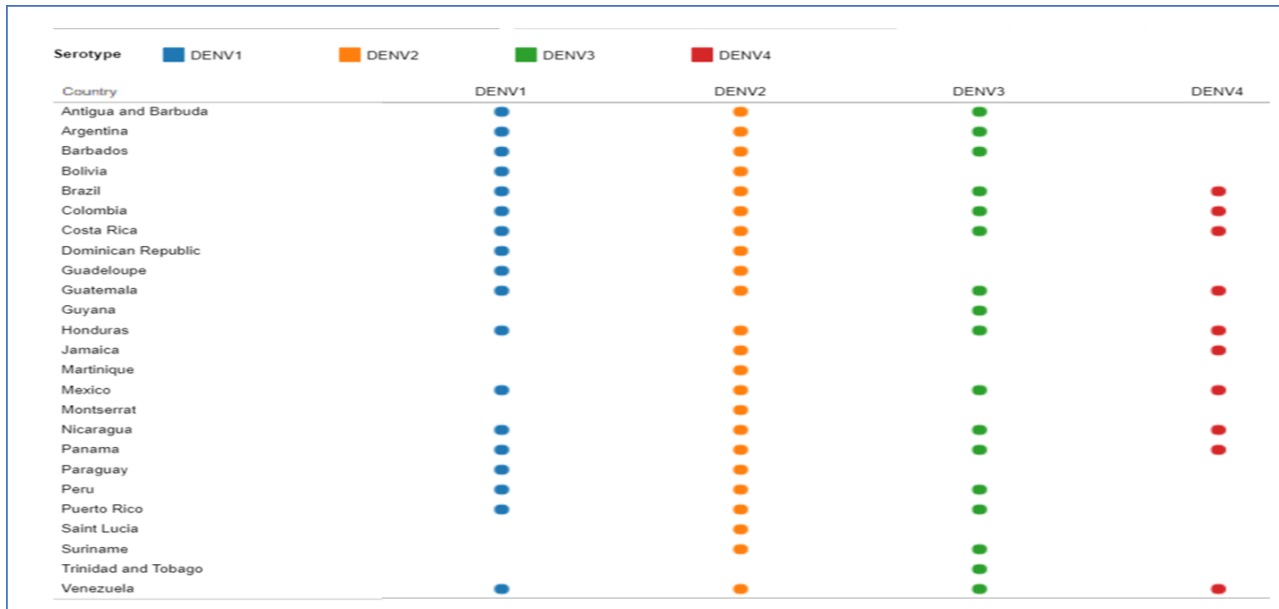
Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

There is a 24% relative increase in the number of cases reported in the Non-Latin Caribbean subregion between EW 44 – 47 when compared to the period between EW 40 – 43, which could be the start of an increasing trend in these islands (Figure 11).

Circulating Dengue Serotypes

All four serotypes of the dengue virus (DENV1, DENV2, DENV3, and DENV4) are currently circulating in both South America, and the Central American Isthmus and Mexico. In 2023, up to EW 49, simultaneous circulation of all four serotypes has been detected in Brazil, Colombia, and Venezuela in South America, and Costa Rica, Guatemala, Honduras, Nicaragua, and Panama in the Central American Isthmus, and in Mexico (1).

Figure 12. Identification of serotypes in countries and territories of the Americas, EW 49 2023.



Source: Adapted from Pan American Health Organization. PLISA Health Information Platform for the Americas, Core Indicators Portal. Washington, DC: PAHO; 2023 [cited 12 December 2023]. Available from: <https://opendata.paho.org/en>

Response from PAHO/WHO

Surveillance

PAHO/WHO has been actively collaborating with Member States to strengthen healthcare and surveillance capacity as part of the implementation of the Integrated Management Strategy for the Prevention and Control of Arboviral Diseases. They have been supporting the application of integrated vector surveillance and control measures by Member States through the periodic publication of guidelines, provision of epidemiological surveillance materials, and technical assistance to national authorities.

Virtual spaces of cooperation (VCS) have been created as a joint surveillance effort between PAHO/WHO and Member States. These allow for the automated generation of various epidemiological analyses, situation rooms, and epidemiological bulletins to strengthen the epidemiological surveillance of dengue and chikungunya, as well as Zika. VCS facilitates the real-time analysis of epidemiological data to support the implementation of prevention and control interventions.

Laboratory

The efforts to enhance laboratory capacity for the diagnosis and detection of arboviral diseases in the Americas have included the development and standardization of diagnostic algorithms for arboviruses. Recent activities involved hosting webinars to educate and prepare laboratory responses to outbreaks of arboviral diseases. Additionally, support has been provided for the distribution of reagents used in serological and molecular tests, ensuring that laboratories across the region have access to necessary resources (4).

Support has been provided to strengthen laboratory capacity for timely and accurate diagnosis and detection of cases throughout the region. The Arbovirus Diagnosis Laboratory Network of the Americas (RELDA as per its acronym in Spanish) has been strengthened to face the introduction of new dengue serotypes and the re-emergence of other arboviral diseases, such as chikungunya, Zika, and the West Nile virus, all of which are currently circulating in the region alongside dengue. The main objective of the network is to ensure efficient laboratory surveillance and robust installed capacity to respond to outbreaks and epidemics (5).

In the latest regional meeting held in August, recommendations were established for the genomic surveillance of Arboviruses. Diagnostic algorithms were updated, and progress was made with the entomo-virological surveillance guides. Furthermore, the work plan and relevant activities for the period 2023-2025 were initiated (6).

Clinical care

A package of interventions has been prepared for countries to strengthen clinical care. This includes the development and dissemination of treatment guidelines, the provision of virtual training materials, a virtual classroom to train the trainers, and the organization of subnational networks of clinical instructors who provide local-scale clinical training (7,8).

The establishment of the National Network of Clinical Experts in Arboviral Diseases has been a key component of a comprehensive approach. This network operates under the direct coordination of national health authorities, with members designated by these authorities. The network facilitates the transfer of technological knowledge, standardizes case management practices, and ensures an ongoing program of continuous education for its members.

PAHO/WHO experts are being periodically deployed in countries that are being affected by major outbreaks (Paraguay and Bolivia). There has been significant expansion during 2023 of the online course on Clinical Diagnosis and Management of Dengue on the PAHO/WHO Virtual Campus of Public Health. This self-learning course is aimed at specialist doctors, general practitioners, nursing staff, as well as medical and nursing students, and all personnel who in one way or another are involved in the care of patients suspected of having dengue, at all levels of healthcare, but mainly at the first level of care (9).

Advice to member countries for the decision to access new technologies to reduce the severity of Dengue, such as the newly approved vaccines.

Vector Control

With the aim of strengthening regional and national capacity for vector prevention and control, PAHO/WHO has been implementing the "Plan of Action on Entomology and Vector Control 2018-2023" (10). The Plan's activities are aimed at supporting strategic lines of action, meeting the goals, milestones, and objectives of the Integrated Management Strategy for Arboviral Disease Prevention and Control in the Americas and the "Global Response for Vector Control 2017-2030" (11).

PAHO/WHO is supporting Member States in recovering their capacity in human resources specialized in entomology and vector control. It is expanding opportunities for entomologists, entomology technicians, and public health workers to receive regular training, continuous education, and professional development (12-16).

PAHO/WHO is working on mobilizing governments and local and regional communities, including local health services, to have a sustainable commitment to entomology and vector prevention and control (17).

PAHO/WHO is collaborating with Member States on access and the correct use of vector surveillance and control methodologies in their countries, as well as the evaluation in the implementation of new technologies for the control of *Aedes aegypti*, such as the case with *Wolbachia* (18,19).

A new operational methodology for controlling *Aedes* mosquitos has been developed and 21 countries already have the capacity to use it and 5 countries have already implemented this new control model (20).

Promotion and planning

Since 2020, PAHO/WHO has been collaborating with the Hipólito Unanue Agreement of the Andean Health Organization (ORAS-CONHU) to strengthen national technical capacities in the prevention and control of arboviruses in Bolivia, Colombia, Chile, Ecuador, Peru, and Venezuela.

Since 2022, the Global Arbovirus Initiative, an integrated strategic plan to address emerging and re-emerging arboviruses with epidemic and pandemic potential, has been implemented. It is focused on risk surveillance, prevention, preparedness, detection, and response to pandemics, as well as the creation of a coalition of partners.

Risk communication and community participation

PAHO/WHO provides advice on risk assessment and communication to Member States. Generic communication materials that are easily adaptable for use in national campaigns have been developed.

PAHO/WHO is encouraging families and communities to adopt source reduction measures aimed at eliminating mosquito breeding sites in homes and their surroundings, and the use of personal protection by family members during the day.

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