

Reported Dengue in the Americas, 2025

Regional evidence with an Experimental Cumulative USU Pilot Estimate

WSI PILOT RELEASE v1.1 | Experimental cumulative USU pilot | P2 evidence-informed mappings | No country ranking

This report preserves the official regional dengue indicators and adds a deliberately simple experimental Universal Suffering Unit model. The modeled estimate is regional, not country-level, and its deterministic mapping range reflects approved mapping scenarios rather than a statistical interval.

Executive summary

4,459,521	1,682,588	8,966	2,207
Suspected cases	Confirmed cases	Severe cases	Deaths

Official PAHO regional controls for epidemiological weeks 1-53 of 2025. Severe cases are a subset of reported suspected cases. Deaths are reported separately from the nonfatal experimental model. [1]

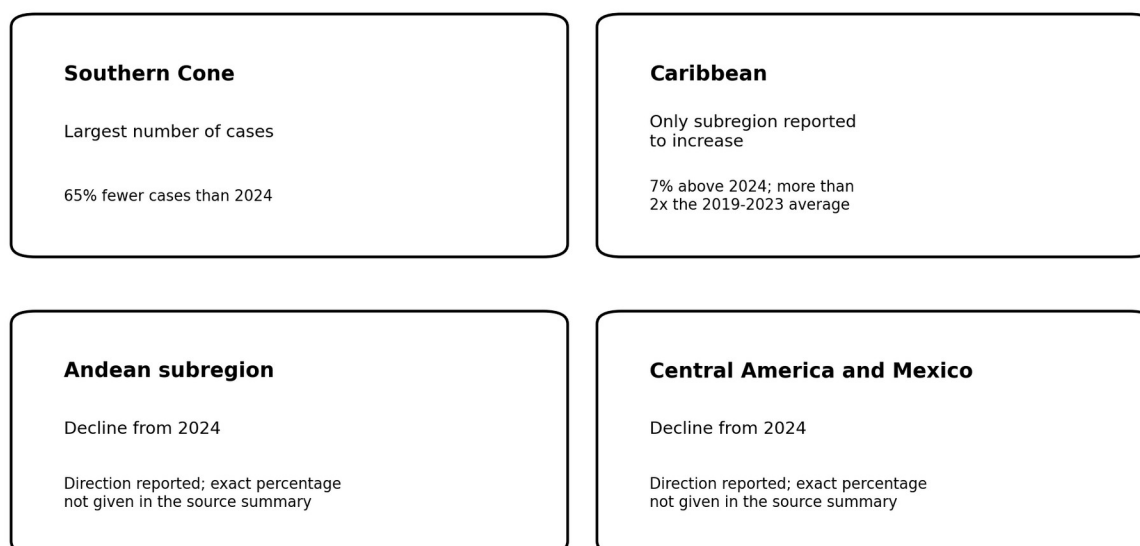
Experimental Cumulative USU Pilot Estimate
Central mapping: approximately 45 million USU. Deterministic mapping range: 18.2-95.5 million USU. This is not a confidence interval.

- Reported dengue declined sharply from the record 2024 year: PAHO reported 66% fewer cases and 74% fewer deaths in 2025. [1]
- The central pilot model adds a four-day non-severe episode, a seven-day severe episode, and provisional P2 - evidence-informed pilot mappings to the regional episode counts.
- Severe episodes contribute about 0.49% of central raw modeled burden because they represent only about 0.20% of reported suspected episodes.
- Reference normalization expresses raw intensity-time burden in USU; it does not create new information or strengthen the source evidence.
- Country modeled ranks remain unavailable because the complete 2025 country table and exact 46-member reporting universe were not archived.

1. What happened in 2025?

PAHO reported 4,459,521 suspected dengue cases across the Americas during 2025, of which 1,682,588 were reported as confirmed. Severe dengue accounted for 8,966 reported cases, or about 0.20% of suspected cases. PAHO recorded 2,207 deaths and a reported case-fatality rate of 0.05%. [1]

The decline from 2024 was substantial but uneven. The Southern Cone remained the largest contributor while reporting 65% fewer cases than in 2024. The Caribbean moved in the opposite direction, increasing by 7% and exceeding twice the average reported during 2019-2023. The Andean subregion and Central America and Mexico also declined. [1]



Source: PAHO final 2025 regional epidemiological update.

Figure 1. Subregional pattern reported by PAHO for 2025.

2. Where were reported cases concentrated?

PAHO's 2025 annual report gives a rounded regional overview: approximately 3.8 million cases in Brazil, 145,000 in Mexico, 125,000 in Colombia, 48,000 in Guatemala, 39,000 in Peru, and about 300,000 across other countries and territories. Brazil therefore accounted for roughly 85% of the regional total described in that report. These values are contextual highlights rather than a complete country-level analytical table. [2]

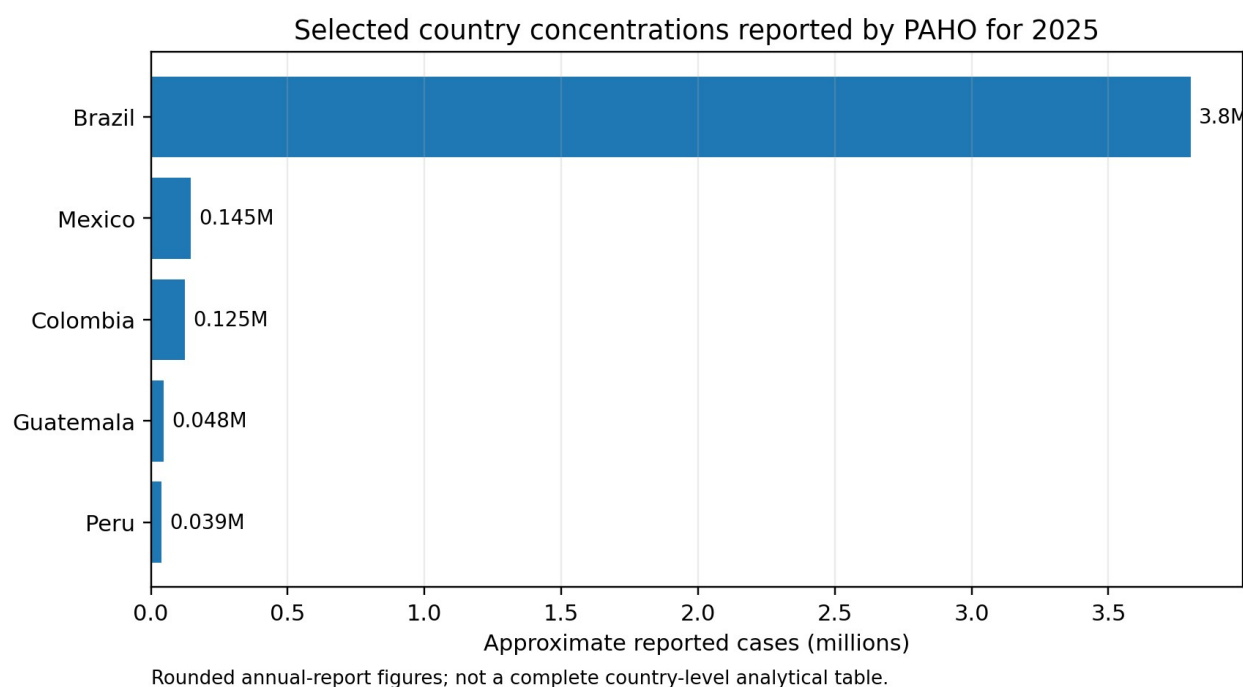


Figure 2. Approximate selected-country figures reported by PAHO. Values are rounded and should not be treated as a complete ranking.

3. Experimental Cumulative USU Pilot Estimate

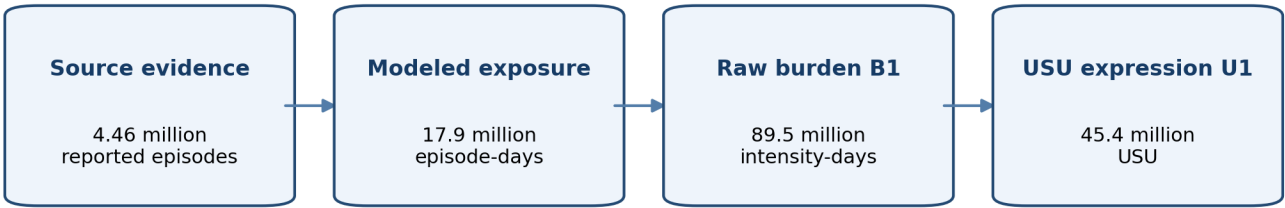
The experimental pilot uses two mutually exclusive episode states. Reported severe cases are removed from total suspected cases, leaving 4,450,555 modeled non-severe episodes and 8,966 severe episodes. Deaths remain separate.

State	Count	Intensity low / central / high	Duration low / central / high	Maturity
Non-severe symptomatic dengue	4,450,555	4 / 5 / 6	2 / 4 / 7 days	P2 - evidence-informed
Severe dengue	8,966	6 / 7 / 8	4 / 7 / 14 days	P2 - evidence-informed

$$B1 = \sum Ns \times Is \times Ds$$

$$U1 = B1 / 1.96875$$

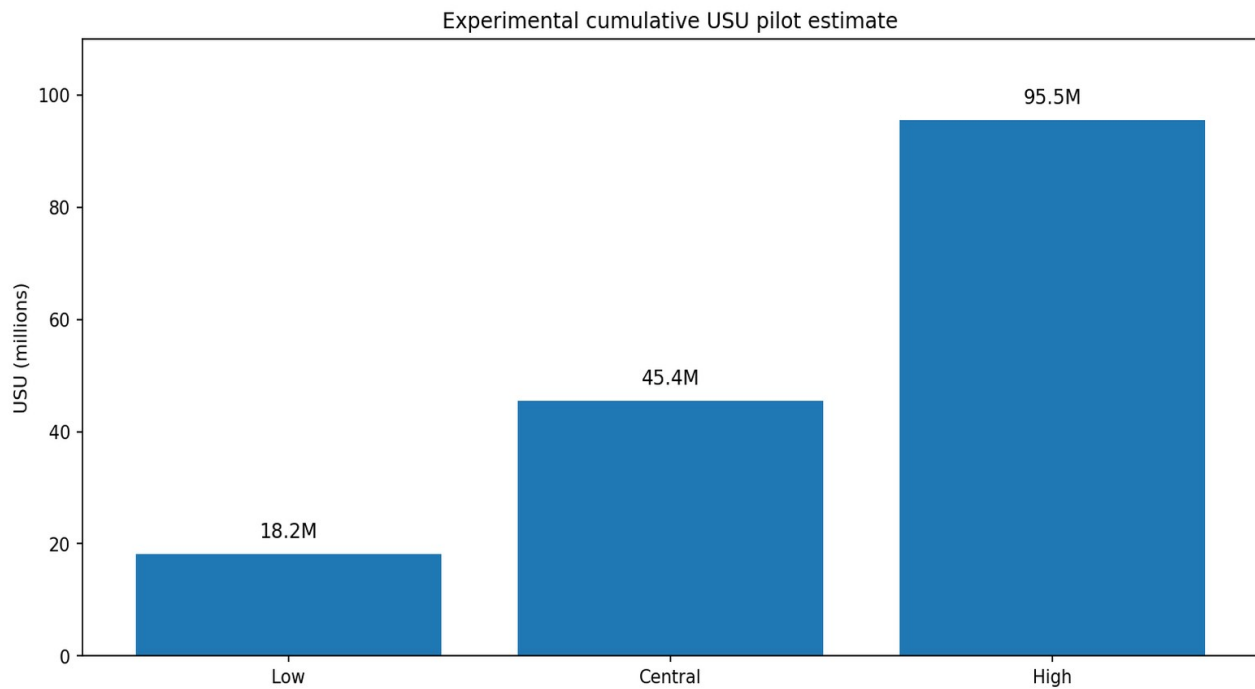
The low, central, and high scenarios apply the corresponding intensity and duration values to both states. The reference burden of 1.96875 intensity-days defines the USU reporting unit. The model uses p=1 and no overlap adjustment.



Central mapping scenario. Duration and intensity add modeled content; reference normalization changes the reporting unit only.

Figure 3. Evidence ladder under the central mapping scenario.

Scenario	Episode-days	Raw B1 (intensity-days)	U1 (USU)	Severe share of B1
Low	8.94 million	35.8 million	18.2 million	0.60%
Central	17.9 million	89.5 million	45.4 million	0.49%
High	31.3 million	188 million	95.5 million	0.53%



Deterministic low, central, and high mapping scenarios; not a confidence interval.

Figure 4. Experimental regional USU results under deterministic mapping scenarios.

Mandatory interpretation

Experimental USU pilot estimate. PAHO directly reports the episode counts. WSI applies provisional P2 intensity and duration mappings to estimate linear intensity-time burden and expresses that burden relative to the renal-colic reference. The mapping range is not a statistical confidence interval. Mortality is reported separately.

4. What the model adds

Layer	Central result	What it adds
Reported episodes	4.46 million	Observed surveillance evidence
Modeled episode-days	17.9 million	Provisional duration
Raw burden B1	89.5 million intensity-days	Provisional intensity
USU expression U1	45.4 million USU	A common reporting unit; no new information
State contribution	0.49% from severe episodes	Shows which state drives the total

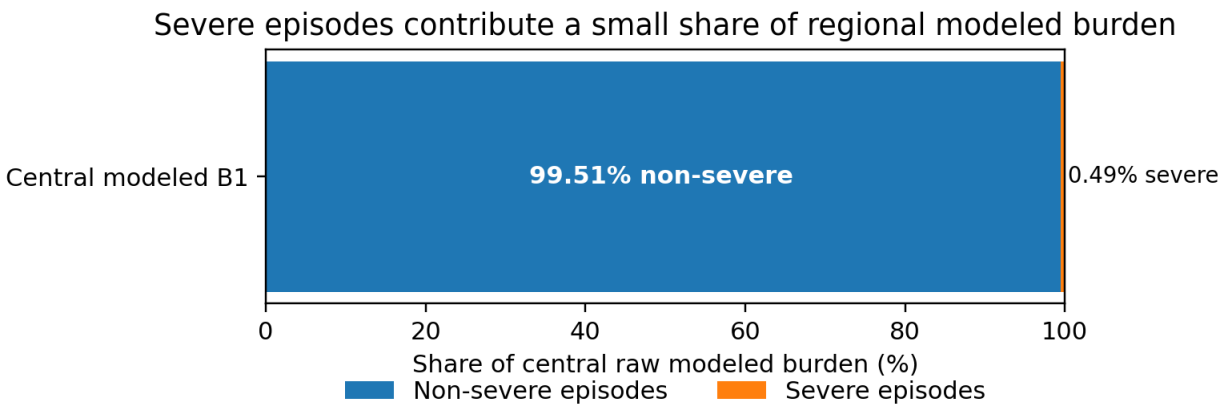


Figure 5. State contribution to central raw modeled burden.

The pilot demonstrates the complete WSI evidence-to-USU workflow. Duration and intensity produce new modeled quantities; normalization only changes their unit. The regional result remains dominated by the non-severe episode count and mapping. This means the USU layer is useful as a transparent pilot of the common-scale method, but it does not radically change the main regional interpretation supplied by the reported case total.

5. Why this is not a country ranking

PAHO states that 46 countries and territories systematically report weekly dengue indicators. [3] WSI located the official country-and-territory interface, but did not obtain a canonical machine-readable 2025 extract or a confirmed list of the 46 reporting members. [4] Without those source objects, a complete country comparison cannot be checked for membership, missingness, late revisions, suppressed values, or regional reconciliation.

Protocol decision

This release provides regional evidence and an experimental regional USU pilot. Country person-time estimates, USU-based country models, per-capita country comparisons, and exact country ranks remain unauthorised by the current evidence package.

6. Scope and limitations

- The reported figures are surveillance data, not the total number of infections. Under-ascertainment is not corrected in the pilot.
- The non-severe and severe intensities are provisional P2 - evidence-informed pilot mappings, not patient-elicited overall suffering scores.
- The severe mapping is a time-averaged interpretation of the full acute episode; it does not assume critical-phase intensity for every day.
- Post-acute fatigue and persistent symptoms are excluded because the regional source does not identify affected cases or duration. [5,10]
- Deaths are reported separately and are not converted into USU.
- The previous 20,000-draw probabilistic model is archived as a superseded technical demonstration and is not used for the public mapping range.

7. What comes next

- Keep the PAHO data request active and archive any later country-level extract as a versioned source snapshot.
- If a reconciled country table becomes available, extend the same approved mappings to a country-level pilot and test whether severity composition changes rankings beyond case counts.
- Use the same simplified p=1 pilot standard for additional WSI series while versioning mappings as stronger evidence becomes available.

Sources

1. Pan American Health Organization. PAHO updates dengue situation in the Americas, recommends strengthened surveillance and health system preparedness. 20 February 2026. <https://www.paho.org/en/news/20-2-2026-paho-updates-dengue-situation-americas-recommends-strengthened-surveillance-and>

- 2. Pan American Health Organization. PAHO Annual Report 2025 - Health security.** <https://www.paho.org/pub/en/annual-report-2025/health-security.html>
- 3. Pan American Health Organization. Dengue: data and analysis.** <https://www.paho.org/en/arbo-portal/dengue-data-and-analysis>
- 4. PAHO/EIH Open Data. Dengue and Severe Dengue cases and deaths.** <https://opendata.paho.org/en/dengue/regional/dengue-and-severe-dengue-cases-and-deaths>
- 5. World Health Organization. Dengue fact sheet.** <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>
- 6. US Centers for Disease Control and Prevention. Clinical Features of Dengue.** <https://www.cdc.gov/dengue/hcp/clinical-signs/index.html>
- 7. Pan American Health Organization. Dengue: Symptoms, Prevention and Treatments.** <https://www.paho.org/en/topics/dengue>
- 8. Wong JGX, et al. Self-reported pain intensity with the numeric reporting scale in adult dengue. PLoS One. 2014;9:e96514.** <https://doi.org/10.1371/journal.pone.0096514>
- 9. Ang LW, et al. A 15-year review of dengue hospitalizations in Singapore. PLoS Negl Trop Dis. 2019;13:e0007389.** <https://doi.org/10.1371/journal.pntd.0007389>
- 10. Tiga-Loza DC, et al. Persistence of symptoms in dengue patients. Trans R Soc Trop Med Hyg. 2020;114:355-364.** <https://doi.org/10.1093/trstmh/traa007>