

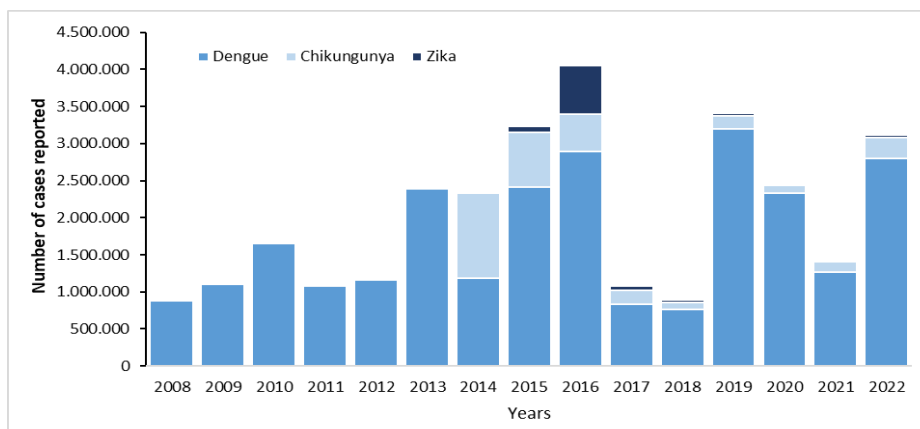
During 2022, several countries in the region registered increases in the number of cases of dengue, Zika and chikungunya, above that was reported in 2021. Given the beginning of the season of greatest transmission of dengue in the Southern Hemisphere, the Pan American Health Organization / World Health Organization (PAHO / WHO) recommends that Member States intensify preparedness and response actions to respond to possible outbreaks of dengue and other arboviral diseases to avoid deaths and complications from these diseases.

### Situation summary

In the Region of the Americas, between epidemiological week (EW) 1 and EW 52 of 2022, a total of 3,110,442 cases<sup>1</sup> of arboviral diseases were reported. Of the total cases, 2,803,096 (90.1%) were dengue cases, 271,006 (8.7%) were chikungunya cases, and 36,340 (1.2%) were Zika cases.

**Figure 1** shows the circulation pattern of dengue, chikungunya and Zika in the last 15 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 in the picture of the arboviral diseases in the region. 2022 is the year with the third highest record in the number of dengue cases, only surpassed by the years 2016 and 2019.

**Figure 1.** Distribution of reported cases of dengue, chikungunya, and Zika by year of report. Region of the Americas, 2008-2022 (up to EW 52 of 2022).



**Source:** Data entered into the Health Information Platform for the Americas (PLISA per its acronym in Spanish, 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 17 January 2023.

<sup>1</sup> Data available in the Health Information Platform for the Americas (PLISA per its acronym in Spanish, PAHO/WHO), accessed on 17 January 2023. Available at: <https://bit.ly/314Snw4>

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In the Region of the Americas, the total number of cases of arboviral disease reported in 2022 as of EW 52 (3,110,442 cases) represents approximately a 118% relative increase compared to the same period in 2021 (1,425,221 cases). During the first semester of 2022 an upward trend in cases of dengue, chikungunya, and Zika was observed, which peaked in EW 18 (**Figures 2,3 and 5**).

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 dengue, chikungunya and Zika viruses has occurred simultaneously with the active transmission of the SARS-CoV-2 virus in endemic countries and territories in the Region of the Americas. Moreover, the identification of new variants of concern for SARS-CoV-2 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 and management of these cases.

Additionally, in the first semester of 2023, several countries in the Region, specially from the Southern Cone, will have an increase in temperatures related to the summer season, which, depending on its magnitude and impact in the endemic areas of the arboviral mentioned, could constitute an additional burden of arboviral 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 52<sup>1</sup> of 2022, a total of 2,803,096 cases of dengue were reported in the Region of the Americas, with a cumulative incidence rate of 282 cases per 100,000 population. The highest cumulative incidence rates have been reported in the following subregions<sup>2</sup>: the Southern Cone with 818 cases per 100,000 population, the Andean subregion with 128 cases per 100,000 population, and the Central American Isthmus and Mexico with 124 cases per 100,000 population.

In 2022, up to EW 52, of the 2,803,096 dengue cases reported in the Region, 1,299,273 (46.4%) were laboratory-confirmed, and 4,497 (0.16%) were classified as severe dengue. The highest number of dengue cases was observed in Brazil with 2,383,001 cases<sup>3</sup>, followed by Nicaragua with 97,541 cases and Peru with 72,844 cases<sup>4</sup>. Regarding the number of severe dengue

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<sup>2</sup> Note: the subregions and the corresponding countries and territories follow the divisions described in the Health Information Platform for the Americas (PLISA as per its acronym in Spanish), available at: <https://bit.ly/3lGwSwc>. Accessed on 17 of January 2023.

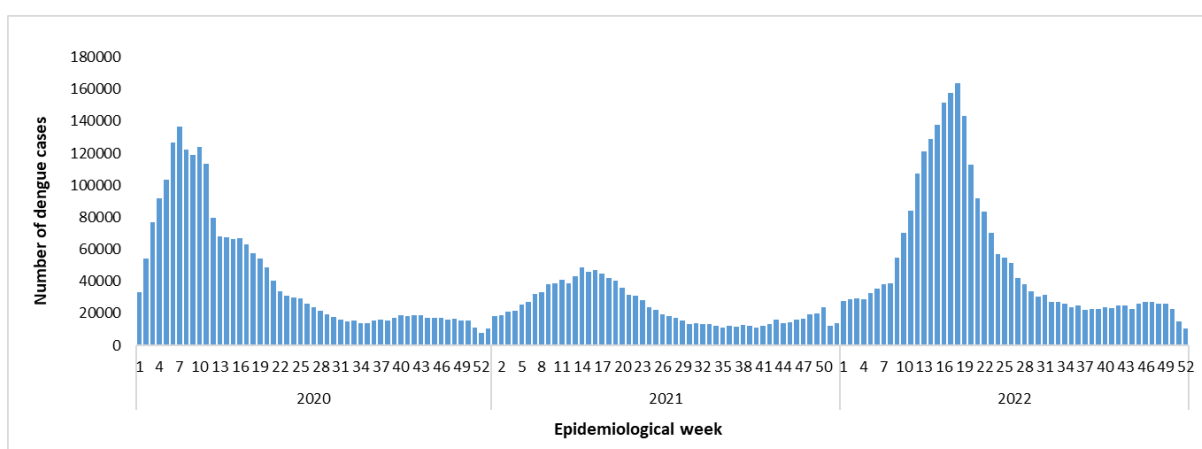
<sup>3</sup> Information provided by Brazil International Health Regulations (IHR) National Focal Point (NFP).

<sup>4</sup> Information provided by Perú International Health Regulations (IHR) National Focal Point (NFP).

cases, the highest number of cases was observed in the following countries: Brazil with 1,473 cases<sup>3</sup> and Colombia with 1,371 cases. Additionally, a total of 1,223 fatalities were reported in the Region during the same period (case-fatality rate: 0.044%). Keeping dengue case fatality below 0.05 is one of the impact objectives in our region and highest priority must be given in all countries to timely diagnosis, identification of warning signs and proper management and treatment of patients, to avoid serious cases and fatalities.

All four dengue virus serotypes (DENV 1, DENV 2, DENV 3, and DENV 4) are present in the Region of the Americas. In 2022, up to EW 52, the simultaneous circulation of all of them was detected in Costa Rica, Colombia, Cuba, El Salvador, Guatemala, Mexico, Nicaragua and Venezuela; while in Brazil and Puerto Rico, circulate serotypes DENV 1, DENV 2, and DENV 3; and in Argentina, Bolivia, Ecuador, Panama and Paraguay, circulate DENV 1 and DENV 2<sup>5</sup>.

**Figure 2.** Distribution of dengue cases by epidemiological week (EW), Region of the Americas, 2020-2022 (up to EW 52 of 2022).



**Source:** Data entered into the Health Information Platform for the Americas (PLISA as per its acronym in Spanish, 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 17 January 2023.

The following is a summary of the epidemiological situation for dengue in subregions and countries with the highest cumulative incidence rates in 2022:

### Southern Cone subregion<sup>6</sup>

Between EW 1 and EW 52 of 2022, 2,371,728 cases of dengue were reported with a cumulative incidence rate of 818 cases per 100,000 population, including 1,476 cases classified as severe dengue and 991 fatalities. The case-fatality rate was 0.042%. During the same period, among the sub-regions in the Region of the Americas, the Southern Cone reported the highest number of dengue cases.

<sup>5</sup> More information on circulating serotypes by country is available at: PAHO/WHO Health Information Platform for the Americas (PLISA as per its acronym in Spanish): <https://bit.ly/314Snw4>

<sup>6</sup> Argentina, Brazil, Chile, Paraguay and Uruguay

In 2022, up to EW 52, the countries with the highest incidence rates in this subregion were: **Brazil**<sup>7</sup> (1,117 cases<sup>3</sup> reported per 100,000 population) and **Paraguay** (105 cases<sup>8</sup> per 100,000 population).

### **Brazil**

In 2022, up to EW 52, of the 2,383,001 reported dengue cases, 1,220,728 (51.2%) were laboratory-confirmed and 1,473 (0.12%) were classified as severe dengue. In the same period, a total of 1,016 fatalities were reported (case-fatality rate: 0.083%), being this the year in which the highest number of deaths from dengue has been registered in the country.<sup>3</sup>

### **Central American Isthmus and Mexico subregion<sup>9</sup>**

Between EW 1 and EW 52 of 2022, a total of 226,375 cases of dengue were reported with a cumulative incidence rate of 124 cases per 100,000 population, including 945 cases classified as severe dengue and 83 fatalities. The case-fatality rate was 0.037%. During the same period, the simultaneous circulation of all four dengue virus serotypes were identified in El Salvador, Guatemala, Mexico and Nicaragua.

In 2022, up to EW 52, the countries with the highest incidence rates in this subregion were: **Nicaragua** (1,463 cases<sup>10</sup> per 100,000 population), **Panama** (259 cases per 100,000 population) and **El Salvador** (253 cases per 100,000 population).

### **Nicaragua**

In 2022, up to EW 52, of the 97,562 reported dengue cases, 4,532 (4.6%) were laboratory-confirmed and 35 (0.03%) were classified as severe dengue cases. No deaths were reported during the same period.<sup>10</sup>

### **Andean subregion<sup>11</sup>**

Between EW 1 and EW 52 of 2022, a total of 183,857 cases of dengue were reported, with a cumulative incidence rate of 128 cases per 100,000 population, including 1,802 cases classified as severe dengue and 168 fatalities. The case-fatality rate was 0.091%. During the same period all four dengue virus serotypes were identified in Colombia and Venezuela.

The countries with the highest incidence rates in this subregion were: **Peru** (219 cases<sup>4</sup> per 100,000 population), **Colombia** (135 cases per 100,000 population) and **Bolivia** (124 cases per 100,000 population).

### **Peru**

In 2022, up to EW 52, of the 72,844 dengue cases reported, 53,729 (74%) were laboratory-confirmed and 229 (0.3%) were classified as severe dengue. In the same period, a total of 84 fatalities were reported (case-fatality rate: 0.12%), and serotypes DENV 1 and DENV 2 were identified.<sup>4</sup>

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<sup>7</sup> Of the total accumulated cases of arboviral diseases notified in the Region of the Americas up to EW 52 2022, the 84% of dengue cases, 98% of chikungunya cases and the 91% of Zika cases, correspond to Brazil.

<sup>8</sup> Information provided by Paraguay International Health Regulations (IHR) National Focal Point (NFP).

<sup>9</sup> Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

<sup>10</sup> Information provided by Nicaragua International Health Regulations (IHR) National Focal Point (NFP).

<sup>11</sup> Bolivia, Colombia, Ecuador, Peru, and Venezuela.

## Latin Caribbean subregion<sup>12</sup>

Between EW 1 and EW 52 of 2022, a total of 114,498 cases of dengue were reported with a cumulative incidence rate of 57 cases per 100,000 population, including 333 cases classified as severe dengue and 43 fatalities. The case-fatality rate was 0.29%.

In 2022, up to EW 52, the countries and territories with the highest incidence rates in this subregion were: **Dominican Republic** (95 cases per 100,000 population) and **Puerto Rico** (36 cases per 100,000 population)

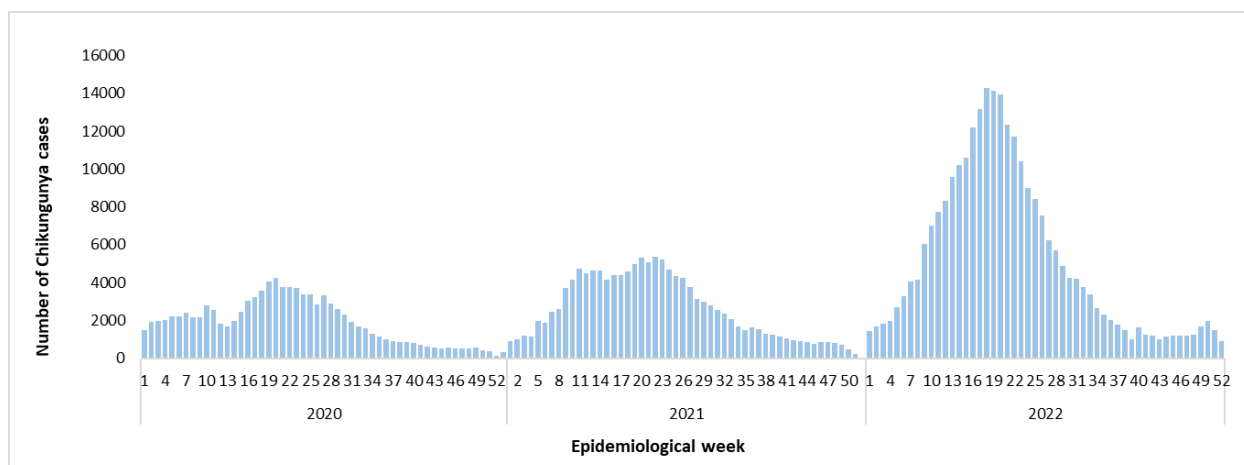
### Dominican Republic

In 2022, up to EW 52, of the 10,439 reported dengue cases, 270 (2.6%) were classified as severe dengue. In the same period, a total of 39 fatalities were reported (case-fatality rate: 0.37%), during the same period, the circulation of the DENV 2 serotype was identified in the country.

## Chikungunya

Between EW 1 and EW 52<sup>1</sup> of 2022, a total of 271,006 chikungunya cases were reported, including 94 fatalities<sup>3</sup>, in 13 of the countries and territories in the Region of the Americas; this figure is higher than that observed in the same period of 2021 (137,025 cases, including 12 fatalities) (**Figure 3**). During the same period, 99,5% of the cases were reported by 3 countries: **Brazil** with 265,265 suspected cases<sup>3</sup> of chikungunya (98%), **Paraguay** with 2,443 cases<sup>8</sup> (0.9%) and **Guatemala** with 1,933 cases (0.7%).

**Figure 3.** Distribution of chikungunya cases by epidemiological week of onset of symptoms. Region of the Americas, 2020-2022 (up to EW 52 of 2022).



**Source:** Data entered into the Health Information Platform for the Americas (PLISA as per its acronym in Spanish, 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 on the 17 January 2023.

In 2022, between EW 1 and EW 52, the cumulative incidence rate in the Region was 27 cases per 100,000 population. The countries with the highest incidence rates were **Brazil** with 124

<sup>12</sup> Cuba, Dominican Republic and Puerto Rico.

cases per 100,000 population<sup>3</sup>, **Paraguay** with 20 cases per 100,000 population<sup>8</sup> and **Guatemala** with 10 cases per 100,000 population<sup>1</sup>.

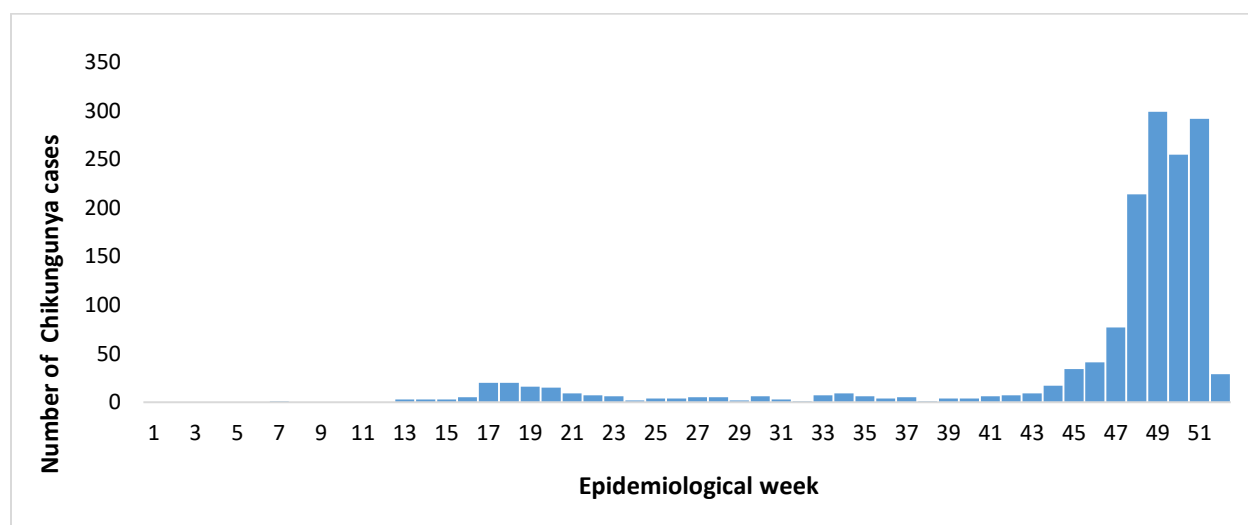
During the same period, 94 fatalities attributed to chikungunya were reported, all in Brazil.<sup>3</sup>

### Paraguay

As of late 2022, the country has reported an increase in the number of chikungunya cases. The average number of cases reported per week in the last three EW of the year (50 to 52) is 750 cases (**Figure 4**). In this same period, 576 confirmed cases were reported.

It is very important for all the southern hemisphere to be extremely vigilant and prepared to intensify prevention and control actions in the face of any increase in cases in the first half of 2023.

**Figure 4.** Distribution of chikungunya cases by epidemiological week of symptom onset. Paraguay, 2022 (up to EW 52 of 2022).



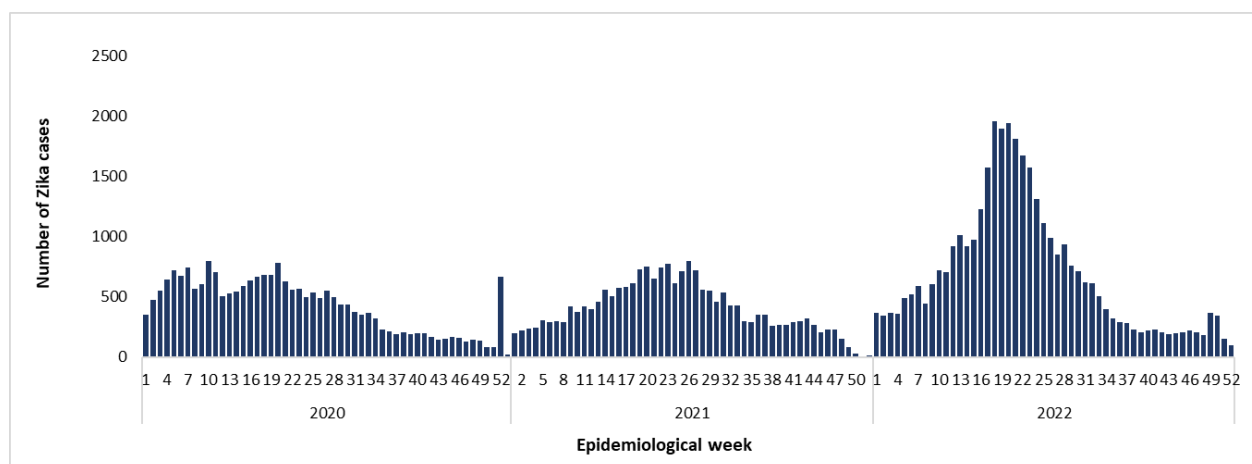
**Source:** Figure from Paraguay International Health Regulations (IHR) National Focal Point (NFP) and reproduced by PAHO/WHO.

## Zika

Between EW 1 and EW 52<sup>1</sup> of 2022, a total of 36,340 cases of Zika have been reported, in 15 of the countries and territories of the Region of the Americas, including two fatalities (reported in Brazil)<sup>3</sup>. These figures are higher than those observed in the same period of 2021 (21,045 cases, including 5 fatalities).

In 2022, as of EW 52, of the 36,340 cases of Zika reported in the Region of the Americas, the highest proportion of suspected cases in the Region was reported in **Brazil** with 34,176 cases<sup>3</sup> (94%), followed by **Guatemala** with 1,717 cases (4.7%) and **Paraguay** with 1,094 cases (3%). Since the first detection of Zika in Brazil in March 2015, local transmission has been confirmed in all countries and territories in the Americas, except of continental Chile, Uruguay, and Canada. In 2016, a total of 651,470 cases were reported, and a significant reduction in transmission was observed in the following years (**Figure 5**).

**Figure 5.** Distribution of reported cases of Zika by epidemiological week of onset of symptoms. Region of the Americas, 2020-2022 (up to EW 52 of 2022).



**Source:** Data entered into the Health Information Platform for the Americas (PLISA as per its acronym in Spanish, 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 17 January 2023.

## Guidance for national authorities

Given the beginning of the season of greatest dengue transmission in the Southern Hemisphere and the coexistence of COVID-19 with dengue and other arboviral diseases 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 and timely 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 arboviral diseases, 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 at times of massive influx of patients.

Member States are urged to remain vigilant about the possibility of an increase in chikungunya cases, given the accumulation of susceptible people eight years after the major outbreak of this disease in 2014.

PAHO/WHO reminds Member States of the guidelines published in the 10 June 2020 PAHO/WHO Epidemiological Update on dengue and other arboviral diseases, 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://bit.ly/3jFrDqf>

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