Weekly COVID-19 Epidemiological Update - Region of the Americas

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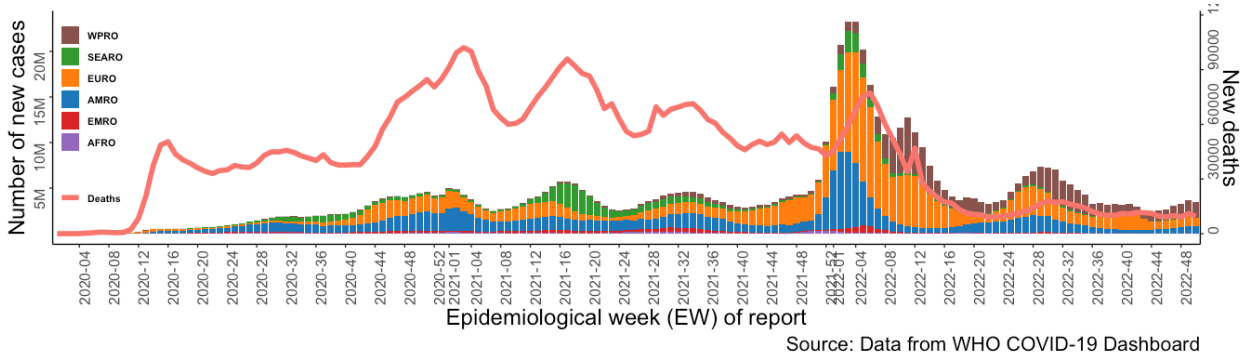
Contents:

Executive Summary

- **Since the onset of the pandemic** in 2020 and up to December 20, 2022, a cumulative total of approximately 650 million COVID-19 cases including about 6.6 million deaths were reported from all six WHO regions. During epidemiological week (EW) 50, cases decreased in four regions while they increased in WPRO (8.1%) and AMRO (17.9%). Similarly, COVID-19 deaths decreased in four regions while they increased in WPRO (6.9%) and AMRO (2.6%).
- **Globally,** approximately 3,821,620 new COVID-19 cases were reported in EW 50 (December 11, 2022-December 17, 2022) - a 4.8% increase compared to EW 49 (December 04, 2022-December 10, 2022) (**Figure 1**). For the same period, 10,737 new COVID-19 deaths were reported globally – a -4.9% relative decrease compared the previous week.
- **In the region of the Americas,** 1,022,218 cases and 4,637 deaths were reported in EW 50 - a 17.9% increase in cases and 2.6% increase in deaths compared to the previous week.
- At the subregional level, COVID-19 cases and deaths increased in two subregions – the South American subregion (49.6% and 55.0%, respectively) and the Central American subregion (10.4% and 57.7%, respectively).
- The overall weekly case notification rate for the region of the Americas was 99.9 cases per 100,000 population during EW 50 (84.8 the previous week). Between EW 50 and 49, the 14-day COVID-19 death rate was 9 deaths per 1 million population (7.5 the previous two weeks).
- Among 22 countries/territories in the region with available data, **COVID-19 hospitalizations** increased in 12 countries and territories (range: 1% - 122.6%) during EW 50 compared to the previous week. Among 16 countries and territories with available data, COVID-19 **ICU admissions** increased in 7 countries and territories (range: 0.4% - 133.3%).

Figure 1: COVID-19 cases and deaths by epidemiological week (EW) of report and WHO region. EW 4, 2020 - EW 50, 2022.



Source: Data from WHO COVID-19 Dashboard

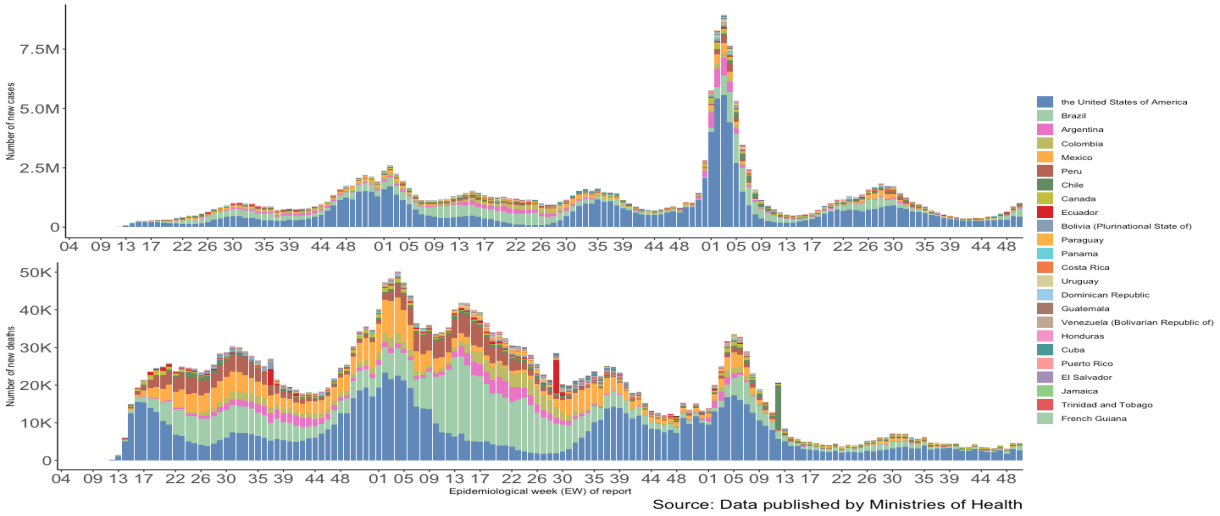
Data are retro-adjusted every week and the numbers and percent changes of COVID-19 cumulative cases and deaths may not match with the previous COVID-19 weekly situational reports.

Pan American Health Organization / World Health Organization. Washington, D.C.: PAHO/WHO; 2022

More information available at: https://paho-covid19-response-who.hub.arcgis.com/ & https://shiny.pahobra.org/wdc/

Region of the Americas - An overview

Figure 2: COVID-19 cases and deaths by epidemiological week (EW) of report and country/territory. Region of the Americas. EW 3, 2020 - 50, 2022.



During EW 50, 1,022,218 new **COVID-19 cases** were reported in the region of the Americas - a relative increase of 17.9% compared to previous week **(Figure 2)**. The highest number of COVID-19 cases in the last week was reported from South America (503,353 cases, 49% increase) compared to the previous week. **(Table 1)**. During EW 50 at the national level, the highest proportion of weekly COVID-19 cases were reported by the United States of America (445,424 new cases, -2.9% decrease), Brazil (337,810 new cases, 74% increase), Argentina (62,261 new cases, 129.6% increase).

Table 1: Weekly change (%) in cases and deaths between EW 49 and EW 50 by subregion. Region of the Americas

Subregion	Total Cases	Total Deaths	Cases EW 49	Deaths EW 49	Cases EW 50	Deaths EW 50	% Change Cases	% Change Deaths
Caribbean and Atlantic Ocean Islands	4,312,260	35,734	13,630	100	12,330	35	-9.5%	-65.0%
Central America	4,111,021	53,819	22,282	26	24,609	41	10.4%	57.7%
North America	110,172,098	1,456,569	494,348	3,371	481,926	2,974	-2.5%	-11.8%
South America	65,893,150	1,335,975	336,578	1,024	503,353	1,587	49.6%	55.0%

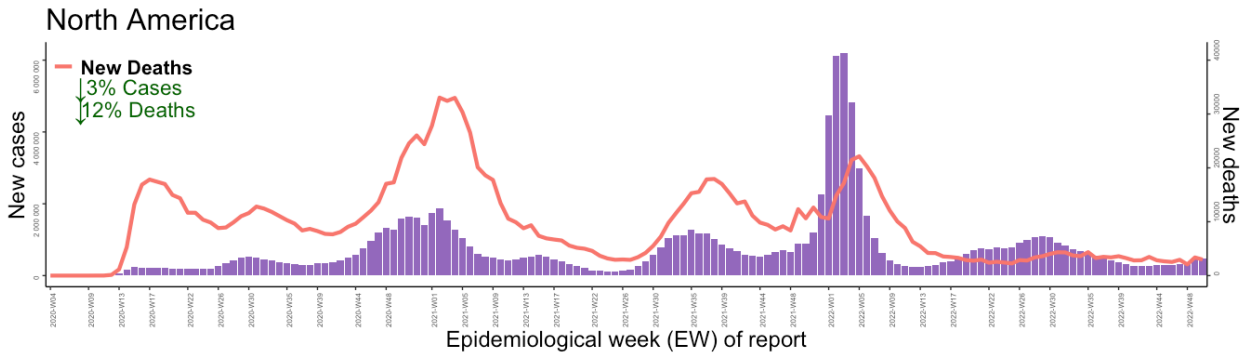
For the same period, 4,637 **COVID-19 deaths** were reported in the region of the Americas - a relative increase of 2.5% compared to previous week **(Figure 2)**. The highest number of COVID-19 deaths in the last week was reported from North America (2,974 deaths, -12% decrease) **(Table 1)**. At the national level, the highest proportion of weekly COVID-19 deaths were reported by the United States of America (2,658 new deaths, -13.4% decrease), Brazil (1,133 new deaths, 87.9% increase), and Canada (250 new deaths, -0.4% decrease).

A summary of the COVID-19 trends for EW 50 by subregion is presented below.

North America

The overall trends for **COVID-19 cases** have plateaued in North America as of EW 50, with a total of 481,926 weekly cases (-2.5% decrease) being reported. During EW 50, two countries in the subregion did not report any substantial changes, reporting a slight decrease – Canada (16,528 cases, -4.9% decrease) and the United States of America (445,424 cases, -2.9% decrease), while Mexico reported a 10.4% increase (19,974 cases) compared to the previous week.

Figure 3: COVID-19 cases and deaths by epidemiological week (EW). **North America. Region of the Americas.** EW 3, 2020 - EW 50, 2022.



For the same period, **weekly COVID-19 deaths** decreased by -11.8% in North America during EW 50 relative to the previous week. While two countries in the subregion reported a decrease in weekly deaths – the United States of America (2,658 new deaths, -13.4% decrease) and Canada (250 new deaths, -0.4% decrease), Mexico reported a large increase in weekly deaths (66 new deaths, 26.9% increase) during EW 50 compared to the previous week.

During 50, among the two countries in North America with available data for **COVID-19 weekly hospitalizations and ICU admissions**, the United States of America reported an increase in weekly hospitalizations (n=39,888, 4.1% increase) and ICU admissions (n=4,648, 7.5% increase) for the third consecutive week. In Canada, weekly hospitalizations including weekly ICU admissions remained stable after a peak observed in early-November 2022 (5,120 hospitalizations, 1% increase & 262 ICU admissions, -0.8% decrease) during EW 50 compared to the previous week.

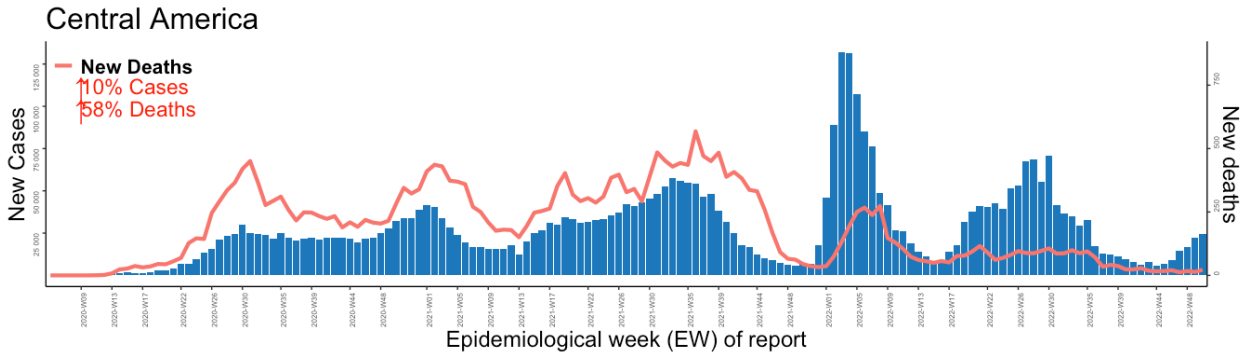
The Omicron **variant of concerns** (VOC) of BA.5 are predominant in all three countries in the subregion. In the United States of America, the proportion of the BA.5 subvariant has been gradually decreasing over the past three months – accounting for 10%, while the estimated proportions of BA.5 sub-lineages, BQ.1 and BQ.1.1, have been rapidly increasing over the past two months – accounting for 69.1% (30.7% and 38.4% respectively) of sequences for the week ending on 17 December 2022[1]. The BA.5 and BA.4 sub-lineages made up about 93.2% (including 9.6% of BQ.1, 22.2% of BQ.1.1 and 5.7% of BF.7) and 2.5% the week of 27 November 2022 in Canada[2] and 95.8% and 1.4% as of EW 45 in Mexico, respectively.

1 The United States Centers for Disease Control and Prevention (CDC). Variant Proportions. Accessed 20 Dec 2022. Available at: https://bit.ly/3Obz8cT
2 Public Health Agency of Canada (PHAC). COVID-19 Variants in Canada. Accessed 20 Dec 2022. Available at: https://bit.ly/3bbFRFr

Central America

In Central America, the overall **COVID-19 incidence** for the sub-region has been on an upward trend for the past six consecutive weeks, with 24,609 new cases being reported during EW 50 – - a 10.4% increase compared to the previous week **(Figure 4)**.

Figure 4: COVID-19 cases and deaths by epidemiological week (EW). **Central America. Region of the Americas.** EW 6, 2020 - EW 50, 2022.



During EW 50, **COVID-19 weekly cases** increased in four countries and territories in the subregion – the highest relative increase in cases being reported by Belize (259 new cases, 275.4% increase), followed by Nicaragua (45 new cases, 246.2% increase), Guatemala (13,657 new cases, 34.7% increase), and Costa Rica (4,031 new cases, 13.5% increase). The remaining three countries in the subregion reported either a decline – Panama (4,991 new cases, -25.7% decrease) and Honduras (1,626 new cases, -9.3% decrease) – or did not report any cases (El Salvador) during EW 50 compared to the previous week.

During EW 50, **weekly deaths** increased by approximately 57.7% relative to the previous week **(Figure 4)** with four out of the seven countries and territories reporting an increase (range: 10% – 100%). The highest proportion of reported deaths in the subregion was reported by Guatemala (16 deaths, 100% increase), followed by Panama (11 deaths, 10% increase), and Costa Rica (8 deaths, 60% increase) compared to the previous week.

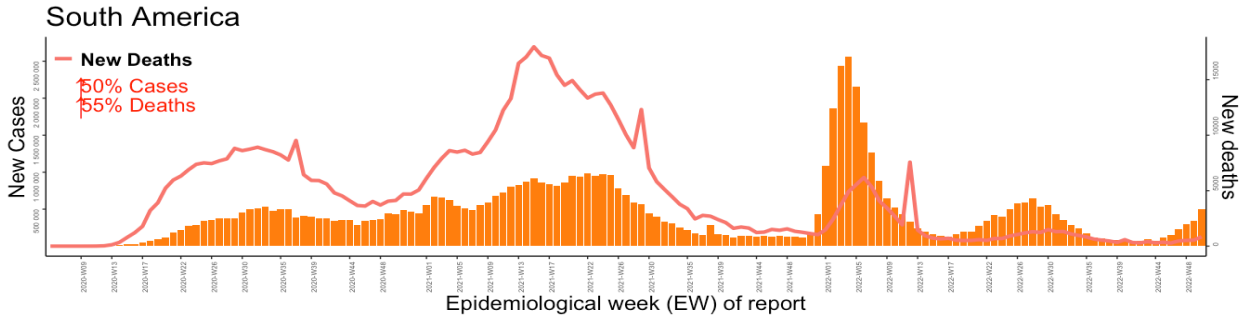
Among three countries/territories with available data for **weekly COVID-19 hospitalizations** in the Central American subregion, two reported an increase in their weekly COVID-19 hospitalizations – Honduras (69 hospitalizations, 122.6% increase) and Costa Rica (108 hospitalizations, 22.7% increase), while one – Panama – reported a slight decrease (163 hospitalizations, -6.9% decrease). With regards to ICU admissions, all three countries and territories with available data for **weekly COVID-19 ICU admissions** reported an increase in their weekly COVID-19 ICU admissions (range: 7-18 ICU admissions, 28.6 - 133.3% increase) compared to the previous week.

To date, Omicron lineages BA.4 and BA.5 have been reported from six of the seven countries and territories in the subregion respectively – Costa Rica, Panama, Guatemala, El Salvador, Nicaragua, and Belize.

South America

In South America, the overall **COVID-19 incidence** for the subregion has increased by 49.6%, primarily due to an increase in Brazil and Argentina, with a total of 503,353 new COVID-19 cases in the subregion being reported during EW 50 compared to the previous week **(Figure 5)**.

Figure 5: COVID-19 cases and deaths by epidemiological week (EW). **South America. Region of the Americas.** EW 3, 2020 - EW 50, 2022.



During EW 50, **COVID-19 weekly cases** increased in in eight out of the 10 countries and territories the sub-region (range: 9.5 – 129.6% increase) and decreased in one country – Peru (55,330 new cases, -22.6% decrease). Please note that data for EW 50 for Ecuador was not publicly available, resulting in a data artifact in percent changes in the subregion. The largest proportion of reported cases was reported by Brazil (337,810 new cases, 74% increase), while the largest increase in weekly cases was observed from Argentina (62,261 new cases, 129.6% increase), followed by Uruguay (4,941 new cases, 86.8% increase), Bolivia (Plurinational State of) (10,152 new cases, 75.5% increase) relative to the previous week.

During EW 50, a total of 1,587 **COVID-19 deaths** were reported in South America – a 55.0% increase compared to the previous week. Six countries and territories in the subregion reported an increase in weekly deaths (range: 7.7 – 457.1% increase) while three reported a decline (range: -43.8 - -13.9% decrease) relative to the previous week. The highest relative increase in weekly deaths was observed from Argentina (39 new deaths, 457.1% increase), followed by Venezuela (Bolivarian Republic of) (1 new death, 100% increase), Brazil (1,133 new deaths, 87.9% increase) and Bolivia (Plurinational State of) (9 new deaths, 80% increase).

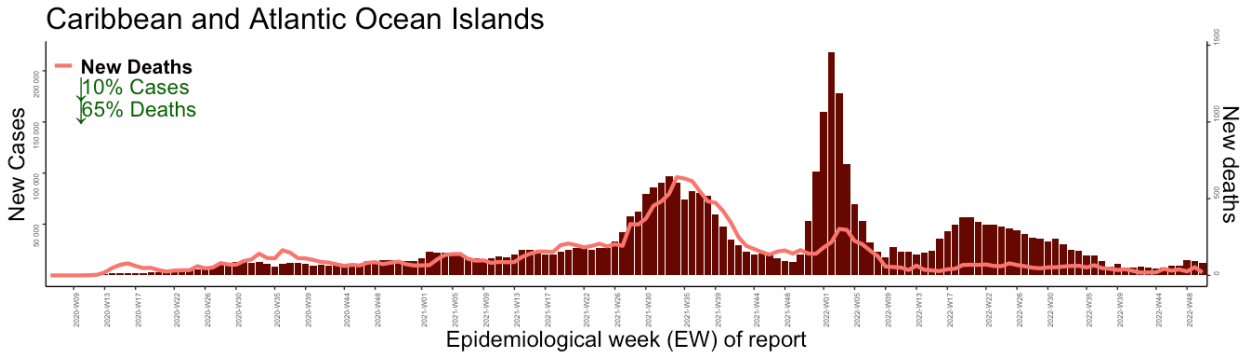
Among three countries and territories in the subregion with data available for **COVID-19 weekly hospitalizations**, two countries and territories reported an increase in their weekly COVID-19 hospitalizations – Peru (n=779, 6.7% increase) and Venezuela (Bolivarian Republic of) (n=138, 21.1% increase), while Chile observed a continued decline in hospitalizations (n=1,093, -9.1% decrease). For the same period, two out of four countries and territories with data available for **COVID-19 ICU admissions** reported an increase in their weekly COVID-19 ICU admissions – Peru (n=126, % increase) and Argentina (n=248, 0.4% increase), while the remaining two reported a decline in ICU admissions – Chile (n=113, -12.4% decrease) and Uruguay (n=13, -23.5% decrease) relative to the previous week.

To date, Omicron lineage BA.4 and BA.5 have been reported from eight out of the 10 countries in the subregion respectively – Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, and Venezuela (Bolivarian Republic of).

Caribbean and Atlantic Ocean Islands

In the Caribbean and Atlantic Ocean Islands sub-region, **COVID-19 weekly cases** decreased by -9.5% compared to the previous week **(Figure 6)**. At the national level, cases increased in nine countries and territories in the subregion (range: 0.2% - 125%) while they declined in 10 countries and territories (range: -100% - -36.7%). The remaining 15 countries and territories did not report any cases during EW 50.

Figure 6: COVID-19 cases and deaths by epidemiological week (EW). **Caribbean and Atlantic Ocean Islands. Region of the Americas.** EW 6, 2020 - EW 50, 2022.



For the same period, **COVID-19 weekly deaths** decreased by -65.0% (35 deaths) in the Caribbean and Atlantic Ocean Islands subregion. One - Trinidad and Tobago – observed an increase in weekly deaths in EW 50 (3 deaths, 200% increase) compared to the previous week. Weekly deaths declined in five countries and territories (range: -100 – -39.2% decrease) while the remaining countries and territories did not report any deaths during EW 50.

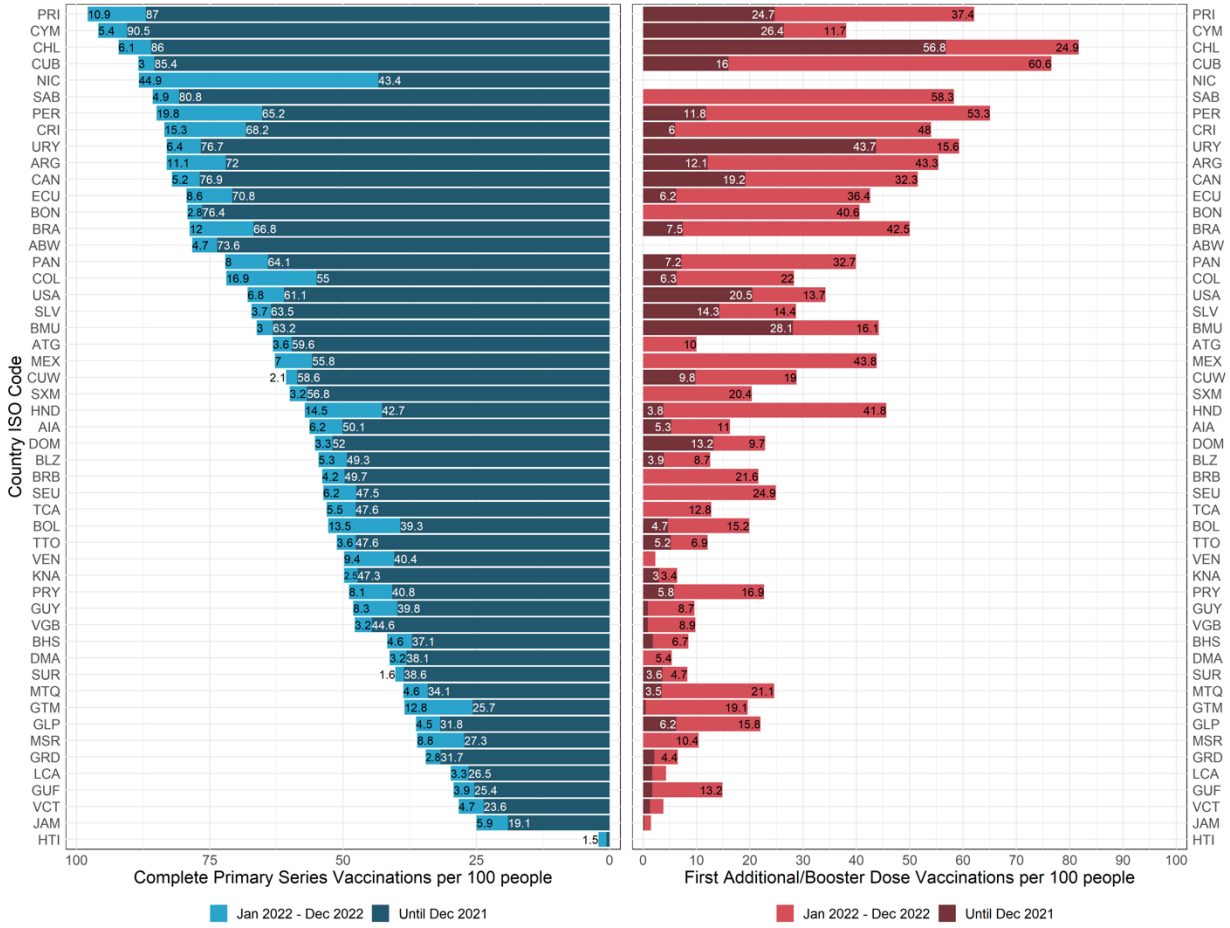
During EW 50, among 14 countries and territories with available data for **weekly COVID-19 hospitalizations**, six countries and territories reported an increase in their weekly COVID-19 hospitalizations (range: 9.4 – 100% increase). The highest increase was observed in the Dominican Republic (62 hospitalizations, 87.9% increase), followed by Trinidad and Tobago (30 hospitalizations, 76.5% increase). Among seven countries and territories with data available for **COVID-19 ICU admissions**, one – the Dominican Republic – reported an increase in their weekly COVID-19 ICU admissions (n=9, 125% increase), while the remaining six reported either a decline or no substantial changes relative to the previous week (range: -100 - -25% decrease).

Notable increases in weekly cases in the subregion during EW 50 were Saint Vincent and the Grenadines (18 new cases, 125% increase), Bonaire (64 new cases, 73% increase), and Trinidad and Tobago (180 new cases, 19.2% increase) relative to the previous week.

To date, Omicron lineages BA.4 and BA.5 have been reported from 18 and 17 out of 34 countries and territories in the subregion, respectively, including the overseas territories of France, the Netherlands, the United Kingdom, and the United States of America. However, these trends should be interpreted with caution due to the presence of differences in sequencing capacity and sampling strategies between countries and territories.

Immunization

Figure 7: Increase in COVID-19 vaccination coverage* in the Americas between January and December 2022. The coverage rate for completed primary series (Left) and the coverage rate for first additional dose administered (Right). **Region of the Americas.** As of EW 50, 2022.



The graph (**Figure 7**) reports the increase in COVID-19 vaccination coverage rate, by country, that was reported between January and December 2022.

On the left side, the graph reports the national COVID-19 vaccination coverage rate for completed primary series. In December 2021, the average coverage rate across the region was 52%. Twelve months later, the coverage had increased by 7%.

* Based on the United Nations (UN) Population Prospects for 2021 and projections from the United States (US) Census Bureau for countries with 100,000 or fewer inhabitants

On the right side, the graph reports the national COVID-19 vaccination coverage rate for first additional dose administered. In December 2021, the average coverage rate across the region was 8%. Twelve months later, the coverage had increased by 20%.

Therefore, vaccination uptake with the primary series reached its peak in 2021 and showed considerably in 2022. We see the same trend with additional doses in 2022, although uptake never reached the same rate as the primary series.

Also, it is important to notice the larger standard deviation reported in the uptake for the first additional dose in 2022 (16%), compared to the smaller standard deviation for uptake in complete primary series over the same year (7%). This result suggests that uptake for the additional dose has slowed down consistently across all the countries and territories of the region.

Genomic surveillance

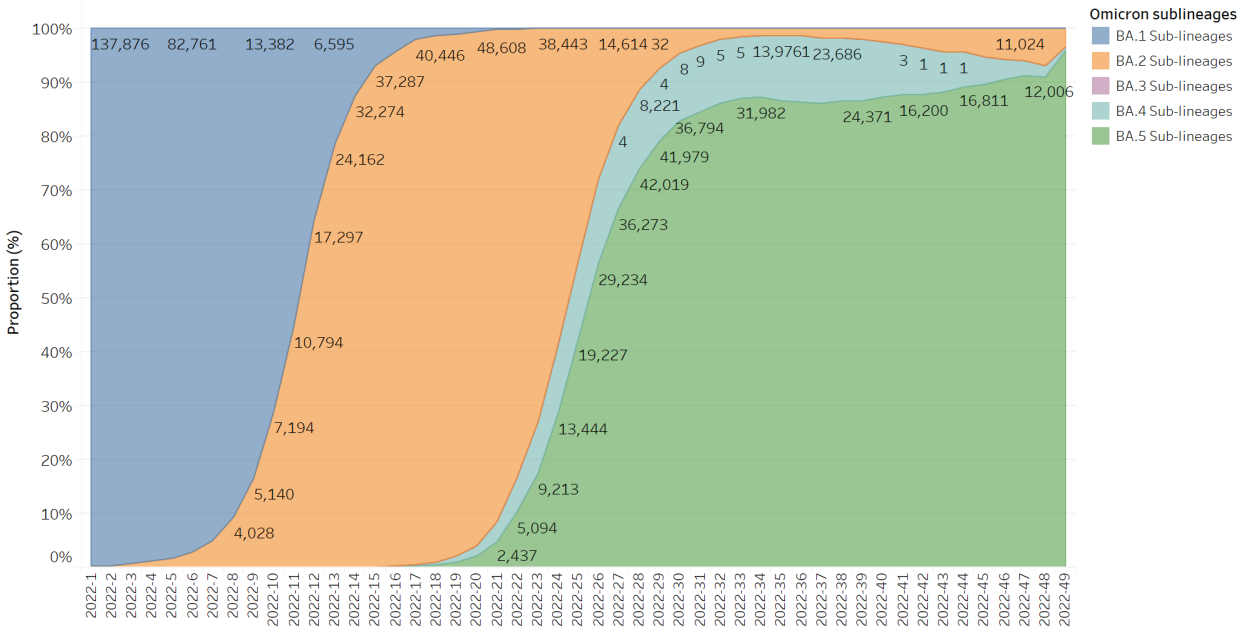
Through PAHO's Genomic Surveillance Regional Network and the work from the Member States, 496,903 full genome sequences of SARS-CoV-2 from Latin America and the Caribbean have been uploaded to the Global Initiative on Sharing All Influenza Data (GISAID) platform up to 20 December 2022.

The Omicron variant of concern (VOC) was introduced in the Americas at the end of 2021, and it rapidly replaced Delta VOC and other lineages throughout the Region. Omicron has been officially reported by 54 countries or territories and has been predominant in all PAHO countries since the beginning of 2022. In the past two months, very few sequences from "previously circulating" VOCs have been detected in the Region (five Delta sequences distributed as follows: four in North America and one in the Caribbean; and two Lambda sequences in South America).

Omicron comprises the BA.1 to BA.5 sublineages (or subvariants), which are in turn subdivided into diverse sublineages based on additional mutations that slightly change the genomic profile. These sublineages of BA.1 to BA.5 include those denominated as BC.x to DM.x. The cumulative proportion of Omicron sequences collected in the Americas from November 2021 to date are: 44.2% of BA.1 (and BA.1 sublineages), 24.8% of BA.2 (and sublineages), <0.1% of BA.3 (and sublineages), 4.5% of BA.4 (and BA.4 sublineages), and 26.5% BA.5 (and BA.5 sublineages). Although BA.1 accounts for the majority of cumulative sequences, BA.2 became predominant in all subregions between weeks 12 and 15 of 2022, and BA.4 and BA.5 became predominant between weeks 25 and 34 (**Figure 8**). Since then, the proportion of BA.4 and in particular BA.5 has stabilized throughout the Region. Notably, in the past eight weeks, the BA.4 and BA.5 (and sublineages) combined represent 94.6%, 94.3%, 96.9%, and 96.0% of the characterized samples in North America, the Caribbean, Central America, and South America, respectively.

It is important to note that the number of SARS-CoV-2 sequences deposited in GISAID by PAHO Member States has been decreasing significantly for the past 19 weeks. This decrease, which is also observed in other regions, increases the risk of bias in the estimates and reduces our collective ability for timely identification of new emerging lineages. In this context, **PAHO strongly encourages all countries in the Region to continue collecting representative samples for sequencing and to maintain appropriate COVID-19 genomic surveillance.**

Figure 8: Proportions of VOC Omicron sublineages identified by the countries in the Region of the Americas (January-December 2022)

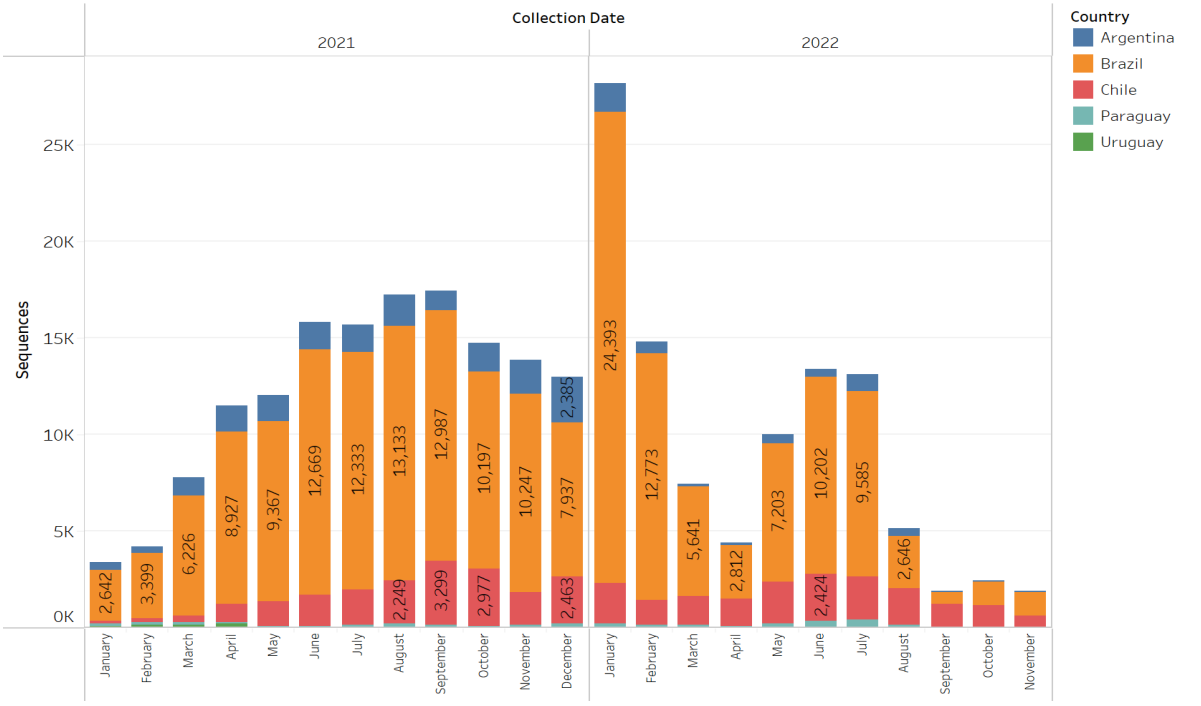


Source: GISAID

Spotlight: Sequencing and genomic surveillance in the Southern Cone

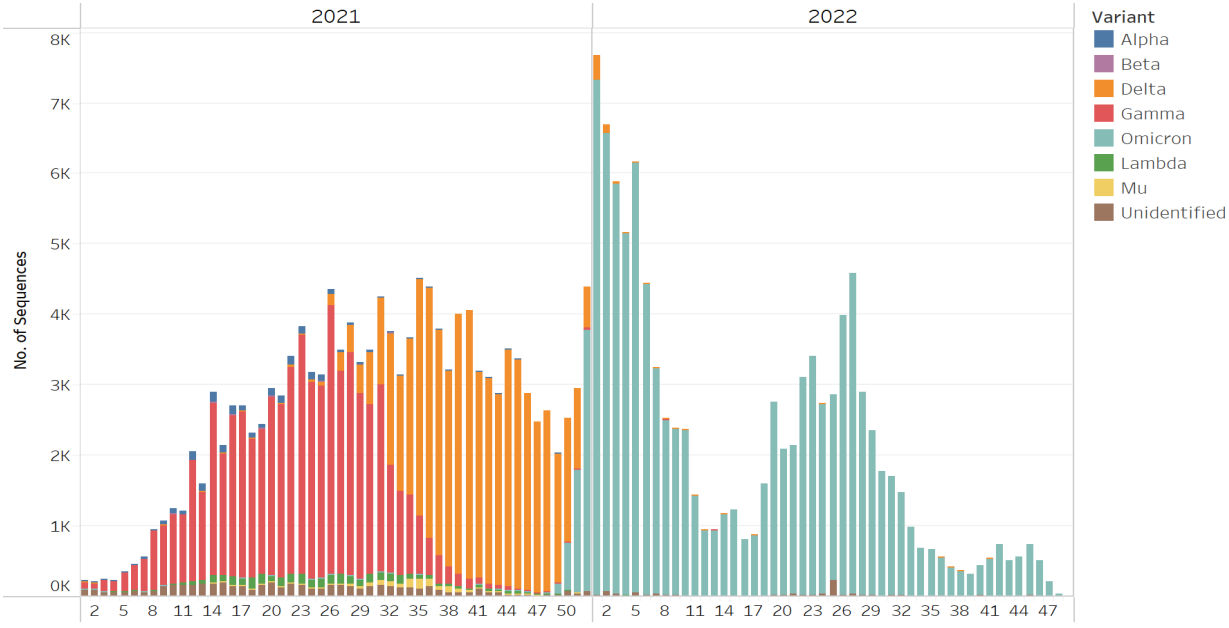
During the last 23 months (January 2021 to 17 December 2022), 248,613 whole genome sequences from the Southern Cone countries (Argentina, Brazil, Chile, Paraguay, and Uruguay) have been generated as part of the genomic surveillance systems (**Figure 9**). As in other subregions, Omicron is vastly predominant and a single "previously circulating" VOC/VOI sequence has been detected in the past six weeks (a Lambda sequence in Argentina) (**Figure 10**). Since Omicron's first detection, BA.1 and BA.1 sublineages represent the majority (52.3%) of cumulative sequences, while BA.2 and BA.2 sublineages represent 17.7% of the cumulative sequences, and BA.3, BA.4, and BA.5 represent <0.01%, 8.6%, and 21.3% of cumulative sequences, respectively (**Figure 11**). However, BA.1 was progressively replaced by BA.2 in weeks 12 to 18, and BA.2 is being replaced by BA.4 and BA.5 since week 22 (**Figure 12**). When focusing on the past eight weeks, BA.5 is the predominant sublineage (81.5%) while BA.4 and BA.2 account for 14.7% and 3.8% of the sequences, respectively. In the same period, BA.1 represented only 0.1% of the sequences and BA.3 represented <0.1% of the sequences. It is important to note that the majority of sequences for the eight-week period was contributed by Brazil (60.1%).

Figure 9. Number of sequences generated monthly by countries in the Southern Cone (January 2021- December 2022)



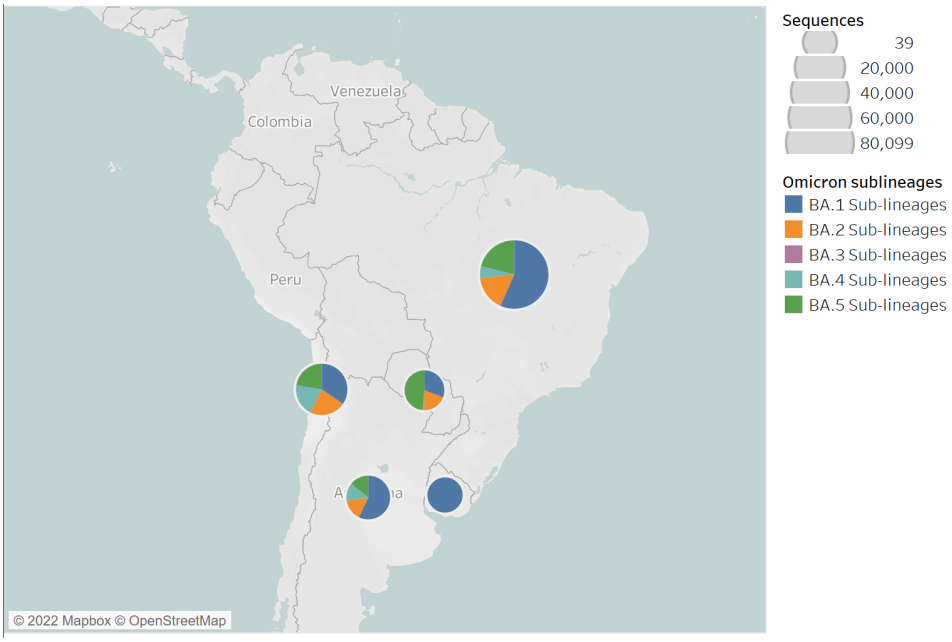
Source: GISAID

Figure 10. Variants detected and reported by the countries in the Southern Cone (January 2021- December 2022)



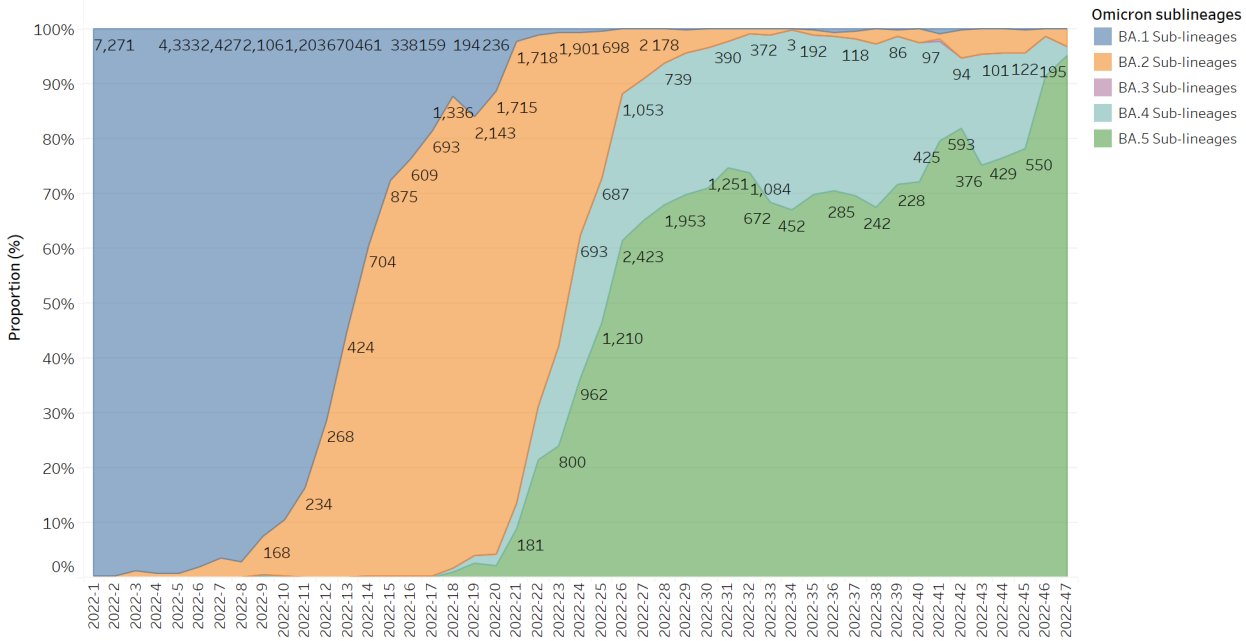
Source: GISAID
Country-specific data is available at: https://ais.paho.org/phip/viz/SARS_CoV2_variants_regional.asp

Figure 11. Distribution of Omicron sublineages identified by the countries in the Southern Cone (December 2021-December 2022)



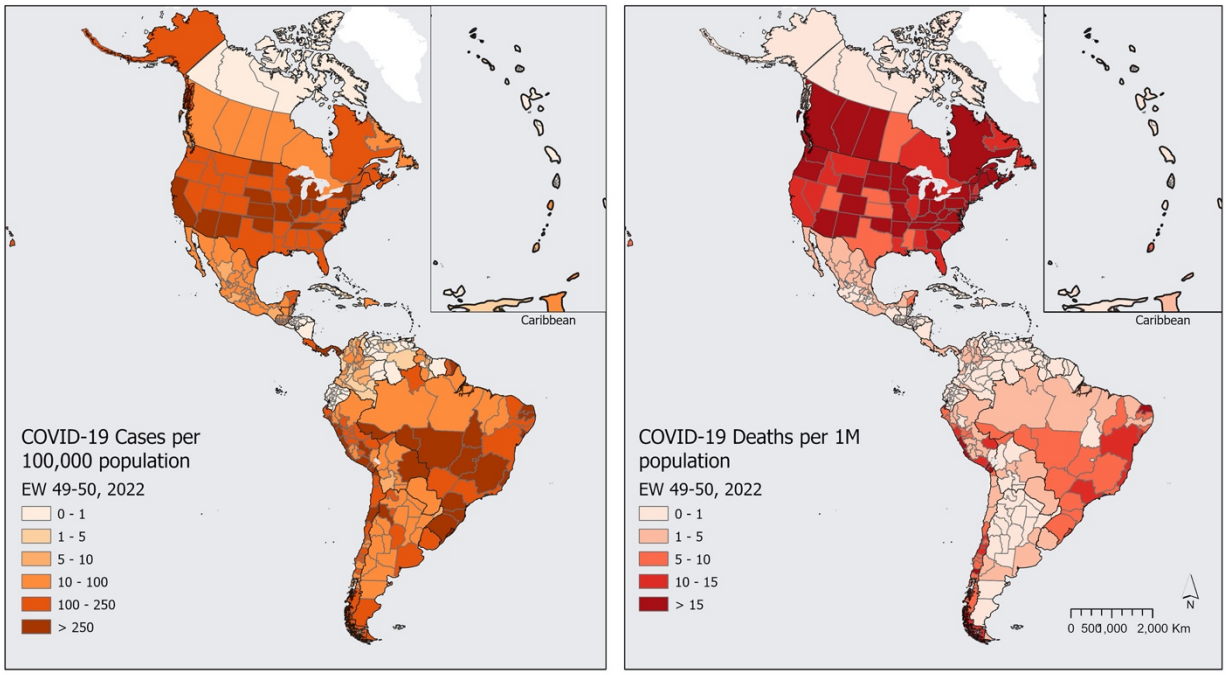
Source: GISAID

Figure 12. Proportion of VOC Omicron sublineages in the Southern Cone subregion (January-December 2022)



Source: GISAID

Annex 1. COVID-19 incidence rate per 100,000 population and COVID-19 mortality rate from per 1 million population. Region of the Americas. Between EW 49 and 50, 2022.



The maps (**Annex 1**) represent the COVID-19 incidence rates per 100,000 population and the mortality rates from COVID-19 per 1 million population in the Region of the Americas reported in EW 49 and EW 50, 2022.

The highest case incidence was observed in the USA, Brazil, Peru, and Panama, while the highest mortality was seen in the US, Canada, and some parts of Brazil, Peru, and Chile.

In North America, some states/provinces of the US and Canada, particularly in Quebec, New Brunswick, Nova Scotia, presented the highest incidence rates. The highest mortality rates in the region in most territories of the US and Canada.

In Central America, an increase rise in cases in Panama and Costa Rica was observed, while in South America, Brazil, Peru, Bolivia, Chile, Argentina, and Uruguay all report continued high incidence rates. Some parts of Brazil (Espirito Santo, Santa Catarina, Goias, and surrounding territories), Peru (Lima, Cuzco, and the coastal departments), and Bolivia (Santa Cruz) observe some of the highest incidence rates in the sub-region.

In the Caribbean islands, Puerto Rico showed the highest number of new cases and deaths in the subregion.