# COVID-19 Results Briefing

## The Region of the Americas

## July 18, 2022

This document contains summary information on the latest projections from the IHME model on COVID-19 in the Region of the Americas. The model was run on July 15, 2022, with data through July 13, 2022.

The BA.5 subvariant is driving a moderate surge in many countries in the region, a modest increase in cases and deaths, and a larger increase in hospital admissions. In other countries, such as South Africa, the BA.5 wave lasted from start to peak about 4–5 weeks and was associated with a minimal increase in deaths. Across nations in Europe and Latin America, many different patterns have emerged with very different increases in cases, hospitalizations, and deaths. The heterogeneity of response is likely related to different levels of home testing that is not reported in official data, along with inclusion in many – but not all – countries of hospitalizations with deaths with COVID-19 but not due to COVID-19. Despite 2.5 years of the pandemic, our current ability to make sense of the pandemic has declined as data systems have become less, not more, comparable during the Omicron period.

Although it is harder to make sense of some of the trends, it is likely, given the experience in other countries, that the BA.5 surge will be relatively short-lived, on the order of 4–6 weeks. We do not expect a major increase in deaths due to COVID-19 given high levels of past exposure to COVID-19, either through past infection or through vaccination. We estimate that only 2% of those who are not vaccinated still want to be vaccinated, so that expanding new vaccinations is unlikely to be a major control strategy. The main strategies available are: 1) encouraging second boosters more widely to counteract declining immunity in those who have not been recently infected; 2) broad use of Paxlovid in those at risk of severe disease; 3) selective use of social distancing and mask wearing in individuals at risk due to age or comorbidities. The most important short- to medium-term strategy is to maintain and improve surveillance. Given the confusing signal in reported cases, hospital admissions, and deaths, the government should require reporting hospitalizations and deaths where COVID-19 is the underlying cause of admission or death separated from incidental admissions and deaths where patients are COVID-19-positive but have other conditions leading to hospitalization or death.

## Current situation

- Daily infections in the last week decreased to 3,717,000 per day on average compared to 3,818,000 the week before (Figure 1.1). Daily hospital census in the last week (through July 13) increased to 92,000 per day on average compared to 81,000 the week before.
- Daily reported cases in the last week increased to 232,000 per day on average compared to 221,000 the week before (Figure 2.1).

- Reported deaths due to COVID-19 in the last week increased to 870 per day on average compared to 730 the week before (Figure 3.1).
- Total deaths due to COVID-19 in the last week increased to 1,200 per day on average compared to 950 the week before (Figure 3.1). This makes COVID-19 the number three cause of death in the Region of the Americas this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 1.3 times larger than the reported number of deaths.
- The daily rate of reported deaths due to COVID-19 is greater than 4 per million in one country and no subnational locations (Figure 4.1).
- The daily rate of total deaths due to COVID-19 is greater than 4 per million in five countries and five subnational locations (Figure 4.2).
- We estimate that 85% of people in the Region of the Americas have been infected at least once as of July 11 (Figure 6.1). Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in 25 countries and 86 subnational locations (Figure 7.1).
- Based on the GISAID and various national databases, combined with our variant spread model, we estimate the current prevalence of variants of concern (Figures 9.1–9.5). We estimate that the Alpha variant is circulating in 31 countries and 77 subnational locations, that the Beta variant is circulating in seven countries and 17 subnational locations, that the Delta variant is circulating in 34 countries and 122 subnational locations, that the Gamma variant is circulating in 31 countries and 83 subnational locations, and that the Omicron variant is circulating in 34 countries and 122 subnational locations.

## Trends in drivers of transmission

- Mobility last week was 8% higher than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 15% of baseline in two countries and four subnational locations (Figure 12.1).
- As of June 24, in the COVID-19 Trends and Impact Survey, 32% of people self-reported that they always wore a mask when leaving their home, the same as the previous week (Figure 13.1).
- There were 103 diagnostic tests per 100,000 people on July 11 (Figure 15.1).
- As of July 11, 17 countries and 72 subnational locations have reached 70% or more of the population who have received at least one vaccine dose, and 15 countries and 50 subnational locations have reached 70% or more of the population who are fully vaccinated (Figures 17.1 and 17.2). 80% of people in the Region of the Americas have received at least one vaccine dose, and 72% are fully vaccinated.
- As of June 24, 2022, 2% of the population in the Region of the Americas say they would accept a vaccine for COVID-19 but have not yet been vaccinated.

- In our current reference scenario, we expect that 806.8 million people will be vaccinated with at least one dose by November 1 (Figure 19.1). We expect that 75% of the population will be fully vaccinated by November 1.

## Projections and scenarios

We produce three scenarios when projecting COVID-19. The **reference scenario** is our forecast of what we think is most likely to happen:

- Vaccines are distributed at the expected pace. Brand- and variant-specific vaccine efficacy is updated using the latest available information from peer-reviewed publications and other reports.
- Future mask use will decline to 50% of the minimum level it reached between January 1, 2021, and May 1, 2022. This decline begins after the last observed data point in each location and transitions linearly to the minimum over a period of six weeks.
- Mobility increases as vaccine coverage increases.
- 80% of those who are fully vaccinated (two doses for most vaccines, or one dose for Johnson & Johnson) receive an additional dose six months after becoming fully vaccinated, and 80% of those who receive an additional dose receive a second additional dose six months later.
- Antiviral utilization for COVID-19 risk prevention has reached 80% in high-risk populations and 50% in low-risk populations between March 1, 2022, and June 1, 2022. This applies in high-income countries, but not low- and middle-income countries, and this rollout assumption follows a similar pattern to global vaccine rollouts.

The **80% mask use scenario** makes all the same assumptions as the reference scenario but assumes all locations reach 80% mask use within seven days. If a location currently has higher than 80% use, mask use remains at the current level.

The **antiviral access scenario** makes all the same assumptions as the reference scenario but assumes globally distributed antivirals and extends coverage to all low- and middle-income countries between August 15, 2022, and September 15, 2022.

Infections

- Daily estimated infections in the **reference scenario** will decline to 1,062,160 by October 10, 2022 (Figure 21.1).
- Daily estimated infections in the **80% mask use scenario** will decline to 378,780 by October 3, 2022 (Figure 21.1).
- Daily estimated infections in the **antiviral access scenario** will decline to 1,062,160 by October 10, 2022 (Figure 21.1).

Cases

- Daily estimated cases in the **reference scenario** will rise to 234,220 by July 14, 2022 (Figure 21.2).

- Daily estimated cases in the **80% mask use scenario** will decline to 11,830 by October 23, 2022 (Figure 21.2).
- Daily estimated cases in the **antiviral access scenario** will rise to 234,220 by July 14, 2022 (Figure 21.2).

Hospitalizations

- Daily hospital census in the **reference scenario** will rise to 99,430 by July 18, 2022 (Figure 21.3). At some point from July through November 1, five countries will have high or extreme stress on hospital beds (Figure 23.1). At some point from July through November 1, 10 countries will have high or extreme stress on intensive care unit (ICU) capacity (Figure 24.1).
- Daily hospital census in the **80% mask use scenario** will rise to 97,060 by July 14, 2022 (Figure 21.3).
- Daily hospital census in the **antiviral access scenario** will rise to 99,430 by July 18, 2022 (Figure 21.3).

Deaths

- In our **reference scenario**, our model projects 2,997,000 cumulative reported deaths due to COVID-19 on November 1. This represents 98,000 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 1,430 by August 1, 2022 (Figure 21.4).
- Under our **reference scenario**, our model projects 4,253,000 cumulative total deaths due to COVID-19 on November 1. This represents 143,000 additional deaths from July 11 to November 1 (Figure 21.5).
- In our **80% mask use scenario**, our model projects 2,959,000 cumulative reported deaths due to COVID-19 on November 1. This represents 60,000 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 1,380 by July 29, 2022 (Figure 21.4).
- In our **antiviral access scenario**, our model projects 2,995,000 cumulative reported deaths due to COVID-19 on November 1. This represents 96,000 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **antiviral access scenario** will rise to 1,430 by August 1, 2022 (Figure 21.4).
- Figure 22.1 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.

## Model updates

This month, we have made two alterations to our reference scenario assumptions and one alteration to our antiviral scenario assumptions in the model. First, in the reference scenario, we included an estimate for an additional vaccination dose (second booster). As was previously done with the first booster, we assumed 80% of those who are fully vaccinated (two doses for most vaccines, or one dose for Johnson & Johnson), receive an additional dose six months after becoming fully vaccinated. In this model, we assume 80% of those who receive an additional dose (first booster) receive a second additional dose (second booster) 4-6 months later. Distribution assumptions were time-corrected based on reported data. We estimated each vaccination course using the doses administered in the previous course, taking into account the number of doses available based on manufacturer distribution data. We updated this process to estimate supply and demand on a daily basis rather than periodically.

Second, we expect the recent rollout of Paxlovid treatments in high-income settings to greatly reduce severe disease and death outcomes. We only currently have data from the United States to inform levels of antiviral coverage and have used these data to update our scale-up model from last month. The model assumes individuals in high-income countries had been targeted for treatment, and access to treatment among this group had risen from 0% on March 15, 2022, to a maximum of 80% for high-risk individuals and 50% for low-risk individuals by June 1, 2022. This rollout assumption follows a similar pattern to global vaccine rollouts. Clinical trials suggest that Paxlovid provides an 88% reduction in the risk of hospitalization and death among people treated within five days of symptom onset. We made an additional assumption that if roughly 70% of deaths and 50% of admissions are incidental (defined as patients who test positive for COVID after being admitted to the hospital for other reasons), Paxlovid effectiveness among patients admitted primarily for COVID treatment would be 25-30% for deaths and 40-50% for admissions.

Lastly, we have made one alteration to our antiviral scenario assumptions in the model. Our scale-up model assumes that global distribution of antivirals will extend to all low- and middle-income countries between August 15, 2022, and September 15, 2022. Similar to the reference scenario, we assume a linear scale-up to a maximum of 80% access for high-risk individuals and 50% for low-risk individuals during this time frame.

**Figure 1.1: Daily COVID-19 hospital census and estimated infections**

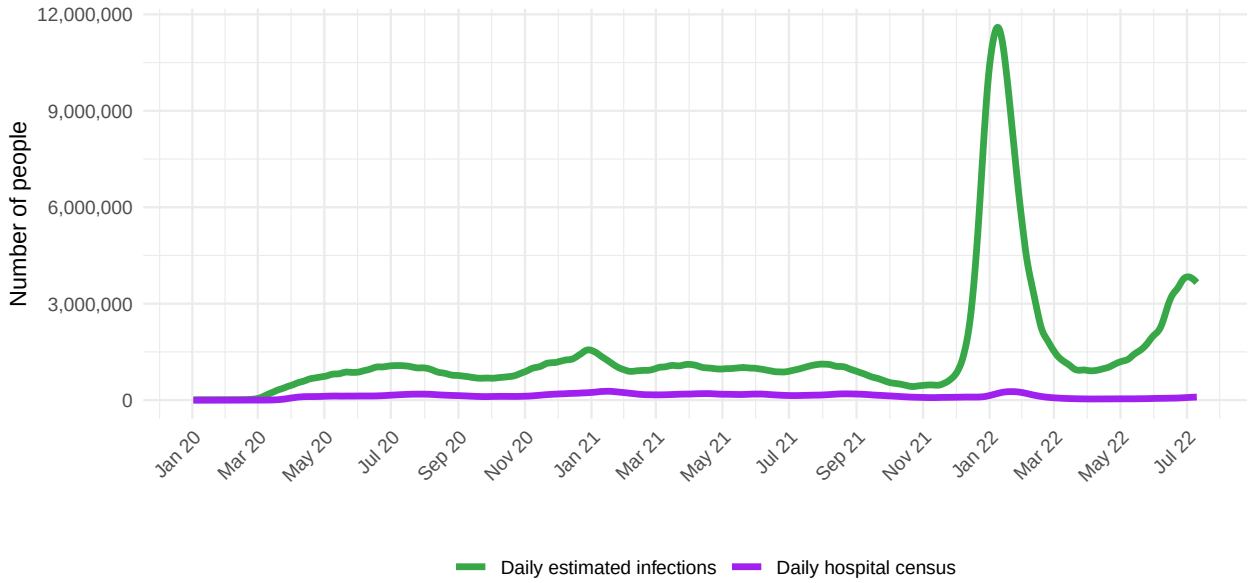



**Figure 2.1: Reported daily COVID-19 cases, moving average**

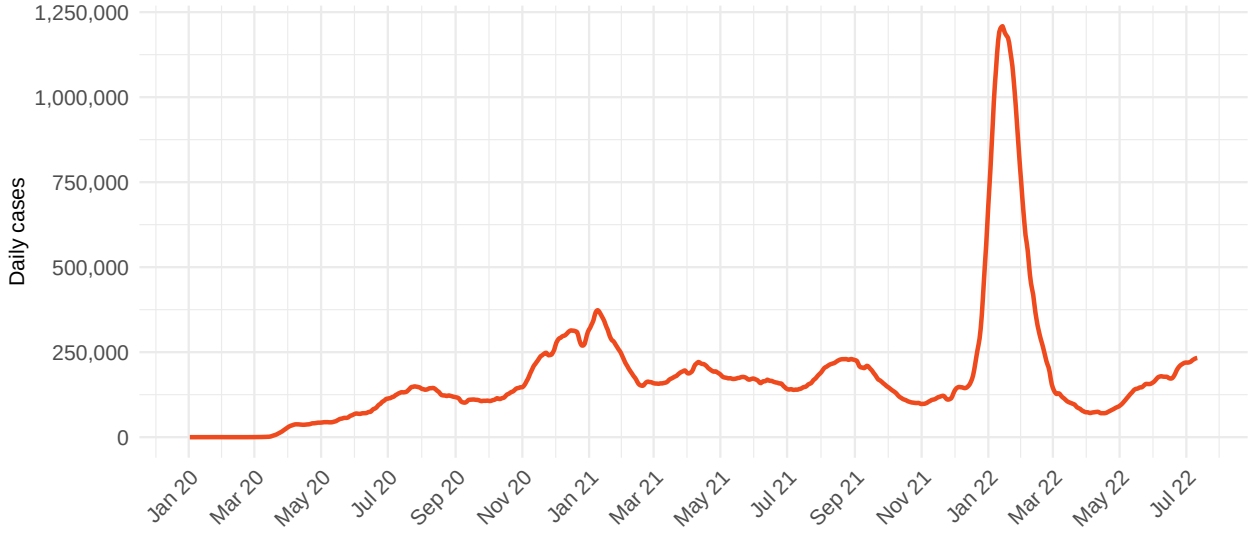
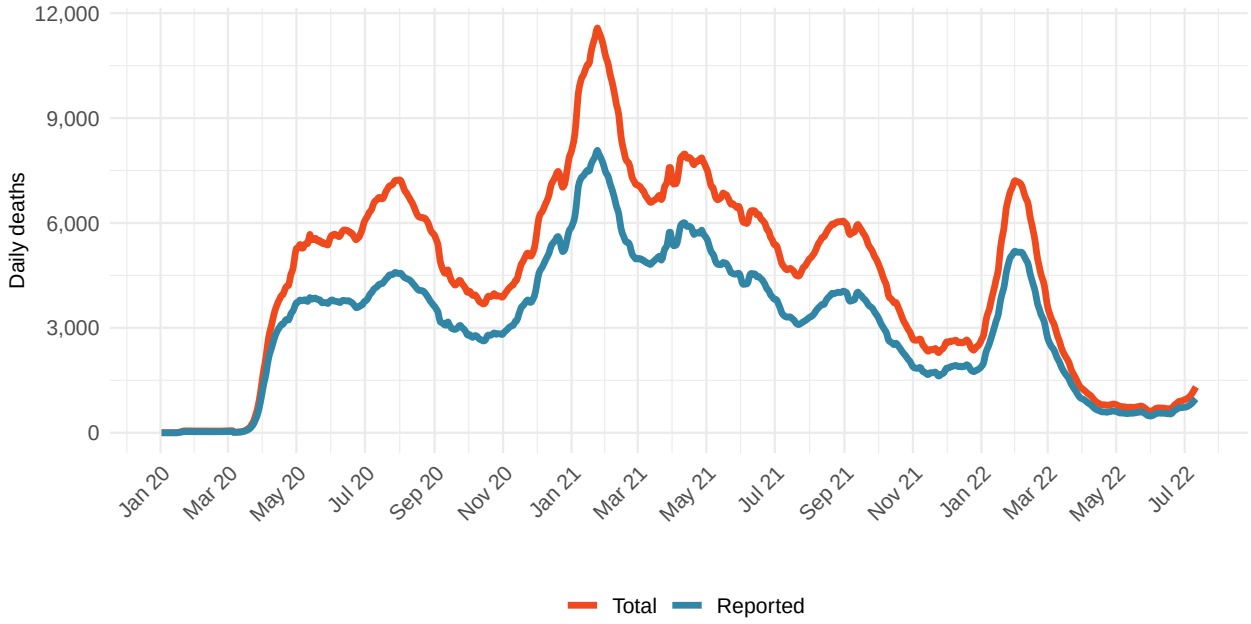


**Table 1: Ranking of total deaths due to COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year**

| Cause name | Weekly deaths | Ranking |
|---|---|---|
| Ischemic heart disease | 22,182 | 1 |
| Stroke | 10,124 | 2 |
| COVID-19 | 8,088 | 3 |
| Chronic obstructive pulmonary disease | 7,401 | 4 |
| Tracheal, bronchus, and lung cancer | 6,369 | 5 |
| Lower respiratory infections | 6,211 | 6 |
| Chronic kidney disease | 6,184 | 7 |
| Alzheimer's disease and other dementias | 5,890 | 8 |
| Diabetes mellitus | 5,822 | 9 |
| Cirrhosis and other chronic liver diseases | 4,153 | 10 |

**Figure 3.1: Smoothed trend estimate of daily COVID-19 deaths**



Daily COVID-19 death rate per 1 million on July 11, 2022

**Figure 4.1: Daily reported COVID-19 death rate per 1 million**

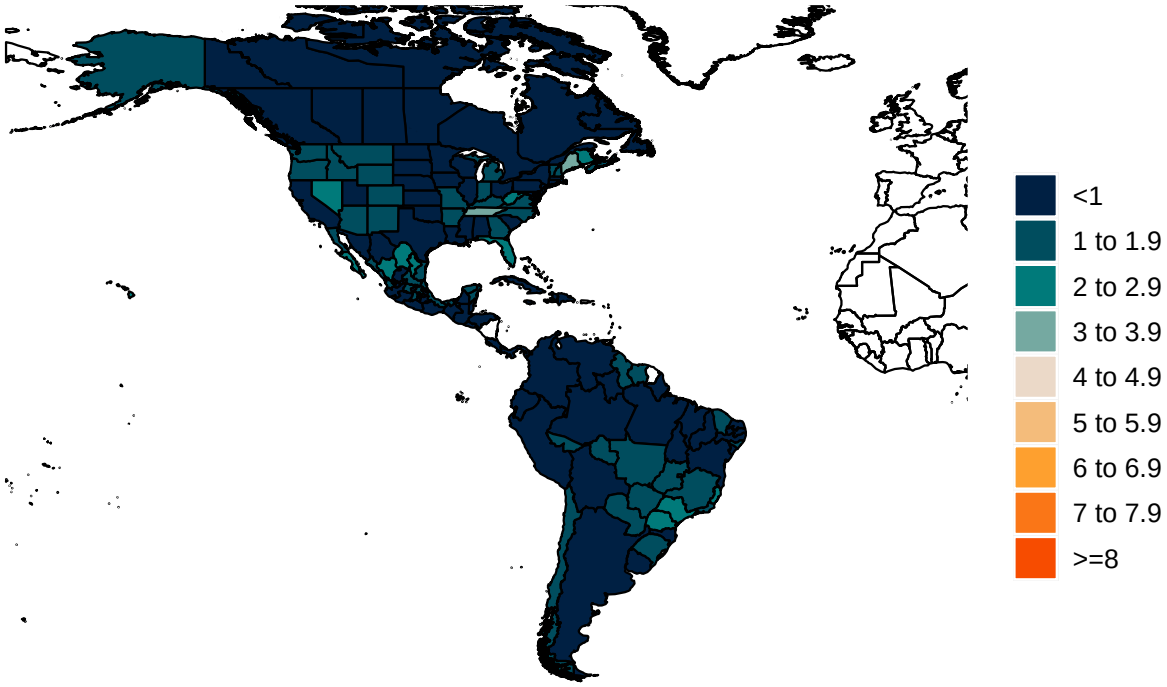
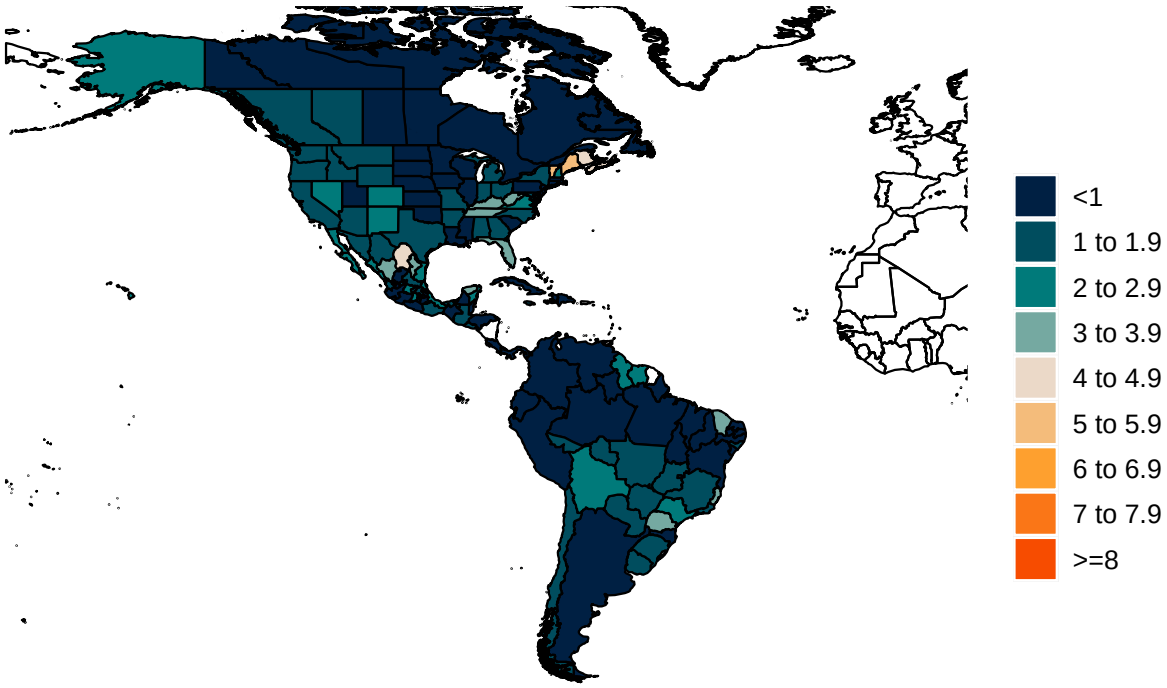



**Figure 4.2: Daily total COVID-19 death rate per 1 million**



Cumulative COVID-19 deaths per 100,000 on July 11, 2022

**Figure 5.1: Reported cumulative COVID-19 deaths per 100,000**

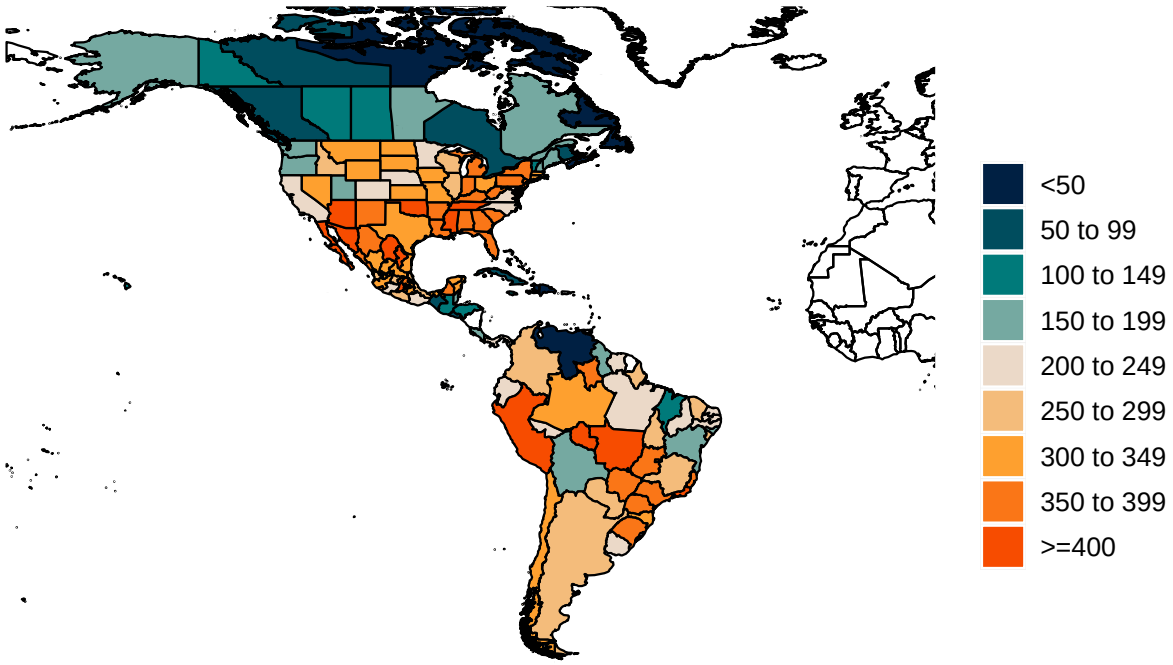



**Figure 5.2: Total cumulative COVID-19 deaths per 100,000**

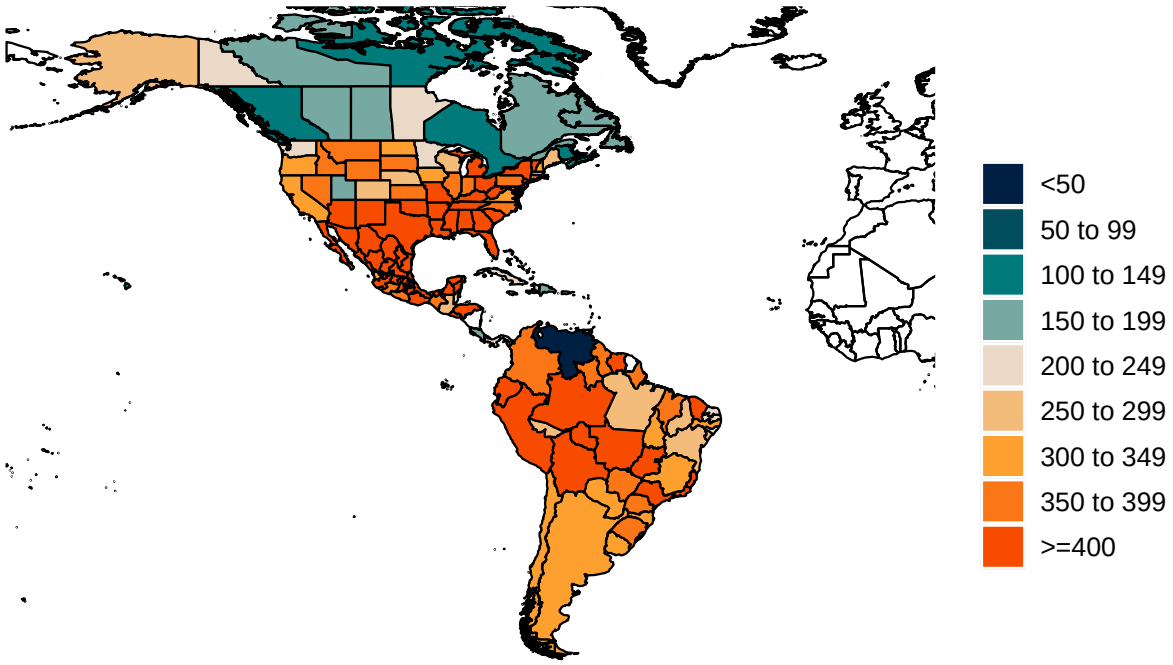


**Figure 6.1: Estimated percent of the population infected with COVID-19 on July 11, 2022**

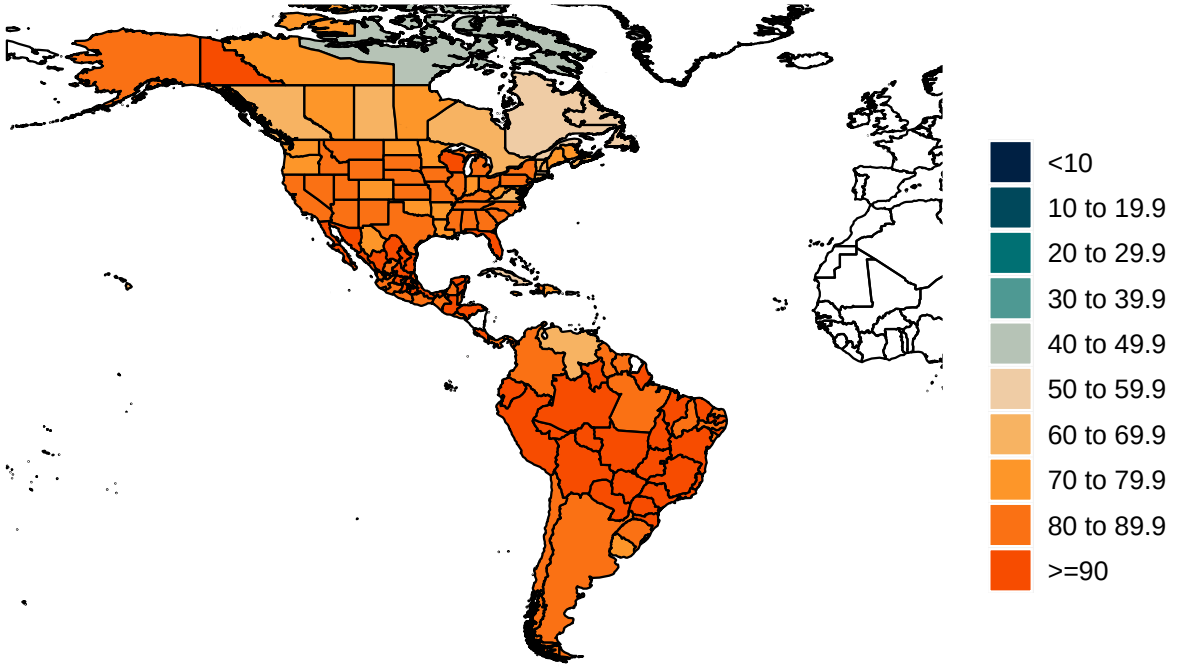
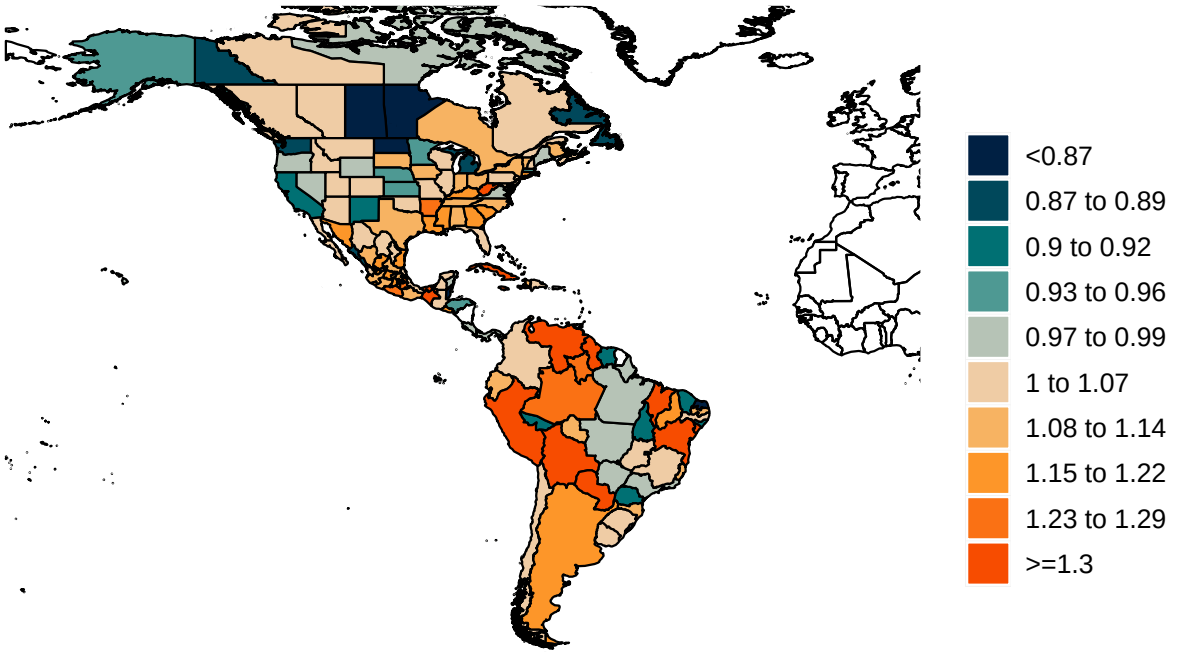



**Figure 7.1: Mean effective R on June 30, 2022.** Effective R less than 1 means that transmission should decline, all other things being held the same. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past.



Estimated percent of circulating SARS-CoV-2 for primary variant families on July 11, 2022

**Figure 9.1: Estimated percent of new infections that are Alpha variant**

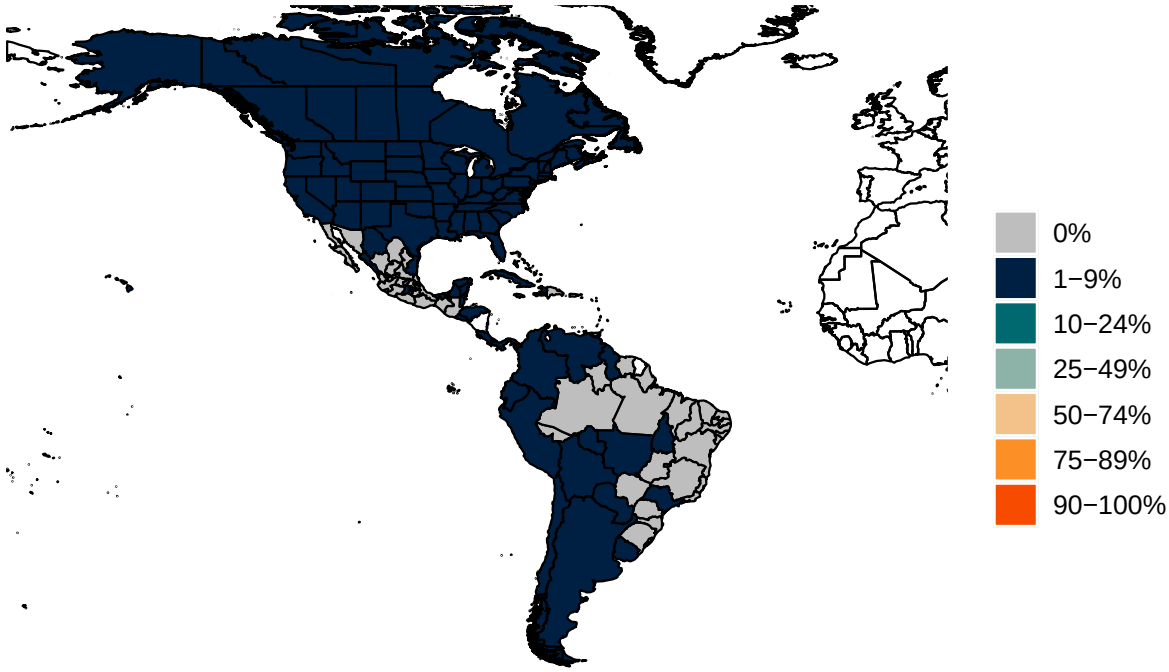



**Figure 9.2: Estimated percent of new infections that are Beta variant**

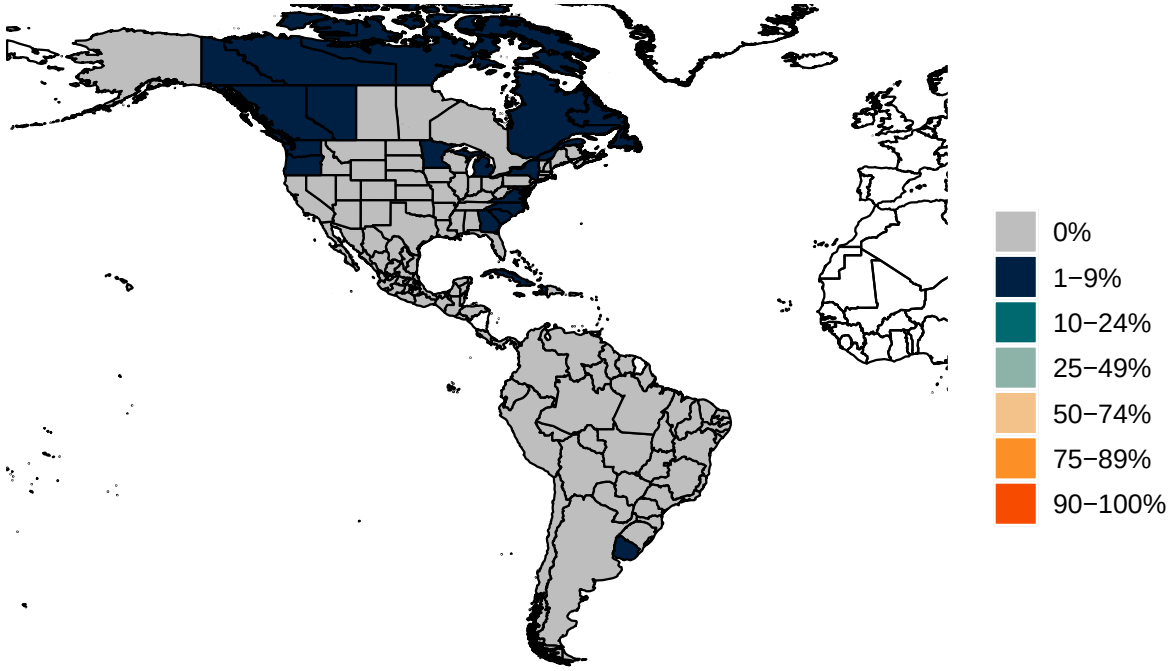


**Figure 9.3: Estimated percent of new infections that are Delta variant**

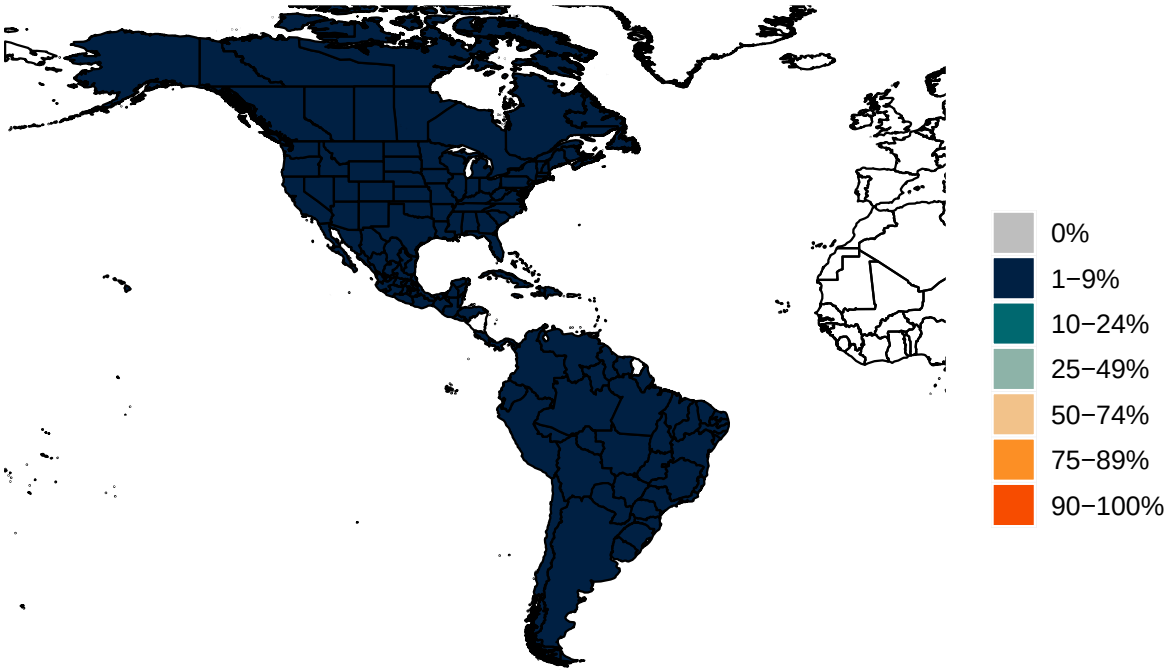



**Figure 9.4: Estimated percent of new infections that are Gamma variant**

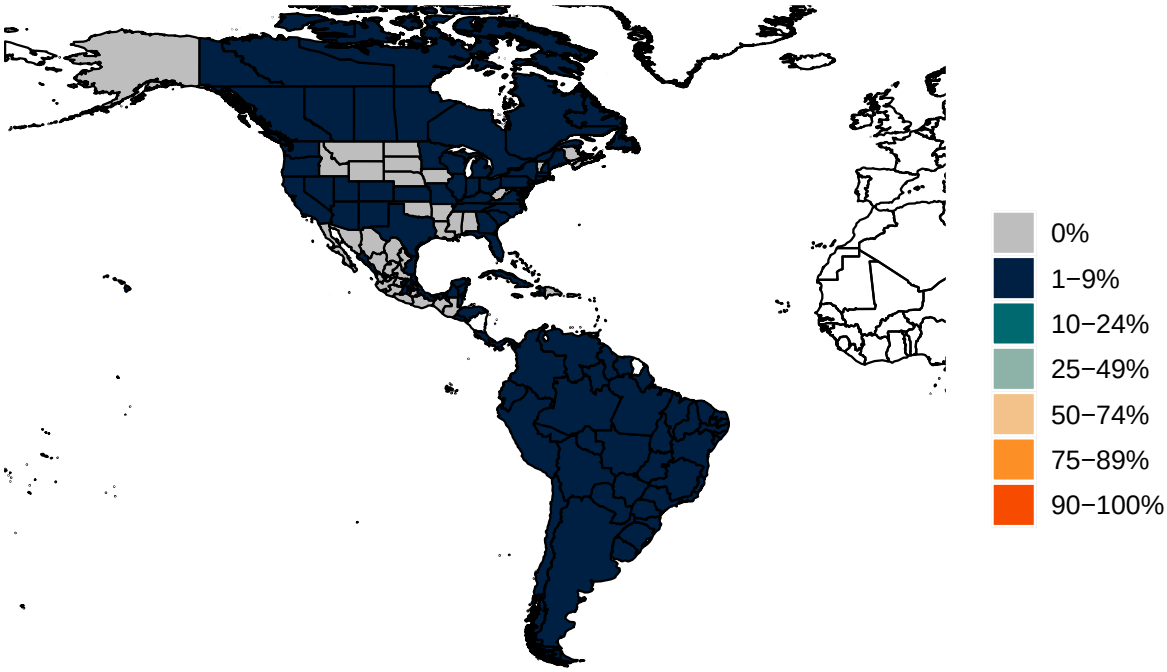


**Figure 9.5: Estimated percent of new infections that are Omicron variant**

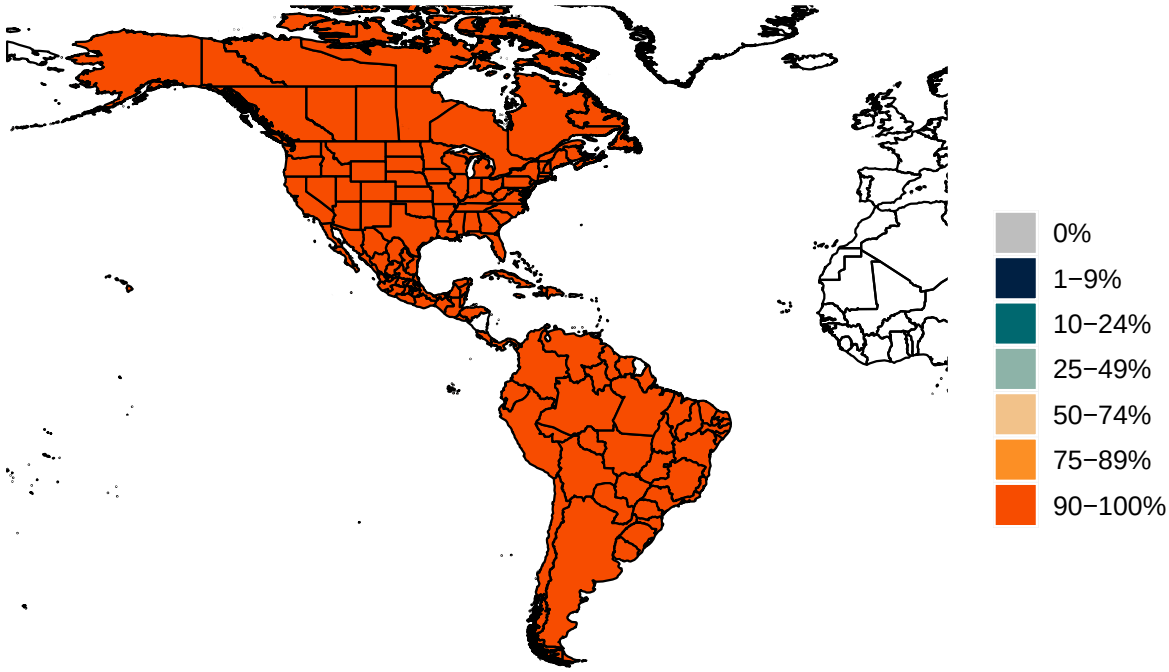
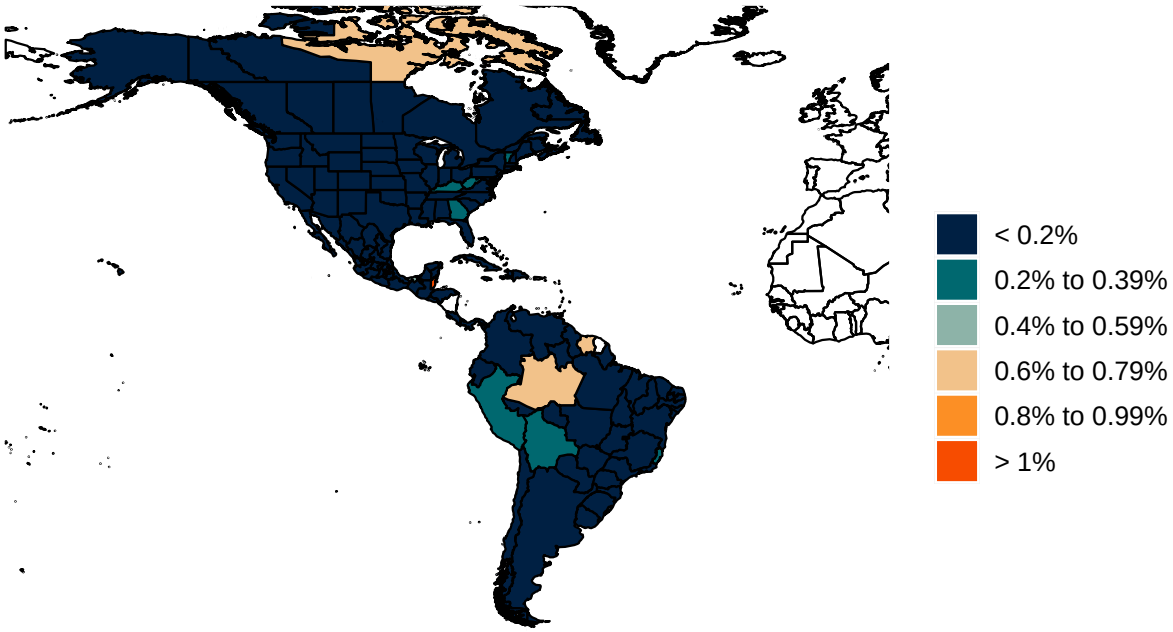
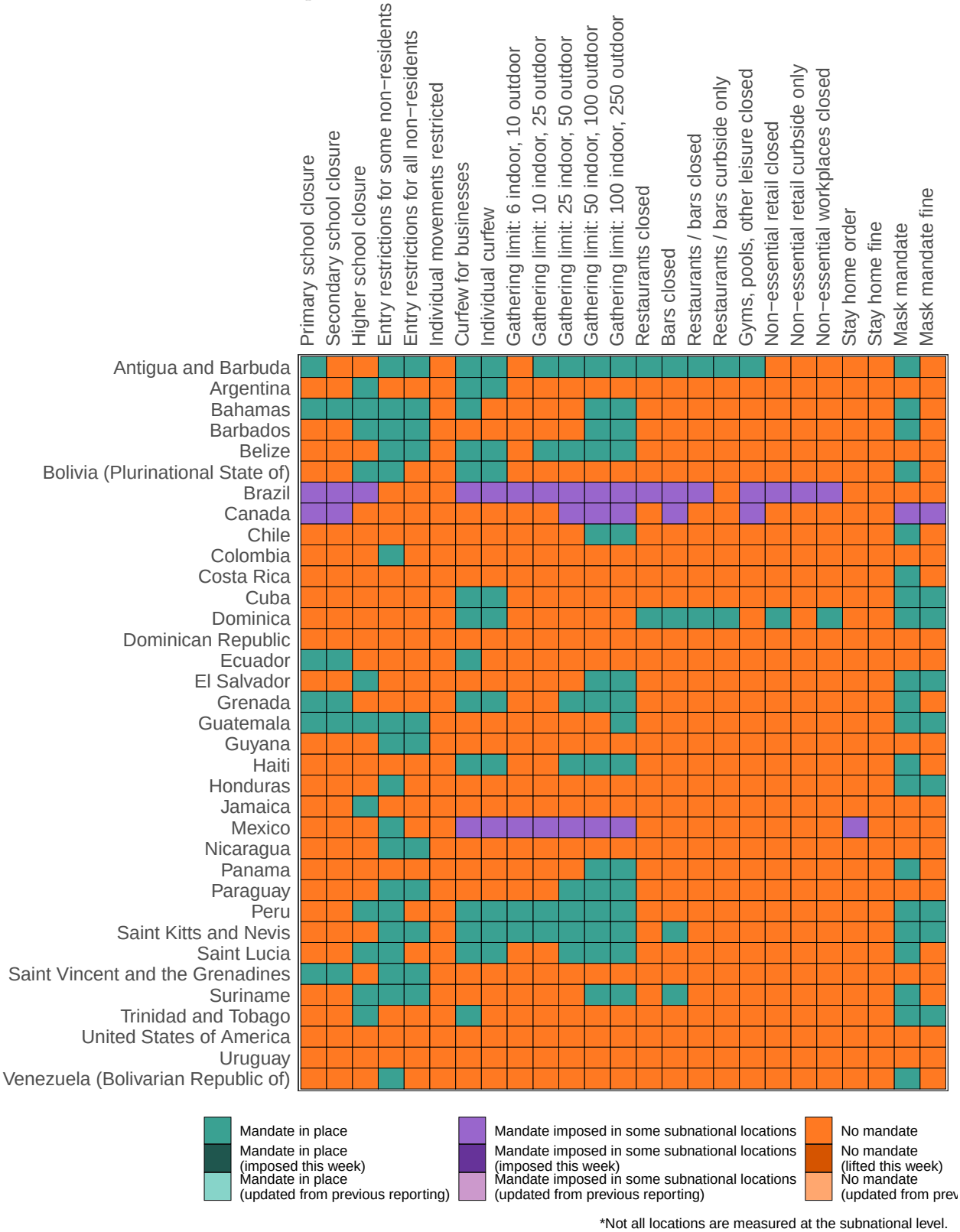


**Figure 10.1: Infection-fatality rate on July 11, 2022.** This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.



## Critical drivers

**Table 2: Current mandate implementation**




*Not all locations are measured at the subnational level.

**Figure 11.1: Trend in mobility as measured through smartphone app use, compared to January 2020 baseline**

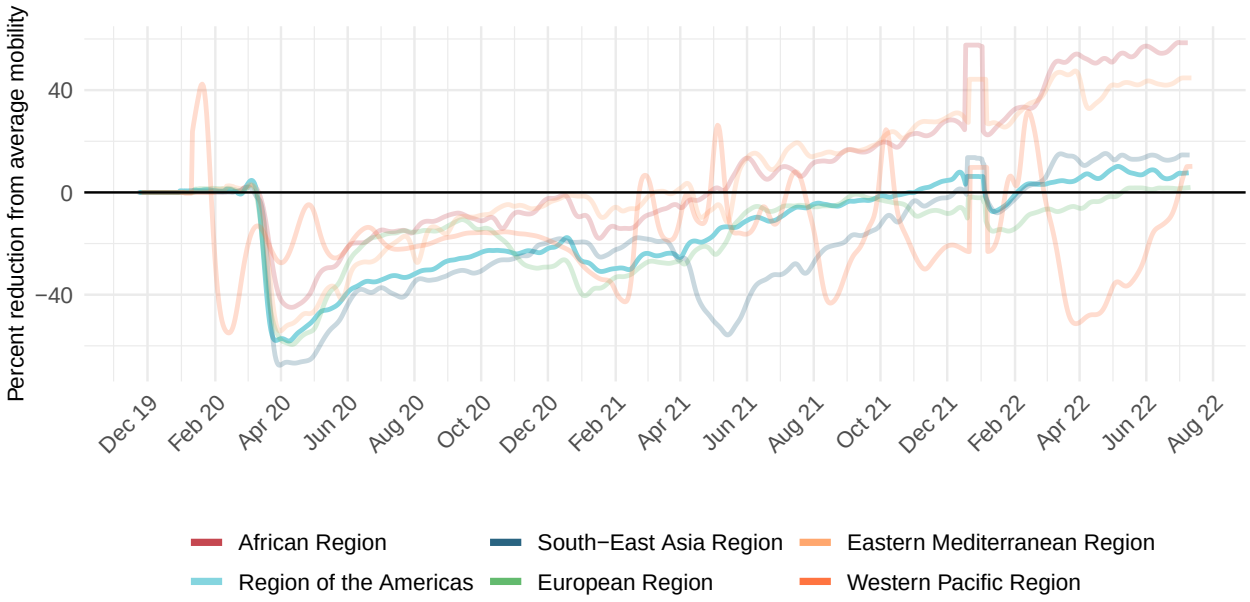


**Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on July 11, 2022**

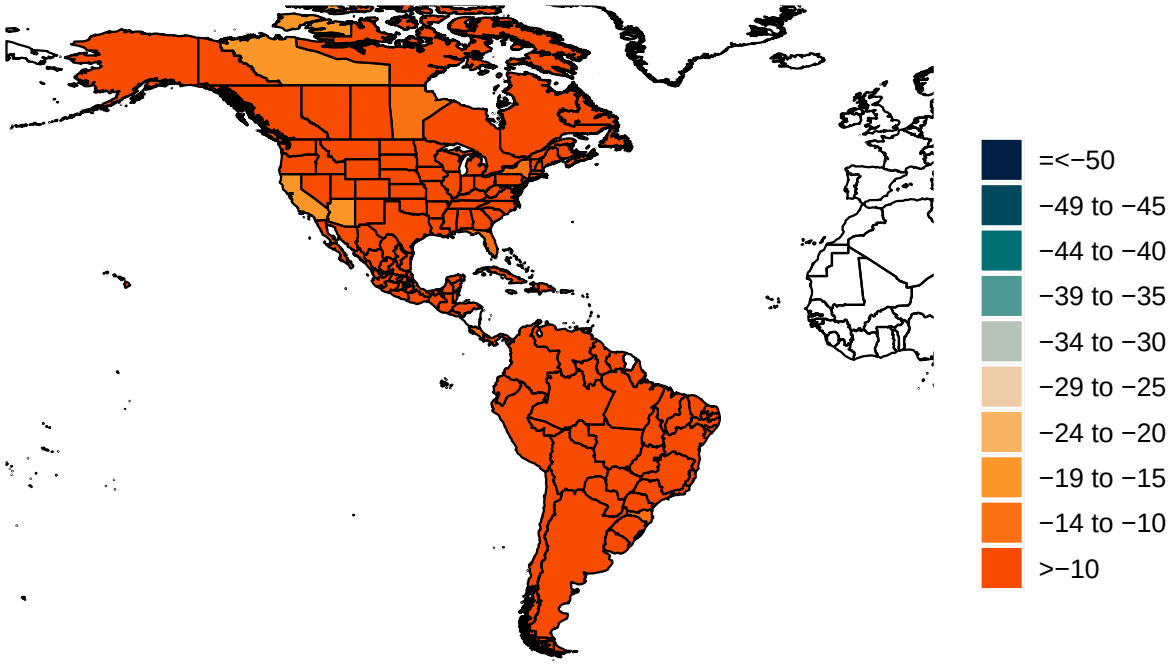


**Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home**

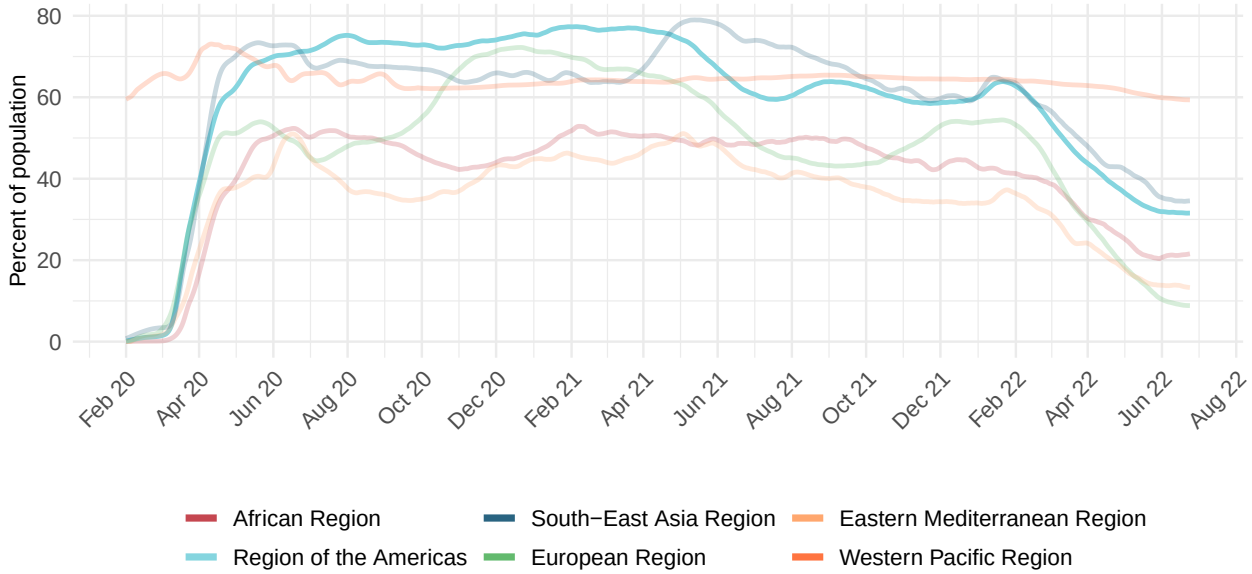



**Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on July 11, 2022**

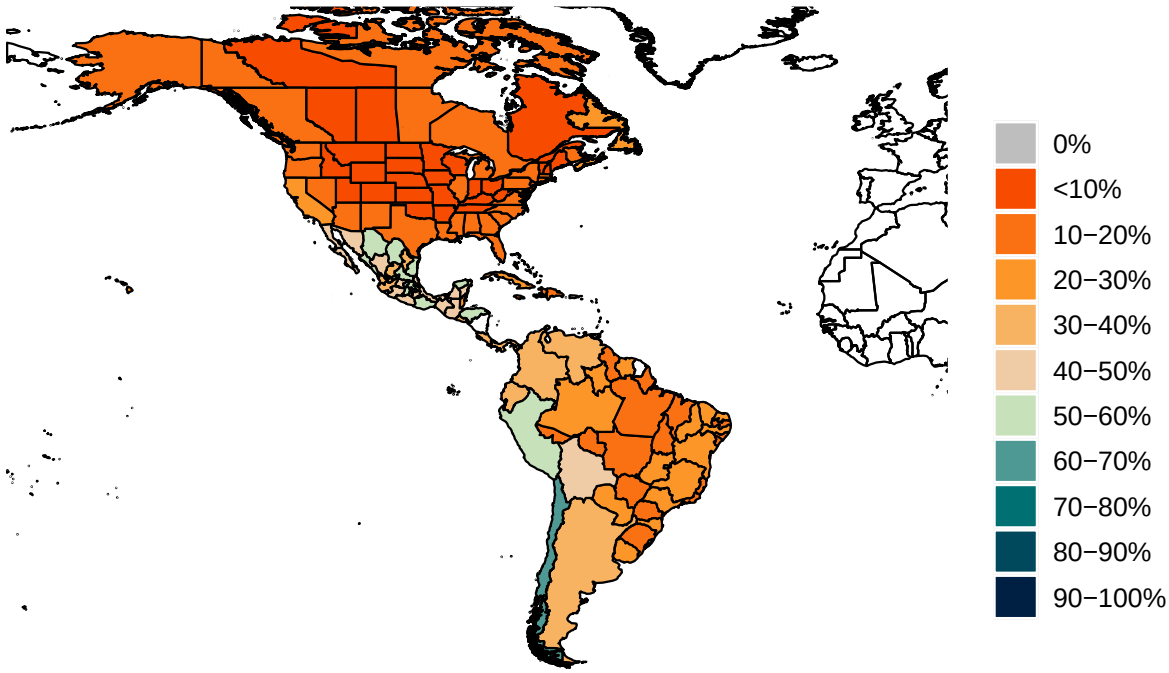


**Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people**

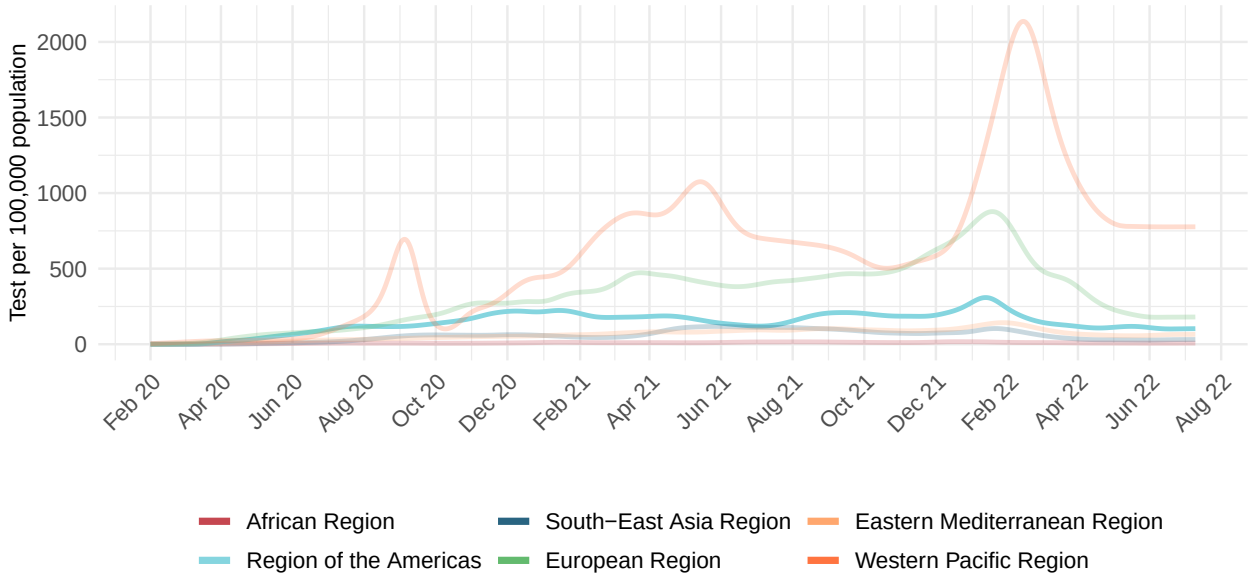



**Figure 16.1: COVID-19 diagnostic tests per 100,000 people on July 11, 2022**

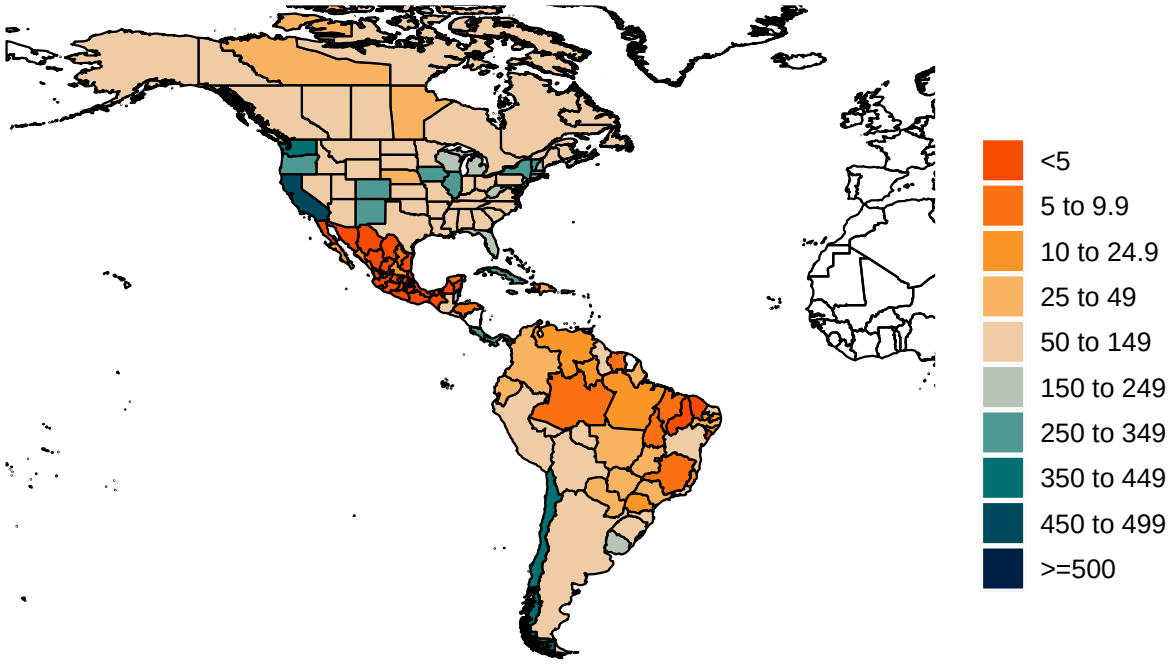


**Table 3: Estimates of vaccine effectiveness for specific vaccines used in the model at preventing severe disease and infection.** We use data from clinical trials directly, where available, and make estimates otherwise. More information can be found on our website.

| | Effectiveness at preventing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ancestral | | Alpha | | Beta | | Gamma | | Delta | | Omicron | |
| Vaccine | Severe disease | Infection | Severe disease | Infection | Severe disease | Infection | Severe disease | Infection | Severe disease | Infection | Severe disease | Infection |
| AstraZeneca | 94% | 63% | 94% | 63% | 94% | 69% | 94% | 69% | 94% | 69% | 71% | 36% |
| CanSino | 66% | 62% | 66% | 62% | 64% | 61% | 64% | 61% | 64% | 61% | 48% | 32% |
| CoronaVac | 50% | 47% | 50% | 47% | 49% | 46% | 49% | 46% | 49% | 46% | 37% | 24% |
| Covaxin | 78% | 73% | 78% | 73% | 76% | 72% | 76% | 72% | 76% | 72% | 57% | 38% |
| Johnson & Johnson | 86% | 72% | 86% | 72% | 76% | 64% | 76% | 64% | 76% | 64% | 57% | 33% |
| Moderna | 97% | 92% | 97% | 92% | 97% | 91% | 97% | 91% | 97% | 91% | 73% | 48% |
| Novavax | 89% | 83% | 89% | 83% | 86% | 82% | 86% | 82% | 86% | 82% | 65% | 43% |
| Pfizer/BioNTech | 95% | 86% | 95% | 86% | 95% | 84% | 95% | 84% | 95% | 84% | 72% | 44% |
| Sinopharm | 73% | 68% | 73% | 68% | 71% | 67% | 71% | 67% | 71% | 67% | 53% | 35% |
| Sputnik-V | 92% | 86% | 92% | 86% | 89% | 85% | 89% | 85% | 89% | 85% | 67% | 44% |
| Other vaccines | 75% | 70% | 75% | 70% | 73% | 69% | 73% | 69% | 73% | 69% | 55% | 36% |
| Other vaccines (mRNA) | 91% | 86% | 91% | 86% | 88% | 85% | 88% | 85% | 88% | 85% | 67% | 45% |

Percent of the population having received at least one dose (17.1) and fully vaccinated against SARS-CoV-2 (17.2) by July 11, 2022

**Figure 17.1: Percent of the population having received one dose of a COVID-19 vaccine**

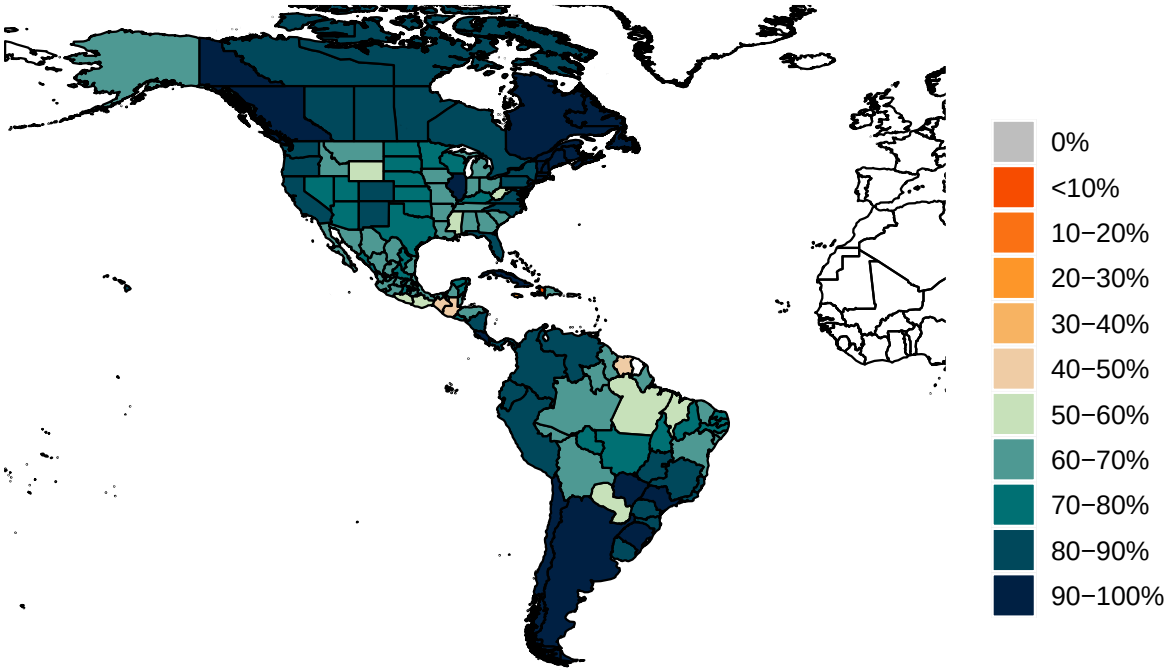



**Figure 17.2: Percent of the population fully vaccinated against SARS-CoV-2**

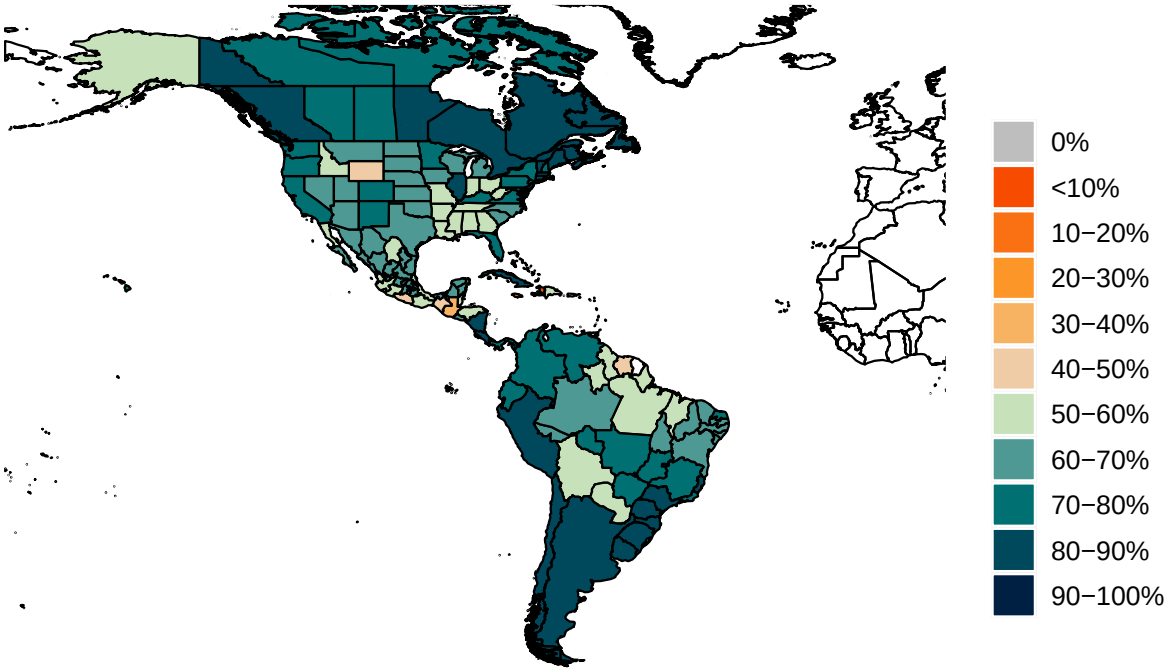


**Figure 18.1: Estimated proportion of the total population that is not vaccinated but willing to be vaccinated as of June 24, 2022**

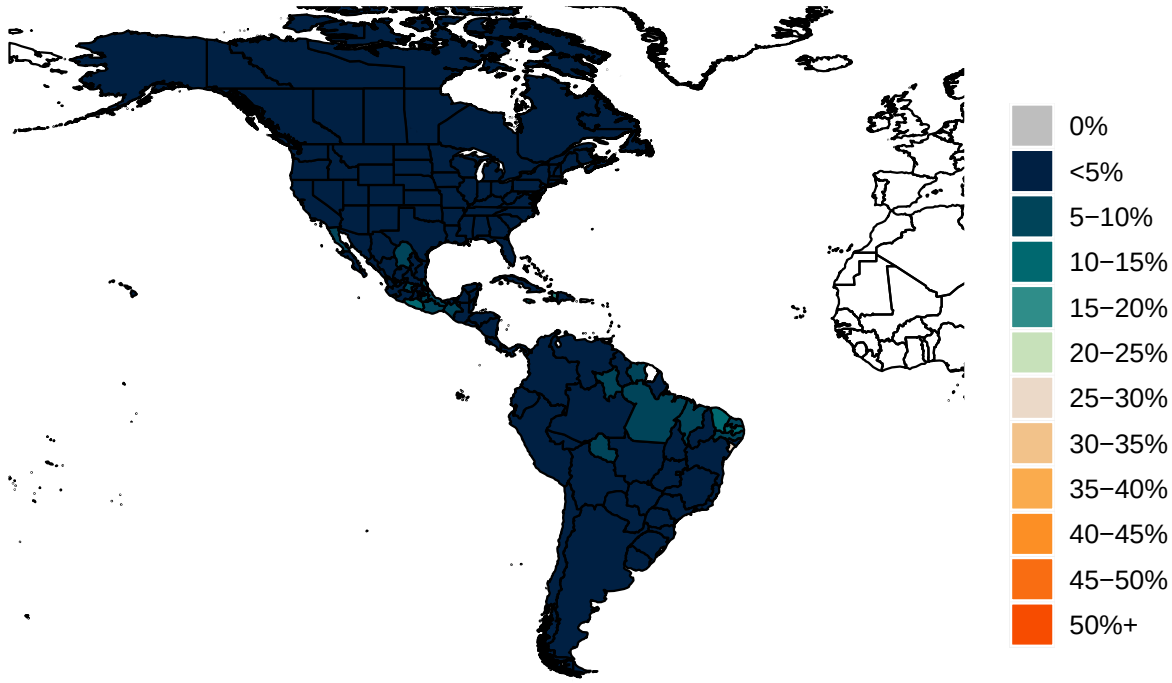


**Figure 19.1: Percent of people who receive at least one dose of a COVID-19 vaccine and those who are fully vaccinated**

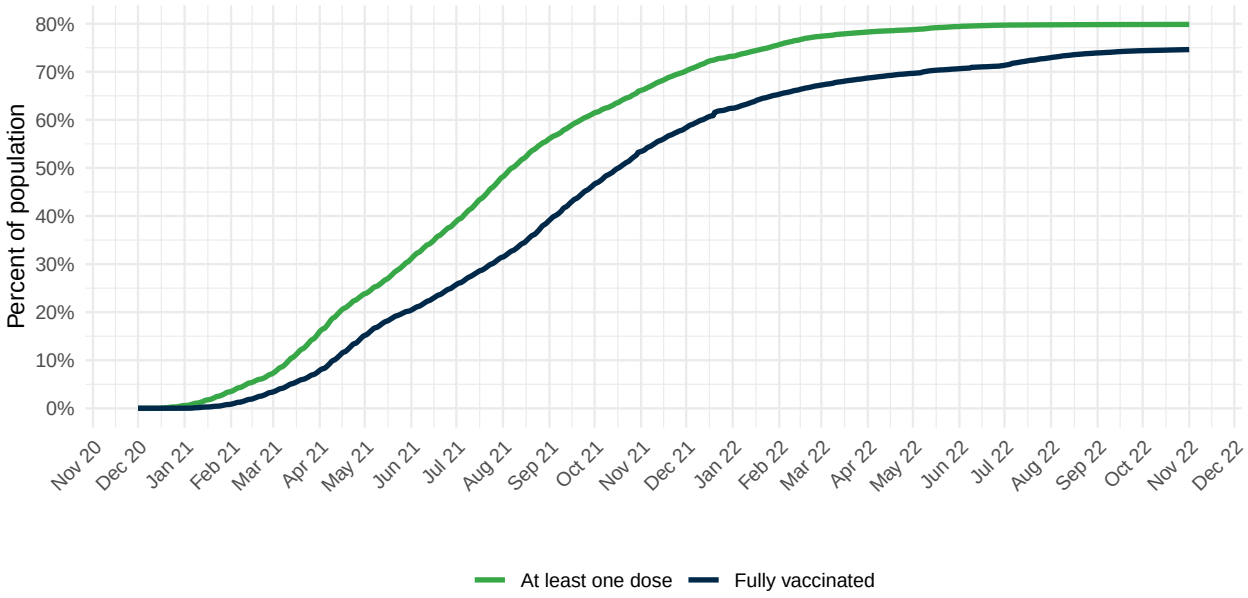
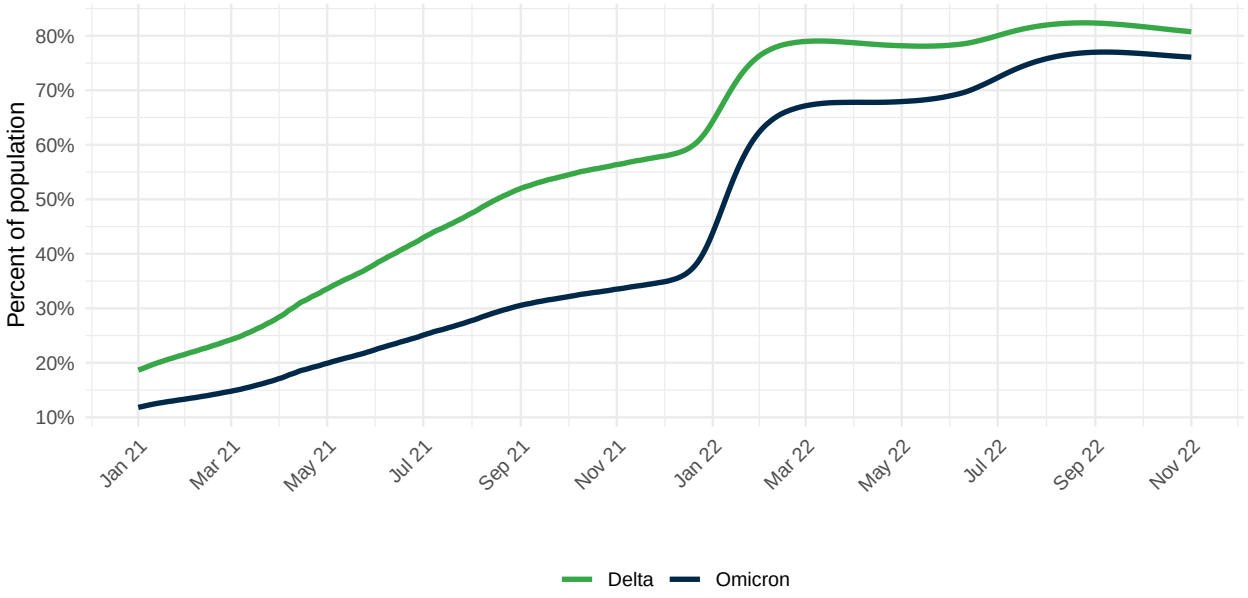



**Figure 20.1: Percent of people who are immune to Delta or Omicron.** Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.



## Projections and scenarios

**Figure 21.1: Daily COVID-19 infections until November 01, 2022 for three scenarios**

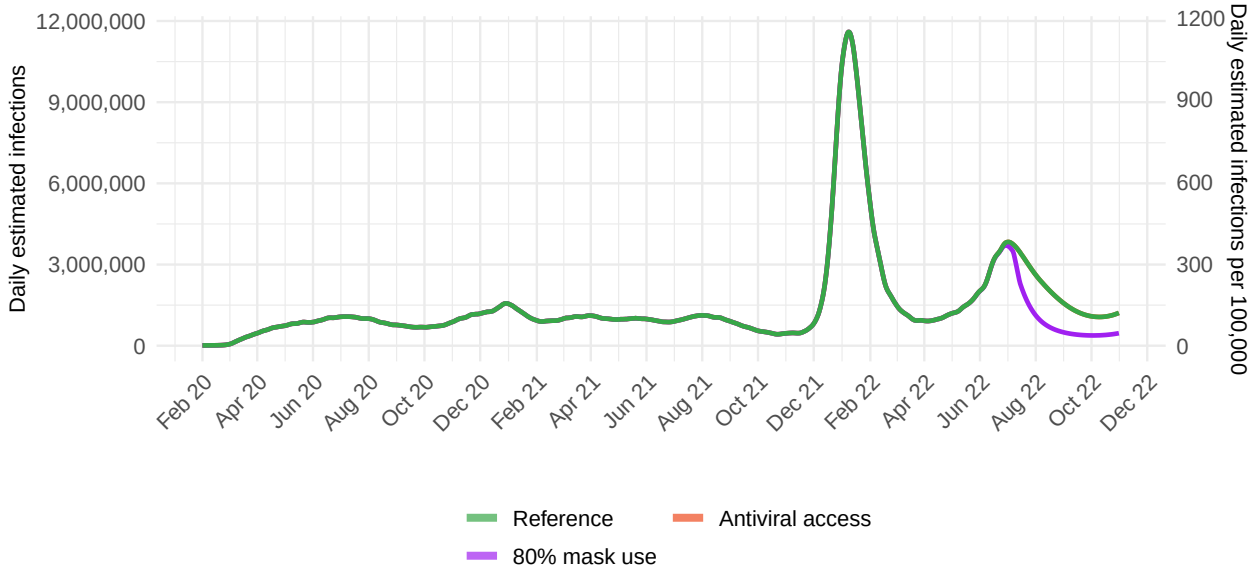



**Figure 21.2: Daily COVID-19 reported cases until November 01, 2022 for three scenarios**

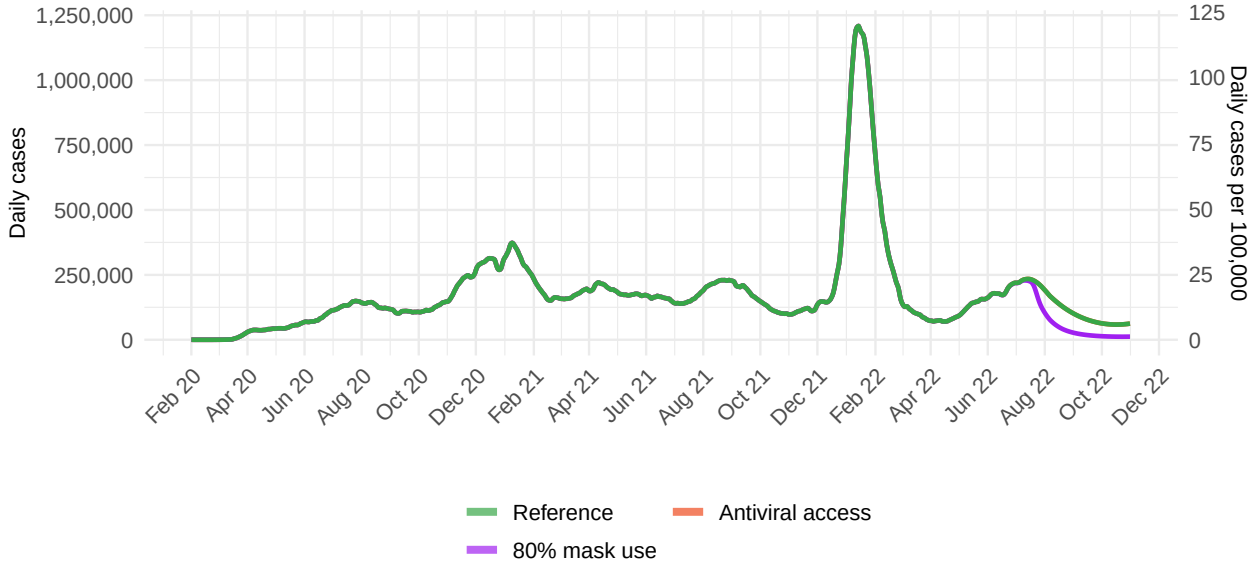


**Figure 21.3: Daily COVID-19 hospital census until November 01, 2022 for three scenarios**

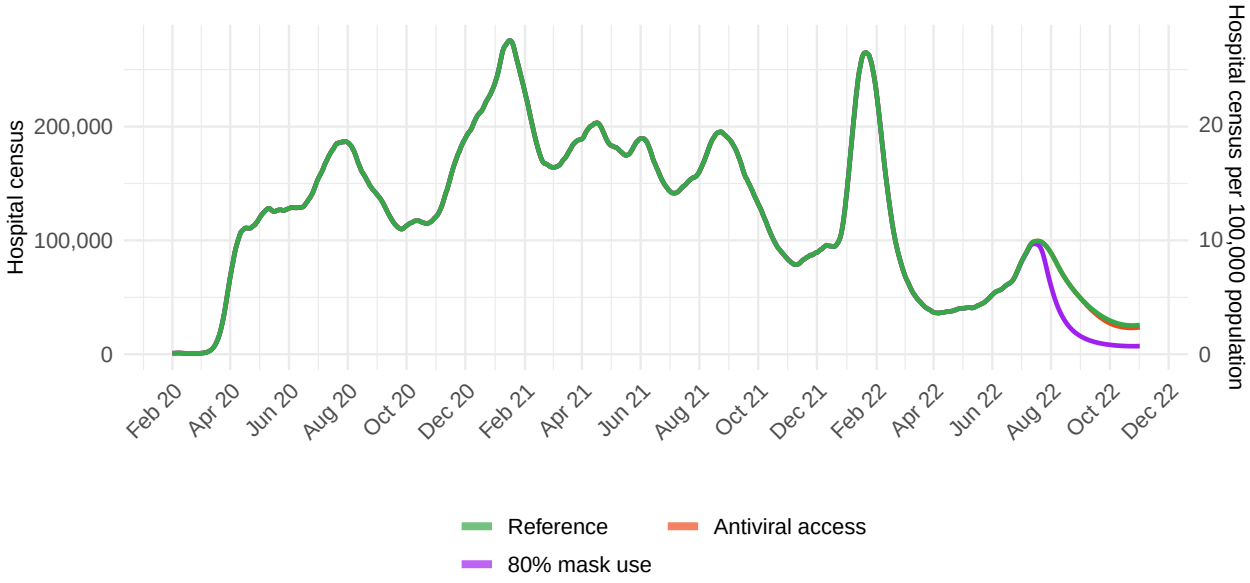


**Figure 21.4: Reported daily COVID-19 deaths per 100,000**

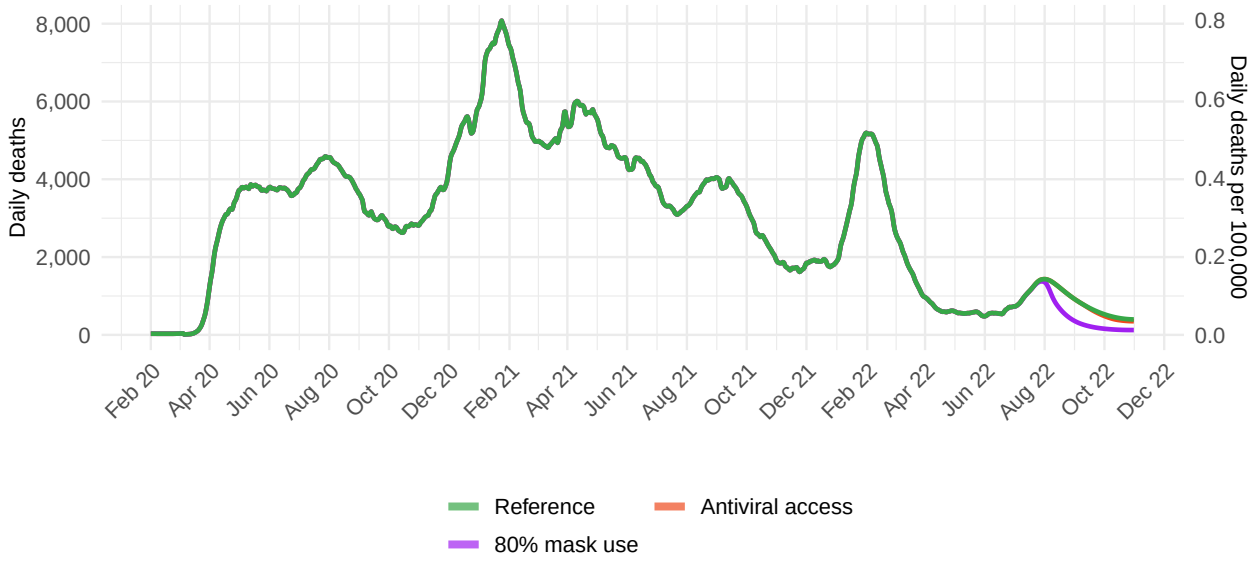


**Figure 21.5: Total daily COVID-19 deaths per 100,000**

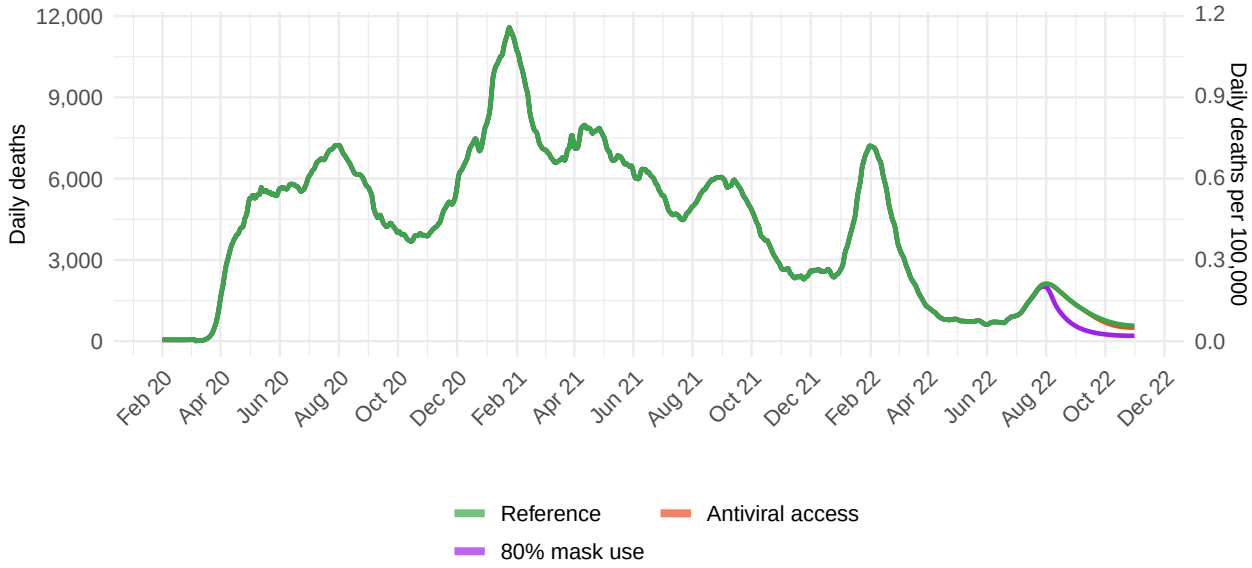


**Figure 22.1: Comparison of reference model projections with other COVID modeling groups.** For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available, last model update in brackets: . Regional values are aggregates from available locations in that region.

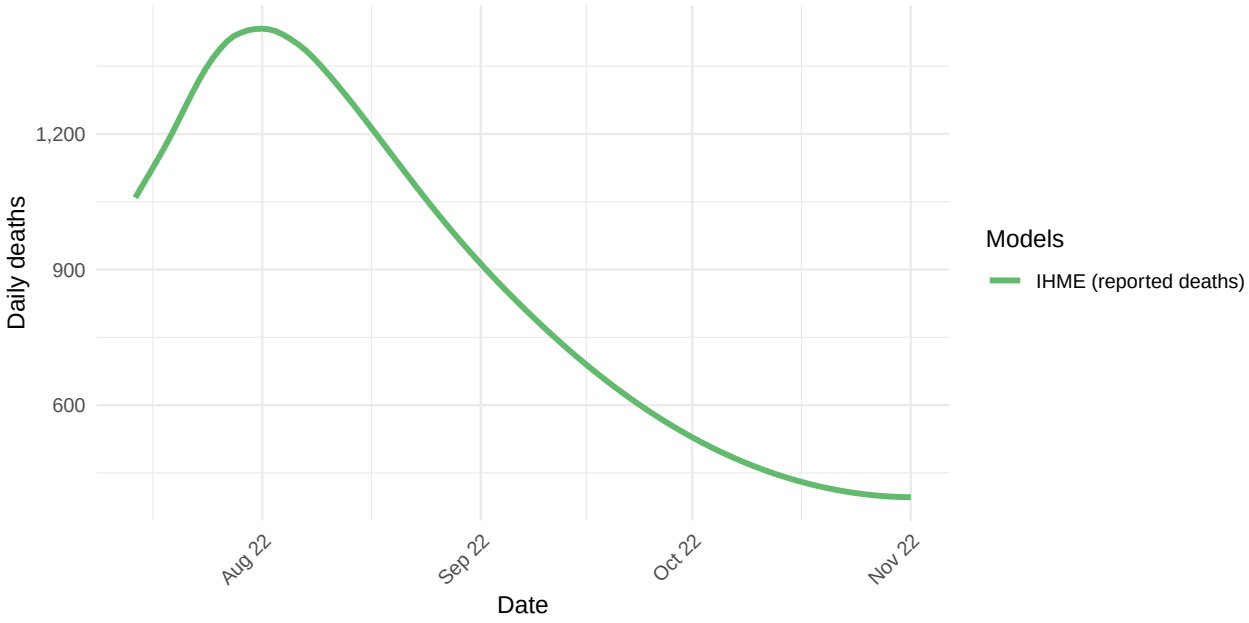


**Figure 23.1: The estimated inpatient hospital usage is shown over time.** The percent of hospital beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate stress*, 10-19% is considered *high stress*, and 20% or greater is considered *extreme stress*.

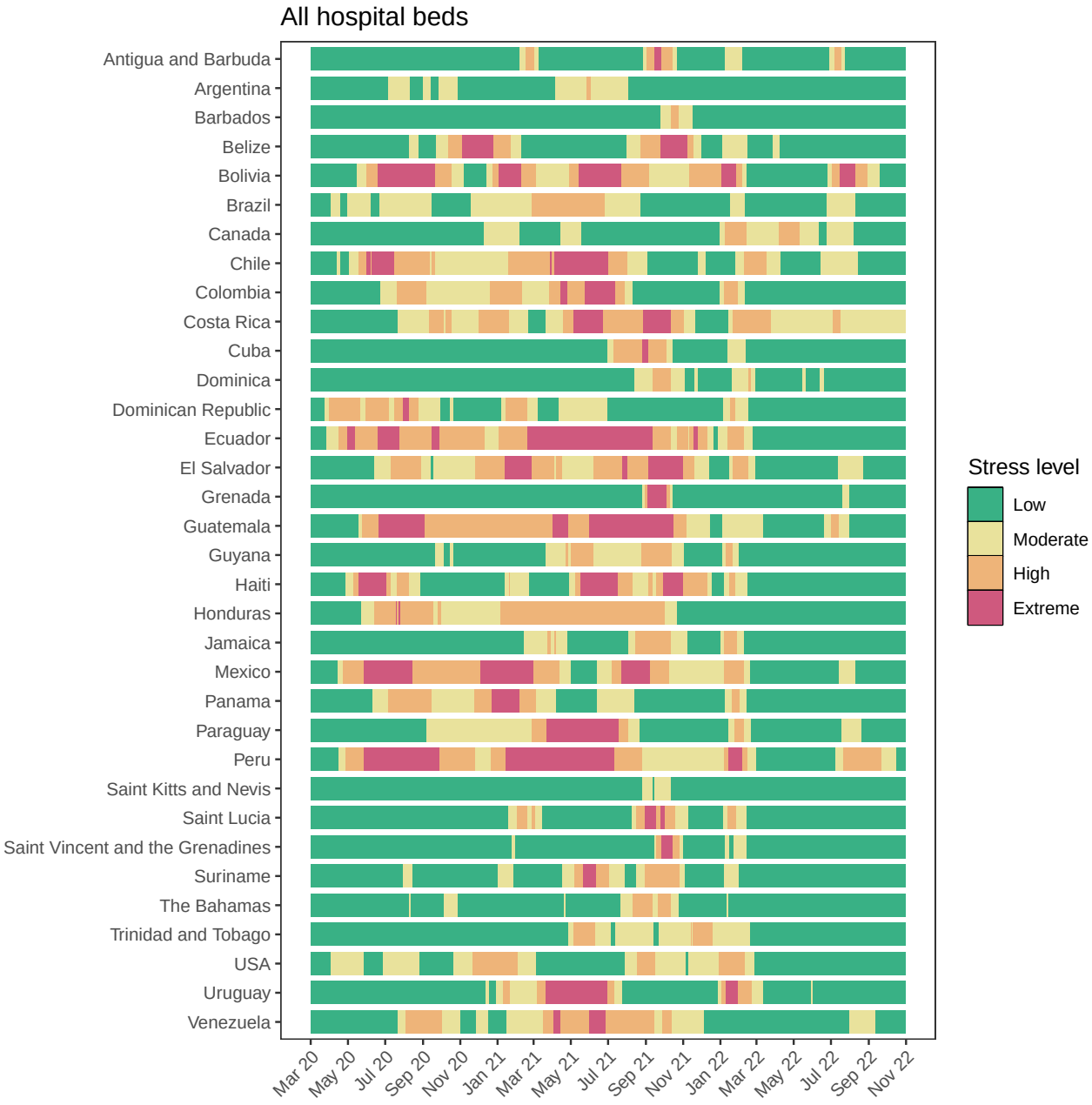


**Figure 24.1: The estimated intensive care unit (ICU) usage is shown over time.** The percent of ICU beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *moderate stress*, 30-59% is considered *high stress*, and 60% or greater is considered *extreme stress*.

## More information

**Data sources:**

Mask use and vaccine confidence data are from the The Delphi Group at Carnegie Mellon University and University of Maryland COVID-19 Trends and Impact Surveys, in partnership with Facebook. Mask use data are also from Premise, the Kaiser Family Foundation, and the YouGov COVID-19 Behaviour Tracker survey.

Genetic sequence and metadata are primarily from the GISAID Initiative. Further details available on the COVID-19 model FAQ page.

**A note of thanks:**

We wish to warmly acknowledge the support of these and others who have made our COVID-19 estimation efforts possible.

**More information:**

For all COVID-19 resources at IHME, visit http://www.healthdata.org/covid.

To download our most recent results, visit our Data downloads page.

Questions? Requests? Feedback? Please contact us at https://www.healthdata.org/covid/contact-us.