COVID-19 Results Briefing

Global

February 18, 2022

This document contains summary information on the latest projections from the IHME model on COVID-19 globally. The model was run on February 17, 2022, with data through February 14, 2022.

The Omicron wave continues to spread across the world. Transmission has peaked and is declining in most of North and South America, Africa, South Asia, and most of Europe, but is still increasing in Southeast Asia, New Zealand, and South Korea. In some countries, notably Finland and Sardinia in Italy, there is a secondary increase after an initial Omicron peak and decline. In New Zealand, Omicron is now doubling every two days. So far, China has been able to block Omicron transmission when it occurs using strict lockdown, but the recent exposure across multiple cities may challenge this success. Data across multiple countries confirm that a high fraction of cases are asymptomatic or mildly symptomatic; for example, unpublished cohort data in India suggests that in a five-week period, as many as two-thirds of the population have been infected. Despite extraordinary levels of transmission across the world leading to a peak in transmission four times higher than for Delta, global deaths have peaked at 40% of the Delta peak. These rough global figures confirm that on average, the Omicron infection-fatality rate is 90+% lower than that of Delta.

While most of the world is entering the declining transmission phase of the Omicron wave, transmission is still increasing in most of Southeast Asia and select other countries such as New Zealand. We expect these waves will peak in a three- to five-week timeframe. The most uncertain is the trajectory for China, where application of strict lockdown and rigorous test, trace, and quarantine strategies have avoided a widespread outbreak so far. We expect it will be hard to sustain this strategy and the Omicron wave will eventually spread throughout the country, but the timing for this is highly uncertain. In our scenario analysis, rapid rollout of a third dose with an effective vaccine prior to the spread of Omicron would save lives in China. Case counts in the Russian Federation have risen to higher levels than we expected, indicating that levels of past infection may have been overestimated or immunity from Sputnik vaccination may wane faster than we have estimated.

While many countries, particularly in East and Southeast Asia, have challenging weeks ahead, in those countries with two or more weeks of sustained decline in transmission, governments may want to consider relaxing mandates and mitigation measures. We believe that the sharp declines in transmission in the majority of countries reflect a situation where the number of susceptible individuals has declined enough to R effective below 1. In these settings, we do not think relaxation of mitigation measures, including masking in schools, will alter the trajectory of the Omicron wave.

While the current trajectory in many regions is favorable, several steps should be taken to protect against risks from future variants. First, surveillance efforts should be maintained and strengthened so that if a new variant emerges anywhere in the world, all countries can have advance warning. Second, production of effective antivirals should be accelerated if possible so that sufficient doses are available if a new variant, particularly one that is more severe than Omicron, emerges. We expect Omicron, in the absence of a new variant, to return in the Northern Hemisphere winter of 2022, so there will be a need for antivirals even in the absence of a new variant. A Southern Hemisphere winter Omicron return is possible but less likely, but it depends on the speed of waning of Omicron-derived immunity. Third, efforts to persuade the unvaccinated to get vaccinated should continue, as should efforts to address vaccine inequity. And careful consideration should be given to need and timing for a fourth dose of vaccine. Evidence has accumulated that shows immunity after a third and fourth dose wanes steadily. Given that the Omicron wave is rapidly subsiding, a major push on a fourth dose now seems unnecessary except in China and parts of Southeast Asia. In addition, fourth doses in settings with available supply should be considered for high-risk individuals. A fourth dose push when a new variant emerges, or later in the year in anticipation of a winter increase in Omicron, may be more appropriate. Fourth, even as most individuals return to pre-COVID-19 activities, individuals at risk (over 65, immunocompromised, and multiple co-morbidities) should take precautions if and when transmission increases. These precautions should include using a high-quality mask if available, avoiding high-risk indoor settings, and social distancing.

Current situation

- Estimated daily infections in the last week decreased to 24.3 million per day on average compared to 28.0 million the week before (Figure 1.1).

- Estimated daily hospital census in the last week (through February 14) decreased to 1,154,000 per day on average compared to 1,195,000 the week before.

- Daily reported cases in the last week decreased to 2,369,000 per day on average compared to 2,795,000 the week before (Figure 2.1).

- Reported deaths due to COVID-19 in the last week decreased to 10,000 per day on average compared to 11,000 the week before (Figure 3.1).

- Total deaths due to COVID-19 in the last week decreased to 20,000 per day on average compared to 22,000 the week before (Figure 3.1). This makes COVID-19 the number 2 cause of death globally this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 2 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 43 locations and 77 subnational locations (Figure 4.1).

- The daily rate of total deaths due to COVID-19 is greater than 4 per million in 77 locations and 128 subnational locations (Figure 4.2).

- We estimate that 55% of people globally have been infected at least once as of February 14 (Figure 6.1).

- Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in 38 locations and 14 subnational locations (Figure 7.1).

- The infection-detection rate globally was close to 7% on February 14 (Figure 8.1).

- 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). Omicron remains the dominant variant throughout the world.

Trends in drivers of transmission

- Mobility last week was 5% higher than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 30% of baseline in two locations and one subnational location.

- As of February 14, in the COVID-19 Trends and Impact Survey, 62% of people self-report that they always wore a mask when leaving their home (Figure 13.1). Lowest levels of mas use are in north, west, and east Africa, parts of Eastern Europe, and many US states.

- There were 218 diagnostic tests per 100,000 people on February 14 (Figure 15.1).

- As of February 14, 73 locations and no subnational locations have reached 70% or more of the population who have received at least one vaccine dose, and nine locations and 93 subnational locations have reached 70% or more of the population who are fully vaccinated (Figure 17.1). 62% of people globally have received at least one vaccine dose, and 55% are fully vaccinated.

- Globally, 67.1% of the population that is 12 years and older say they would accept, or would probably accept, a vaccine for COVID-19. Note that vaccine acceptance is calculated using survey data from the 18+ population. This is down by 0.2 percentage points from last week. The proportion of the population who are open to receiving a COVID-19 vaccine ranges from 31% in Namibia to 100% in United Arab Emirates (Figure 19.1).

- In our current reference scenario, we expect that 5.0 billion people will be vaccinated with at least one dose by June 1 (Figure 20.1). We expect that 60% of the population will be fully vaccinated by June 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 is the mean of mask use over the last seven days.

- Mobility increases as vaccine coverage increases.

- Omicron variant spreads according to our flight and local spread model.

- 80% of those who have had two doses of vaccine (or one dose for Johnson & Johnson) receive a third dose at six months after their second dose.

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 **third dose scenario** is the same as the reference scenario but assumes that 100% of those who have received two doses of vaccine will get a third dose at six months.

Projections

Infections

- Daily estimated infections in the **reference scenario** decline until mid-February and then increase again as Omicron expands in China, reaching a second peak in mid-March, and then declines steadily until June 1, 2022 (Figure 22.1).

- Daily estimated infections in the **80% mask use scenario** will rise to 48.4 million on March 5, 2022, and then decline (Figure 22.1).

- Daily estimated infections in the **third dose scenario** will rise to a much lower peak of 40.9 million by March 7, 2022 (Figure 22.1). The substantial impact of the third dose scenario compared to reference is largely in China.

Cases

- Daily estimated cases in the **reference scenario** will rise to 4.9 million by March 16, 2022 (Figure 22.2).

- Daily estimated cases in the **80% mask use scenario** will rise to 4.7 million by March 16, 2022 (Figure 22.2).

- Daily estimated cases in the **third dose scenario** will rise to 3.7 million by March 18, 2022 (Figure 22.2).

Hospitalizations

- Daily estimated hospitalizations in the **reference scenario** will rise to 1.7 million by March 16, 2022 (Figure 22.2).

- Daily estimated hospitalizations in the **80% mask use scenario** will rise to 1.6 million by March 16, 2022 (Figure 22.2).

- Daily estimated hospitalizations in the **third dose scenario** will rise to 1.4 million by March 18, 2022 (Figure 22.2).

Deaths

- In our **reference scenario**, our model projects 6,862,000 cumulative reported deaths due to COVID-19 on June 1. This represents 509,000 additional deaths from February 14 to June 1. Daily reported COVID-19 deaths in the **reference scenario** will decline to 700 by June 1, 2022 (Figure 22.4).

- Under our **reference scenario**, our model projects 16,135,000 cumulative total deaths due to COVID-19 on June 1. This represents 1,148,000 additional deaths from February 14 to June 1 (Figure 25.2).

- In our **80% mask use scenario**, our model projects 6,825,000 cumulative reported deaths due to COVID-19 on June 1. This represents 471,000 additional deaths from February 14 to June 1 (Figure 22.4).

- In our **third dose scenario**, our model projects 6,822,000 cumulative reported deaths due to COVID-19 on June 1. This represents 470,000 additional deaths from February 14 to June 1 (Figure 22.4).

Model updates

No model updates.

Figure 1.1: Daily COVID-19 hospital census and estimated infections
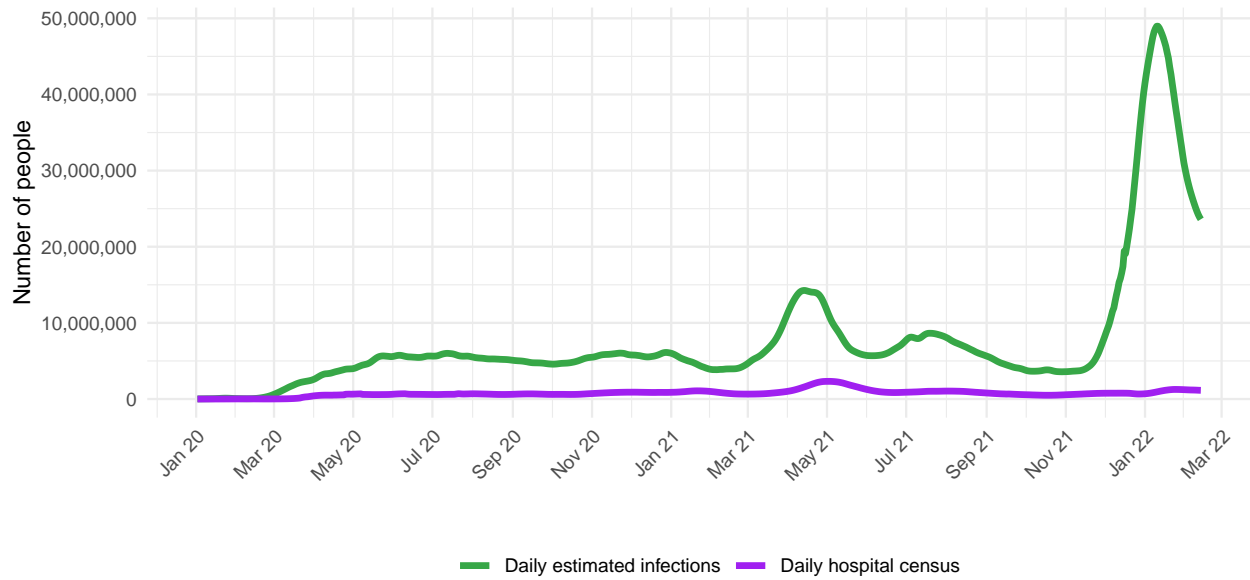
Figure 2.1: Reported daily COVID-19 cases, moving average
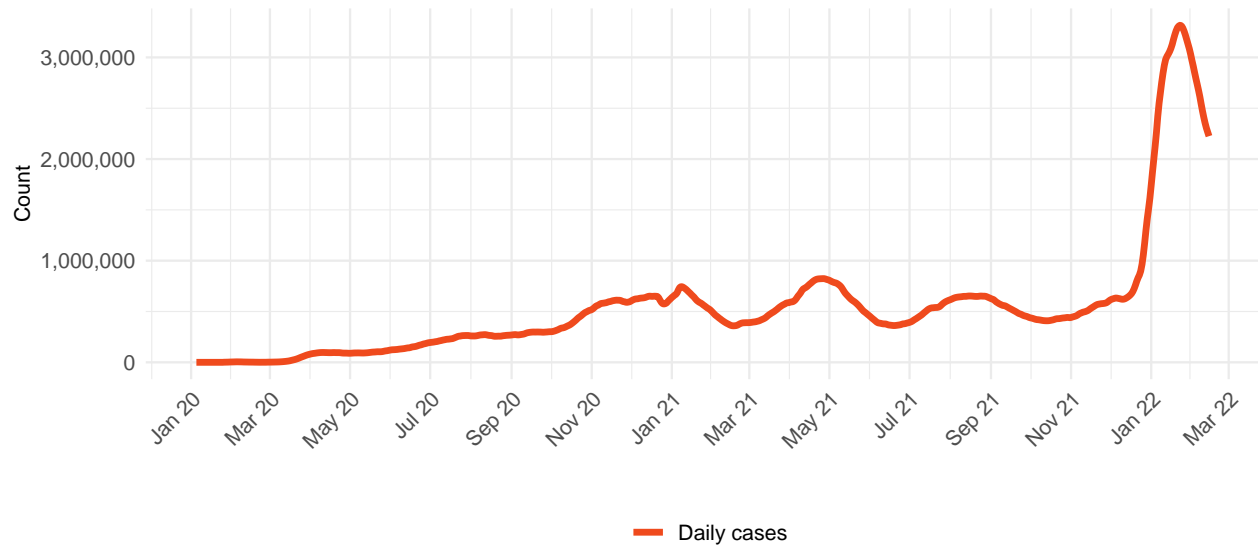
Table 1: Ranking of total deaths due to COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year

Cause name	Weekly deaths	Ranking
Ischemic heart disease	175,727	1
COVID-19	143,229	2
Stroke	126,014	3
Chronic obstructive pulmonary disease	63,089	4
Lower respiratory infections	47,946	5
Tracheal, bronchus, and lung cancer	39,282	6
Neonatal disorders	36,201	7
Alzheimer's disease and other dementias	31,217	8
Diabetes mellitus	29,830	9
Diarrheal diseases	29,509	10

Figure 3.1: Smoothed trend estimate of reported daily COVID-19 deaths (blue) and total daily deaths due to COVID-19 (orange)
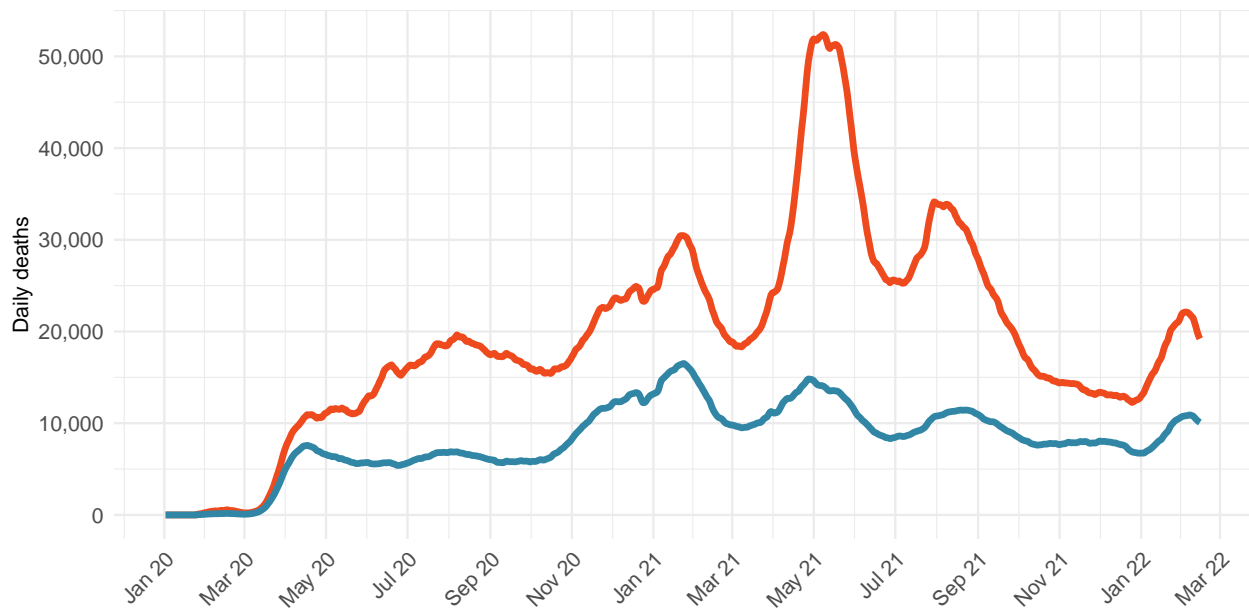
Daily COVID-19 death rate per 1 million on February 14, 2022

Figure 4.1: Daily reported COVID-19 death rate per 1 million
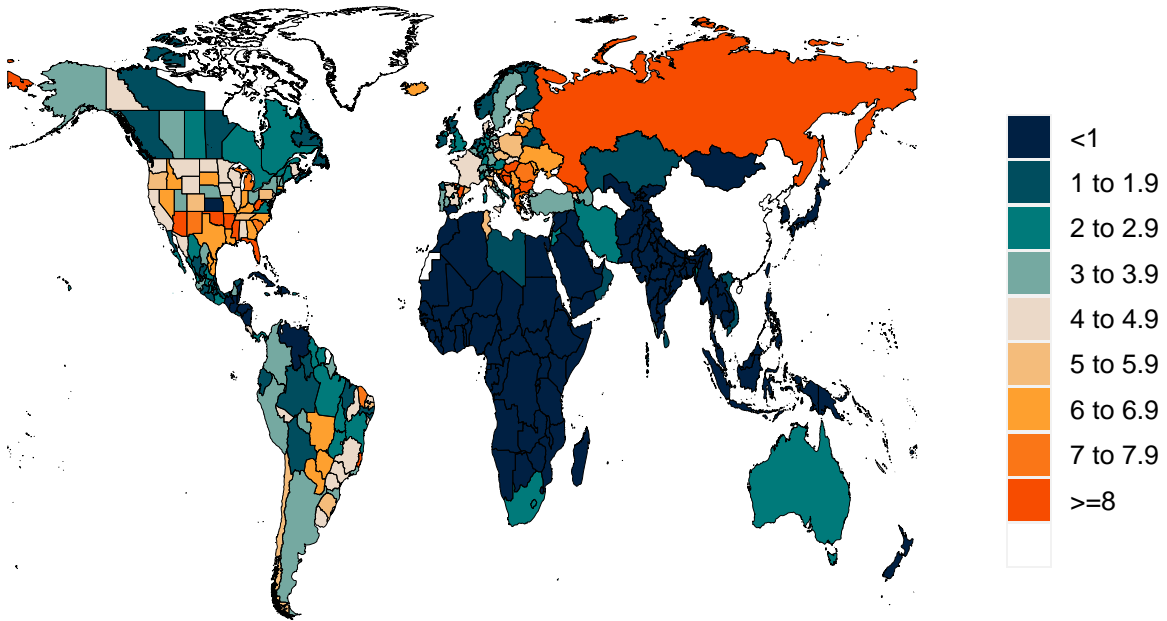
Figure 4.2: Daily total COVID-19 death rate per 1 million
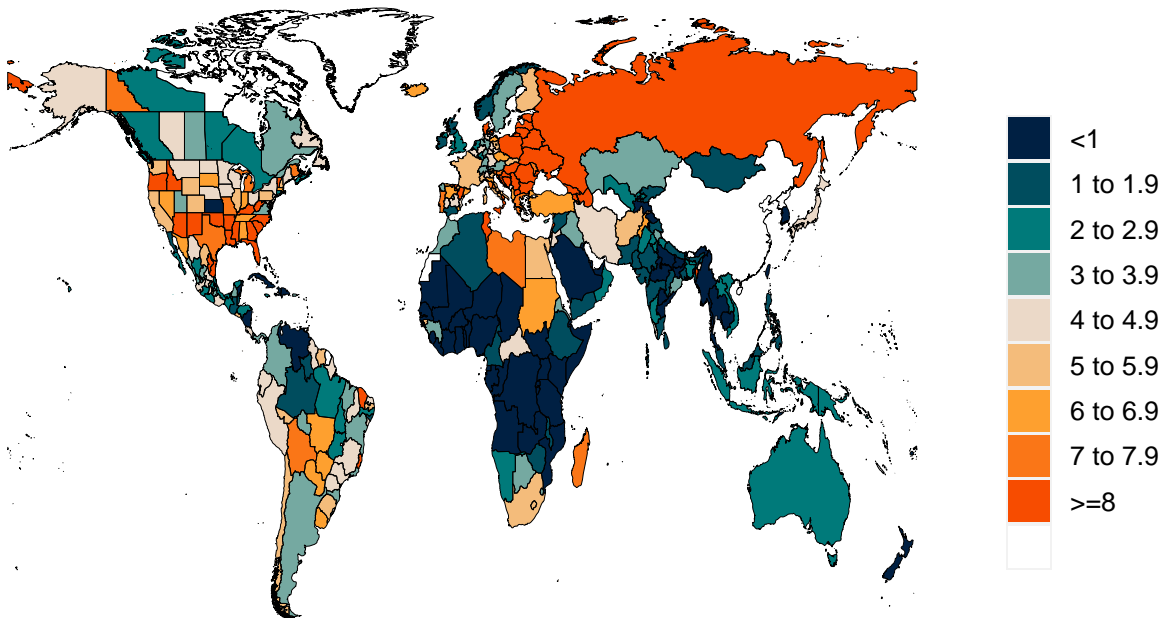
Cumulative COVID-19 deaths per 100,000 on February 14, 2022

Figure 5.1: Reported cumulative COVID-19 deaths per 100,000
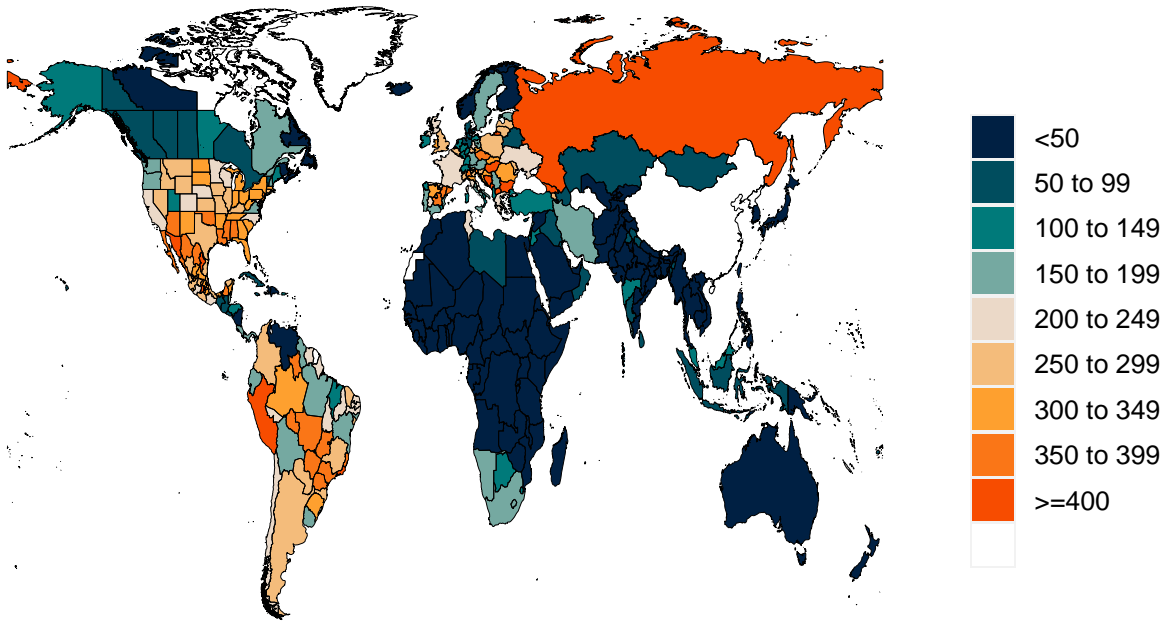
Figure 5.2: Total cumulative COVID-19 deaths per 100,000
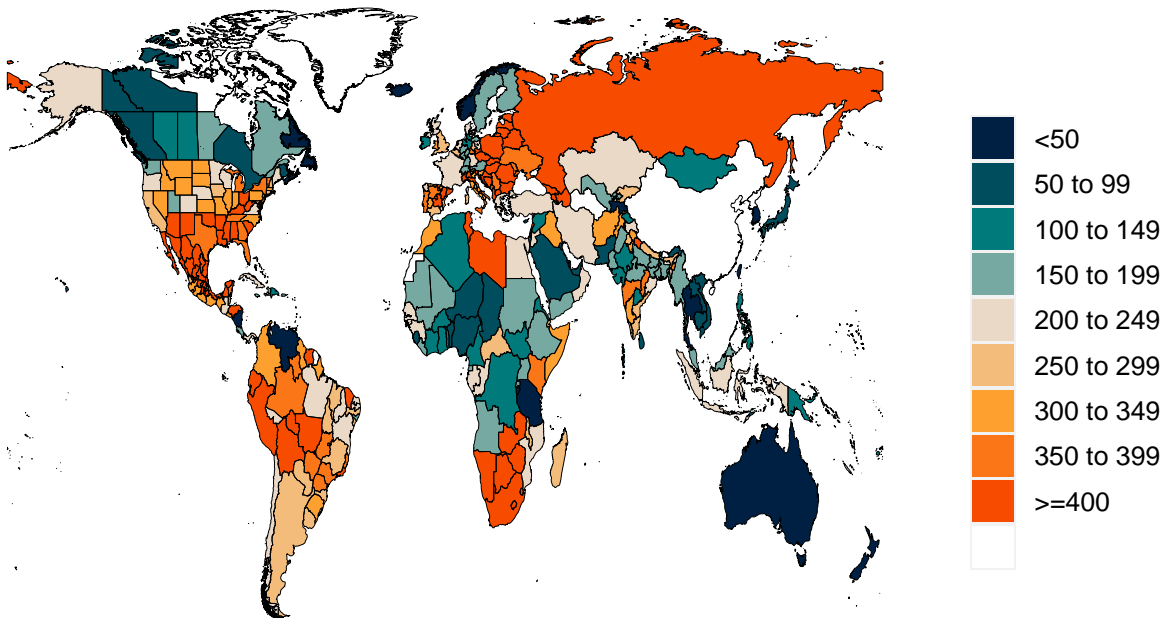
Figure 6.1: Estimated percent of the population infected with COVID-19 on February 14, 2022
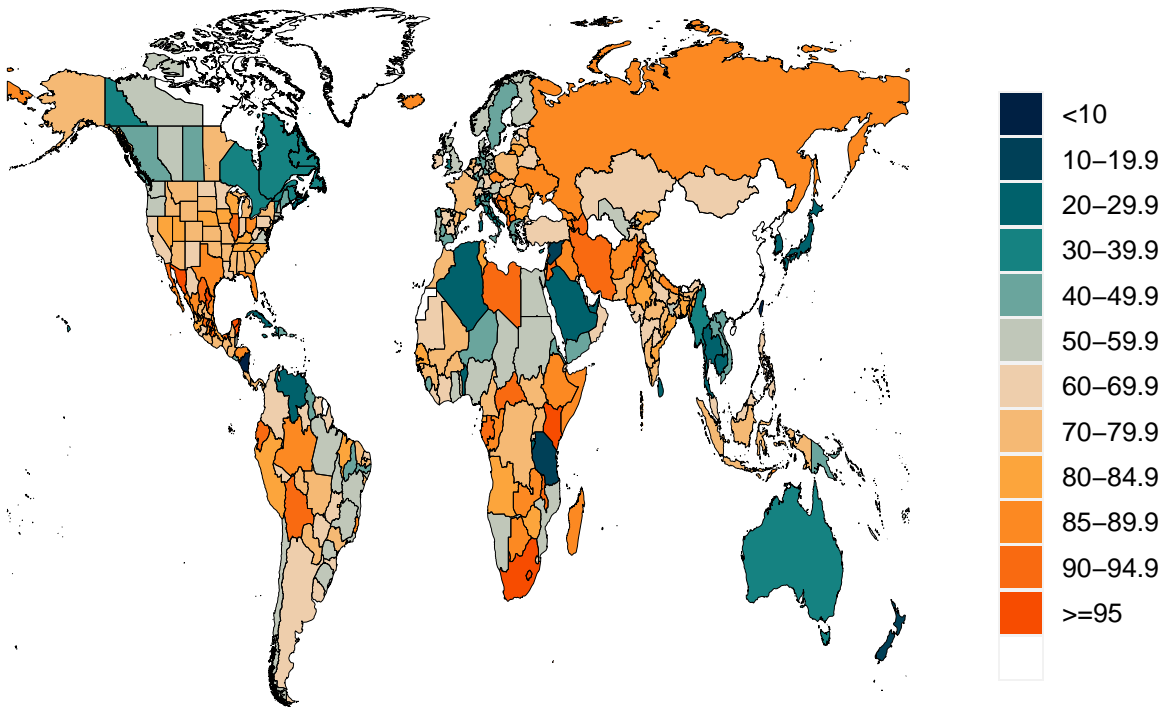
Figure 7.1: Mean effective R on February 3, 2022. Effective R less than 1 means that transmission should decline, all other things being held the same. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past.
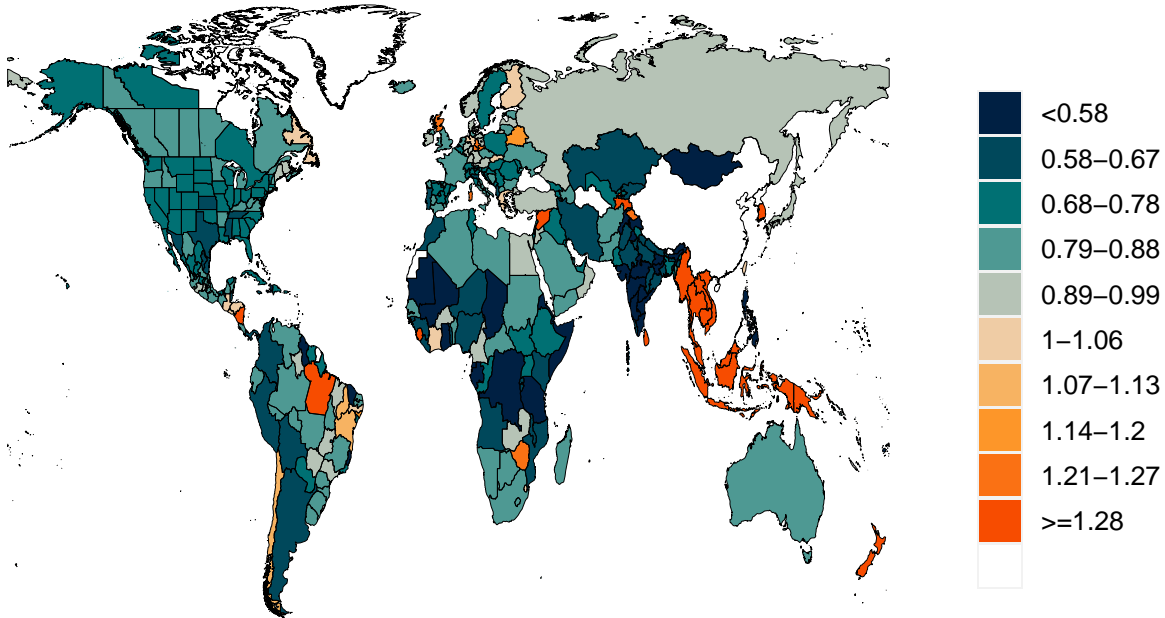
Figure 8.1: Percent of estimated COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model. Due to measurement errors in cases and testing rates, the infection-detection rate can exceed 100% at particular points in time.
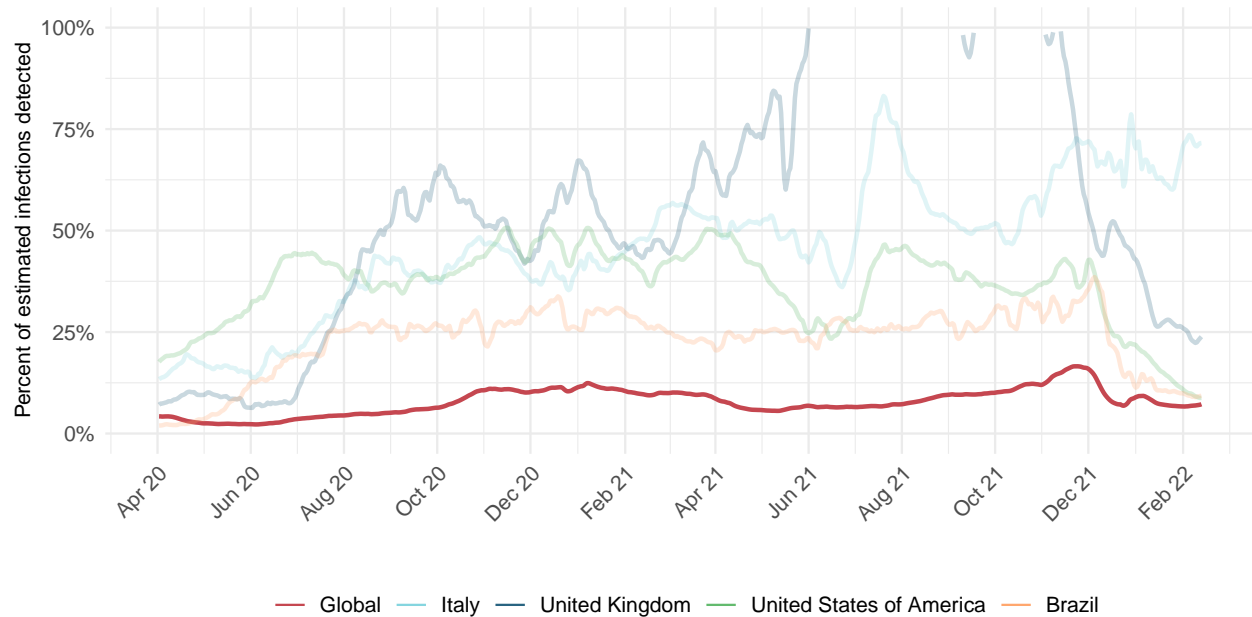
Estimated percent of circulating SARS-CoV-2 for primary variant families on February 14, 2022

Figure 9.1: Estimated percent of new infections that are Alpha variant
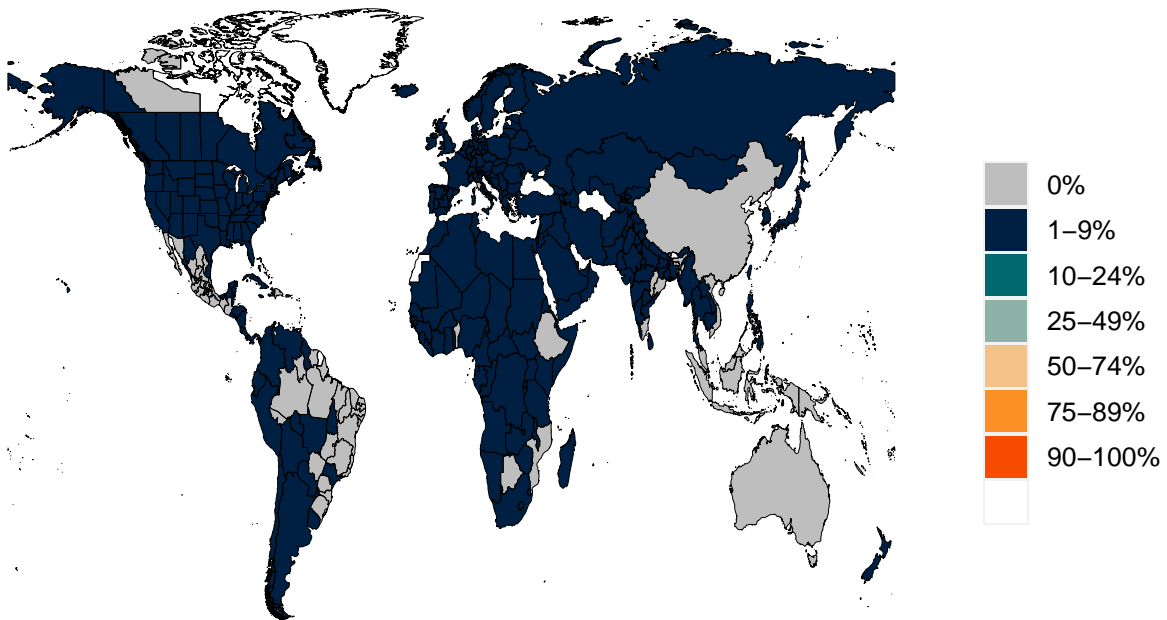
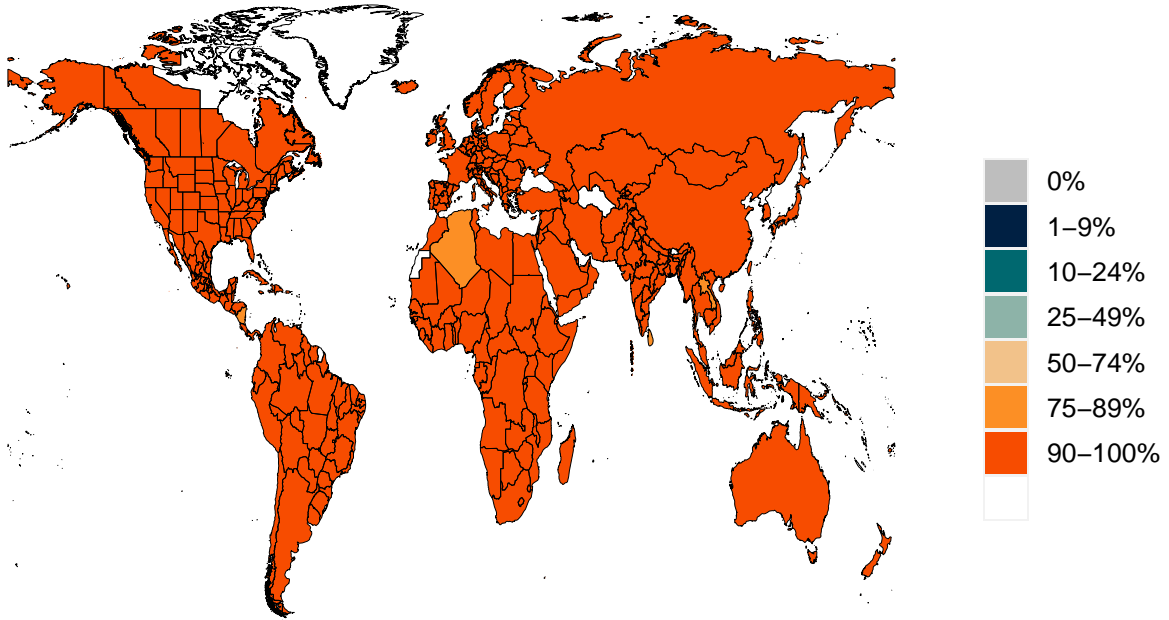**Figure 9.2: Estimated percent of new infections that are Beta variant**
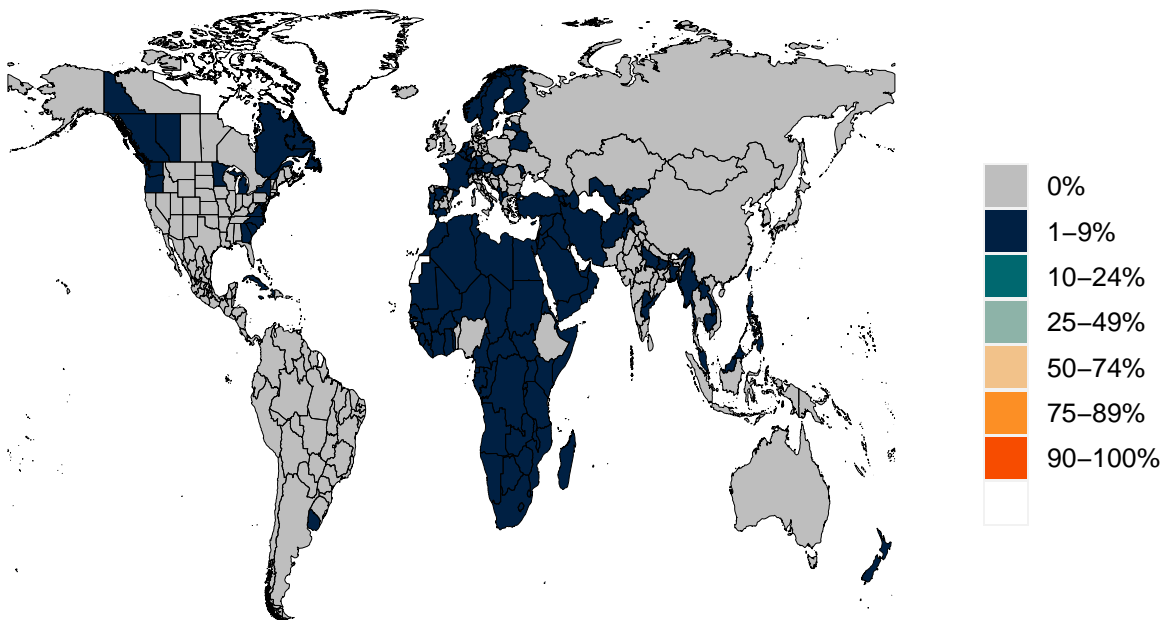
Figure 9.3: Estimated percent of new infections that are Delta variant
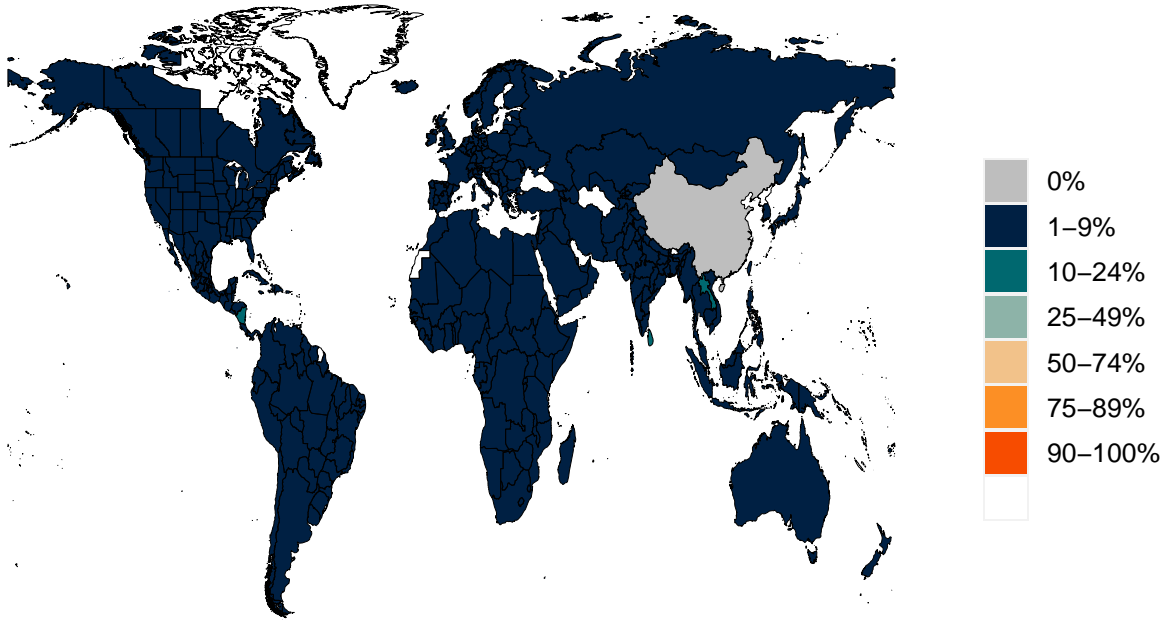
Figure 9.4: Estimated percent of new infections that are Gamma variant
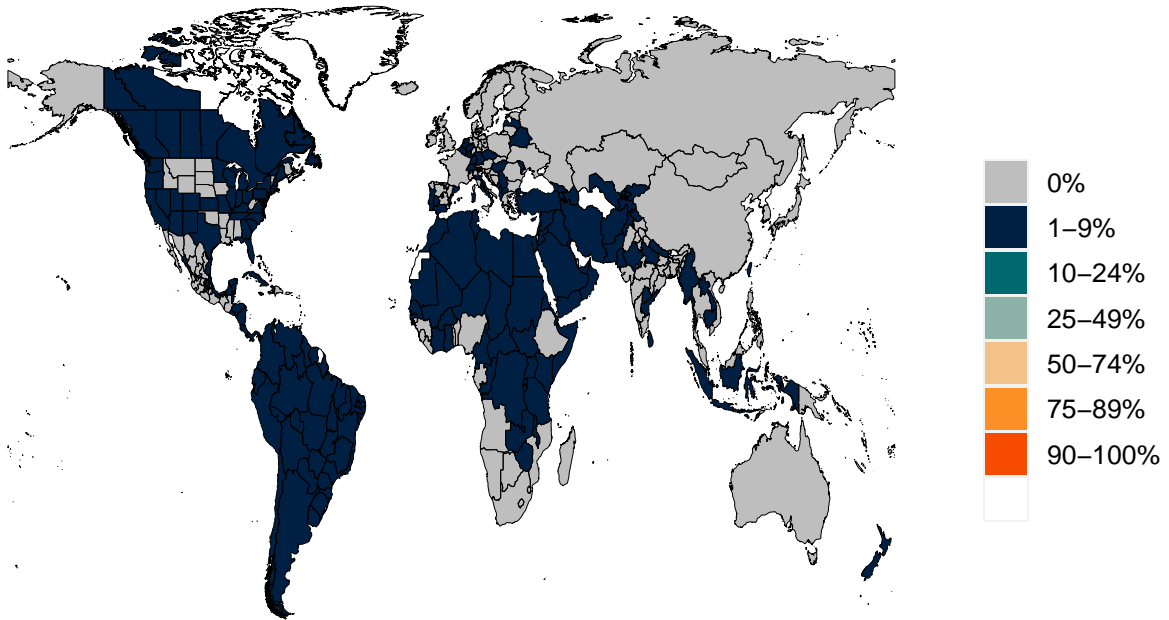
Figure 9.5: Estimated percent of new infections that are Omicron variant

■	0%
■	1–9%
■	10–24%
■	25–49%
■	50–74%
■	75–89%
■	90–100%
□	

Figure 10.1: Infection-fatality rate on February 14, 2022. This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.

■	< 0.2%
■	0.2% to 0.39%
■	0.4% to 0.59%
■	0.6% to 0.79%
■	0.8% to 0.99%
■	> 1%
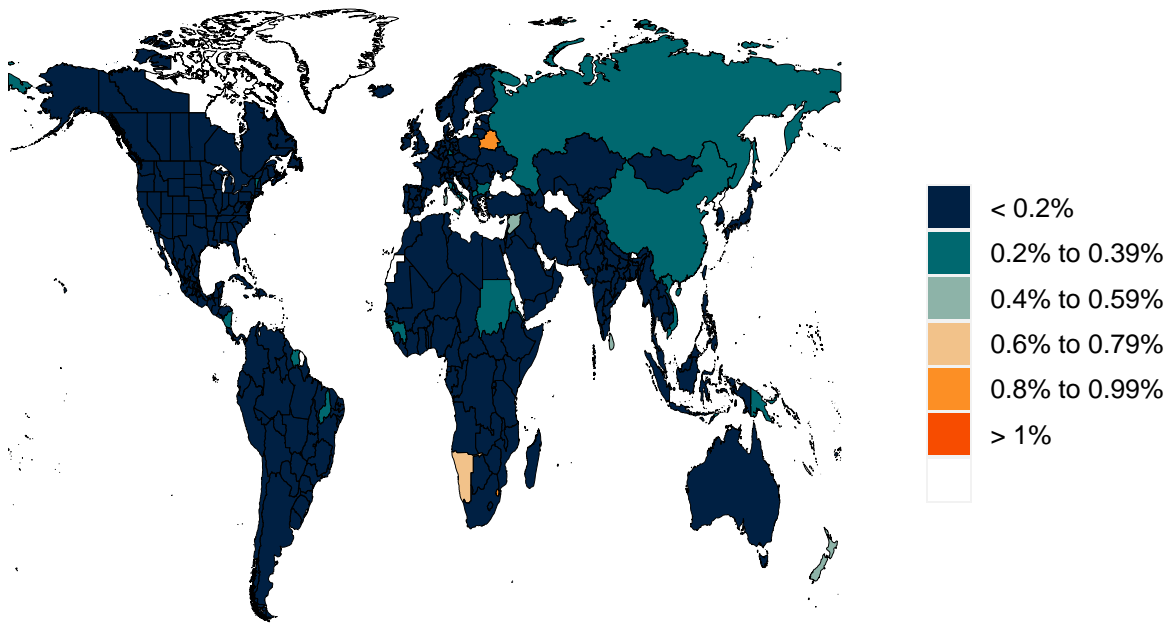
Figure 11.1: Trend in mobility as measured through smartphone app use, compared to January 2020 baseline
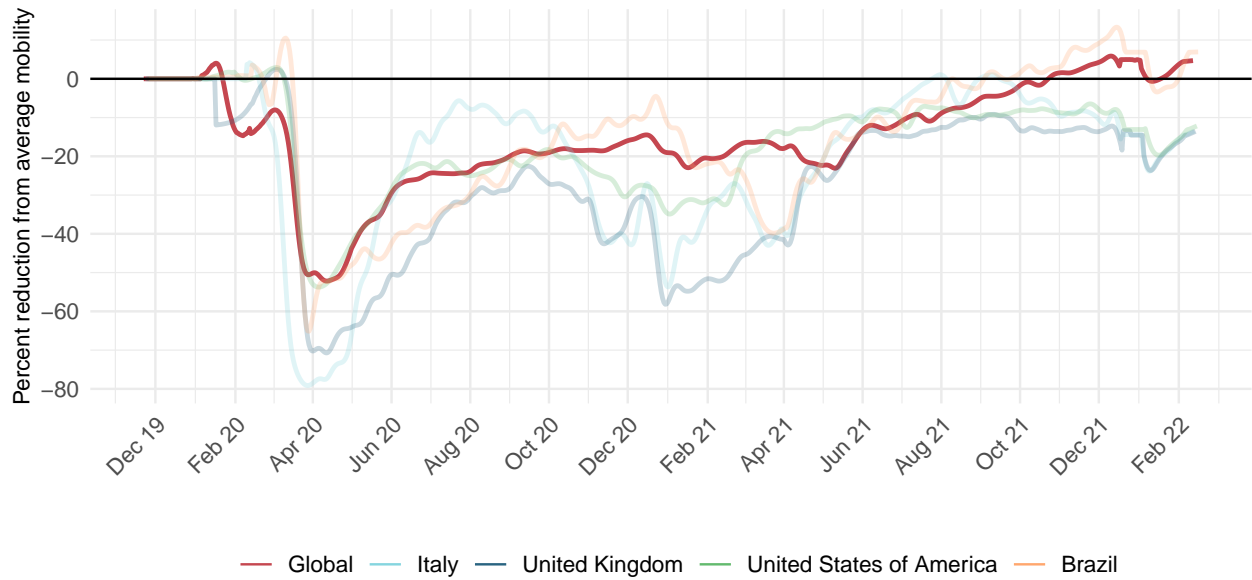
Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on February 14, 2022

	=<−50
	−49 to −45
	−44 to −40
	−39 to −35
	−34 to −30
	−29 to −25
	−24 to −20
	−19 to −15
	−14 to −10
	>−10
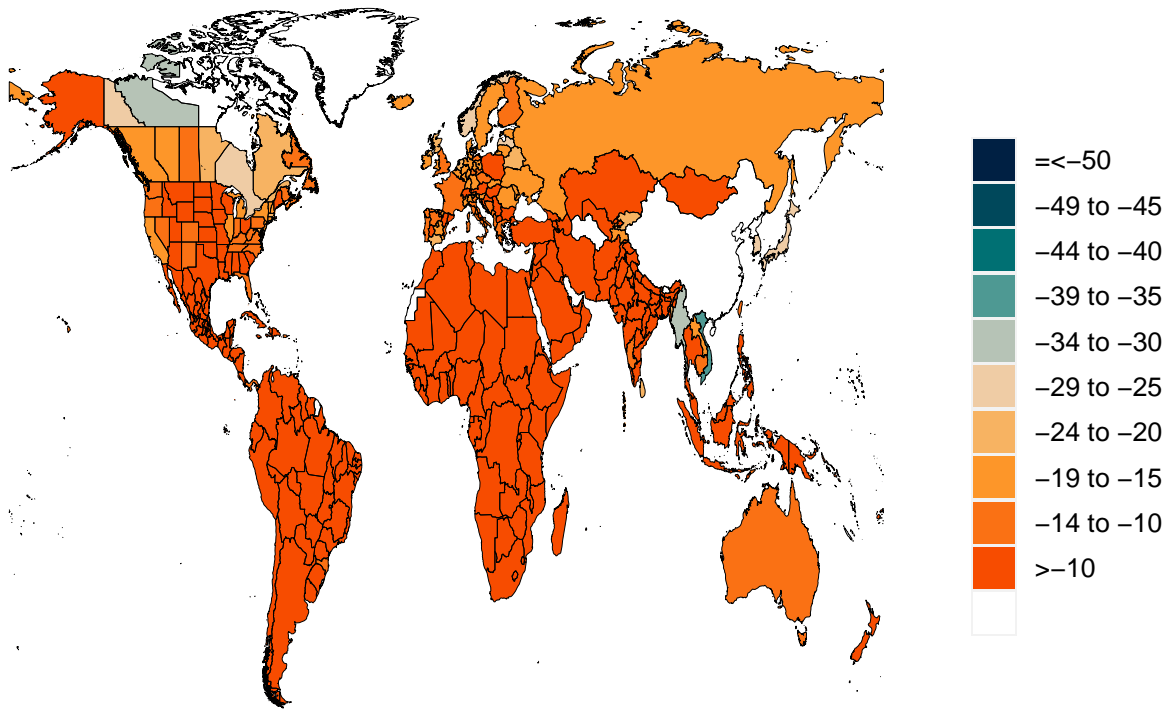
Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home
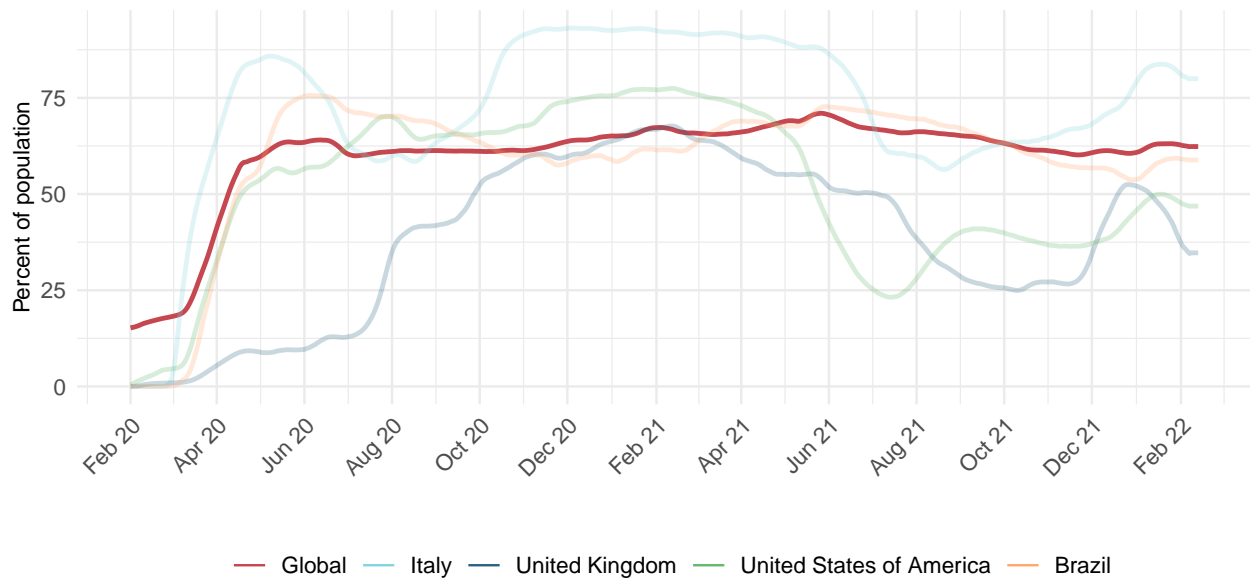
Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on February 14, 2022
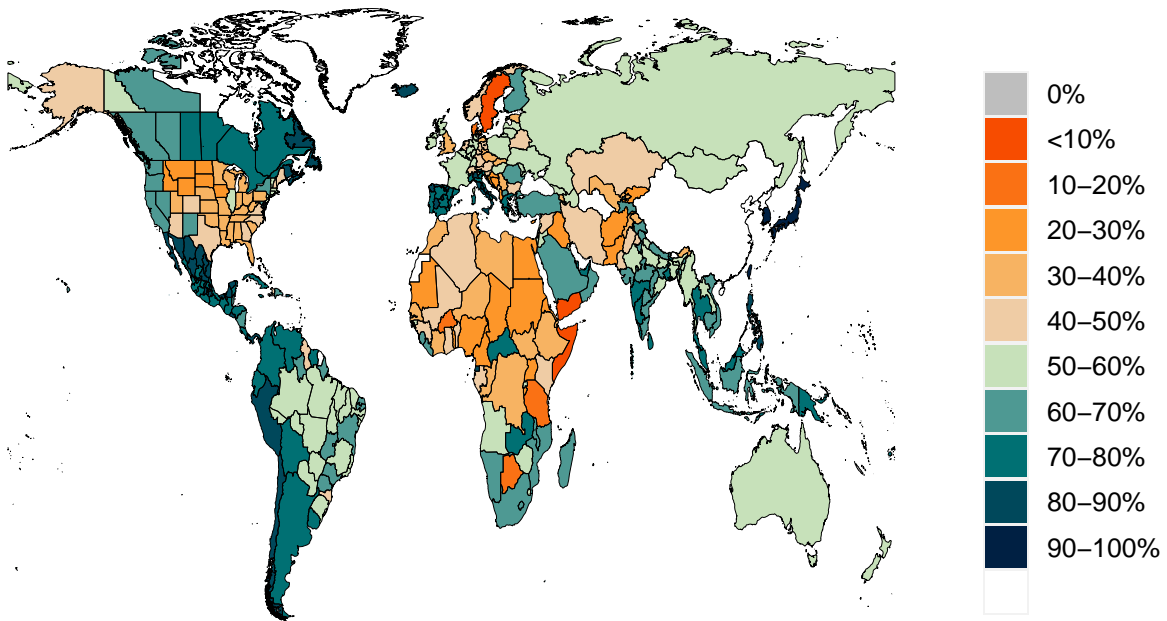
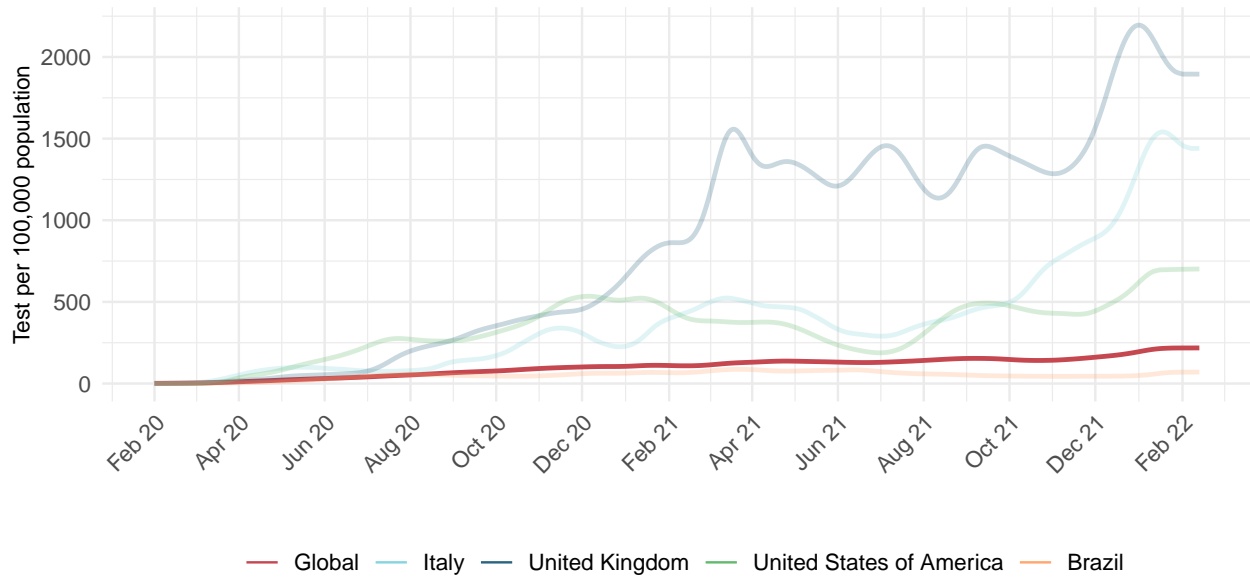**Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people**

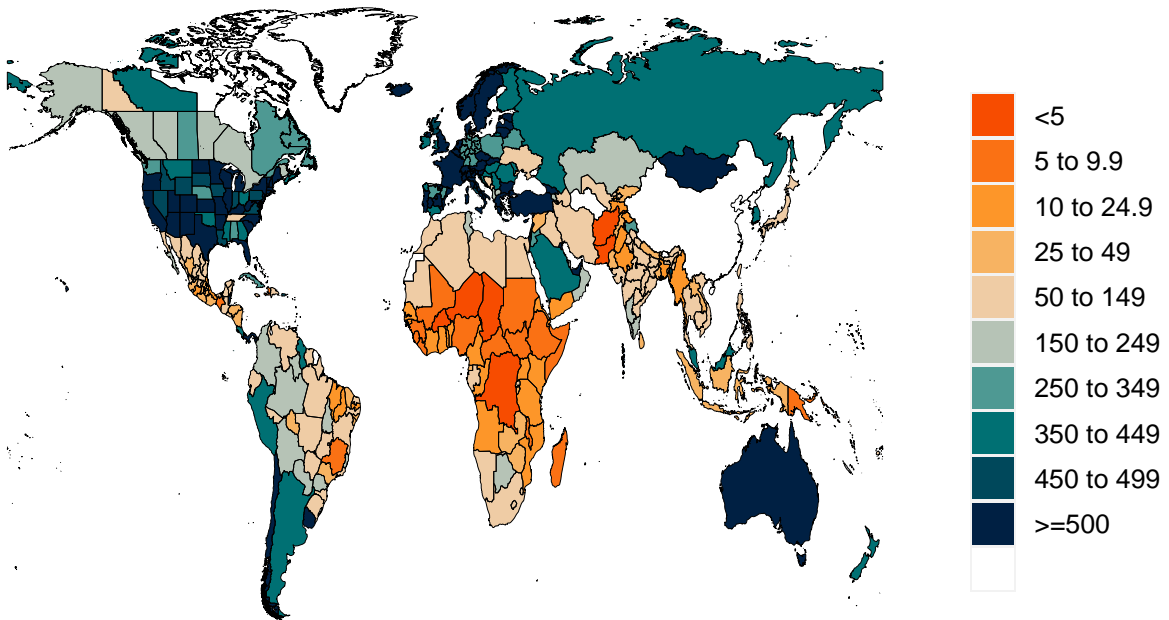**Figure 16.1: COVID-19 diagnostic tests per 100,000 people on February 14, 2022**

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 February 14, 2022

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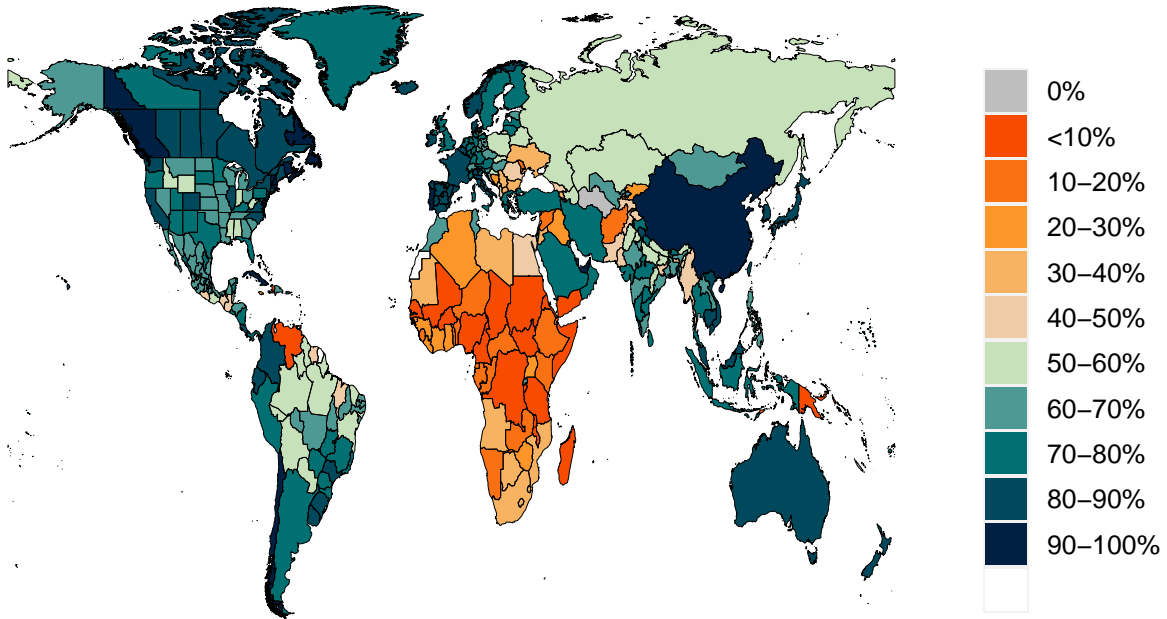

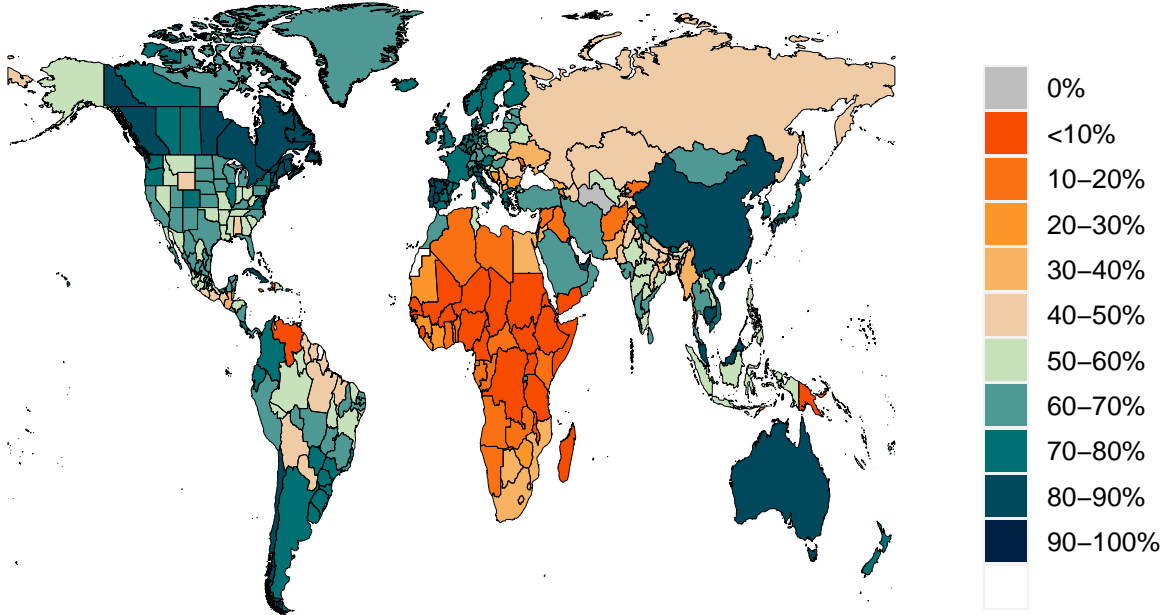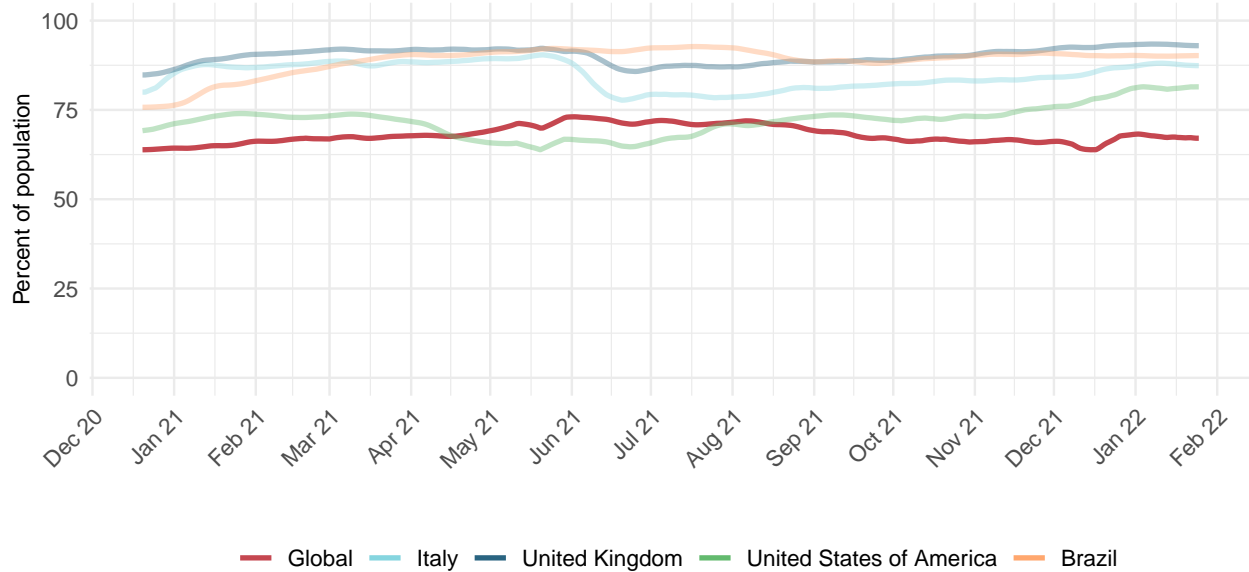**Figure 17.2: Percent of the population fully vaccinated against SARS-CoV-2**

Figure 18.1: Trend in the estimated proportion of the population that is 12 years and older that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.
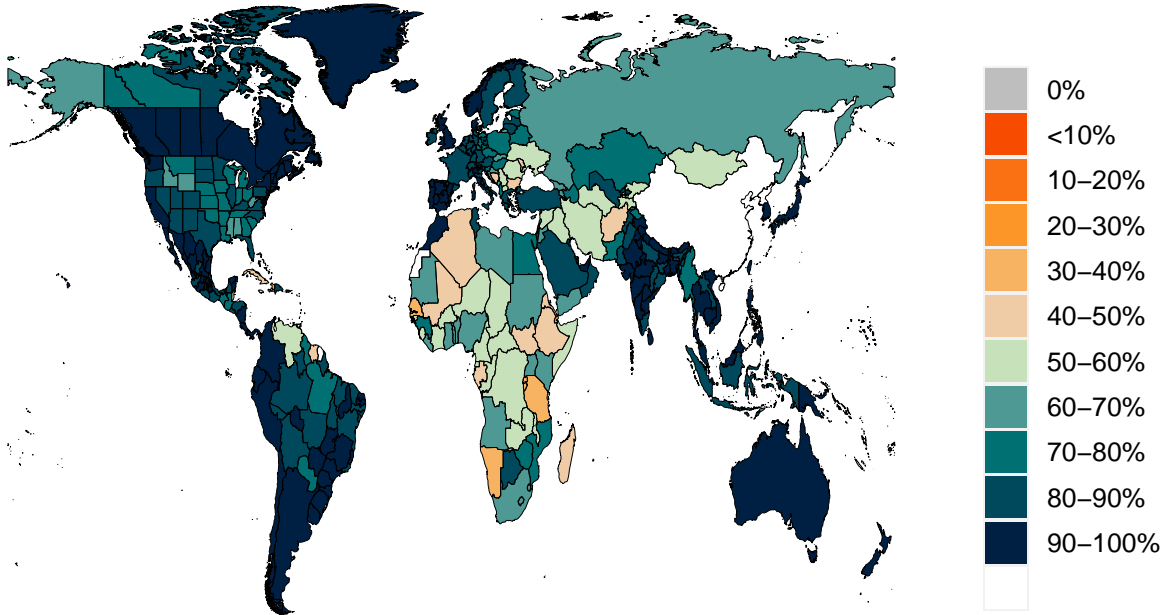

Figure 19.1: Estimated proportion of the population that is 12 years and older that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.

Figure 20.1: Percent of people who receive at least one dose of a COVID-19 vaccine and those who are fully vaccinated
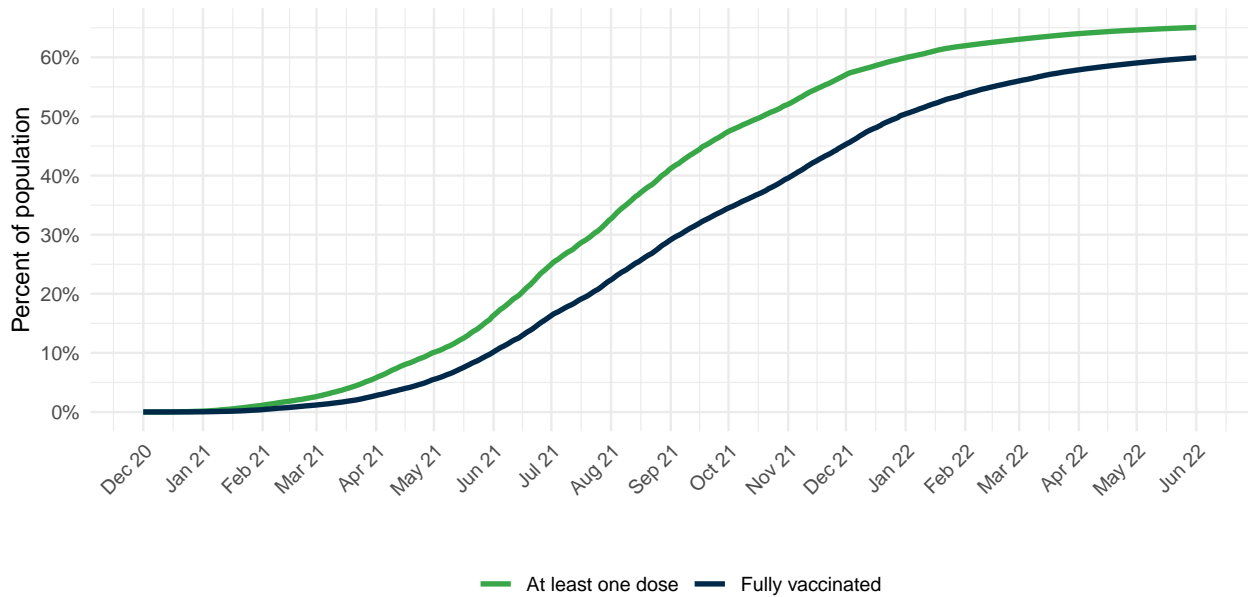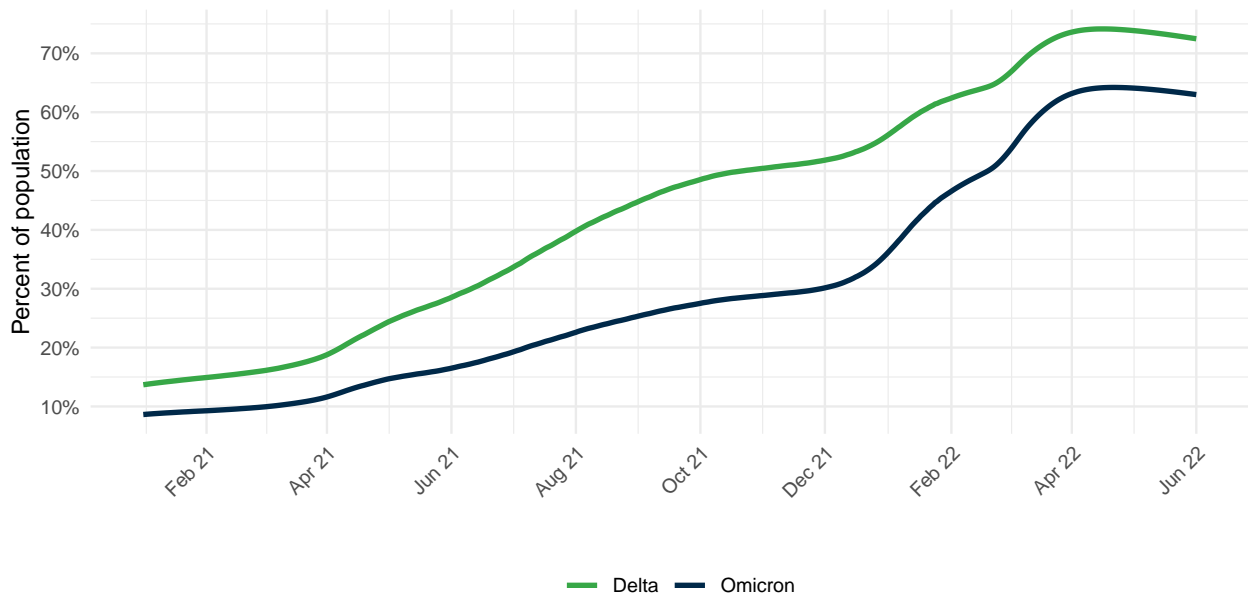

Figure 21.1: Percent of people who are immune to Delta or Omicron. Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.

Projections and scenarios

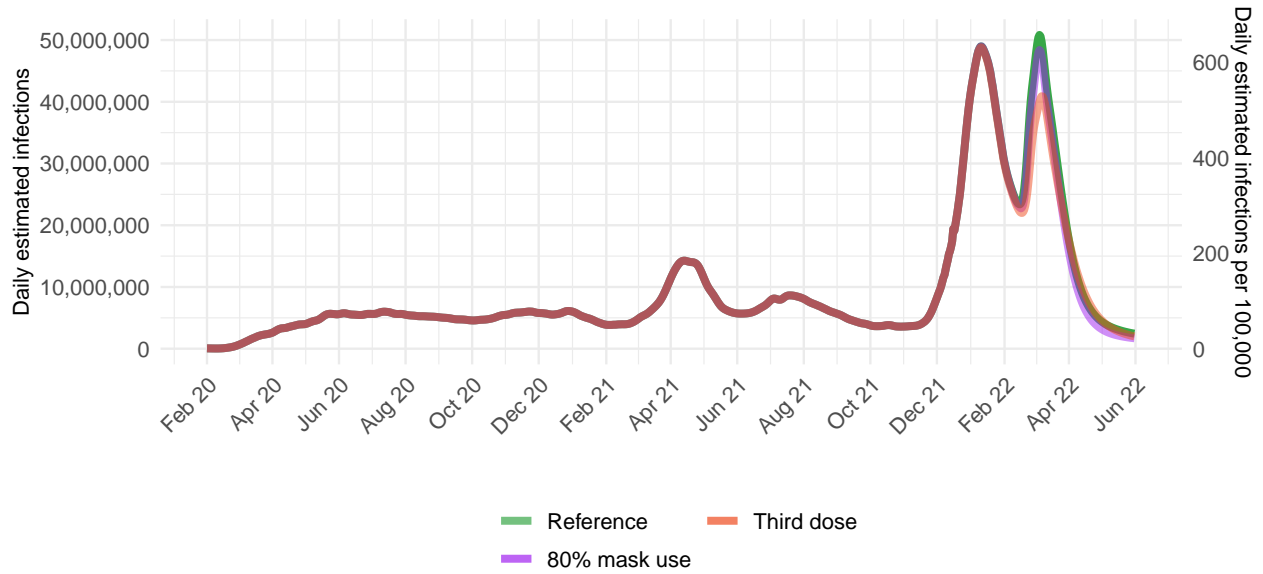**Figure 22.1: Daily COVID-19 infections until June 01, 2022 for three scenarios**

Legend: Reference, Third dose, 80% mask use

Figure 22.2: Daily COVID-19 reported cases until June 01, 2022 for three scenarios

Legend: Reference, Third dose, 80% mask use
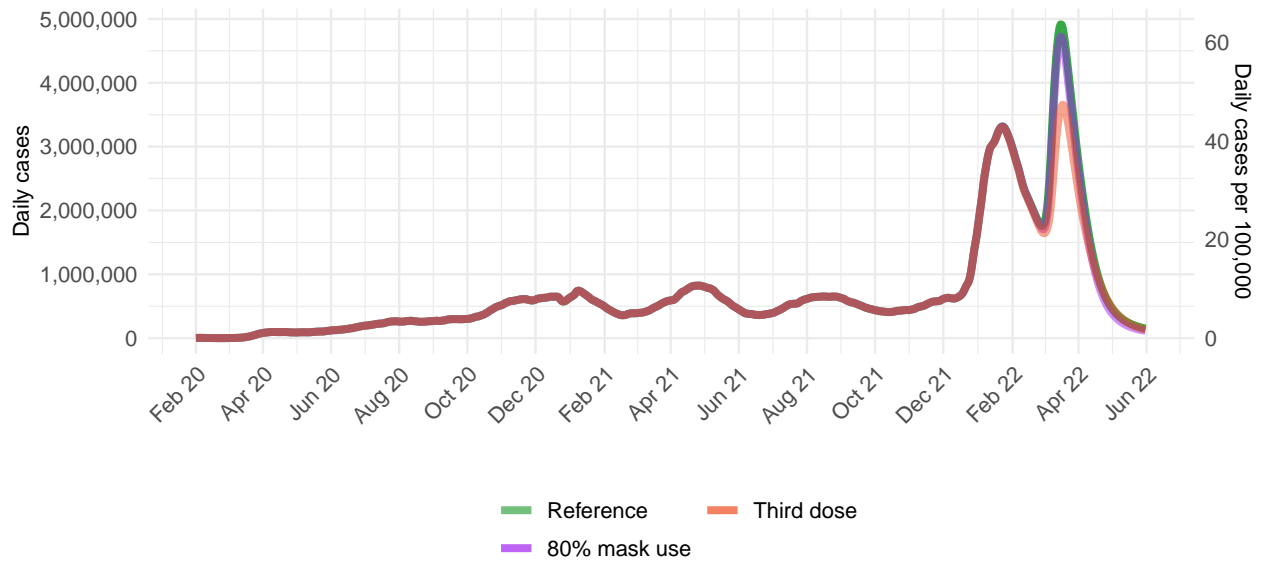
Figure 22.3: Daily COVID-19 hospital census until June 01, 2022 for three scenarios
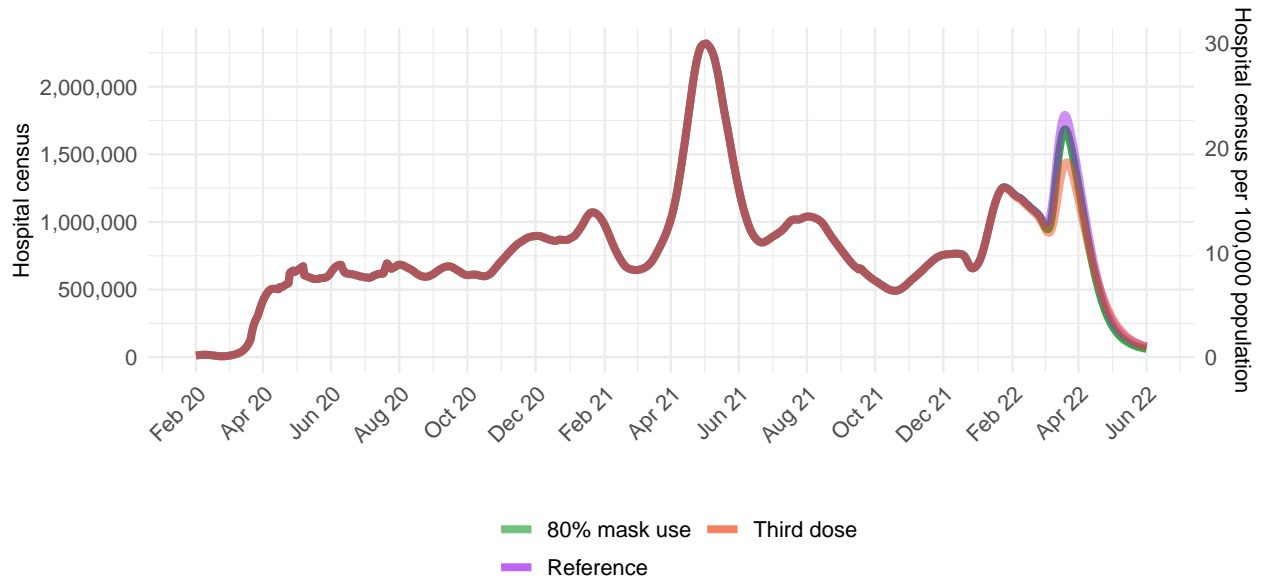

- 80% mask use
- Third dose
- Reference

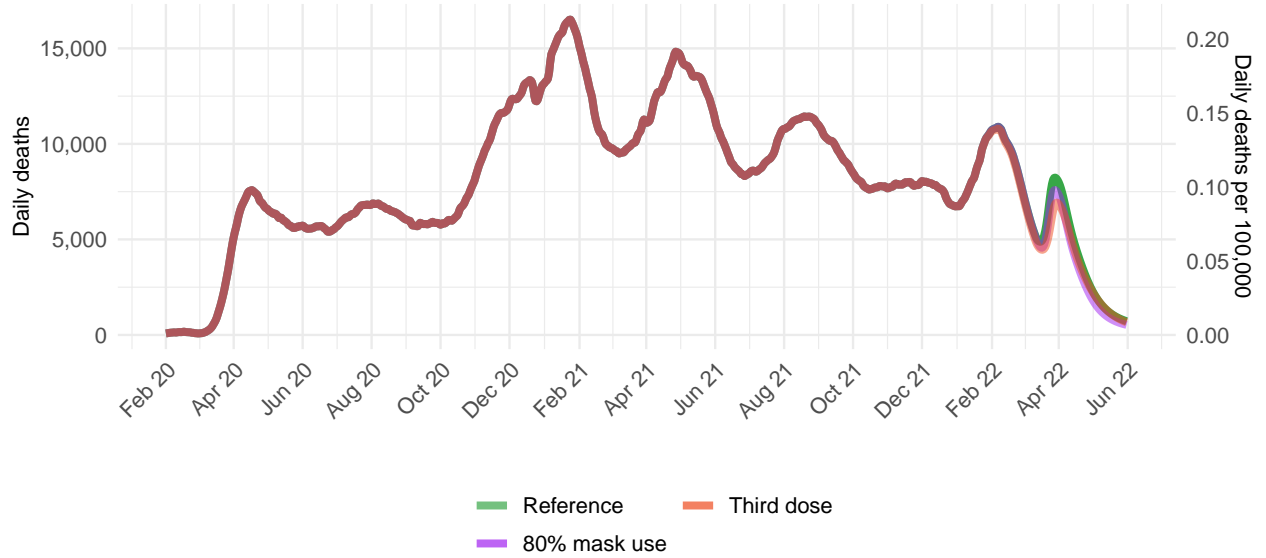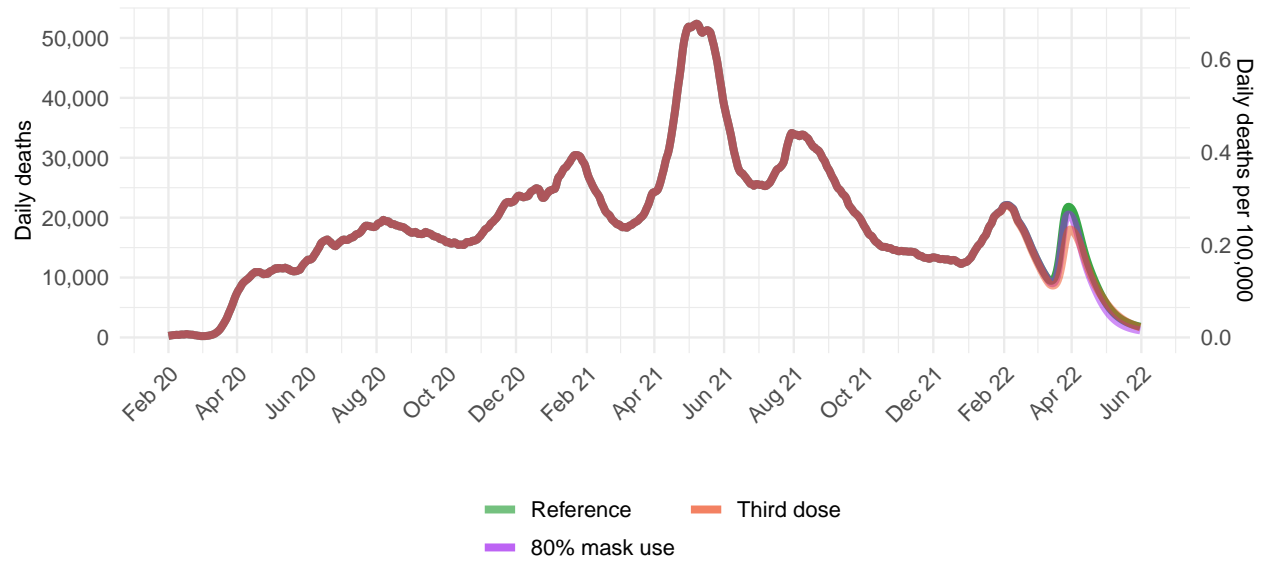**Figure 22.4: Reported daily COVID-19 deaths per 100,000**

Figure 22.5: Total daily COVID-19 deaths per 100,000

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.