

COVID-19 Results Briefing

The Western Pacific Region

May 5, 2022

This document contains summary information on the latest projections from the IHME model on COVID-19 in Western Pacific Region. The model was run on May 5, 2022, with data through May 3, 2022.

Current situation

- Daily infections in the last week decreased to 492,000 per day on average compared to 578,000 the week before (Figure 1.1). Daily hospital census in the last week (through May 3) decreased to 28,000 per day on average compared to 33,000 the week before.
- Daily reported cases in the last week decreased to 165,000 per day on average compared to 216,000 the week before (Figure 2.1).
- Reported deaths due to COVID-19 in the last week decreased to 270 per day on average compared to 300 the week before (Figure 3.1).
- Total deaths due to COVID-19 in the last week decreased to 470 per day on average compared to 530 the week before (Figure 3.1). This makes COVID-19 the number 19 cause of death in Western Pacific Region this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 1.7 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 no countries and no subnational locations (Figure 4.1).
- The daily rate of total deaths due to COVID-19 is greater than 4 per million in no countries and no subnational locations (Figure 4.2).
- We estimate that 16% of people in Western Pacific Region have been infected at least once as of May 2 (Figure 6.1). Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in three countries and 11 subnational locations. (Figure 7.1).
- The infection-detection rate in Western Pacific Region was close to 25% on May 2 (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). We estimate that the Alpha variant is circulating in eight countries and no subnational locations, that the Beta variant is circulating in six countries and no subnational locations, that the Delta variant is circulating in 15 countries and three subnational locations, that the Gamma variant is circulating in three countries and no subnational locations, and that the Omicron variant is circulating in 15 countries and 31 subnational locations.

Trends in drivers of transmission

- Mobility last week was 45% lower than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 15% of baseline in four countries and 30 subnational locations (Figure 12.1).
- As of April 24, in the COVID-19 Trends and Impact Survey, 63% of people self-reported that they always wore a mask when leaving their home compared to 63% the previous week (Figure 13.1).
- There were 1,629 diagnostic tests per 100,000 people on May 2 (Figure 15.1).
- As of May 2, 18 countries and 33 subnational locations have reached 70% or more of the population who have received at least one vaccine dose, and 14 countries and 32 subnational locations have reached 70% or more of the population who are fully vaccinated (Figures 17.1 and 17.2). 88% of people in Western Pacific Region have received at least one vaccine dose, and 82% are fully vaccinated.
- In the Western Pacific Region, 98.6% of the population that is 12 years and older say they would accept a vaccine for COVID-19 (Figure 18.1). This is the same as last week. Note that vaccine acceptance is calculated using survey data from the 18+ population. The proportion of the population who are open to receiving a COVID-19 vaccine ranges from 45% in Papua New Guinea to 100% in Lao People's Democratic Republic (Figure 19.1).
- As of April 25, 2022, 0.8 percent of the population in Western Pacific Region say they would accept a vaccine for COVID-19 but have not yet been vaccinated.

- In our current reference scenario, we expect that 1.7 billion people will be vaccinated with at least one dose by September 1 (Figure 21.1). We expect that 83% of the population will be fully vaccinated by September 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** will decline to 123,810 by August 2, 2022 (Figure 23.1).
- Daily estimated infections in the **80% mask use scenario** will decline to 53,100 by August 17, 2022 (Figure 23.1).
- Daily estimated infections in the **third dose scenario** will decline to 119,110 by August 2, 2022 (Figure 23.1).

Cases

- Daily estimated cases in the **reference scenario** will decline to 25,650 by August 17, 2022 (Figure 23.2).
- Daily estimated cases in the **80% mask use scenario** will decline to 9,560 by August 28, 2022 (Figure 23.2).
- Daily estimated cases in the **third dose scenario** will decline to 24,820 by August 18, 2022 (Figure 23.2).

Hospitalizations

- Daily hospital census in the **reference scenario** will decline to 4,190 by August 20, 2022 (Figure 23.3).
- Daily hospital census in the **80% mask use scenario** will decline to 1,960 by September 1, 2022 (Figure 23.3).
- Daily hospital census in the **third dose scenario** will decline to 4,020 by August 20, 2022 (Figure 23.3).

Deaths

- In our **reference scenario**, our model projects 242,000 cumulative reported deaths due to COVID-19 on September 1. This represents 18,000 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 270 by May 8, 2022 (Figure 23.4).

- Under our **reference scenario**, our model projects 594,000 cumulative total deaths due to COVID-19 on September 1. This represents 29,000 additional deaths from May 2 to September 1 (Figure 23.5).
- In our **80% mask use scenario**, our model projects 238,000 cumulative reported deaths due to COVID-19 on September 1. This represents 15,000 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 270 by May 8, 2022 (Figure 23.4).
- In our **third dose scenario**, our model projects 242,000 cumulative reported deaths due to COVID-19 on September 1. This represents 18,000 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **third dose scenario** will rise to 270 by May 8, 2022 (Figure 23.4).
- Figure 24.1 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.
- At some point from May through September 1, one country will have high or extreme stress on hospital beds (Figure 25.1). At some point from May through September 1, four countries will have high or extreme stress on intensive care unit (ICU) capacity (Figure 26.1).

Model updates

No model updates.

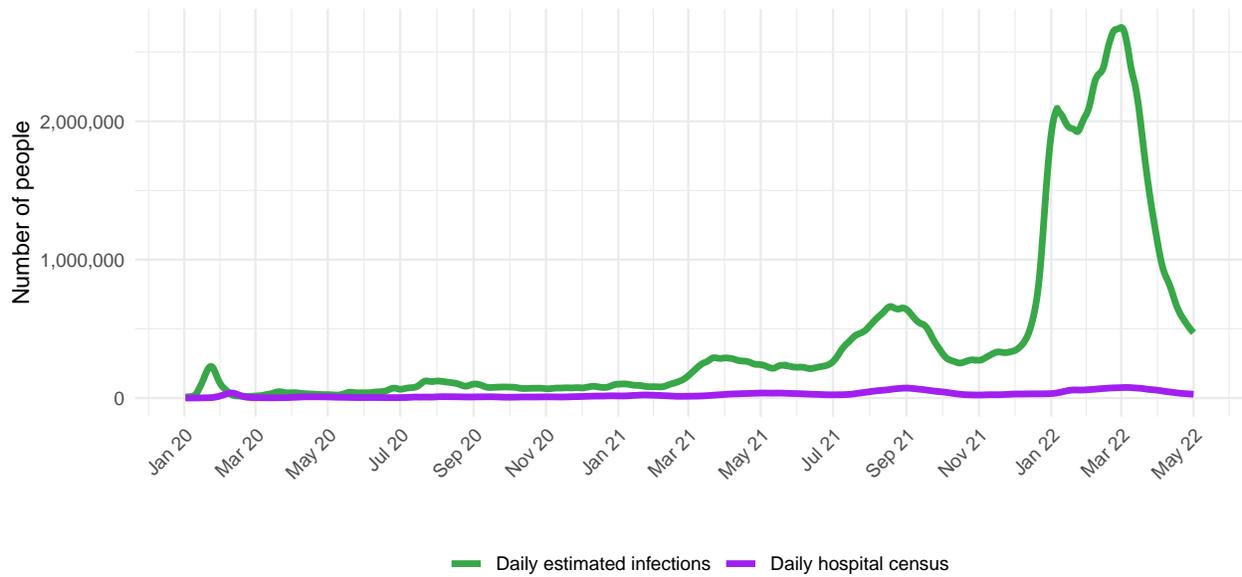
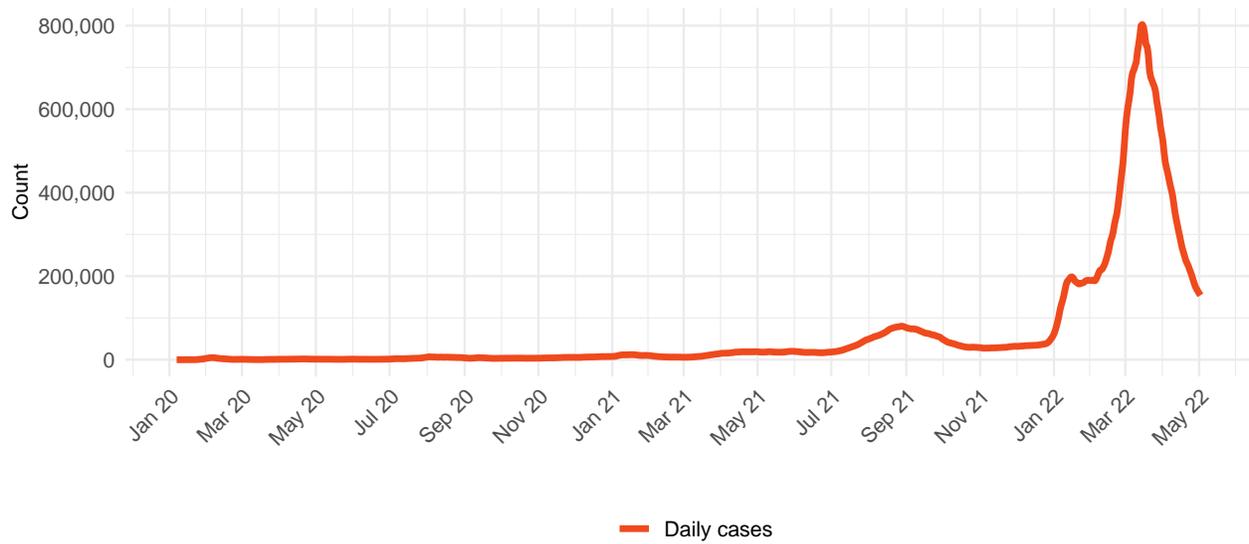
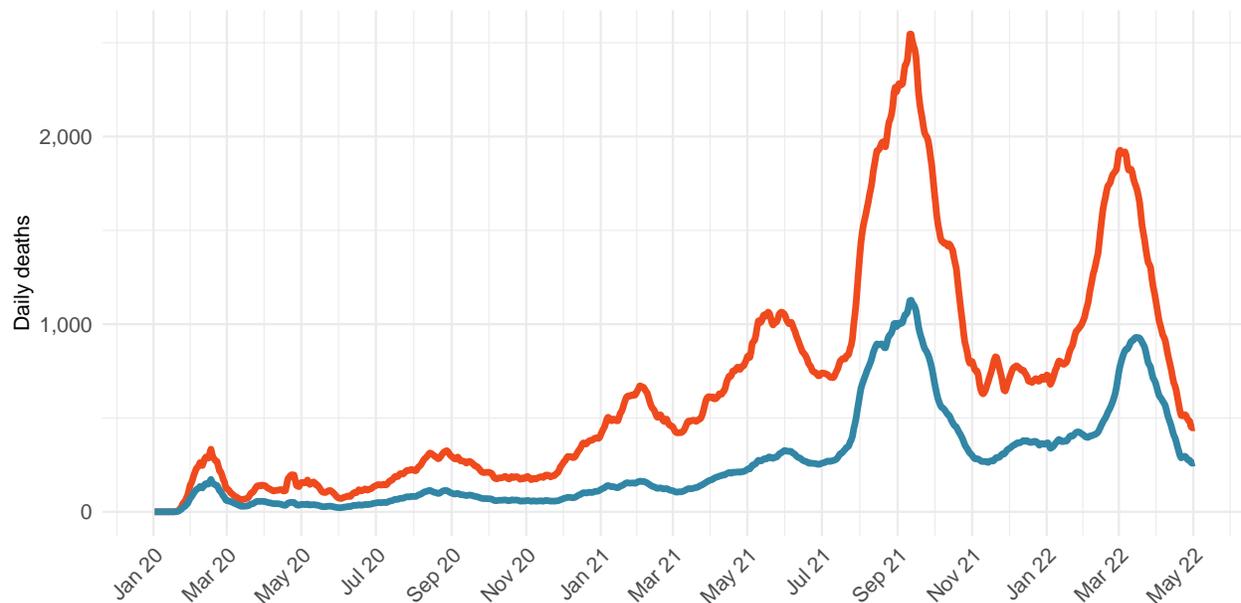
Figure 1.1: Daily COVID-19 hospital census and estimated infections

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 |
|---|---------------|---------|
| Stroke | 51,115 | 1 |
| Ischemic heart disease | 44,778 | 2 |
| Chronic obstructive pulmonary disease | 22,489 | 3 |
| Tracheal, bronchus, and lung cancer | 18,018 | 4 |
| Alzheimer's disease and other dementias | 10,761 | 5 |
| Stomach cancer | 9,878 | 6 |
| Lower respiratory infections | 8,865 | 7 |
| Hypertensive heart disease | 7,494 | 8 |
| Colon and rectum cancer | 7,483 | 9 |
| Chronic kidney disease | 6,343 | 10 |
| COVID-19 | 3,265 | 19 |

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 May 2, 2022

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

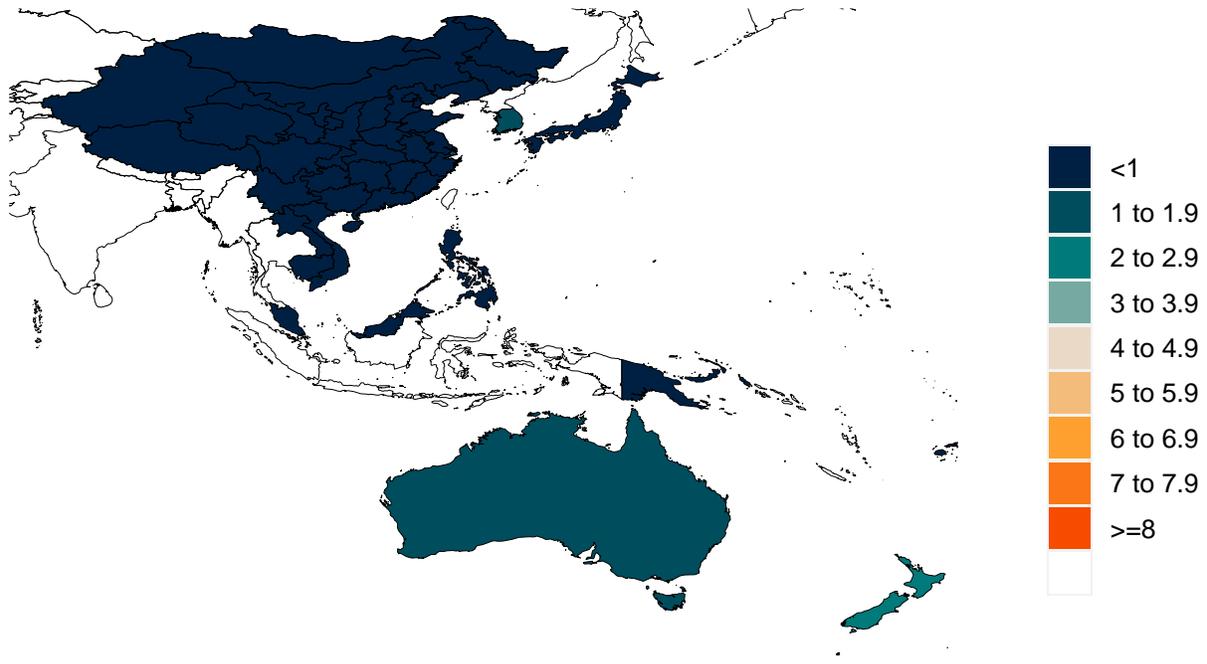
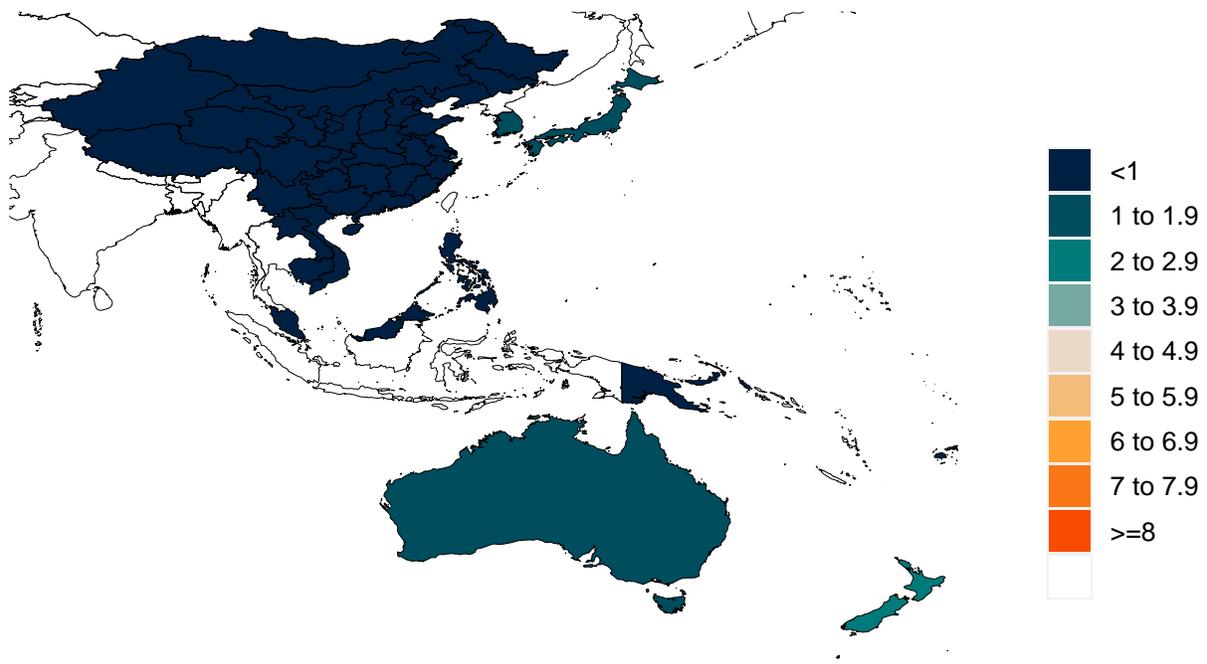


Figure 4.2: Daily total COVID-19 death rate per 1 million



Cumulative COVID-19 deaths per 100,000 on May 2, 2022

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

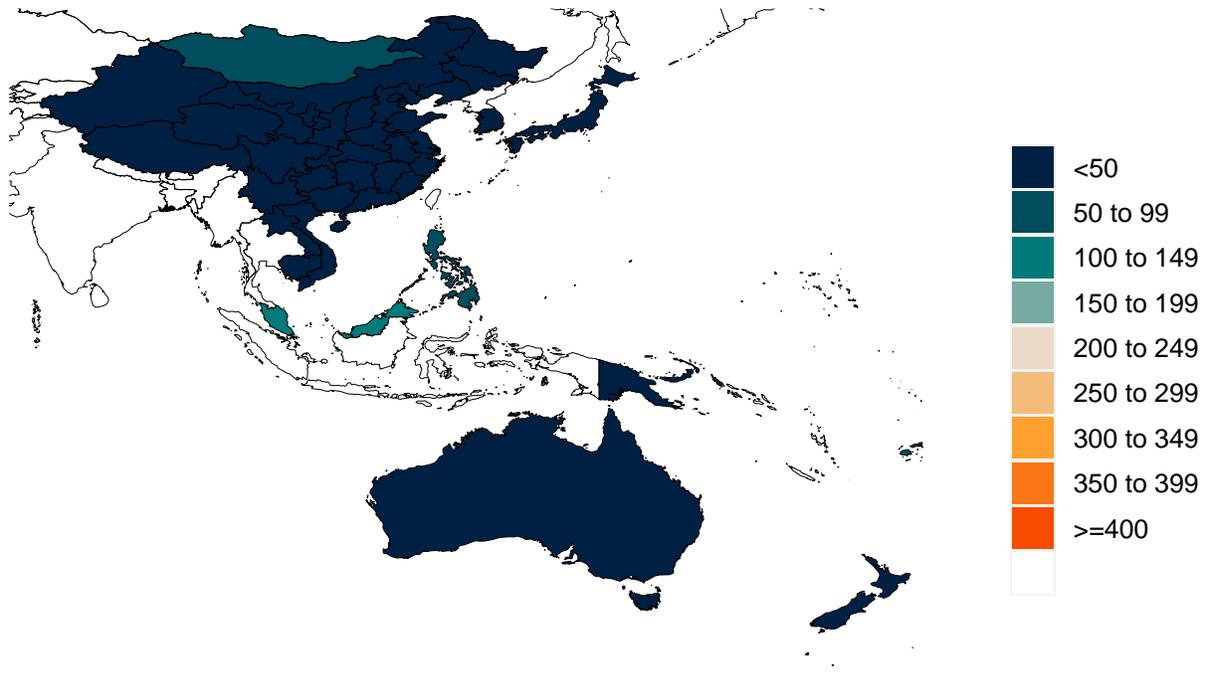


Figure 5.2: Total cumulative COVID-19 deaths per 100,000

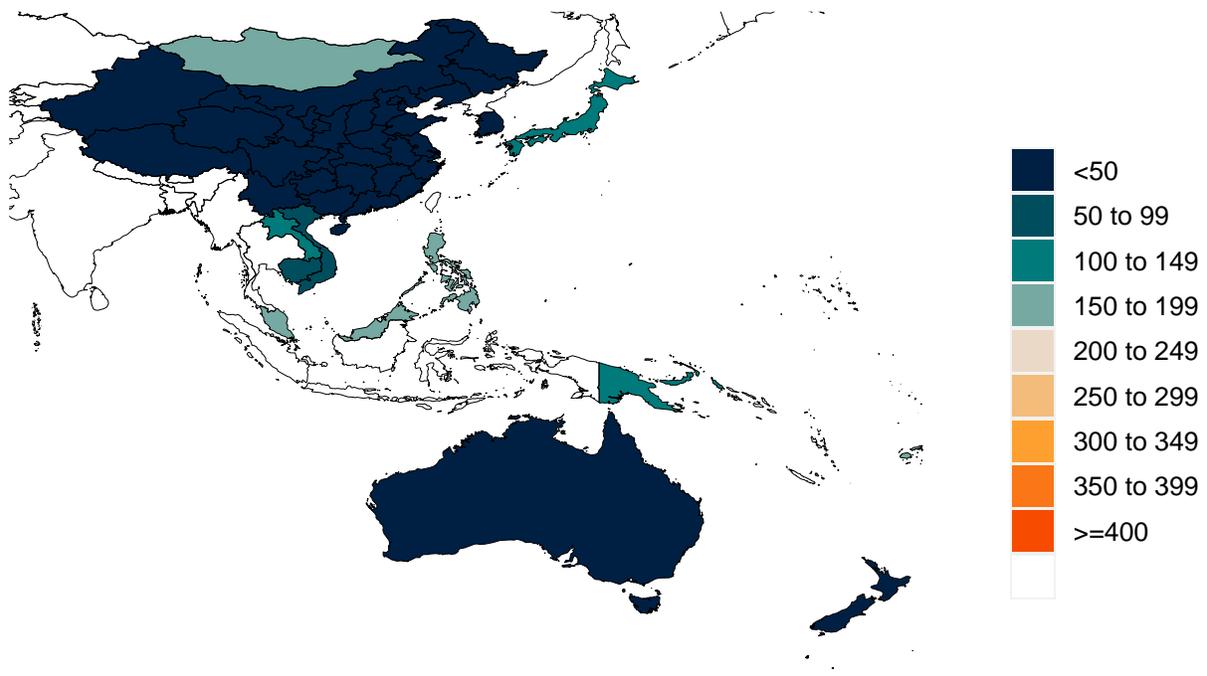


Figure 6.1: Estimated percent of the population infected with COVID-19 on May 2, 2022

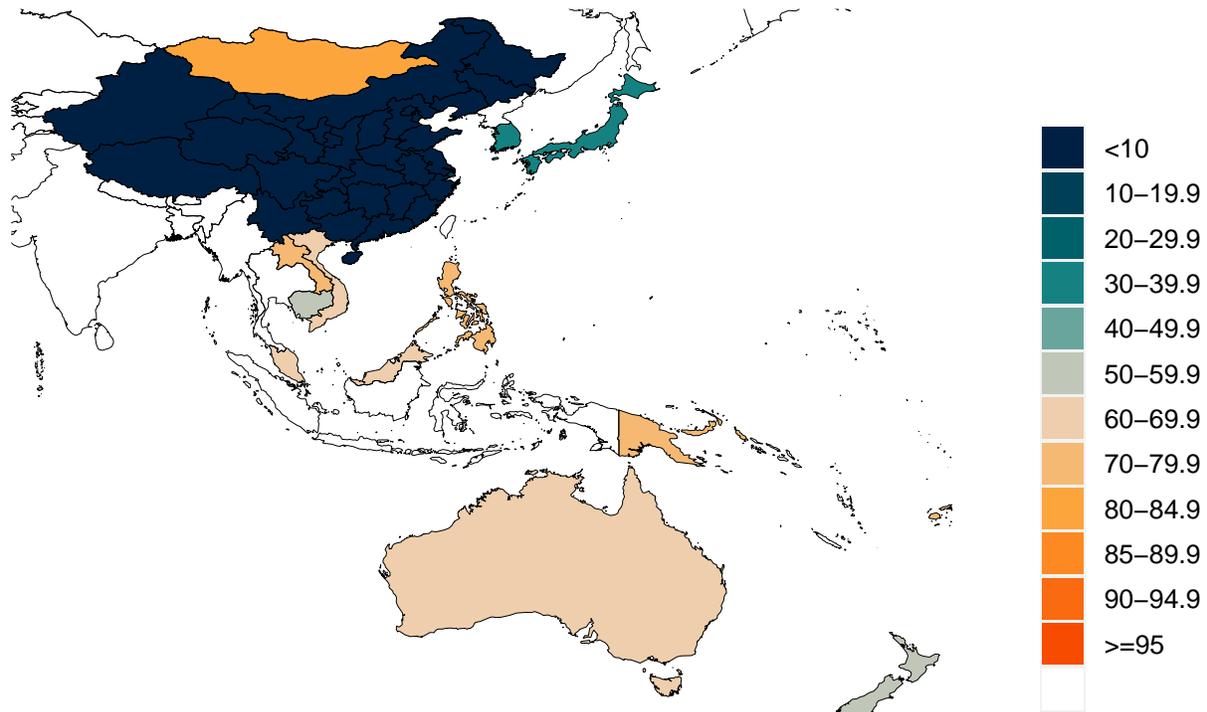


Figure 7.1: Mean effective R on April 21, 2022. Effective R less than 1 means that transmission should decline, all other things being held the same. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past.

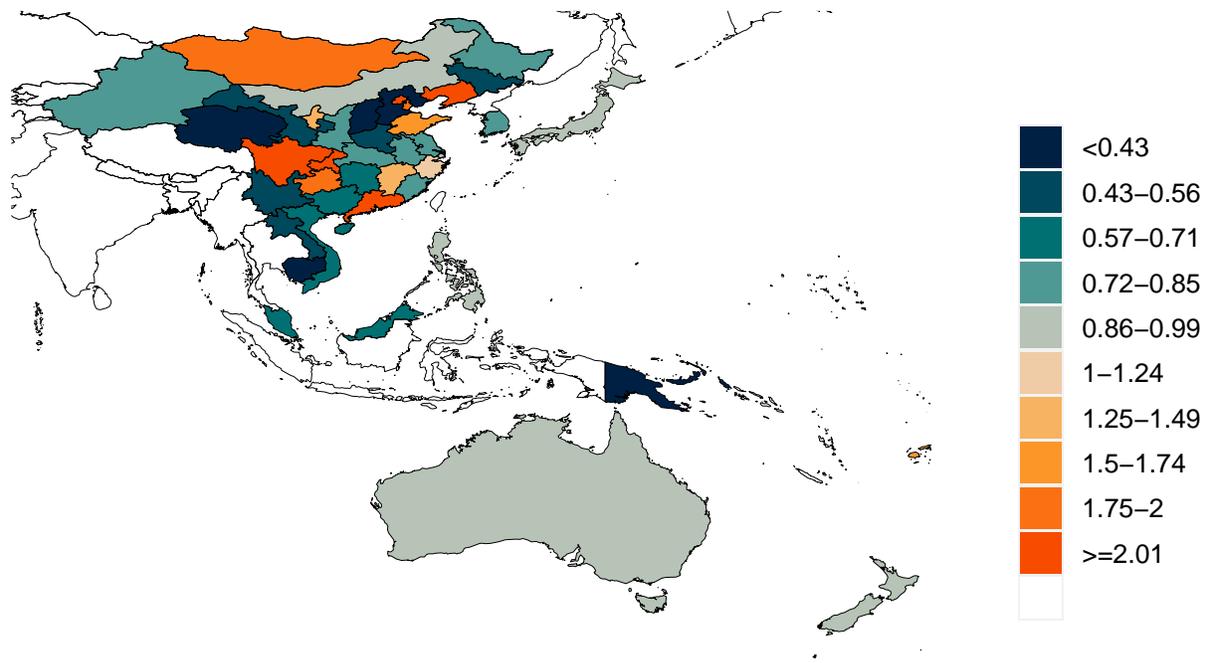
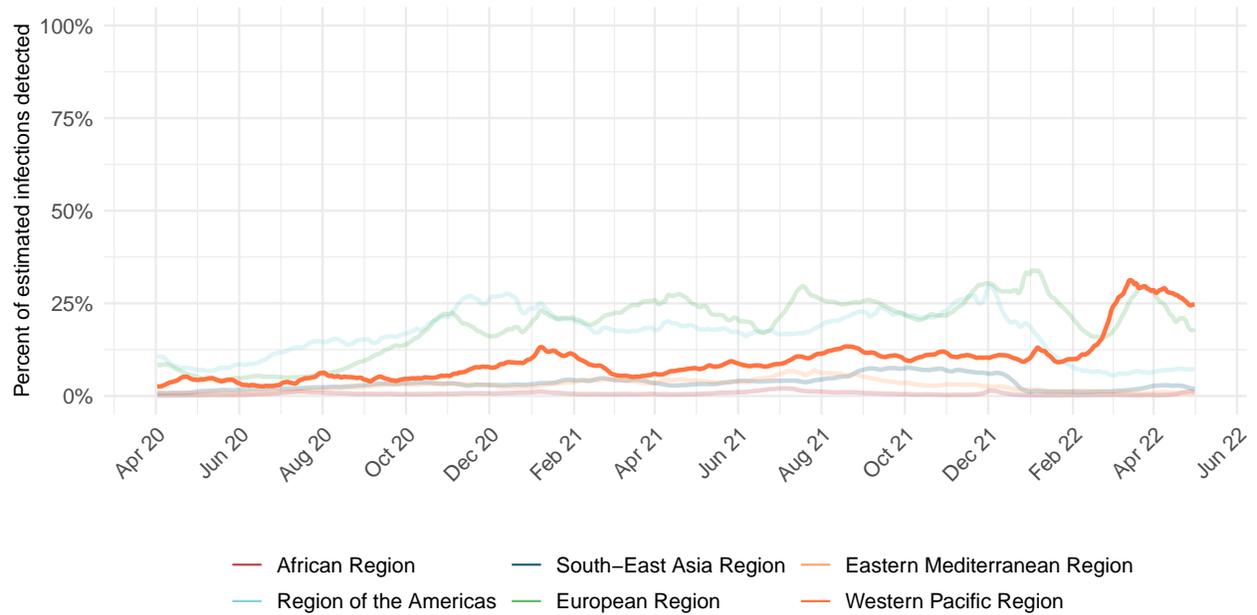


Figure 8.1: Percent of estimated COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model. Due to measurement errors in cases and testing rates, the infection-detection rate can exceed 100% at particular points in time.



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

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

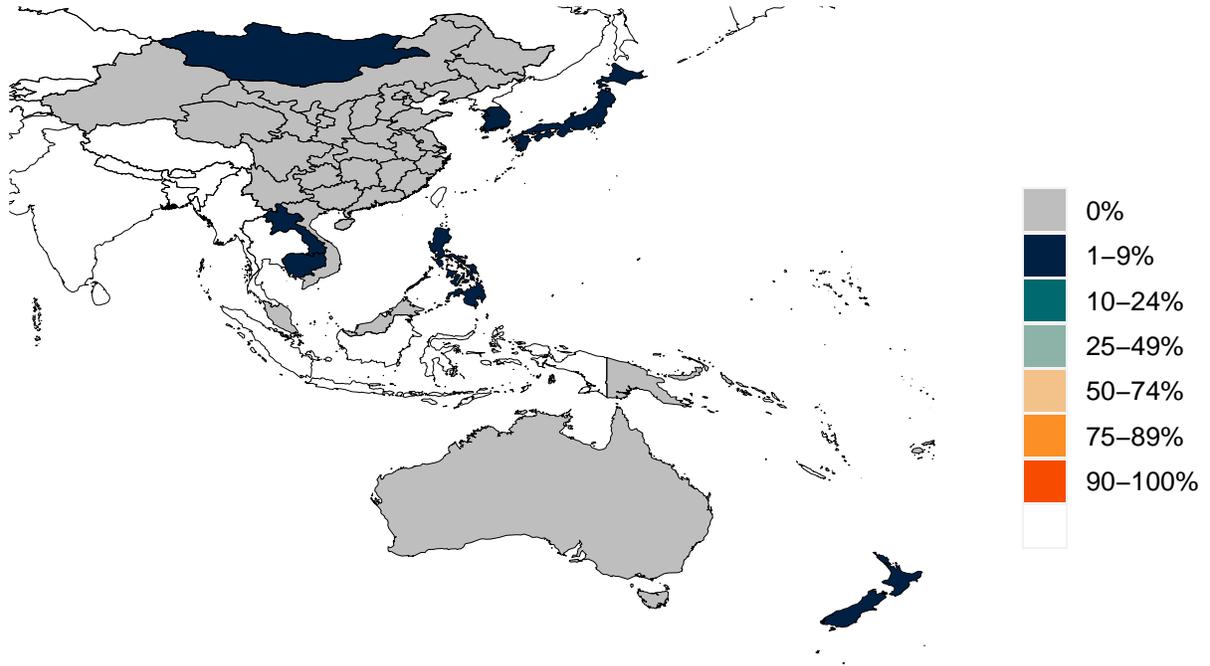


Figure 9.2: Estimated percent of new infections that are Beta variant

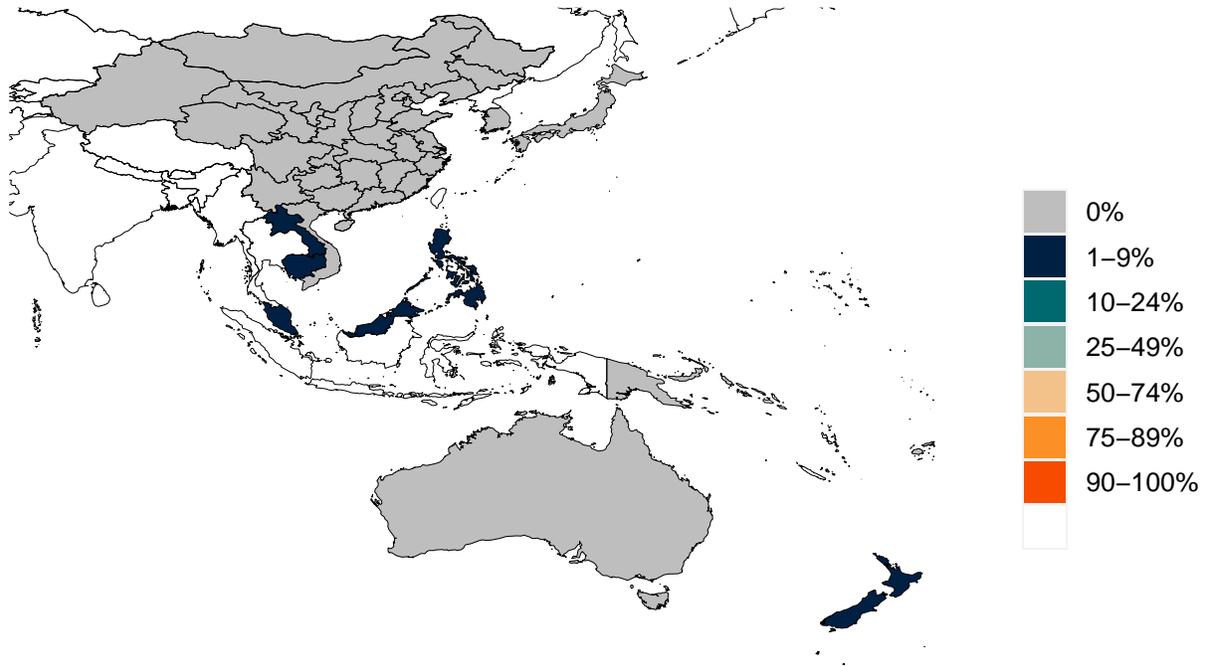


Figure 9.3: Estimated percent of new infections that are Delta variant

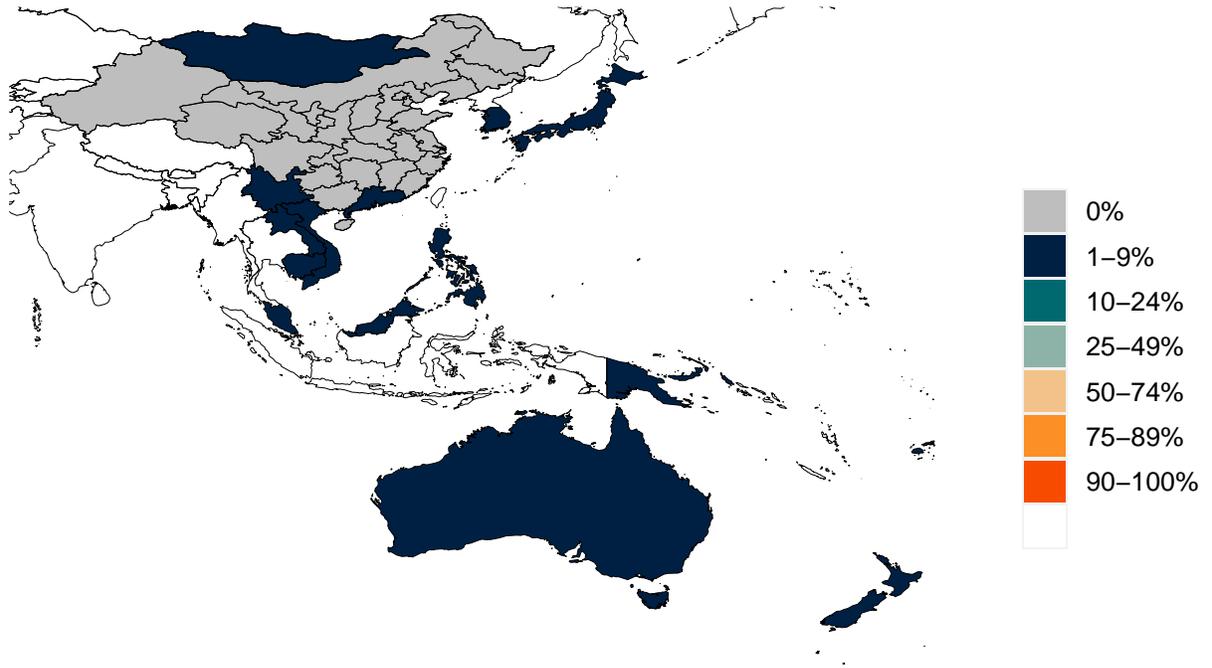


Figure 9.4: Estimated percent of new infections that are Gamma variant

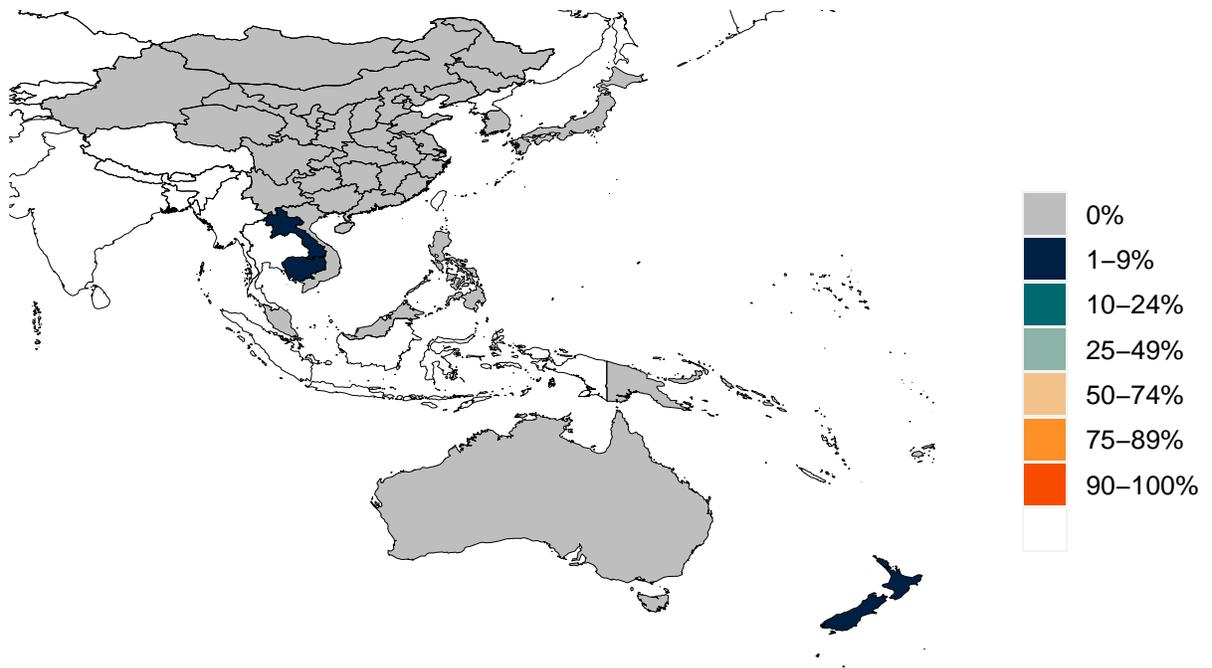
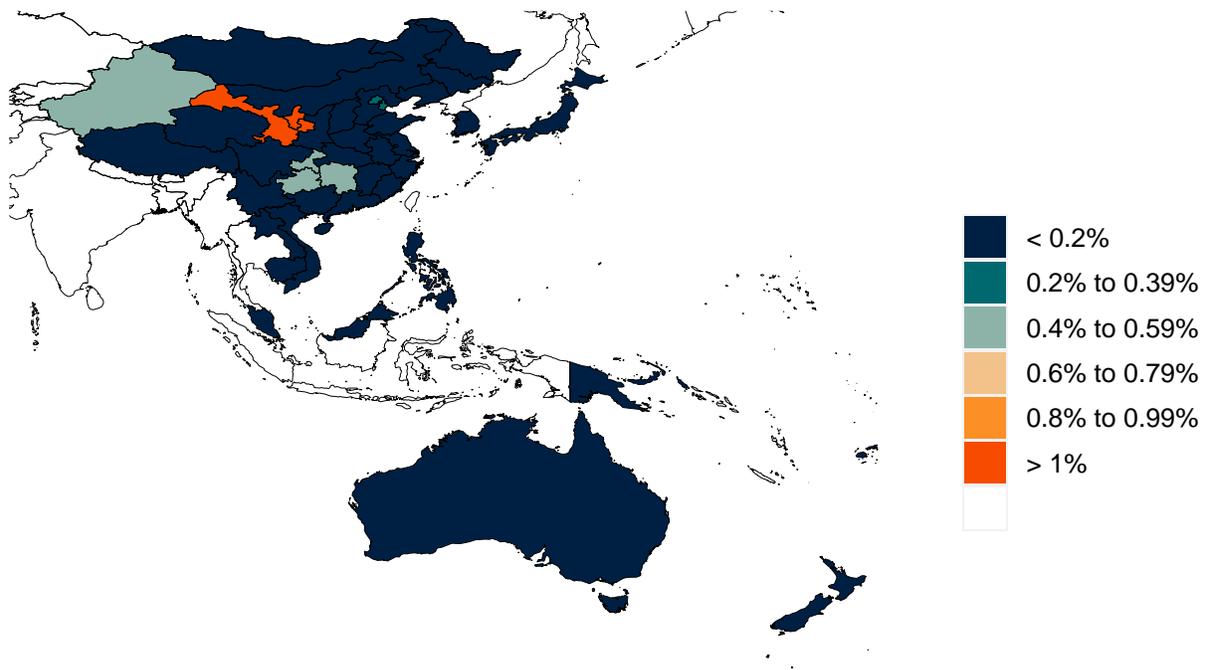


Figure 9.5: Estimated percent of new infections that are Omicron variant

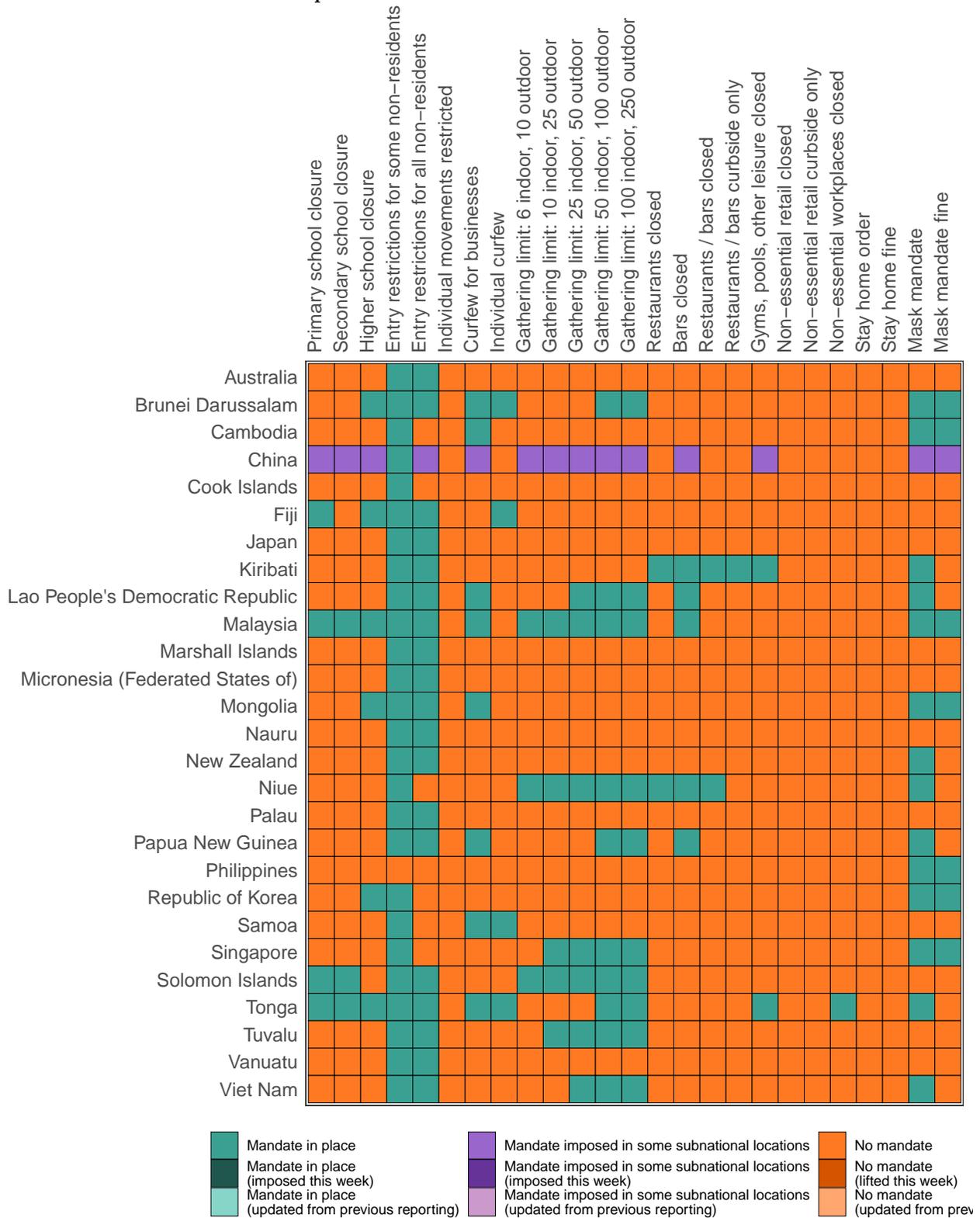


Figure 10.1: Infection-fatality rate on May 2, 2022. This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.



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

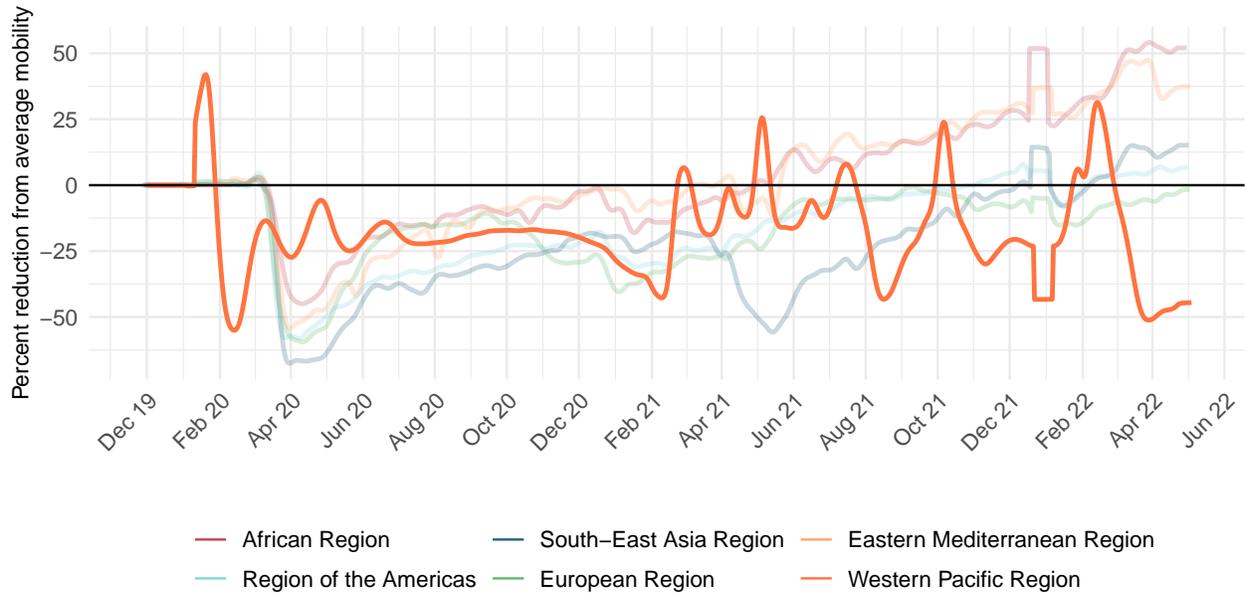


Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on May 2, 2022

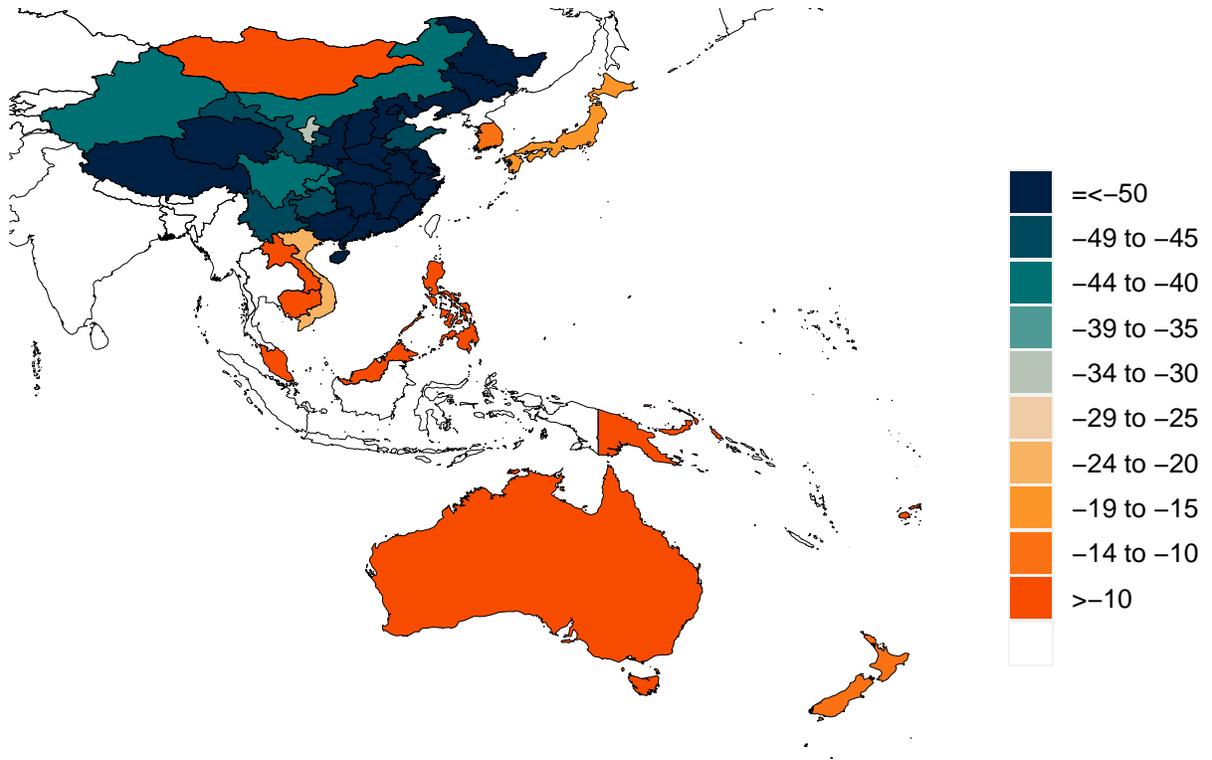


Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home

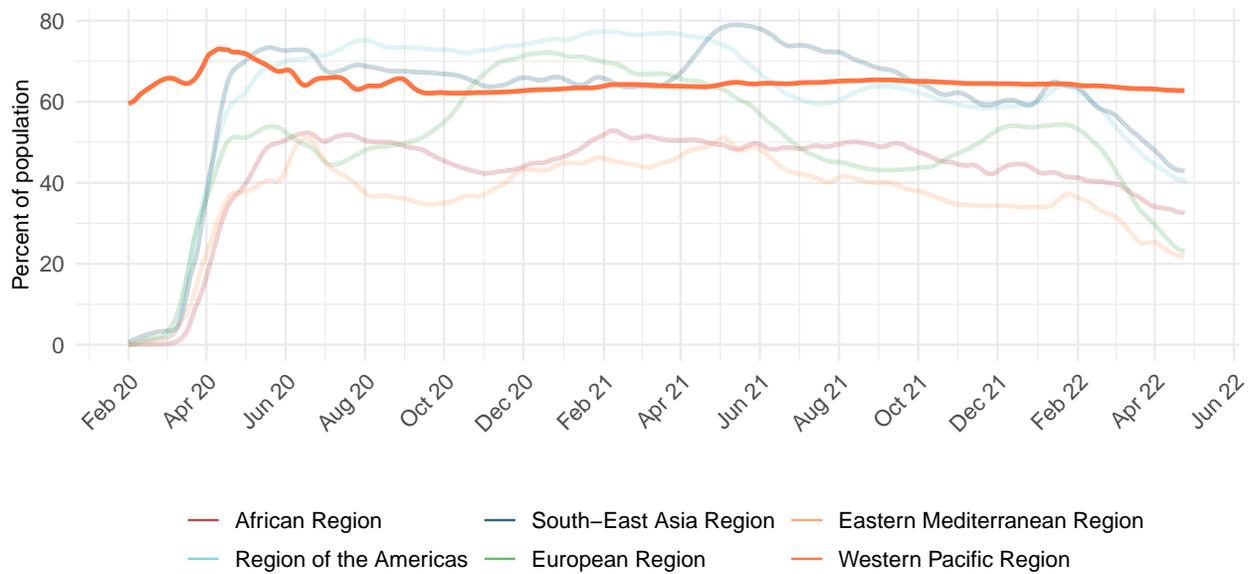


Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on May 2, 2022

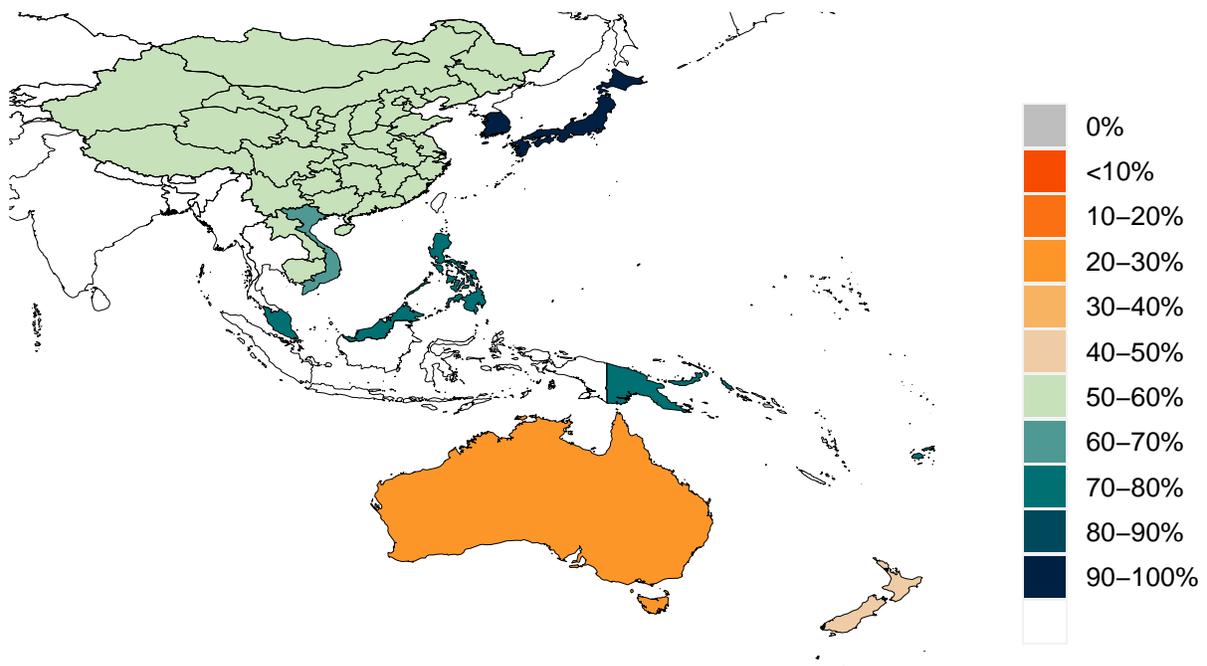


Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people

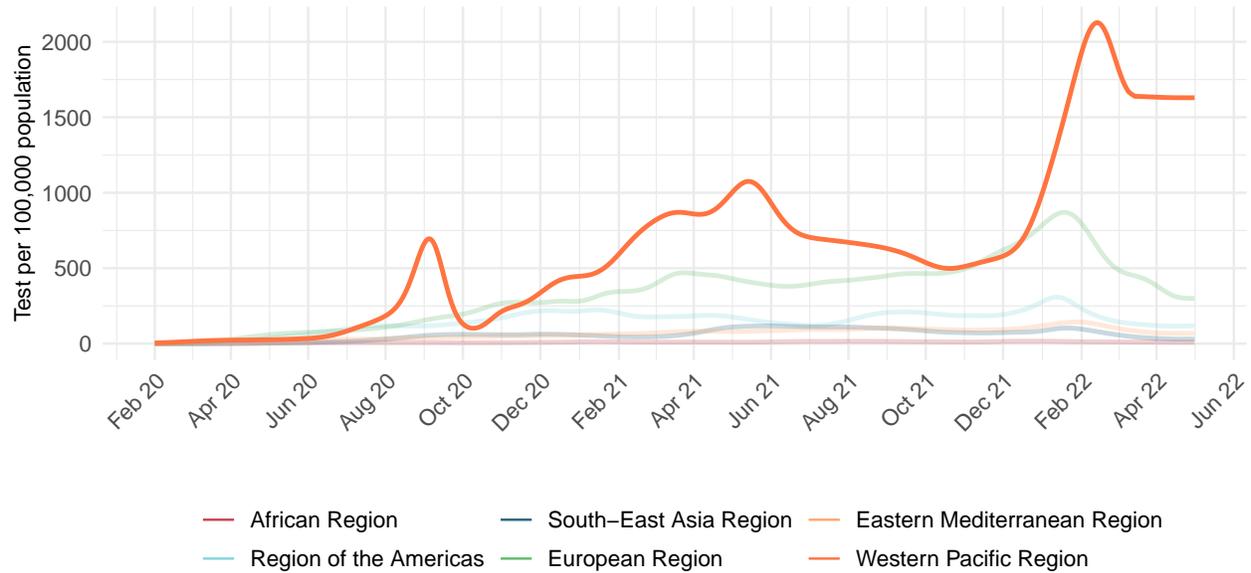


Figure 16.1: COVID-19 diagnostic tests per 100,000 people on May 2, 2022

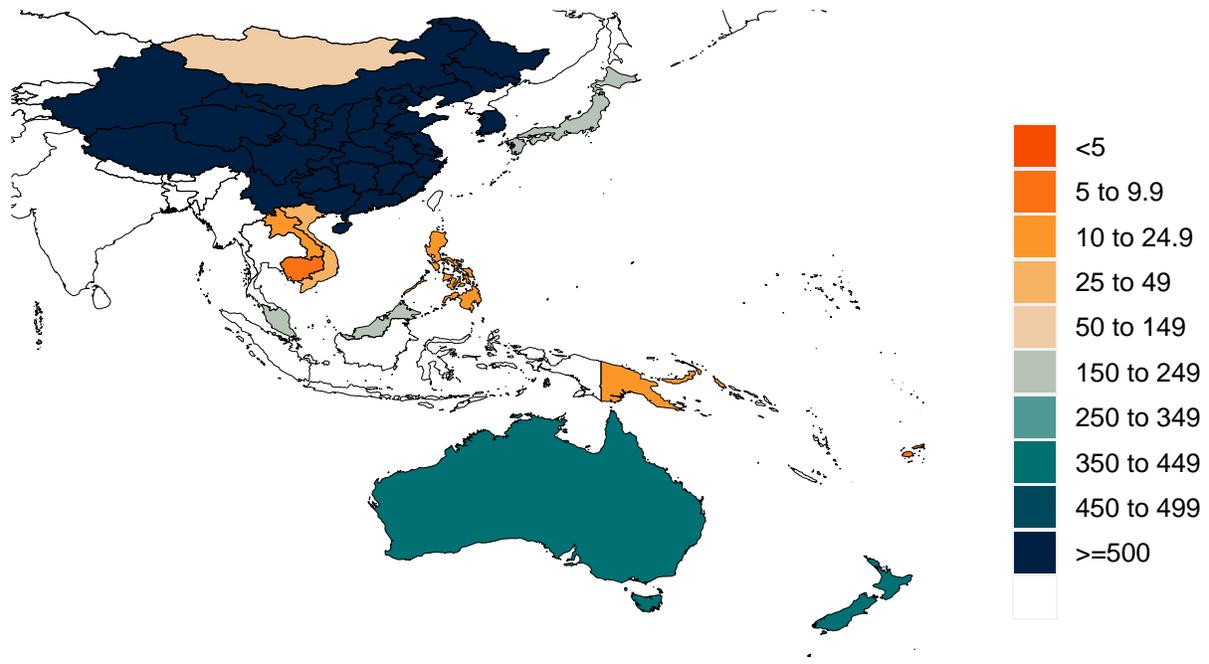


Table 3: Estimates of vaccine effectiveness for specific vaccines used in the model at preventing severe disease and infection. We use data from clinical trials directly, where available, and make estimates otherwise. More information can be found on our [website](#).

| Vaccine | Effectiveness at preventing | | | | | | | | | | | |
|-----------------------|-----------------------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
| | Ancestral | | Alpha | | Beta | | Gamma | | Delta | | Omicron | |
| | 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 May 2, 2022

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

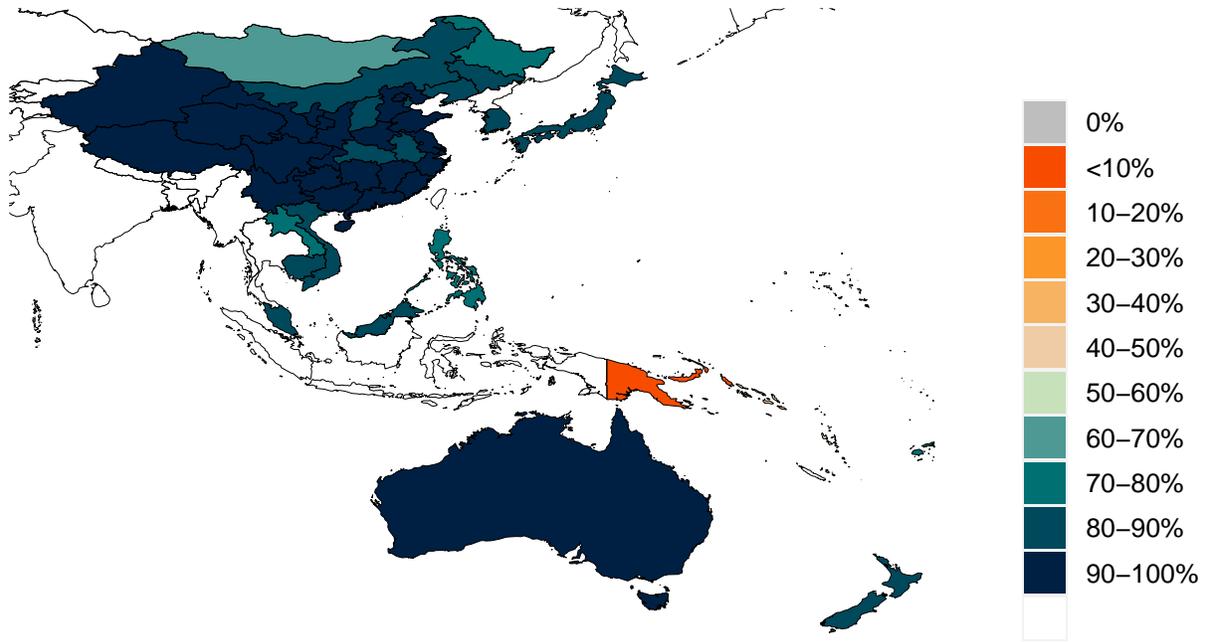


Figure 17.2: Percent of the population fully vaccinated against SARS-CoV-2

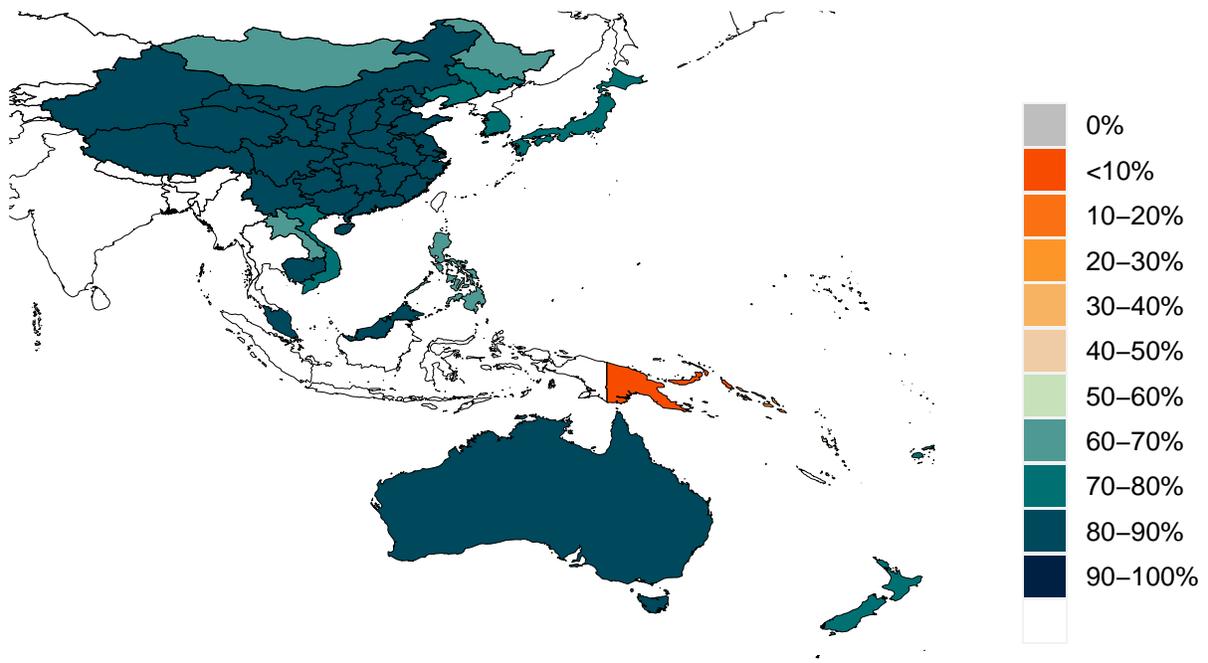


Figure 18.1: Trend in the estimated proportion of the population that is 12 years and older that has been vaccinated or would definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.

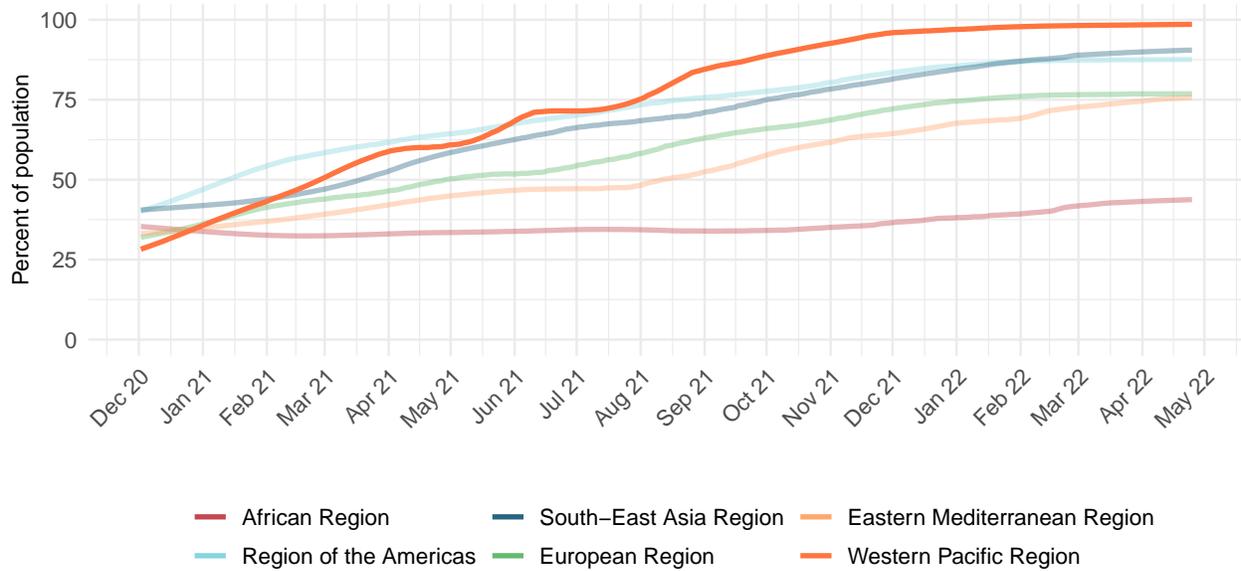


Figure 19.1: Estimated proportion of the population that is 12 years and older that has been vaccinated or would definitely receive the COVID-19 vaccine if available. Note that vaccine acceptance is calculated using survey data from the 18+ population.

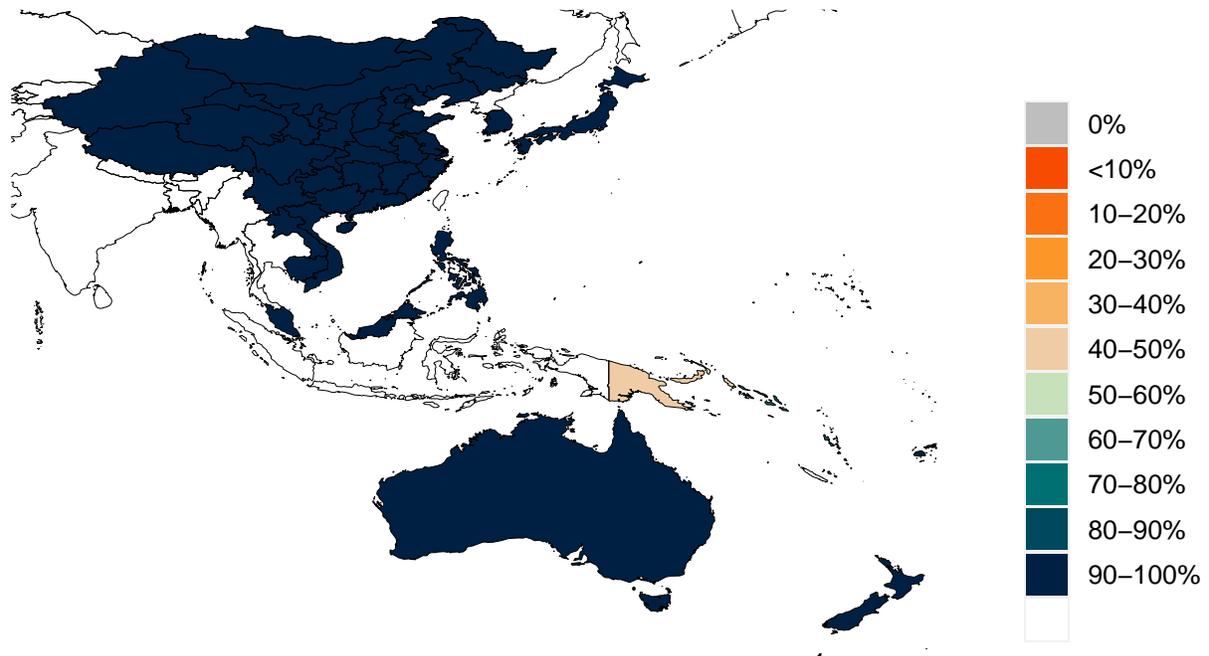


Figure 20.1: Estimated proportion of the total population that is not vaccinated but willing to be vaccinated as of April 25, 2022

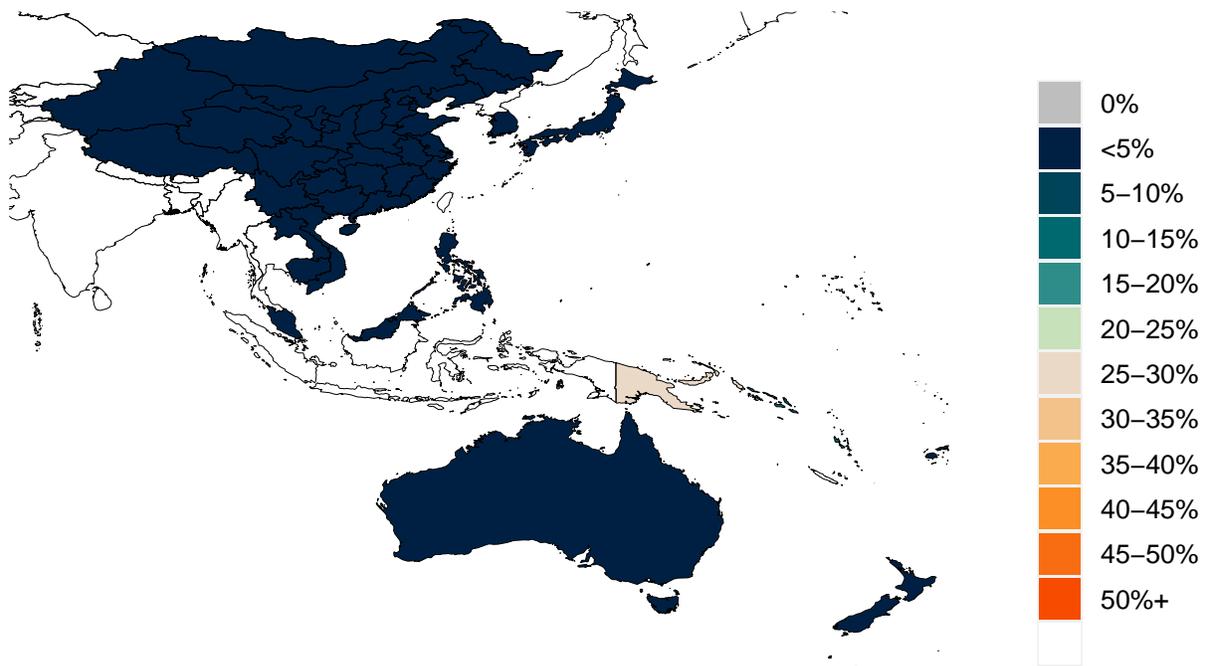


Figure 21.1: Percent of people who receive at least one dose of a COVID-19 vaccine and those who are fully vaccinated

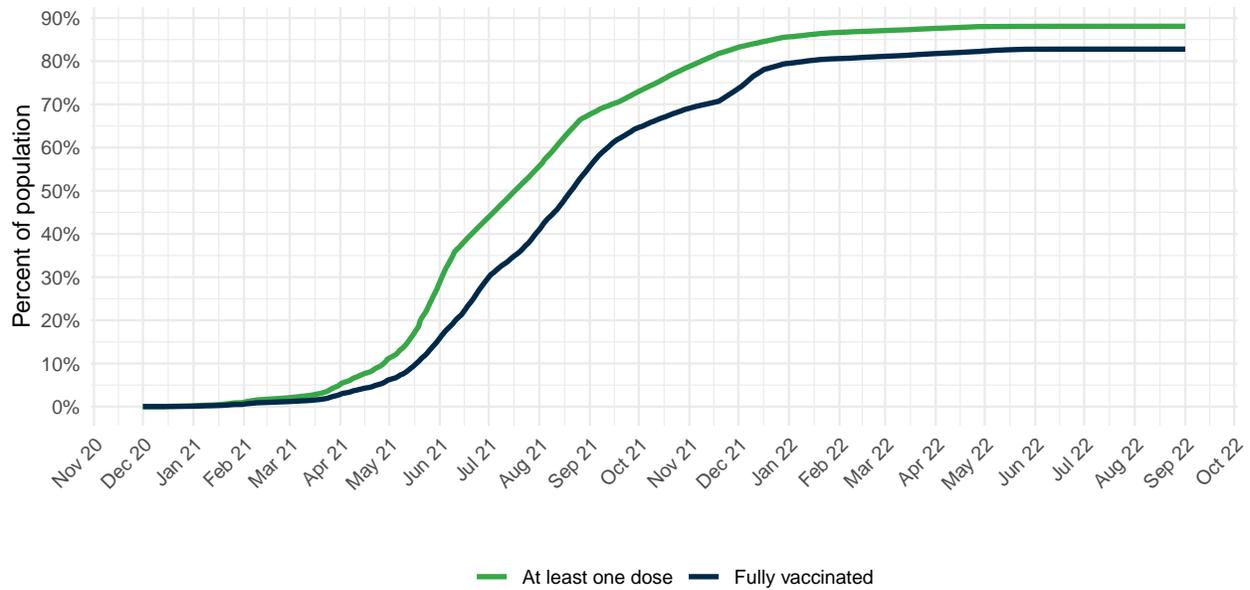
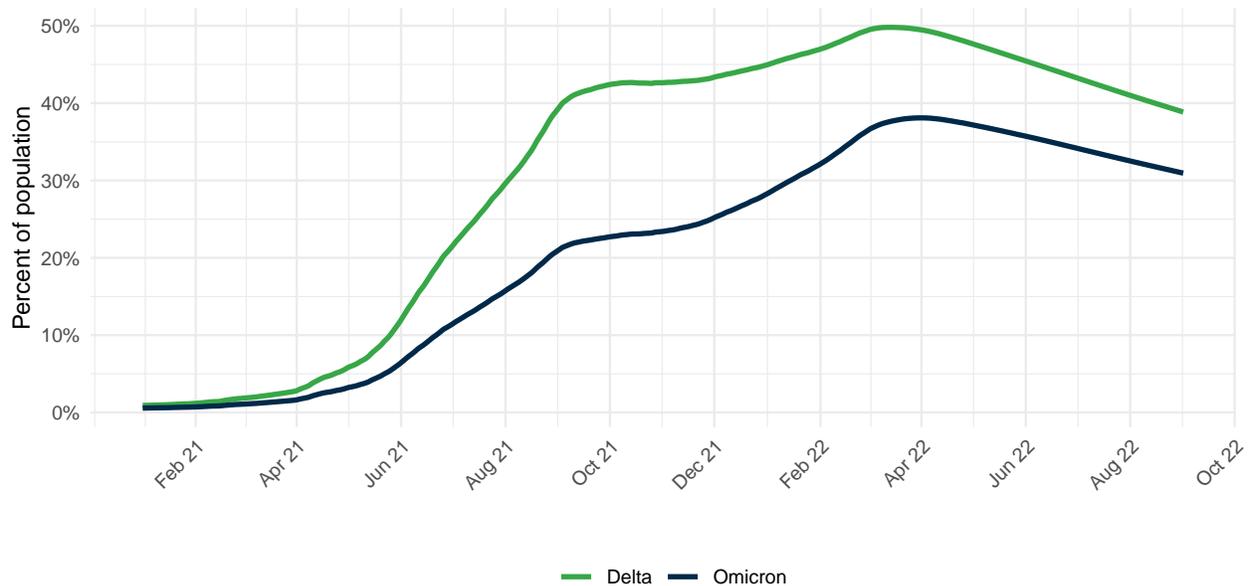


Figure 22.1: Percent of people who are immune to Delta or Omicron. Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.



Projections and scenarios

Figure 23.1: Daily COVID-19 infections until September 01, 2022 for three scenarios

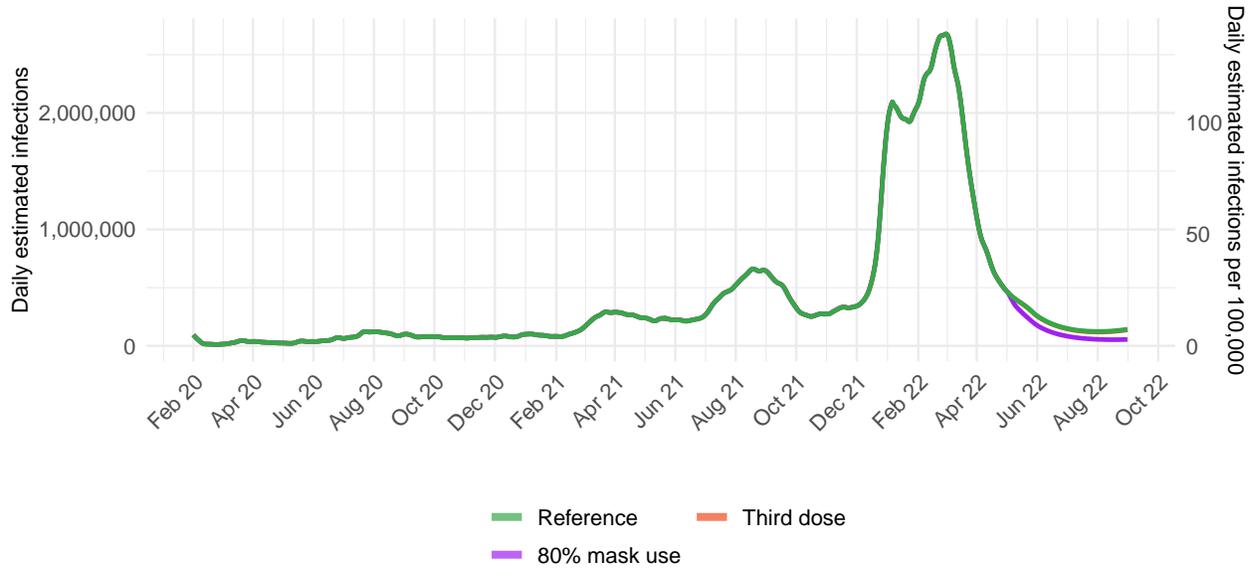


Figure 23.2: Daily COVID-19 reported cases until September 01, 2022 for three scenarios

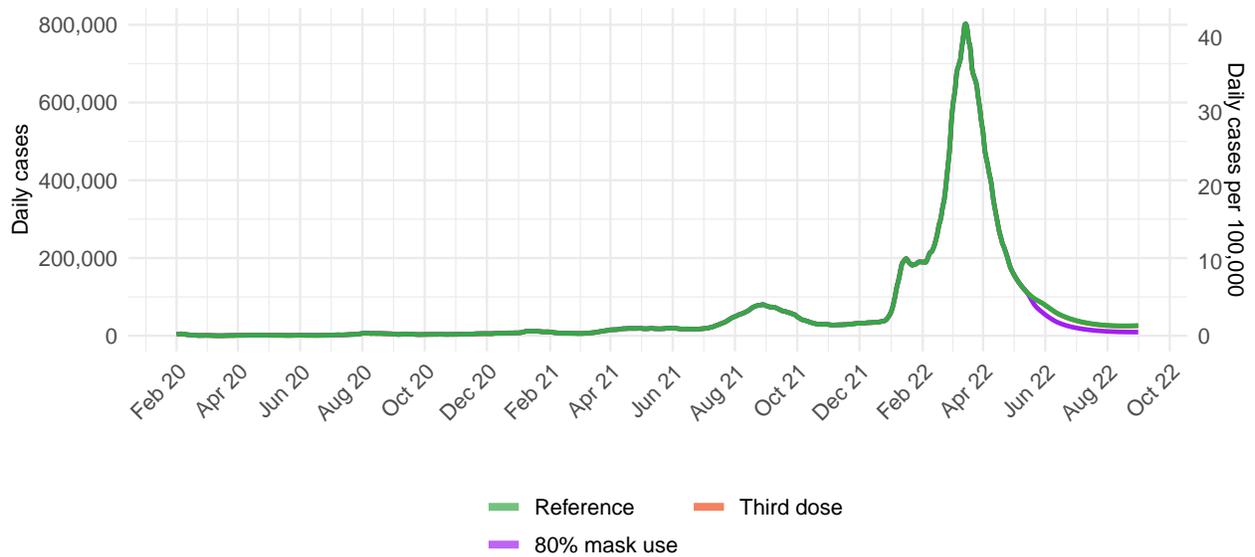


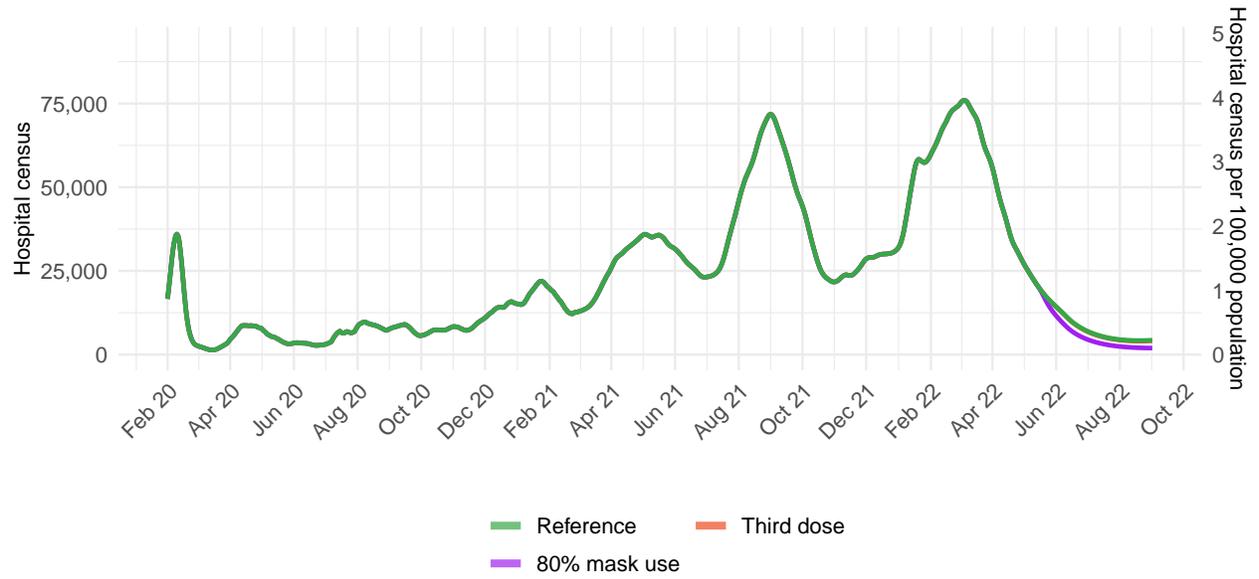
Figure 23.3: Daily COVID-19 hospital census until September 01, 2022 for three scenarios

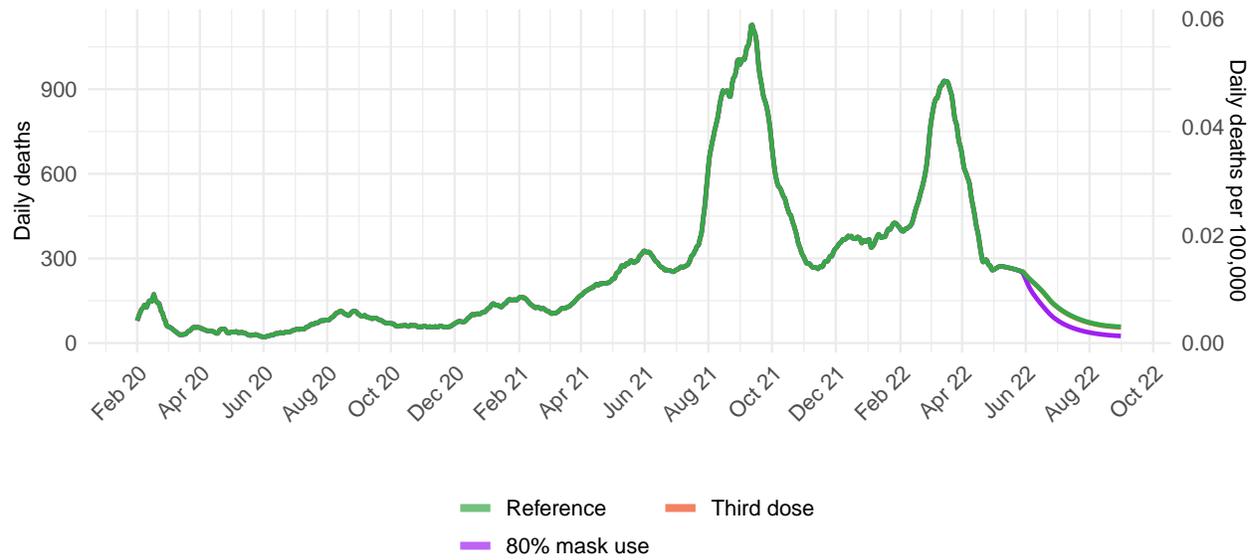
Figure 23.4: Reported daily COVID-19 deaths per 100,000

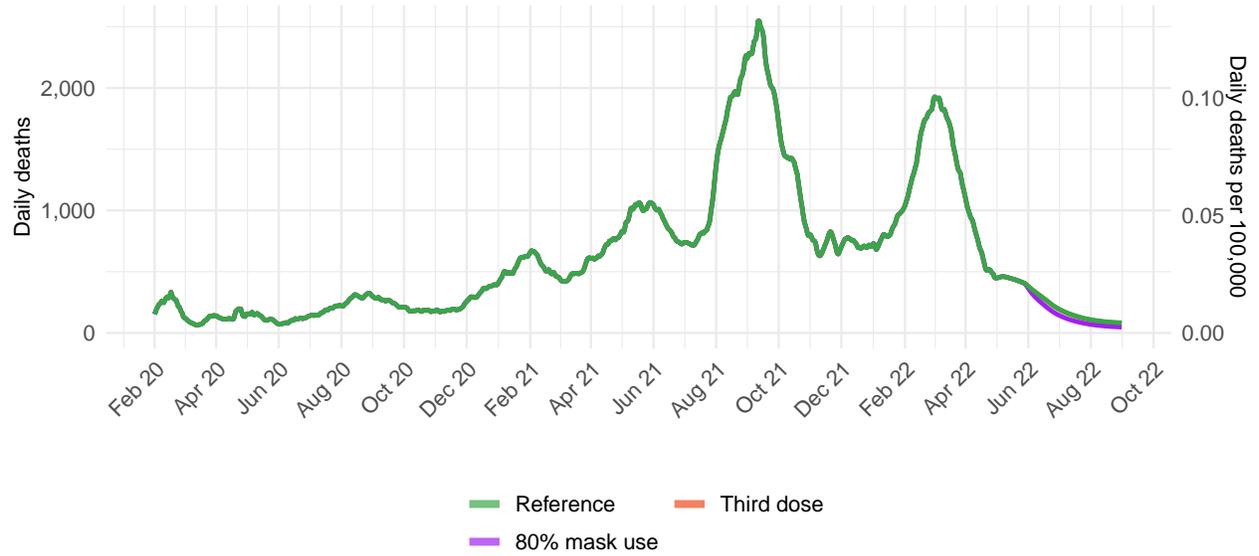
Figure 23.5: Total daily COVID-19 deaths per 100,000

Figure 24.1: 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: Delphi from the Massachusetts Institute of Technology ([Delphi](#)) [May 2, 2022], and the SI-KJalpha model from the University of Southern California ([SIKJalpha](#)) [May 2, 2022]. Regional values are aggregates from available locations in that region.

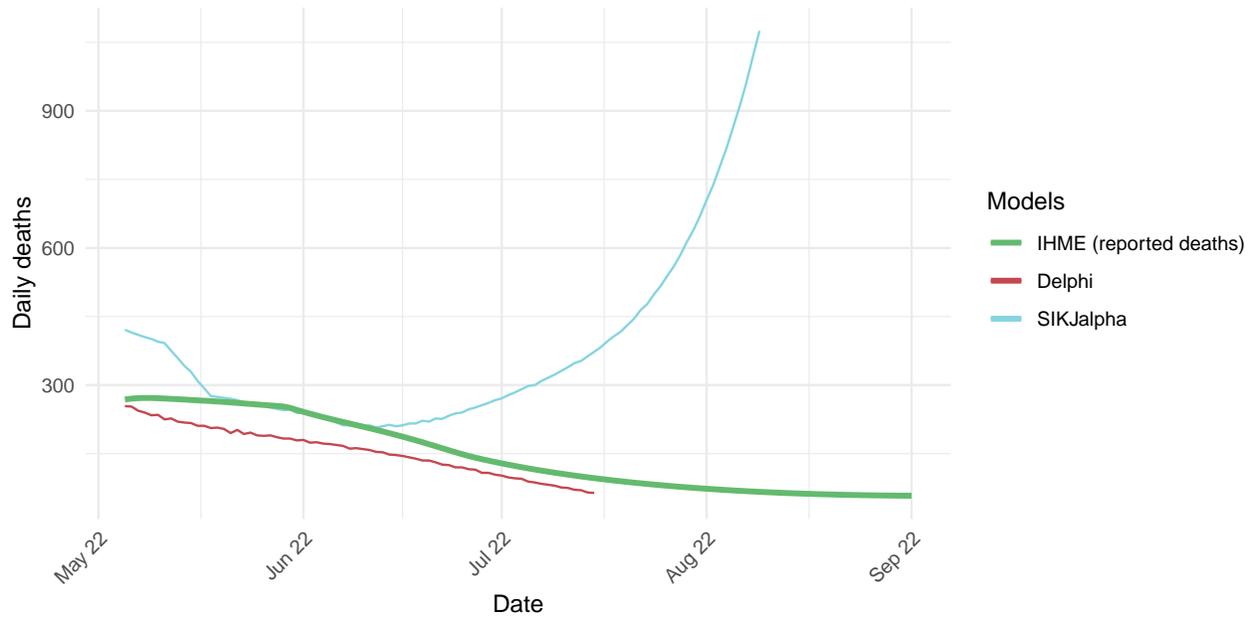


Figure 25.1: The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate stress*, 10-19% is considered *high stress*, and 20% or greater is considered *extreme stress*.

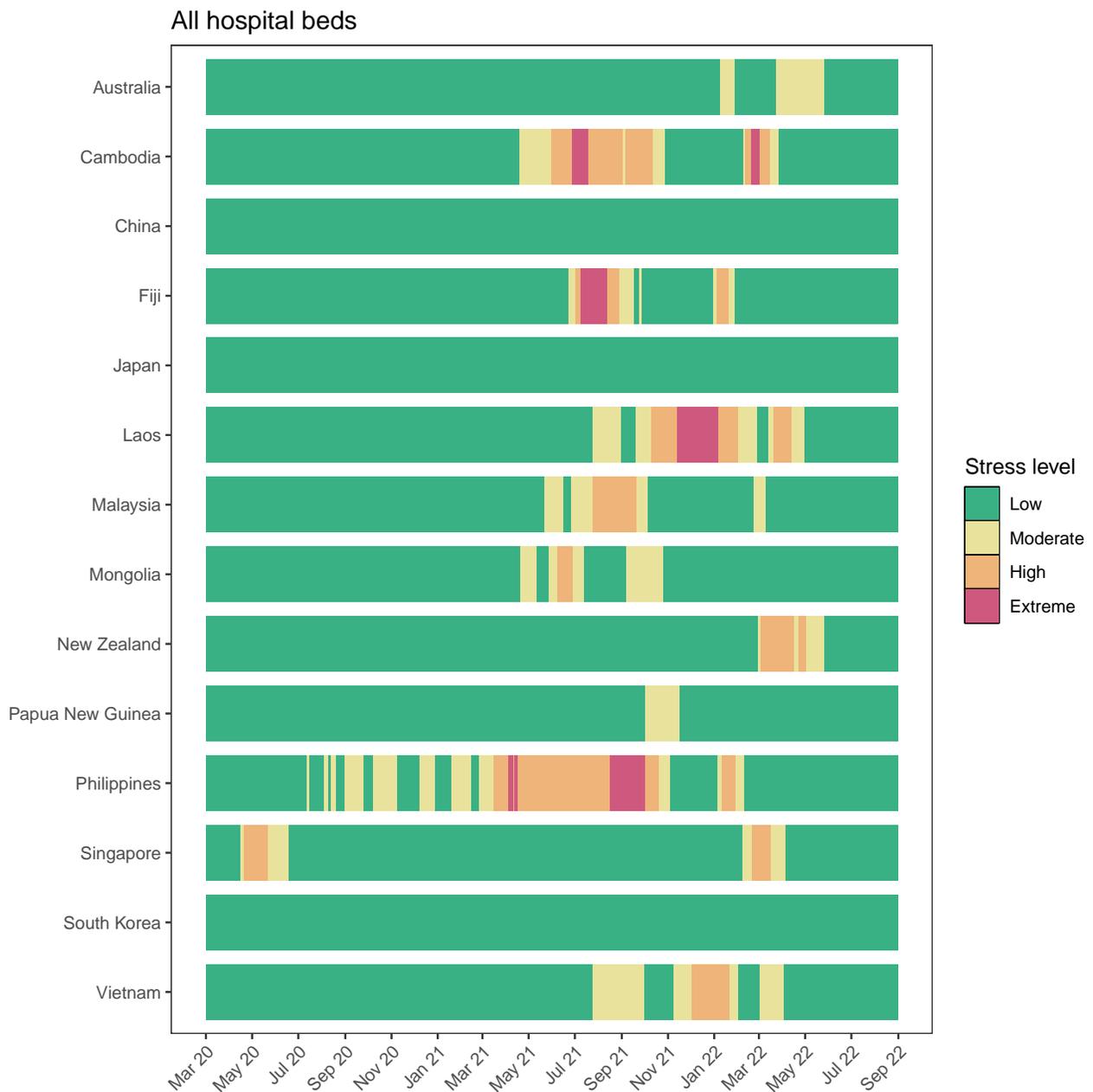
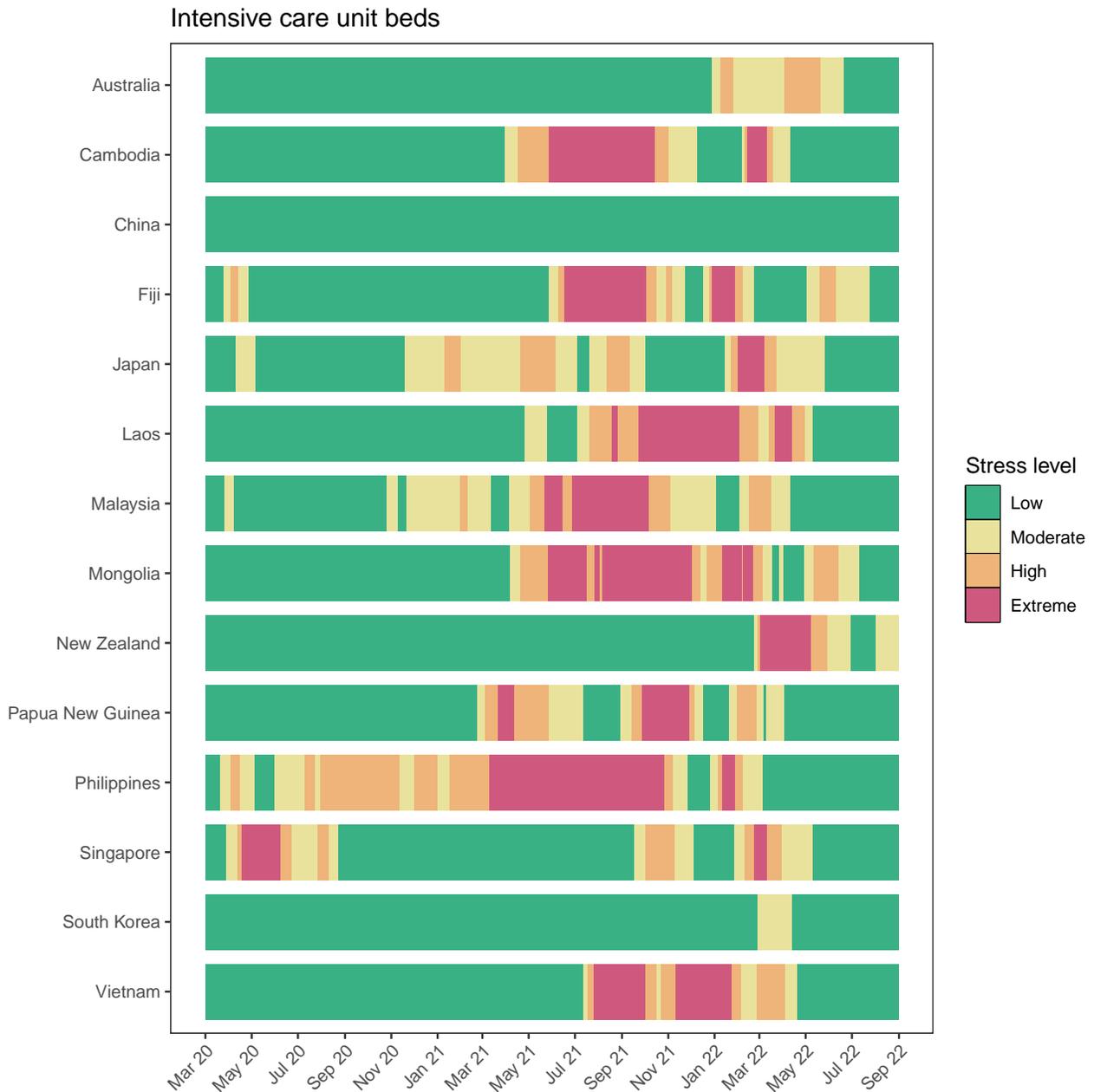


Figure 26.1: The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *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>.