COVID-19 Results Briefing

The South-East Asia Region

July 18, 2022

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

Current situation

- Daily infections in the last week increased to 4,602,000 per day on average compared to 4,214,000 the week before (Figure 1.1). Daily hospital census in the last week (through July 13) increased to 50,000 per day on average compared to 47,000 the week before.
- Daily reported cases in the last week increased to 25,000 per day on average compared to 23,000 the week before (Figure 2.1).
- Reported deaths due to COVID-19 in the last week increased to 79 per day on average compared to 54 the week before (Figure 3.1).
- Total deaths due to COVID-19 in the last week increased to 410 per day on average compared to 240 the week before (Figure 3.1). This makes COVID-19 the number 18 cause of death in South-East Asia Region this week (Table 1). Estimated total daily deaths due to COVID-19 in the past week were 5.2 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 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 one country and no subnational locations (Figure 4.2).
- We estimate that 88% of people in South-East Asia Region 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 eight countries and 18 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 eight countries and 26 subnational locations, that the Beta variant is circulating in three countries and seven subnational locations, that the Delta variant is circulating in 11 countries and 35 subnational locations, that the Gamma variant is circulating in four countries and five subnational locations, and that the Omicron variant is circulating in 11 countries and 35 subnational locations.

Trends in drivers of transmission

- Mobility last week was 15% higher than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 15% of baseline in two countries and one subnational location (Figure 12.1).
- As of June 24, in the COVID-19 Trends and Impact Survey, 35% of people self-reported that they always wore a mask when leaving their home compared to 35% the previous week (Figure 13.1).
- There were 31 diagnostic tests per 100,000 people on July 11 (Figure 15.1).
- As of July 11, nine countries and 16 subnational locations have reached 70% or more of the population who have received at least one vaccine dose, and six countries and 11 subnational locations have reached 70% or more of the population who are fully vaccinated (Figures 17.1 and 17.2). 70% of people in South-East Asia Region have received at least one vaccine dose, and 64% are fully vaccinated.
- As of June 24, 2022, two percent of the population in South-East Asia Region say they would accept a vaccine for COVID-19 but have not yet been vaccinated.
- In our current reference scenario, we expect that 1.4 billion people will be vaccinated with at least one dose by November 1 (Figure 19.1). We expect that 66% 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 rise to 5,313,260 by September 16, 2022 (Figure 21.1).
- Daily estimated infections in the **80% mask use scenario** will decline to 1,435,420 by September 7, 2022 (Figure 21.1).
- Daily estimated infections in the **antiviral access scenario** will rise to 5,313,260 by September 16, 2022 (Figure 21.1).

Cases

- Daily estimated cases in the **reference scenario** will rise to 43,160 by September 12, 2022 (Figure 21.2).
- Daily estimated cases in the **80% mask use scenario** will rise to 29,820 by July 20, 2022 (Figure 21.2).
- Daily estimated cases in the **antiviral access scenario** will rise to 43,160 by September 12, 2022 (Figure 21.2).

Hospitalizations

- Daily hospital census in the **reference scenario** will rise to 69,560 by September 15, 2022 (Figure 21.3). At some point from July through November 1, one country will have high or extreme stress on hospital beds (Figure 23.1). At some point from July through November 1, two 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 56,950 by July 21, 2022 (Figure 21.3).
- Daily hospital census in the **antiviral access scenario** will rise to 68,460 by August 30, 2022 (Figure 21.3).

Deaths

- In our **reference scenario**, our model projects 812,000 cumulative reported deaths due to COVID-19 on November 1. This represents 23,000 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 250 by October 10, 2022 (Figure 21.4).
- Under our **reference scenario**, our model projects 5,102,000 cumulative total deaths due to COVID-19 on November 1. This represents 132,000 additional deaths from July 11 to November 1 (Figure 21.5).
- In our **80% mask use scenario**, our model projects 799,000 cumulative reported deaths due to COVID-19 on November 1. This represents 9,700 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 140 by August 1, 2022 (Figure 21.4).
- In our **antiviral access scenario**, our model projects 811,000 cumulative reported deaths due to COVID-19 on November 1. This represents 21,000 additional deaths from July 11 to November 1. Daily reported COVID-19 deaths in the **antiviral access scenario** will rise to 230 by September 14, 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

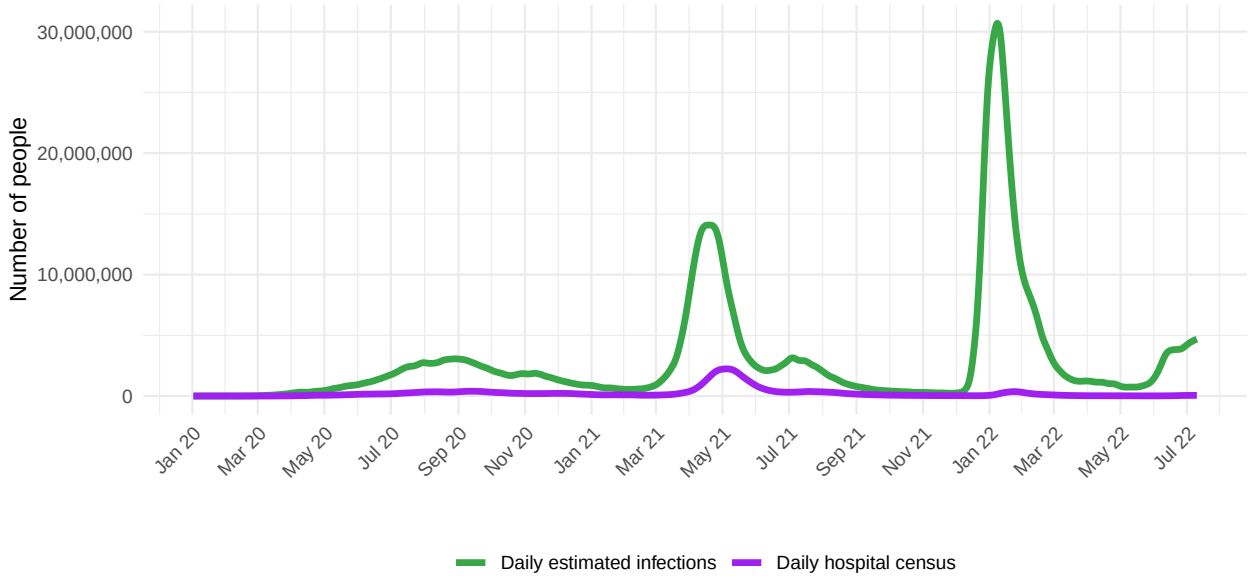


Figure 2.1: Reported daily COVID-19 cases, moving average

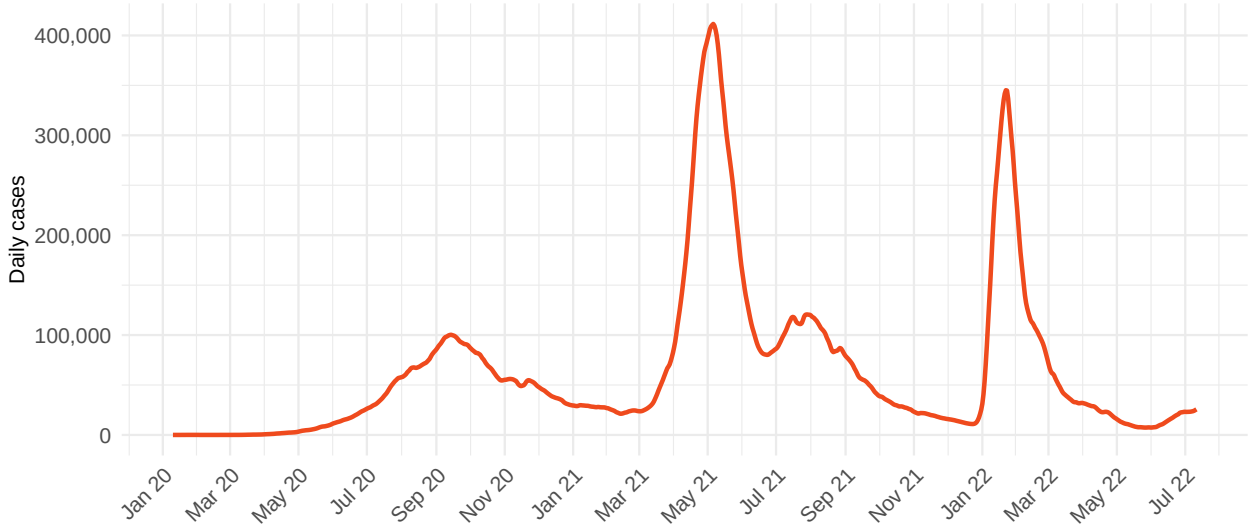
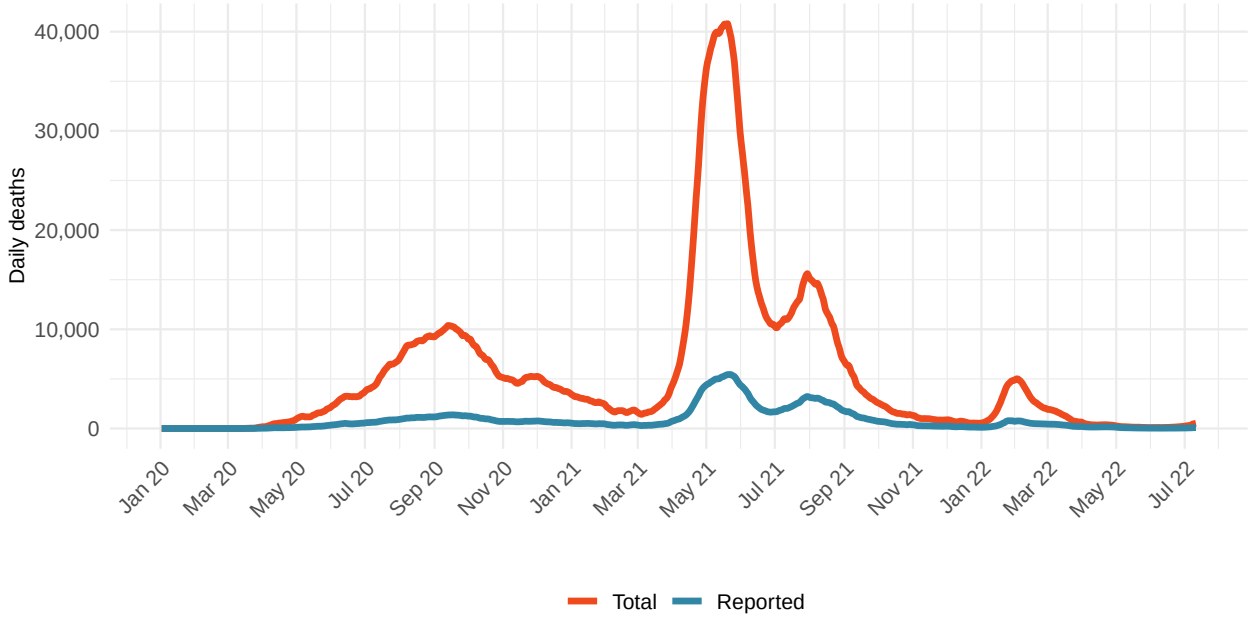


Table 1: Ranking of total deaths due to COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year

Cause name	Weekly deaths	Ranking
Ischemic heart disease	39,868	1
Stroke	27,102	2
Chronic obstructive pulmonary disease	21,984	3
Diarrheal diseases	14,328	4
Lower respiratory infections	11,327	5
Tuberculosis	10,815	6
Neonatal disorders	10,504	7
Diabetes mellitus	9,152	8
Cirrhosis and other chronic liver diseases	8,514	9
Chronic kidney disease	6,390	10
COVID-19	2,880	18

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

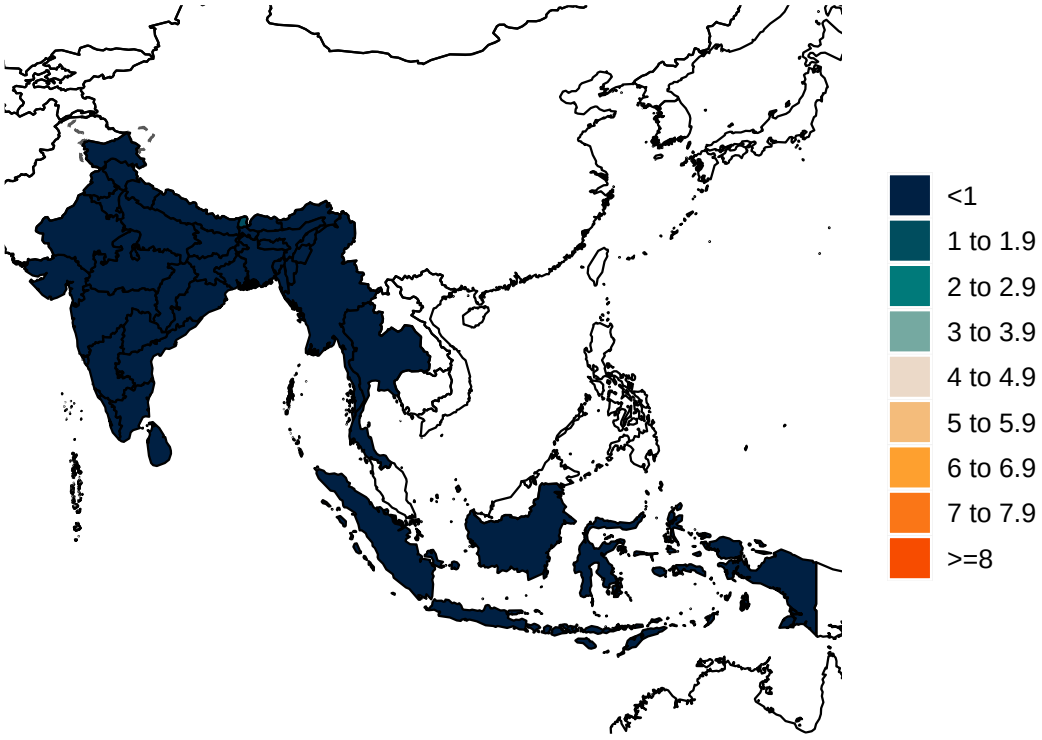
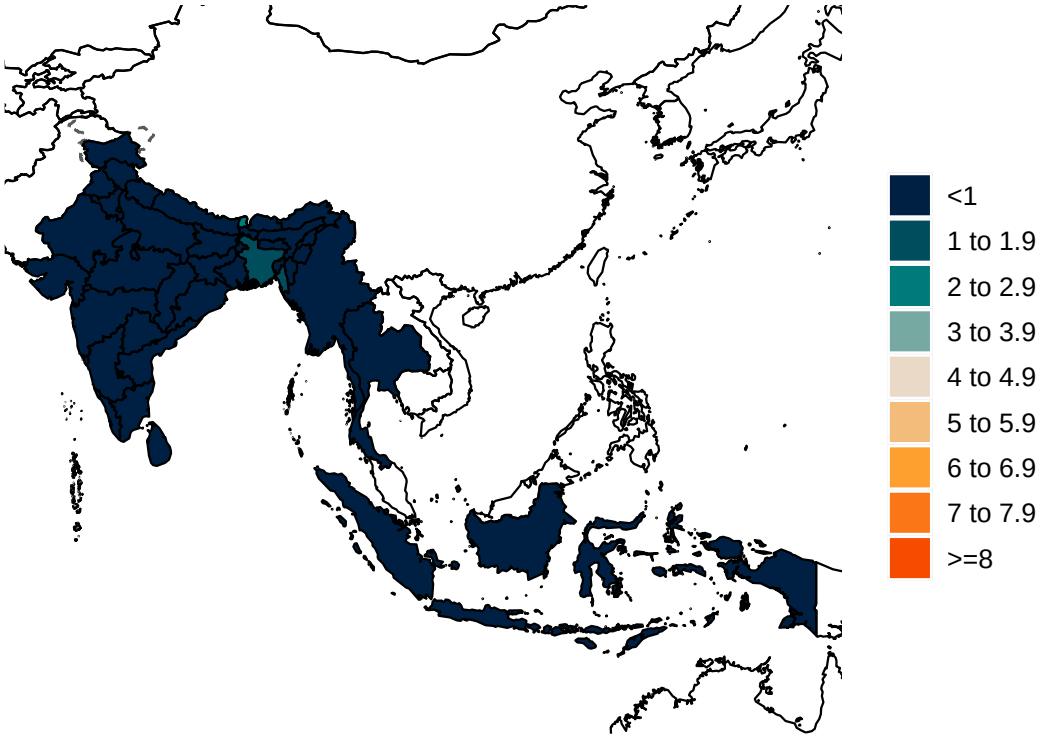


Figure 4.2: Daily total COVID-19 death rate per 1 million



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

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

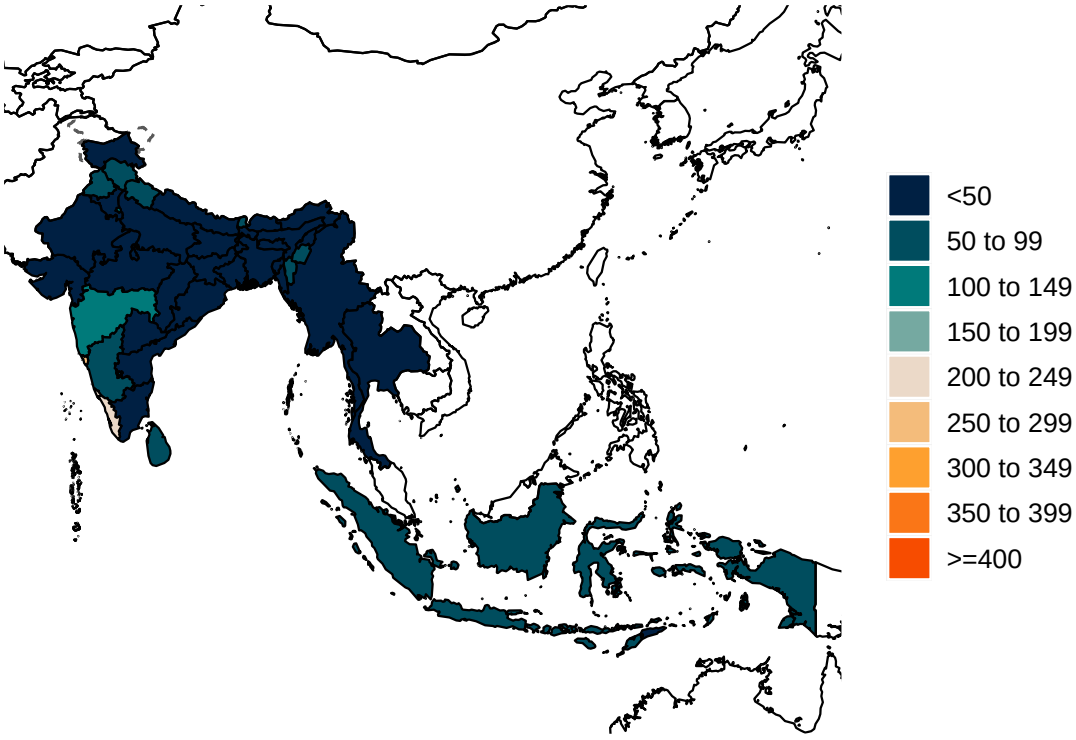


Figure 5.2: Total cumulative COVID-19 deaths per 100,000

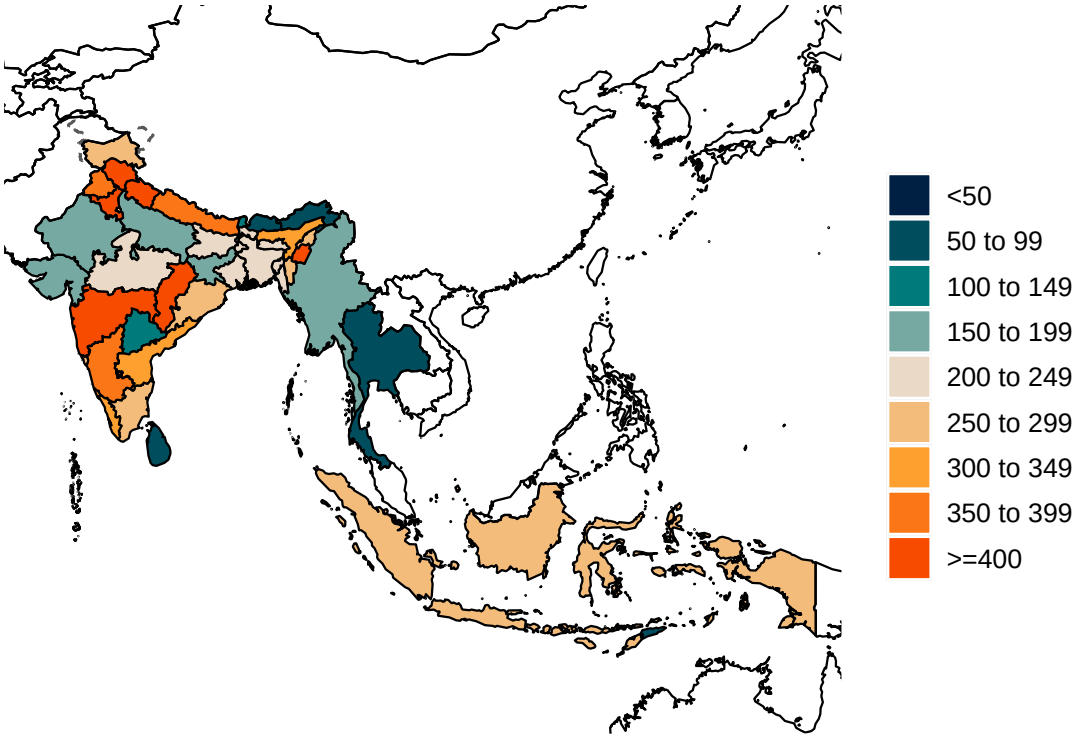


Figure 6.1: Estimated percent of the population infected with COVID-19 on July 11, 2022

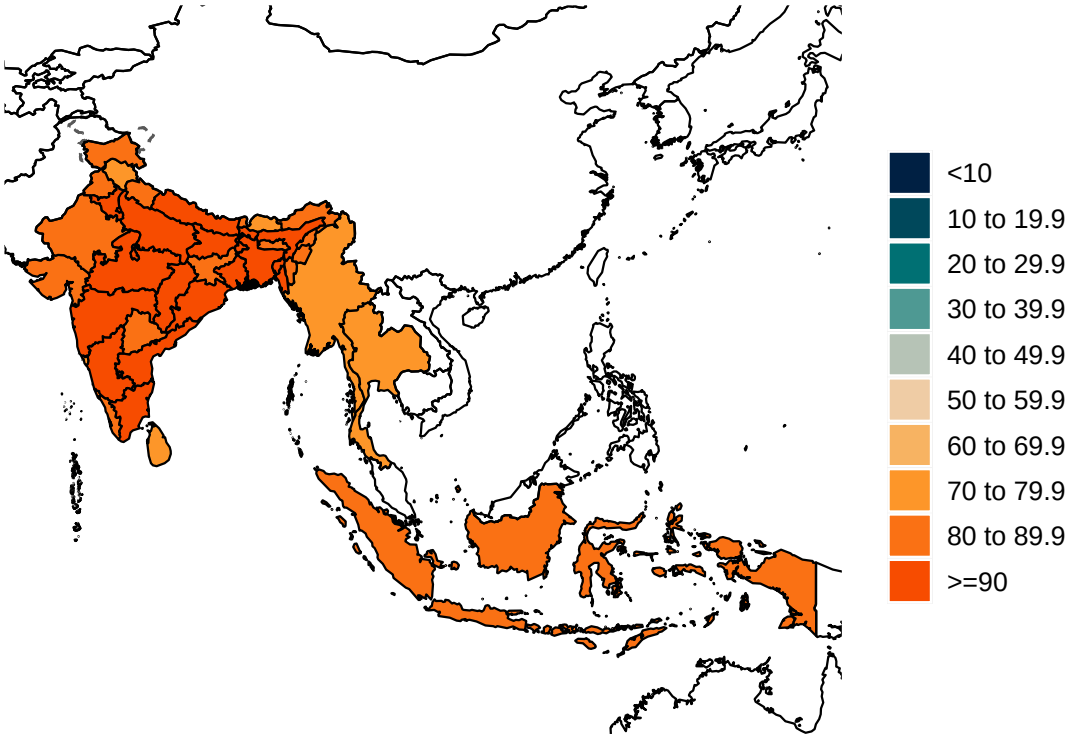
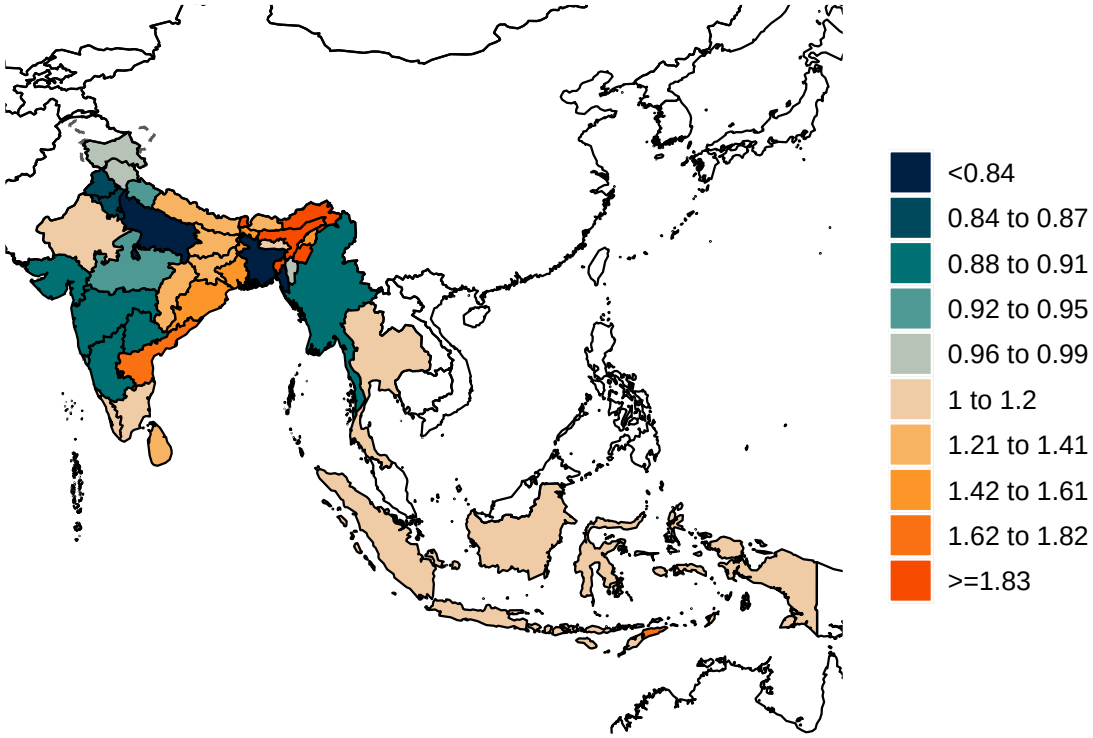


Figure 7.1: Mean effective R on June 30, 2022. Effective R less than 1 means that transmission should decline, all other things being held the same. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect 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

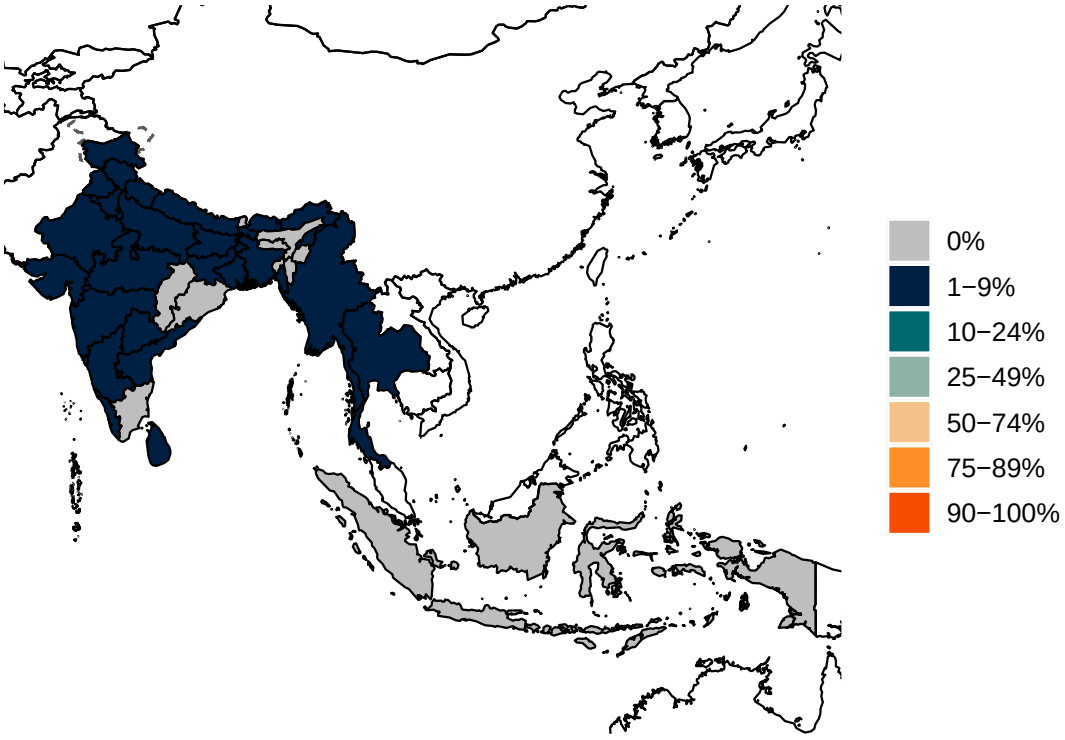


Figure 9.2: Estimated percent of new infections that are Beta variant

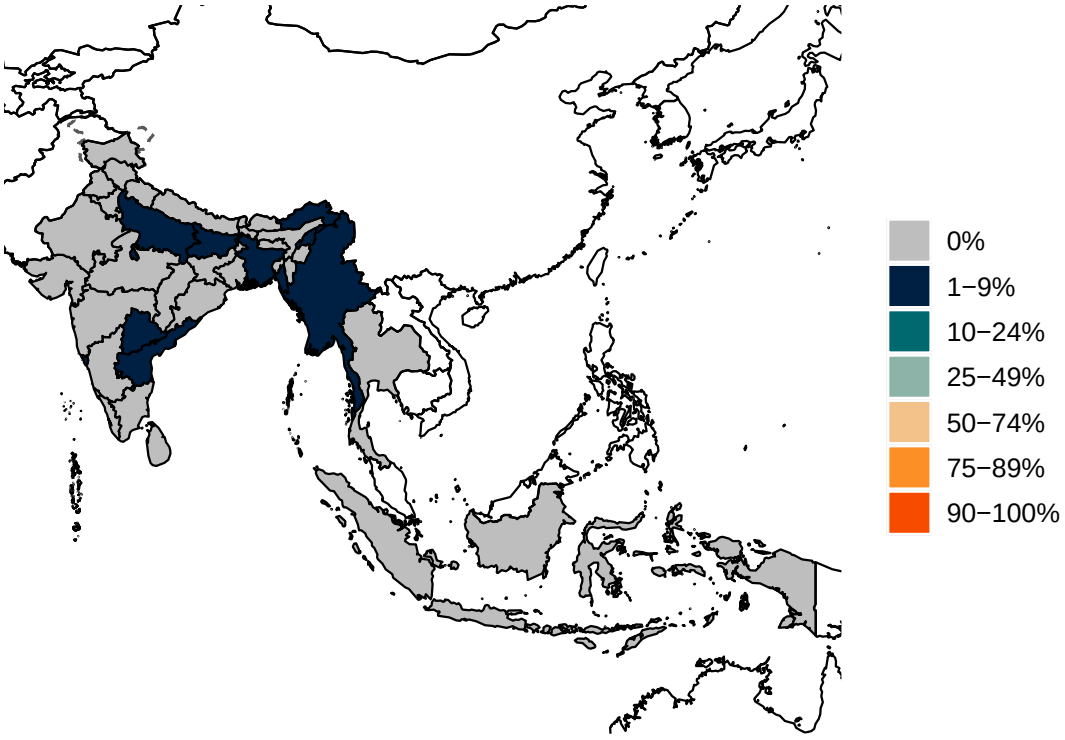


Figure 9.3: Estimated percent of new infections that are Delta variant

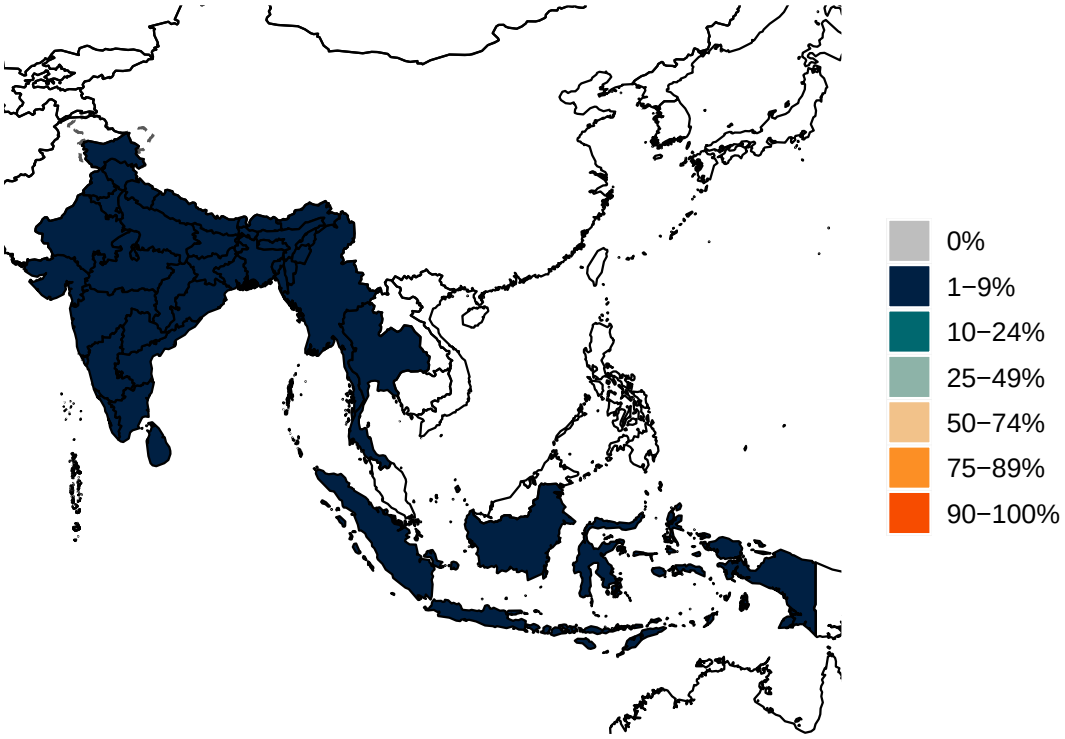


Figure 9.4: Estimated percent of new infections that are Gamma variant

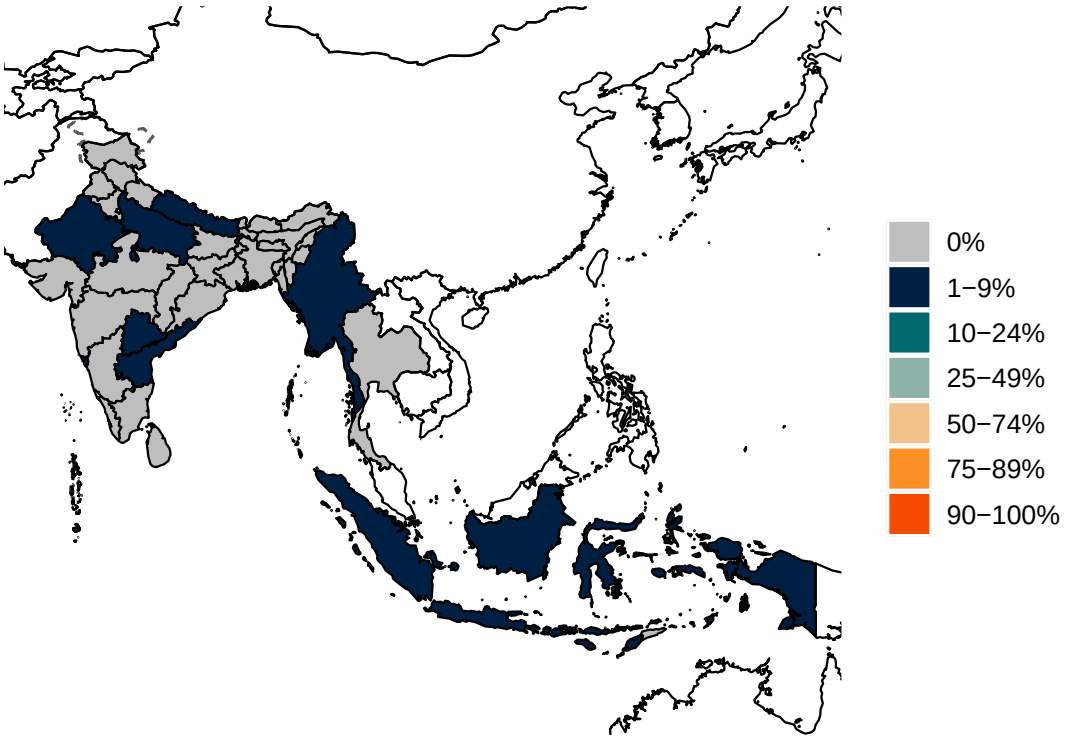


Figure 9.5: Estimated percent of new infections that are Omicron variant

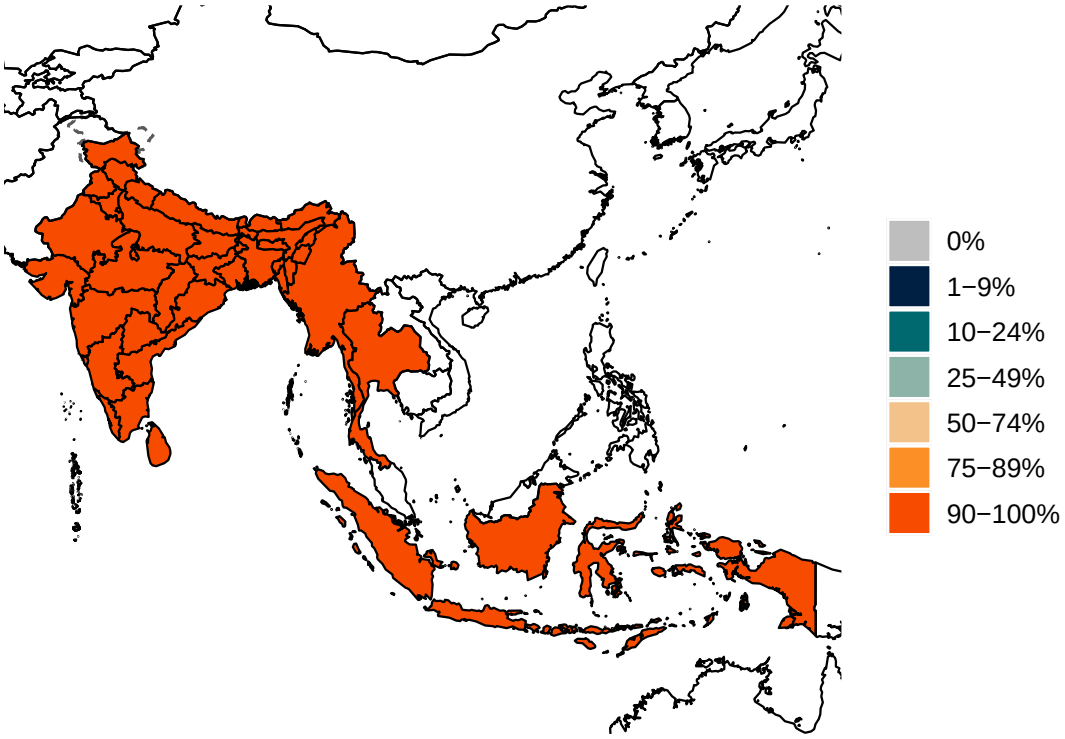
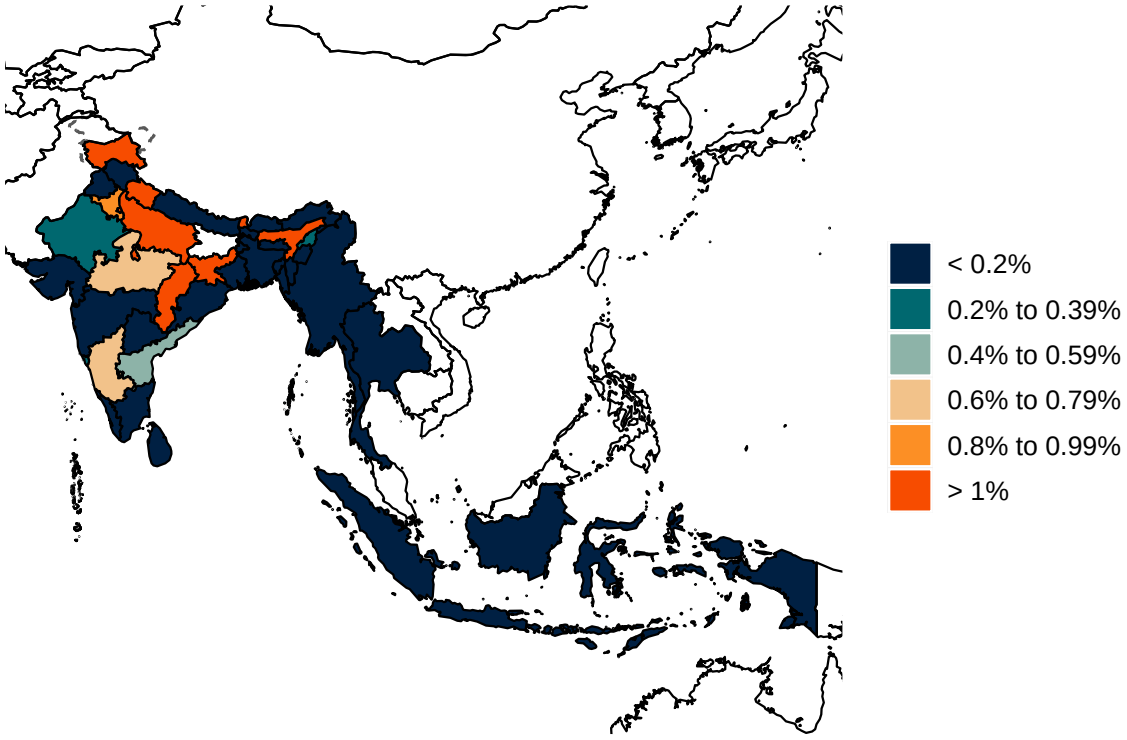
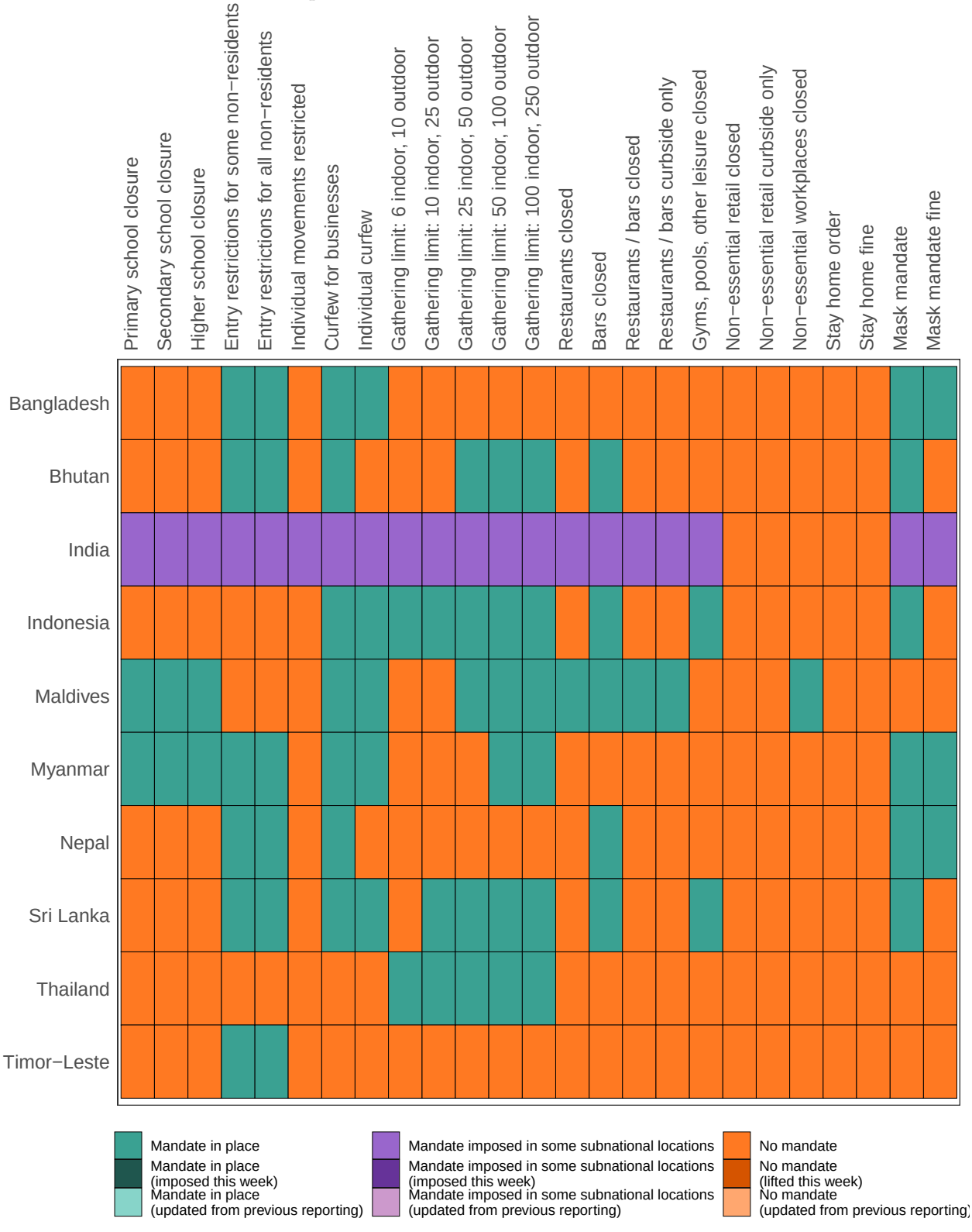


Figure 10.1: Infection-fatality rate on July 11, 2022. This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.



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

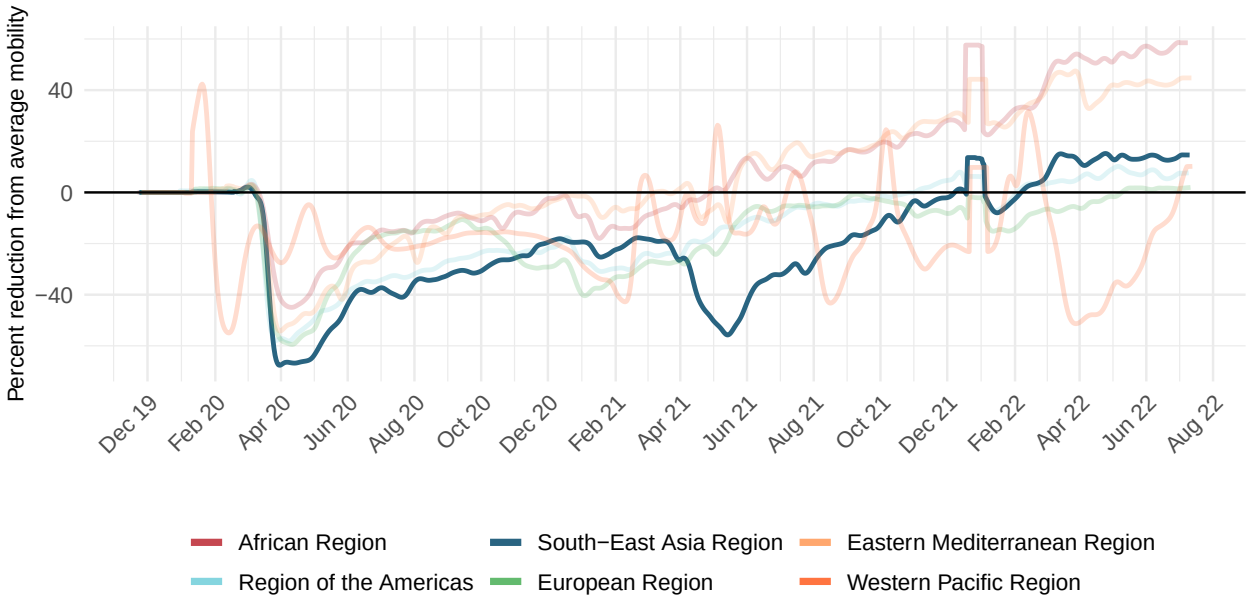


Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on July 11, 2022

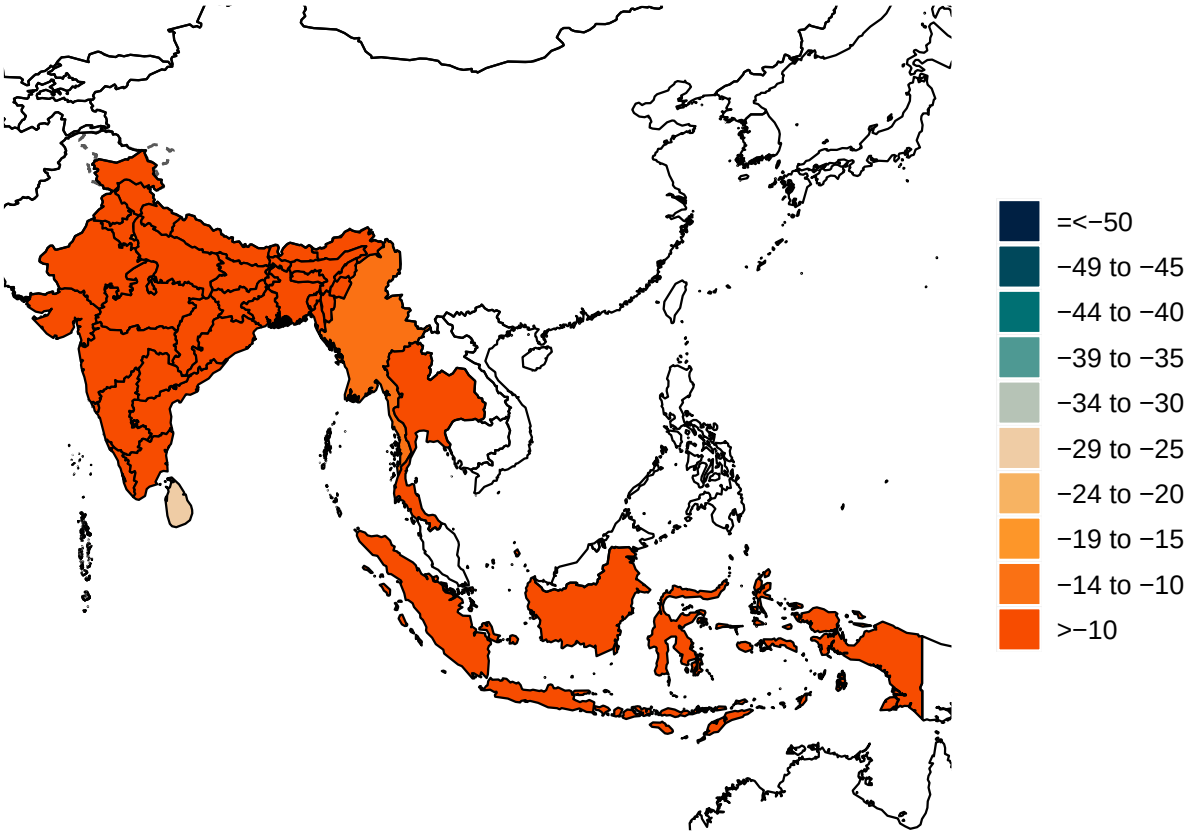


Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home

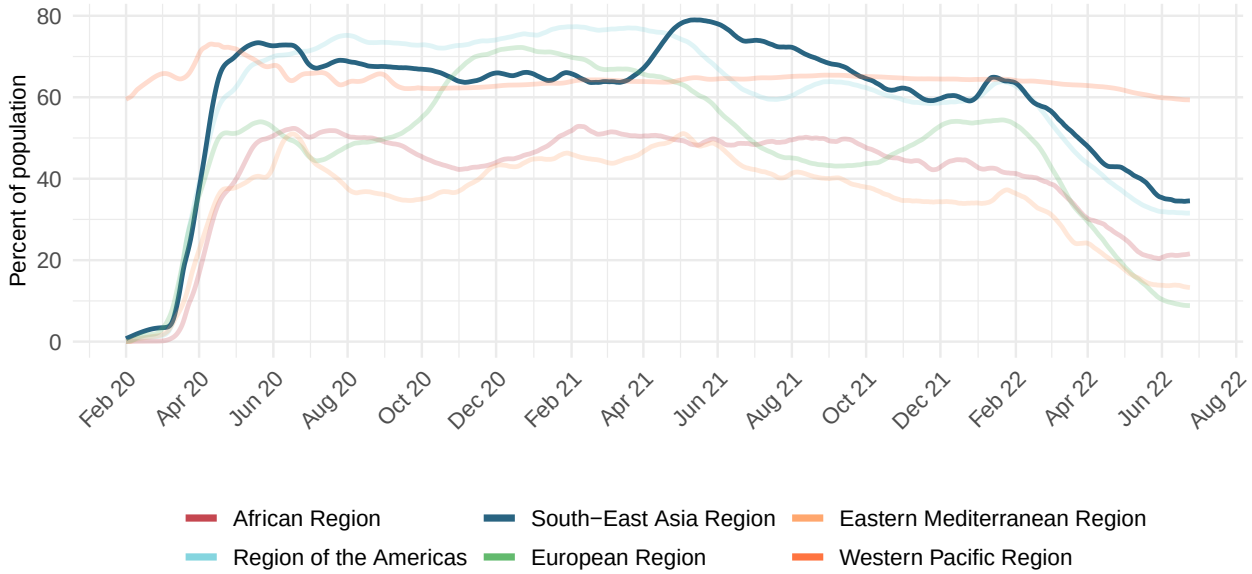


Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on July 11, 2022

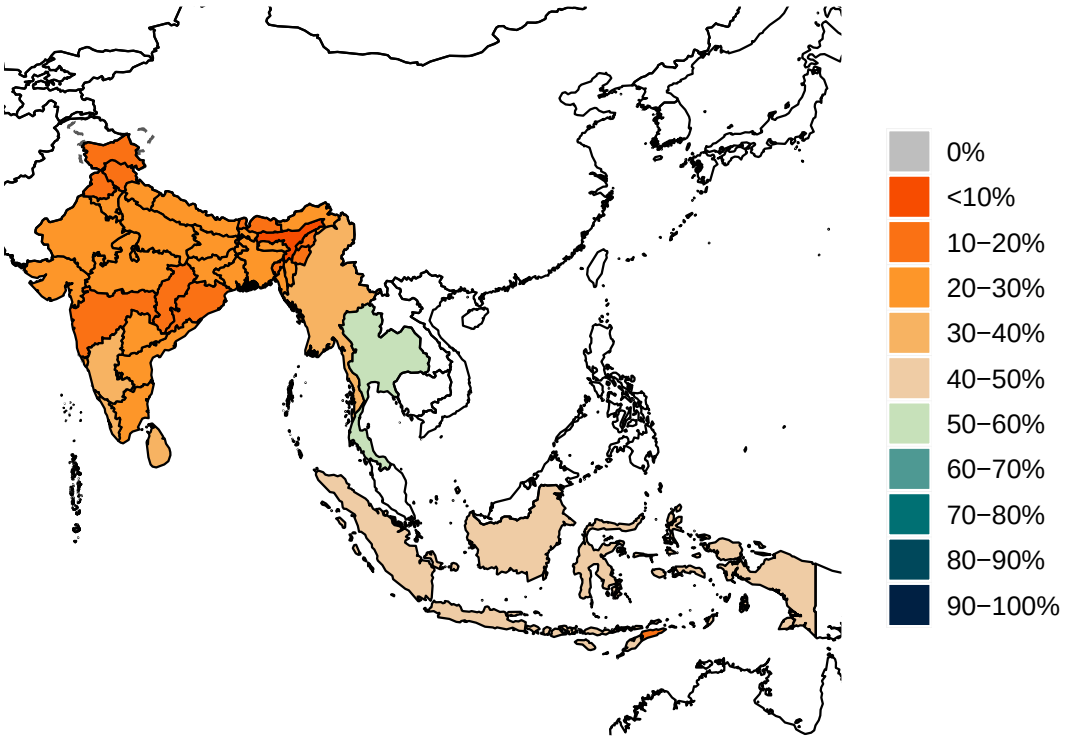


Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people

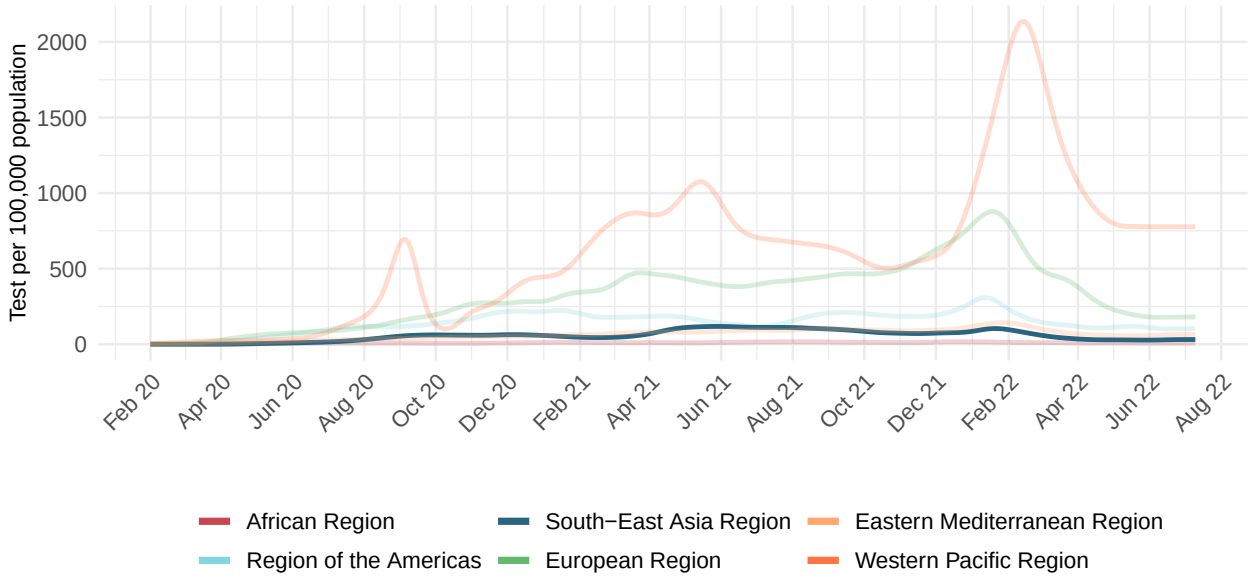


Figure 16.1: COVID-19 diagnostic tests per 100,000 people on July 11, 2022

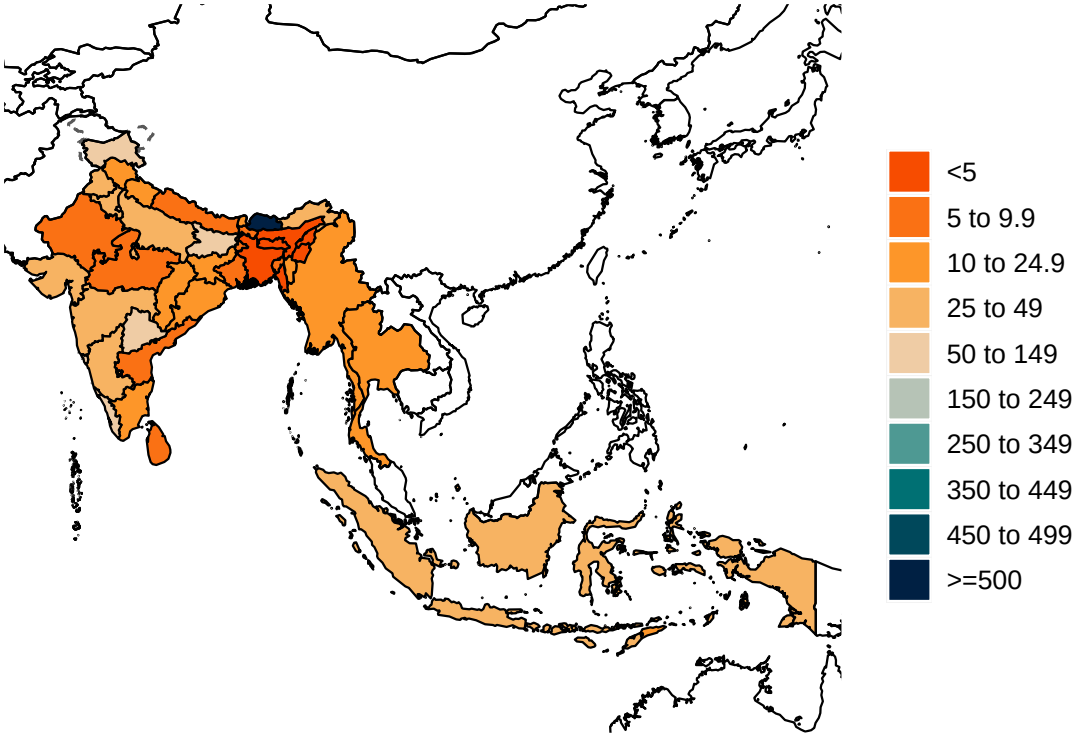


Table 3: Estimates of vaccine effectiveness for specific vaccines used in the model at preventing severe disease and infection. We use data from clinical trials directly, where available, and make estimates otherwise. More information can be found on our website.

	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

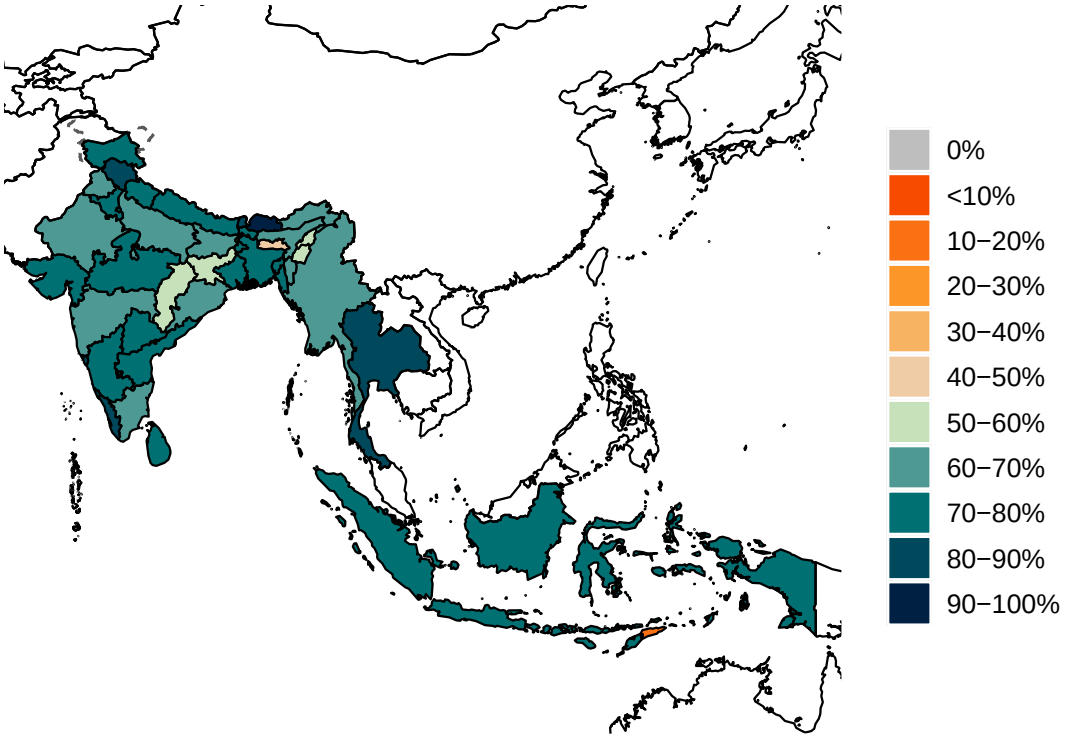


Figure 17.2: Percent of the population fully vaccinated against SARS-CoV-2

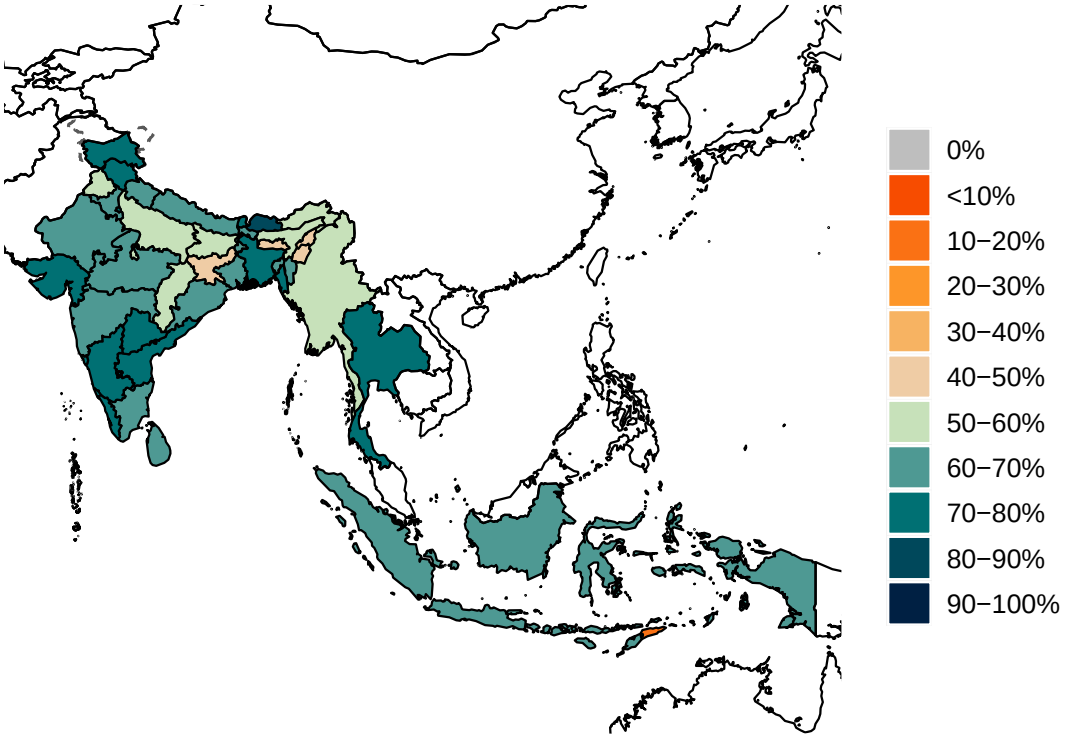


Figure 18.1: Estimated proportion of the total population that is not vaccinated but willing to be vaccinated as of June 24, 2022

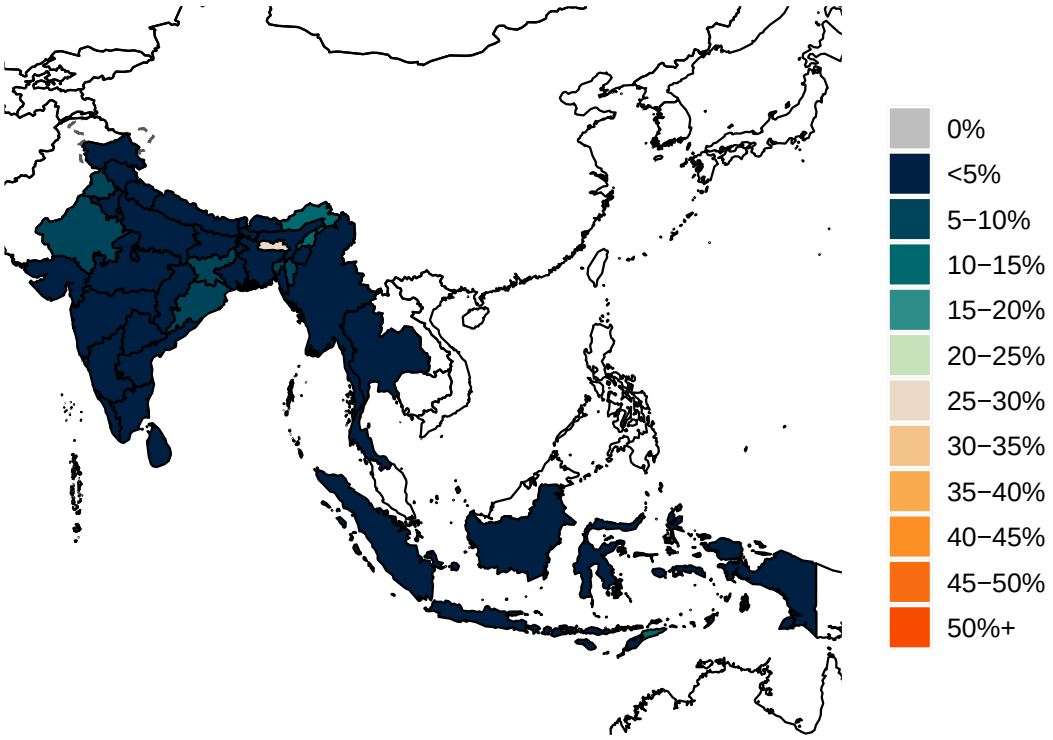


Figure 19.1: Percent of people who receive at least one dose of a COVID-19 vaccine and those who are fully vaccinated

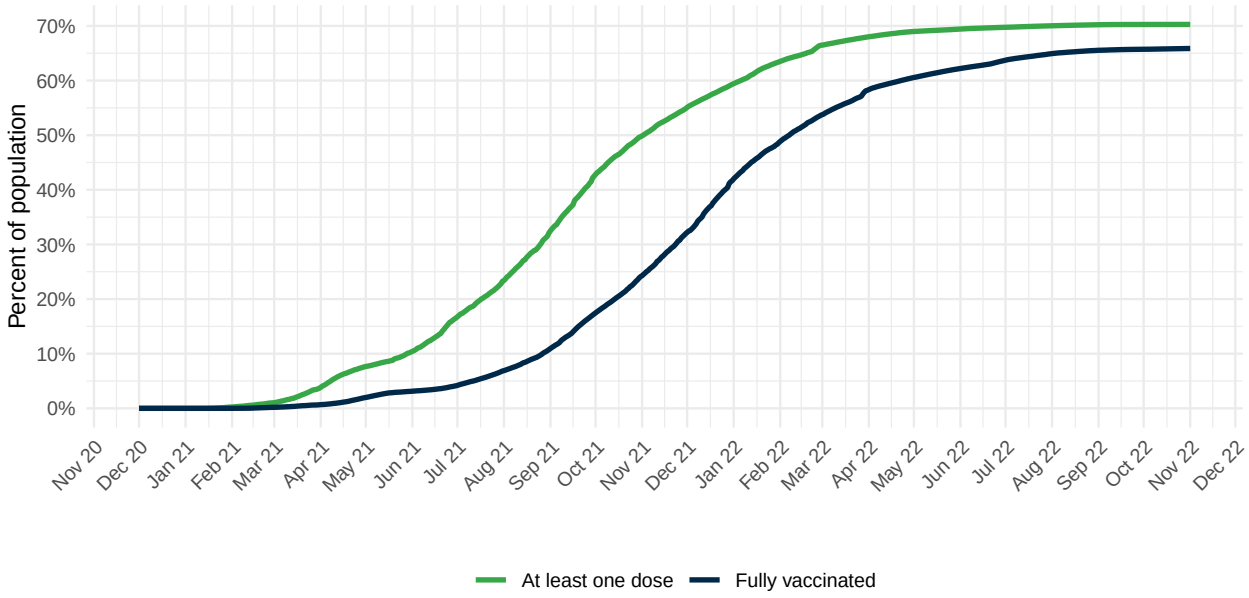
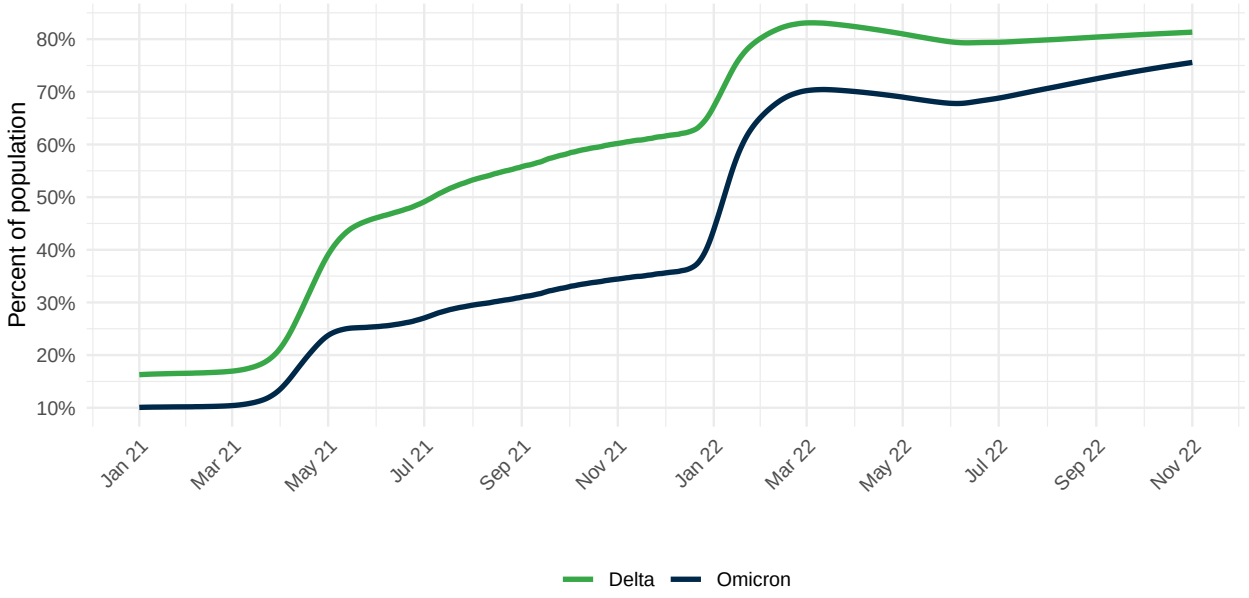


Figure 20.1: Percent of people who are immune to Delta or Omicron. Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.



Projections and scenarios

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

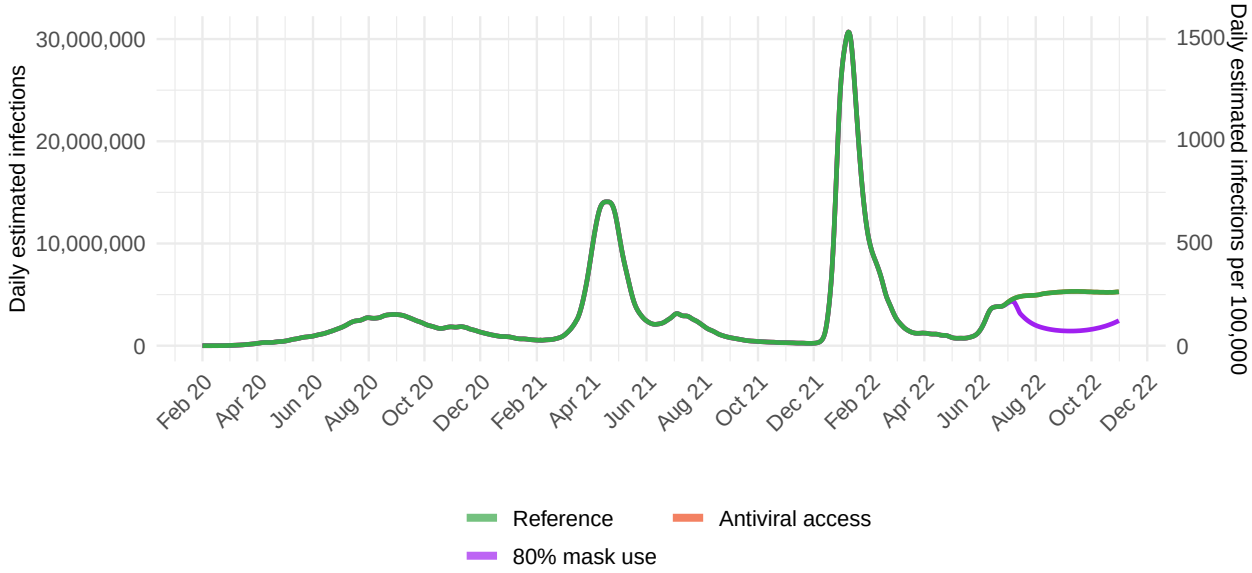


Figure 21.2: Daily COVID-19 reported cases until November 01, 2022 for three scenarios

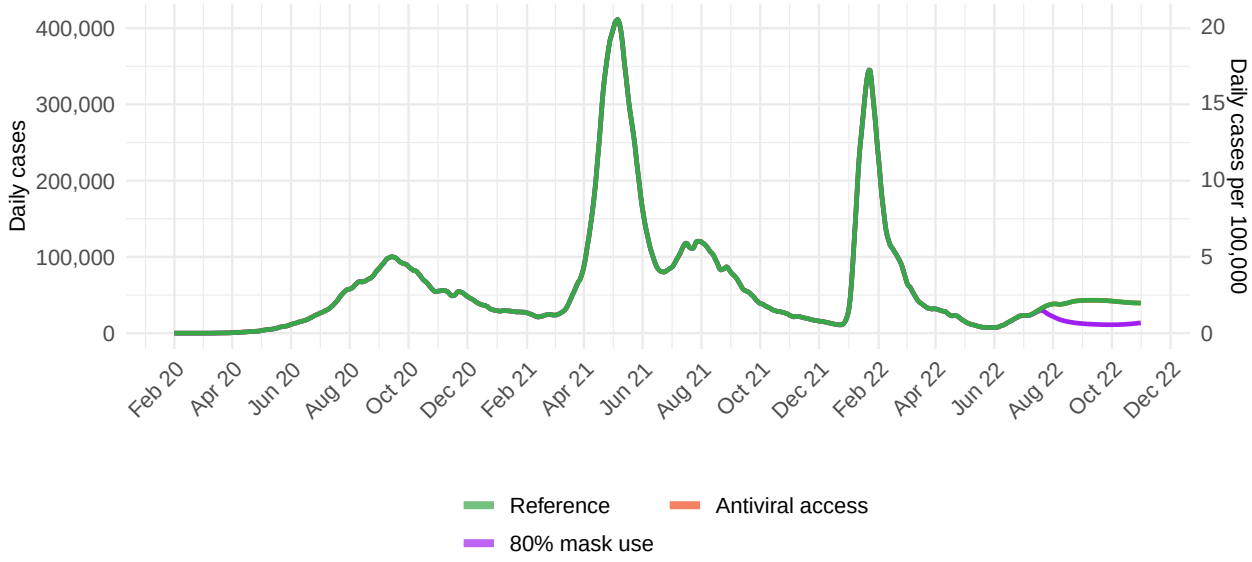


Figure 21.3: Daily COVID-19 hospital census until November 01, 2022 for three scenarios

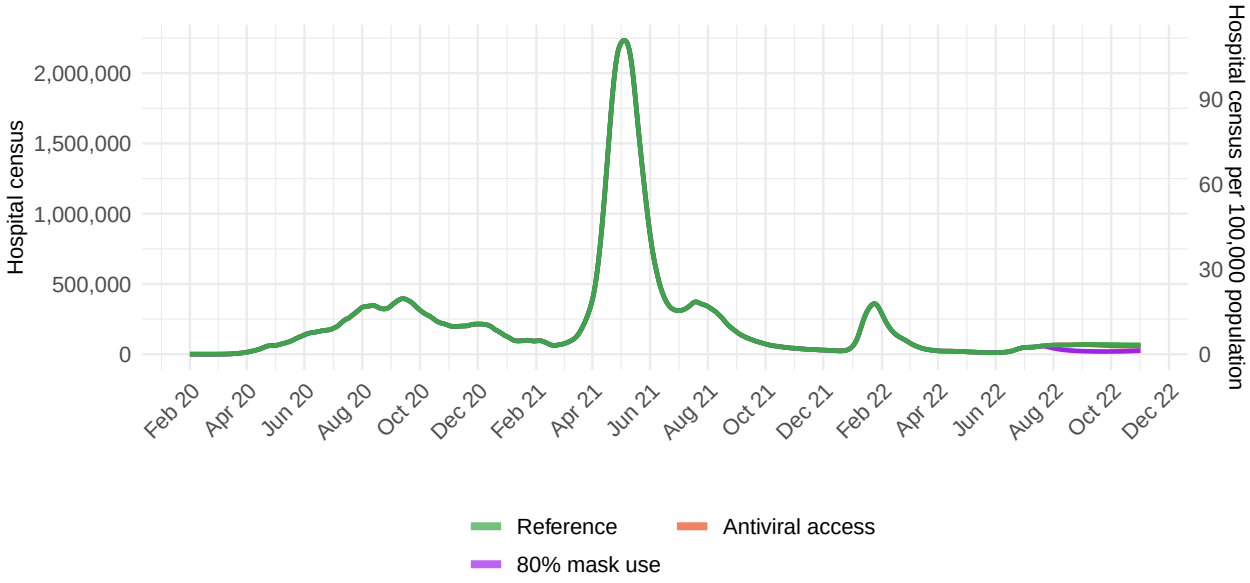


Figure 21.4: Reported daily COVID-19 deaths per 100,000

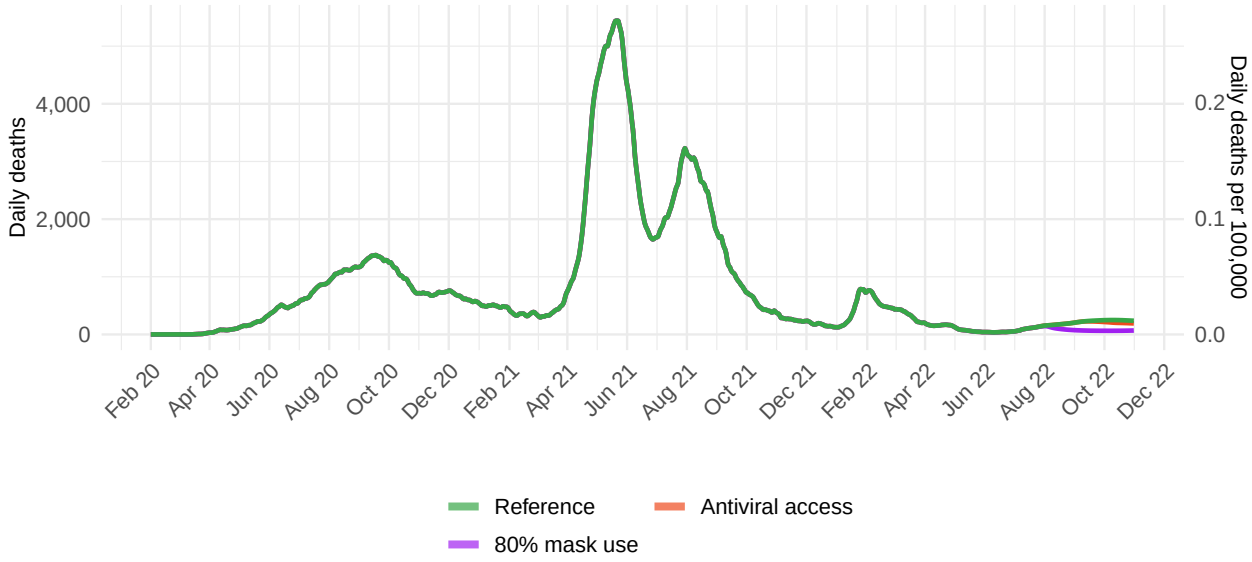


Figure 21.5: Total daily COVID-19 deaths per 100,000

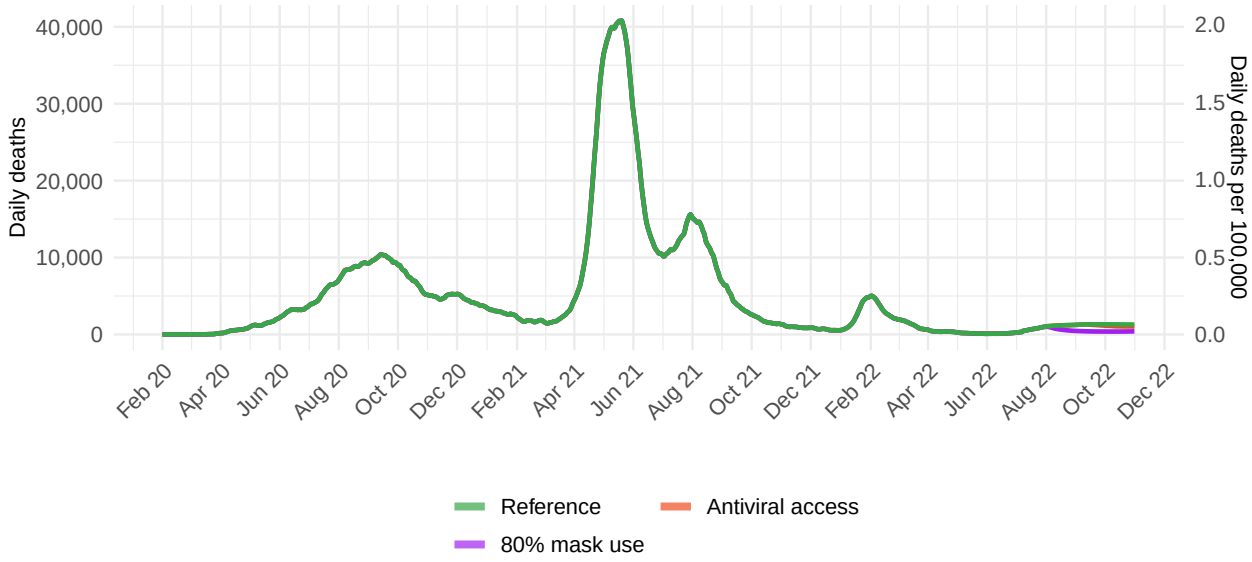


Figure 22.1: Comparison of reference model projections with other COVID modeling groups. For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available, last model update in brackets: Delphi from the Massachusetts Institute of Technology (Delphi) [July 18, 2022]. Regional values are aggregates from available locations in that region.

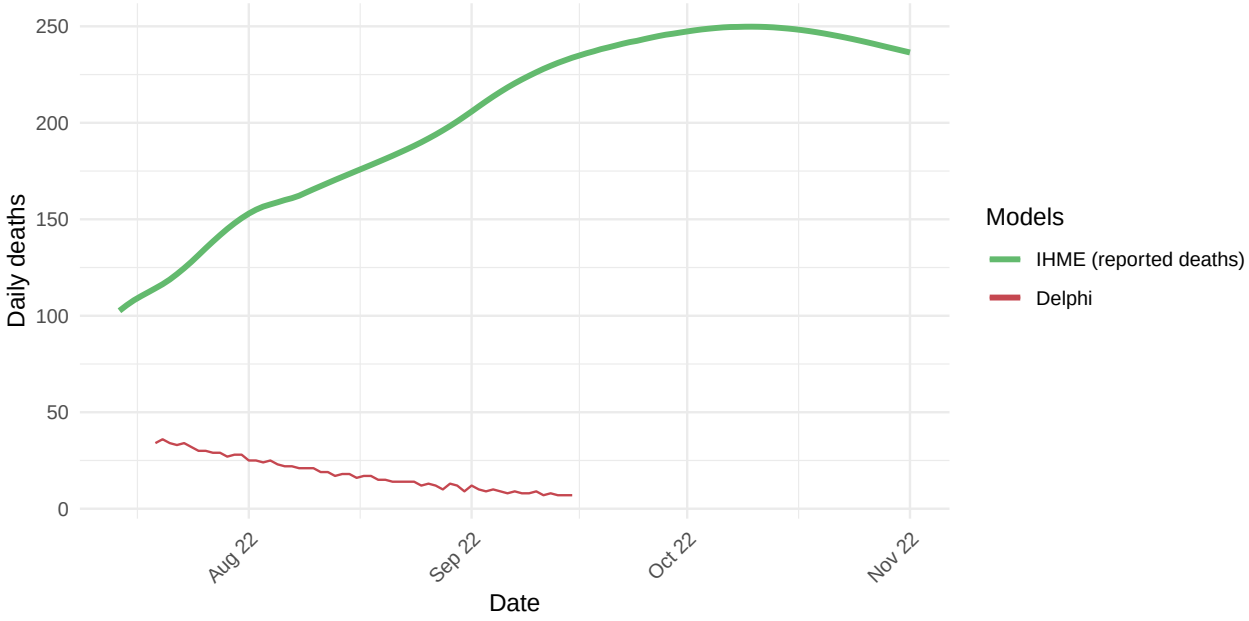


Figure 23.1: The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate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

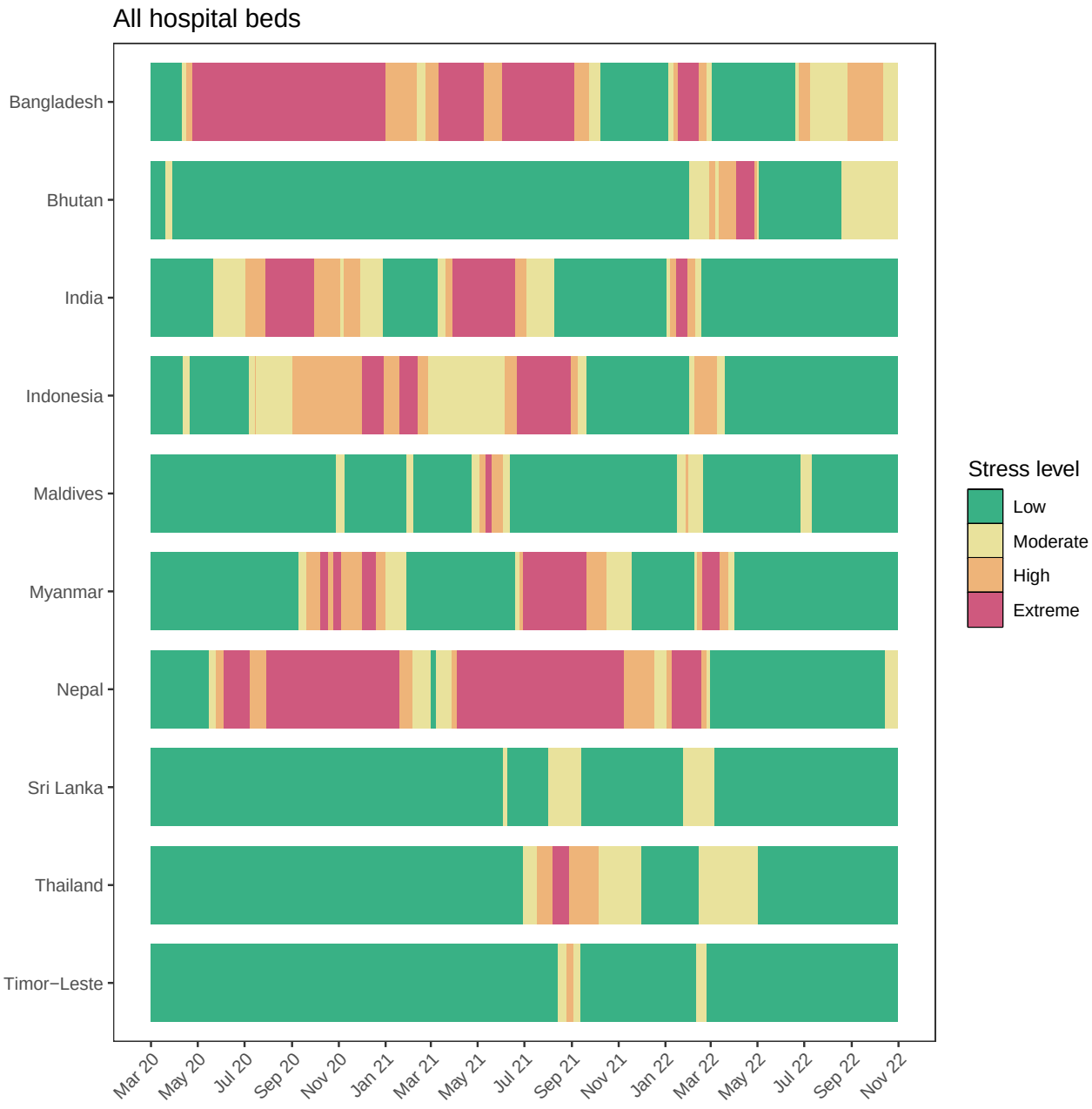
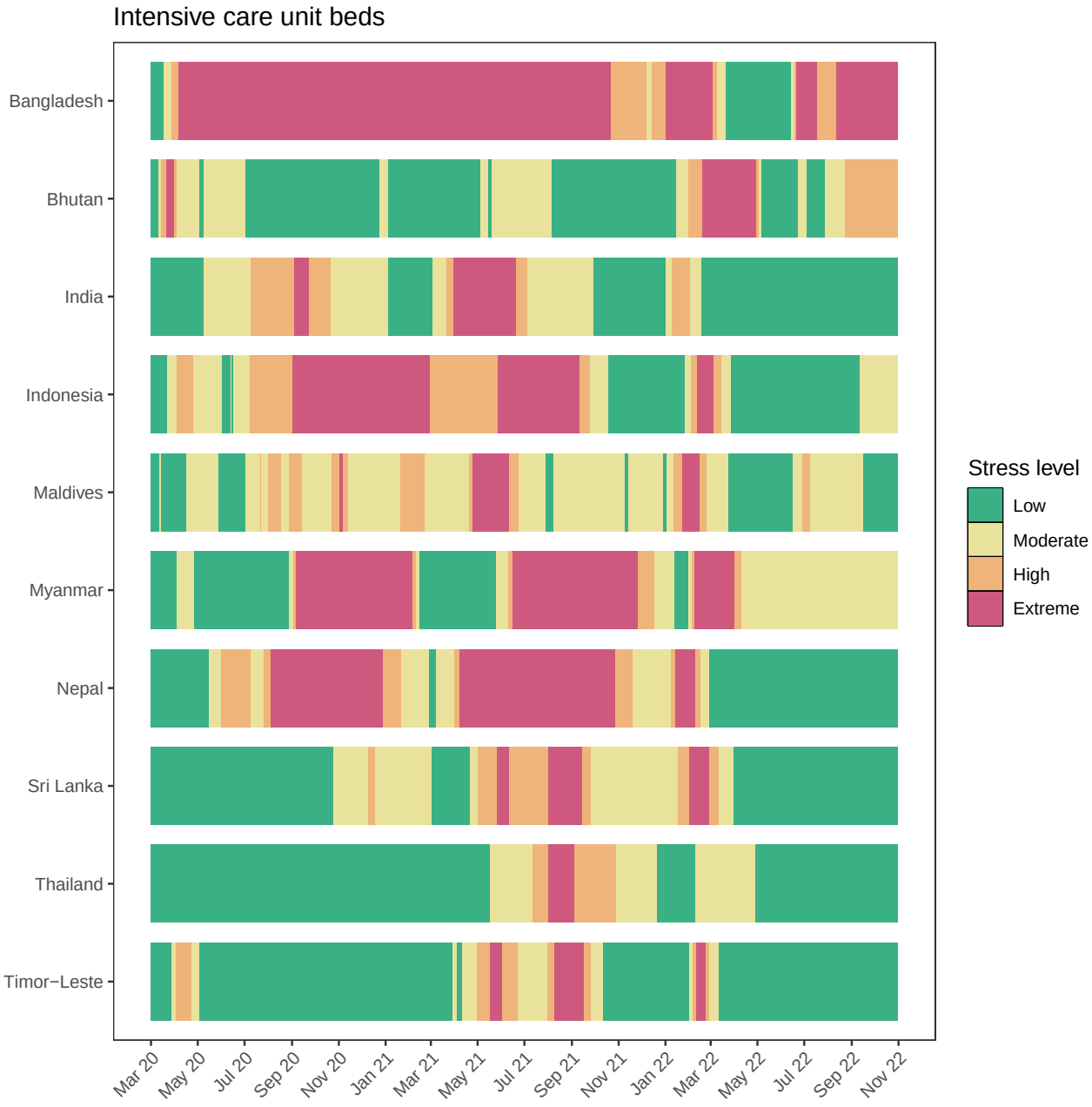


Figure 24.1: The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered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