

## COVID-19 Results Briefing

### The African Region

May 5, 2022

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

#### Current situation

- Daily infections in the last week increased to 1,038,000 per day on average compared to 714,000 the week before (Figure 1.1). Daily hospital census in the last week (through May 3) increased to 3,800 per day on average compared to 3,100 the week before.
- Daily reported cases in the last week increased to 5,000 per day on average compared to 3,900 the week before (Figure 2.1).
- Reported deaths due to COVID-19 in the last week decreased to 10 per day on average compared to 24 the week before (Figure 3.1).
- Total deaths due to COVID-19 in the last week decreased to 54 per day on average compared to 140 the week before (Figure 3.1). This makes COVID-19 the number 48 cause of death in African 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 no countries (Figure 4.1).
- The daily rate of total deaths due to COVID-19 is greater than 4 per million in no countries (Figure 4.2).
- We estimate that 85% of people in African 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 16 countries. (Figure 7.1).
- The infection-detection rate in African Region was close to 1% 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 37 countries, that the Beta variant is circulating in 36 countries, that the Delta variant is circulating in 42 countries, that the Gamma variant is circulating in 24 countries, and that the Omicron variant is circulating in 42 countries.

#### Trends in drivers of transmission

- Mobility last week was 52% higher than the pre-COVID-19 baseline (Figure 11.1). Mobility was lower than 15% of baseline in no countries (Figure 12.1).
- As of April 24, in the COVID-19 Trends and Impact Survey, 32% of people self-reported that they always wore a mask when leaving their home compared to 33% the previous week (Figure 13.1).
- There were 10 diagnostic tests per 100,000 people on May 2 (Figure 15.1).
- As of May 2, two countries have reached 70% or more of the population who have received at least one vaccine dose, and two countries have reached 70% or more of the population who are fully vaccinated (Figures 17.1 and 17.2). 19% of people in African Region have received at least one vaccine dose, and 16% are fully vaccinated.
- In the African Region, 43.7% of the population that is 12 years and older say they would accept a vaccine for COVID-19 (Figure 18.1). This is up by 0.2 percentage points from 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 17% in Madagascar to 99% in Seychelles (Figure 19.1).
- As of April 25, 2022, 10.1 percent of the population in African Region say they would accept a vaccine for COVID-19 but have not yet been vaccinated.
- In our current reference scenario, we expect that 243.5 million people will be vaccinated with at least

one dose by September 1 (Figure 21.1). We expect that 20% 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 rise to 1,273,670 by May 9, 2022 (Figure 23.1).
- Daily estimated infections in the **80% mask use scenario** will rise to 1,171,970 by May 3, 2022 (Figure 23.1).
- Daily estimated infections in the **third dose scenario** will rise to 1,273,610 by May 9, 2022 (Figure 23.1).

### Cases

- Daily estimated cases in the **reference scenario** will decline to 2,320 by September 1, 2022 (Figure 23.2).
- Daily estimated cases in the **80% mask use scenario** will decline to 1,670 by September 1, 2022 (Figure 23.2).
- Daily estimated cases in the **third dose scenario** will decline to 2,290 by September 1, 2022 (Figure 23.2).

### Hospitalizations

- Daily hospital census in the **reference scenario** will rise to 8,330 by July 17, 2022 (Figure 23.3).
- Daily hospital census in the **80% mask use scenario** will rise to 6,230 by May 19, 2022 (Figure 23.3).
- Daily hospital census in the **third dose scenario** will rise to 8,260 by July 17, 2022 (Figure 23.3).

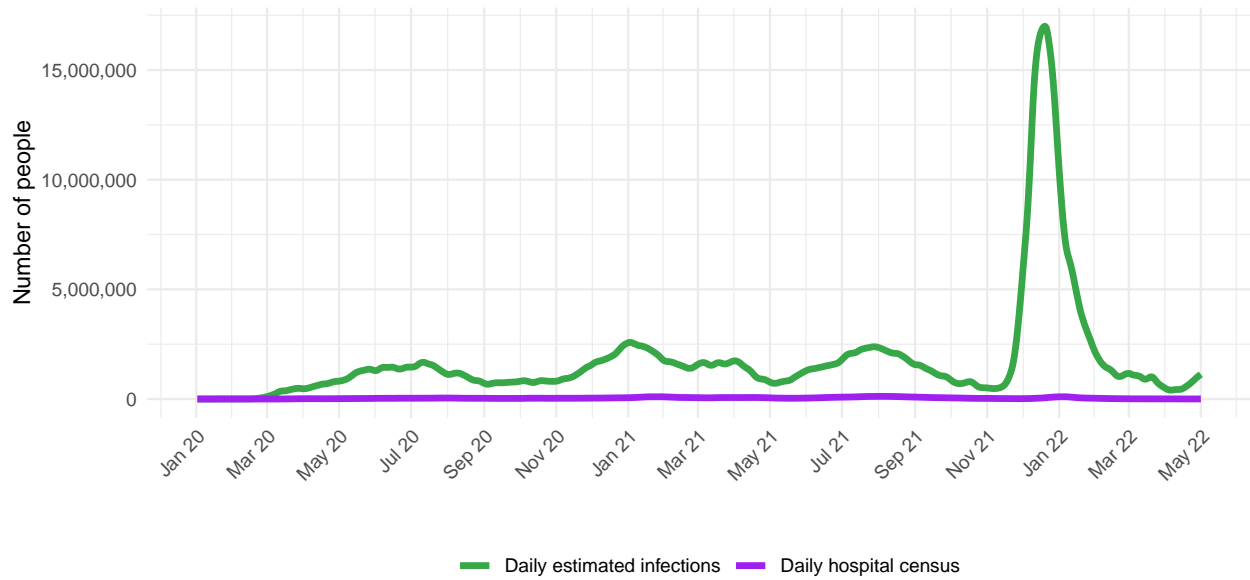
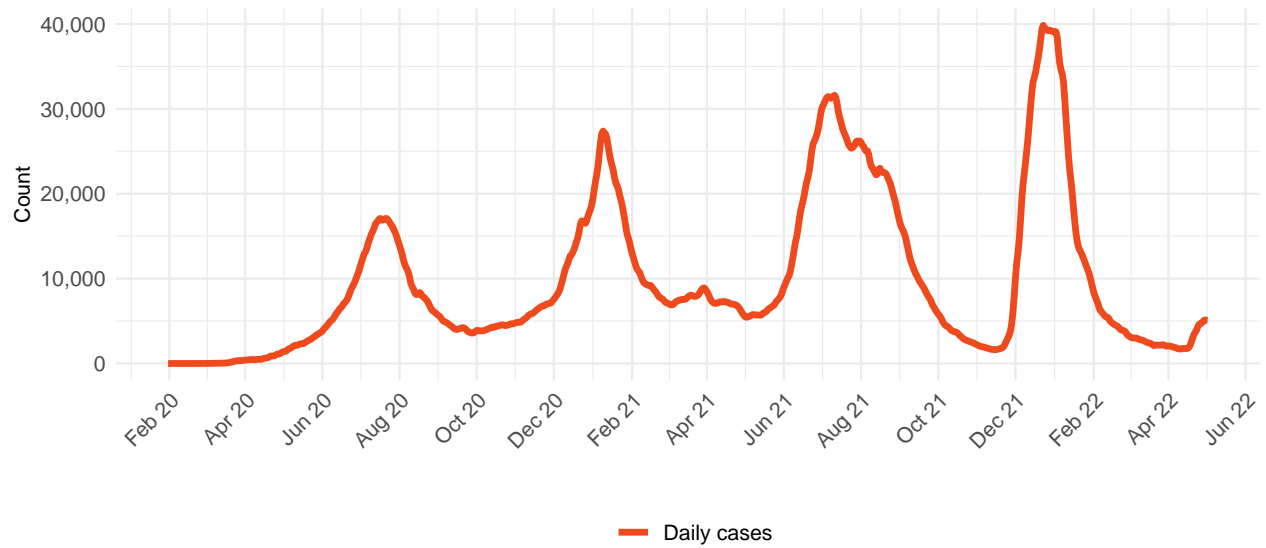
### Deaths

- In our **reference scenario**, our model projects 176,000 cumulative reported deaths due to COVID-19 on September 1. This represents 6,800 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **reference scenario** will rise to 70 by July 9, 2022 (Figure 23.4).
- Under our **reference scenario**, our model projects 1,861,000 cumulative total deaths due to COVID-19 on September 1. This represents 44,000 additional deaths from May 2 to September 1 (Figure 23.5).

- In our **80% mask use scenario**, our model projects 173,000 cumulative reported deaths due to COVID-19 on September 1. This represents 4,700 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **80% mask use scenario** will rise to 50 by May 30, 2022 (Figure 23.4).
- In our **third dose scenario**, our model projects 175,000 cumulative reported deaths due to COVID-19 on September 1. This represents 6,700 additional deaths from May 2 to September 1. Daily reported COVID-19 deaths in the **third dose scenario** will rise to 70 by July 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, 19 countries will have high or extreme stress on intensive care unit (ICU) capacity (Figure 26.1).

**Model updates**

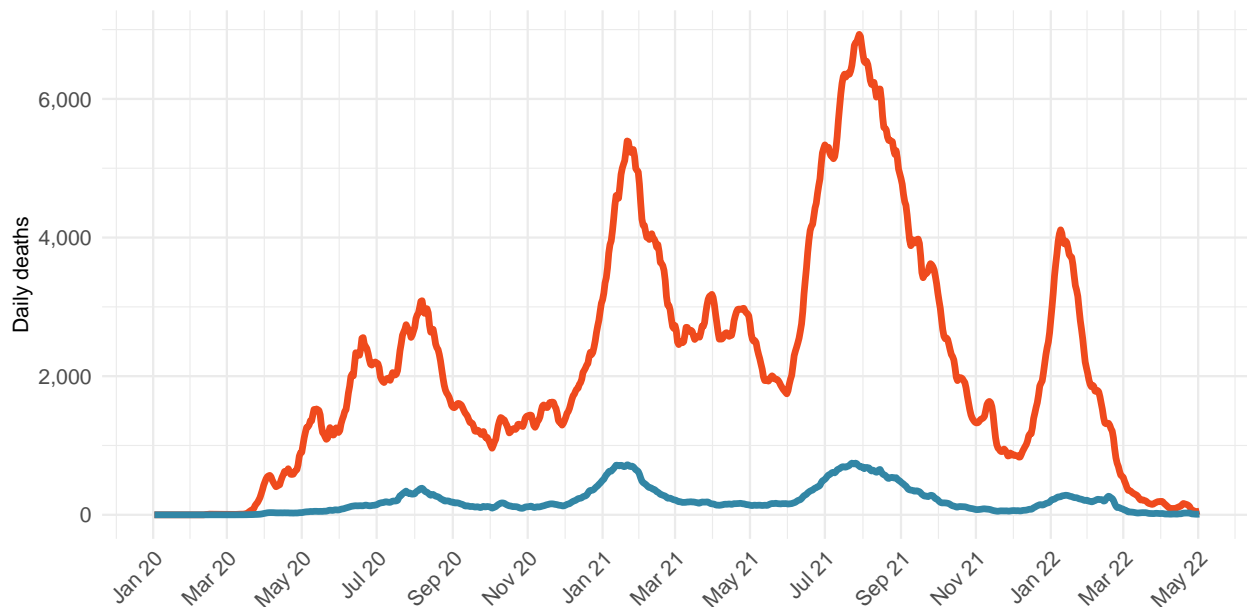
No model updates.

**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
Neonatal disorders	14,422	1
Lower respiratory infections	12,732	2
HIV/AIDS	12,224	3
Malaria	11,351	4
Diarrheal diseases	11,088	5
Ischemic heart disease	8,306	6
Stroke	8,063	7
Tuberculosis	7,097	8
Congenital birth defects	3,721	9
Cirrhosis and other chronic liver diseases	3,615	10
COVID-19	377	48

**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

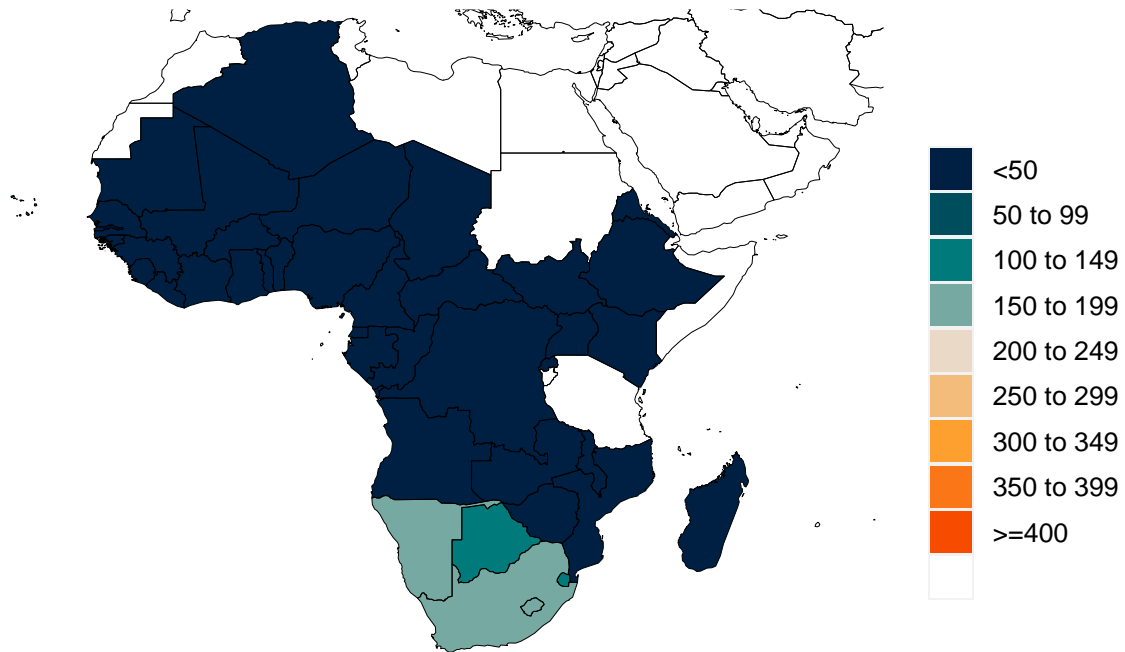


Figure 4.2: Daily total COVID-19 death rate per 1 million

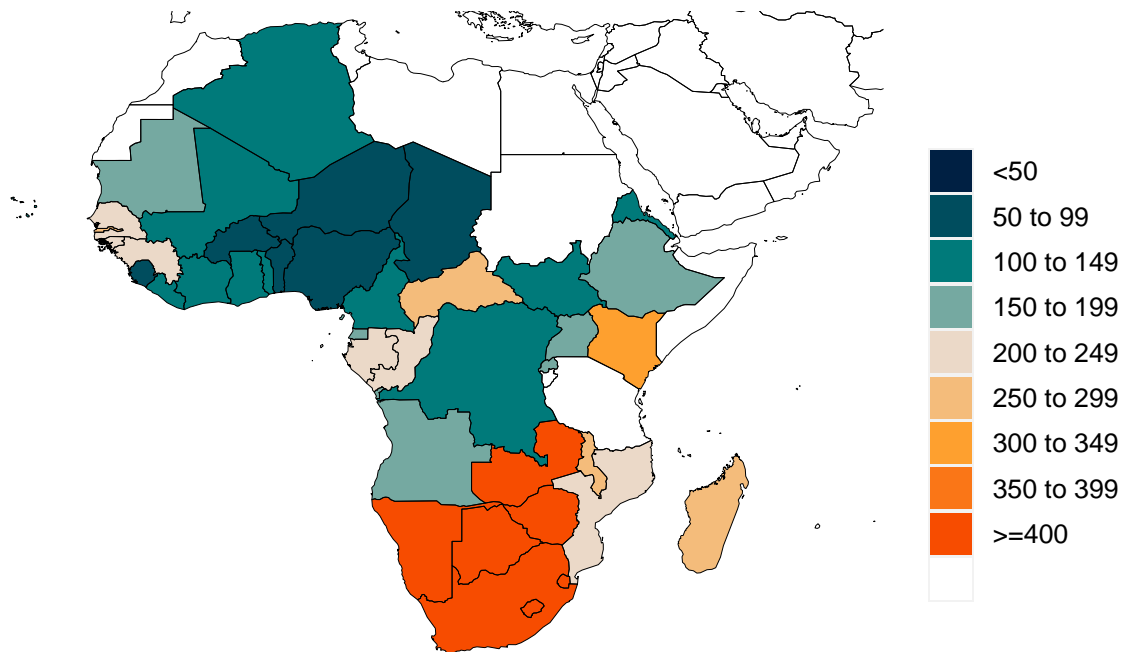


Cumulative COVID-19 deaths per 100,000 on May 2, 2022

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

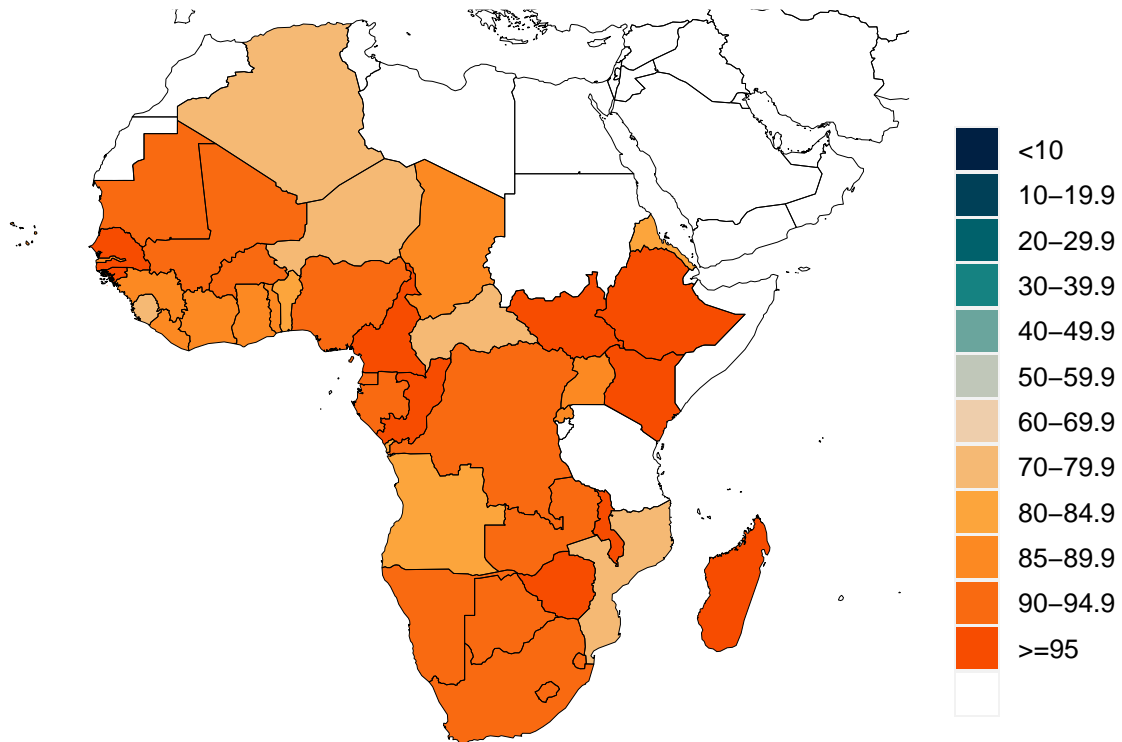


**Figure 5.2: Total cumulative COVID-19 deaths per 100,000**

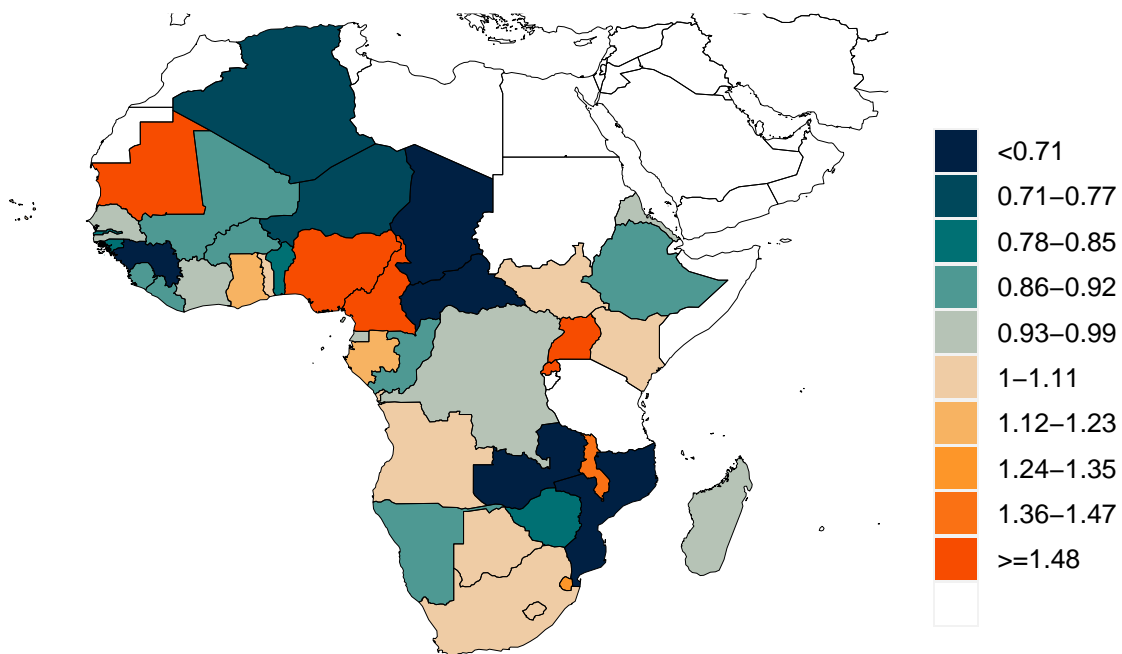




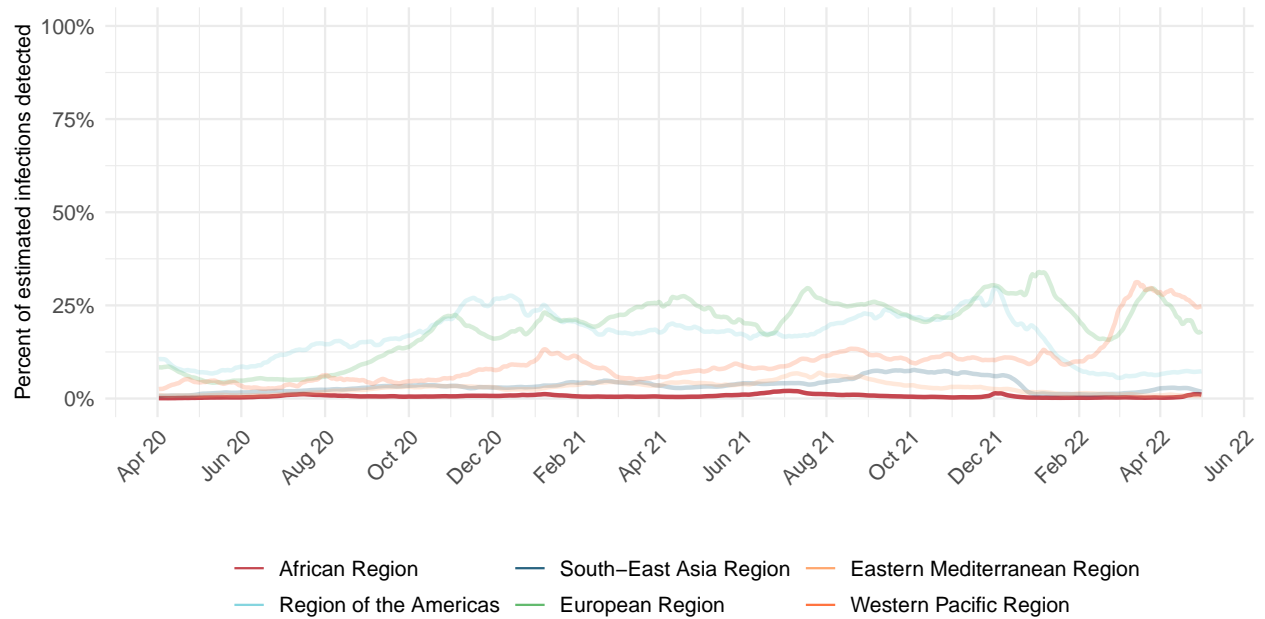
**Figure 6.1: Estimated percent of the population infected with COVID-19 on May 2, 2022**



**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.

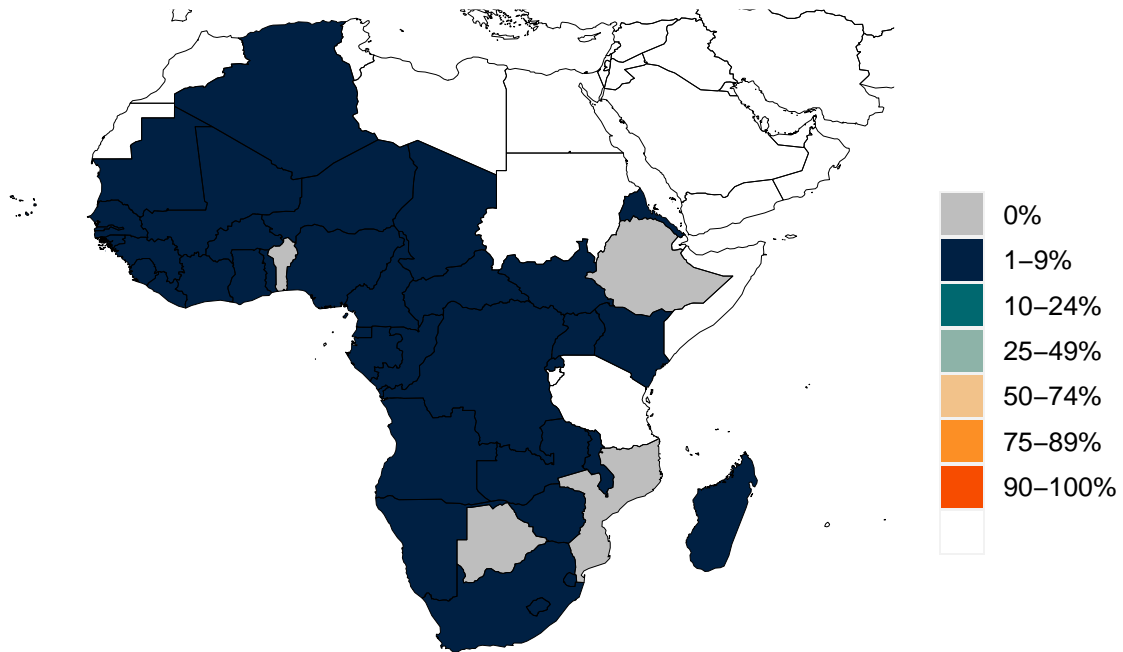


**Figure 8.1: Percent of estimated COVID-19 infections detected.** This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model. Due to measurement errors in cases and testing rates, the infection-detection rate can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

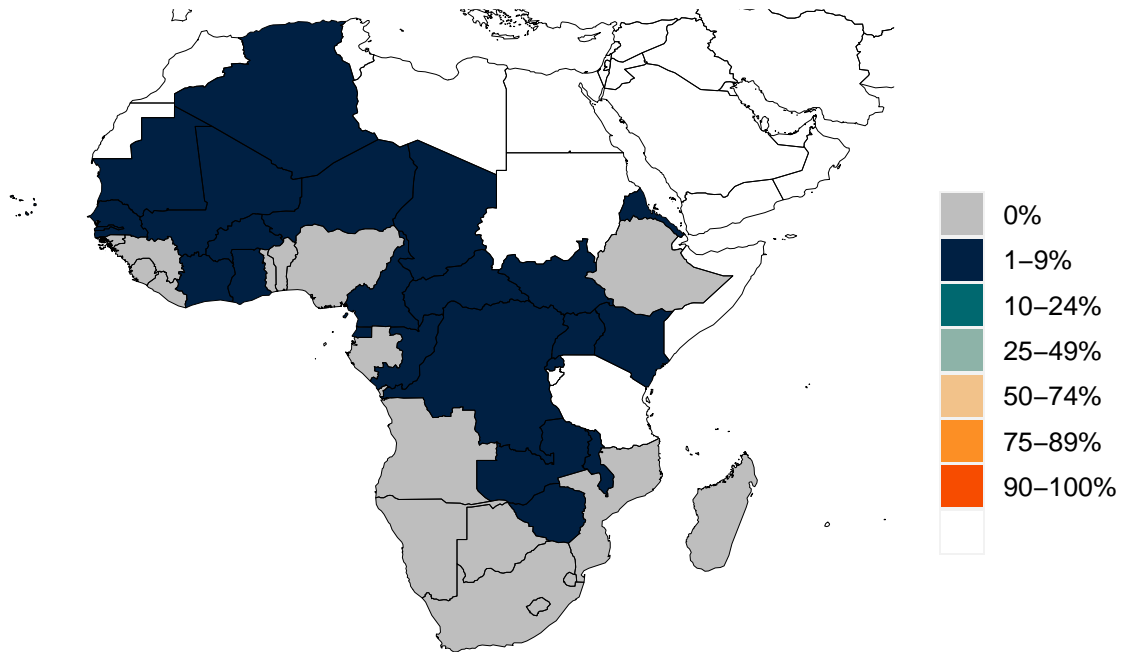
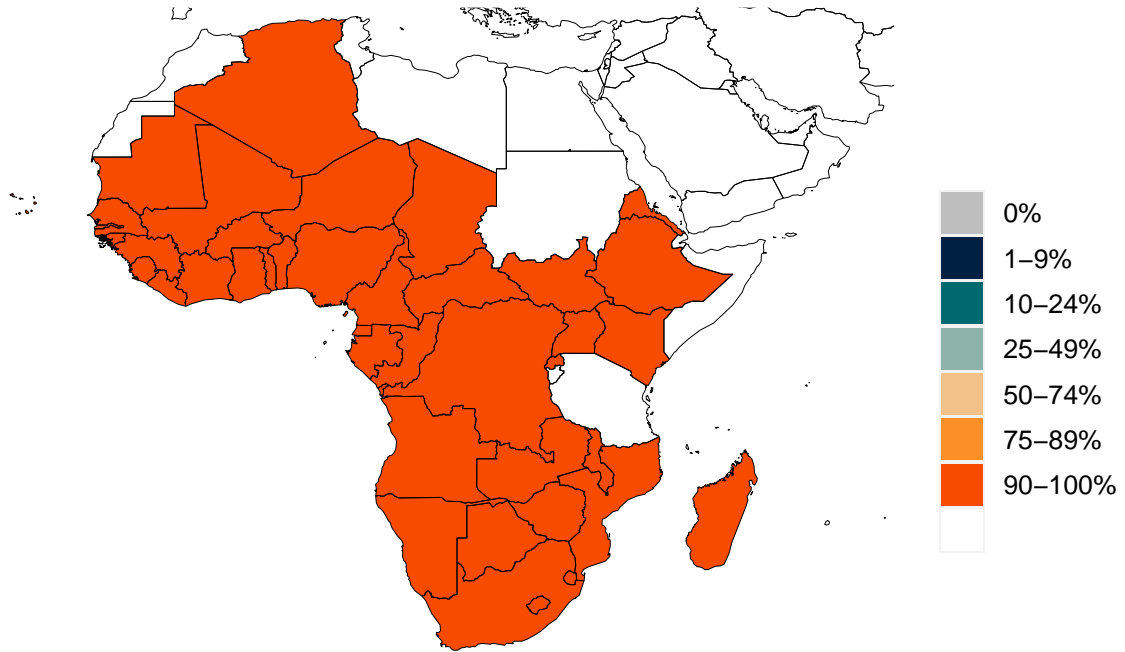
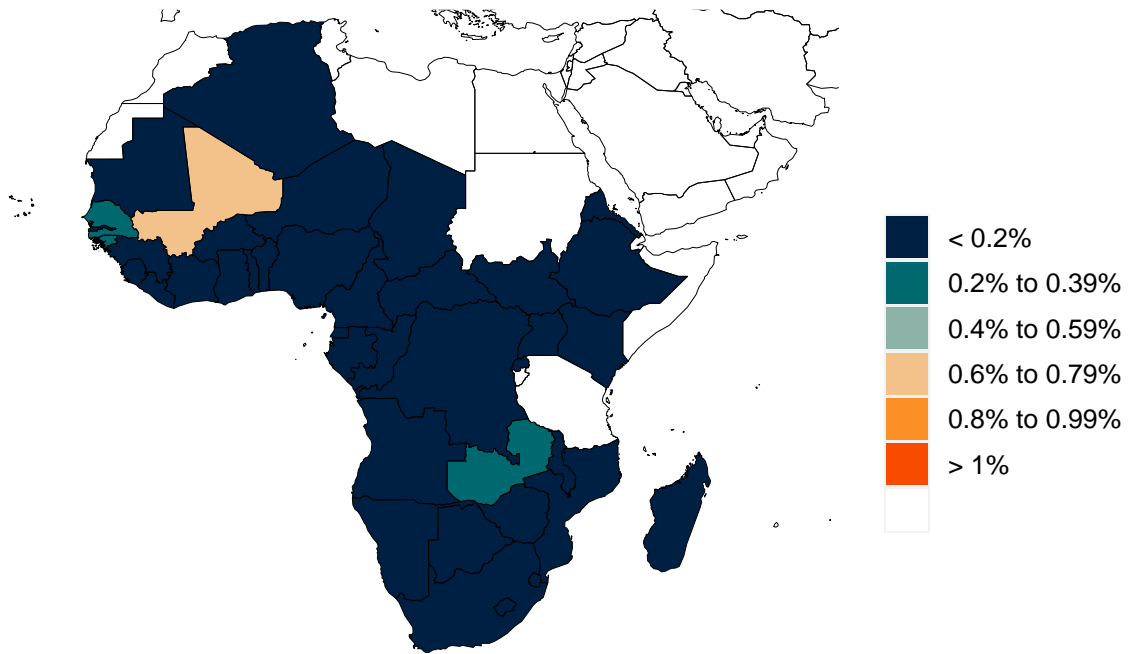


Figure 9.5: Estimated percent of new infections that are Omicron variant



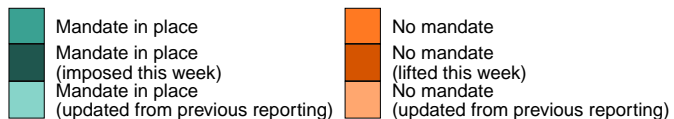
**Figure 10.1: Infection-fatality rate on May 2, 2022.** This is estimated as the ratio of COVID-19 deaths to estimated daily COVID-19 infections.



Critical drivers

Table 2: Current mandate implementation

	Primary school closure	Secondary school closure	Higher school closure	Entry restrictions for some non-residents	Entry restrictions for all non-residents	Individual movements restricted	Curfew for businesses	Individual curfew	Gathering limit: 6 indoor, 10 outdoor	Gathering limit: 10 indoor, 25 outdoor	Gathering limit: 25 indoor, 50 outdoor	Gathering limit: 50 indoor, 100 outdoor	Gathering limit: 100 indoor, 250 outdoor	Restaurants closed	Bars closed	Restaurants / bars closed	Restaurants / bars curbside only	Gyms, pools, other leisure closed	Non-essential retail closed	Non-essential retail curbside only	Non-essential workplaces closed	Stay home order	Stay home fine	Mask mandate	Mask mandate fine	
Algeria																										
Angola																										
Benin																										
Botswana																										
Burkina Faso																										
Burundi																										
Cabo Verde																										
Cameroon																										
Central African Republic																										
Chad																										
Comoros																										
Congo																										
Côte d'Ivoire																										
Democratic Republic of the Congo																										
Equatorial Guinea																										
Eritrea																										
Eswatini																										
Ethiopia																										
Gabon																										
Gambia																										
Ghana																										
Guinea																										
Guinea-Bissau																										
Kenya																										
Lesotho																										
Liberia																										
Madagascar																										
Malawi																										
Mali																										
Mauritania																										
Mauritius																										
Mozambique																										
Namibia																										
Niger																										
Nigeria																										
Rwanda																										
Sao Tome and Principe																										
Senegal																										
Seychelles																										
Sierra Leone																										
South Africa																										
South Sudan																										
Togo																										
Uganda																										
United Republic of Tanzania																										
Zambia																										
Zimbabwe																										



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

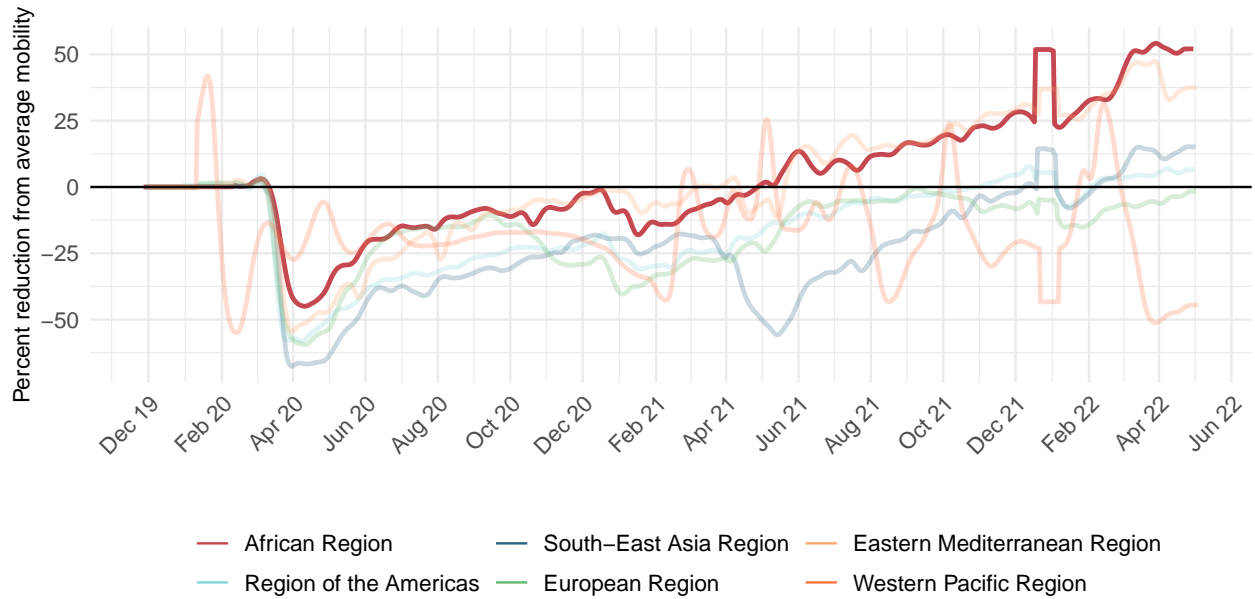




Figure 12.1: Mobility level as measured through smartphone app use, compared to January 2020 baseline (percent) on May 2, 2022

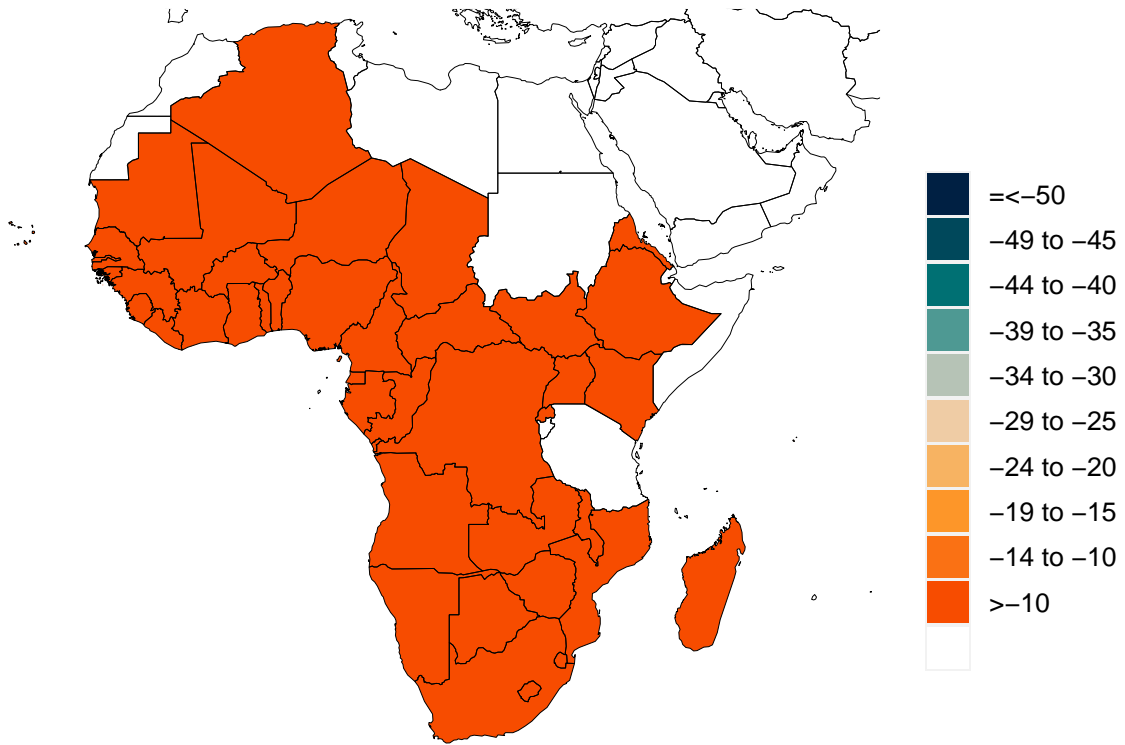


Figure 13.1: Trend in the proportion of the population reporting always wearing a mask when leaving home

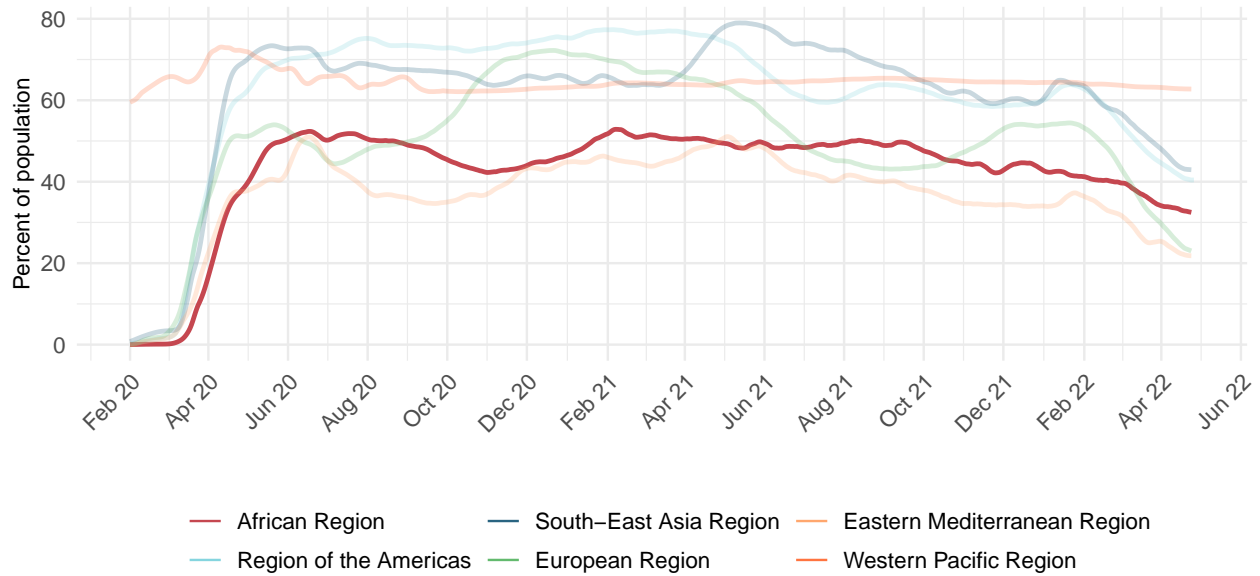
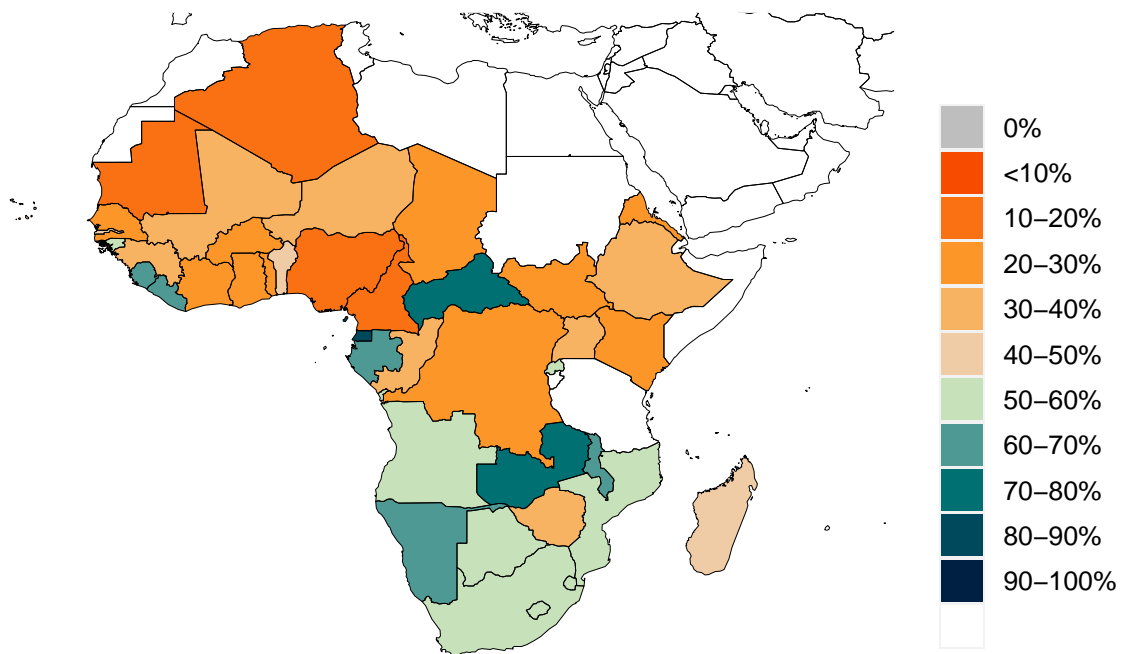
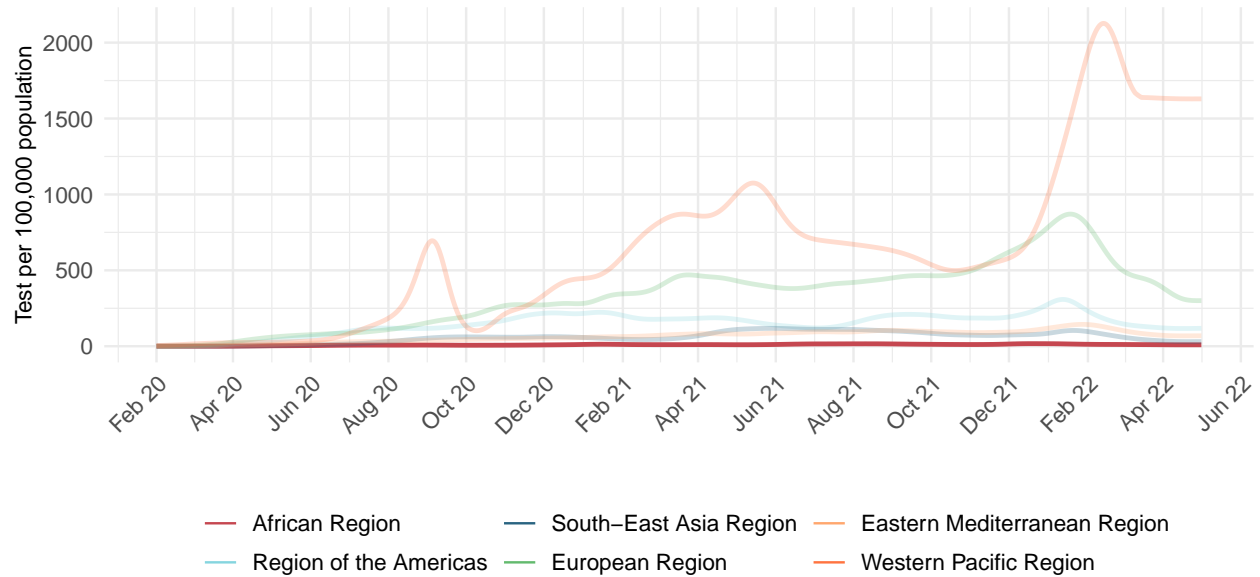
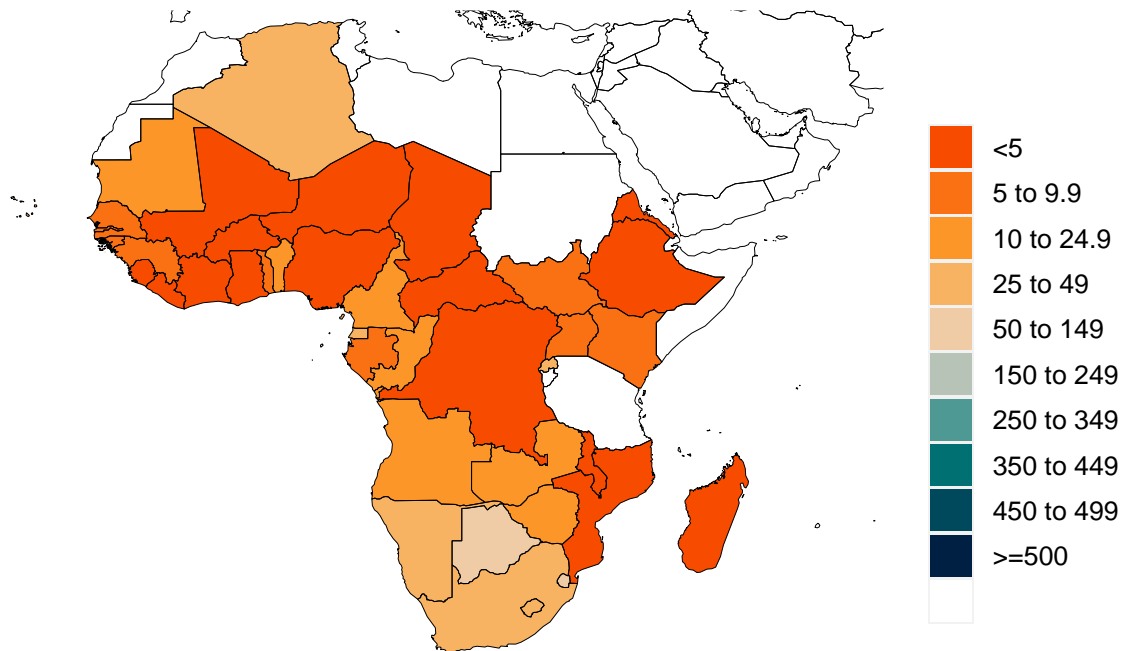


Figure 14.1: Proportion of the population reporting always wearing a mask when leaving home on May 2, 2022



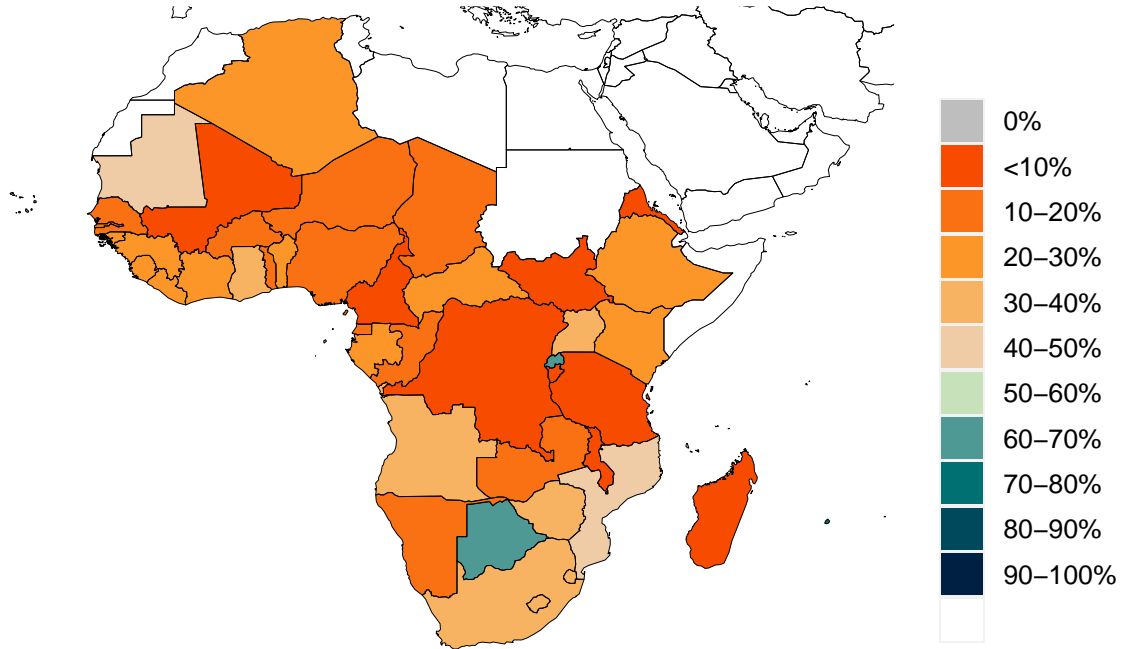
**Figure 15.1: Trend in COVID-19 diagnostic tests per 100,000 people**

**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](#).

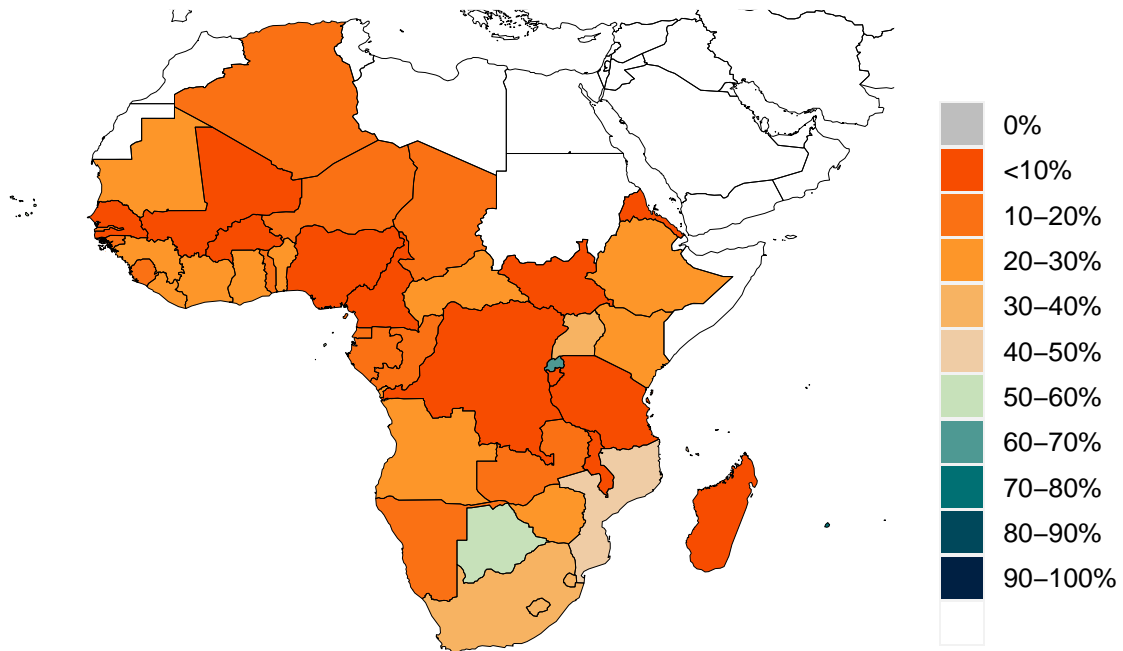
Vaccine	Effectiveness at preventing											
	Ancestral		Alpha		Beta		Gamma		Delta		Omicron	
	Severe disease	Infection	Severe disease	Infection	Severe disease	Infection	Severe disease	Infection	Severe disease	Infection	Severe disease	Infection
AstraZeneca	94%	63%	94%	63%	94%	69%	94%	69%	94%	69%	71%	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

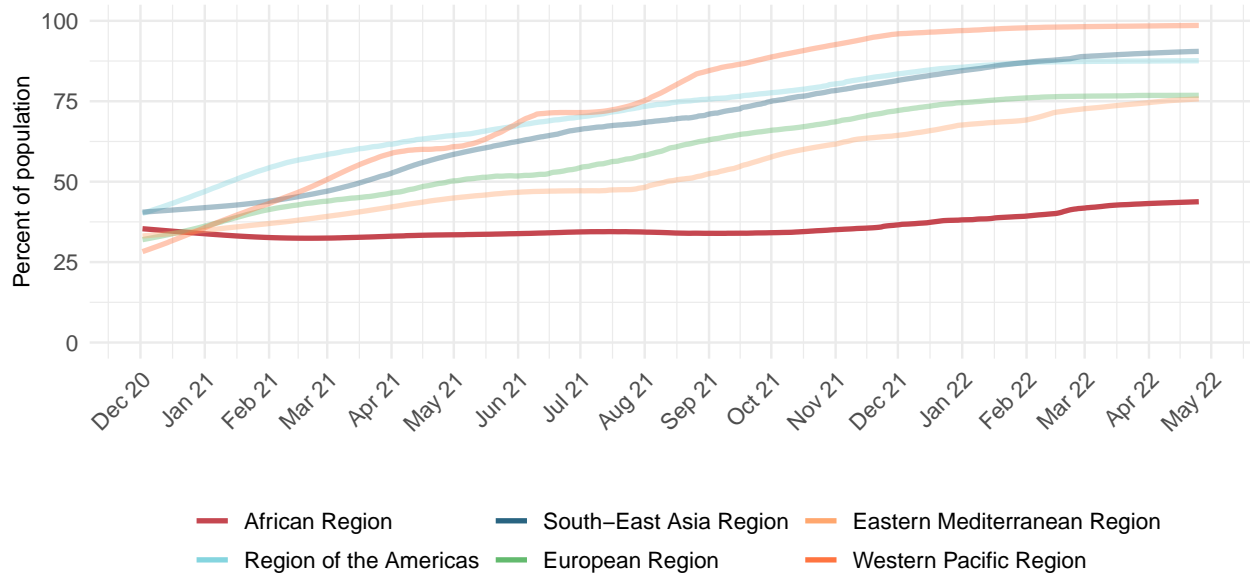
**Figure 17.1: Percent of the population having received one dose of a COVID-19 vaccine**



**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.

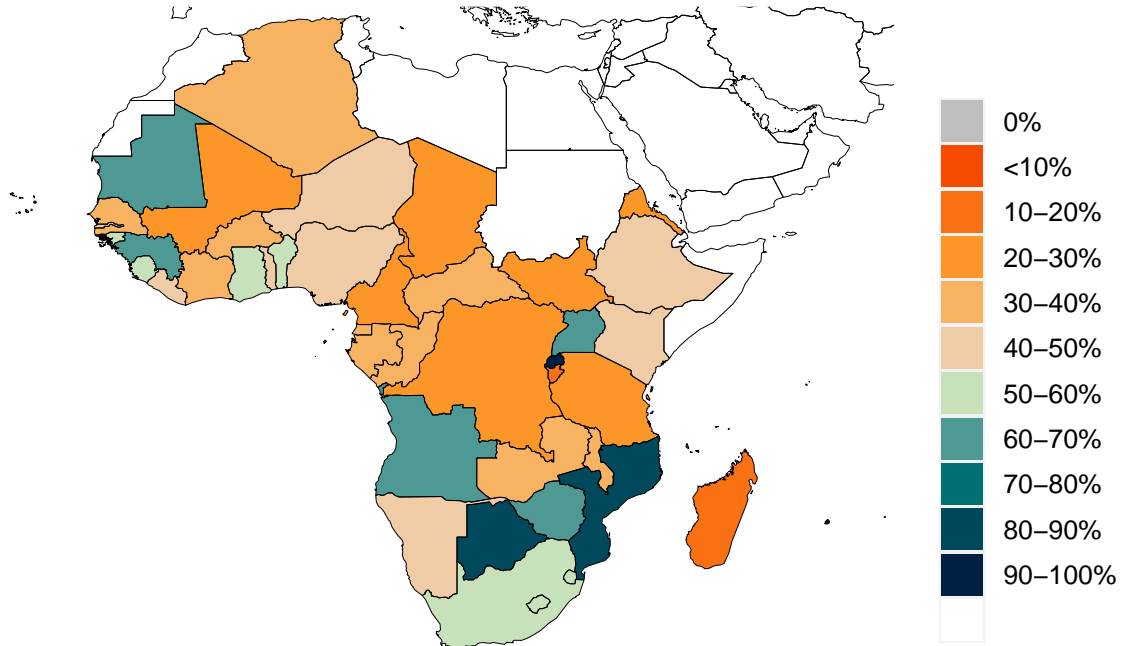
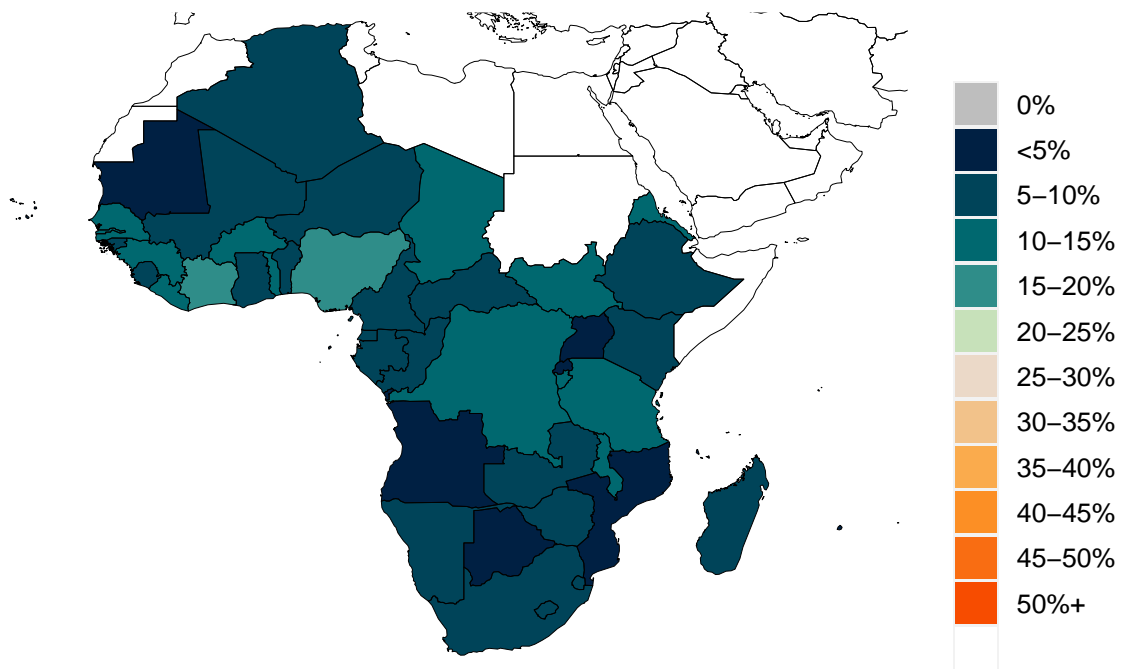
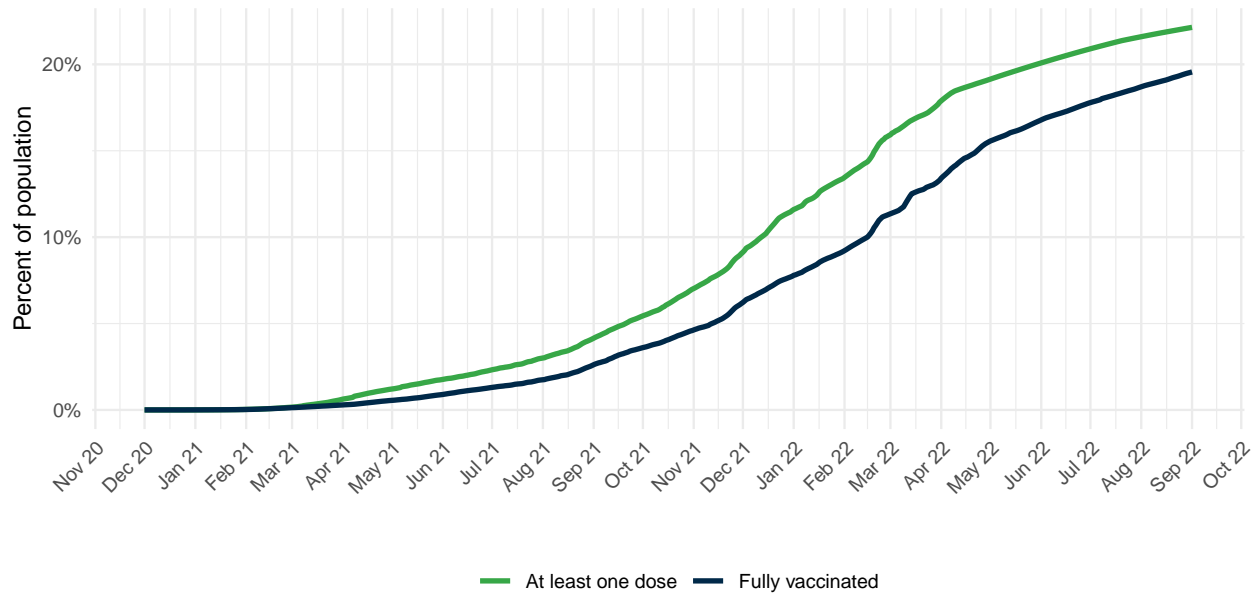


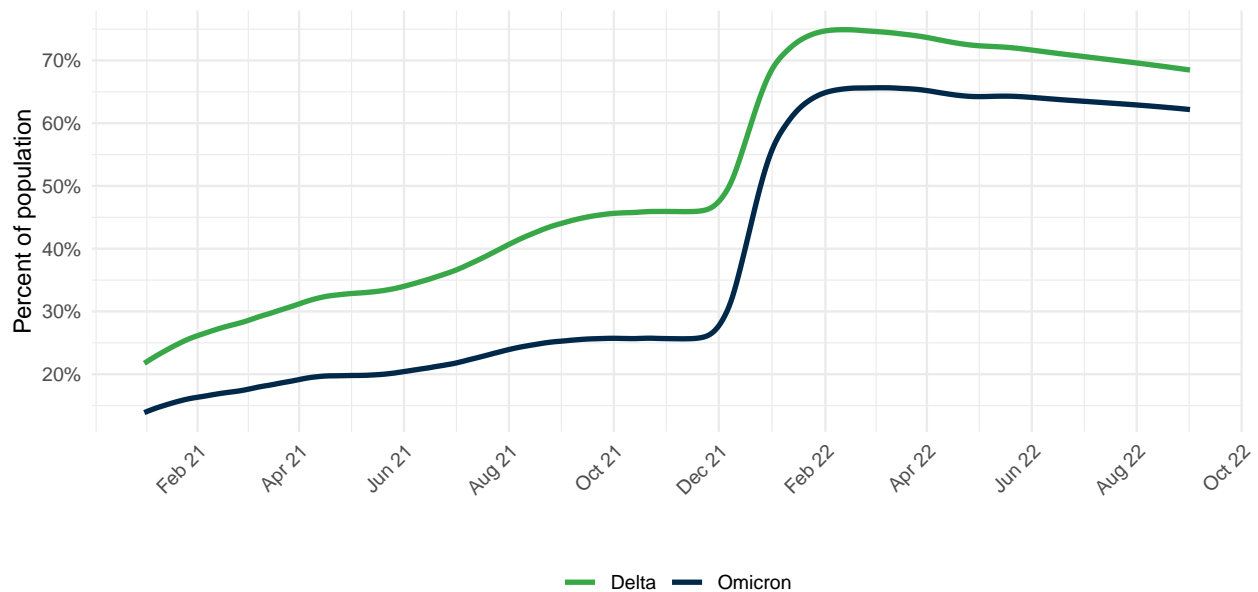
Figure 20.1: Estimated proportion of the total population that is not vaccinated but willing to be vaccinated as of April 25, 2022



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



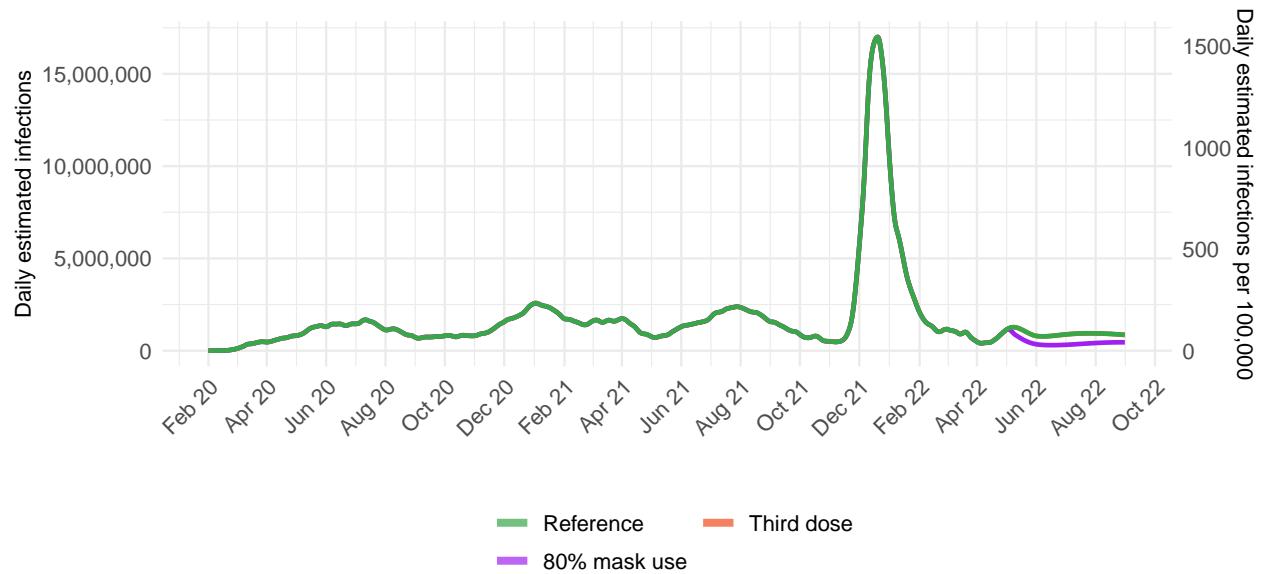
**Figure 22.1: Percent of people who are immune to Delta or Omicron.** Immunity is based on protection due to prior vaccination and infection(s). Moreover, variant-specific immunity is also based on variant-variant specific protection.





## 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**

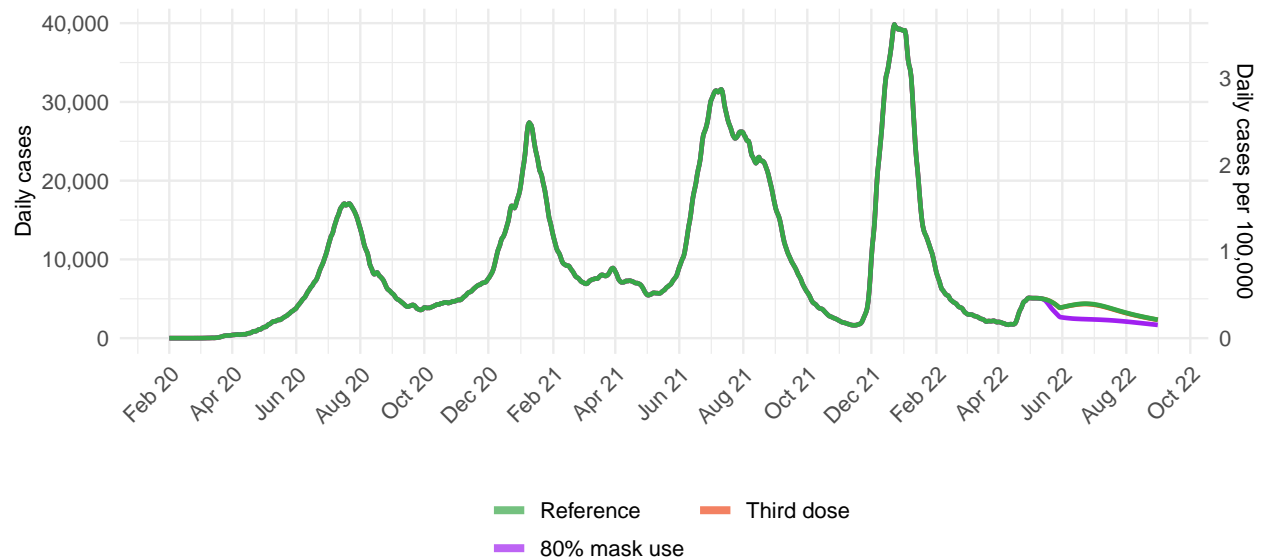
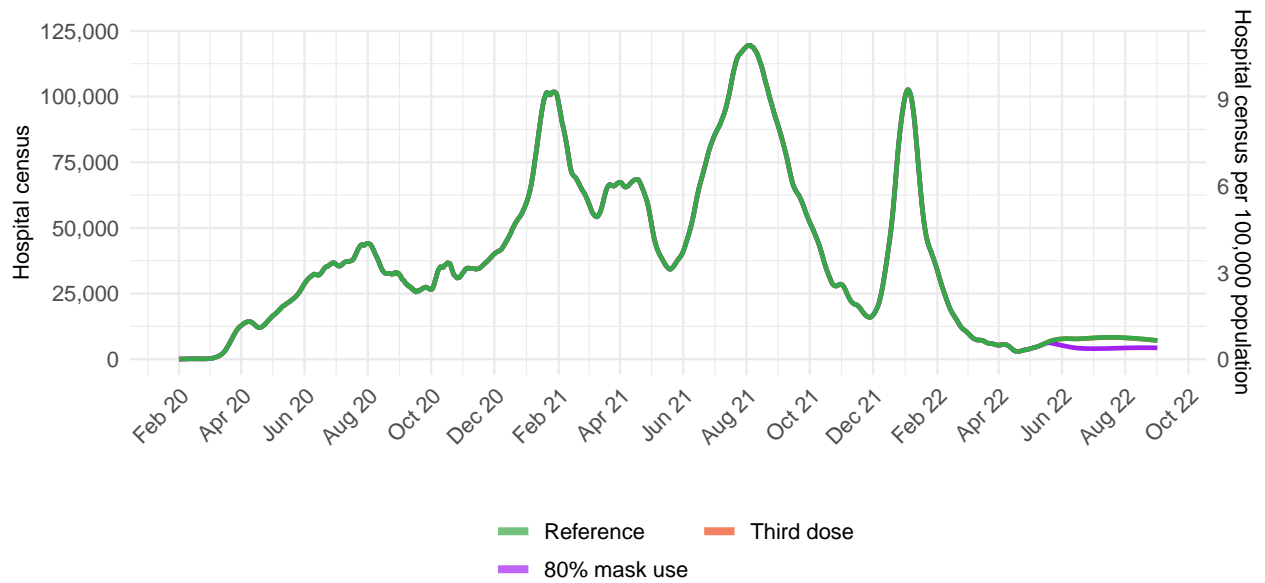


Figure 23.3: Daily COVID-19 hospital census until September 01, 2022 for three scenarios



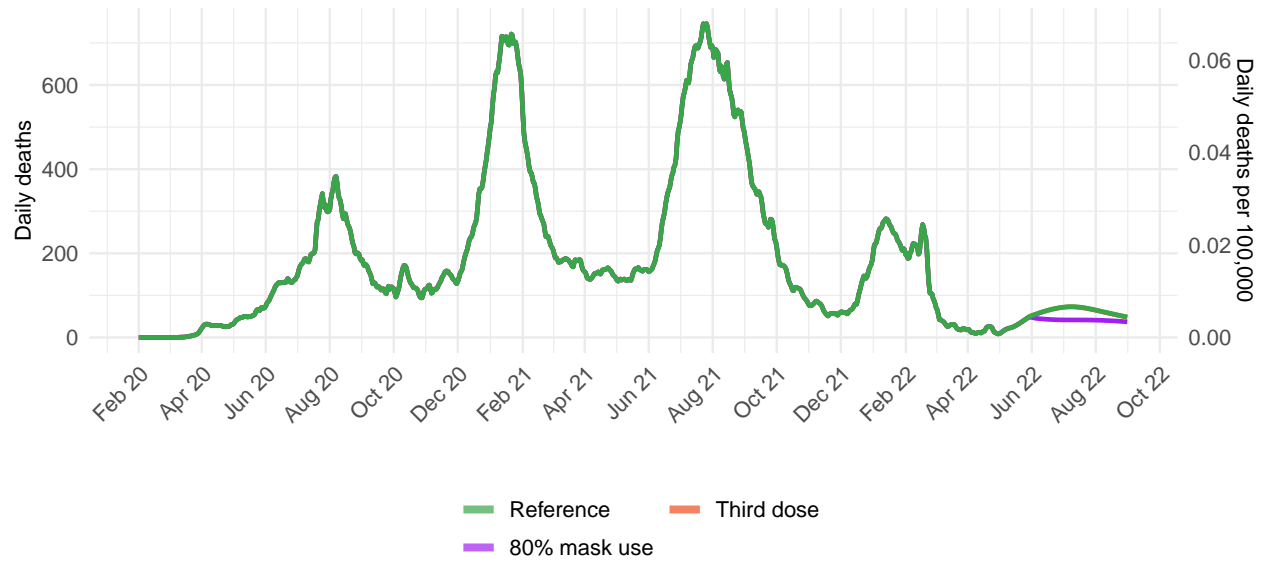
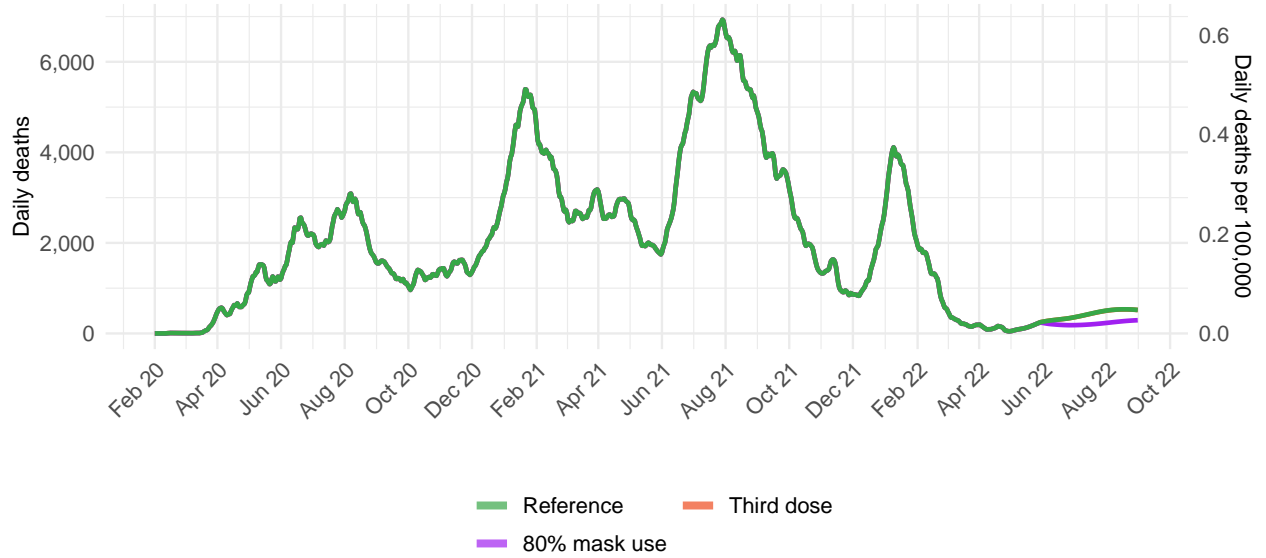
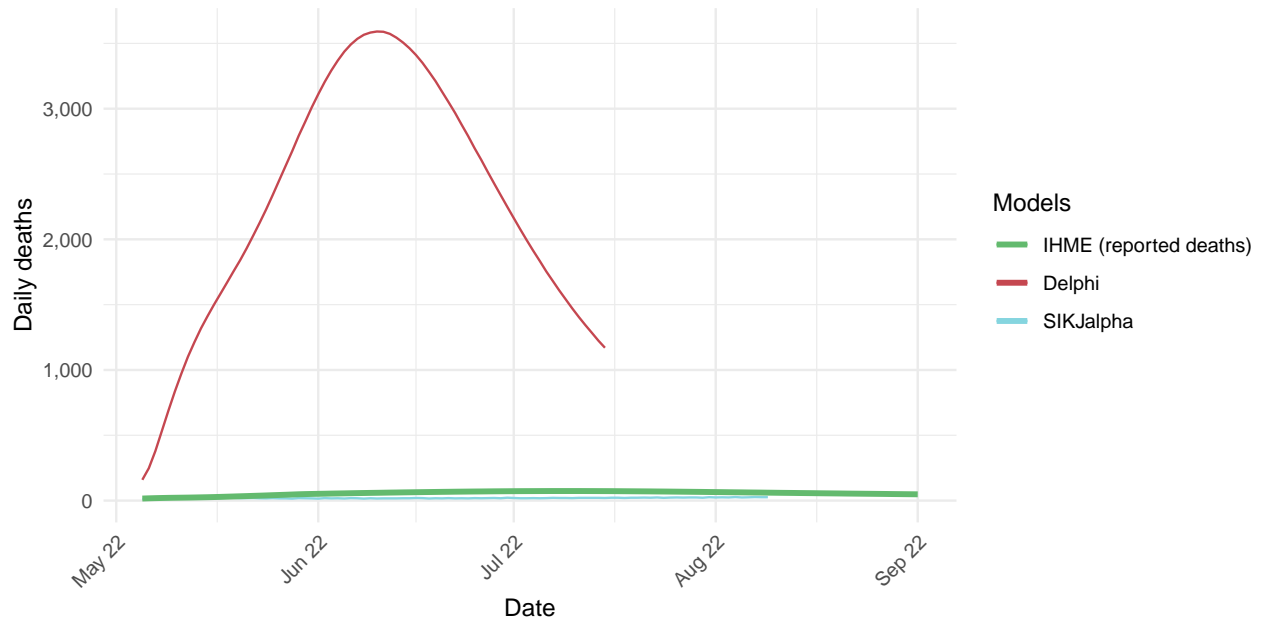
**Figure 23.4: Reported daily COVID-19 deaths per 100,000**

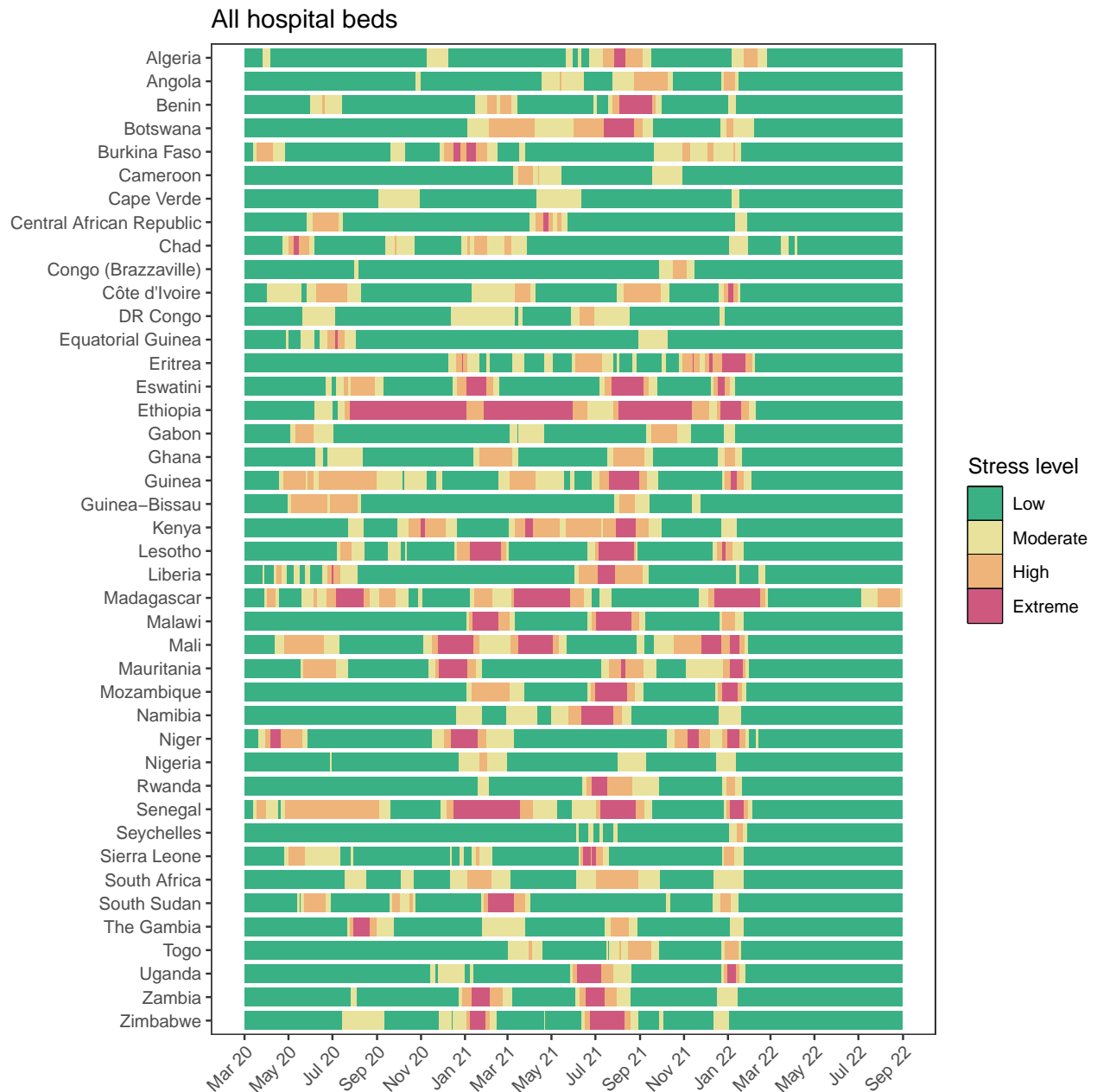
Figure 23.5: Total daily COVID-19 deaths per 100,000



**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>.