

COVID-19 Results Briefing

The African Region

July 14, 2021

This document contains summary information on the latest projections from the IHME model on COVID-19 in the African Region. The model was run on July 13, 2021, with data through July 12, 2021.

The third wave of COVID-19 in the African Region surges on, surpassing all prior peaks in reported cases, which increased to 30,600 per day on average compared to 29,900 the week before. Reported daily deaths rose by nearly 13% to 620 per day, while excess deaths due to COVID-19 were 2.9 times larger than the number of reported deaths. This makes COVID-19 the number 3 cause of death in the African Region this week. The Delta variant is driving surges in many, but not all, countries in sub-Saharan Africa, including Malawi, Mozambique, Zimbabwe, Nigeria, and Senegal, and smaller surges in many other countries. Some of these surges have peaked already, such as in Uganda, Zambia, and Rwanda. High mobility and social interaction, limited mask wearing, and the continued slow pace of vaccination coupled with highly transmissible variants fuel current surges. In our reference scenario, we project 155,000 cumulative deaths and 455,000 cumulative excess deaths on November 1, representing an additional 51,000 and 158,000 lives lost, respectively, between July 12 and November 1. Universal mask use could save 14,000 lives, and up to 45,000 lives if the potential effect of excess deaths is taken into account. Ongoing inequities in access to vaccines as well as increasing vaccine hesitancy are particularly concerning as rapid vaccine scale-up is the most effective way to curb fast-moving epidemics throughout the region. Bolstering vaccine confidence, implementing social distancing mandates as transmission increases, and improving adherence to prevention measures remain critical strategies for countries to save lives and avoid overwhelming health systems.

Current situation

- Daily reported cases in the last week (through July 12) increased to 30,600 per day on average compared to 29,900 the week before (Figure 1).
- Reported deaths due to COVID-19 in the last week increased to 620 per day on average compared to 550 the week before (Figure 2).
- Excess deaths due to COVID-19 in the last week increased to 1,800 per day on average compared to 1,600 the week before (Figure 2). This makes COVID-19 the number 3 cause of death in the African Region this week (Table 1). Estimated excess daily deaths due to COVID-19 were 2.9 times larger than the reported number of deaths.
- The daily reported COVID-19 death rate is greater than 4 per million in Botswana, Namibia, Seychelles, and South Africa (Figure 3).
- The daily rate of excess deaths due to COVID-19 is greater than 4 per million in Botswana, Eswatini, Liberia, Namibia, Seychelles, South Africa, Zambia, and Zimbabwe (Figure 3).

- We estimated that 24% of people in the African Region have been infected as of July 12 (Figure 5).
- Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in 31 countries (Figure 6).
- The infection-detection rate in the African Region was close to 3% on July 12 (Figure 7).
- Based on the GISAID and various national databases, combined with our variant spread model, we estimate the current prevalence of variants of concern (Figure 8). We estimate that B.1.351 is circulating in 19 countries, that B.1.617 is circulating in 31 countries, and that P.1 is circulating in 0 countries.

Trends in drivers of transmission

- Mobility last week was 2% lower than the pre-COVID-19 baseline (Figure 10). Mobility was near baseline (within 10%) in 42 countries. Mobility was lower than 30% of baseline in Seychelles and Uganda.
- As of July 12, in the COVID-19 Trends and Impact Survey, 47% of people self-report that they always wore a mask when leaving their home, the same as last week (Figure 12).
- There were 17 diagnostic tests per 100,000 people on July 12 (Figure 14).
- In the African Region, 60.5% of people say they would accept or would probably accept a vaccine for COVID-19. This is down by 0.4 percentage points from last week. The fraction of the population who are open to receiving a COVID-19 vaccine ranges from 27% in Mali to 73% in Mozambique (Figure 18).
- In our current reference scenario, we expect that 106.7 million people will be vaccinated by November 1 (Figure 19).

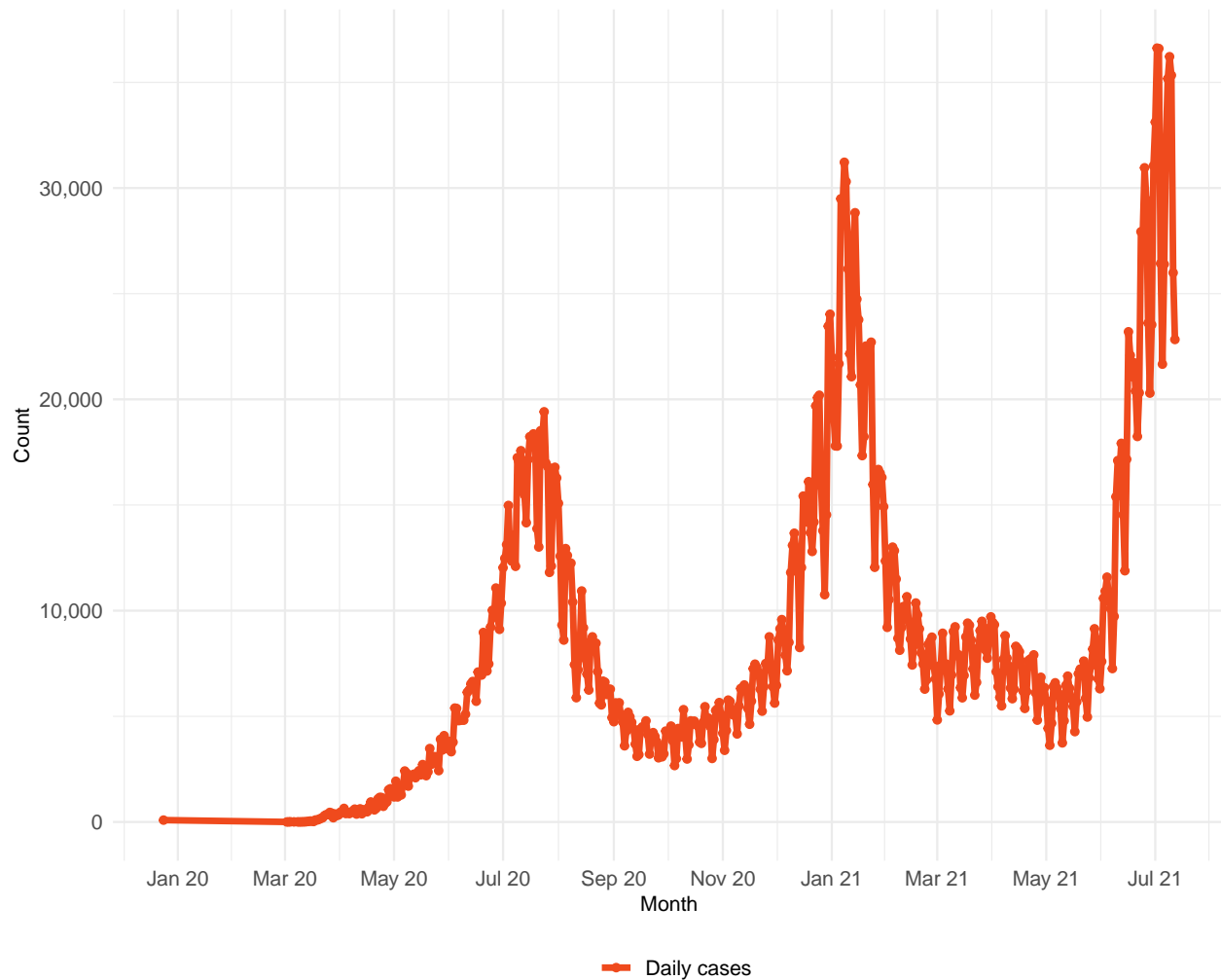
Projections

- In our **reference scenario**, which represents what we think is most likely to happen, our model projects 155,000 cumulative reported deaths due to COVID-19 on November 1. This represents 51,000 additional deaths from July 12 to November 1. Daily reported deaths will rise to 810 by July 28, 2021 (Figure 20).
- Under our **reference scenario**, our model projects 455,000 cumulative excess deaths due to COVID-19 on November 1. This represents 158,000 additional deaths from July 12 to November 1. Daily excess deaths due to COVID-19 will rise to 2,370 by July 28, 2021 (Figure 20).
- If **universal mask coverage (95%)** were attained in the next week, our model projects 14,000 fewer cumulative reported deaths compared to the reference scenario on November 1.

- If **universal mask coverage (95%)** were attained in the next week, our model projects 45,000 fewer cumulative excess deaths due to COVID-19 compared to the reference scenario on November 1.
- Under our **worse scenario**, our model projects 167,000 cumulative reported deaths on November 1, an additional 12,000 deaths compared to our reference scenario. Daily reported deaths in the worse scenario will rise to 860 by August 8, 2021 (Figure 20).
- Under our **worse scenario**, our model projects 497,000 cumulative excess deaths due to COVID-19 on November 1, an additional 42,000 deaths compared to our reference scenario. Daily excess deaths due to COVID-19 in the worse scenario will rise to 2,570 by August 8, 2021 (Figure 20).
- By November 1, we project that 17,900 lives will be saved by the projected vaccine rollout. This does not include lives saved through vaccination that has already been delivered.
- Daily infections in the reference scenario will rise to 1,104,000 by July 17, 2021 (Figure 25). Daily infections in the worse scenario will rise to 1,723,650 by September 23, 2021 (Figure 25).
- Figure 22 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.
- At some point from July through November 1, 22 countries will have high or extreme stress on hospital beds (Figure 23). At some point from July through November 1, 41 countries will have high or extreme stress on intensive care unit (ICU) capacity (Figure 24).

Model updates

No model updates.

Figure 1. Reported daily COVID-19 cases

Table 1. Ranking of excess 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
COVID-19	12,294	3
HIV/AIDS	12,224	4
Malaria	11,351	5
Diarrheal diseases	11,088	6
Ischemic heart disease	8,306	7
Stroke	8,063	8
Tuberculosis	7,097	9
Congenital birth defects	3,721	10

Figure 2. Smoothed trend estimate of reported daily COVID-19 deaths (blue) and excess daily deaths due to COVID-19 (orange).

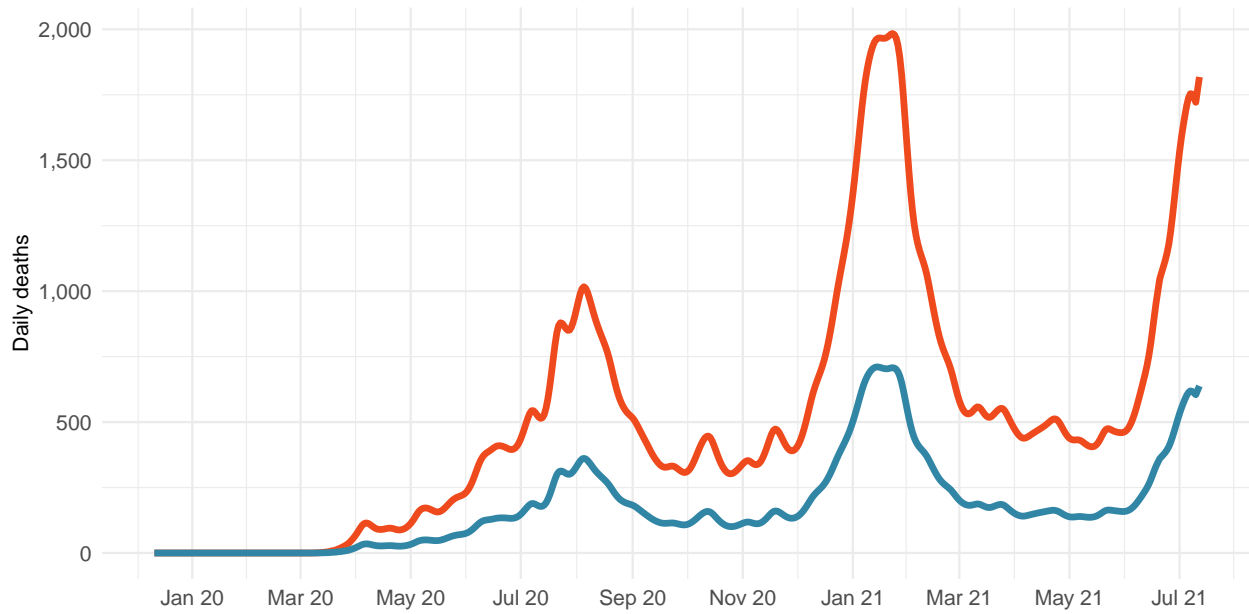
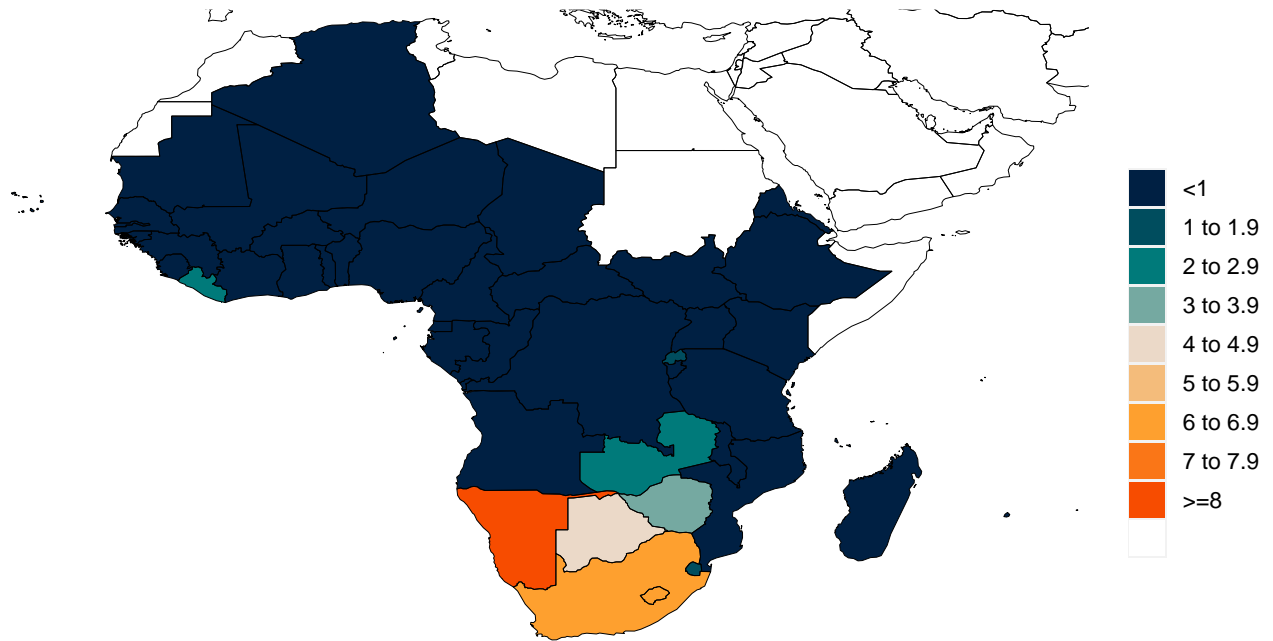


Figure 3. Daily COVID-19 death rate per 1 million on July 12, 2021

A. Daily reported COVID-19 death rate per 1 million



B. Daily excess COVID-19 death rate per 1 million

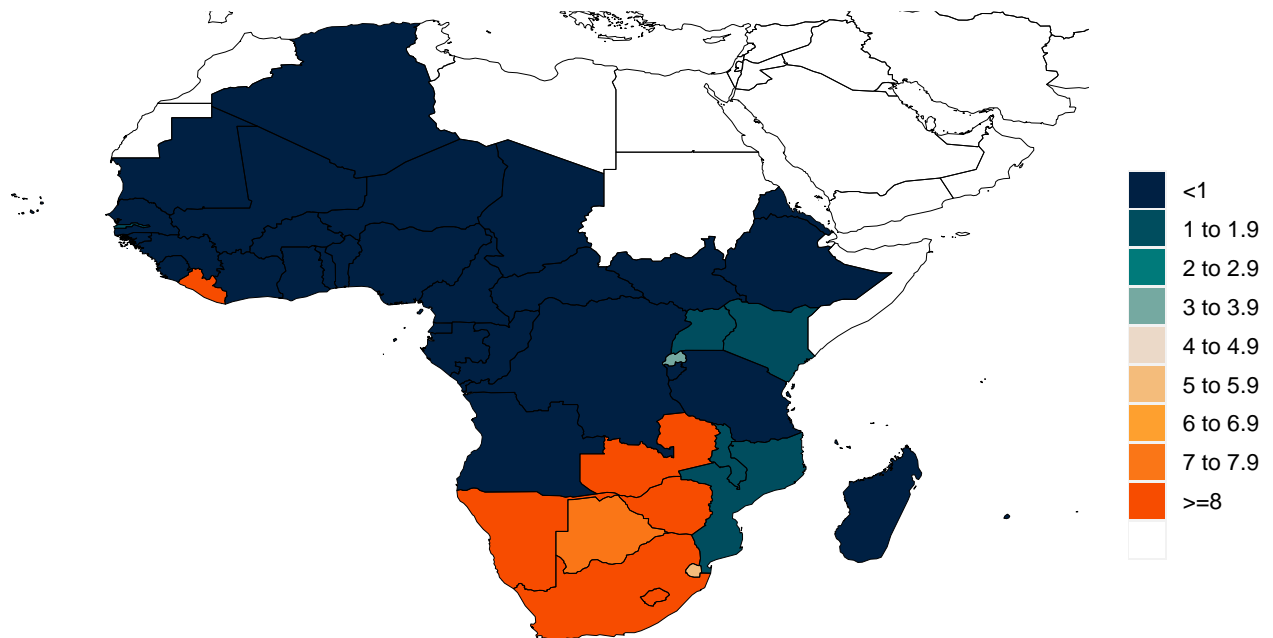
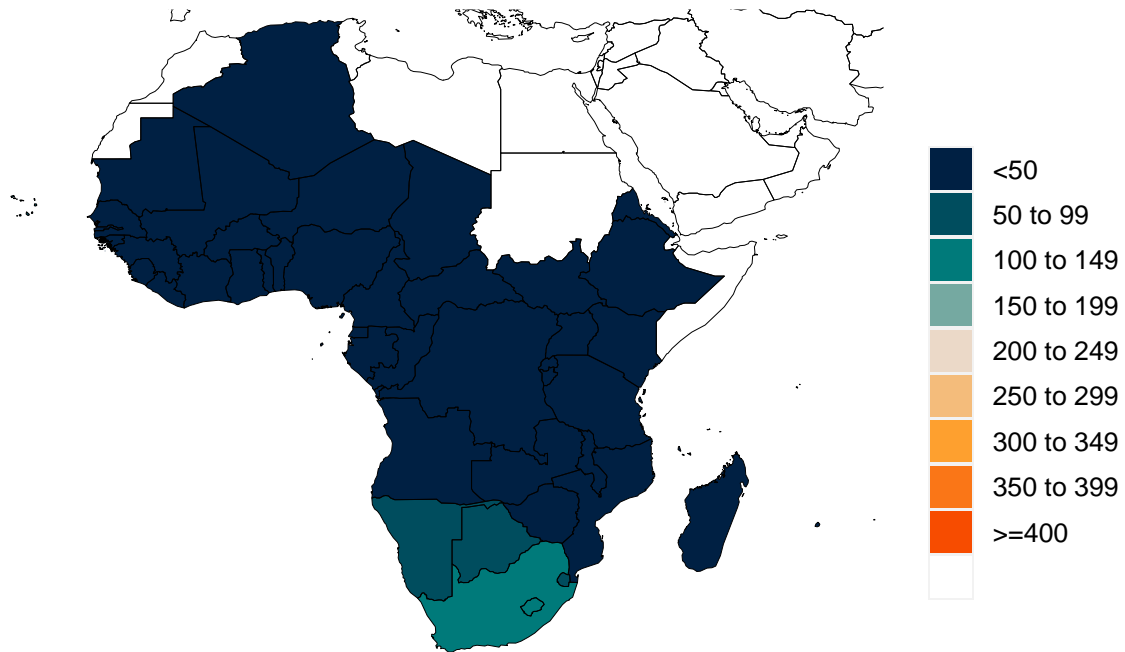


Figure 4. Cumulative COVID-19 deaths per 100,000 on July 12, 2021

A. Reported cumulative COVID-19 deaths per 100,000



B. Excess cumulative COVID-19 deaths per 100,000

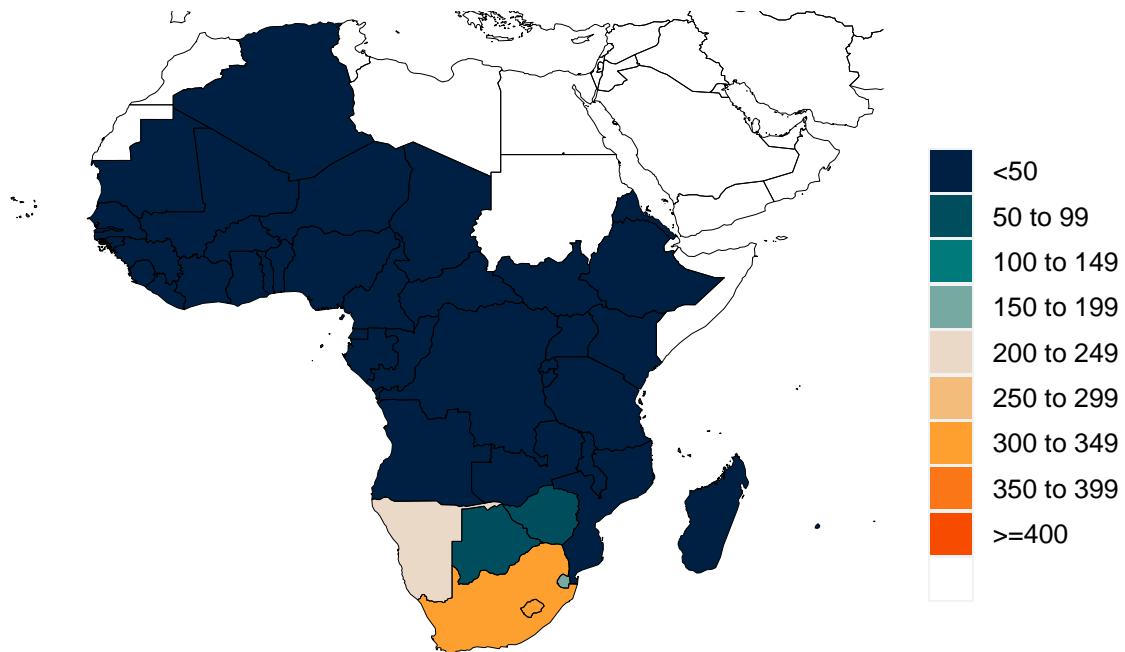


Figure 5. Estimated percent of the population infected with COVID-19 on July 12, 2021

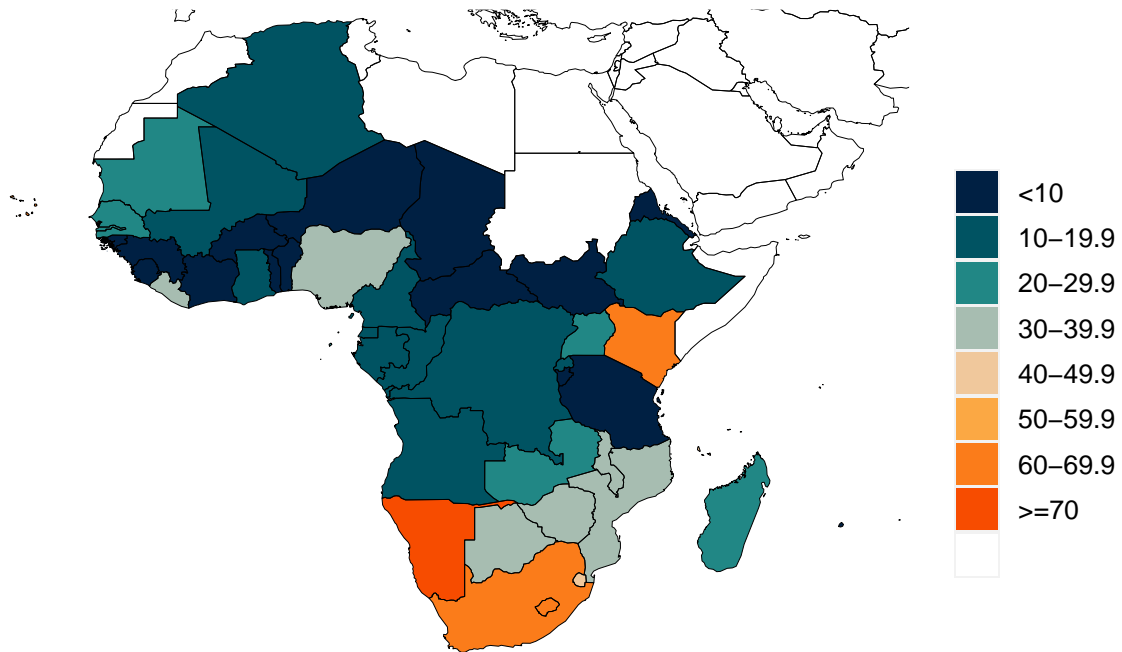


Figure 6. Mean effective R on July 1, 2021. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline, all other things being held the same.

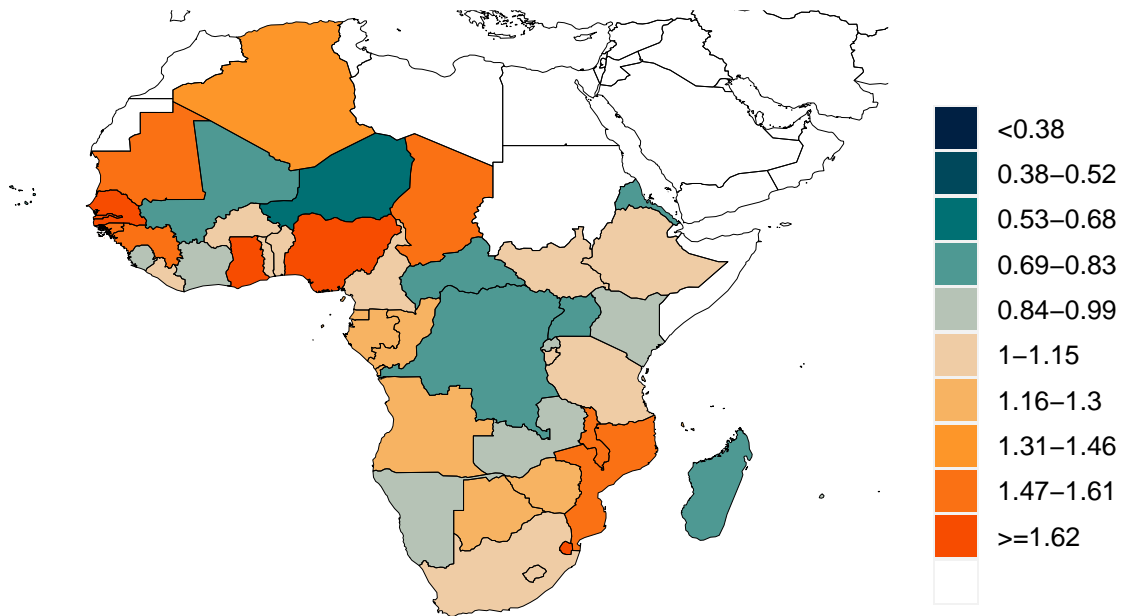


Figure 7. Percent of COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model. Due to measurement errors in cases and testing rates, the infection-detection rate can exceed 100% at particular points in time.

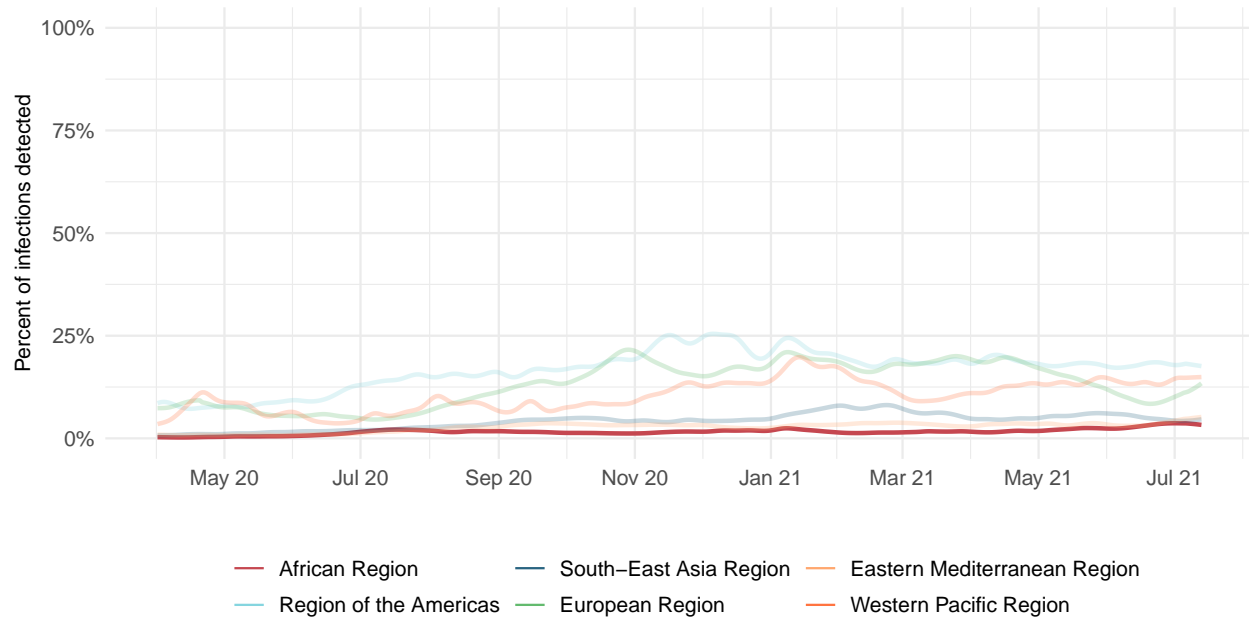
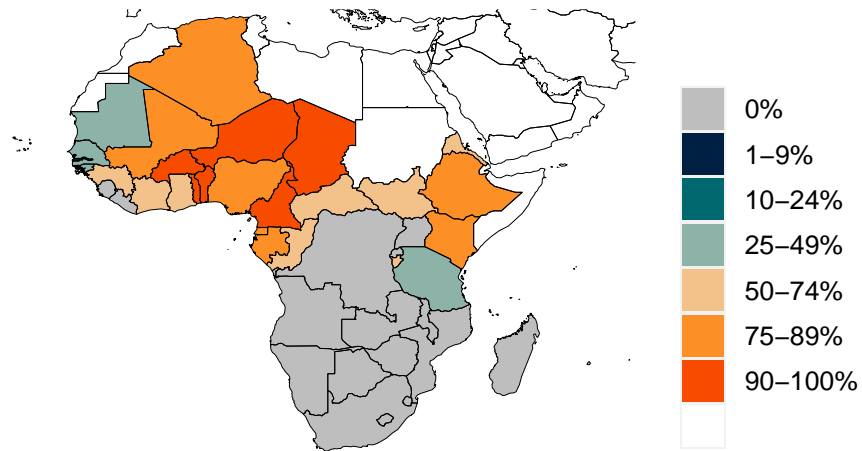
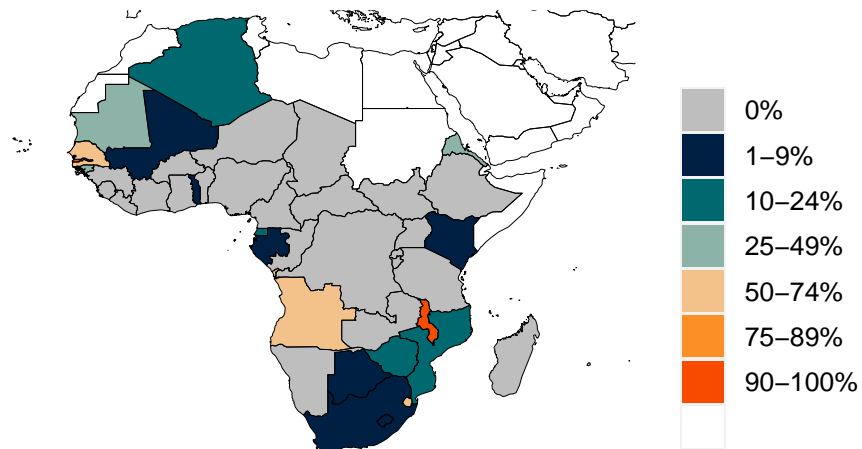


Figure 8. Estimated percent of circulating SARS-CoV-2 for primary variant families on July 12, 2021.

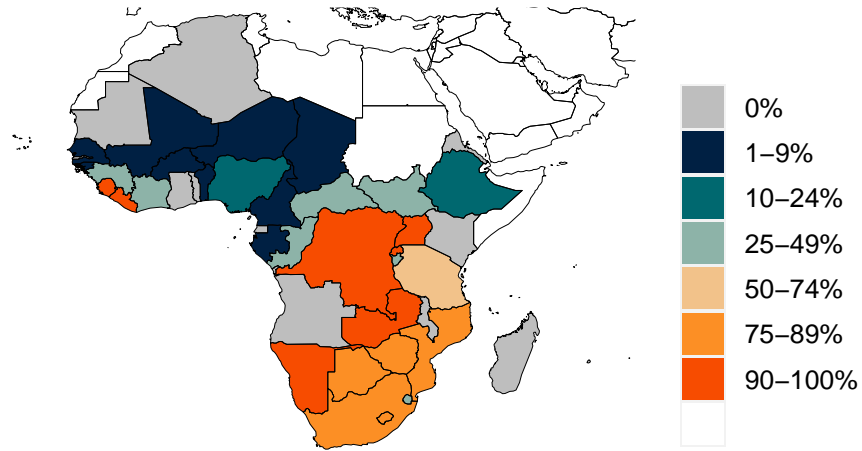
A. Estimated percent B.1.1.7 variant



B. Estimated percent B.1.351 variant



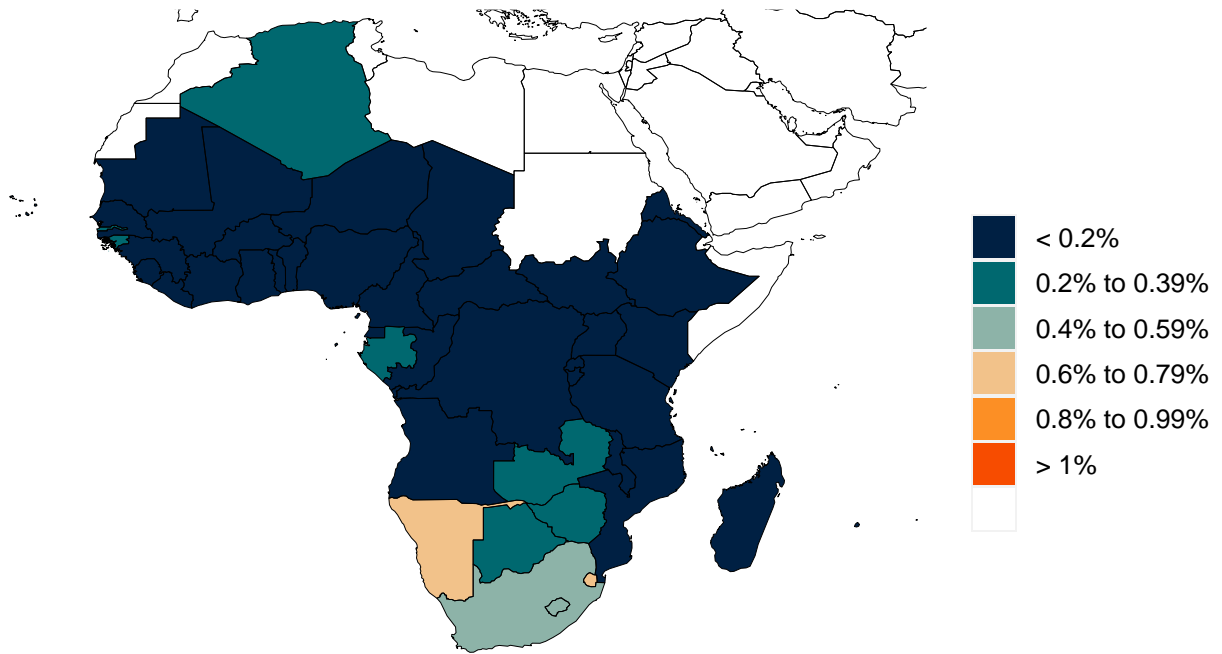
C. Estimated percent B.1.617 variant



D. Estimated percent P.1 variant



Figure 9. Infection-fatality ratio on July 12, 2021



Critical drivers

Table 2. Current mandate implementation

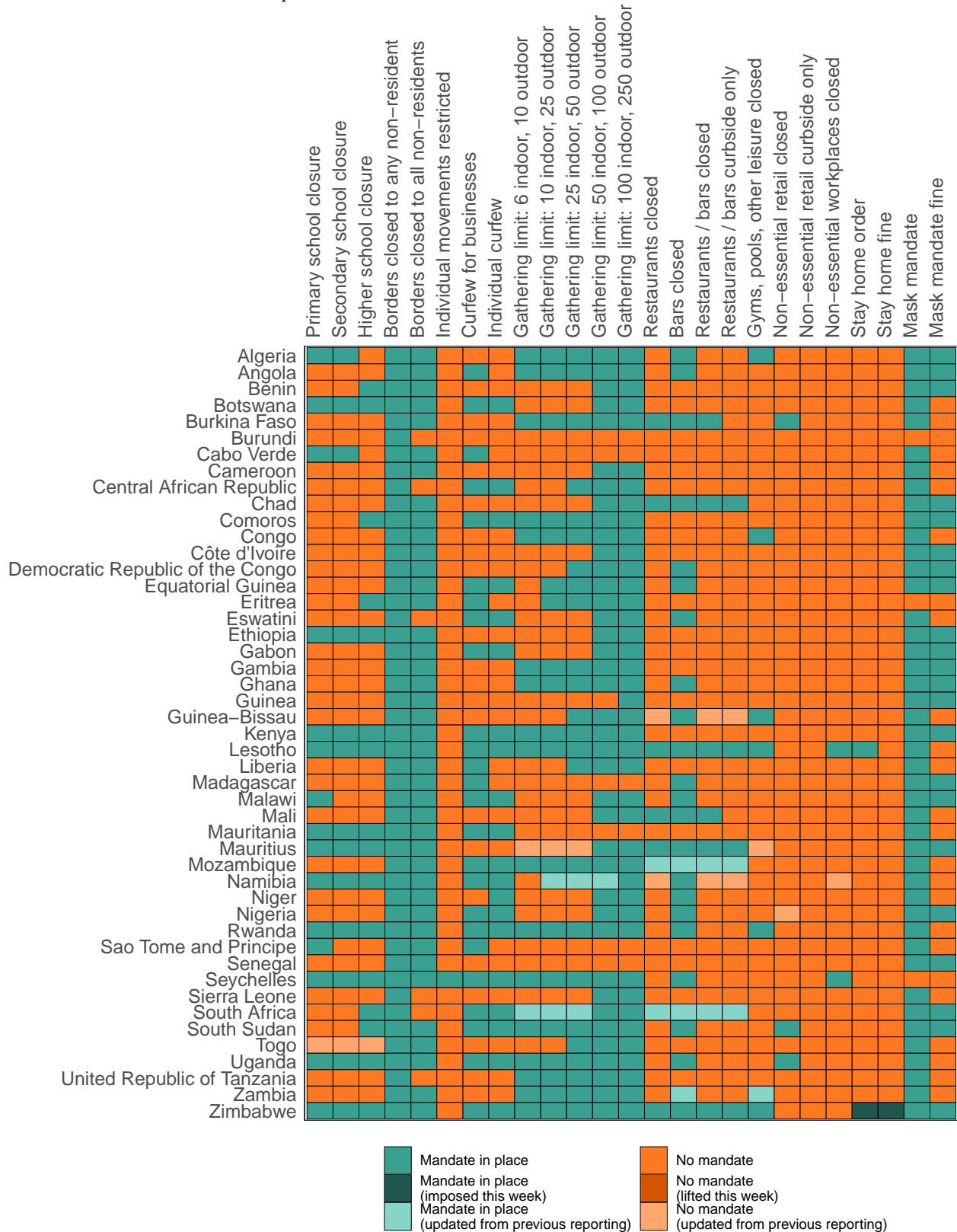


Figure 10. Trend in mobility as measured through smartphone app use compared to January 2020 baseline

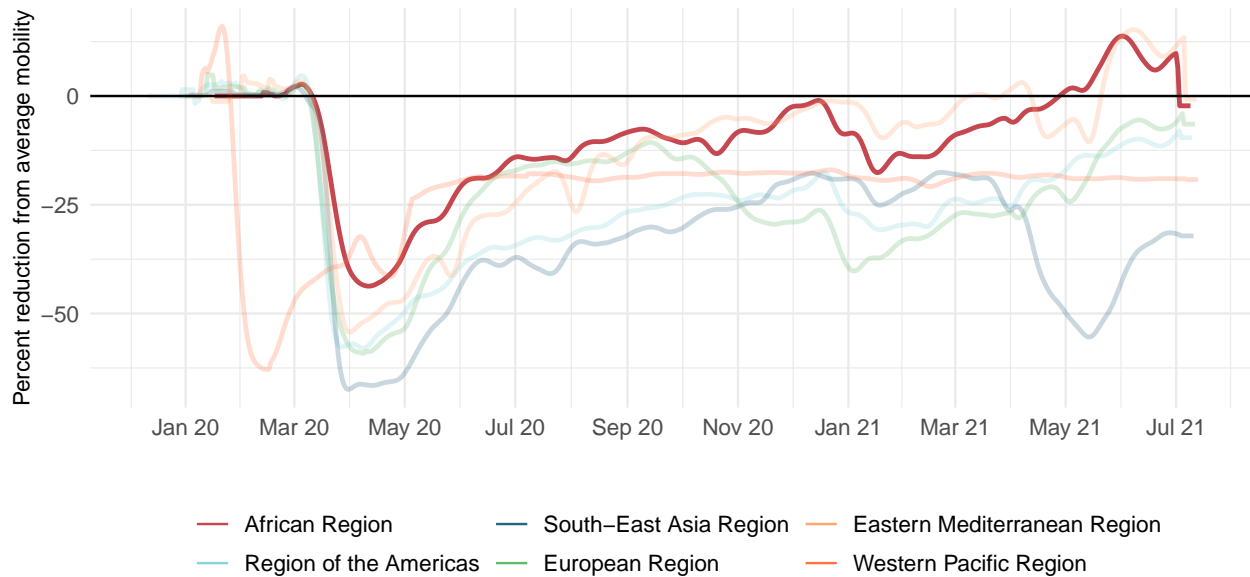


Figure 11. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent) on July 12, 2021

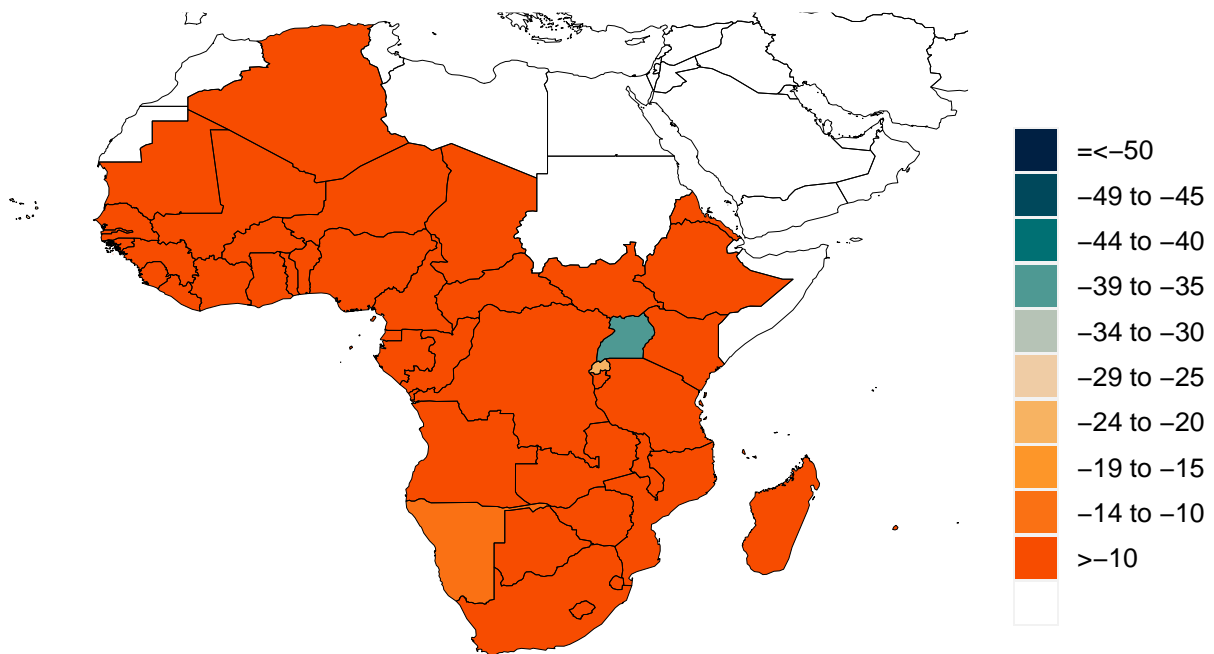


Figure 12. Trend in the proportion of the population reporting always wearing a mask when leaving home

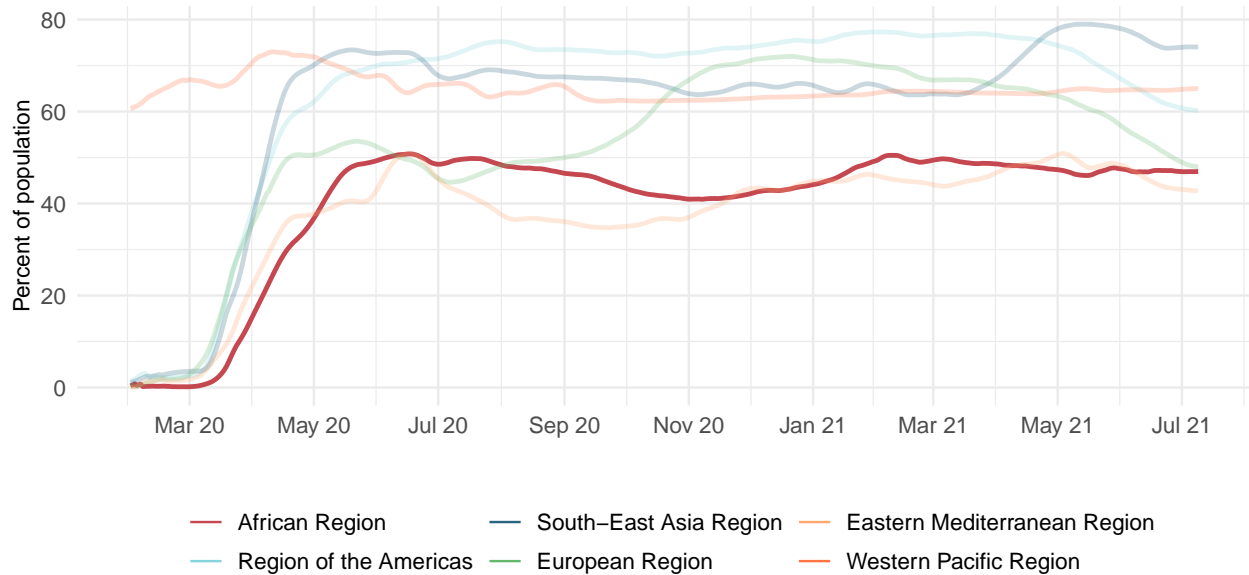


Figure 13. Proportion of the population reporting always wearing a mask when leaving home on July 12, 2021

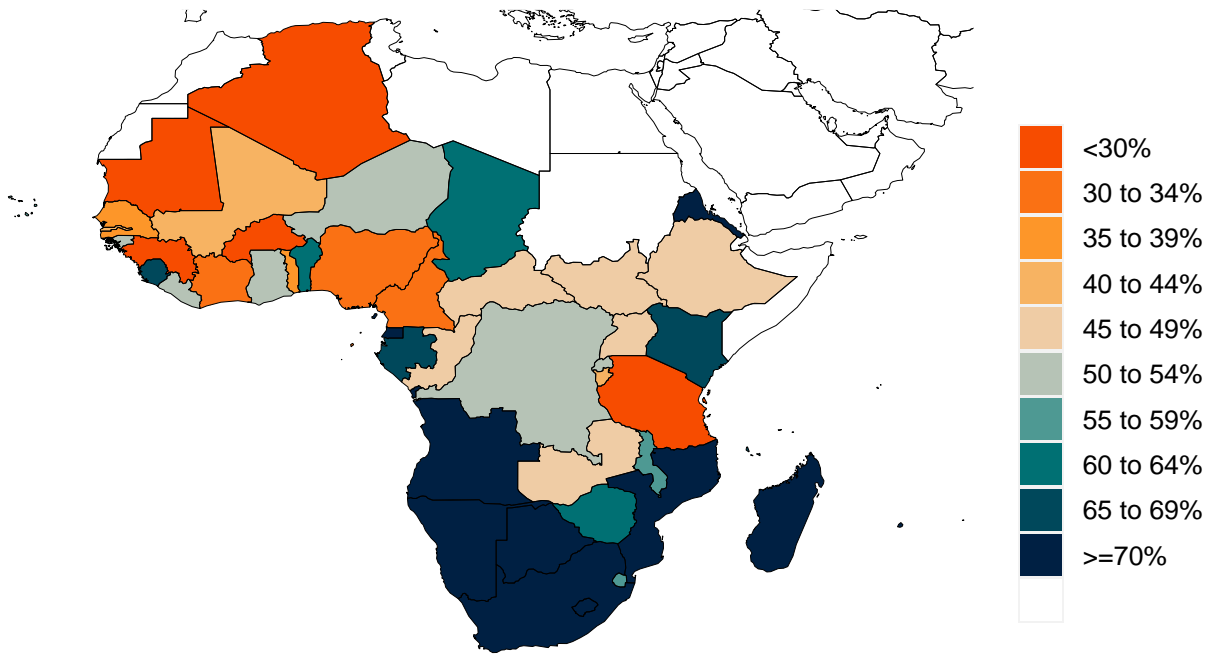


Figure 14. Trend in COVID-19 diagnostic tests per 100,000 people

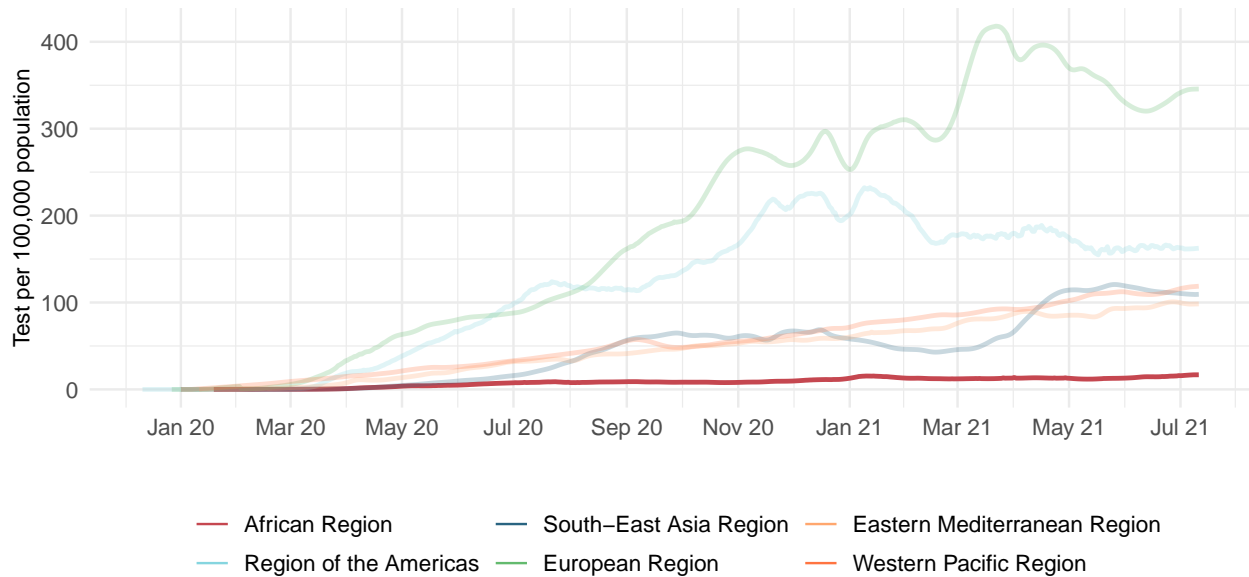


Figure 15. COVID-19 diagnostic tests per 100,000 people on July 12, 2021

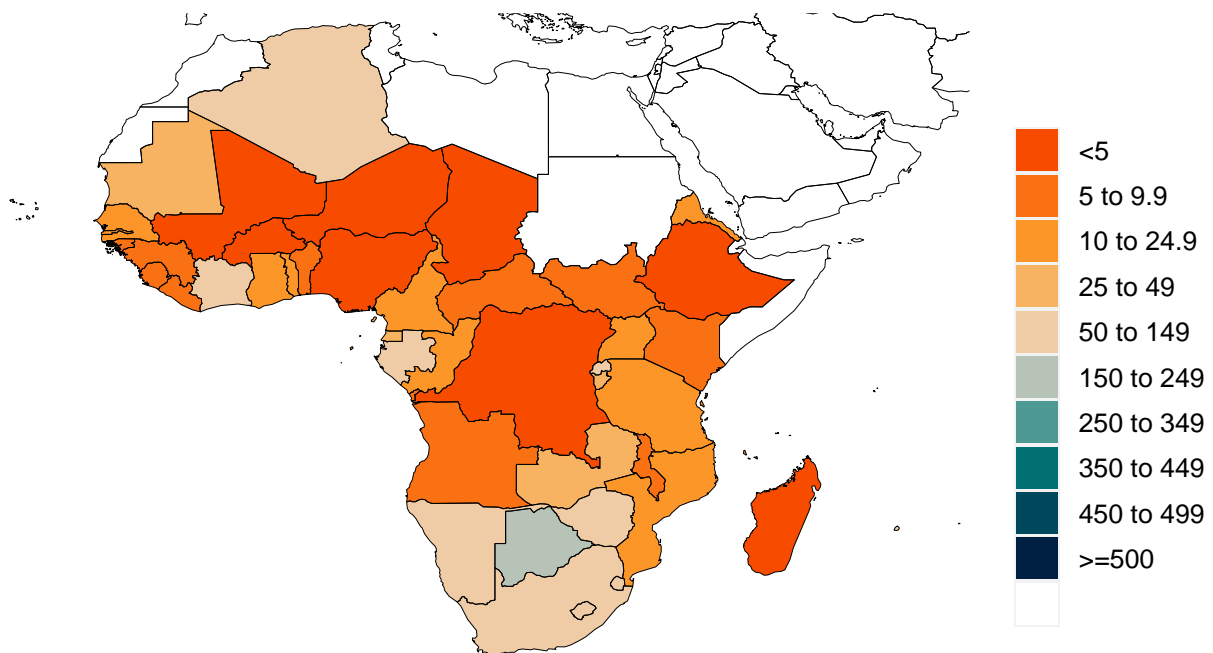


Figure 16. Increase in the risk of death due to pneumonia on February 1 compared to August 1

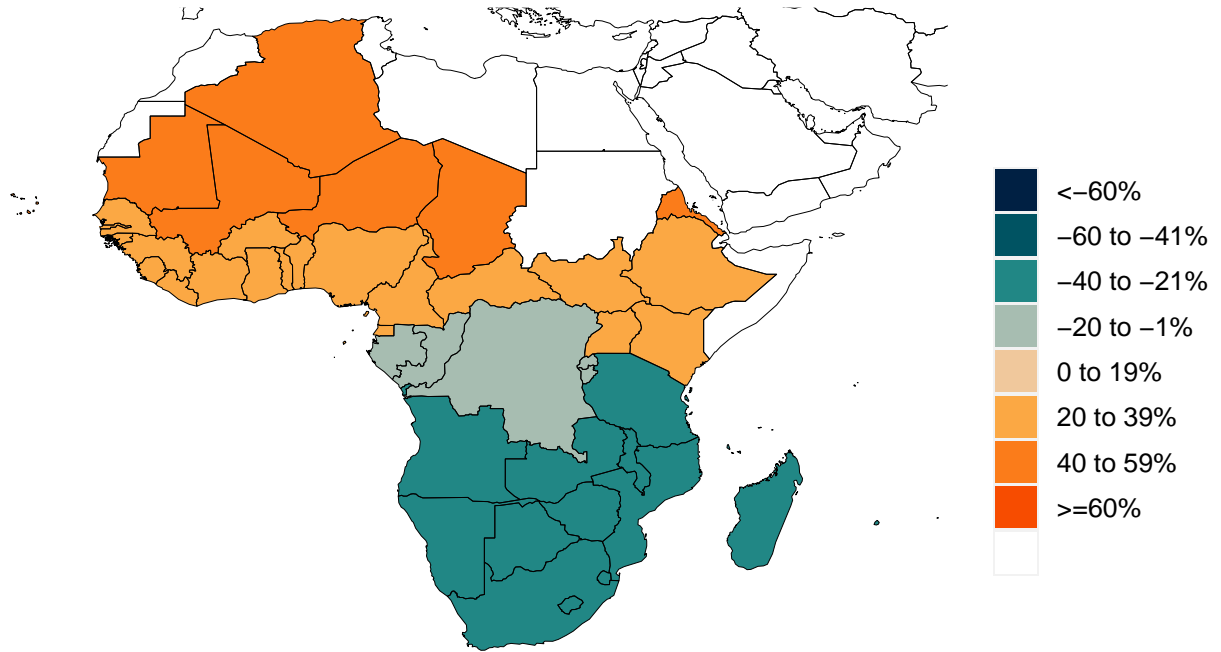


Table 3. Estimates of vaccine efficacy for specific vaccines used in the model at preventing disease and infection. The SEIR model uses variant-specific estimates of vaccine efficacy at preventing symptomatic disease and at preventing infection. We use data from clinical trials directly, where available,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

Vaccine	Efficacy at preventing disease: D614G & B.1.1.7	Efficacy at preventing infection: D614G & B.1.1.7	Efficacy at preventing disease: B.1.351, B.1.617, & P.1	Efficacy at preventing infection: B.1.351, B.1.617, & P.1
AstraZeneca	74%	52%	53%	47%
CoronaVac	50%	44%	40%	35%
Covaxin	78%	69%	62%	55%
Janssen	72%	72%	64%	56%
Moderna	94%	89%	83%	79%
Novavax	89%	79%	73%	64%
Pfizer/BioNTech	91%	86%	81%	77%
Sinopharm	73%	65%	47%	41%
Sputnik-V	92%	81%	73%	65%
Tianjin	66%	58%	53%	47%
CanSino				
Other vaccines	75%	66%	60%	53%
Other vaccines (mRNA)	91%	86%	81%	77%

Figure 17. Trend in the estimated proportion of the adult (18+) population that have been vaccinated or would probably or definitely receive the COVID-19 vaccine if available.

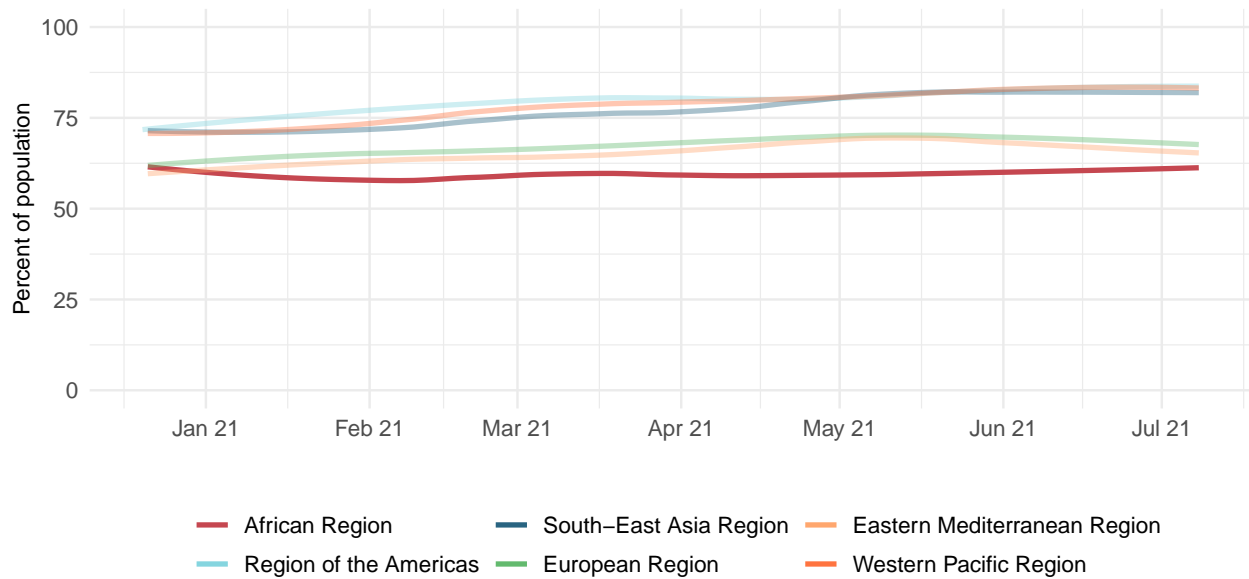


Figure 18. This figure shows the estimated proportion of the adult (18+) population that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available.

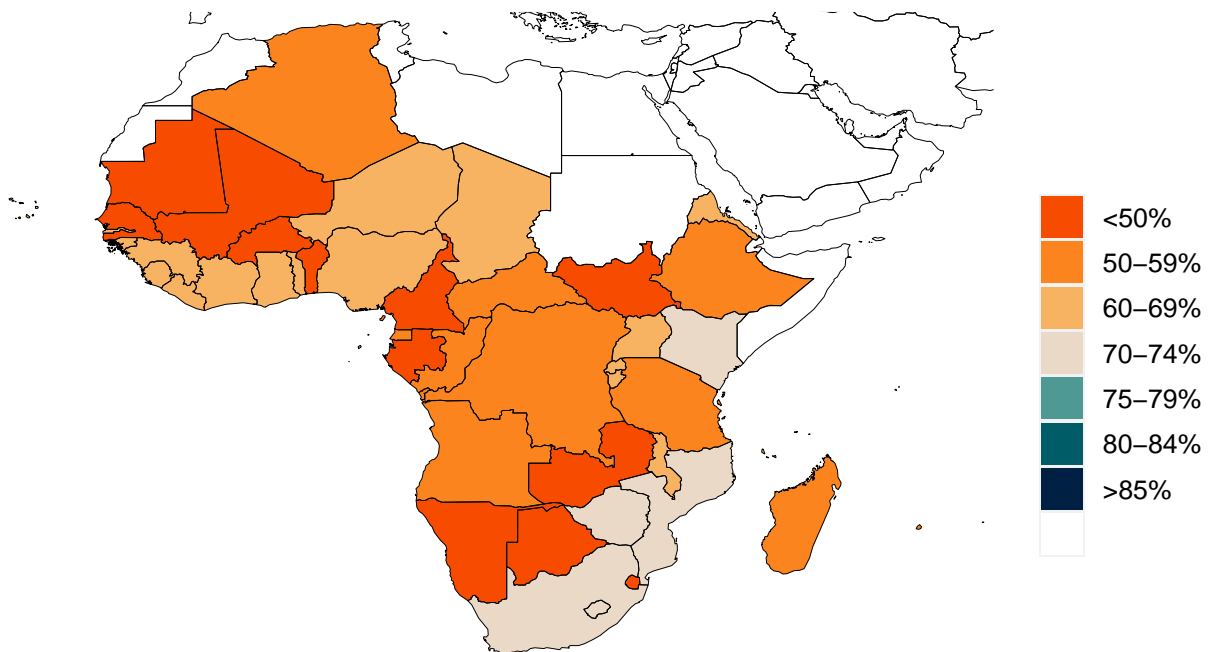
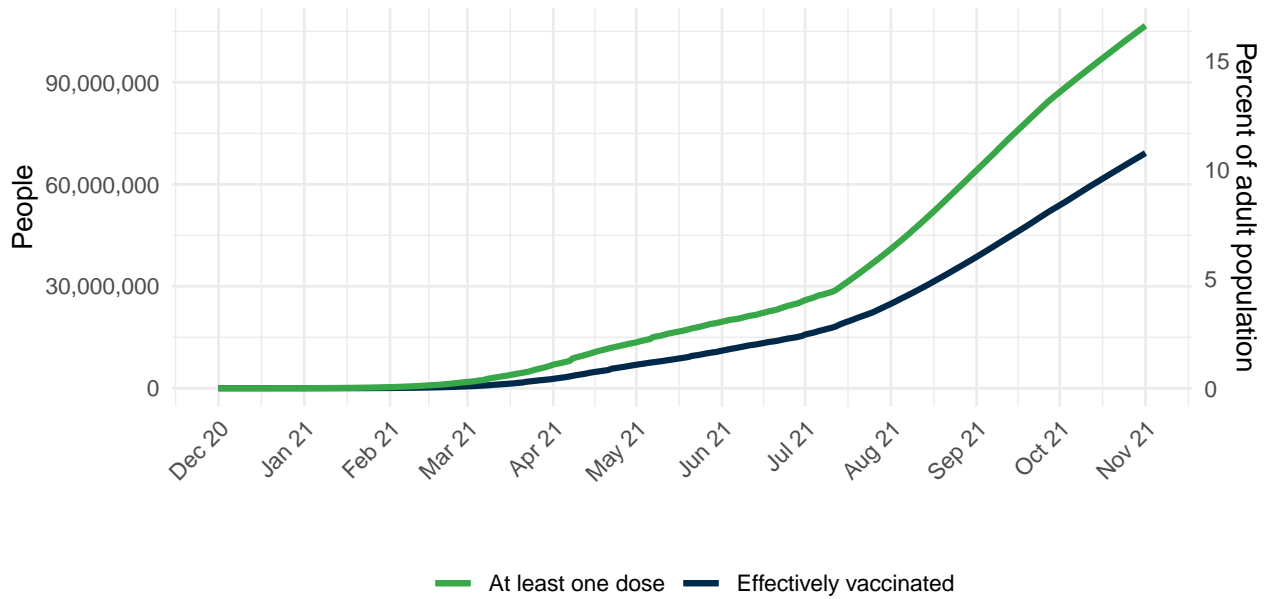


Figure 19. Number of people who receive any vaccine and those who are effectively vaccinated and protected against disease, accounting for efficacy, loss to follow up for two-dose vaccines, partial immunity after one dose, and immunity after two doses.



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.
- Governments adapt their response by re-imposing social distancing mandates for 6 weeks whenever daily deaths reach 8 per million, unless a location has already spent at least 7 of the last 14 days with daily deaths above this rate and not yet re-imposed social distancing mandates. In this case, the scenario assumes that mandates are re-imposed when daily deaths reach 15 per million.
- Variants B.1.1.7 (first identified in the UK), B.1.351 (first identified in South Africa), and P1 (first identified in Brazil) continue to spread from locations with (a) more than 5 sequenced variants, and (b) reports of community transmission, to adjacent locations following the speed of variant scale-up observed in the regions of the United Kingdom.
- In one-quarter of those vaccinated, mobility increases toward pre-COVID-19 levels.

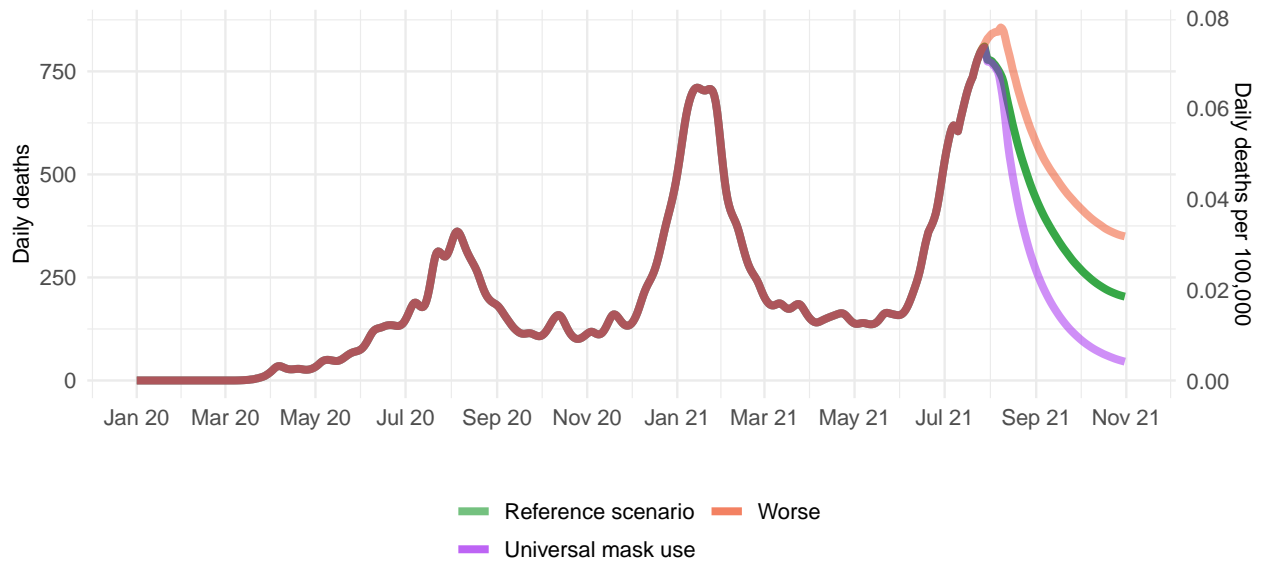
The **worse scenario** modifies the reference scenario assumptions in three ways:

- First, it assumes that variants B.1.351 or P.1 begin to spread within three weeks in adjacent locations that do not already have B.1.351 or P.1 community transmission.
- Second, it assumes that all those vaccinated increase their mobility toward pre-COVID-19 levels.
- Third, it assumes that among those vaccinated, mask use starts to decline exponentially one month after completed vaccination.

The **universal masks scenario** makes all the same assumptions as the reference scenario but also assumes 95% of the population wear masks in public in every location.

Figure 20. Daily COVID-19 deaths until November 01, 2021 for three scenarios

A. Reported daily COVID-19 death per 100,000



B. Excess daily COVID-19 deaths per 100,000

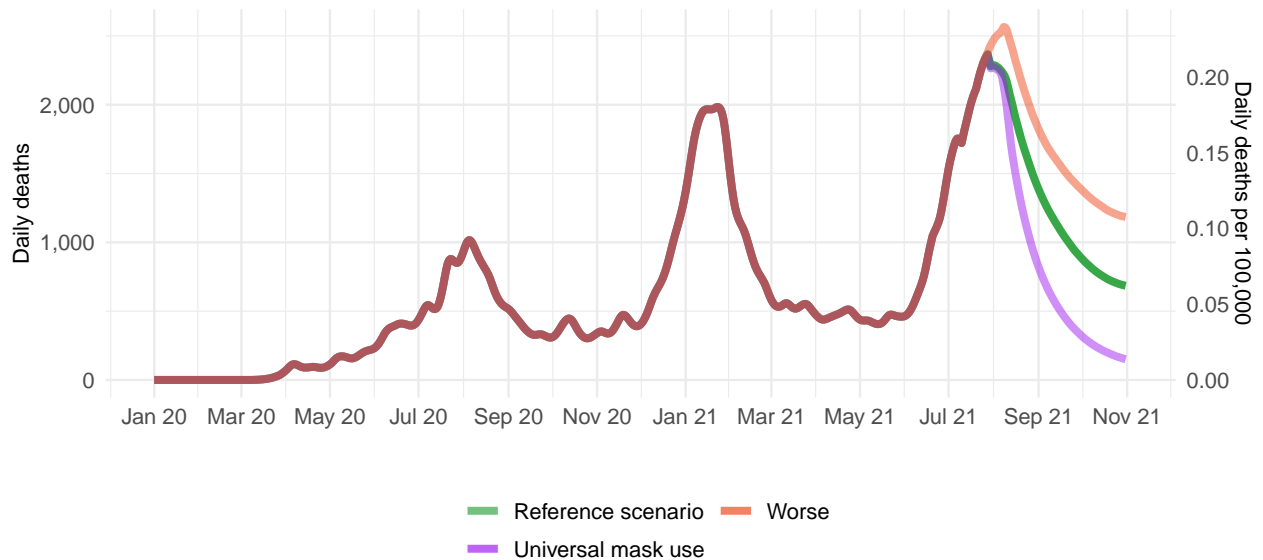


Figure 21. Daily COVID-19 infections until November 01, 2021 for three scenarios

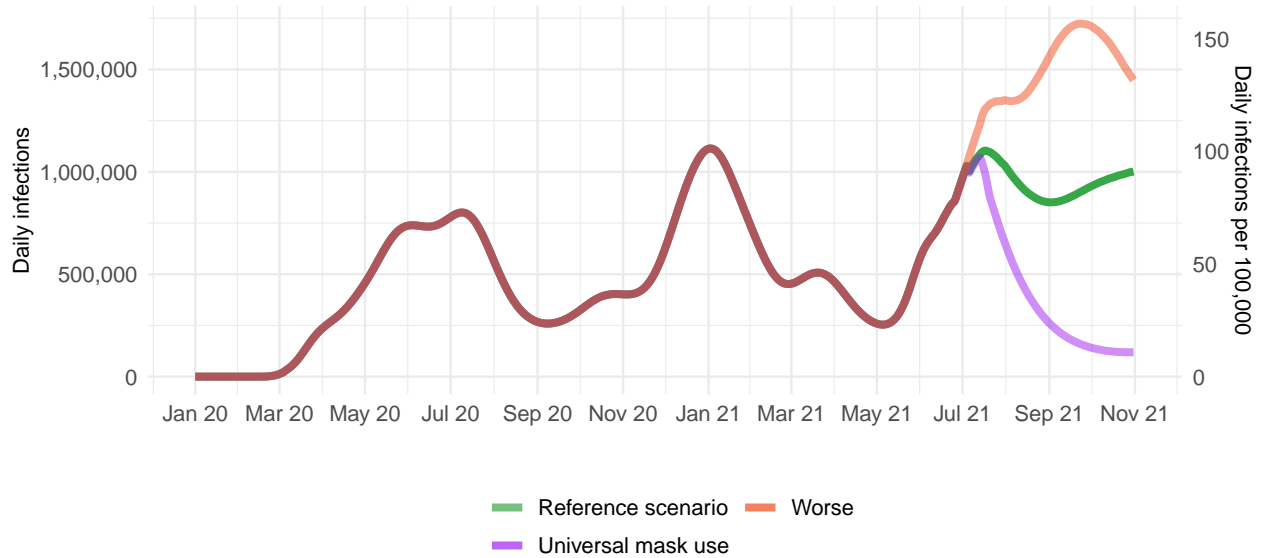


Figure 22. Comparison of reference model projections with other COVID modeling groups. For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available: Delphi from the Massachusetts Institute of Technology ([Delphi](#)), Imperial College London ([Imperial](#)), The Los Alamos National Laboratory ([LANL](#)), and the SI-KJalpha model from the University of Southern California ([SIKJalpha](#)). Daily deaths from other modeling groups are smoothed to remove inconsistencies with rounding. Regional values are aggregates from available locations in that region.

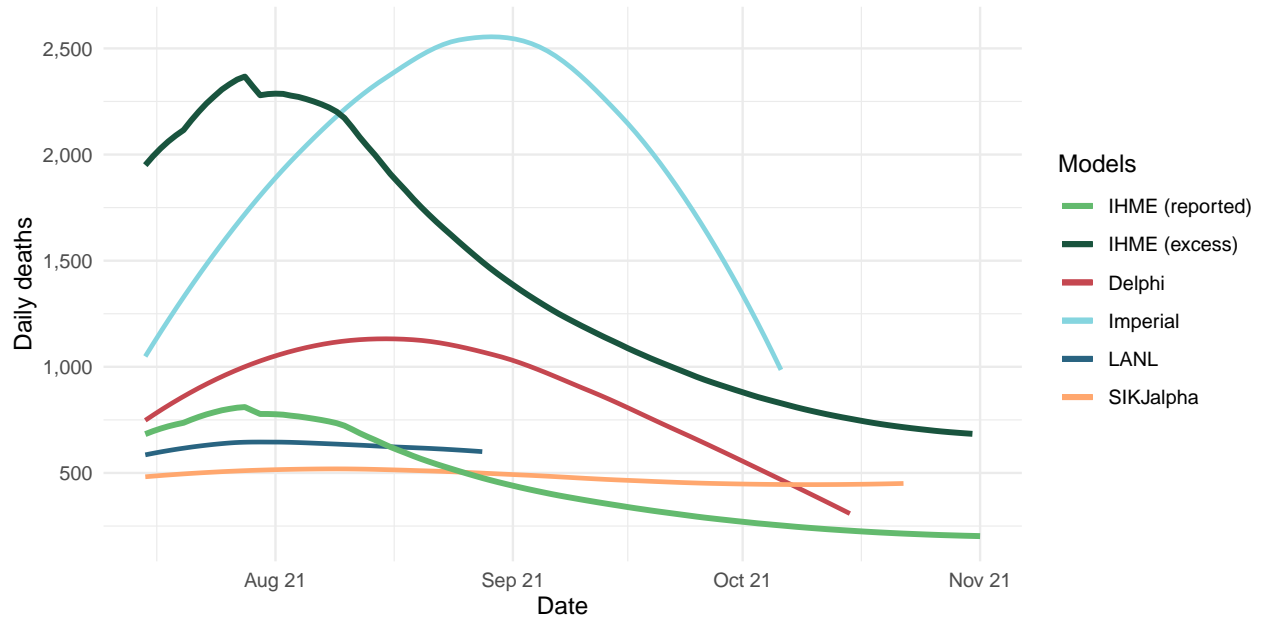


Figure 23. The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate stress*, 10-19% is considered *high stress*, and 20% or greater is considered *extreme stress*.

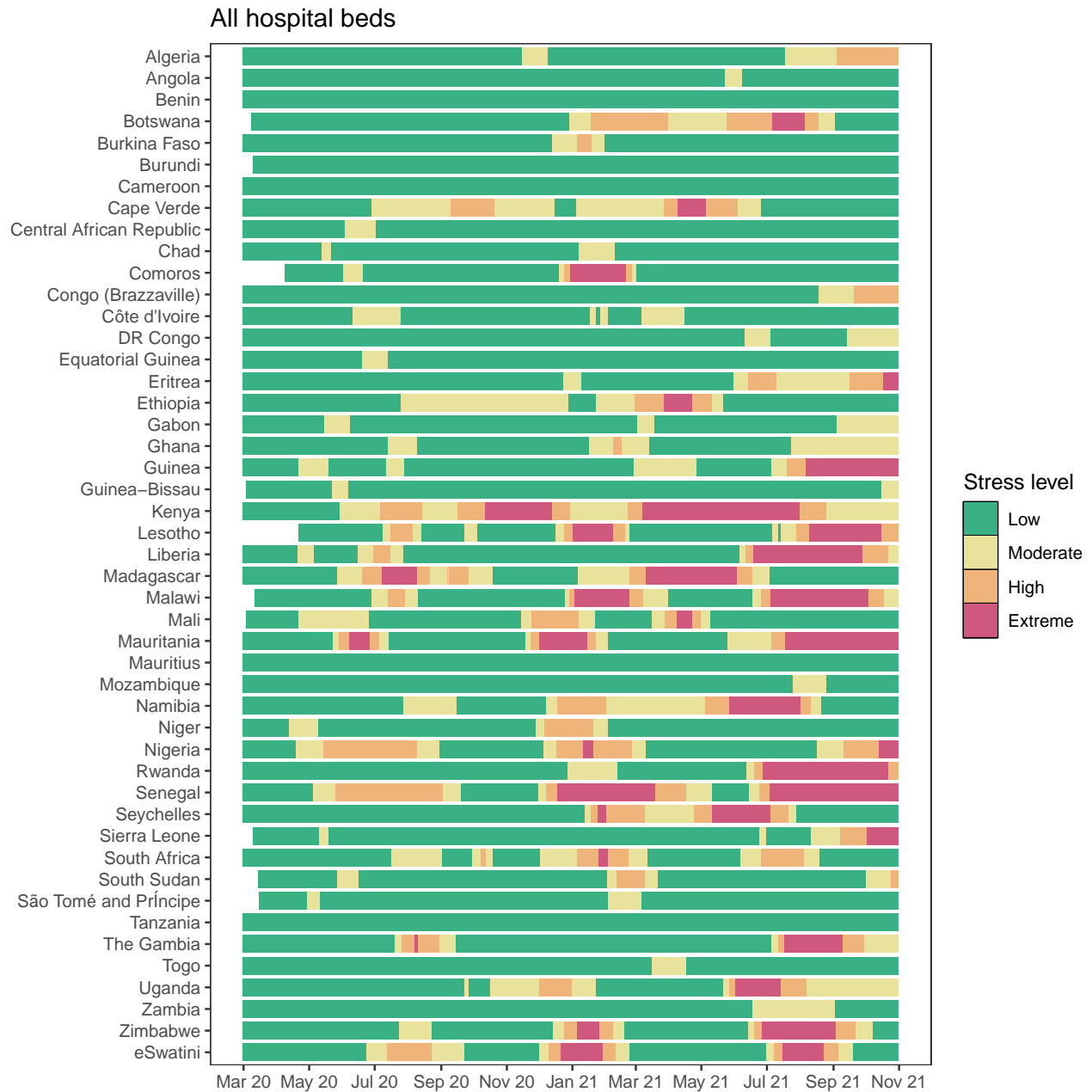


Figure 24. The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *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>.

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