Informe de resultados de COVID-19

la Región de las Américas

25 de febrero de 2021

Este documento contiene información resumida sobre las últimas proyecciones del modelo IHME sobre COVID-19 en la Región de las Américas. El modelo se ejecutó el 24 de febrero de 2021 con datos hasta el 22 de febrero de 2021.

Situación actual

• Los casos reportados diariamente en la última semana disminuyeron a 141,300 por día en promedio en comparación con 182,200 la semana anterior (Figura 1).

• Las muertes diarias en la última semana disminuyeron a 5,120 por día en promedio en comparación con 5,680 la semana anterior (Figura 2). Esto convierte a COVID-19 en la principal causa de muerte en la Región de las Américas esta semana (Tabla 1).

• La R efectiva, calculada usando casos, hospitalizaciones y muertes, es mayor que 1 en 4 países (Figura 5).

• Estimamos que 25% de las personas en la Región de las Américas han sido infectadas al 22 de febrero (Figura 4).

• La tasa de mortalidad diaria es superior a 4 por millón en Antigua y Barbuda, Brasil, Chile, México, Perú, Santa Lucía y Estados Unidos de América (Figura 3).

Tendencias en los impulsores de la transmisión

• La movilidad de la semana pasada fue 27% más baja que la línea de base anterior a COVID-19 (Figura 7). La movilidad estuvo cerca de la línea de base (dentro del 10%) en El Salvador y Nicaragua. La movilidad fue inferior a 30% de la línea de base en Antigua y Barbuda, Bahamas, Barbados, Canadá, Chile, Ecuador, Panamá y Perú.

• Al 22 de febrero estimamos que 77% de las personas siempre usaban una mascarilla al salir de casa (Figura 9) sin cambios en comparación con lo observado la semana pasada. El uso de mascarillas fue inferior a 50% en Barbados, Guyana, Haití y Santa Lucía.

• Se realizaron 202 pruebas de diagnóstico por cada 100.000 personas el 22 de febrero (Figura 11).

• En la Región de las Américas, 79,3% de las personas dicen que aceptarían o probablemente aceptarían una vacuna para COVID-19. La fracción de la población que está dispuesta a recibir la vacuna COVID-19 oscila entre el 39% en Haití y el 89% en México, Michoacán y Veracruz (Figura 14).

• En nuestro escenario de referencia actual, esperamos que 639,51 millones estén vacunados para el 1 de junio (Figura 15).

Proyecciones

• En nuestro escenario de referencia, que representa lo que creemos que es más probable que suceda, nuestro modelo proyecta 1,531,000 muertes acumuladas el 1 de junio de 2021. Esto representa 398,000 muertes adicionales del 22 de febrero al 1 de junio (Figura 16). Las muertes diarias alcanzaron un máximo de 6,460 el 1 de febrero de 2021 (Figura 17).

• Para el 1 de junio de 2021, proyectamos que el lanzamiento proyectado de la vacuna salvará 136,300 vidas.

• Si se alcanzara la cobertura universal de la mascarilla (95%) en la próxima semana, nuestro modelo proyecta 56.000 muertes acumulativas menos en comparación con el escenario de referencia el 1 de junio de 2021 (Figura 16).

• En nuestro peor escenario, nuestro modelo proyecta 1,595,000 muertes acumuladas el 1 de junio de 2021 (Figura 16).

• La Figura 19 compara nuestros pronósticos de escenarios de referencia con otros modelos archivados públicamente. Los pronósticos son muy divergentes.

• En algún momento, desde febrero hasta el 1 de junio, 20 países tendrán un estrés alto o extremo en las camas de hospital (Figura 20). En algún momento, desde febrero hasta el 1 de junio, 26 países tendrán un estrés alto o extremo en la capacidad de la UCI (Figura 21).

Actualizaciones de modelos

En el modelo de esta semana, hemos realizado cinco actualizaciones. En primer lugar, los nuevos datos de seroprevalencia de los bancos de sangre de Sudáfrica han reforzado la evidencia de que la tasa de mortalidad por infección (IFR) estandarizada por edad es mucho más baja en el África subsahariana de lo que se había estimado anteriormente. Las encuestas en Kenia y Nigeria habían apoyado esta idea, pero los datos más extensos de Sudáfrica nos han llevado a revisar el IFR para todos los países del África subsahariana. Este cambio revisó al alza nuestras estimaciones del porcentaje de la población que ha sido infectada en esta región. En segundo lugar, la tercera ronda de la encuesta serológica del Indian Council of Medical Research encontró un nivel de seroprevalencia más alto a nivel nacional de lo que hemos estado estimando. En el análisis de esta semana de los niveles pasados de infección, hemos puesto más énfasis en esta nueva ronda de datos de la encuesta para estimar los IFR específicos del estado, lo que a su vez está dando lugar a estimaciones más altas de infección acumulada. En tercer lugar, la tormenta invernal y los cortes de electricidad en Texas han tenido un impacto notable en los informes de casos, hospitalizaciones y muertes. Hemos excluido del análisis los datos posteriores a la tormenta. En cuarto lugar, hemos seguido revisando nuestras estimaciones de escalado variantes para el pasado y las previsiones para el escalado futuro. En el pasado, para los países de África austral sin un número suficiente de aislamientos secuenciados, hemos revisado los datos de inicio probable para B.1.351 en función de la ampliación de los casos observados en estos países. Se ha adoptado un enfoque similar para Ghana. Los datos de secuencia recientemente disponibles han dado lugar a revisiones de la sincronización de la introducción de B.1.1.7, B.1.351 y P1 en ubicaciones seleccionadas.

Los mapas a continuación muestran nuestras estimaciones de la prevalencia de cada variante esta semana por ubicación. Quinto, hicimos dos cambios al peor escenario. En lugar de suponer la introducción inmediata de nuevas variantes B.1.351 o P1 en todas las ubicaciones, hemos supuesto que la variante se propaga a ubicaciones adyacentes en 21 días, incluso a través de las fronteras nacionales. También asumimos que el uso de mascarillas en aquellos que han sido vacunados comenzará a disminuir un mes después de la vacunación completa (en lugar del escenario de referencia que asume que la máscara comenzará a disminuir tres meses después de la vacunación completa).

COVID-19 Results Briefing

The Region of the Americas

February 25, 2021

This document contains summary information on the latest projections from the IHME model on COVID-19 in the Region of the Americas. The model was run on February 24, 2021, with data through February 22, 2021.

Current situation

- Daily reported cases in the last week decreased to 141,300 per day on average compared to 182,200 the week before (Figure 1).

- Daily deaths in the last week decreased to 5,120 per day on average compared to 5,680 the week before (Figure 2). This makes COVID-19 the number 1 cause of death in the Region of the Americas this week (Table 1).

- Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in 18 regions (Figure 5).

- We estimated that 25% of people in the Region of the Americas have been infected as of February 22 (Figure 4).

- The daily death rate is greater than 4 per million in Antigua and Barbuda, Brazil, Chile, Mexico, Peru, Saint Lucia, and the US (Figure 3).

Trends in drivers of transmission

- Mobility last week was 27% lower than the pre-COVID-19 baseline (Figure 7). Mobility was near baseline (within 10%) in El Salvador and Nicaragua. Mobility was lower than 30% of baseline in Antigua and Barbuda, the Bahamas, Barbados, Canada, Chile, Ecuador, Panama, and Peru.

- As of February 22, we estimated that 77% of people always wore a mask when leaving their home (Figure 9), the same as last week. Mask use was lower than 50% in Barbados, Guyana, Haiti, and Saint Lucia.

- There were 202 diagnostic tests per 100,000 people on February 22 (Figure 11).

- In the Region of the Americas, 79.3% of people say they would accept or would probably accept a vaccine for COVID-19. The fraction of the population who are open to receiving a COVID-19 vaccine ranges from 39% in Haiti to 89% in Mexico, Michoacán de Ocampo, Veracruz de Ignacio de la Llave (Figure 14).

- In our current reference scenario, we expect that 639.51 million will be vaccinated by June 1 (Figure 15).

Projections

- In our **reference scenario**, which represents what we think is most likely to happen, our model projects 1,531,000 cumulative deaths on June 1, 2021. This represents 323,000 additional deaths from February 22 to June 1 (Figure 16). Daily deaths peaked at 6,460 on February 1, 2021 (Figure 17).

- By June 1, 2021, we project that 136,300 lives will be saved by the projected vaccine rollout.

- If **universal mask coverage (95%)** were attained in the next week, our model projects 56,000 fewer cumulative deaths compared to the reference scenario on June 1, 2021 (Figure 16).

- Under our **worse scenario**, our model projects 1,595,000 cumulative deaths on June 1, 2021 (Figure 16).

- Figure 19 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.

- At some point from February through June 1, 20 countries will have high or extreme stress on hospital beds (Figure 20). At some point from February through June 1, 26 countries will have high or extreme stress on ICU capacity (Figure 21).

Model updates

In this week's model, we have made five updates. First, new blood bank seroprevalence data from South Africa has strengthened the evidence that the age-standardized infection-fatality ratio (IFR) is much lower in sub-Saharan Africa than previously estimated. Surveys in Kenya and Nigeria had supported this idea, but the more extensive data from South Africa have led us to revise the IFR for all countries in sub-Saharan Africa. This change revised upwards our estimates of the percentage of the population that has been infected in this region. Second, the third round Indian Council of Medical Research serosurvey found a higher level of seroprevalence at the national level than we have been estimating. In this week's analysis of past levels of infection, we have put more emphasis on this new round of survey data in estimating state-specific IFRs, which in turn is leading to higher estimates of cumulative infection. Third, the winter storm and electricity outages in Texas have had a noticeable impact on case, hospitalization, and death reporting. We have excluded data after the storm from the analysis. Fourth, we have continued to revise our variant scale-up estimates for the past and forecasts for future scale-up. For the past, for countries in Southern Africa without sufficient numbers of isolates sequenced, we have revised the likely start data for B.1.351 based on the scale-up of cases observed in these countries. A similar approach has been taken for Ghana. Newly available sequence data have led to revisions of the timing of the introduction of B.1.1.7, B.1.351, and P1 in select locations. The maps below show our estimates of the prevalence of each variant this week by location. Fifth, we made two changes to the worse scenario. Rather than assuming immediate introduction of new variants B.1.351 or P1 in all locations, we have assumed that the variant spreads to adjacent locations in 21 days, including across national borders. We have also assumed that mask use in those who have been vaccinated will begin declining one month after completed vaccination (rather than the reference scenario that assumes mask will begin declining three months after completed vaccination).
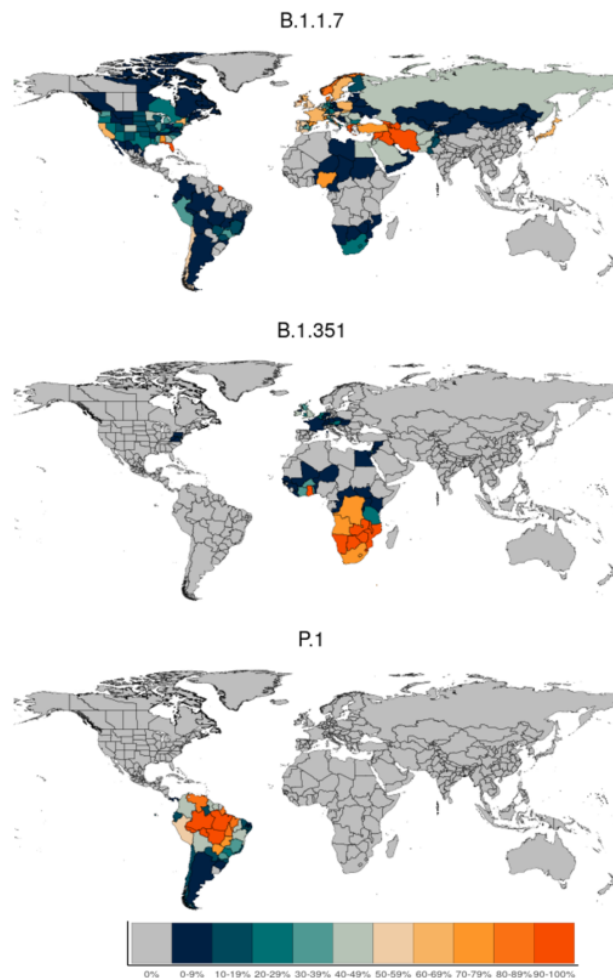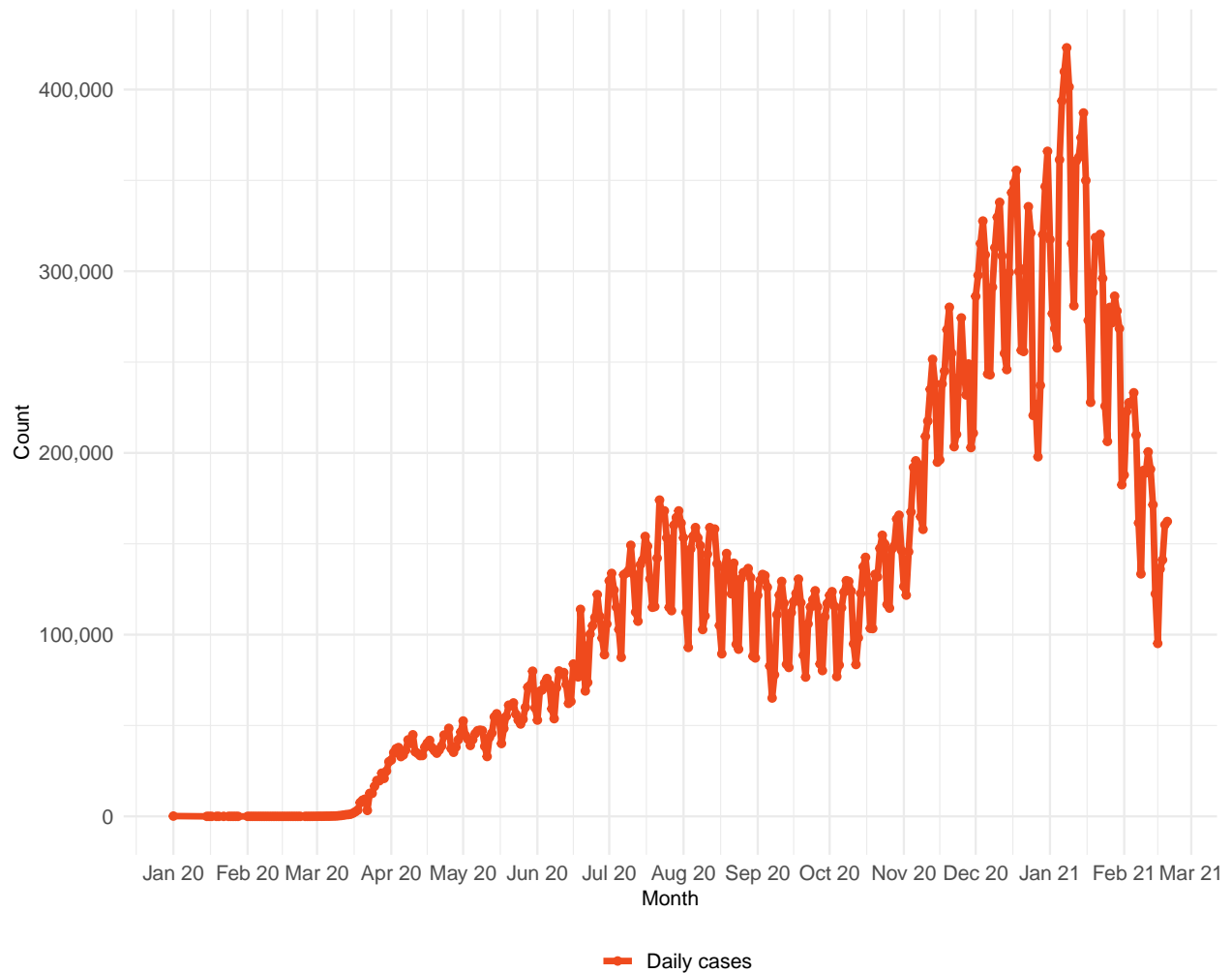
Figure 1. Reported daily COVID-19 cases

Daily cases

Table 1. Ranking of 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
COVID-19	35,811	1
Ischemic heart disease	22,182	2
Stroke	10,124	3
Chronic obstructive pulmonary disease	7,401	4
Tracheal, bronchus, and lung cancer	6,369	5
Lower respiratory infections	6,211	6
Chronic kidney disease	6,184	7
Alzheimer's disease and other dementias	5,890	8
Diabetes mellitus	5,822	9
Cirrhosis and other chronic liver diseases	4,153	10

Figure 2. Reported daily COVID-19 deaths
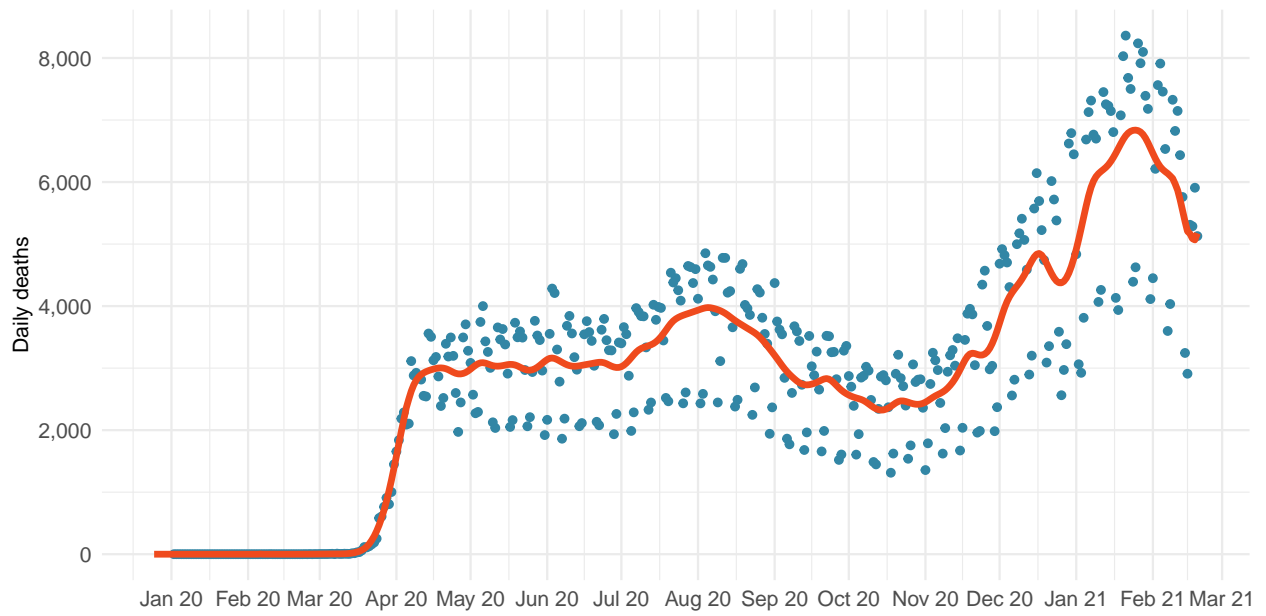
Figure 3. Daily COVID-19 death rate per 1 million on February 22, 2021
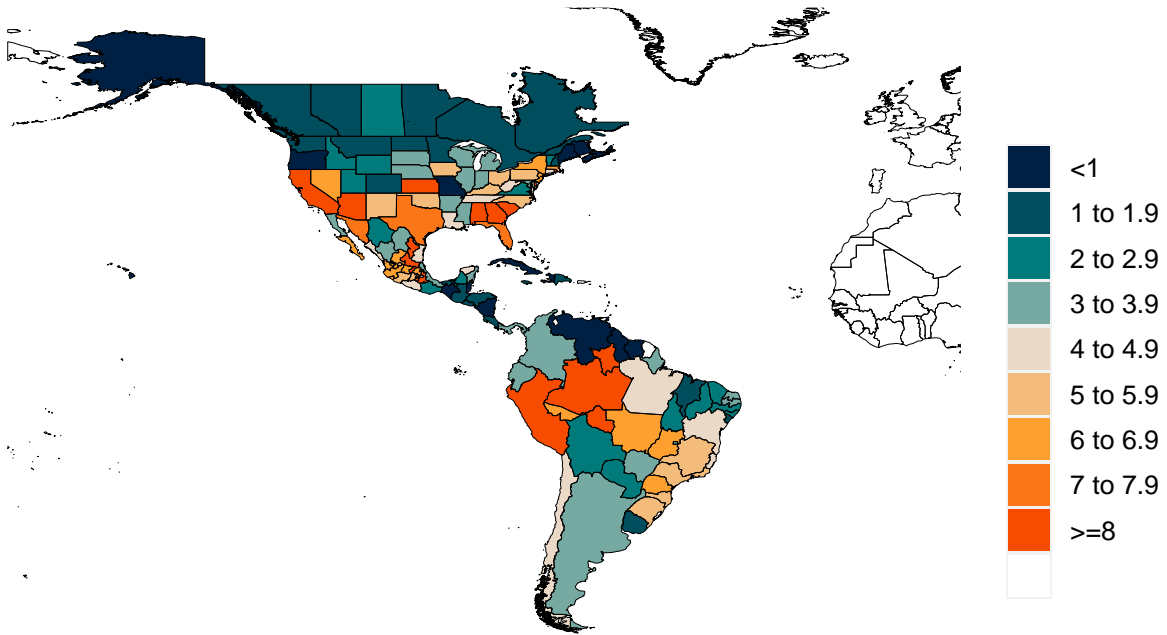
Figure 4. Estimated percent of the population infected with COVID-19 on February 22, 2021
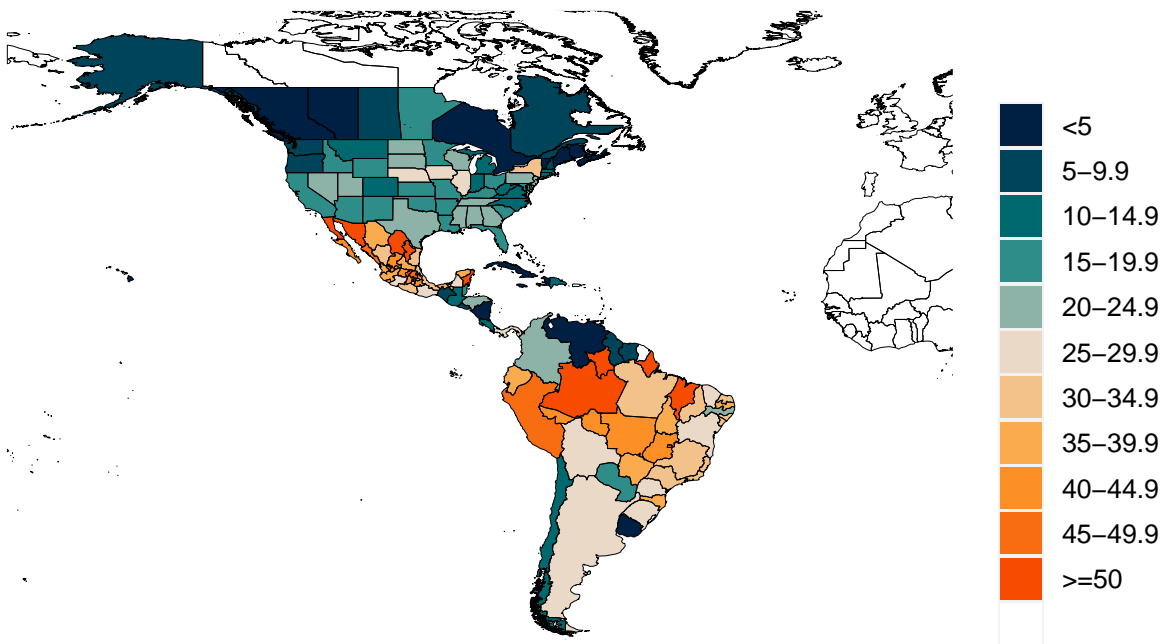
Figure 5. Mean effective R on February 11, 2021. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline, all other things being held the same.
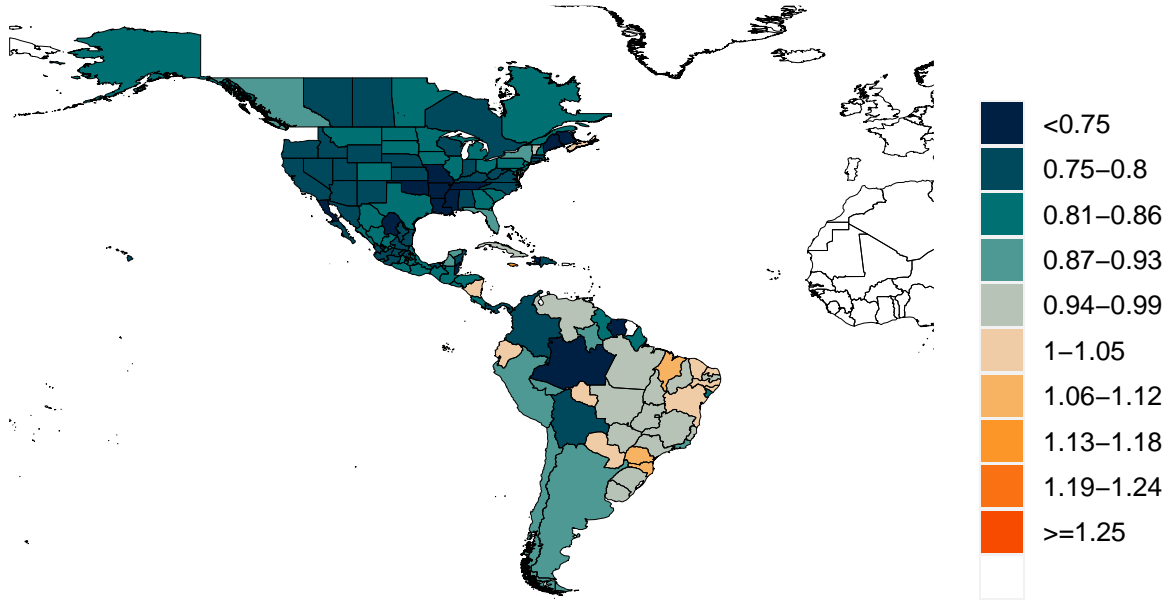
Figure 6. Percent of COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model.
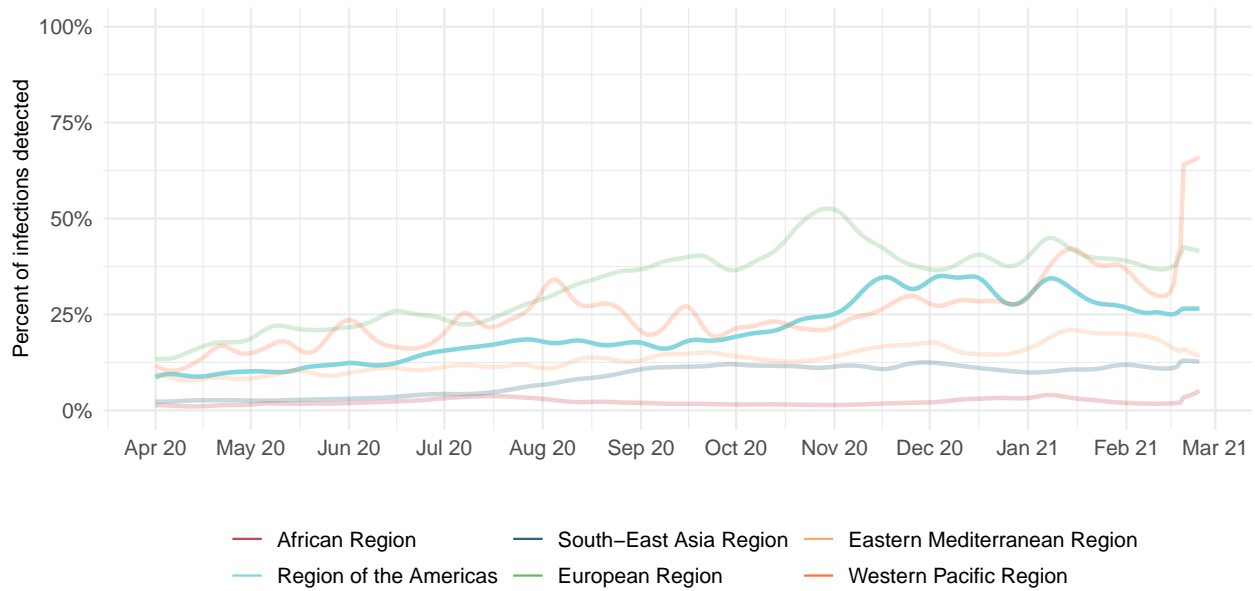
*Due to measurement errors in cases and testing rates, the infection to detection rate (IDR) can exceed 100% at particular points in time.

Critical drivers

Table 2. Current mandate implementation

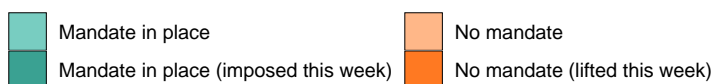|	All nonessential businesses closed	Any businesses restricted	Any gatherings restricted	Mask use	School closure	Stay home order	Travel limits
Antigua and Barbuda	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Argentina	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate
Bahamas	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Barbados	No mandate	No mandate	Mandate	No mandate	No mandate	Mandate	No mandate
Belize	No mandate	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate
Bolivia (Plurinational State of)	No mandate	Mandate	Mandate	No mandate	Mandate	Mandate	Mandate
Brazil	No mandate	No mandate	No mandate	No mandate	Mandate	No mandate	No mandate
Canada	No mandate	Mandate	No mandate	Mandate	Mandate	Mandate	No mandate
Chile	No mandate	Mandate	Mandate	No mandate	Mandate	No mandate	No mandate
Colombia	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Costa Rica	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Cuba	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate	Mandate
Dominica	No mandate	Mandate	No mandate	Mandate	Mandate	No mandate	No mandate
Dominican Republic	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Ecuador	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate
El Salvador	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Grenada	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Guatemala	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Guyana	Mandate	Mandate	Mandate	No mandate	Mandate	Mandate	No mandate
Haiti	No mandate	Mandate	Mandate	Mandate	No mandate	Mandate	Mandate
Honduras	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate
Jamaica	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Mexico	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Nicaragua	No mandate	No mandate	No mandate	No mandate	No mandate	No mandate	No mandate
Panama	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Paraguay	No mandate	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate
Peru	No mandate	Mandate	Mandate	Mandate	Mandate	Mandate	No mandate
Saint Kitts and Nevis	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Saint Lucia	Mandate	No mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Saint Vincent and the Grenadines	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Suriname	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
Trinidad and Tobago	No mandate	Mandate	Mandate	Mandate	Mandate	No mandate	No mandate
United States of America	No mandate	Mandate	No mandate	Mandate	Mandate	No mandate	No mandate
Uruguay	No mandate	Mandate	No mandate	Mandate	No mandate	No mandate	No mandate
Venezuela (Bolivarian Republic of)	No mandate	Mandate	Mandate	Mandate	Mandate	Mandate	Mandate

Legend:
- Mandate in place
- Mandate in place (imposed this week)
- No mandate
- No mandate (lifted this week)

*Not all locations are measured at the subnational level.

Figure 7. Trend in mobility as measured through smartphone app use compared to January 2020 baseline
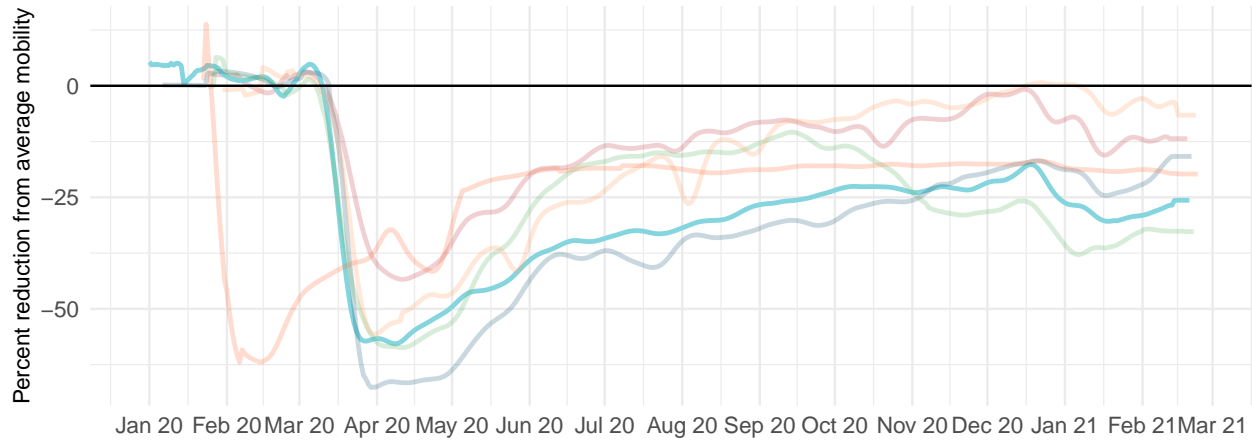
Figure 8. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent) on February 22, 2021
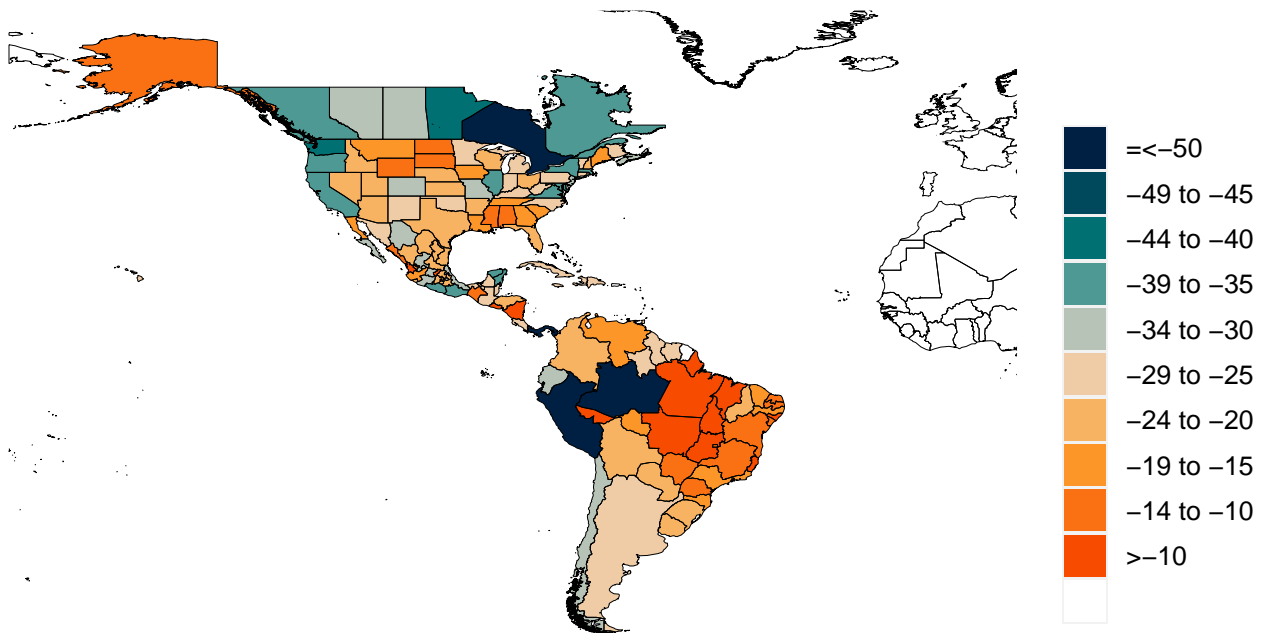
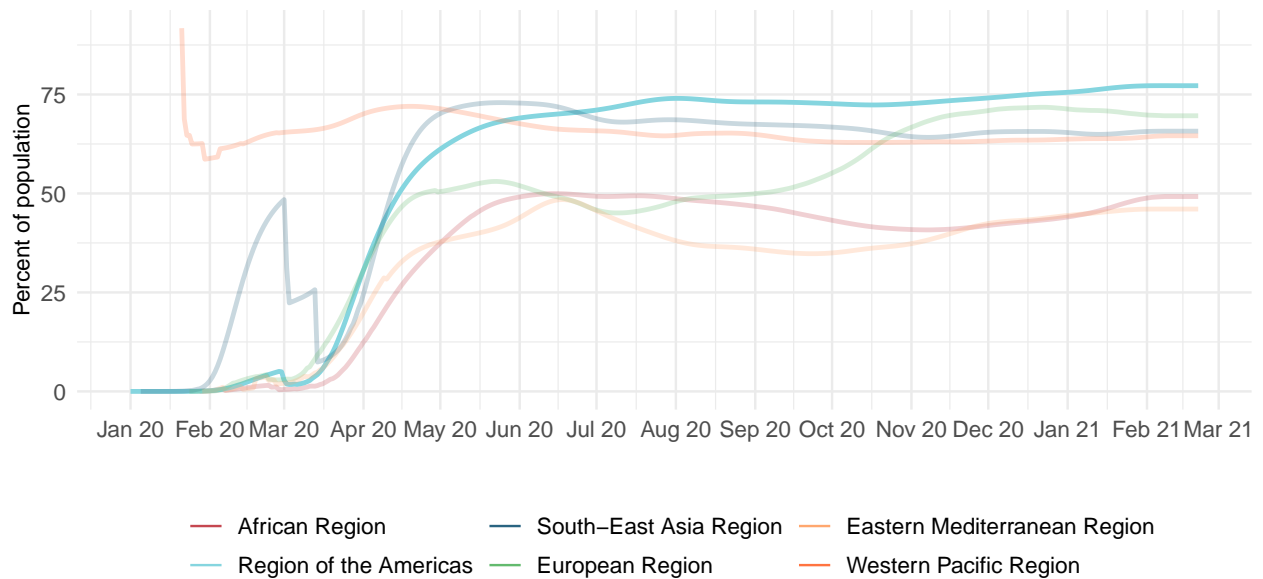**Figure 9.** Trend in the proportion of the population reporting always wearing a mask when leaving home

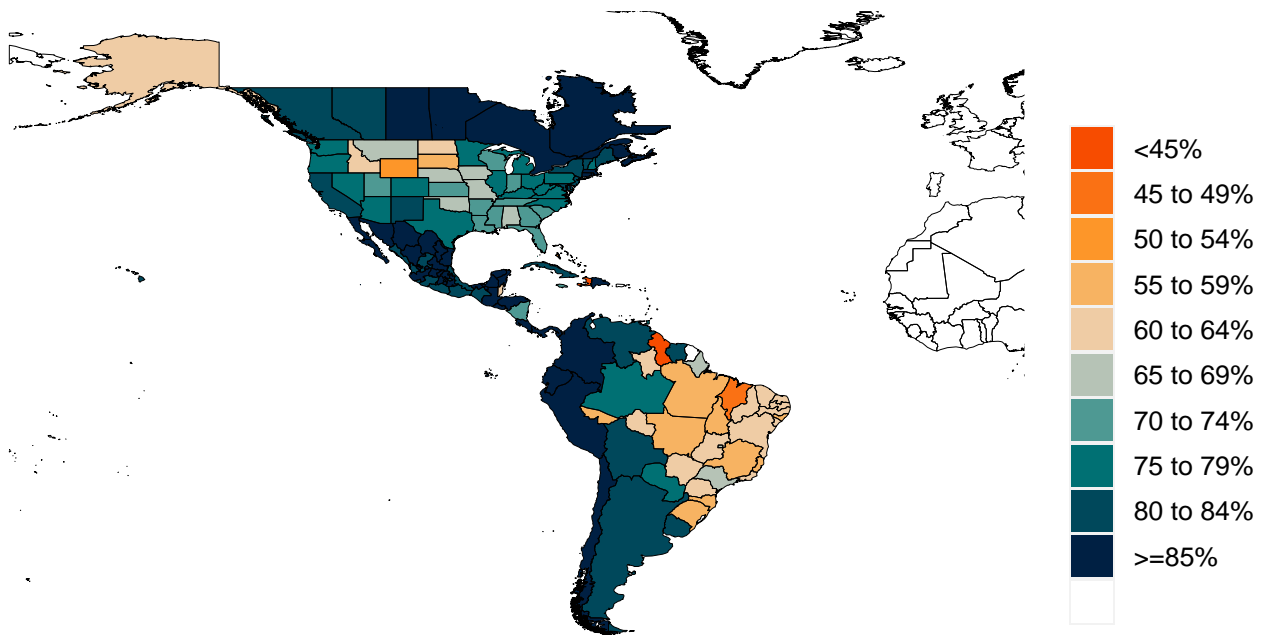**Figure 10.** Proportion of the population reporting always wearing a mask when leaving home on February 22, 2021

Figure 11. Trend in COVID-19 diagnostic tests per 100,000 people
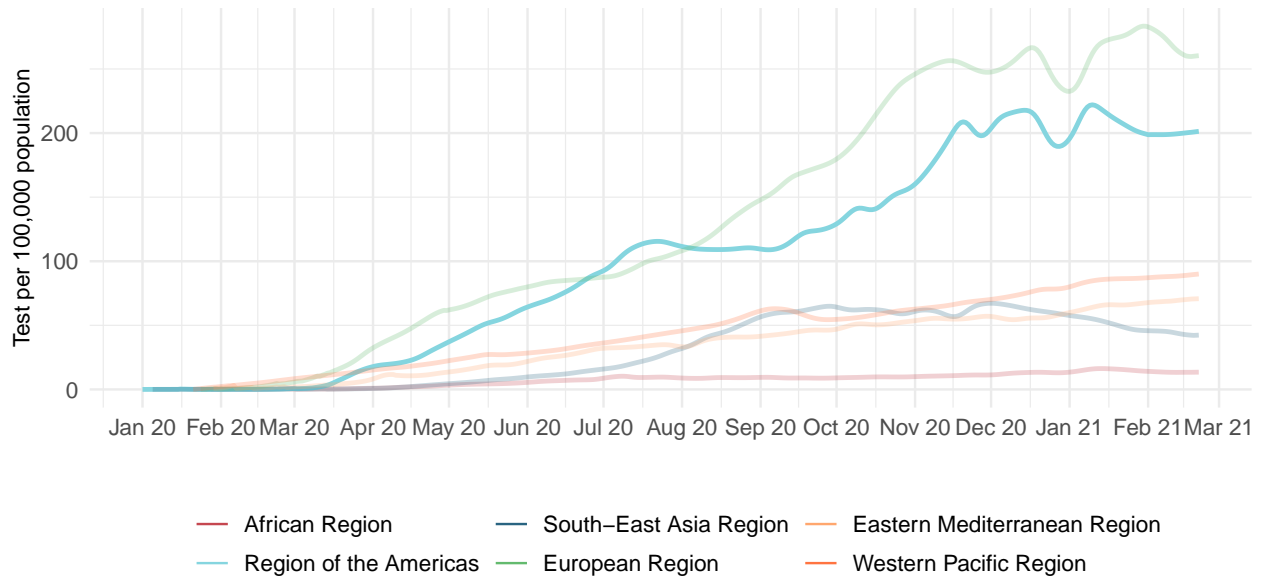
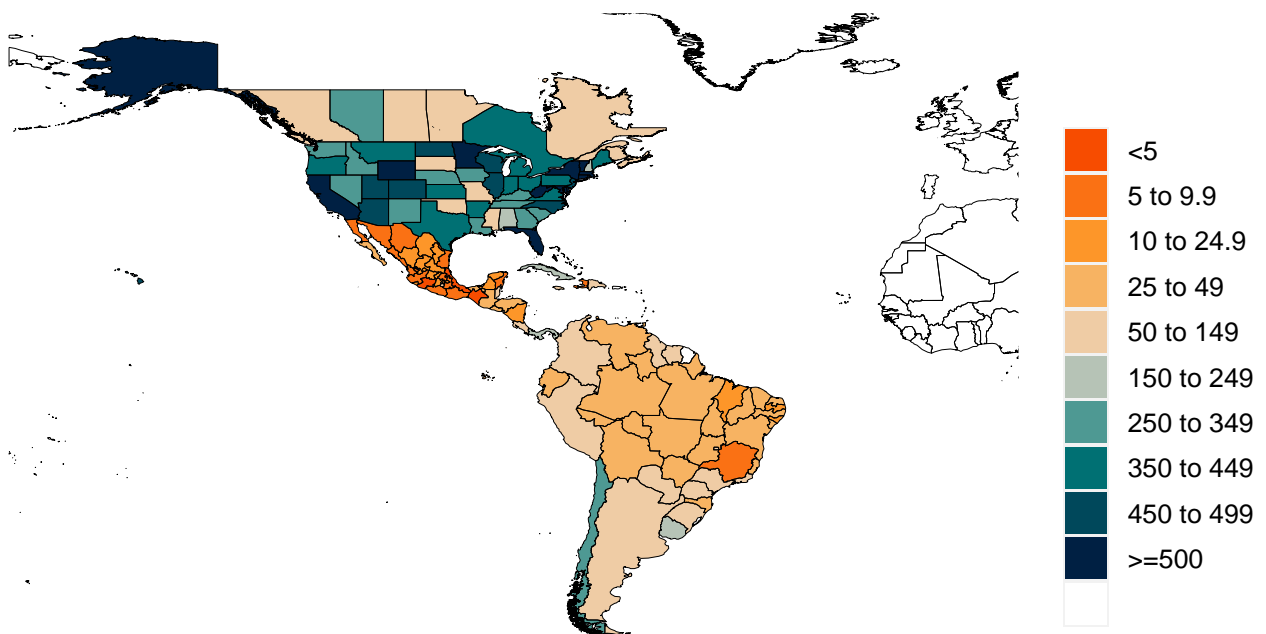**Figure 12.** COVID-19 diagnostic tests per 100,000 people on February 19, 2021

Figure 13 Increase in the risk of death due to pneumonia on February 1 2020 compared to August 1 2020
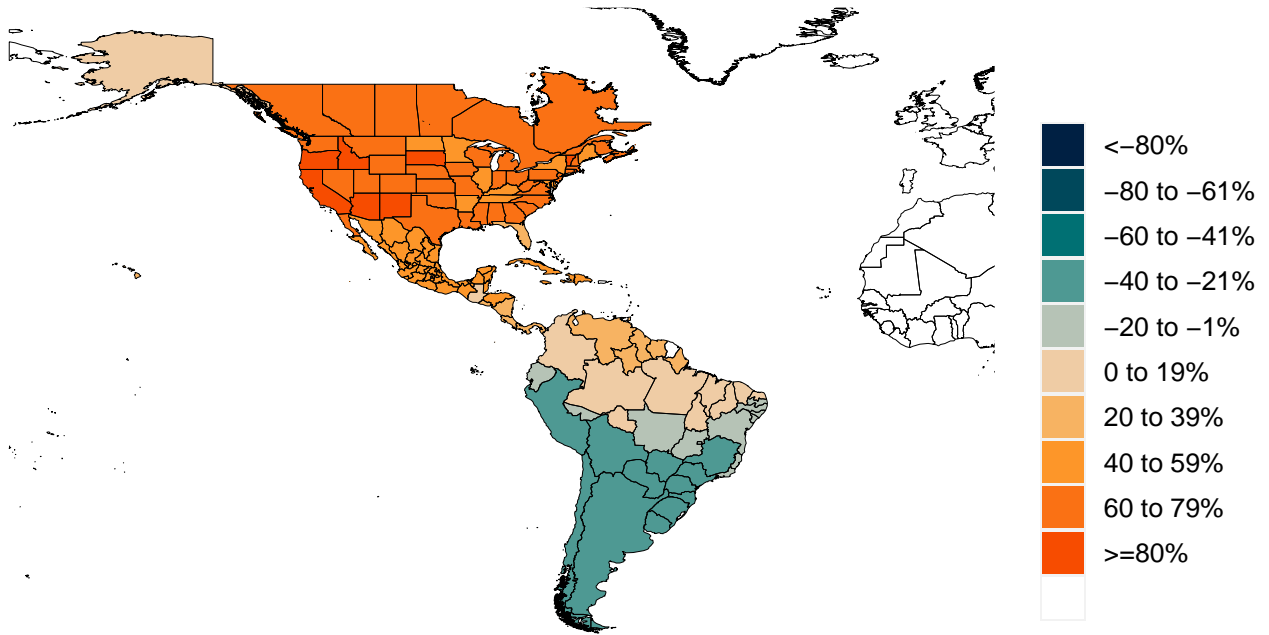
Figure 14. This figure shows the estimated proportion of the adult (18+) population that is open to receiving a COVID-19 vaccine based on Facebook survey responses (yes and yes, probably).
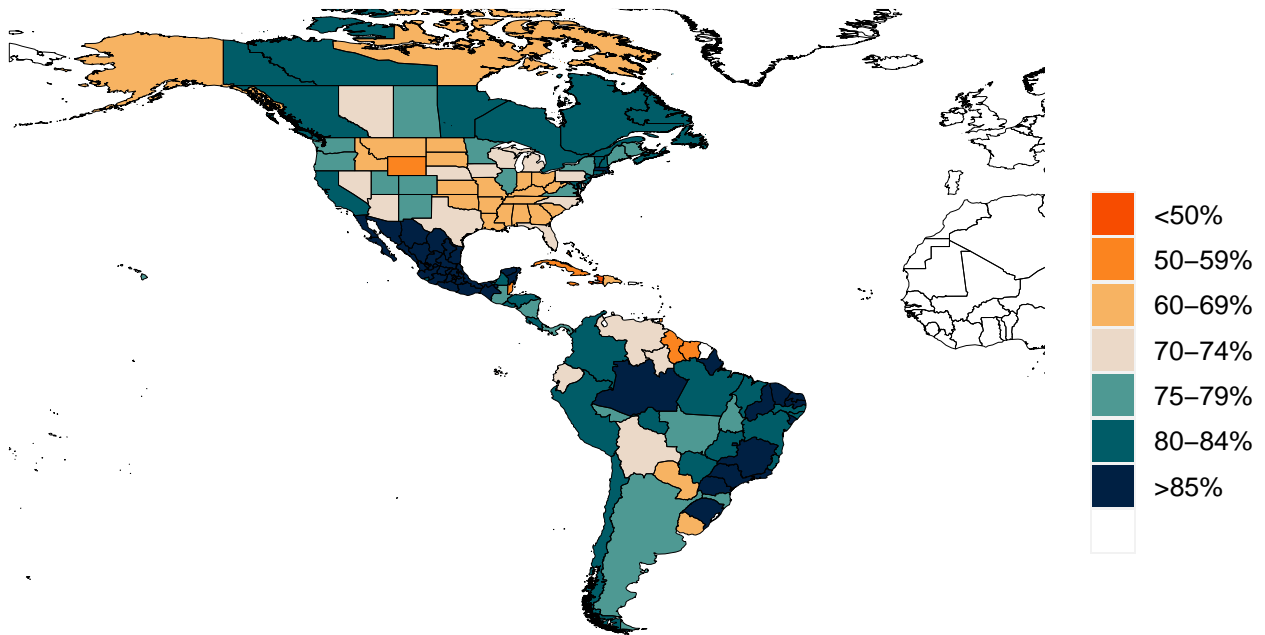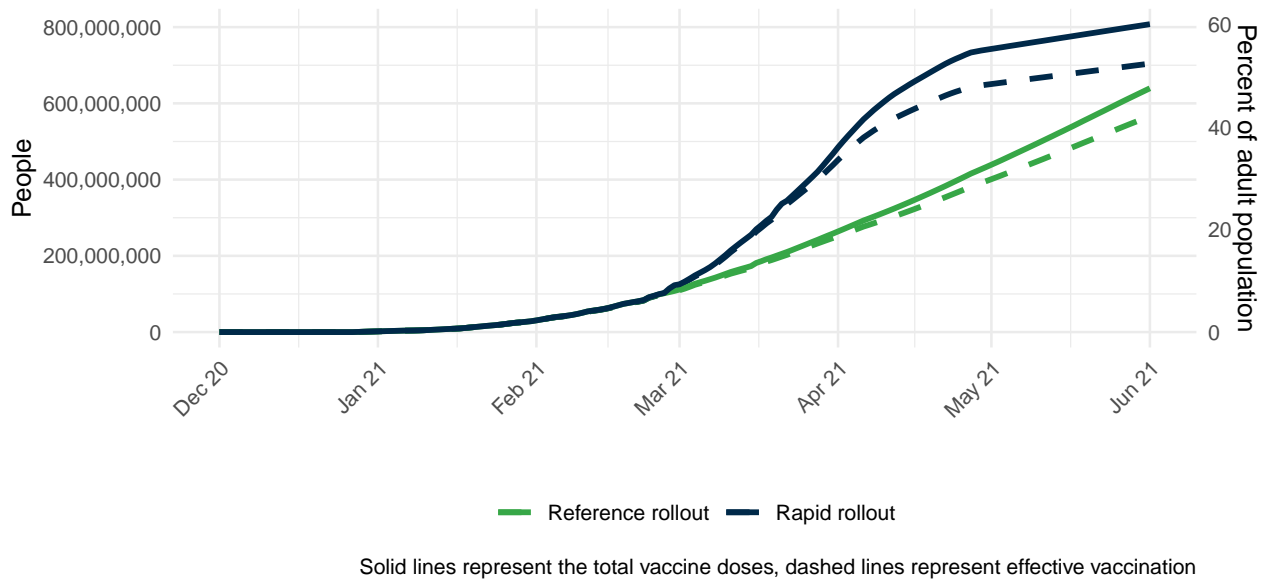

Figure 15. The number of people who receive any vaccine and those who are effectively vaccinated and protected against disease, accounting for efficacy, loss to follow up for two-dose vaccines, partial immunity after one dose, and immunity after two doses.

Solid lines represent the total vaccine doses, dashed lines represent effective vaccination

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 UK.
- 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 P1 begin to spread within 3 weeks in adjacent locations that do not already have B.1.351 or P1 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.

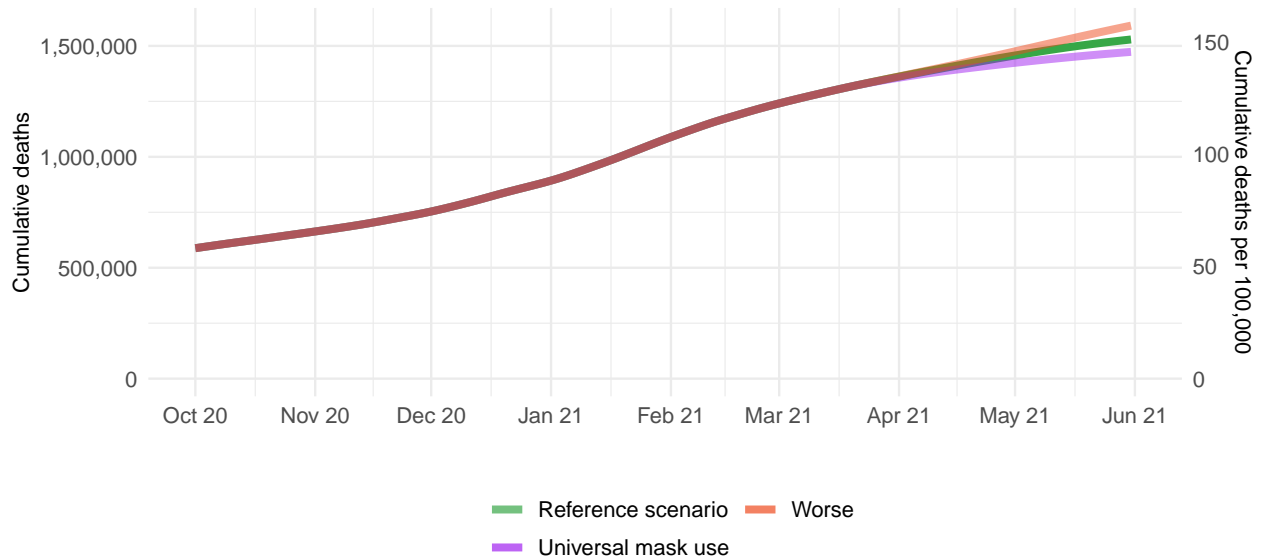**Figure 16.** Cumulative COVID-19 deaths until June 01, 2021 for three scenarios

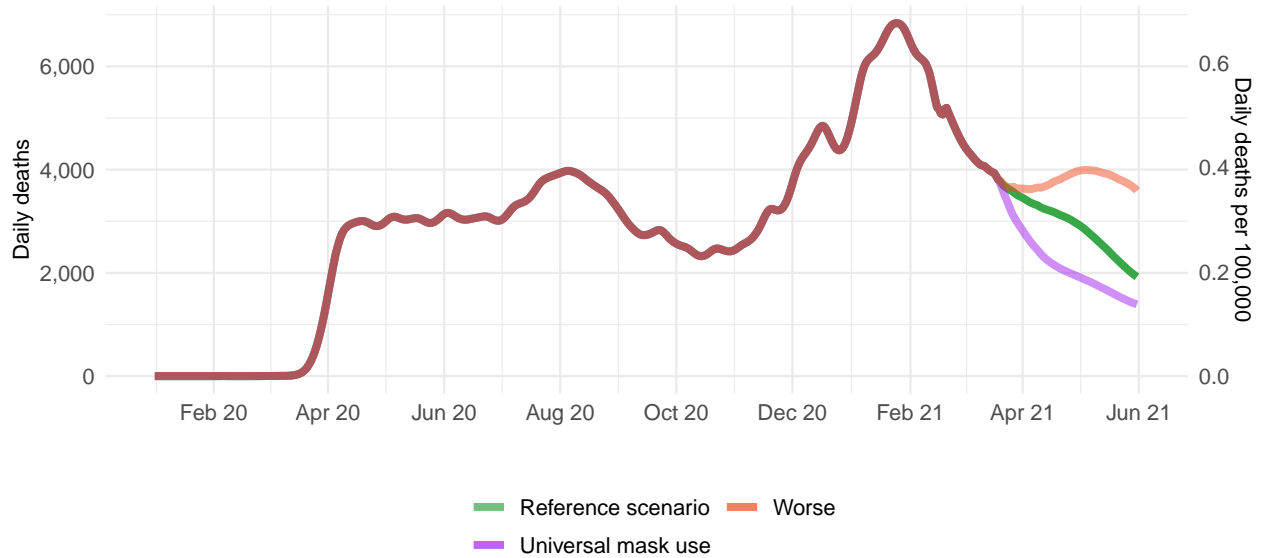**Figure 17.** Daily COVID-19 deaths until June 01, 2021 for three scenarios

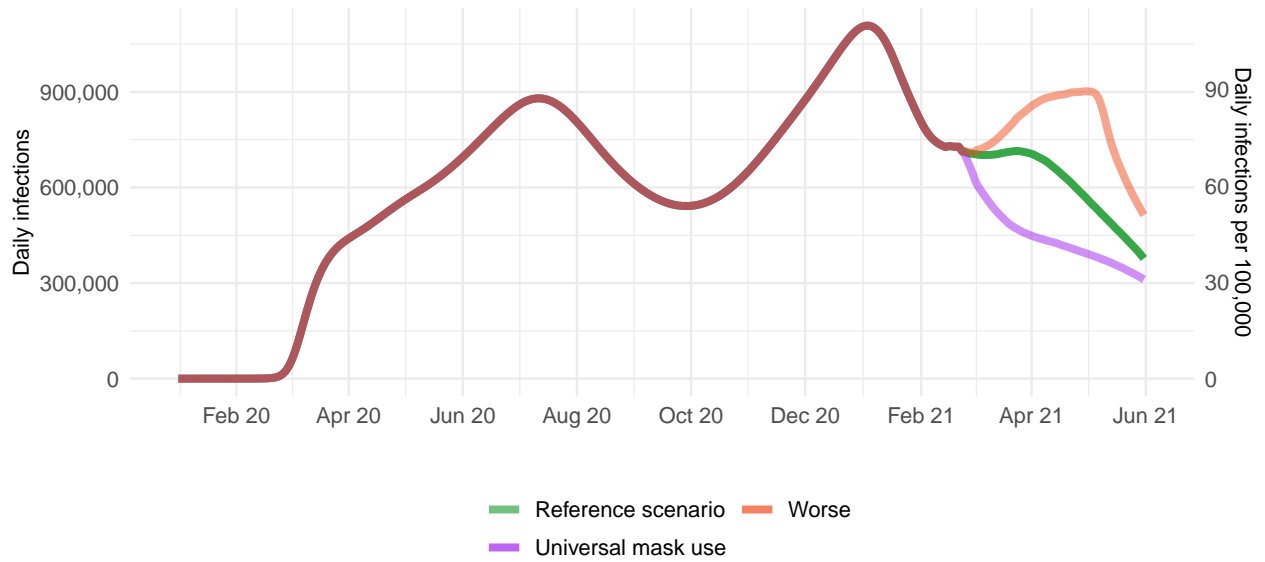**Figure 18.** Daily COVID-19 infections until June 01, 2021 for three scenarios

Figure 19. 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 Massachussets Institute of Technology (Delphi; https://www.covidanalytics.io/home), Imperial College London (Imperial; https://www.covidsim.org), The Los Alamos National Laboratory (LANL; https://covid-19.bsvgateway.org/), and the SI-KJalpha model from the University of Southern California (SIKJalpha; https://github.com/scc-usc/ReCOVER-COVID-19). Daily deaths from other modeling groups are smoothed to remove inconsistencies with rounding. Regional values are aggregates from availble locations in that region.
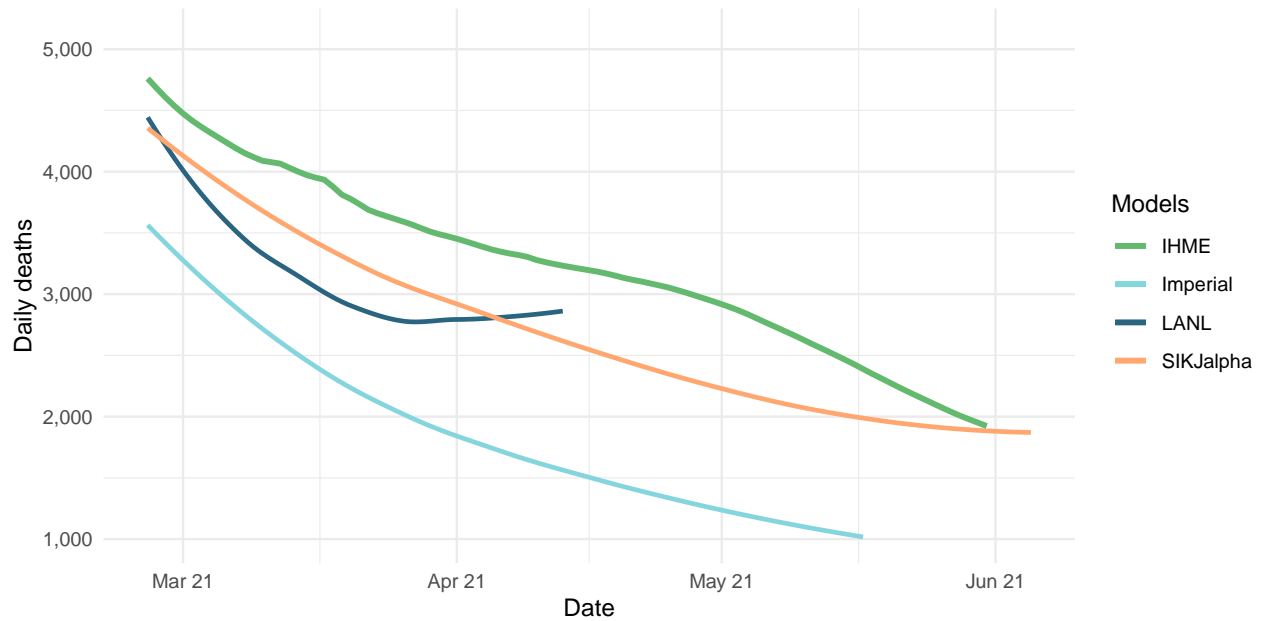
Figure 20. The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate stress*, 10-19% is considered *high stress*, and greater than 20% is considered *extreme stress*.
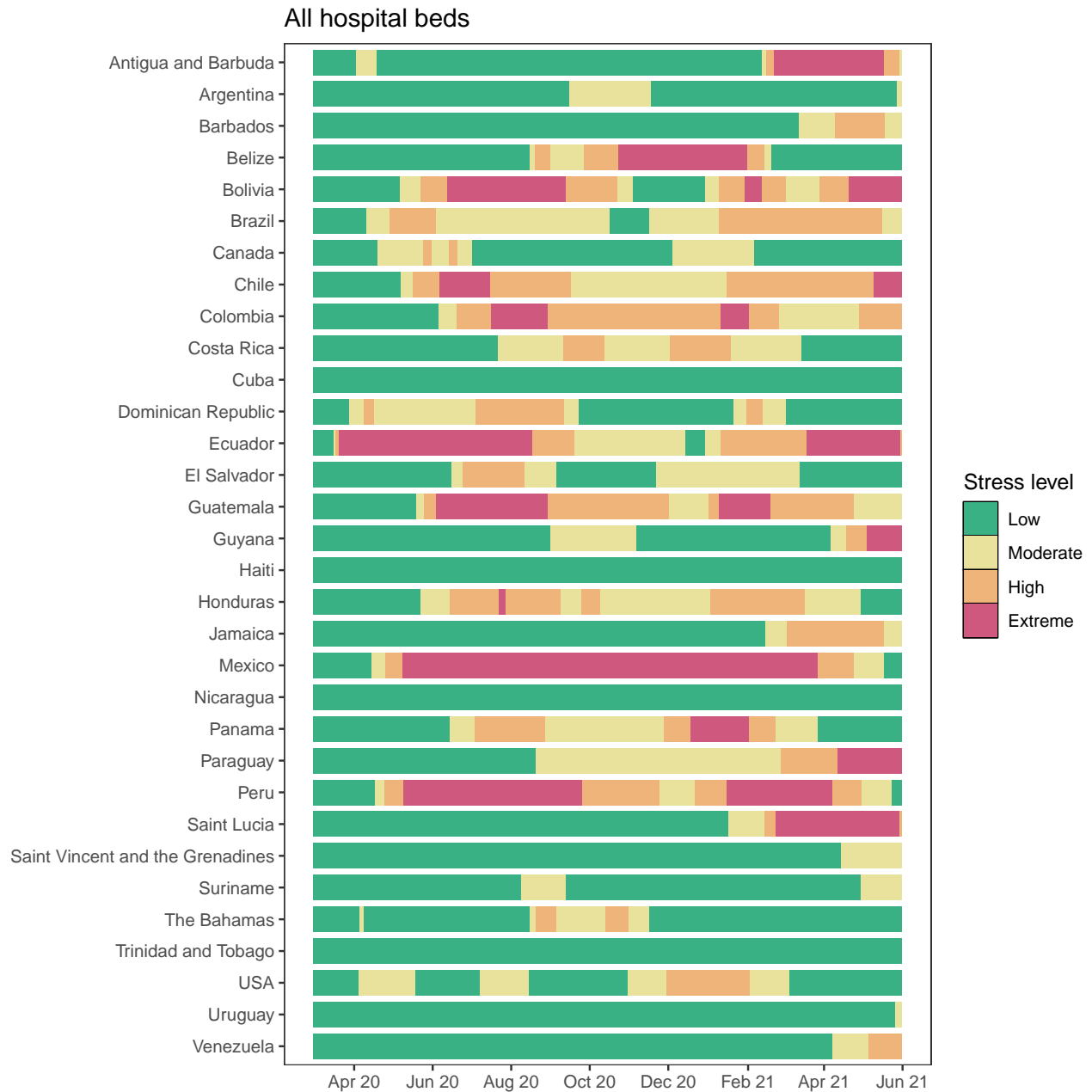
Figure 21. The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *moderate stress*, 30-59% is considered *high stress*, and greater than 60% is considered *extreme stress*.

More information

Data sources:

Mask use data sources include PREMISE; Facebook Global symptom survey (This research is based on survey results from University of Maryland Social Data Science Center) and the Facebook United States symptom survey (in collaboration with Carnegie Mellon University); Kaiser Family Foundation; YouGov COVID-19 Behaviour Tracker survey.

Vaccine hesitancy data are from the COVID-19 Beliefs, Behaviors, and Norms Study, a survey conducted on Facebook by the Massachusetts Institute of Technology (https://covidsurvey.mit.edu/).

Data on vaccine candidates, stages of development, manufacturing capacity, and pre-purchasing agreements are primarily from Linksbridge and supplemented by Duke University.

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.