Informe de resultados de COVID-19

La Región de las Américas

20 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 20 de febrero de 2021 con datos hasta el 16 de febrero de 2021.

Situación actual

• Los casos reportados diariamente en la última semana disminuyeron a 171,700 por día en promedio en comparación con 211,300 la semana anterior (Figura 1).

• Las muertes diarias en la última semana disminuyeron a 5,820 por día en promedio en comparación con 6,140 la semana anterior (Figura 2). Esto mantiene a COVID-19 en la causa número 1 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 5 países de la región (Figura 5).

• Estimamos que el 25% de las personas en la Región de las Américas han sido infectadas al 16 de febrero (Figura 4).

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

Tendencias en impulsores de transmisión

• La movilidad la semana pasada fue 28% 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 al 30% de la línea de base en 17 países.

• Al 16 de febrero estimamos que 77% de las personas siempre usaban una máscara al salir de casa (Figura 9) no se observan cambios en comparación con la semana pasada. El uso de mascarillas fue inferior al 50% en 4 países.

• Hubo 175 pruebas de diagnóstico por cada 100,000 personas el 16 de febrero (Figura 11).

• En la Región de las Américas, el 78,4% 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 88% en México, Veracruz de Ignacio de la Llave (Figura 14).

• En nuestro escenario de referencia actual, esperamos que 615,95 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 1,536,000 muertes acumuladas el 1 de junio de 2021. Esto representa 357,000 muertes adicionales del 16 de febrero al 1 de junio (Figura 16). Las muertes diarias alcanzarán un máximo de 6.790 el 26 de enero de 2021 (Figura 17).

• Para el 1 de junio de 2021, proyectamos que el lanzamiento proyectado de la vacuna salvará 172,300 vidas.

• Si se alcanzara la cobertura universal de mascarillas (95%) en la próxima semana, nuestro modelo proyecta 67,000 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 1,600,000 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 divergentes. El nuestro es el más alto.

• En algún momento, desde febrero hasta el 1 de junio, 20 países tendrán una presión alta o extrema en las camas de hospital (Figura 22). En algún momento, desde febrero hasta el 1 de junio, 26 países tendrán una presión alta o extrema en la capacidad de la UCI (Figura 21).

Actualizaciones de modelos

Hemos actualizado nuestro modelo que predice la propagación de las nuevas variantes, que se utiliza en el escenario de referencia de dos formas. Primero, la velocidad de ampliación de las nuevas variantes ahora se basa en datos de más de 15 ubicaciones, mientras que anteriormente solo teníamos datos de Londres. En segundo lugar, ahora utilizamos datos observados sobre la presencia de nuevas variantes (B.1.1.7, B.1.351 o P1) en todas las ubicaciones con transmisión comunitaria informada y más de cinco casos de esas variantes secuenciadas.

COVID-19 Results Briefing

The Region of the Americas

February 20, 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 20, 2021, with data through February 16, 2021.

Current situation

- Daily reported cases in the last week decreased to 171,700 per day on average compared to 211,300 the week before (Figure 1).
- Daily deaths in the last week decreased to 5,820 per day on average compared to 6,140 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 five countries in the region (Figure 5).
- We estimated that 25% of people in the Region of the Americas have been infected as of February 16 (Figure 4).
- The daily death rate is greater than 4 per million in Bolivia, Brazil, Chile, Colombia, Mexico, Peru, Saint Lucia, and the US (Figure 3).

Trends in drivers of transmission

- Mobility last week was 28% 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 17 countries.
- As of February 16, 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 four countries.
- There were 175 diagnostic tests per 100,000 people on February 16 (Figure 11).
- In the Region of the Americas, 78.4% 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 88% in Veracruz, Mexico (Figure 14).
- In our current reference scenario, we expect that 615.95 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 1,536,000 cumulative deaths on June 1, 2021. This represents 357,000 additional deaths from February 16 to June 1 (Figure 16). Daily deaths peaked at 6,790 on January 26, 2021 (Figure 17).
- By June 1, 2021, we project that 172,300 lives will be saved by the projected vaccine rollout.
- If **universal mask coverage (95%)** were attained in the next week, our model projects 67,000 fewer cumulative deaths compared to the reference scenario on June 1, 2021 (Figure 16).
- Under our **worse scenario**, our model projects 1,600,000 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 22). At some point from February through June 1, 26 countries will have high or extreme stress on ICU capacity (Figure 21).

Model updates

We have updated our model that predicts the spread of the new variants, which is used in the reference scenario in two ways. First, the speed of scale-up of the new variants is now based on data from more than 15 locations, whereas previously we only had data from London. Second, we now use observed data on the presence of new variants (B.1.1.7, B.1.351, or P1) in all locations with reported community transmission and more than five cases of those variants sequenced.

Figure 1. Reported daily COVID-19 cases

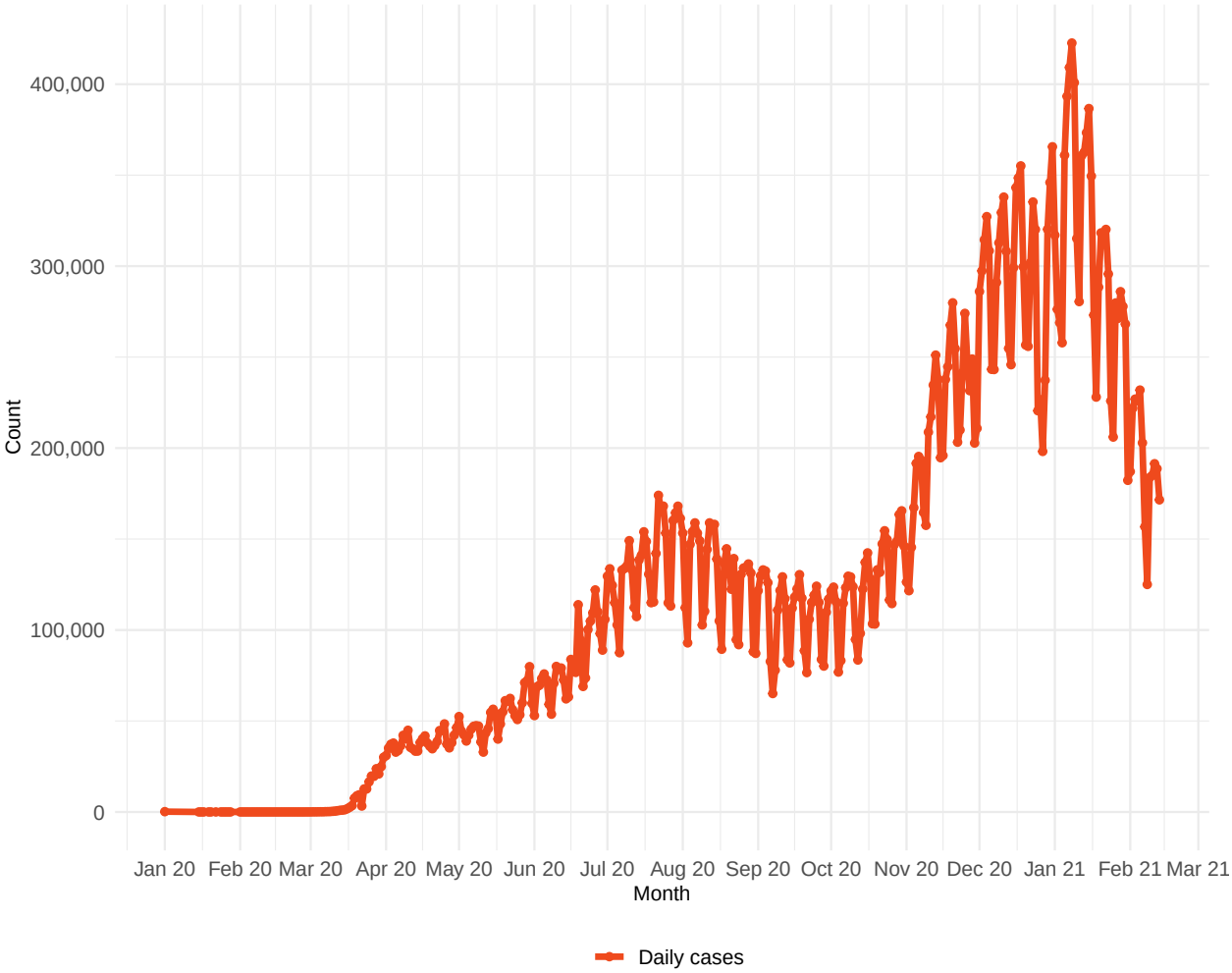


Table 1. Ranking of COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year

Cause name	Weekly deaths	Ranking
COVID-19	39,793	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

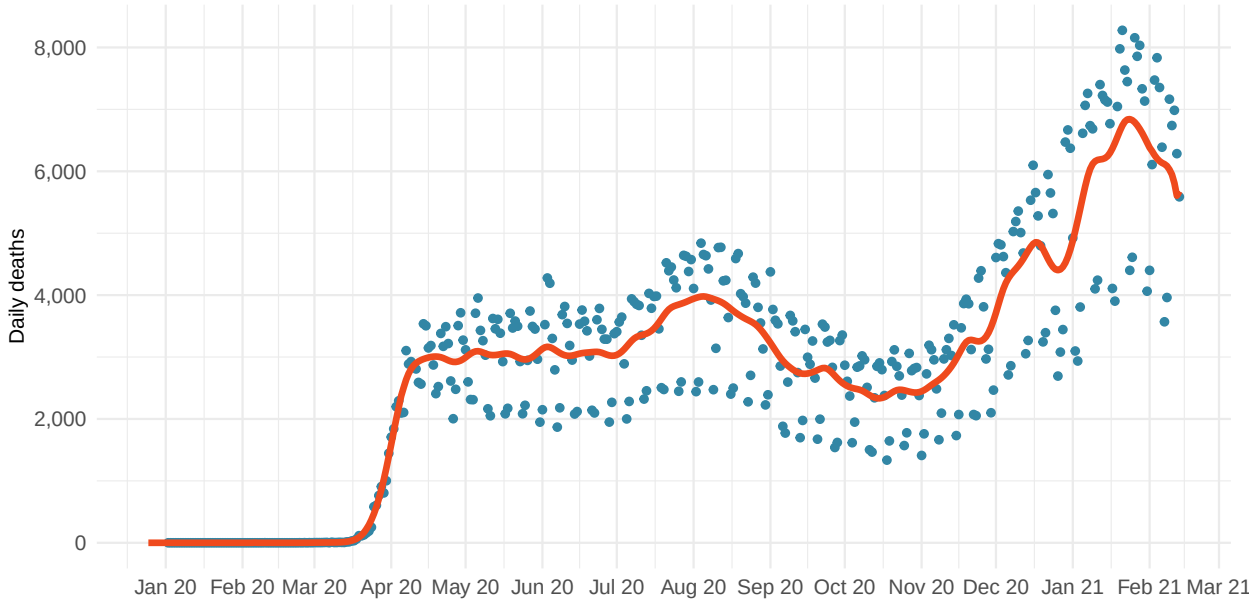


Figure 3. Daily COVID-19 death rate per 1 million on February 16, 2021

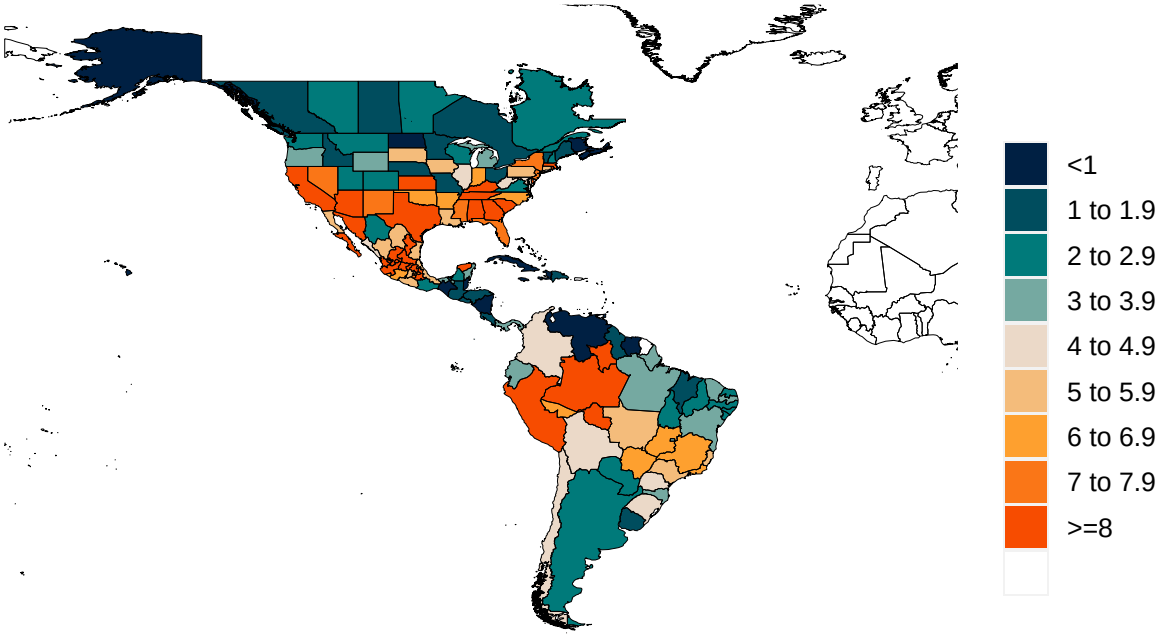


Figure 4. Estimated percent of the population infected with COVID-19 on February 16, 2021

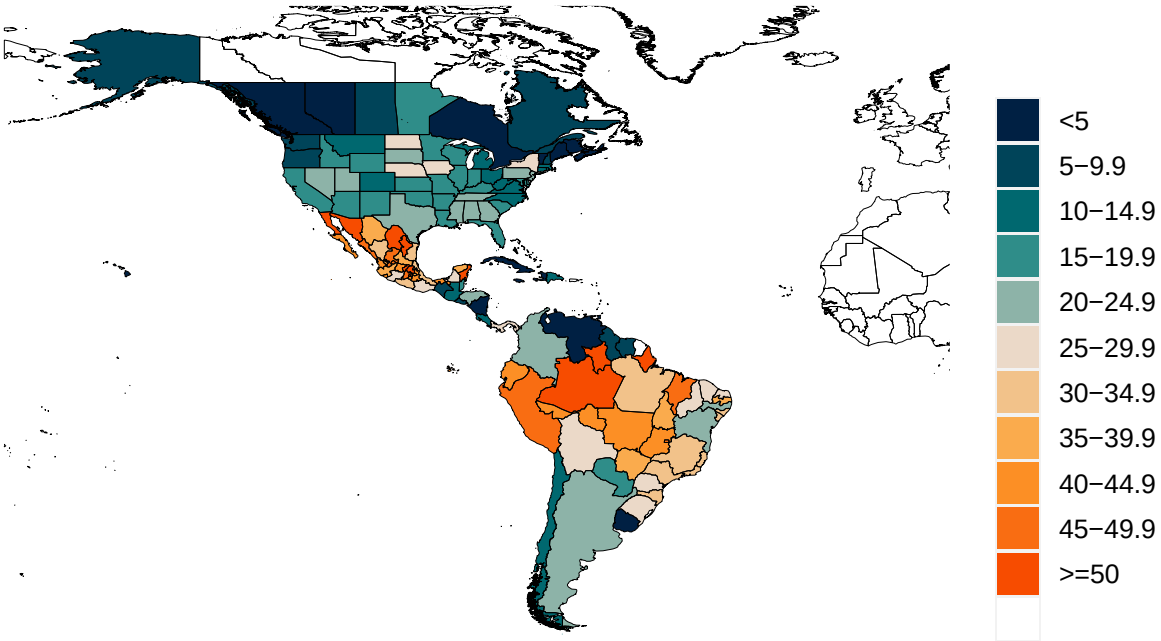


Figure 5. Mean effective R on February 05, 2021. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline, all other things being held the same.

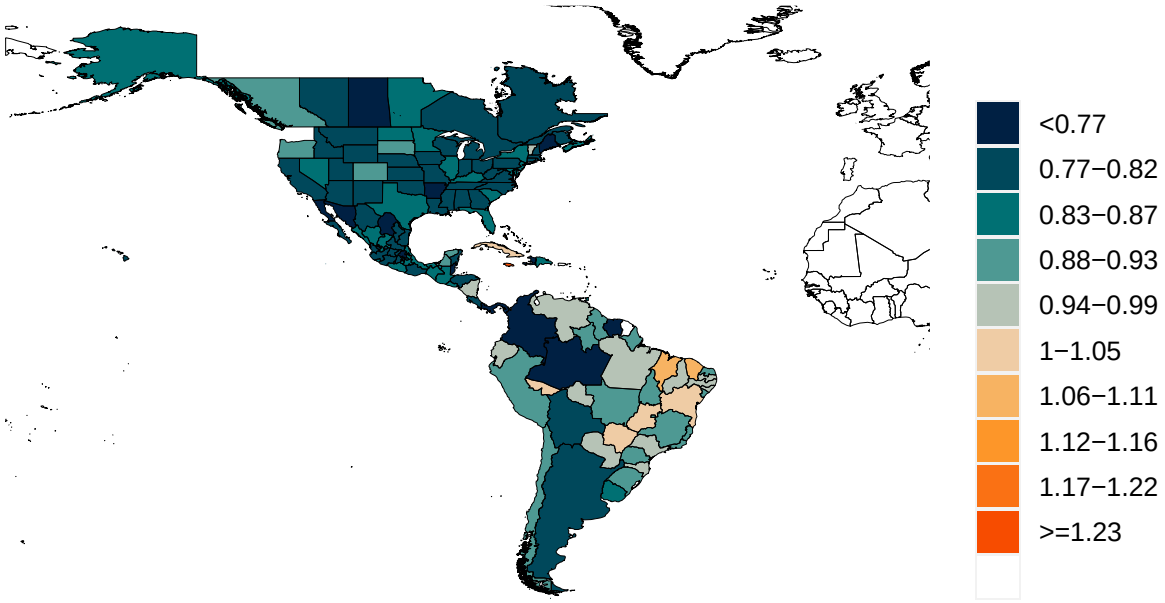
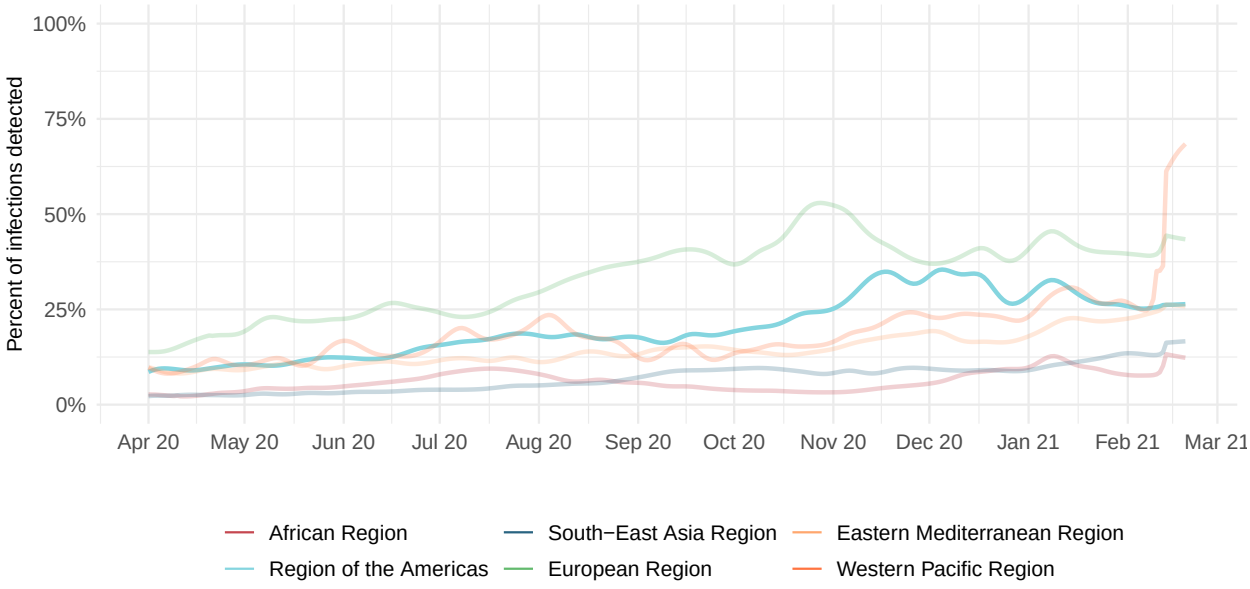


Figure 6. Percent of COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model.



*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

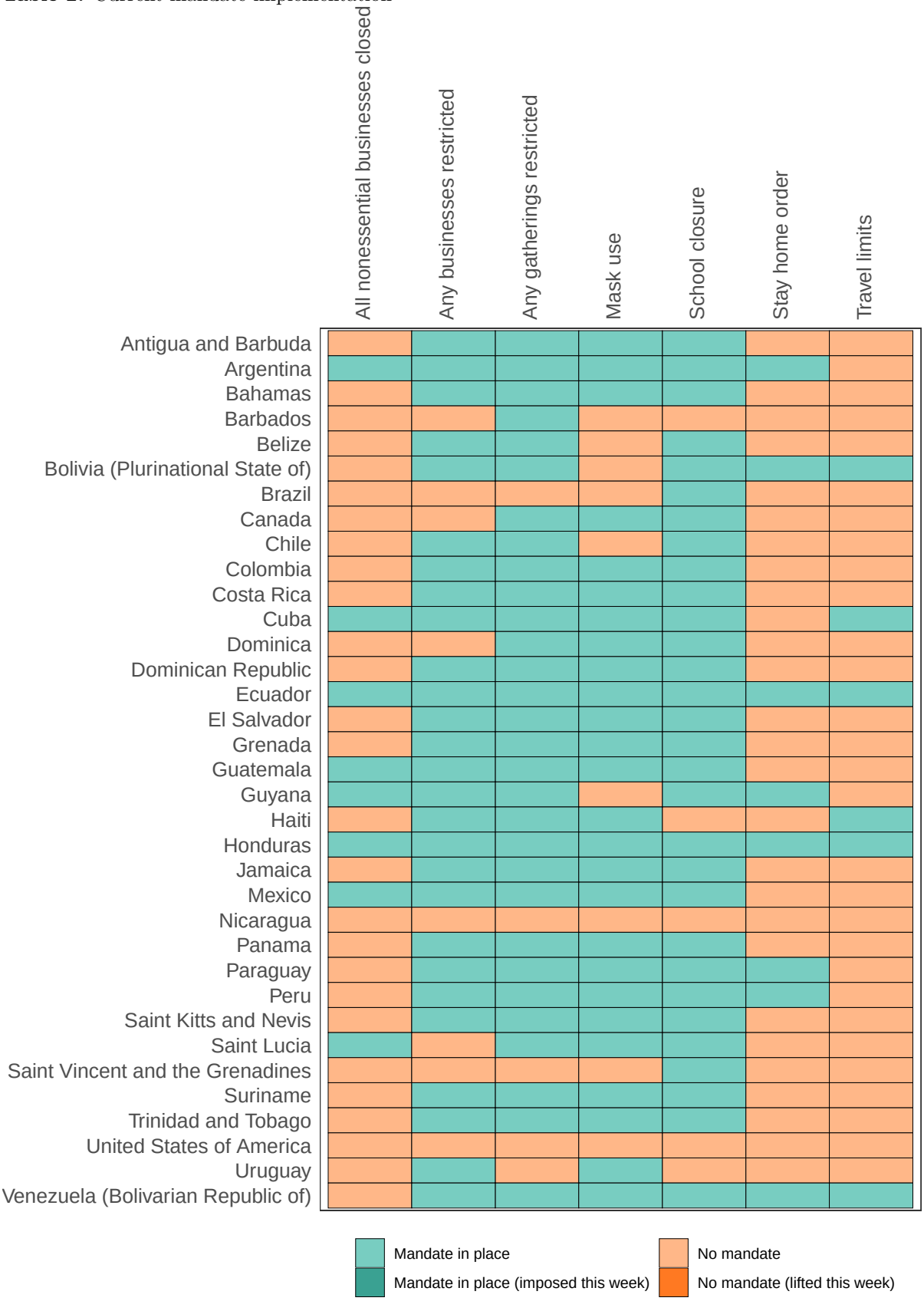


Figure 7. Trend in mobility as measured through smartphone app use compared to January 2020 baseline

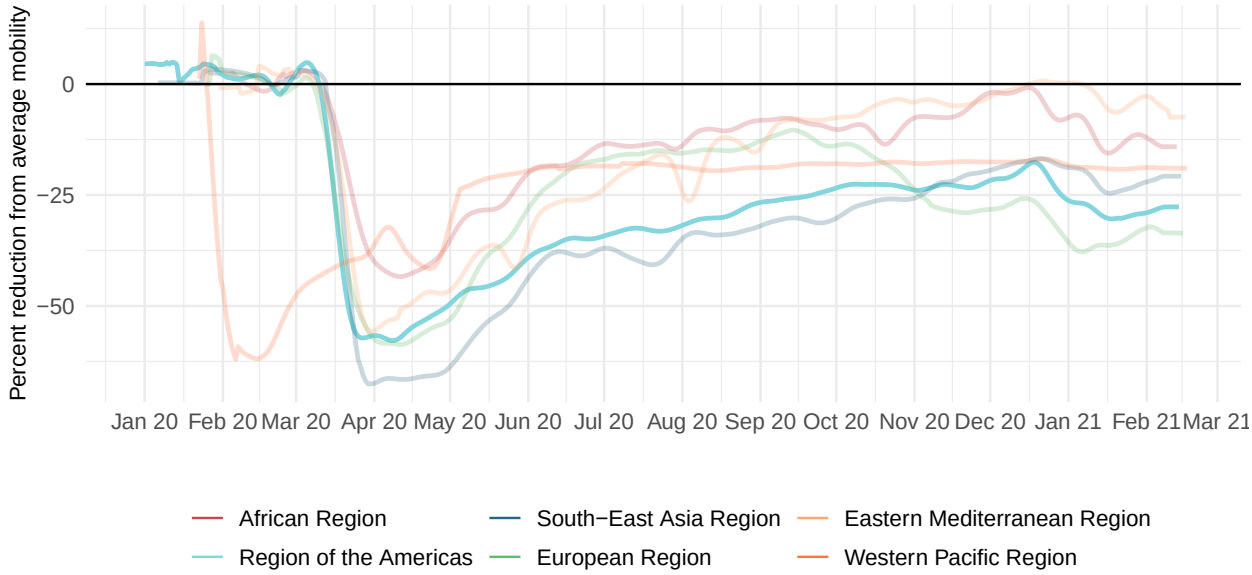


Figure 8. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent) on February 16, 2021

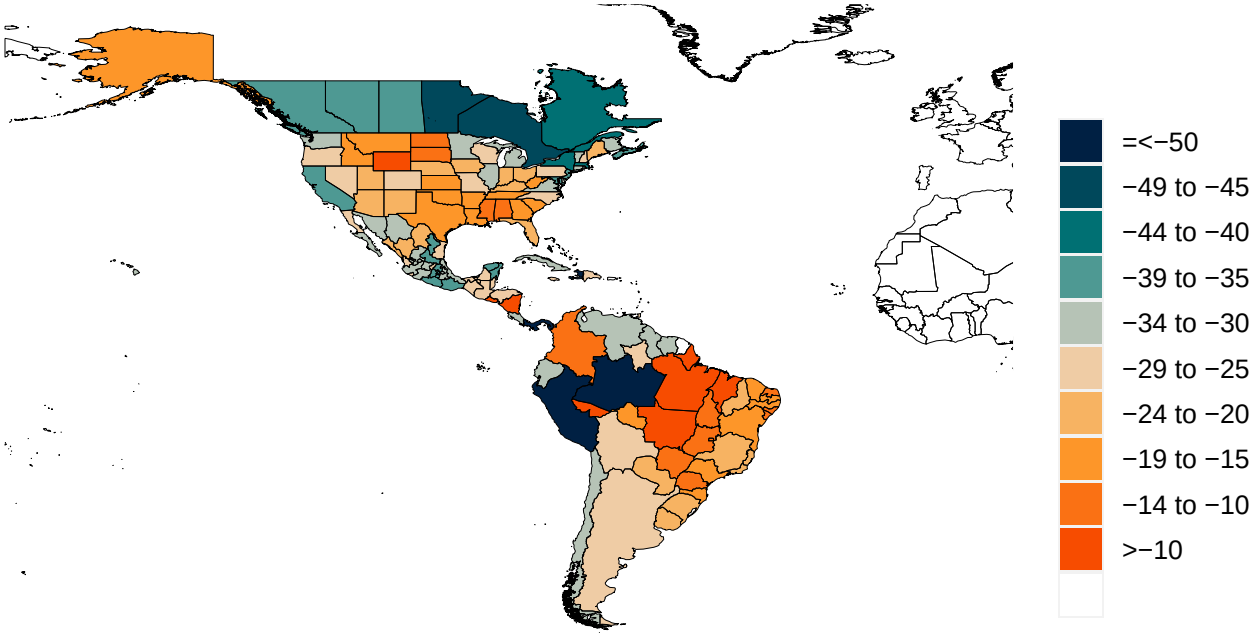


Figure 9. Trend in the proportion of the population reporting always wearing a mask when leaving home

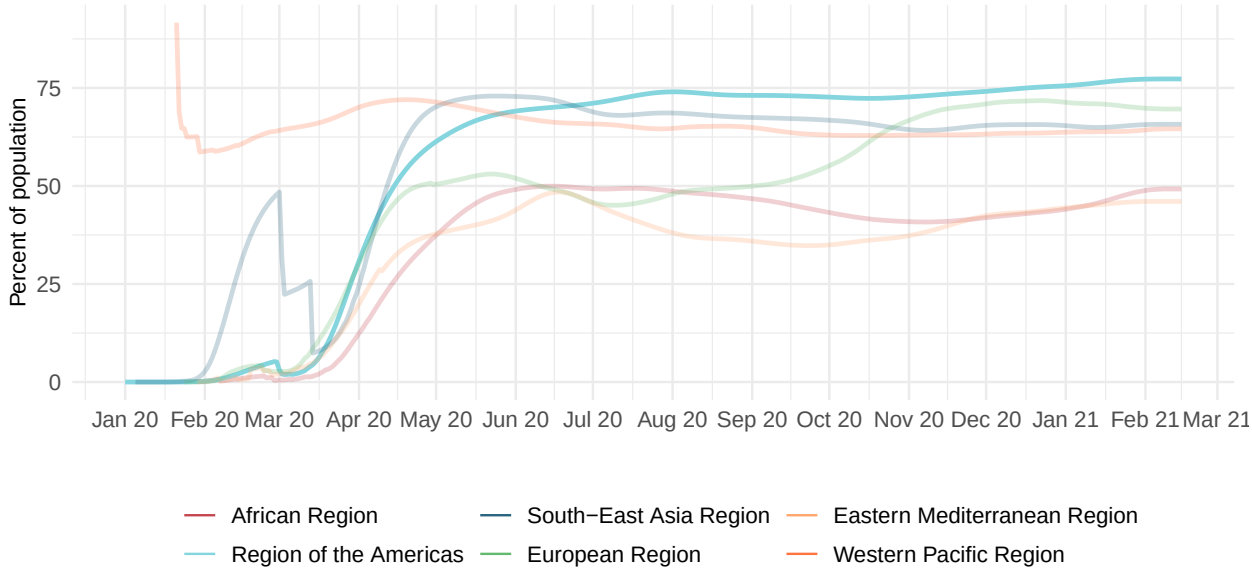


Figure 10. Proportion of the population reporting always wearing a mask when leaving home on February 16, 2021

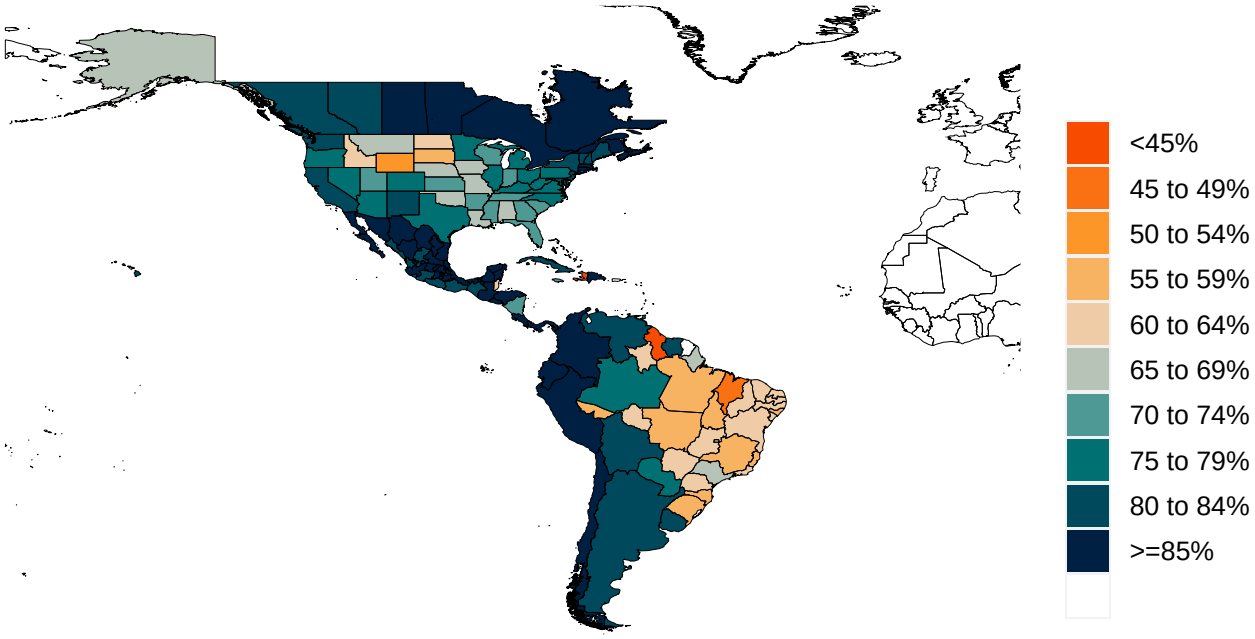


Figure 11. Trend in COVID-19 diagnostic tests per 100,000 people

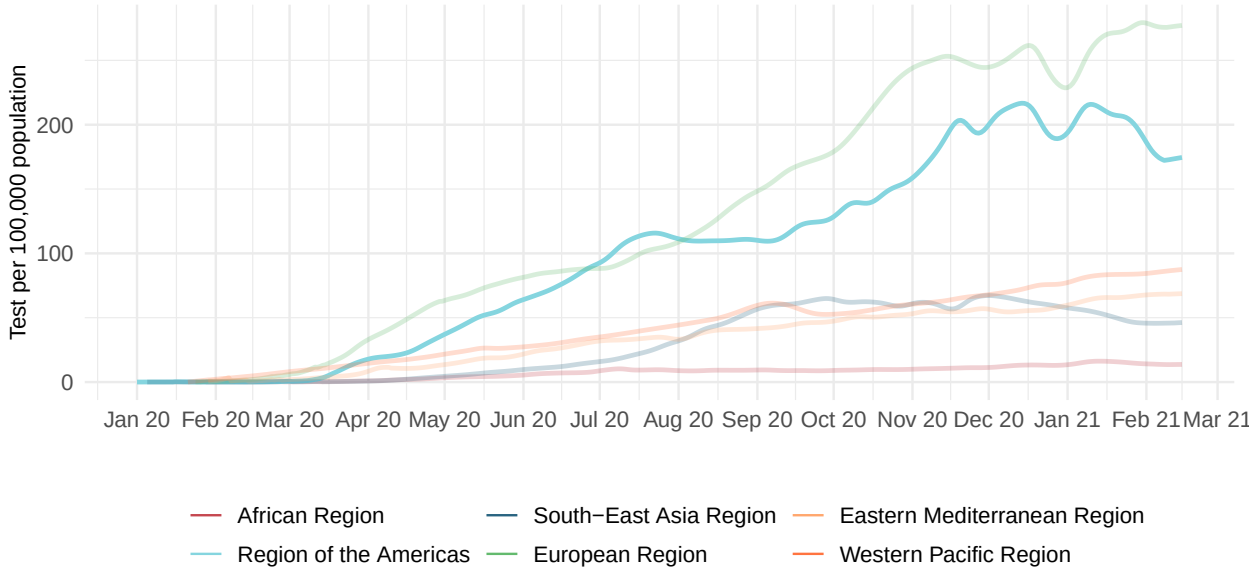


Figure 12. COVID-19 diagnostic tests per 100,000 people on February 15, 2021

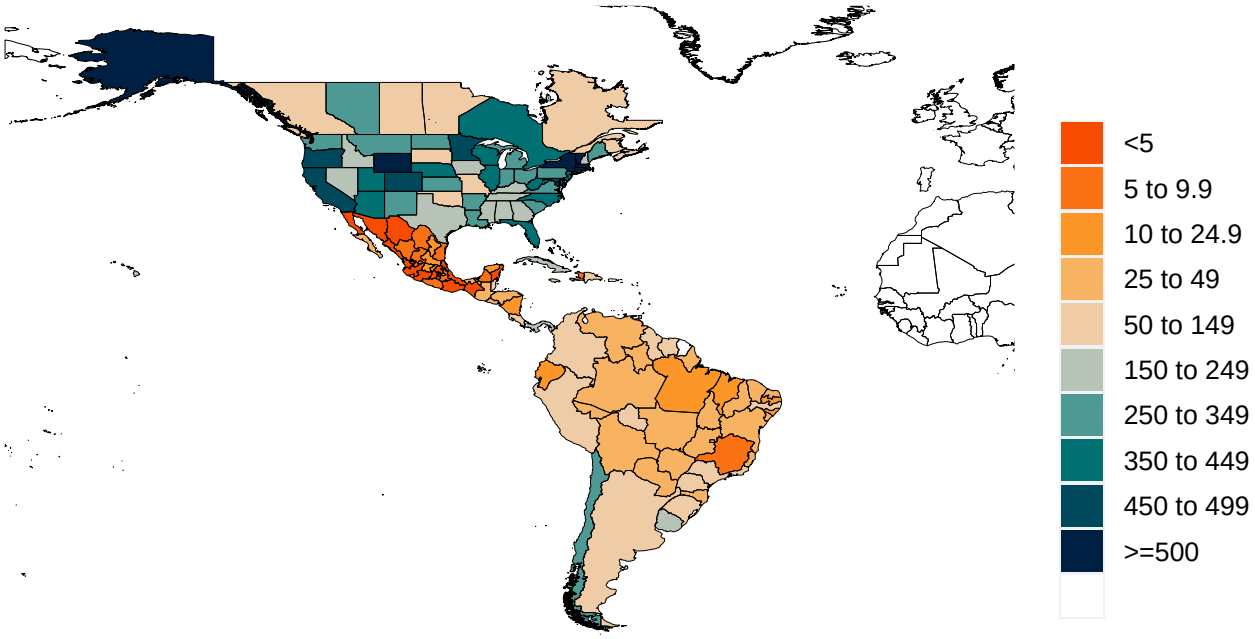


Figure 13 Increase in the risk of death due to pneumonia on February 1 2020 compared to August 1 2020

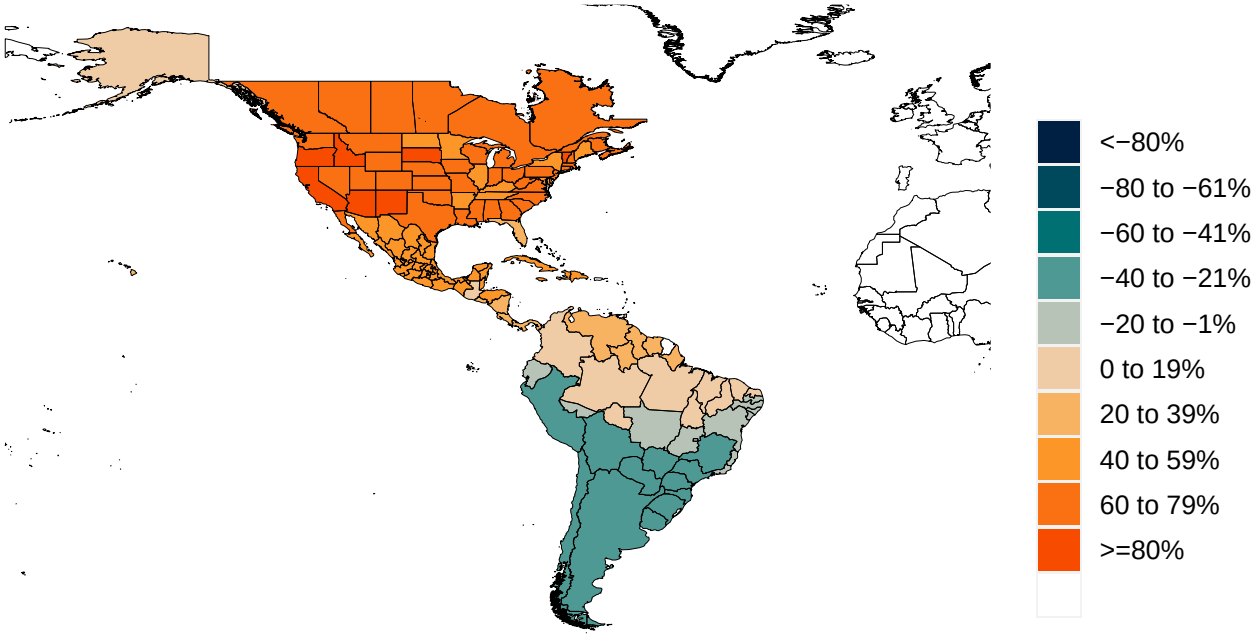


Figure 14. This figure shows the estimated proportion of the adult (18+) population that is open to receiving a COVID-19 vaccine based on Facebook survey responses (yes and yes, probably).

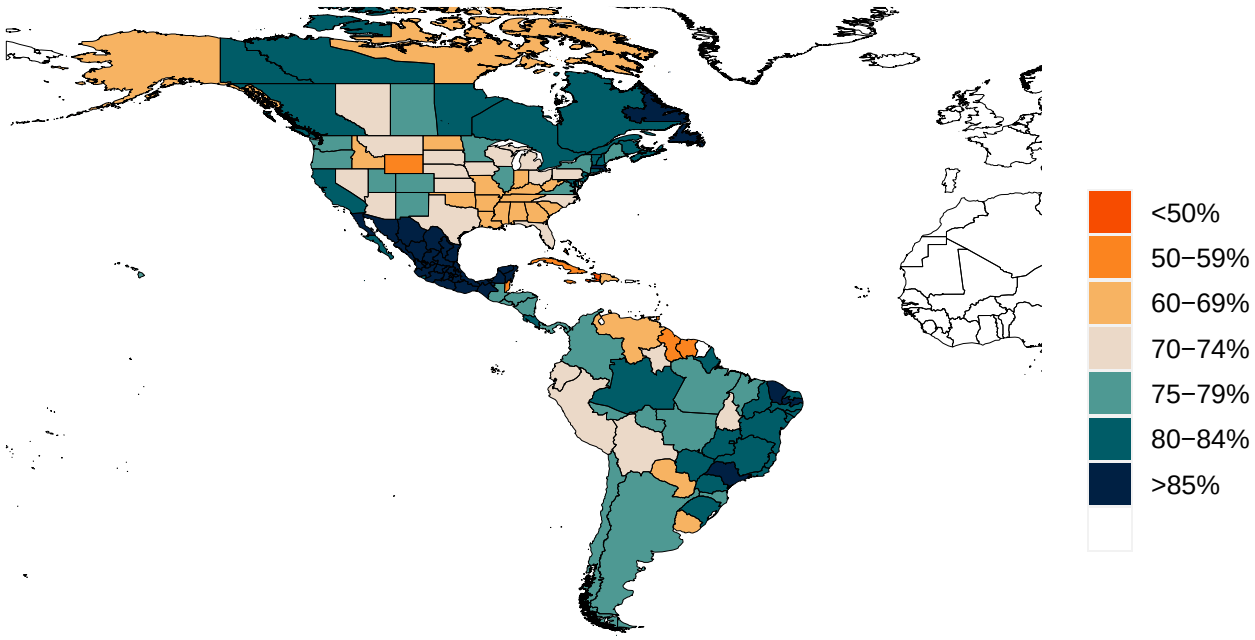
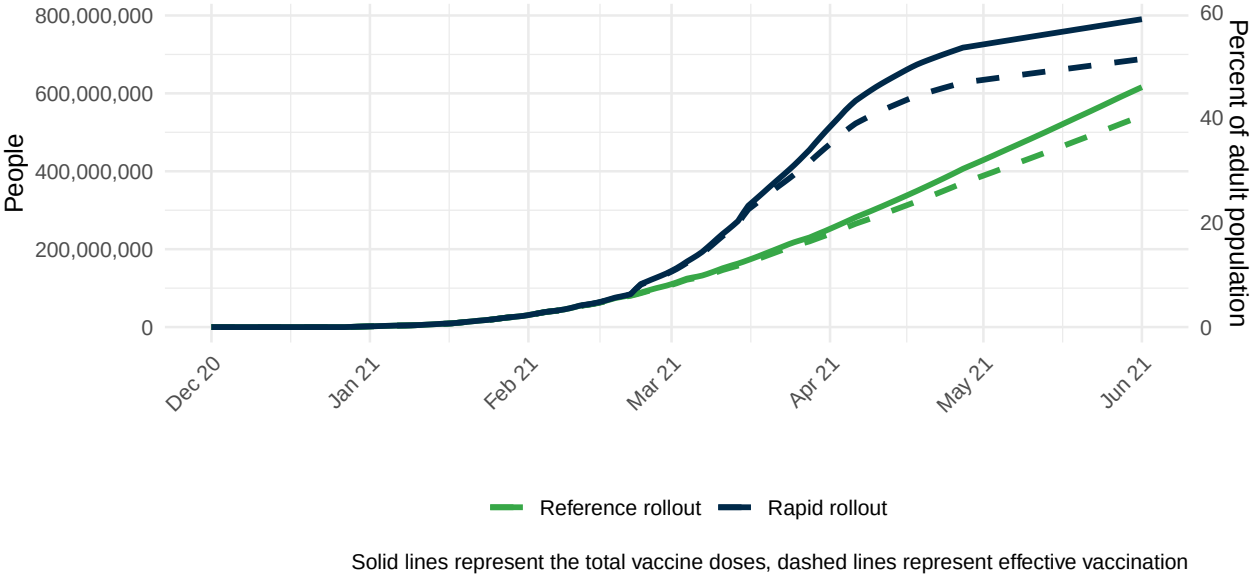


Figure 15. The number of people who receive any vaccine and those who are effectively vaccinated and protected against disease, accounting for efficacy, loss to follow up for two-dose vaccines, partial immunity after one dose, and immunity after two doses.



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 two ways:

- First, it assumes that variants B.1.351 or P1 begin to spread within 2 weeks in all locations that do not already have B.1.351 or P1 community transmission.
- Second, it also assumes that all those vaccinated increase their mobility toward pre-COVID-19 levels.

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

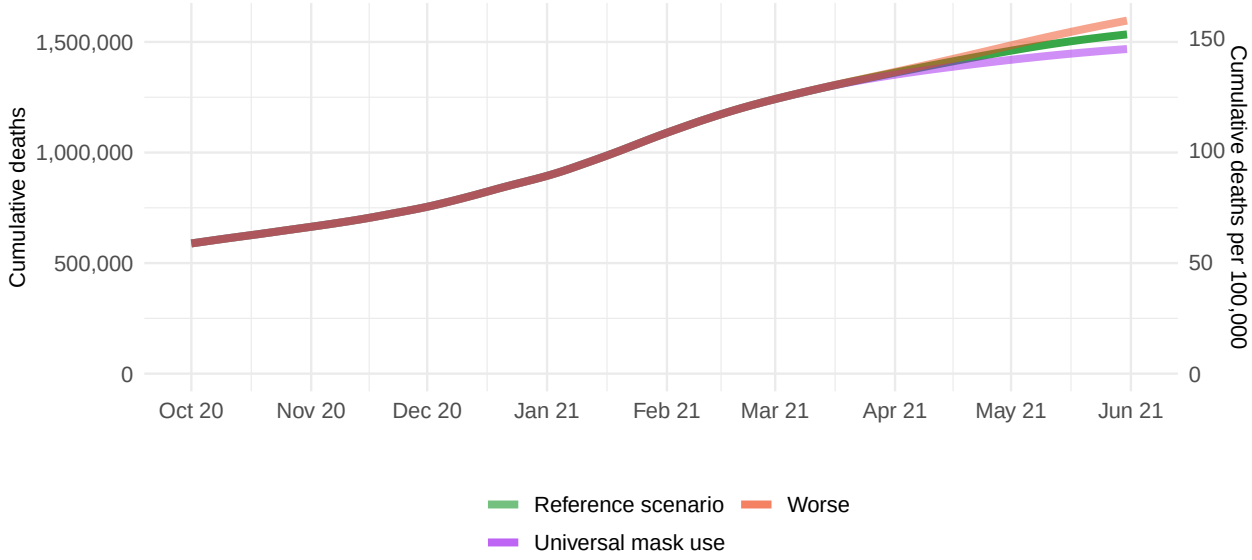


Figure 17. Daily COVID-19 deaths until June 01, 2021 for three scenarios

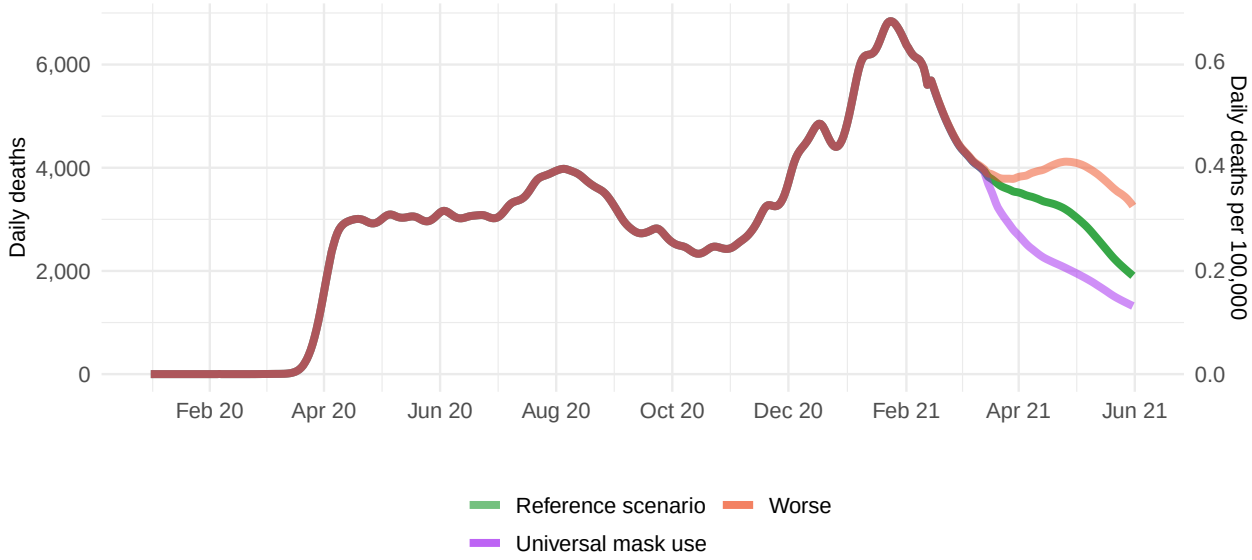


Figure 18. Daily COVID-19 infections until June 01, 2021 for three scenarios

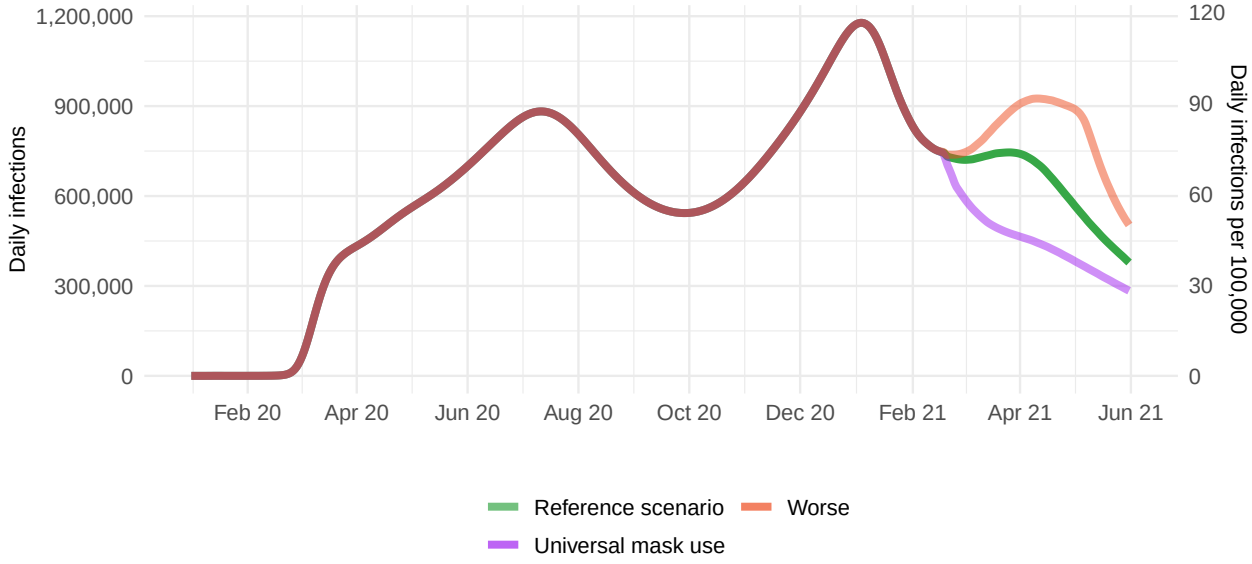


Figure 23. Forecasted percent infected with COVID-19 on June 01, 2021

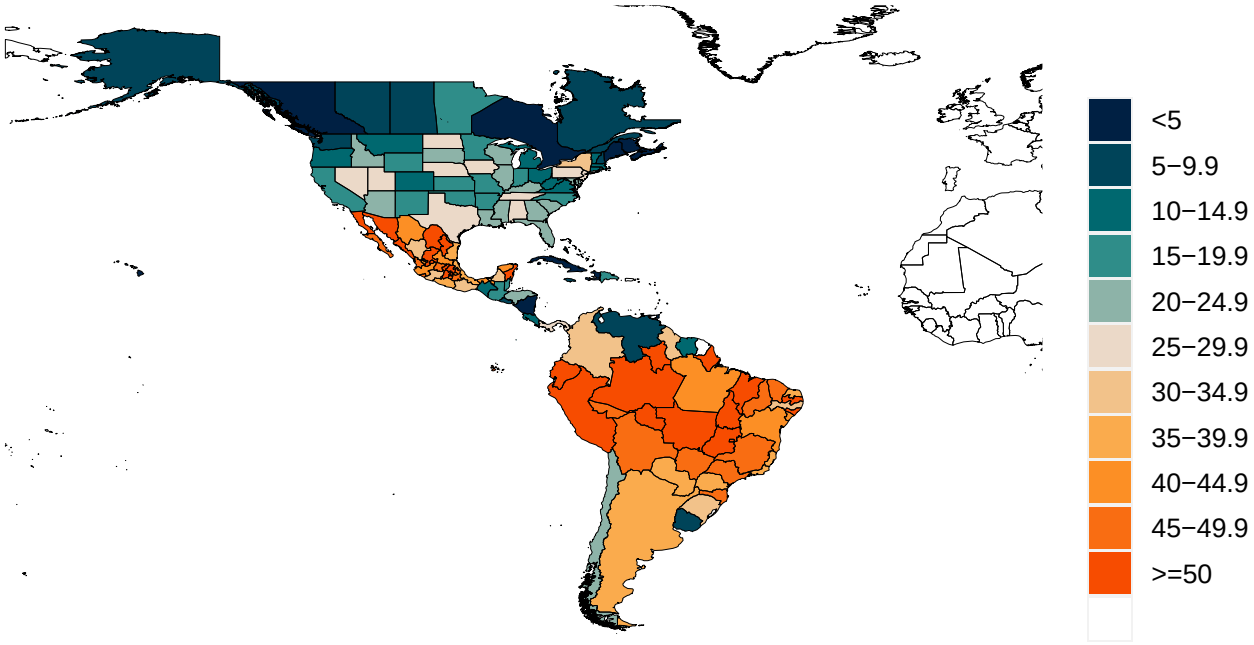


Figure 19. Comparison of reference model projections with other COVID modeling groups. For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available: Delphi from the Massachussets Institute of Technology (Delphi; https://www.covidanalytics.io/home), 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.

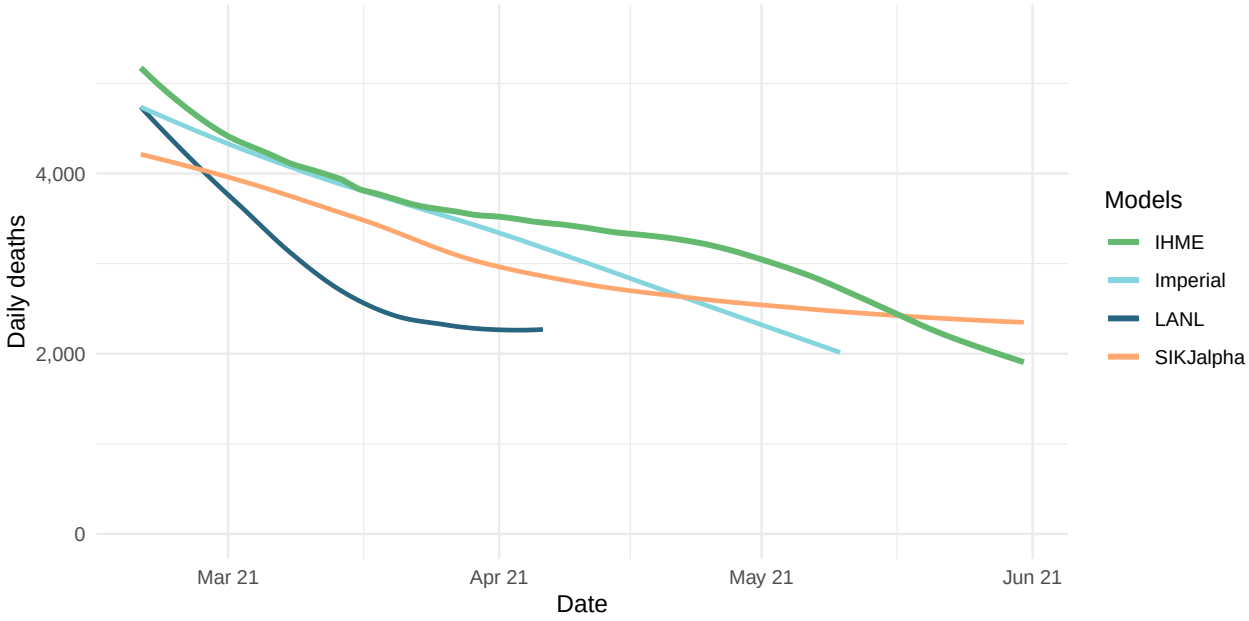


Figure 20. The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate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

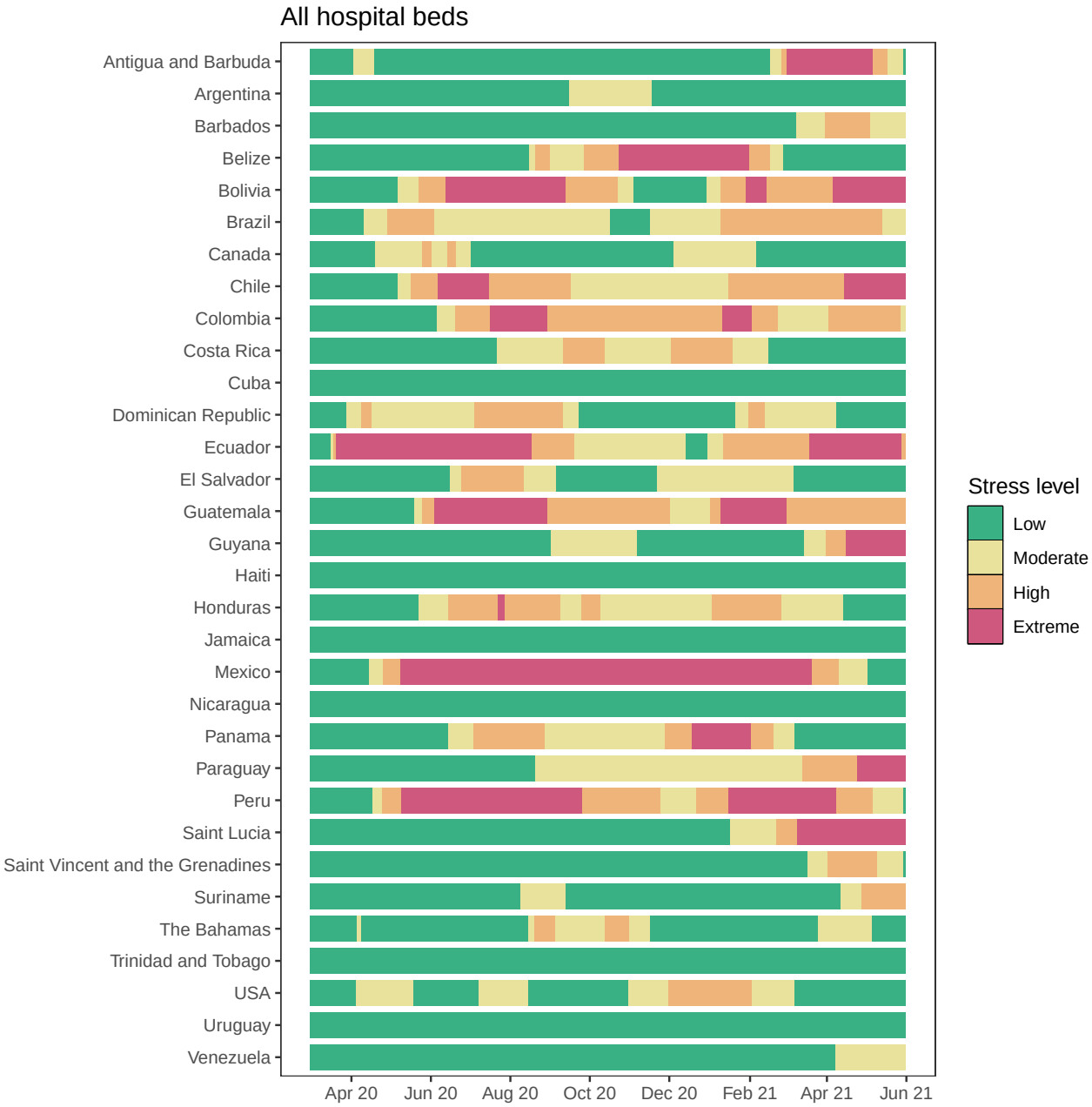
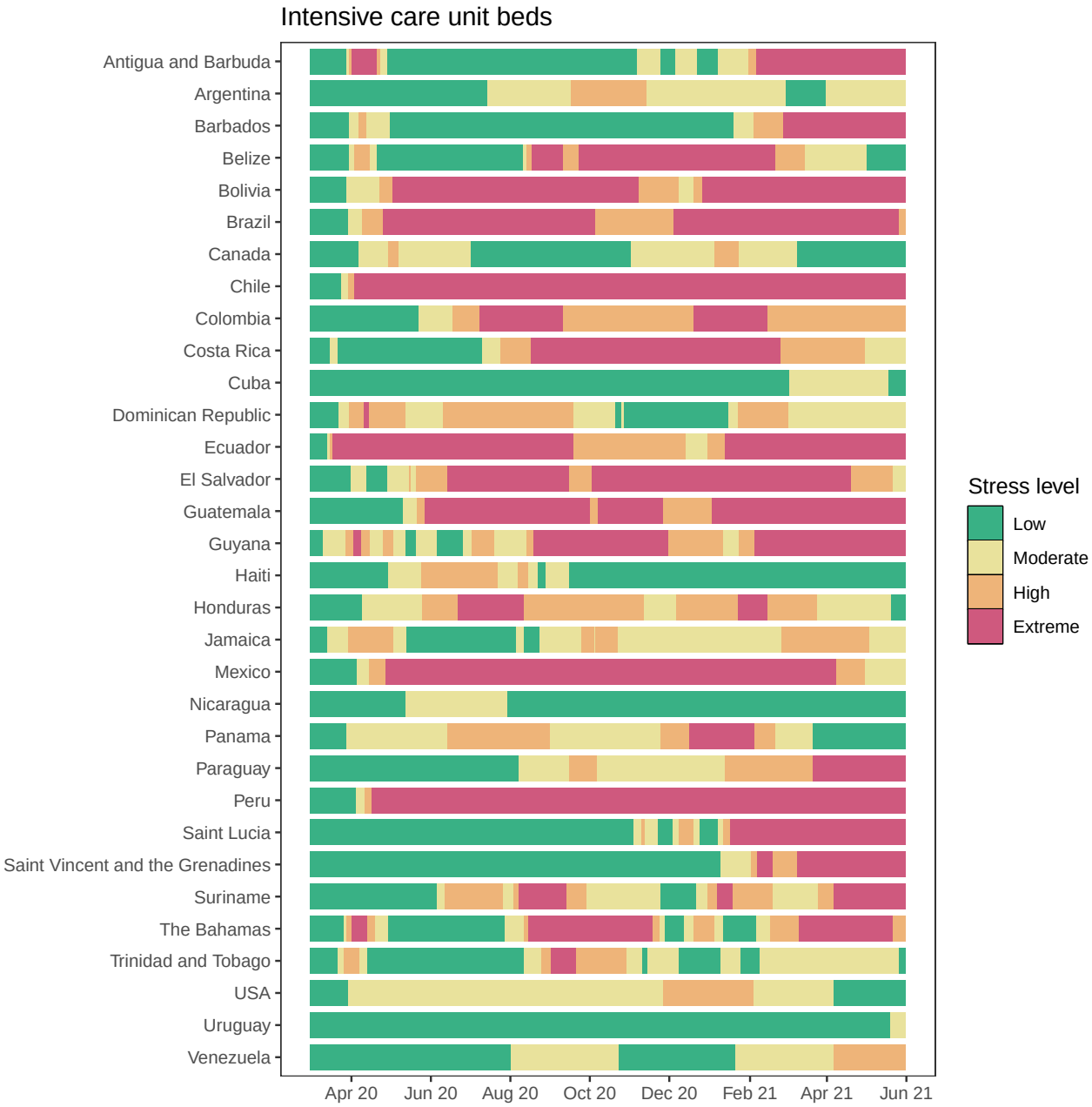


Figure 21. The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *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.