

Informe de resultados de COVID-19

México

1 de julio de 2021

Este documento contiene información resumida sobre las últimas proyecciones del modelo IHME sobre COVID-19 en México. El modelo se ejecutó el 1 de julio de 2021 con datos hasta el 29 de junio de 2021. En esta semana se presentan resultados de muertes por COVID-19 reportadas por el país y muertes en exceso relacionadas con COVID-19. Advertimos que no se hagan comparaciones con los resultados publicados la semana anterior pues estos corresponden a muertes en exceso.

Situación actual

- Los casos reportados diariamente en la última semana (hasta el 25 de junio) aumentaron a 2.900 por día en promedio en comparación con 2.600 la semana anterior (Figura 1).
- Las muertes reportadas por COVID-19 en la última semana aumentaron a 75 por día en promedio en comparación con las 73 de la semana anterior (Figura 2).
- Las muertes en exceso por COVID-19 en la última semana fueron 160 por día en promedio, más o menos igual a la semana anterior (Figura 2). Esto convierte al COVID-19 en la cuarta causa de muerte en México esta semana (Tabla 1). El exceso de muertes diarias estimado debido a COVID-19 fue 2.3 veces mayor que el número de muertes reportadas.
- Baja California Sur reportó que la tasa de muerte por COVID-19 fueron superiores a 4 por millón diariamente (Figura 3).
- La tasa diaria de exceso de muerte por COVID-19 es superior a 4 por millón en Baja California Sur, Quintana Roo, Tamaulipas y Yucatán (Figura 3).
- Estimamos que el 57% de las personas en México han sido infectadas al 29 de junio y que 18 estados tienen infectados a más de la mitad de la población (Figura 5).
- La R efectiva, calculada usando casos, hospitalizaciones y muertes, es mayor que 1 en 20 estados (Figura 6).
- La tasa de detección de infecciones en México fue cercana al 6% el 29 de junio (Figura 7).
- Basándonos en el GISAID y varias bases de datos nacionales, combinado con nuestro modelo de dispersión de variantes, estimamos la prevalencia actual de variantes de interés (Figura 8). Estimamos que B.1.351 aún no está circulando en México, que B.1.617 está circulando en 28 estados y que P.1 está circulando en 25 estados.

Tendencias en los impulsores de la transmisión

- La movilidad la semana pasada fue 2% más baja que la línea de base anterior a COVID-19 (Figura 10). La movilidad estuvo cerca de la línea de base (dentro del 10%) en 30 estados. Ningún estado presenta movilidad inferior a 30% de la línea de base.

- Al 29 de junio, en las encuestas globales de síntomas COVID-19 y en las encuestas de síntomas COVID-19 de EE. UU. 78% de las personas informaron que siempre usaban una máscara al salir de casa en comparación con el 79% la semana pasada (Figura 12) . En ningún estado el uso de mascarillas fue inferior a 50%.
- Se realizaron 11 pruebas de diagnóstico por cada 100,000 personas el 29 de junio (Figura 14).
- En México, 90.2% de las personas dicen que aceptarían o probablemente aceptarían una vacuna para COVID-19. Esto es 0.3 puntos porcentuales menos que la semana pasada. La fracción de la población que está dispuesta a recibir la vacuna COVID-19 oscila entre el 77% en Colima y el 97% en Nayarit (Figura 18).
- En nuestro escenario de referencia actual, esperamos que 59 millones de personas estén vacunadas para el 1 de octubre (Figura 19).

Proyecciones

- En nuestro escenario de referencia, que representa lo que creemos que es más probable que suceda, nuestro modelo proyecta 263,000 muertes reportadas acumuladas por COVID-19 el 1 de octubre. Esto representa 30,000 muertes adicionales del 29 de junio al 1 de octubre. Se espera que muertes reportadas diariamente empiecen a disminuir hasta el 1 de octubre de 2021 (Figura 20).
- Bajo nuestro escenario de referencia, nuestro modelo proyecta 612,000 muertes en exceso acumuladas debido a COVID-19 el 1 de octubre. Esto representa 73,000 muertes adicionales del 29 de junio al 1 de octubre. El exceso de muertes diarias debido a COVID-19 alcanzará un máximo de 1,270 el 25 de agosto. 2021 (Figura 20).
- Si se alcanzara la cobertura universal de mascarillas (95%) en la próxima semana, nuestro modelo proyecta 6,900 muertes reportadas menos en comparación con el escenario de referencia el 1 de octubre.
- Si se alcanzara la cobertura universal de la mascarilla (95%) en la próxima semana, nuestro modelo proyecta 18,000 muertes en exceso menos debido a COVID-19 en comparación con el escenario de referencia del 1 de octubre.
- En nuestro peor escenario, nuestro modelo proyecta 277,000 muertes reportadas el 1 de octubre, 14,000 muertes adicionales en comparación con nuestro escenario de referencia. Se espera que las muertes reportadas diariamente en el peor escenario disminuyan hasta el 1 de octubre de 2021 (Figura 20).
- En nuestro peor escenario, nuestro modelo proyecta 647,000 muertes en exceso acumuladas debido al COVID-19 el 1 de octubre, 35,000 muertes adicionales en comparación con nuestro escenario de referencia. Se espera que el exceso diario de muertes debido a COVID-19 en el peor escenario disminuya de manera constante hasta el 1 de octubre de 2021 (Figura 20).

- Para el 1 de octubre, proyectamos que la vacuna salvará 27,200 vidas. Esto no incluye las vidas salvadas mediante la vacunación que ya se ha entregado.
- Se espera que las infecciones diarias en el escenario de referencia disminuyan de manera constante hasta el 1 de octubre de 2021. En el peor escenario, las infecciones diarias aumentarán a 297,480 para el 1 de octubre de 2021 (Figura 21).
- La Figura 22 compara nuestros pronósticos de escenarios de referencia con otros modelos archivados públicamente. Los pronósticos son divergentes, pero IHME estima un incremento a partir de septiembre que los otros modelos no lo hacen
- En algún momento entre junio y el 1 de octubre, 8 estados tendrán un estrés alto o extremo en las camas de hospital (Figura 23). En algún momento, desde junio hasta el 1 de octubre, 11 estados tendrán un estrés alto o extremo en la capacidad de la UCI (Figura 24).

COVID-19 Results Briefing

Mexico

July 1, 2021

This document contains summary information on the latest projections of the IHME model on COVID-19 in Mexico. The model was run on July 1, 2021, with data up to June 29, 2021. This week, results are presented for both deaths from COVID-19 reported by the country and estimates of excess deaths related to COVID-19. We warn against making comparisons with the results published the previous week, because those correspond to excess deaths.

Current situation

- Daily reported cases in the last week (through June 25) increased to 2,900 per day on average compared to 2,600 the week before (Figure 1).
- Reported deaths due to COVID-19 in the last week increased to 75 per day on average compared to 73 the week before (Figure 2).
- Excess deaths due to COVID-19 in the last week were about the same as the week before, at 160 per day on average (Figure 2). This makes COVID-19 the number 4 cause of death in Mexico this week (Table 1). Estimated excess daily deaths due to COVID-19 were 2.3 times larger than the reported number of deaths.
- No locations had daily reported COVID-19 death rates greater than 4 per million (Figure 3).
- The daily rate of excess death due to COVID-19 is greater than 4 per million in Baja California Sur, Quintana Roo, Tamaulipas, and Yucatán (Figure 3).
- We estimated that 57% of people in Mexico have been infected as of June 29 (Figure 5).
- Effective R, computed using cases, hospitalizations, and deaths, is greater than 1 in 20 states (Figure 6).
- The infection-detection rate in Mexico was close to 6% on June 29 (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 not circulating in any states, that B.1.617 is circulating in 28 states, and that P.1 is circulating in 25 states.

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 30 states. Mobility was not lower than 30% of baseline in any locations.

- As of June 29, in the Global COVID-19 Symptom Surveys and the US COVID-19 Symptom Surveys, 78% of people self-report that they always wore a mask when leaving their home compared to 79% last week (Figure 12). Mask use was not lower than 50% in any states.
- There were 11 diagnostic tests per 100,000 people on June 29 (Figure 14).
- In Mexico 90.2% of people say they would accept or would probably accept a vaccine for COVID-19. This is down by 0.3 percentage points from last week. The fraction of the population who are open to receiving a COVID-19 vaccine ranges from 77% in Colima to 97% in Nayarit (Figure 18).
- In our current reference scenario, we expect that 59.0 million people will be vaccinated by October 1 (Figure 19).

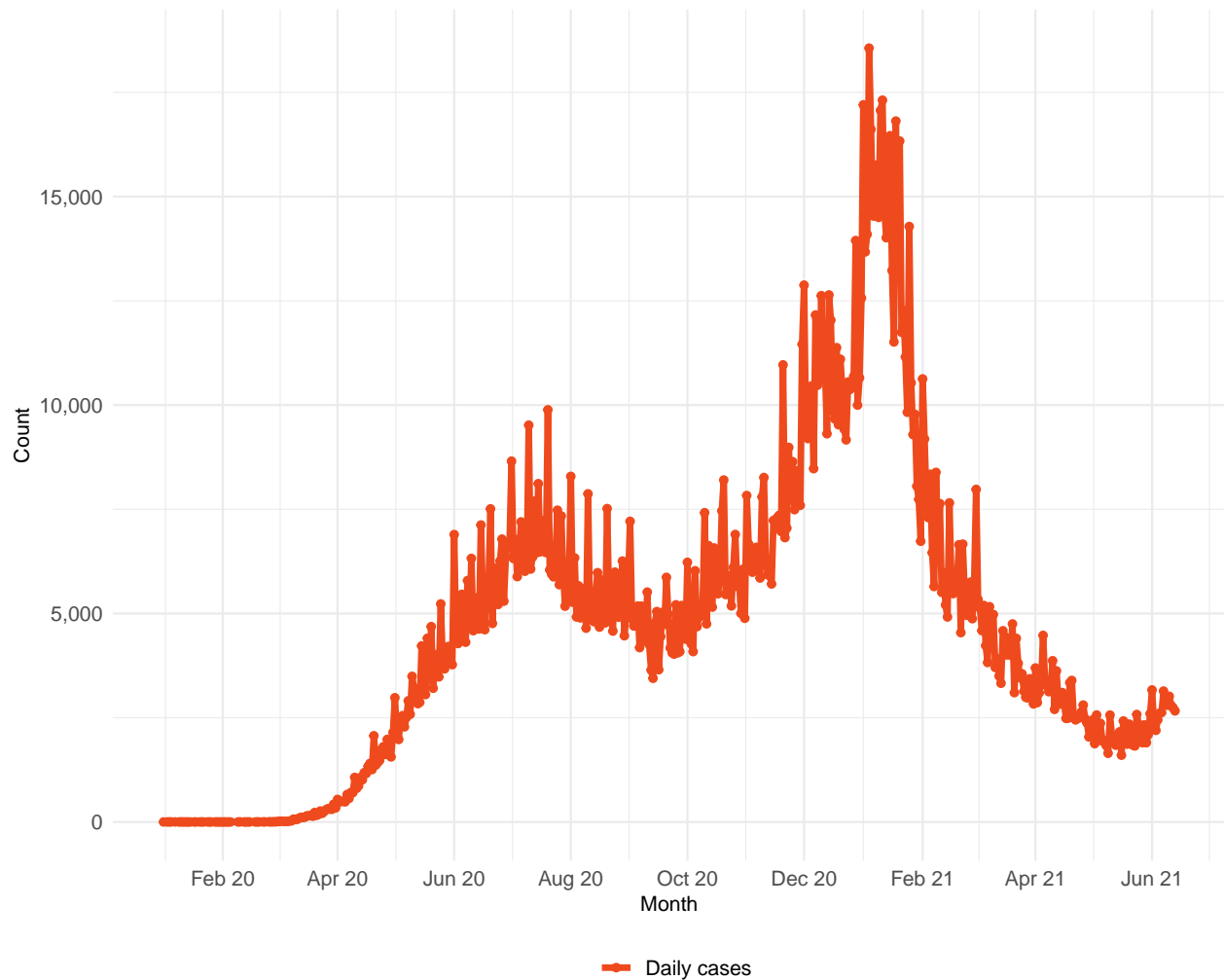
Projections

- In our **reference scenario**, which represents what we think is most likely to happen, our model projects 263,000 cumulative reported deaths due to COVID-19 on October 1. This represents 30,000 additional deaths from June 29 to October 1. Daily reported deaths are expected to decline until October 1, 2021 (Figure 20).
- Under our **reference scenario**, our model projects 612,000 cumulative excess deaths due to COVID-19 on October 1. This represents 73,000 additional deaths from June 29 to October 1. Daily excess deaths due to COVID-19 will peak at 1,270 on August 25, 2021 (Figure 20).
- If **universal mask coverage (95%)** were attained in the next week, our model projects 6,900 fewer cumulative reported deaths compared to the reference scenario on October 1.
- If **universal mask coverage (95%)** were attained in the next week, our model projects 18,000 fewer cumulative excess deaths due to COVID-19 compared to the reference scenario on October 1.
- Under our **worse scenario**, our model projects 277,000 cumulative reported deaths on October 1, an additional 14,000 deaths compared to our reference scenario. Daily reported deaths in the worse scenario are expected to decline until October 1, 2021 (Figure 20).
- Under our **worse scenario**, our model projects 647,000 cumulative excess deaths due to COVID-19 on October 1, an additional 35,000 deaths compared to our reference scenario. Daily excess deaths due to COVID-19 in the worse scenario are expected to decline steadily until October 1, 2021 (Figure 20).
- By October 1, we project that 27,200 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 are expected to decline steadily until October 1, 2021. Under the worse scenario, daily infections will rise to 297,480 by October 1, 2021 (Figure 21).

- Figure 22 compares our reference scenario forecasts to other publicly archived models. Forecasts are widely divergent.
- At some point from June through October 1, eight states will have high or extreme stress on hospital beds (Figure 23). At some point from June through October 1, 11 states will have high or extreme stress on ICU capacity (Figure 24).

Model updates

Our modeling inclusion criteria for current local transmission of a variant were updated to account for locations with relatively few sequences, but for which all sequences were collected in the last few weeks. Specifically, we consider local transmission to have potentially occurred if a location has identified more than 50 sequences of a new variant in the previous six weeks. This rule essentially only applies to P.1 and B.1.617.2.

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
Ischemic heart disease	2,044	1
Diabetes mellitus	1,420	2
Chronic kidney disease	1,395	3
COVID-19	1,148	4
Cirrhosis and other chronic liver diseases	891	5
Stroke	729	6
Chronic obstructive pulmonary disease	630	7
Interpersonal violence	590	8
Alzheimer's disease and other dementias	455	9
Lower respiratory infections	434	10

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

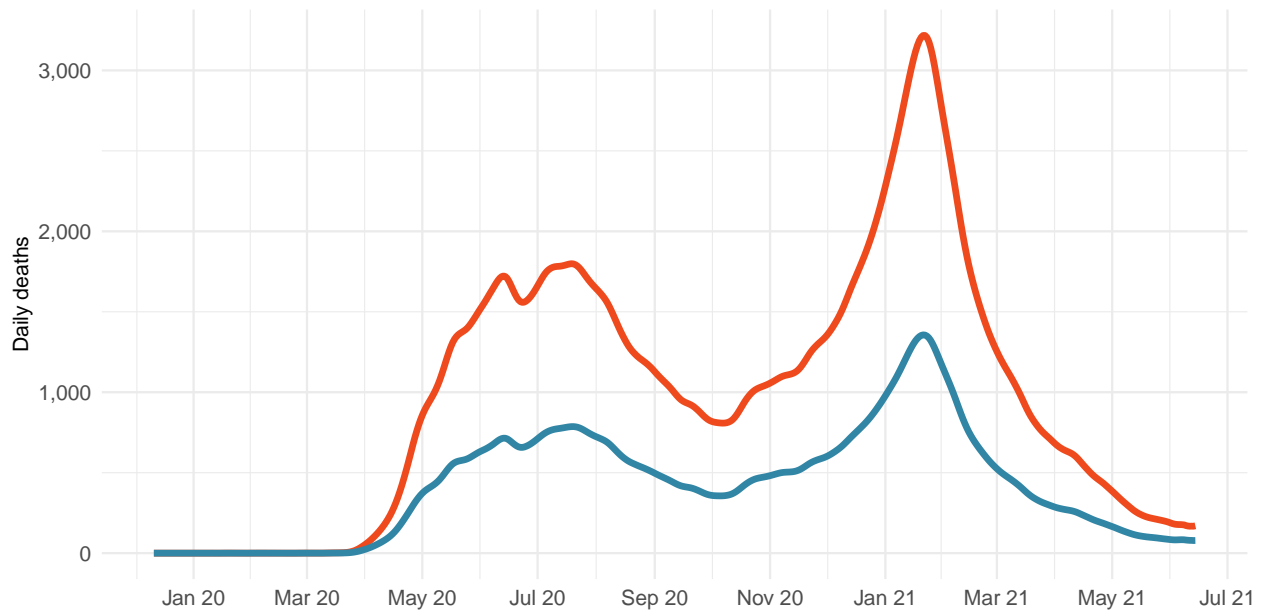


Figure 3. Daily COVID-19 death rate per 1 million on June 29, 2021

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



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

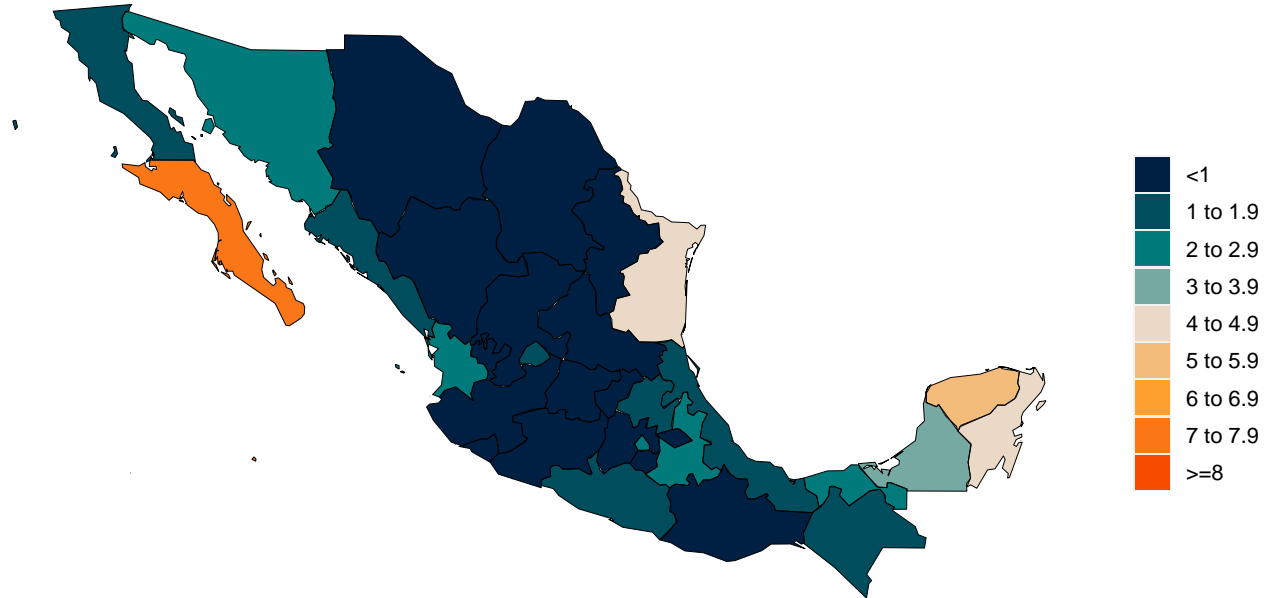
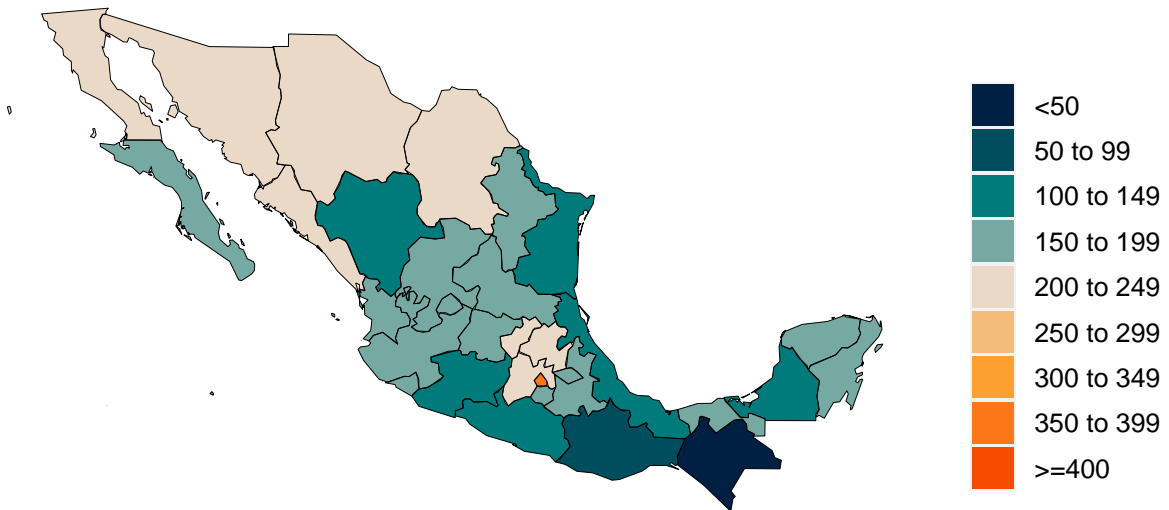


Figure 4. Cumulative COVID-19 deaths per 100,000 on June 29, 2021

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



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

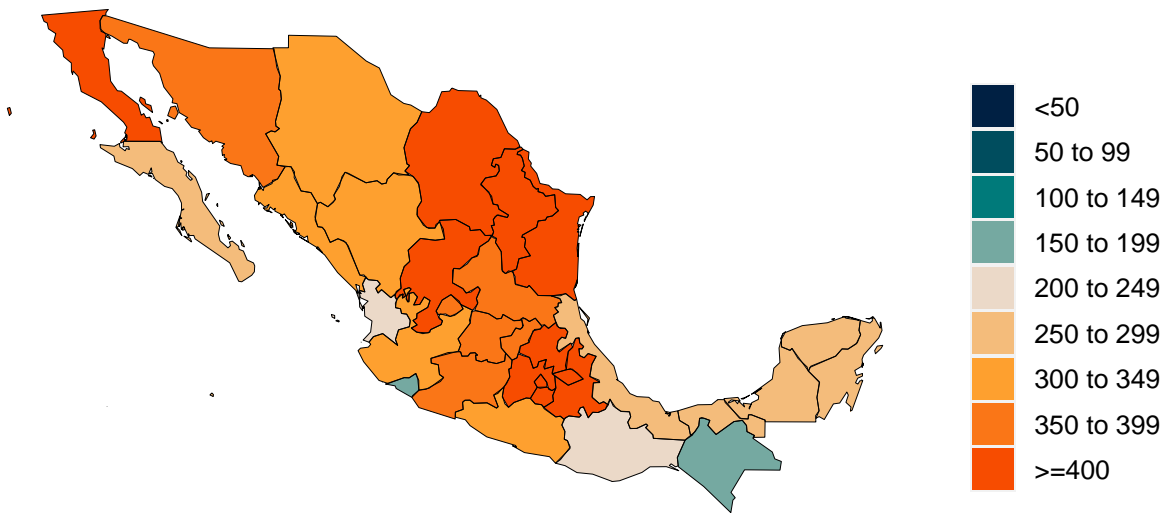


Figure 5. Estimated percent of the population infected with COVID-19 on June 29, 2021

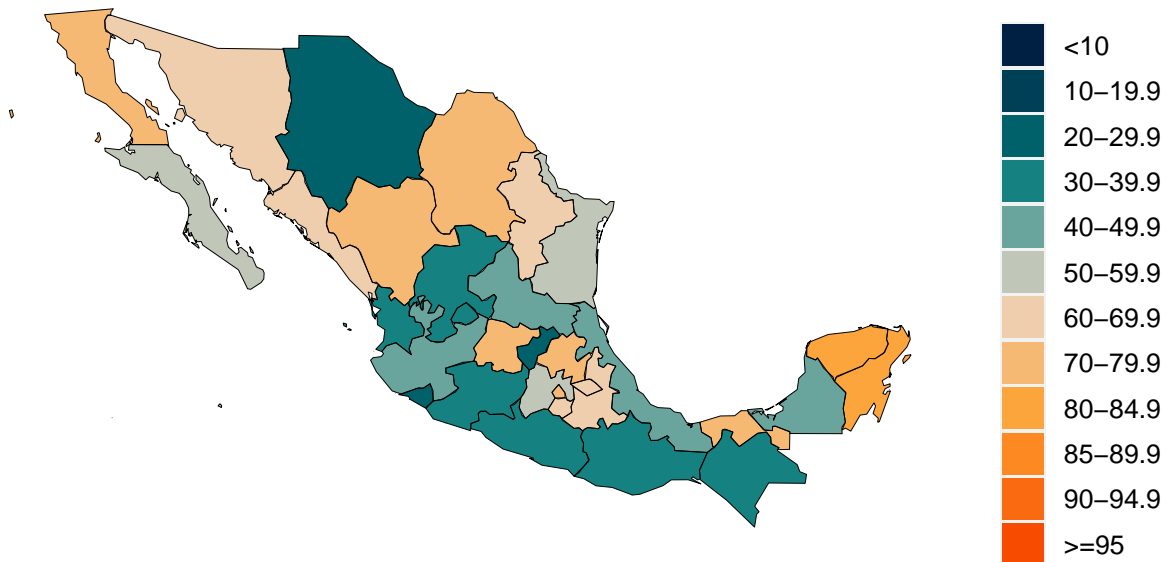


Figure 6. Mean effective R on June 18, 2021. The estimate of effective R is based on the combined analysis of deaths, case reporting, and hospitalizations where available. Current reported cases reflect infections 11-13 days prior, so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline, all other things being held the same.

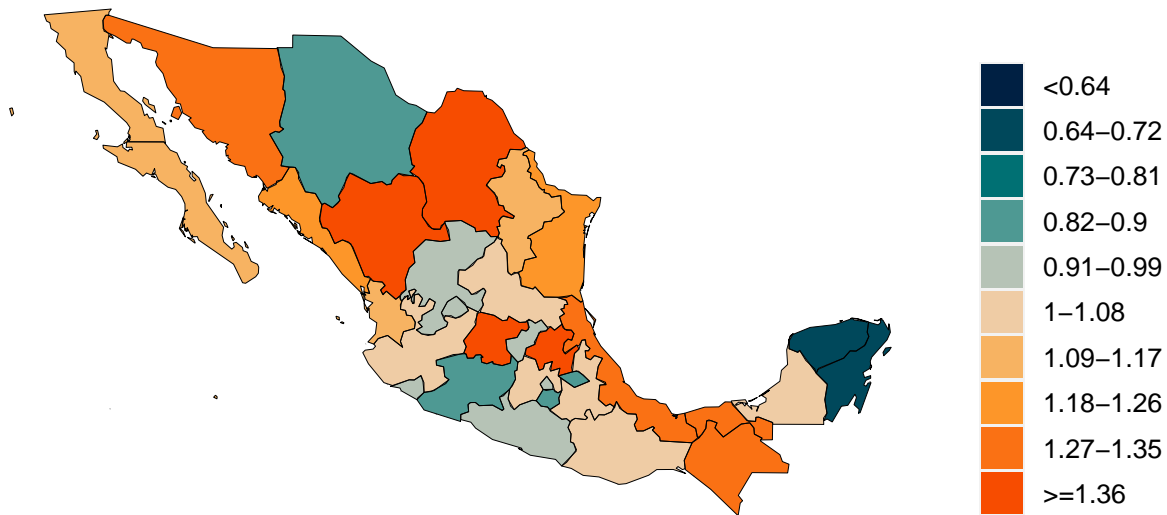


Figure 7. Percent of COVID-19 infections detected. This is estimated as the ratio of reported daily COVID-19 cases to estimated daily COVID-19 infections based on the SEIR disease transmission model. Due to measurement errors in cases and testing rates, the infection-detection rate can exceed 100% at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

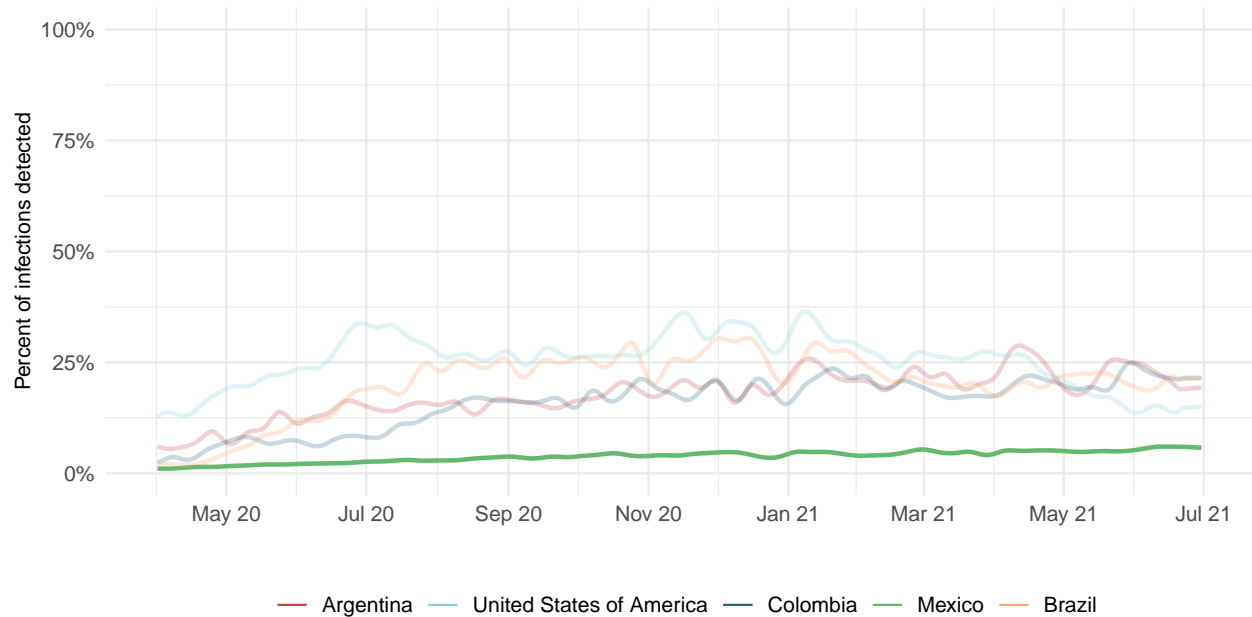
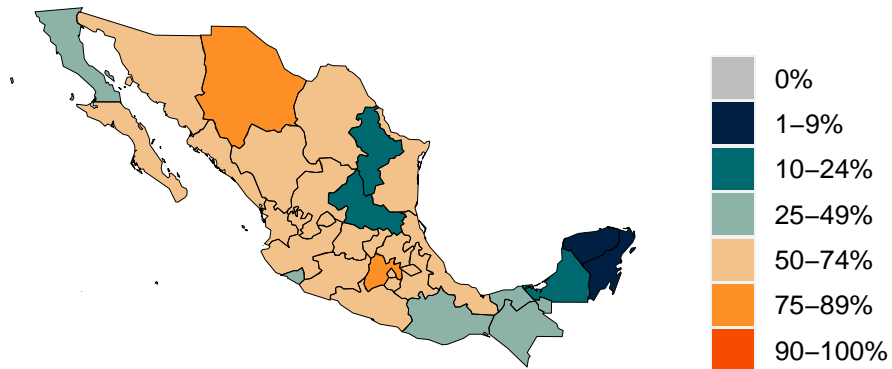


Figure 8. Estimated percent of circulating SARS-CoV-2 for primary variant families on June 29, 2021.

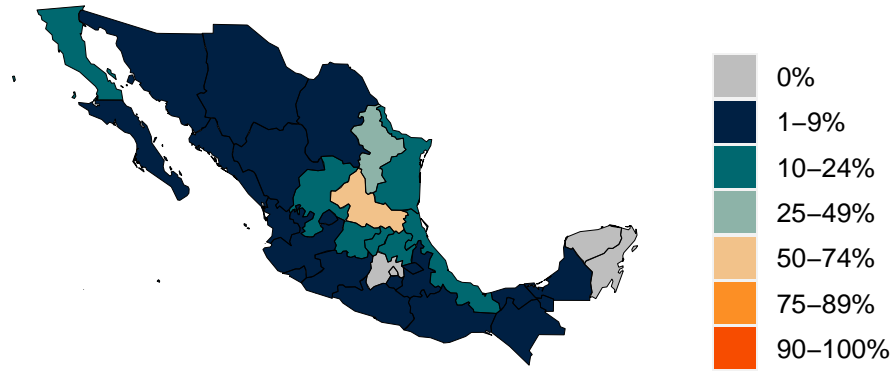
A. Estimated percent B.1.1.7 variant



B. Estimated percent B.1.351 variant



C. Estimated percent B.1.617 variant



D. Estimated percent P.1 variant

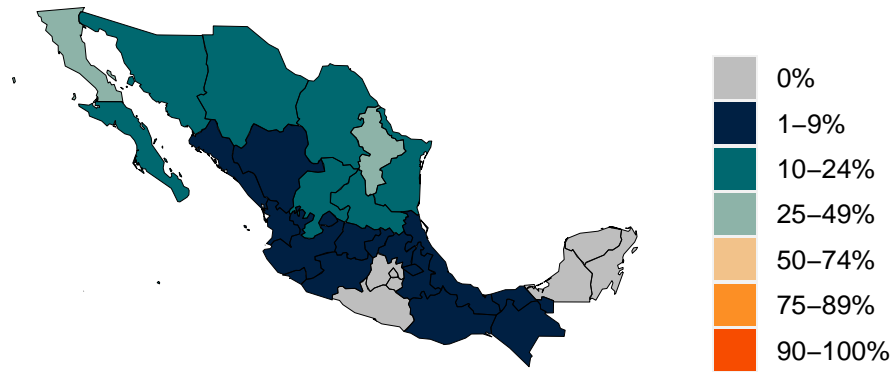
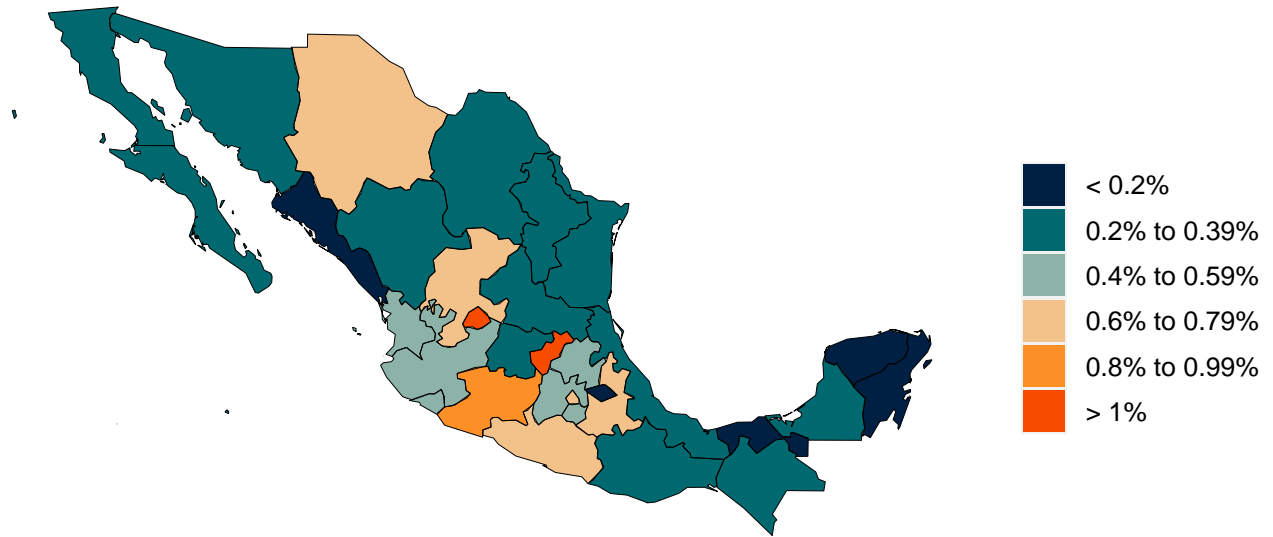


Figure 9. Infection-fatality ratio on June 29, 2021



Critical drivers

Table 2. Current mandate implementation



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

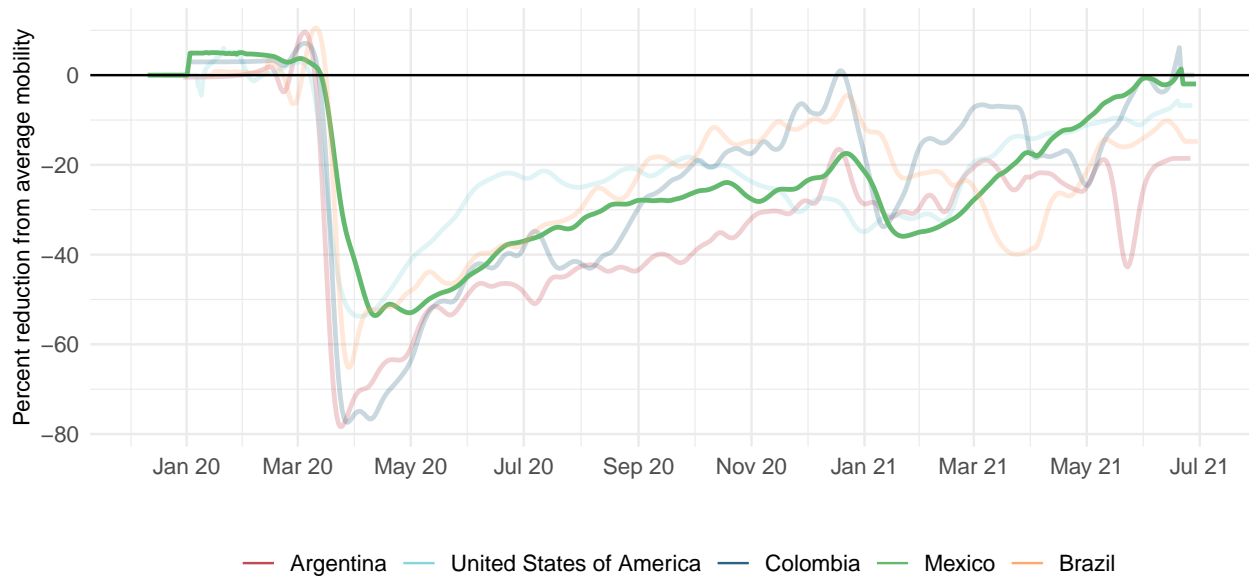


Figure 11. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent) on June 29, 2021



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

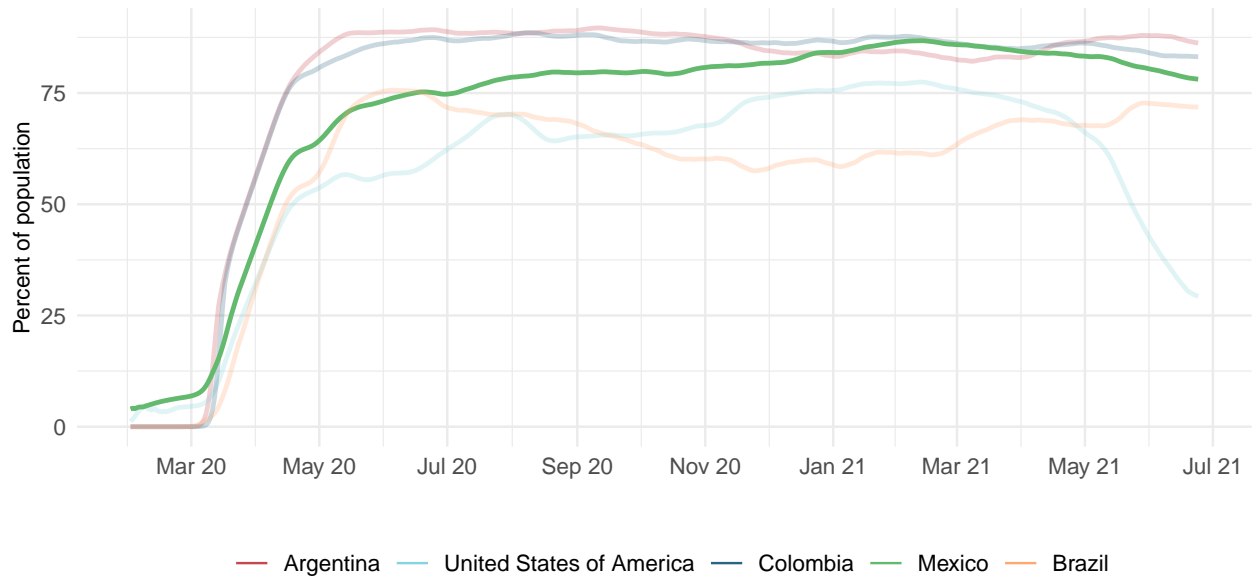


Figure 13. Proportion of the population reporting always wearing a mask when leaving home on June 29, 2021

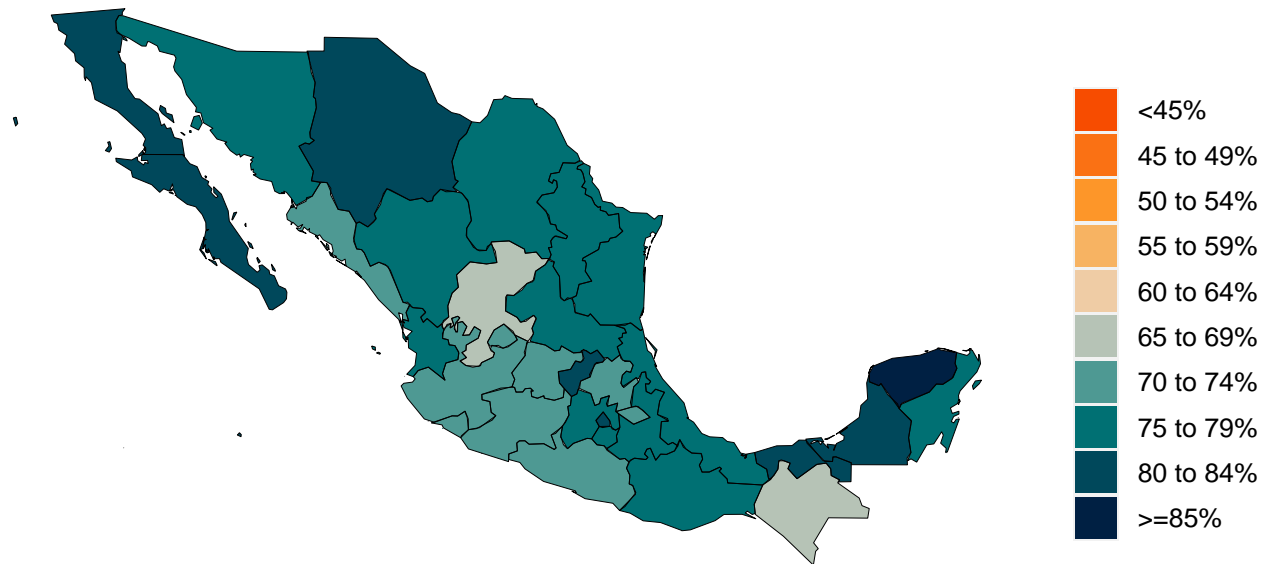


Figure 14. Trend in COVID-19 diagnostic tests per 100,000 people

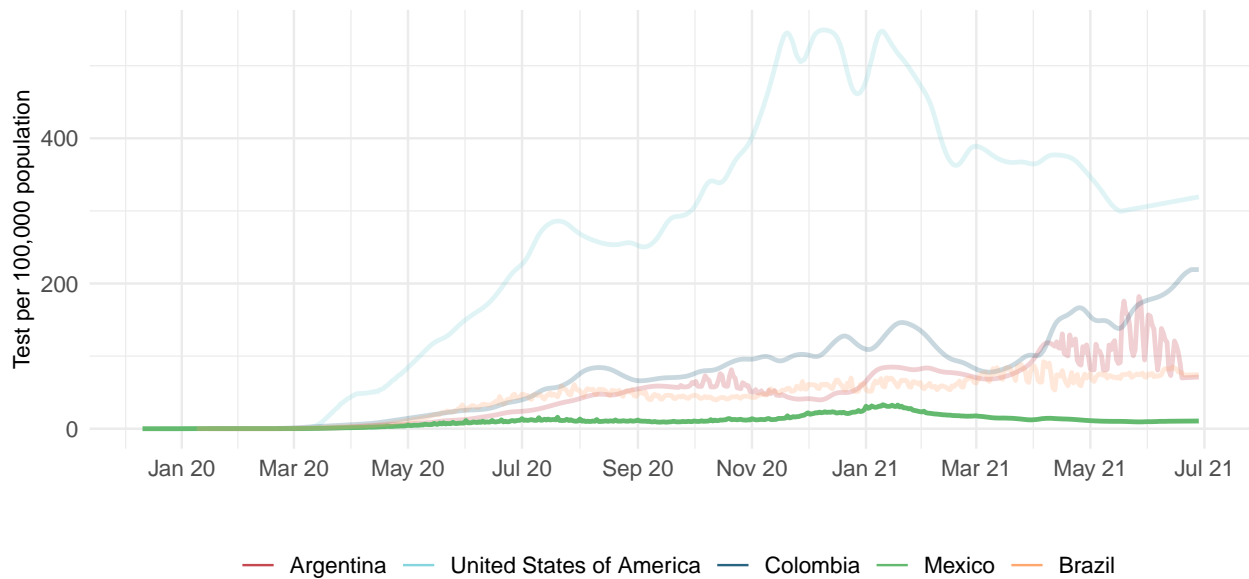


Figure 15. COVID-19 diagnostic tests per 100,000 people on June 29, 2021

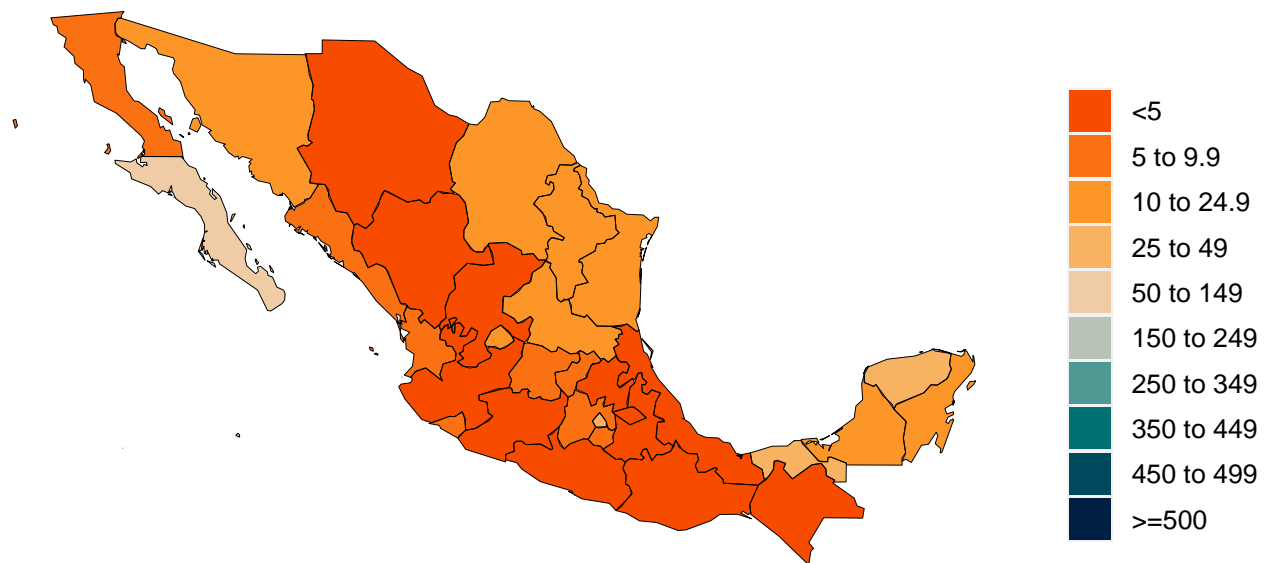


Figure 16. Increase in the risk of death due to pneumonia on February 1 compared to August 1



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.

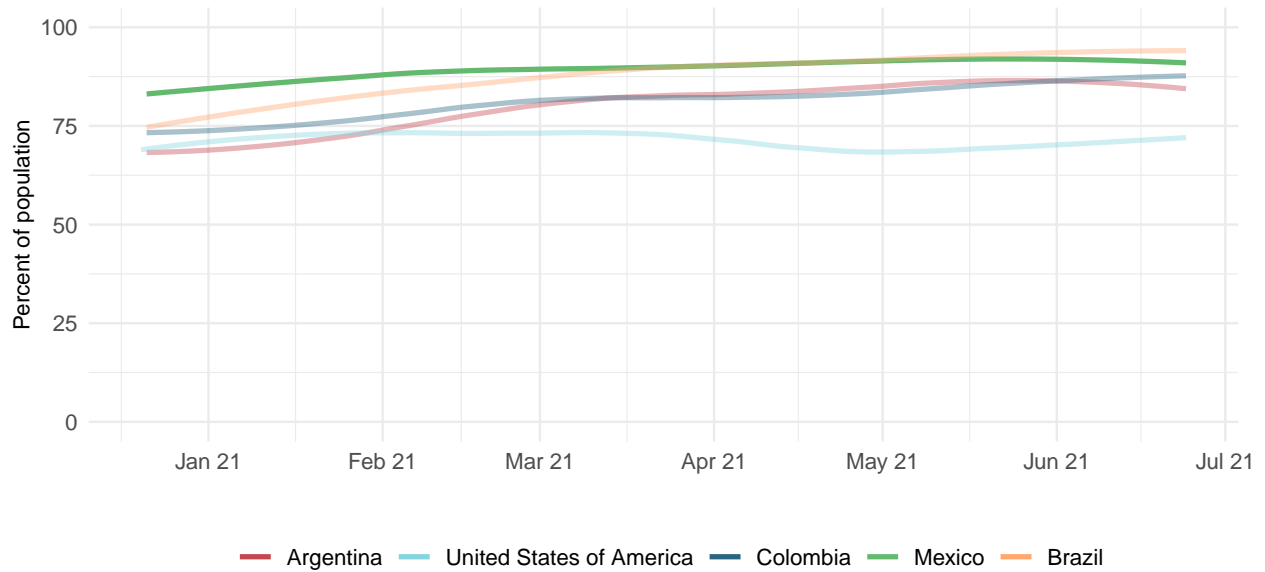
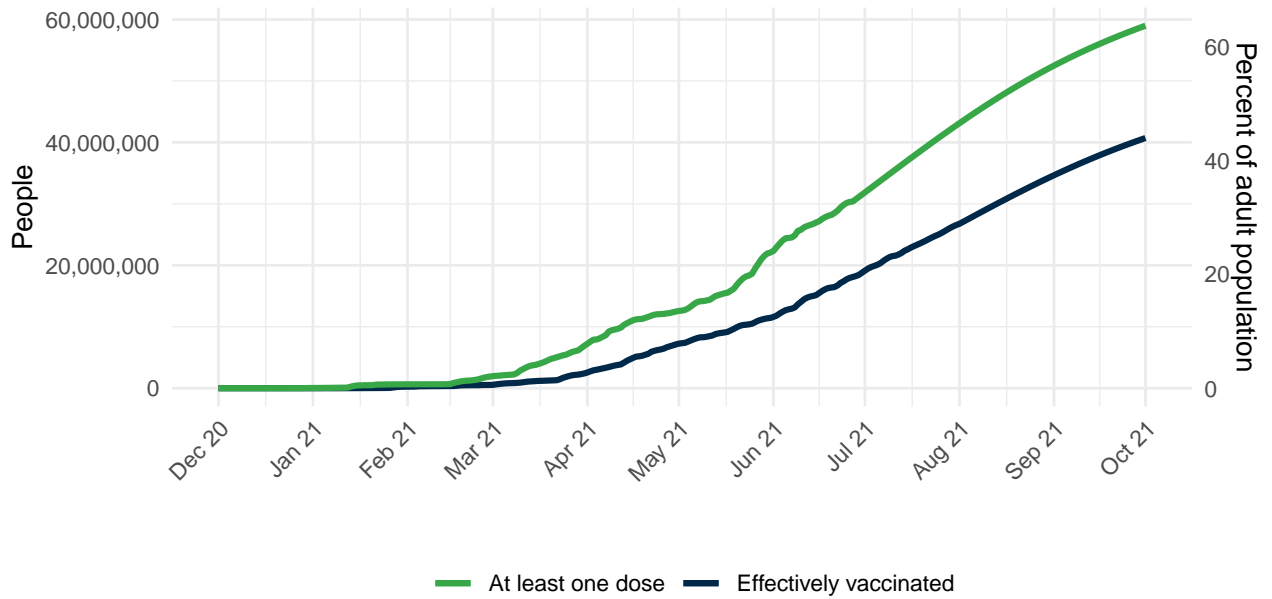


Figure 18. This figure shows the estimated proportion of the adult (18+) population that has been vaccinated or would probably or definitely receive the COVID-19 vaccine if available.



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.

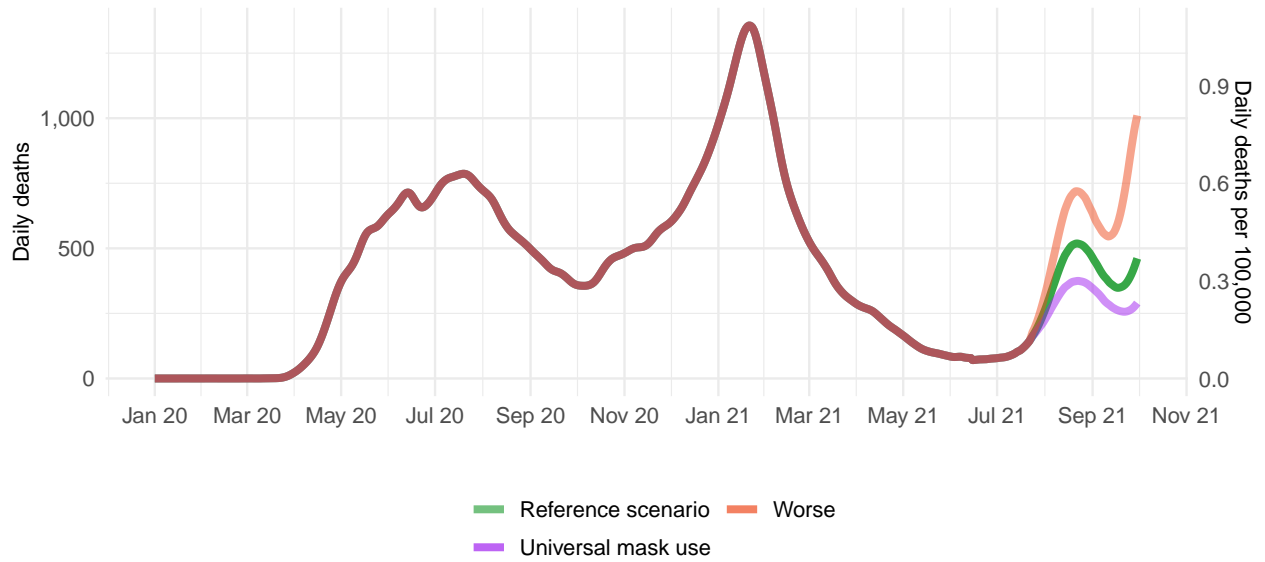
The **worse scenario** modifies the reference scenario assumptions in three ways:

- 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 October 01, 2021 for three scenarios

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



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

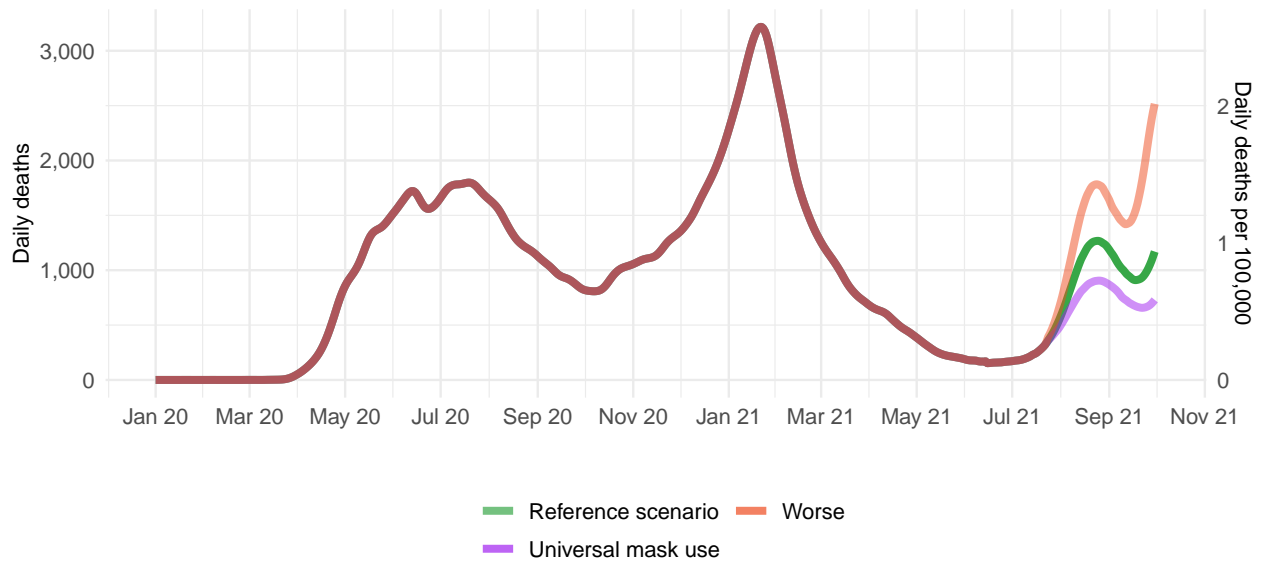


Figure 21. Daily COVID-19 infections until October 01, 2021 for three scenarios

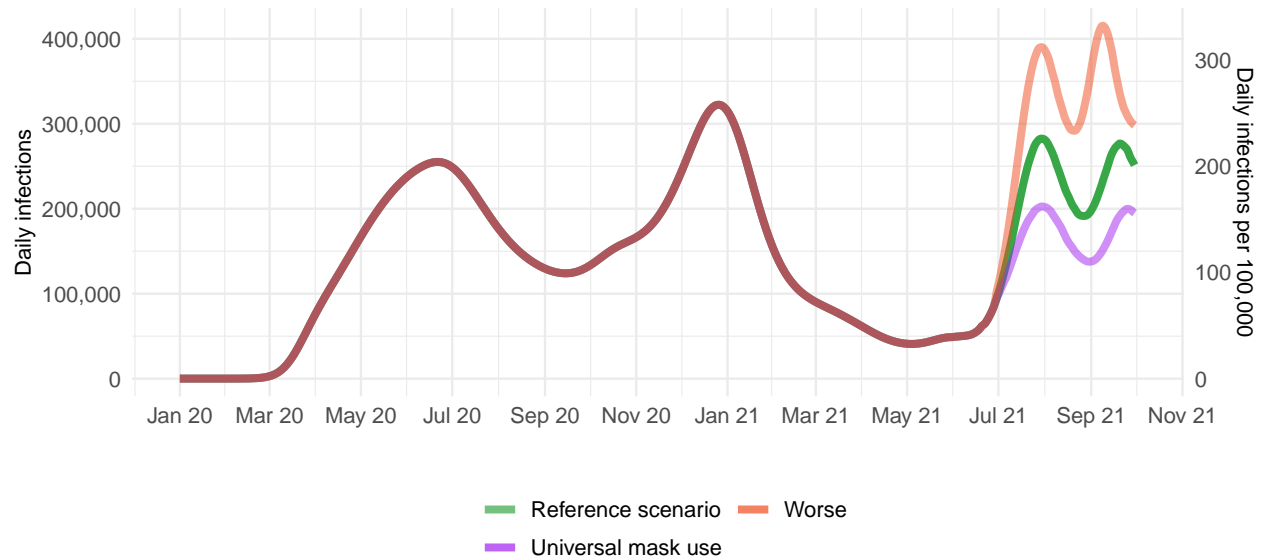


Figure 22. Comparison of reference model projections with other COVID modeling groups. For this comparison, we are including projections of daily COVID-19 deaths from other modeling groups when available: Delphi from the Massachusetts Institute of Technology ([Delphi](#)), Imperial College London ([Imperial](#)), 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.

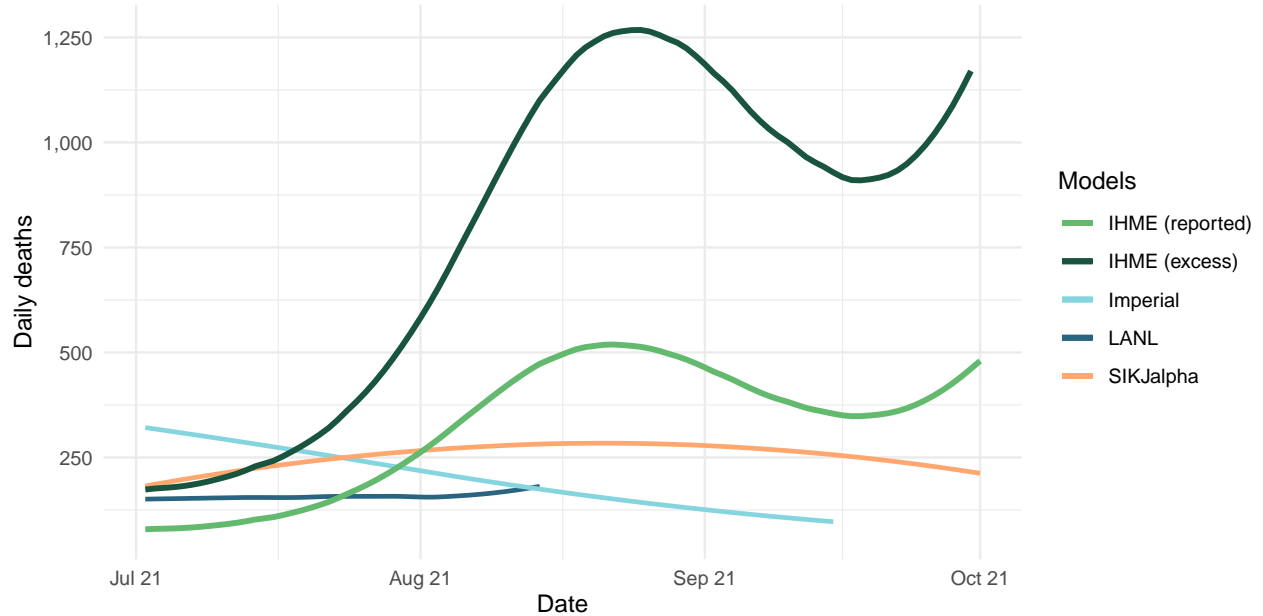


Figure 23. The estimated inpatient hospital usage is shown over time. The percent of hospital beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of beds occupied by COVID-19 patients. Less than 5% is considered *low stress*, 5-9% is considered *moderate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

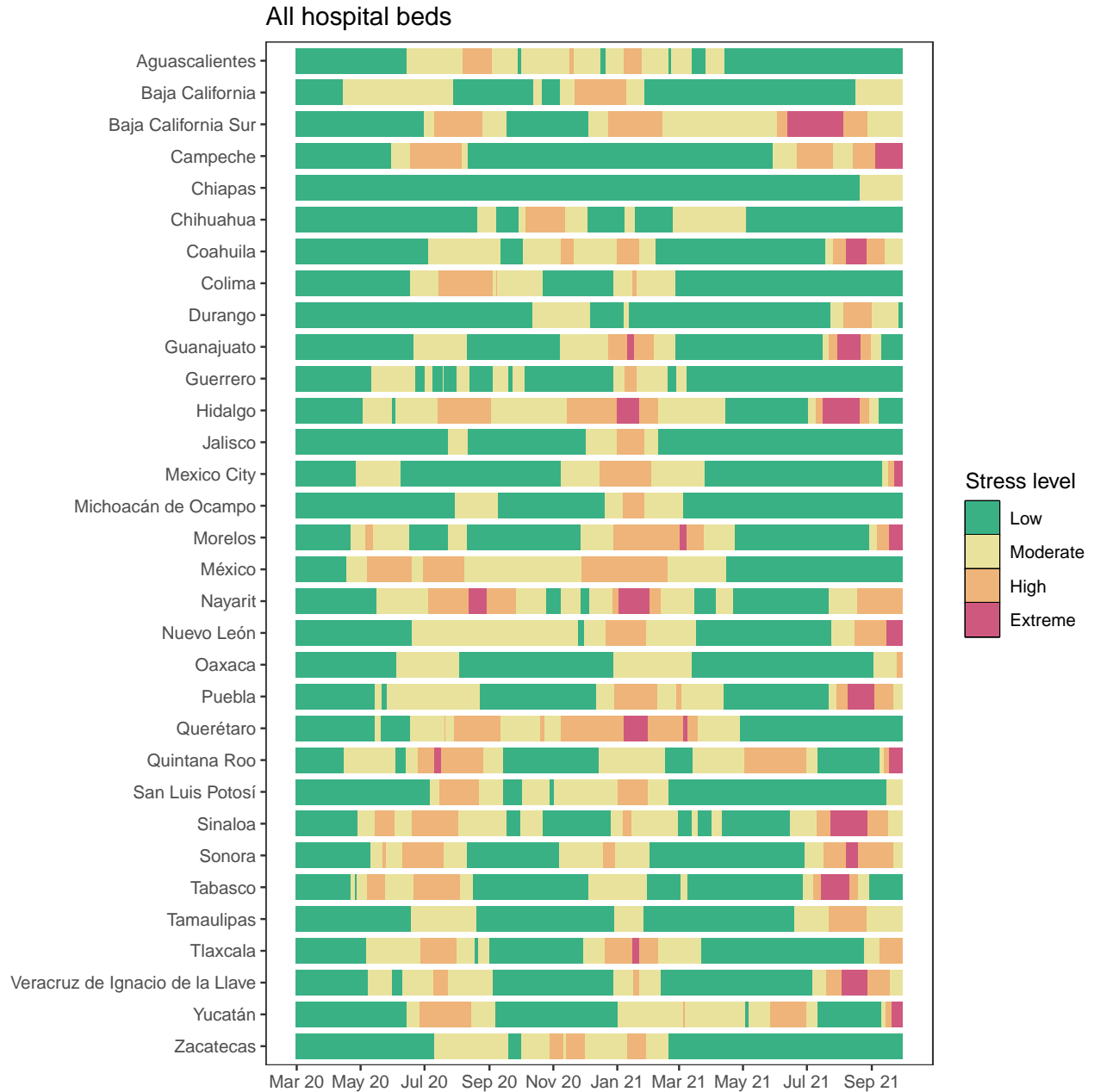
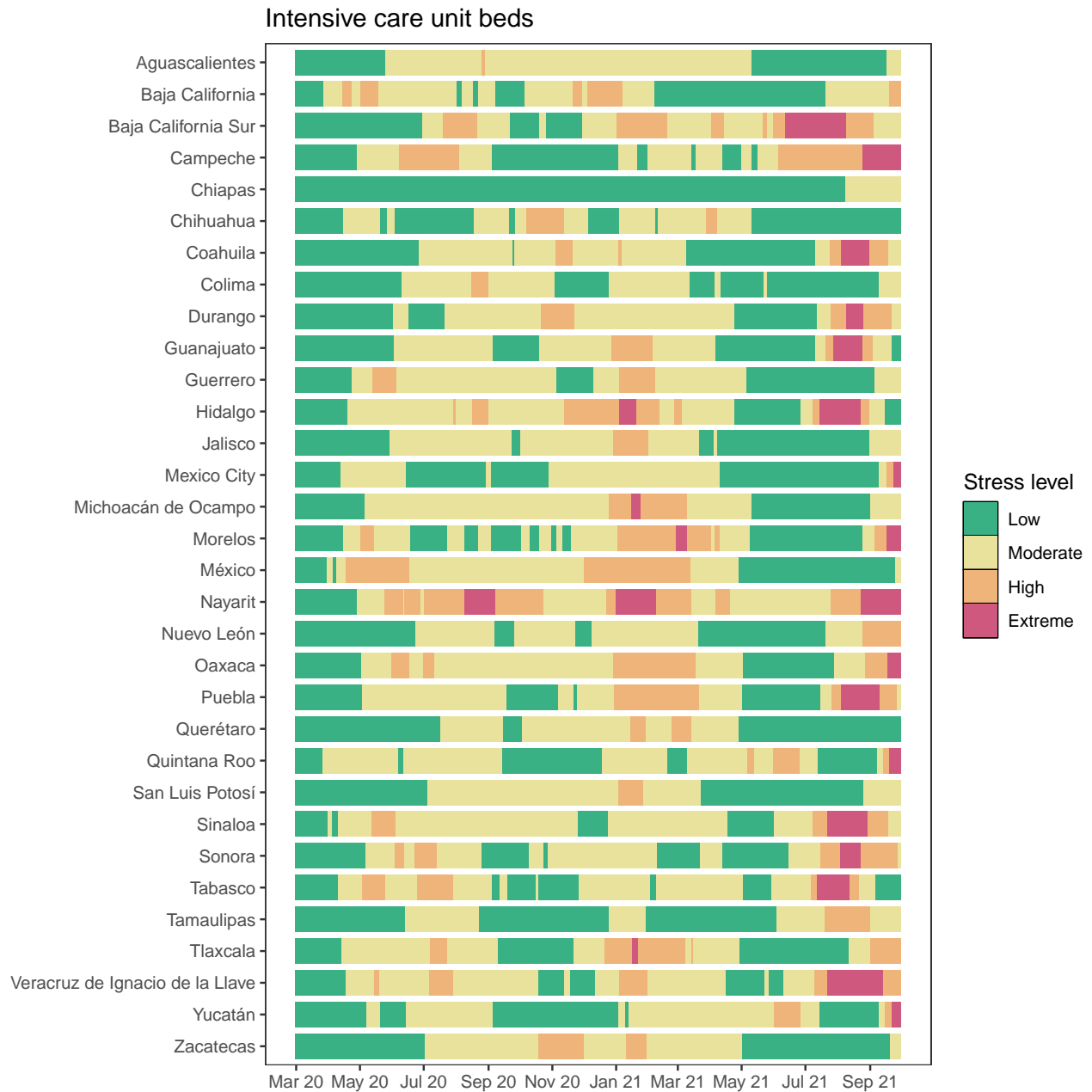


Figure 24. The estimated intensive care unit (ICU) usage is shown over time. The percent of ICU beds occupied by COVID-19 patients is color-coded based on observed quantiles of the maximum proportion of ICU beds occupied by COVID-19 patients. Less than 10% is considered *low stress*, 10-29% is considered *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 [Global COVID-19 Symptom Survey](#) (this research is based on survey results from University of Maryland Social Data Science Center with Facebook's support) and the [US COVID-19 Symptom Survey](#) (this research is based on survey results from Carnegie Mellon University's Delphi Research Group with Facebook's support). 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>.