



"Strategic Advice in an Era of Unprecedented Change"

Issue #379

Monday, April 25, 2022

COVID19
VITAL SIGNS

Highlights – As of April 22

- Worldwide, cases declined 23% from the prior week. Cases fell in Asia, Europe, Oceania, and South America but rose in Africa and North America
- Among the thirty largest countries, only India, China, the United States, and South Africa report effective reproduction rates (Rt) greater than 1.0. An Rt greater than 1.0 indicates spreading virus transmission
- Cases nearly tripled from a week ago in Taiwan and more than doubled in India. South Africa saw 70% more new cases than last week
- Asia-Pacific and European nations continue to post the highest case rates of the largest countries.
 - South Korea, Australia, and New Zealand posted the three highest rates last week
 - Finland, France, Germany, Portugal, Italy, Austria, and Greece rounded out the top ten
 - However, only Finland among these ten reported an increase in the case rate from the previous week.
- The Northeast endured the highest case rates in the U.S. last week
 - Vermont, New York, and Rhode Island led all states
 - Massachusetts ranked fifth, Connecticut seventh, New Jersey eighth, and New Hampshire ninth
- Despite rising cases in the United States, Covid is not overwhelming the health care system
 - Admissions with Covid rose 9% week-over-week, slower than the rise in cases (15%)
 - Covid census rose only 1%
 - Only New York requires one in every ten inpatient beds to care for Covid patients. Nationally, Covid patients occupy one of every thirty-one beds
- Persons infected with Covid today are 2.5 to 3 times less likely to require hospitalization than persons infected during earlier waves
- Deaths with Covid continued falling last week, reaching the lowest level observed in nine months
- As of last weekend, 100 million booster doses have been administered in the United States. On average, a half a million total doses were administered daily last week. Nonetheless, the United States ranks 71st in the percent of its population that has been boosted and 55th in percent fully vaccinated
- Expert modelers anticipate that cases will increase slowly in the next three weeks; deaths are expected to decline each week

The admission rate per case plunged during the Omicron wave, compared to prior Covid waves

Ratio of Covid Admissions to New Case Rate

7-Day Averages, Case Rate = New Daily Cases per Million Population

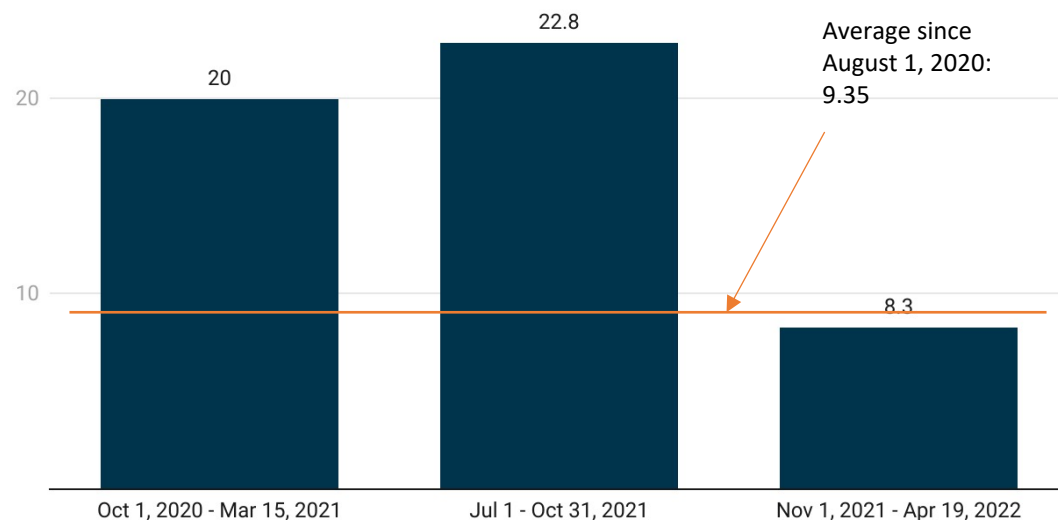


Chart: Health Industry Advisor LLC • Source: Centers for Disease Control and Prevention; world-meters.info • Created with Datawrapper

- Hospital admissions with Covid are correlated with the new case rate ($R^2 = 0.746$, $p\text{-value} = 1.24E-10$; 8/1/20-4/19/21)
- Strength of the relationship increases if we control for time period ($R^2 > 0.93$, $p\text{-value} > 1.94E-90$ for the three periods illustrated)
- Admits were nearly 3x higher per case during Delta wave than Omicron wave (2.5x higher during Fall/Winter 2020-1 wave)

Globally, cases fell 23% from a week earlier. Africa and North America reported more cases than a week ago; other continents reported declining cases

Weekly Change in Cases By Continent

As of April 19

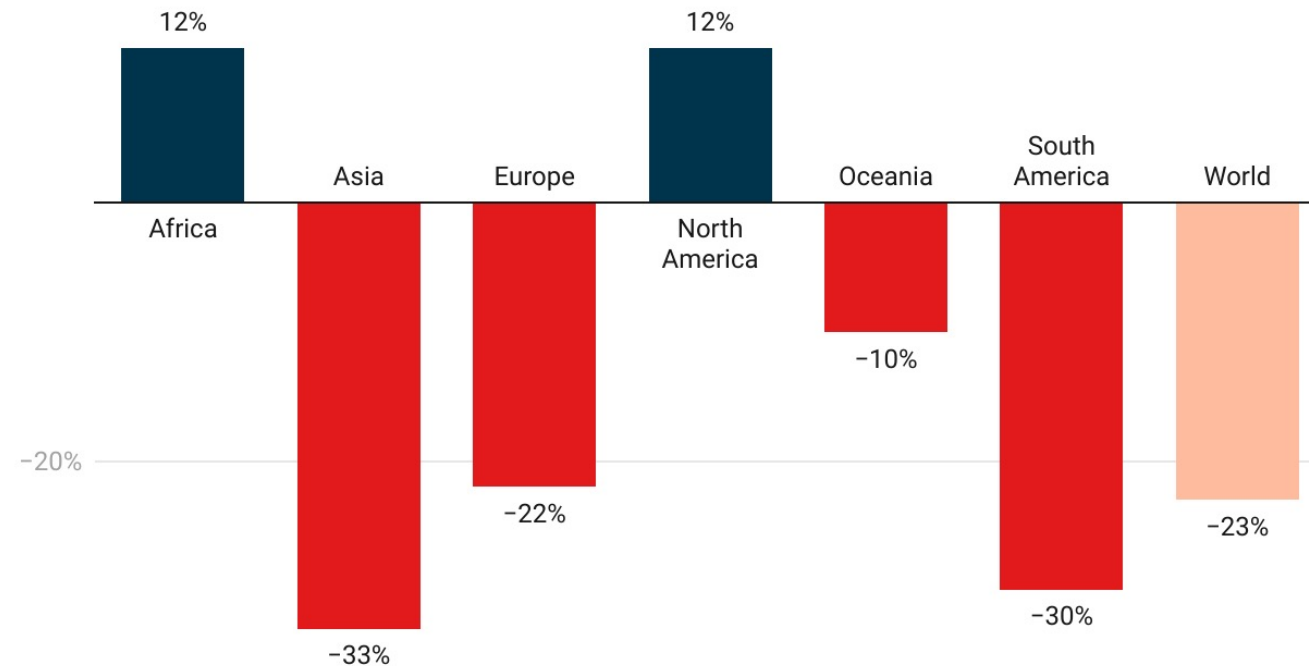
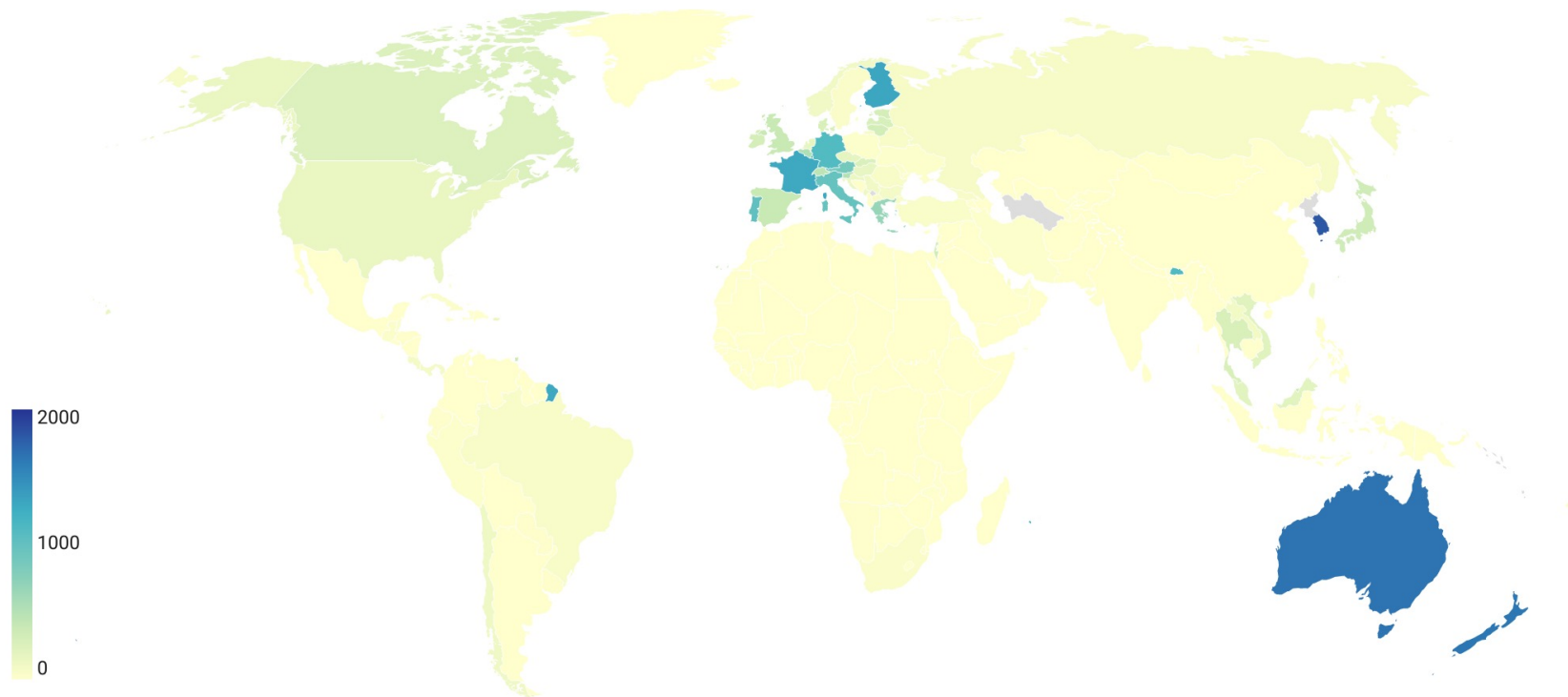


Chart: Health Industry Advisor LLC • Source: world-meters.info • Created with Datawrapper

Europe and the Asia Pacific region remain as global Covid hotspots.
However, cases are declining across Europe

New Daily Cases / Million

7-Day Average, As of April 22



Map: Health Industry Advisor LLC • Source: worldometer.info • Created with Datawrapper

Taiwan outpaced other large countries, with cases nearly tripling from a week ago. Cases doubled in India. Most countries posted fewer cases than last week

Weekly Change in Cases By Country

As of April 19

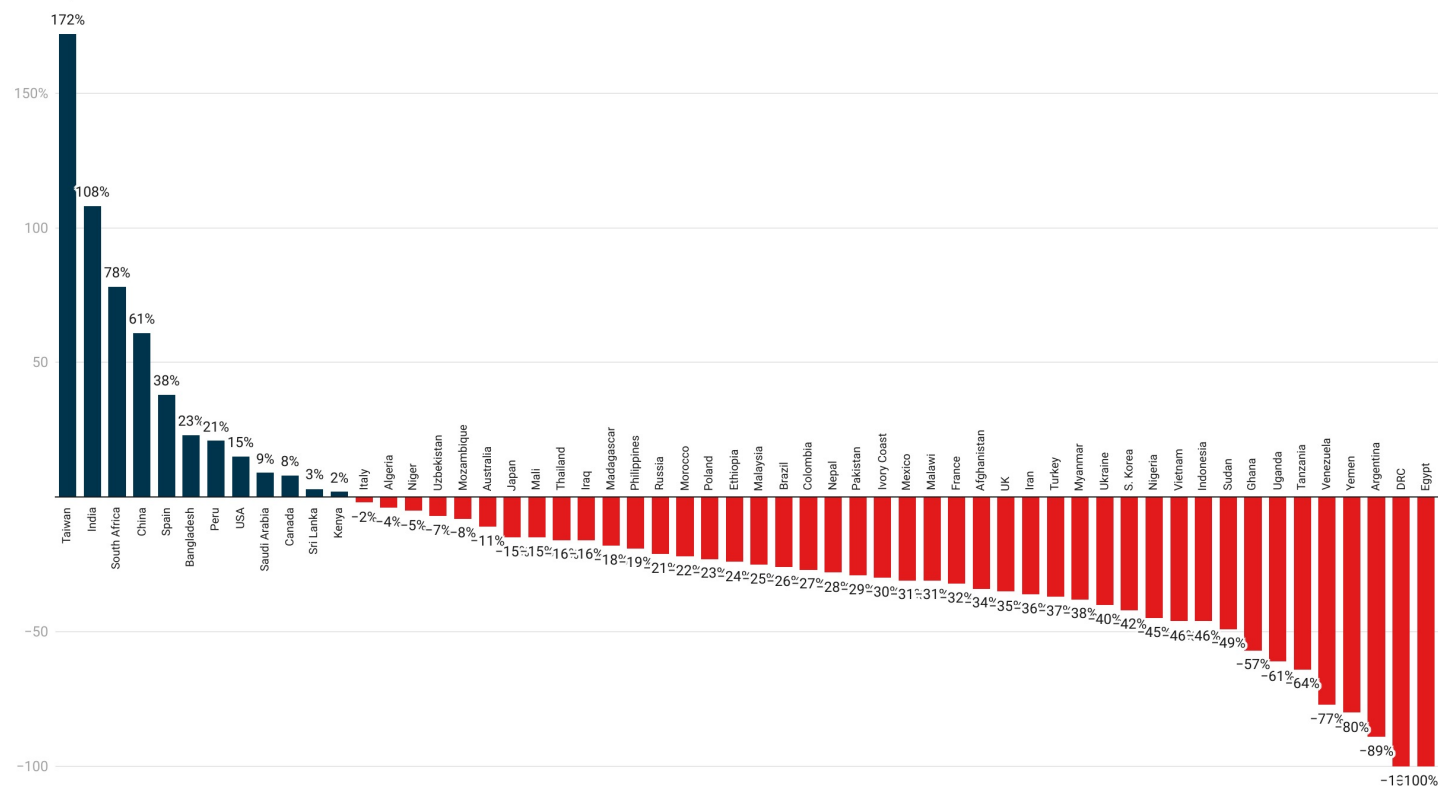
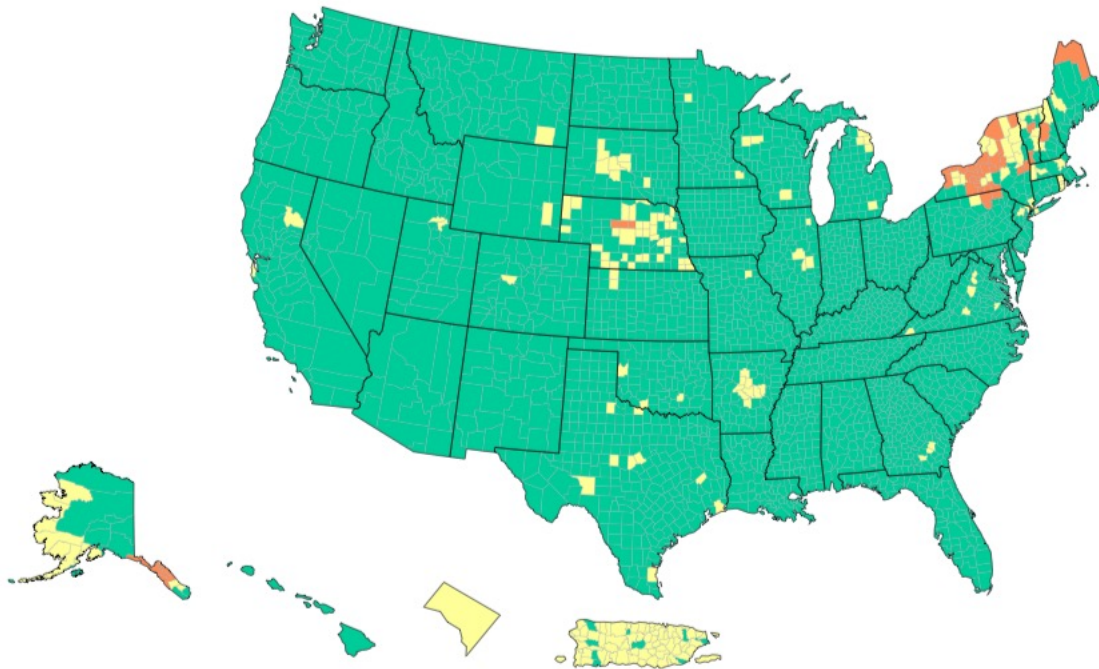


Chart: Health Industry Advisor LLC • Source: world-meters.info • Created with Datawrapper

Forty counties rate "High" in the CDC's Community Level system, which reflects virus transmission and health system impact. These are concentrated in New York

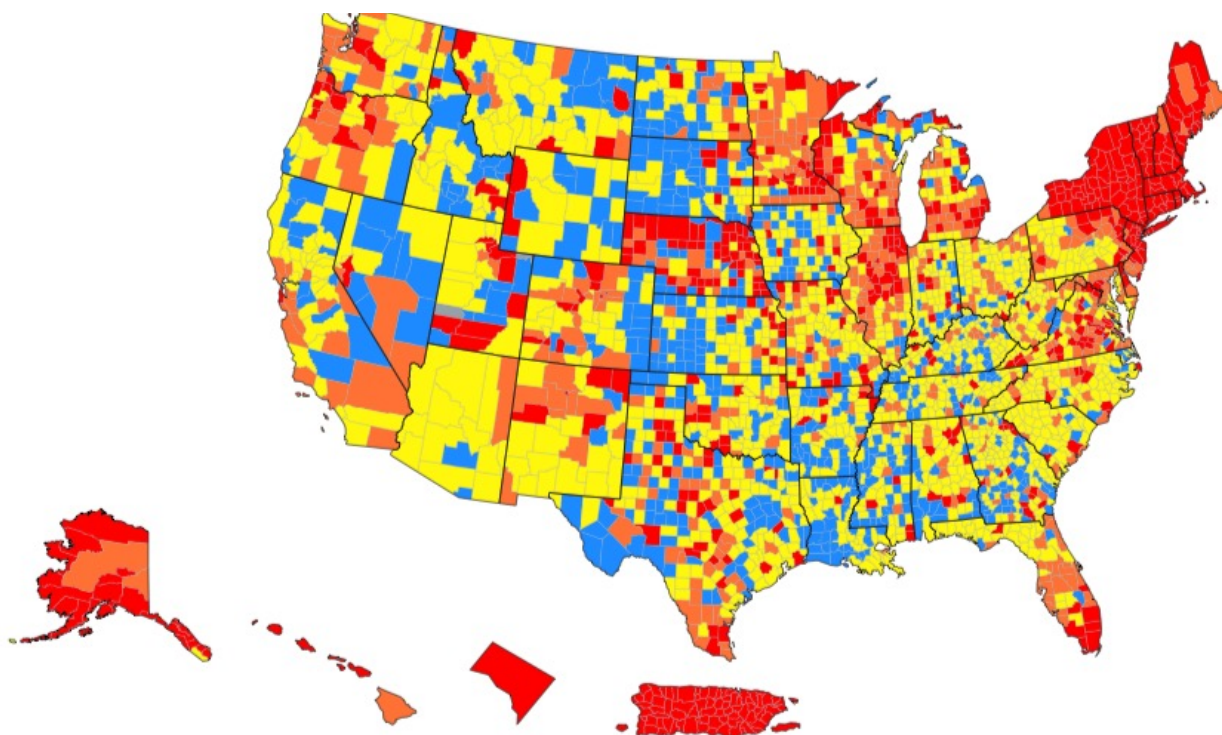
April 13-19, 2022



	Total	Percent	% Change
High	40	1.24%	0.81%
Medium	228	7.07%	1.64%
Low	2956	91.69%	- 2.45%

Source: Centers for Disease Control and Prevention website, https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=CommunityLevels&metric-cases=cases_per_100K_7_day_count_change&metric-admissions=percent_adult_inpatient_beds_used_confirmed_covid; accessed April 23, 2022

Virus spread in one-third of U.S. counties rates as “High” or “Substantial”. This spread is heaviest in counties in the Northeast



Community Transmission
April 16-22, 2022

	Total	Percent	% Change
High	652	18.42%	4.66%
Substantial	551	15.56%	2.71%
Moderate	1335	37.71%	- 4.63%
Low	682	19.27%	- 2.68%

Source: Centers for Disease Control and Prevention website, https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=Risk&metric-cases=cases_per_100K_7_day_count_change&metric-admissions=percent_adult_inpatient_beds_used_confirmed_covid; accessed April 23, 2022

New Covid cases in the United States have increased since the beginning of April. However, the rate of increase may be slowing

Week-Over-Week Change in Newly Reported Cases

7-Day Average

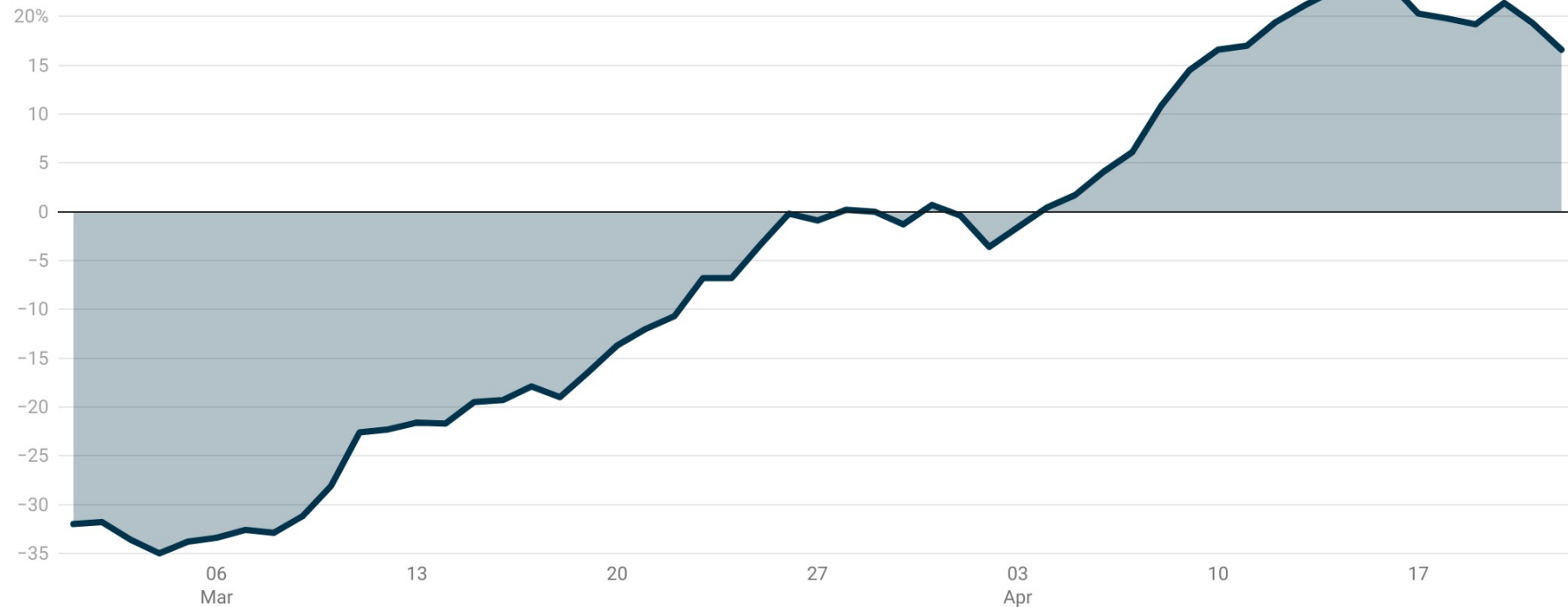
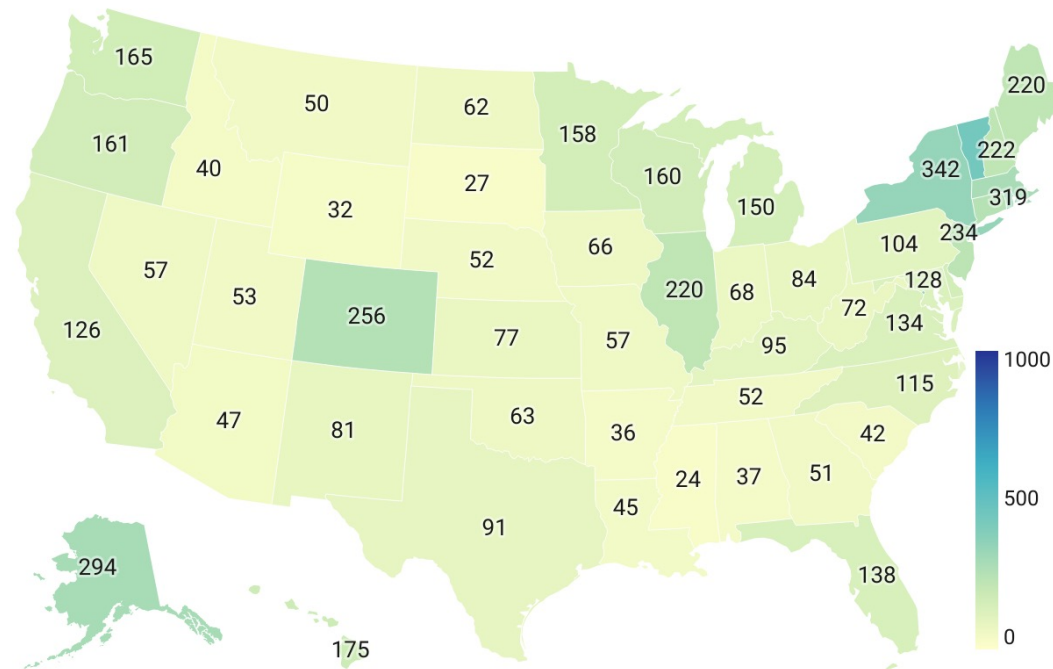


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Cases rates, while generally low in the United States, have moved higher in the past month in many states

New Cases / Million / Day

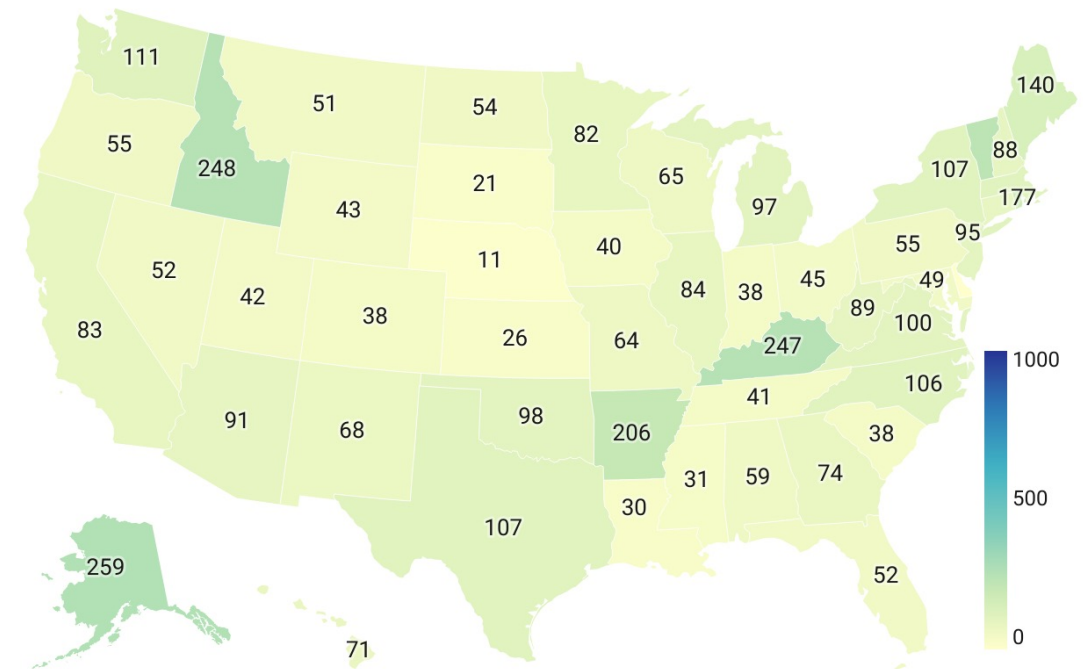
7-Day Average, As of April 22



Map: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

New Cases / Million / Day

7-Day Average, As of March 22



Map: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Covid cases increased last week in most states and the District of Columbia. Cases rose most sharply in Indiana and West Virginia, while Alaska, Arizona, Maine, and Wyoming witnessed double-digit declines

Week-over-Week Increase in Covid Cases

As of April 22

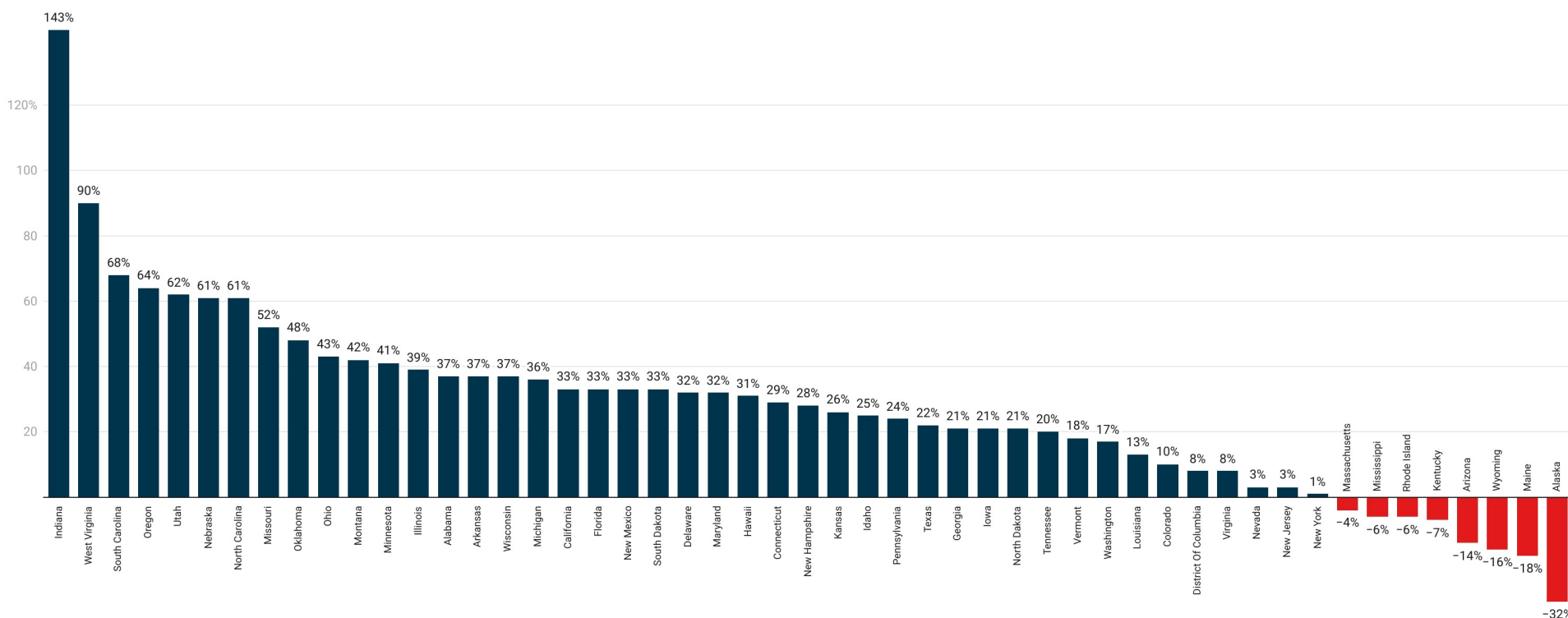
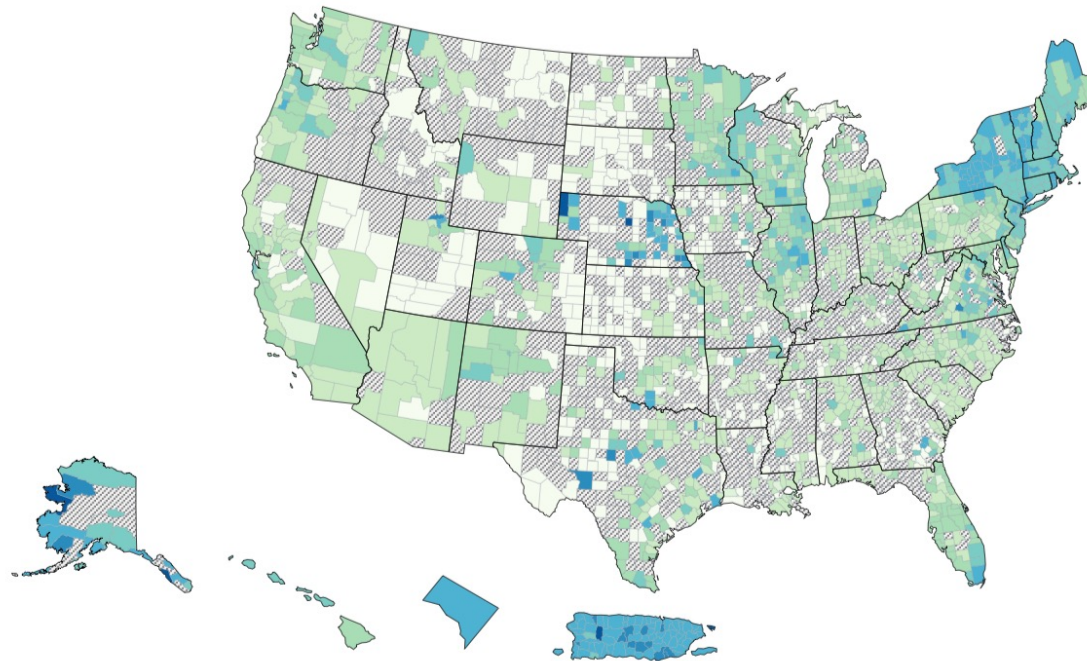


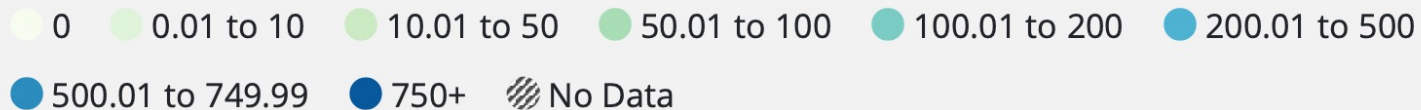
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Two-thirds of U.S. counties reported 50 or fewer cases per 100,000 last week. Only 8% reported 200 or more cases per 100,000

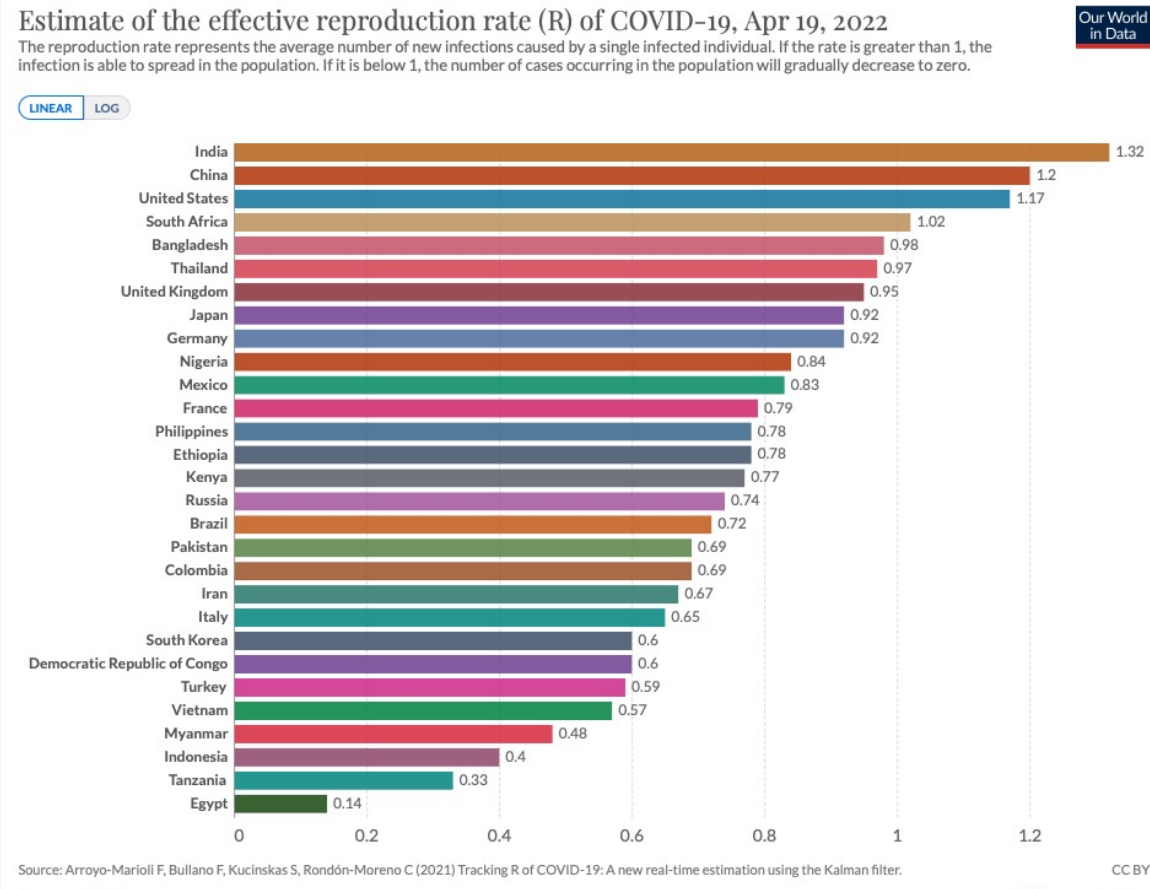


Reported cases per 100,000
April 16-22, 2022

Source: Centers for Disease Control and Prevention website,
https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=Cases&metric-cases=cases_per_100K_7_day_count_change;
accessed April 23, 2022

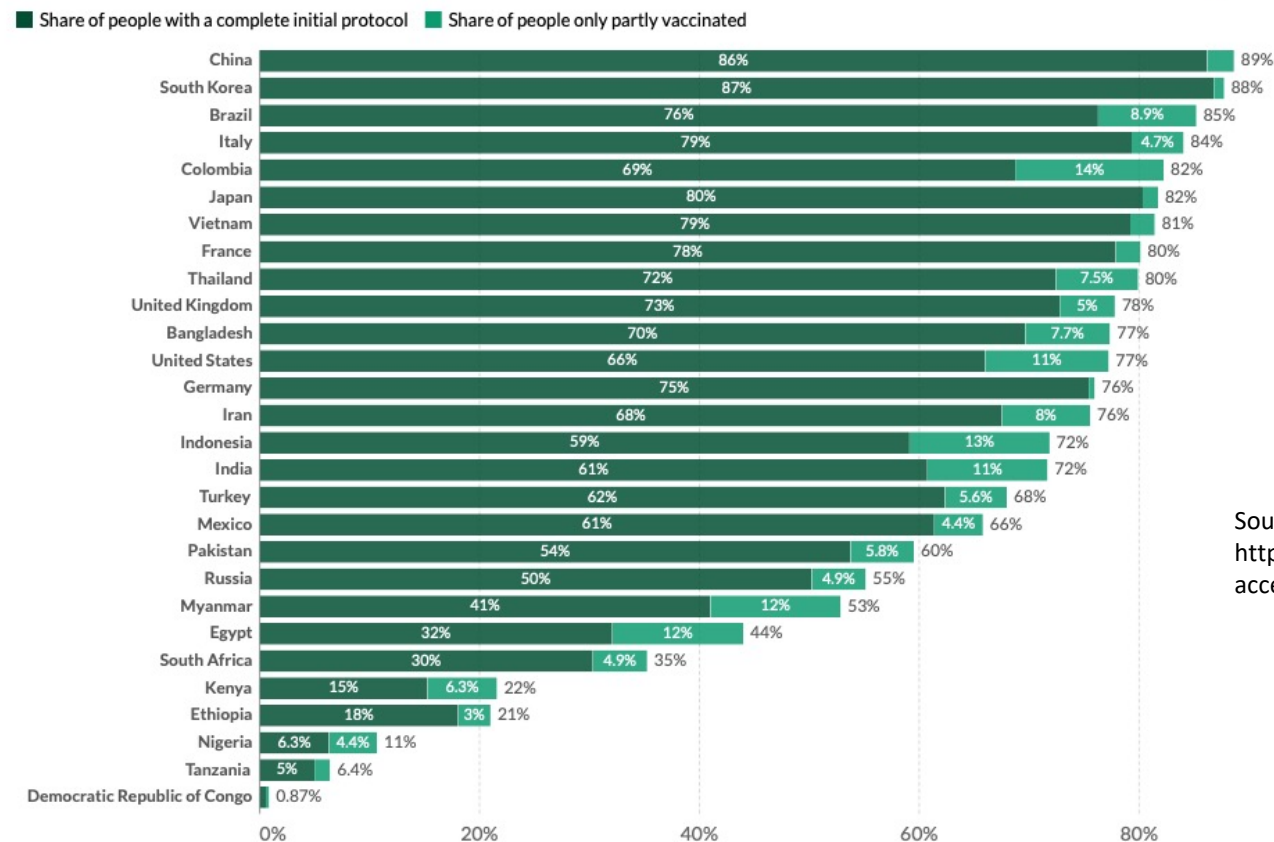


The Reproduction Rate (R_t) in the United States exceeds 1, indicating that the virus is spreading. Among the thirty largest countries, this rate exceeds 1 in only the United States, China, India, and South Africa



Source: Our World in Data website,
<https://ourworldindata.org/covid-vaccinations>;
accessed April 23, 2022

The United States trails several large countries in the share of its population vaccinated against Covid



Source: Official data collated by Our World in Data
Note: Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a 2-dose protocol, are ignored to maximize comparability between countries.

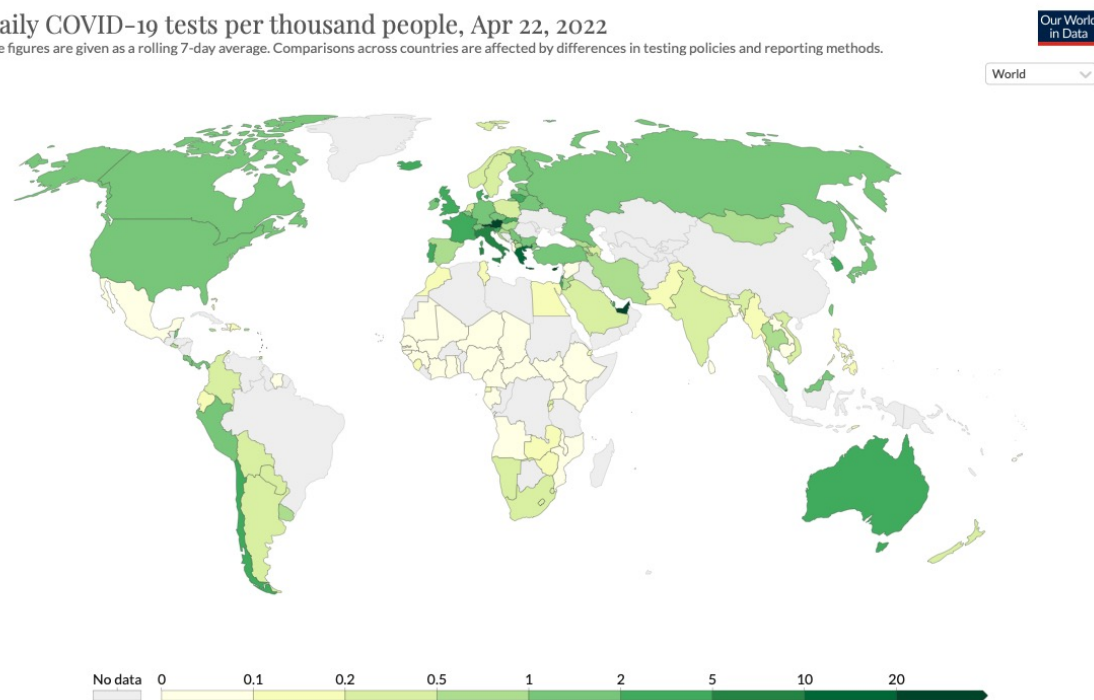
Source: Our World in Data website,
<https://ourworldindata.org/covid-vaccinations>;
accessed April 23, 2022

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The United States tests at a relatively high rate compared to most countries. However, the test-positive rate rose to the upper limit of the public health guidance – suggesting that our surveillance may be insufficient.

Daily COVID-19 tests per thousand people, Apr 22, 2022

The figures are given as a rolling 7-day average. Comparisons across countries are affected by differences in testing policies and reporting methods.



Source: Official data collated by Our World in Data – Last updated 22 April 2022

OurWorldInData.org/coronavirus • CC BY

Test-Positivity Rate

7-Day Average, Through April 16

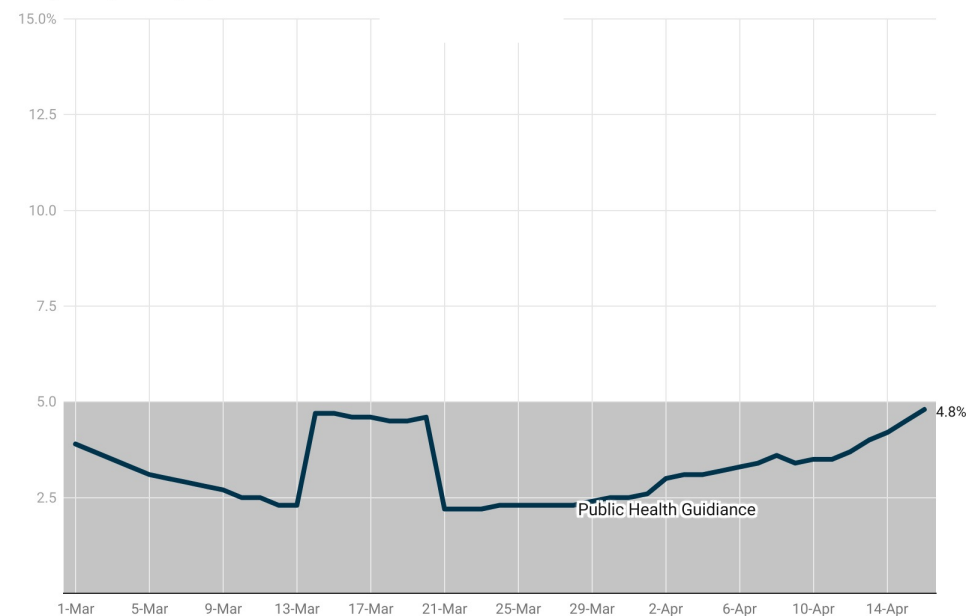
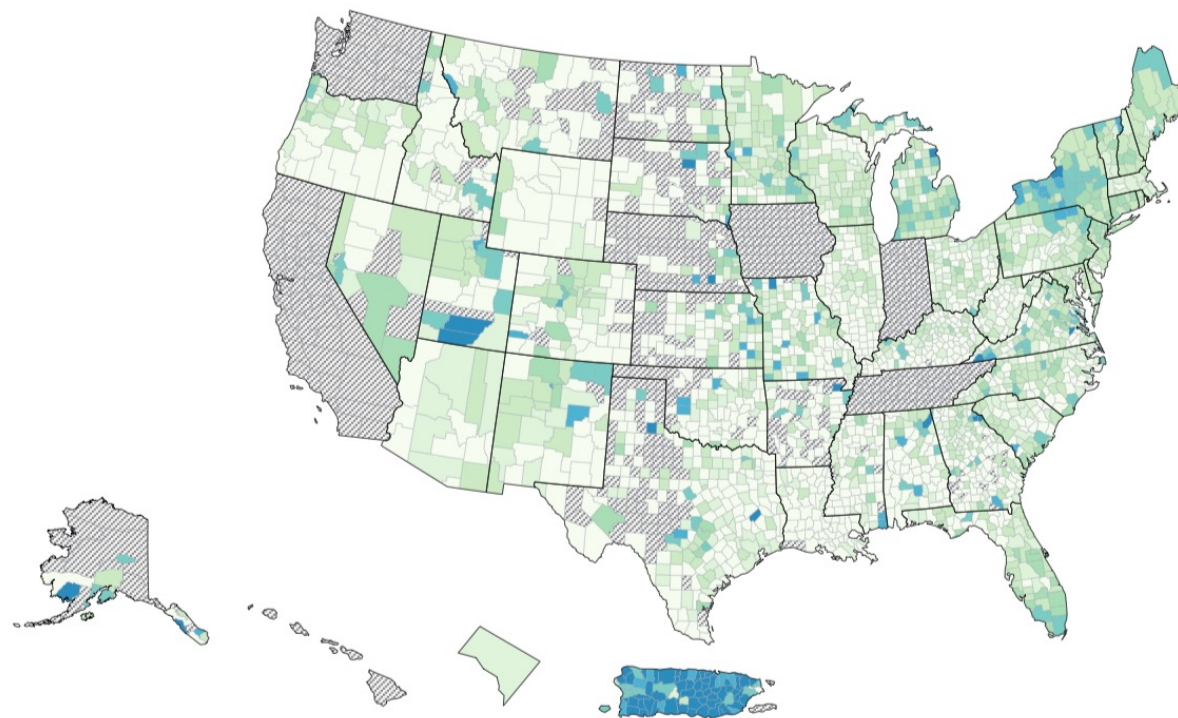


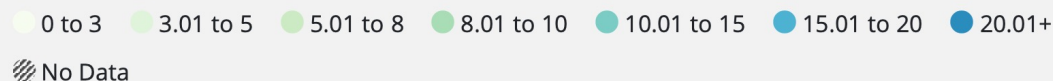
Chart: Health Industry Advisor LLC • Source: U.S. Department of Health & Human Services • Created with Datawrapper

Test-positive rates in most counties (60%) fall within the 0-5% guideline recommended by public health officials. Rates in 80% of U.S. counties remain between 0-8%



Nucleic Acid Amplification Tests (NAATs)
Percent positivity
April 14-20, 2022

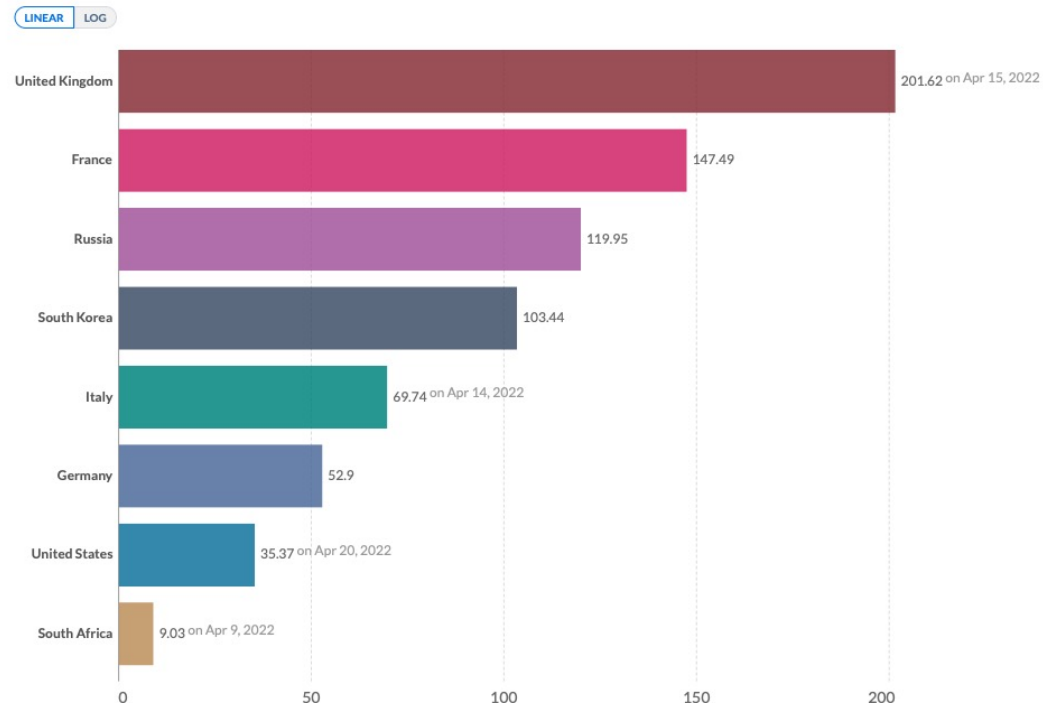
Source: Centers for Disease Control and Prevention website,
https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=Testing&metric-cases=cases_per_100K_7_day_count_change&metric-admissions=percent_adult_inpatient_beds_used_confirmed_covid; accessed April 23, 2022



The United States ranks low in the rate that Covid patients are admitted to hospitals, including to intensive care units

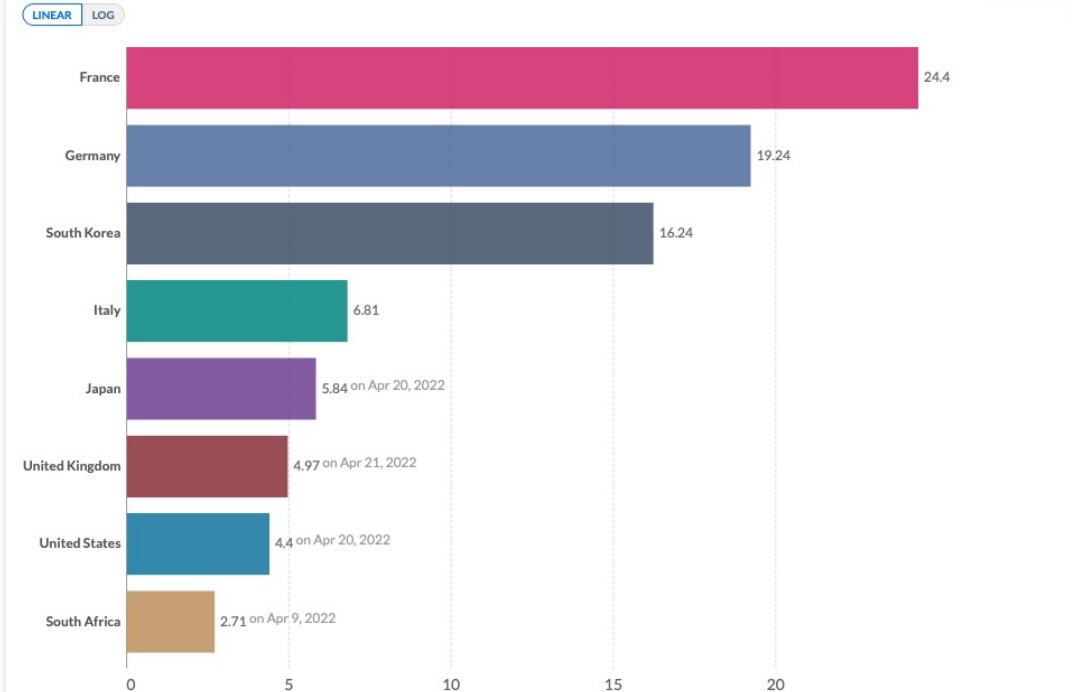
Weekly new hospital admissions for COVID-19 per million people, Apr 22, 2022
Weekly admissions refer to the cumulative number of new admissions over the previous week.

Our World in Data



Number of COVID-19 patients in intensive care (ICU) per million people, Apr 22, 2022

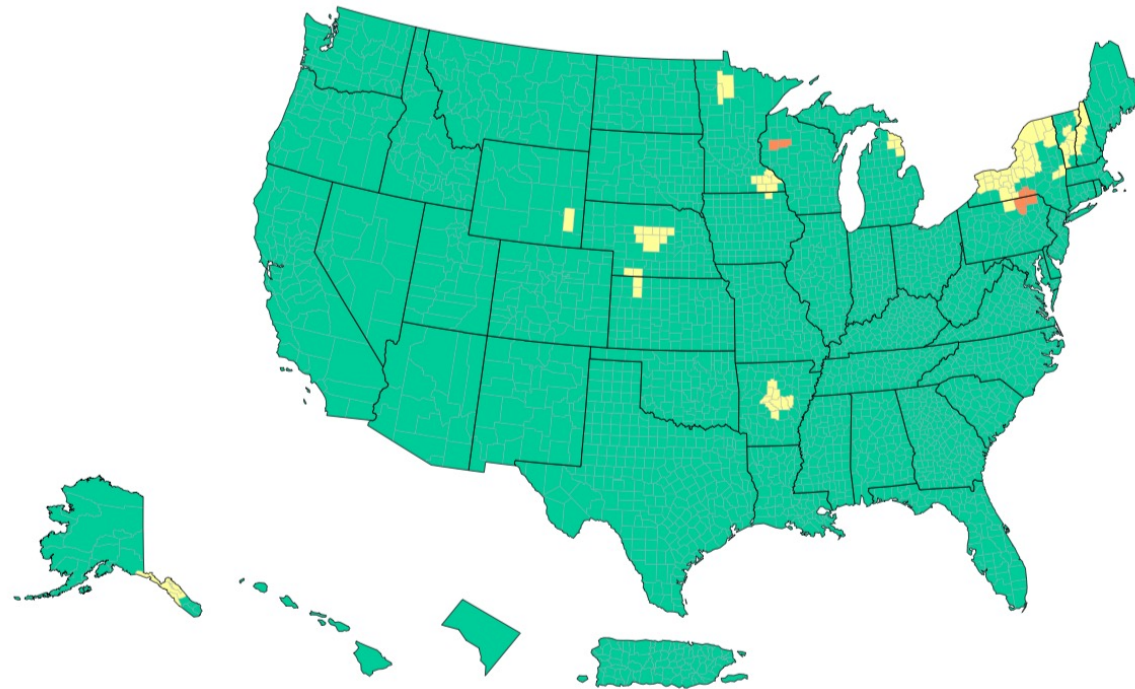
Our World in Data



Source: Official data collated by Our World in Data
Note: For countries where the number of ICU patients is not reported, we display the closest metric (patients ventilated or in critical condition).

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Covid admissions per capita remain low across most of the country.
New York counties are a notable exception



Admissions per 100,000
April 14-20, 2022

Source: Centers for Disease Control and Prevention website,
https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=Hospital&metric-cases=cases_per_100K_7_day_count_change&metric-admissions=percent_adult_inpatient_beds_used_confirmed_covid; accessed April 23, 2022

● <10.0 ● 10.0-19.9 ● ≥20.0 ▨ No Data

Covid admissions increased 9% last week, while patient days increased <1%. However, both measures remain at or near pandemic-low levels

Covid-19 Admissions & Census

7-Day Average Thru April 20

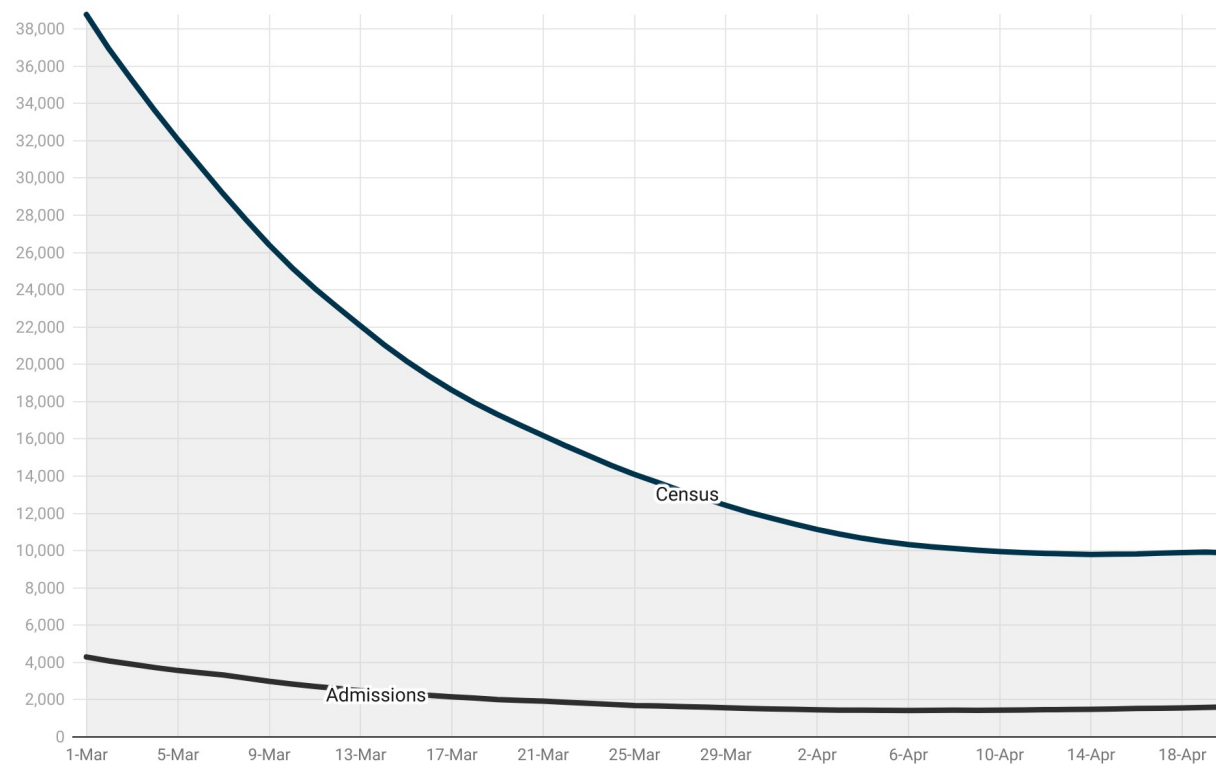
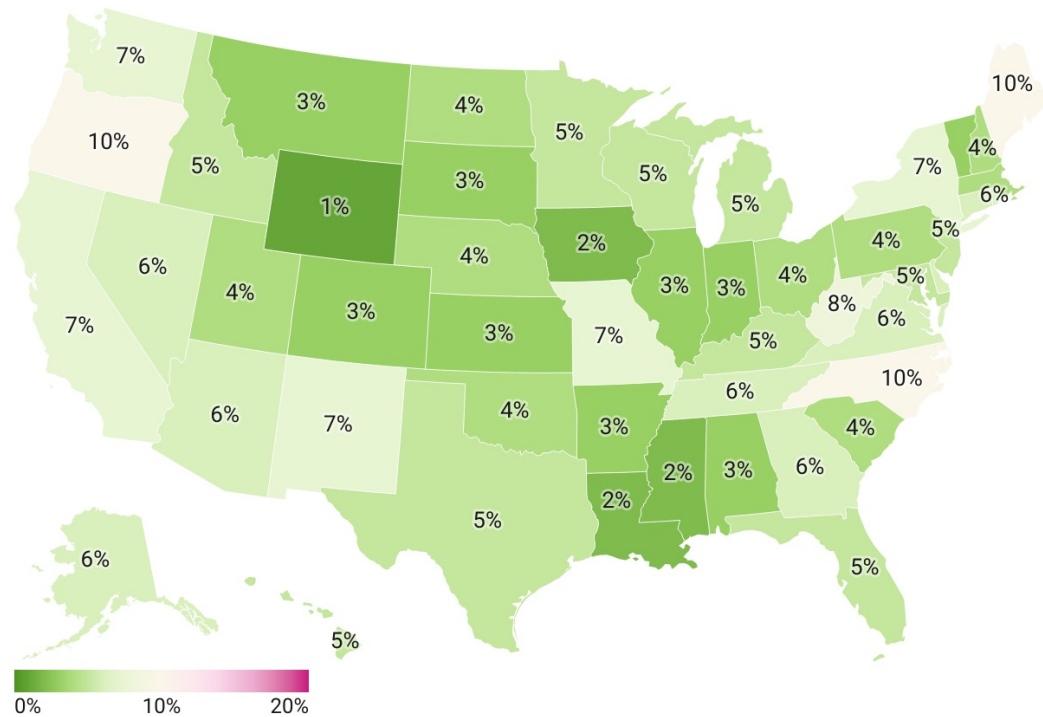


Chart: Health Industry Advisor LLC • Source: Centers for Disease Control and Prevention • Created with Datawrapper

Hospitalizations with Covid remain low, representing fewer than 10% of inpatient beds in every state except New York. A month ago, Covid patients occupied one in twenty beds; now, they occupy one in thirty

Covid-19 Patients As % of All Inpatient Beds

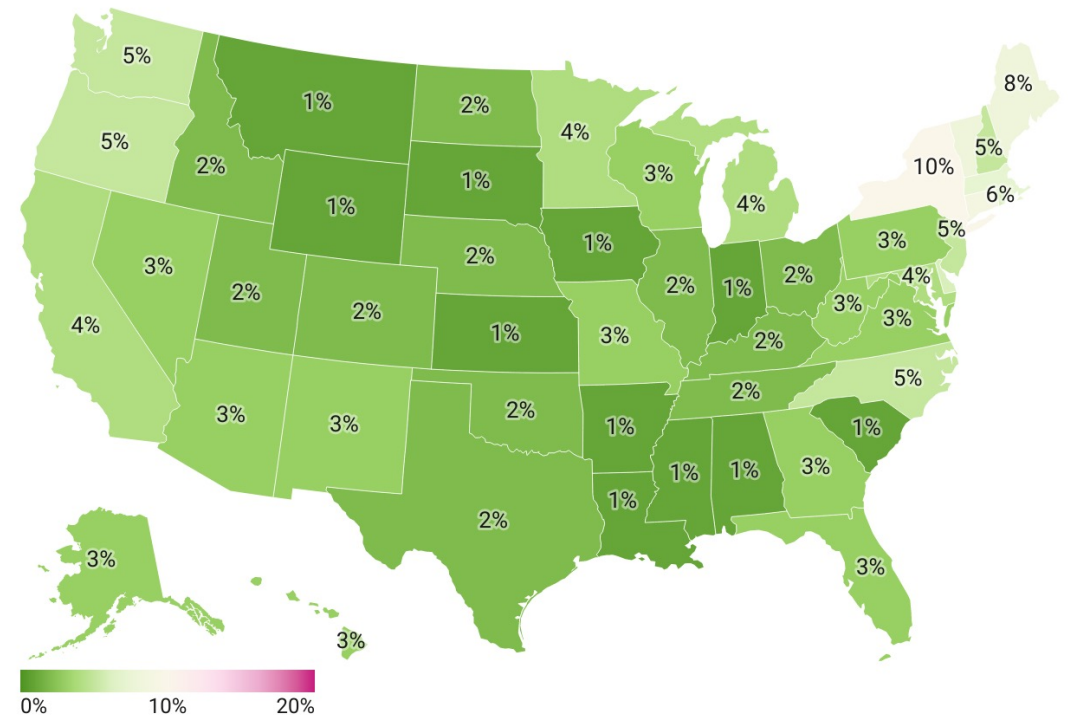
As of March 21



Map: Health Industry Advisor LLC • Source: Centers for Disease Control and Prevention • Created with Datawrapper

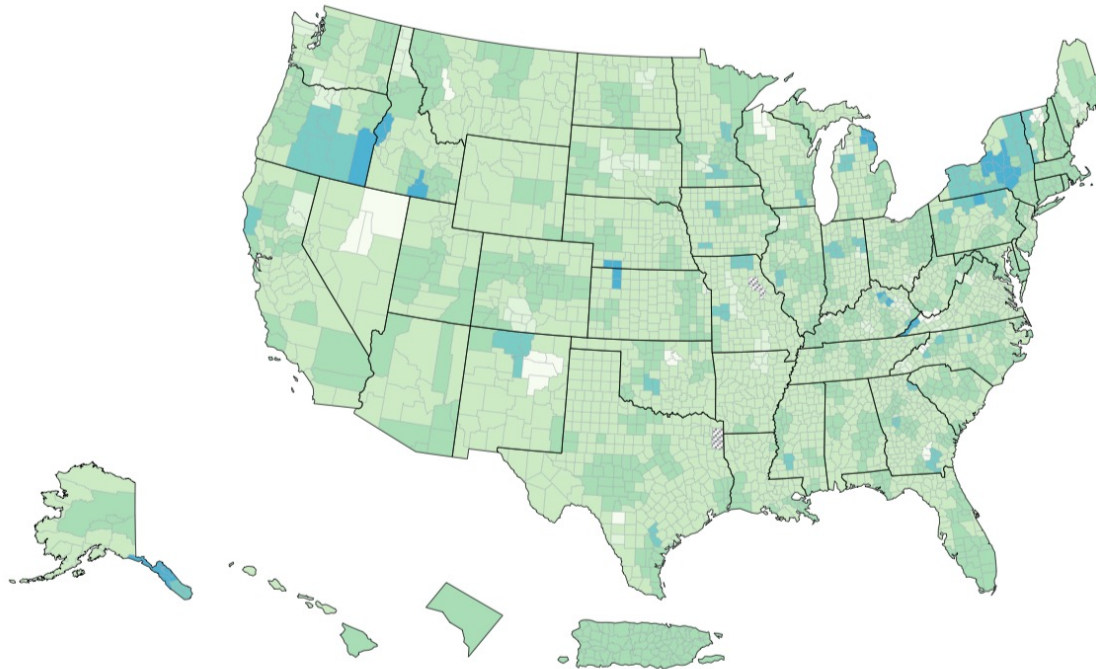
Covid-19 Patients As % of All Inpatient Beds

As of April 21



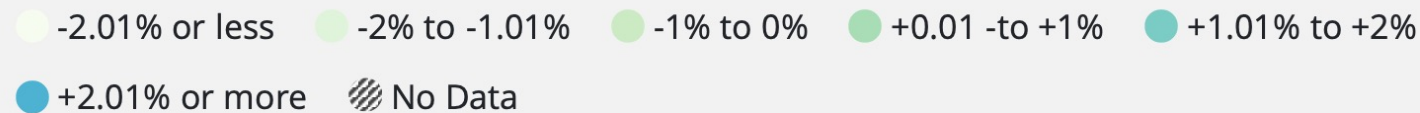
Map: Health Industry Advisor LLC • Source: Centers for Disease Control and Prevention • Created with Datawrapper

Except in New York and Oregon, most counties experienced small increases or declines in Covid census in the last week



Weekly change (%) in Covid census
April 14-20, 2022

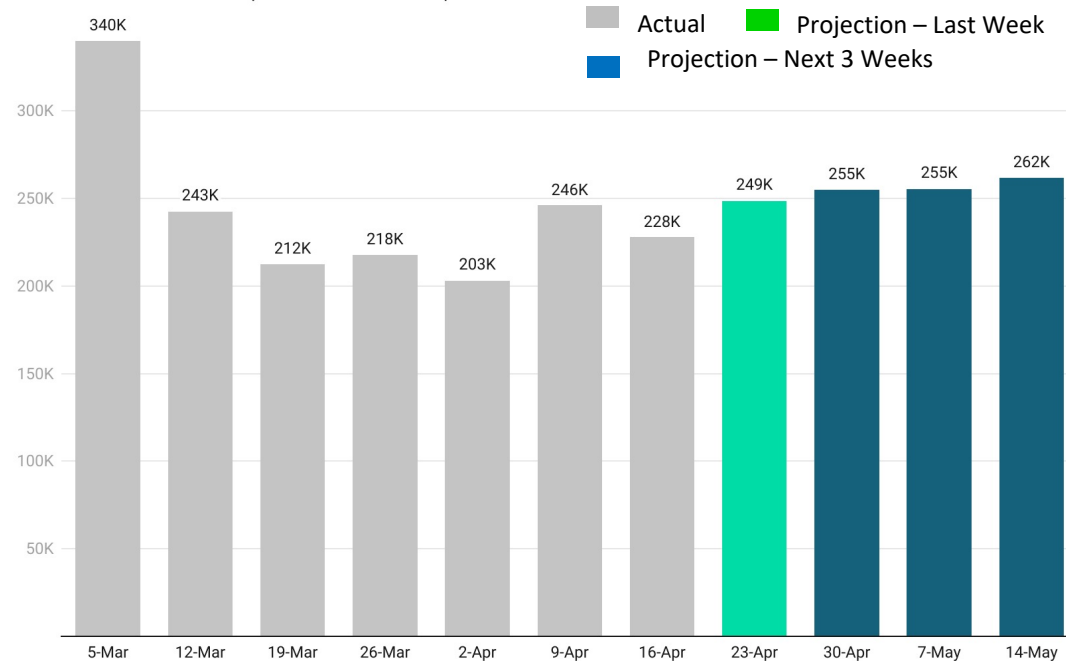
Source: Centers for Disease Control and Prevention website,
https://covid.cdc.gov/covid-data-tracker/#county-view?list_select_state=all_states&list_select_county=all_counties&data-type=Hospital&metric-cases=cases_per_100K_7_day_count_change&metric-admissions=percent_adult_inpatient_beds_used_confirmed_covid; accessed April 23, 2022



An ensemble forecast predicts cases will increase while deaths will decline over the next three weeks

Newly-Reported Cases Per Week

Covid-19 Forecast Hub, Composite Forecast As of April 16

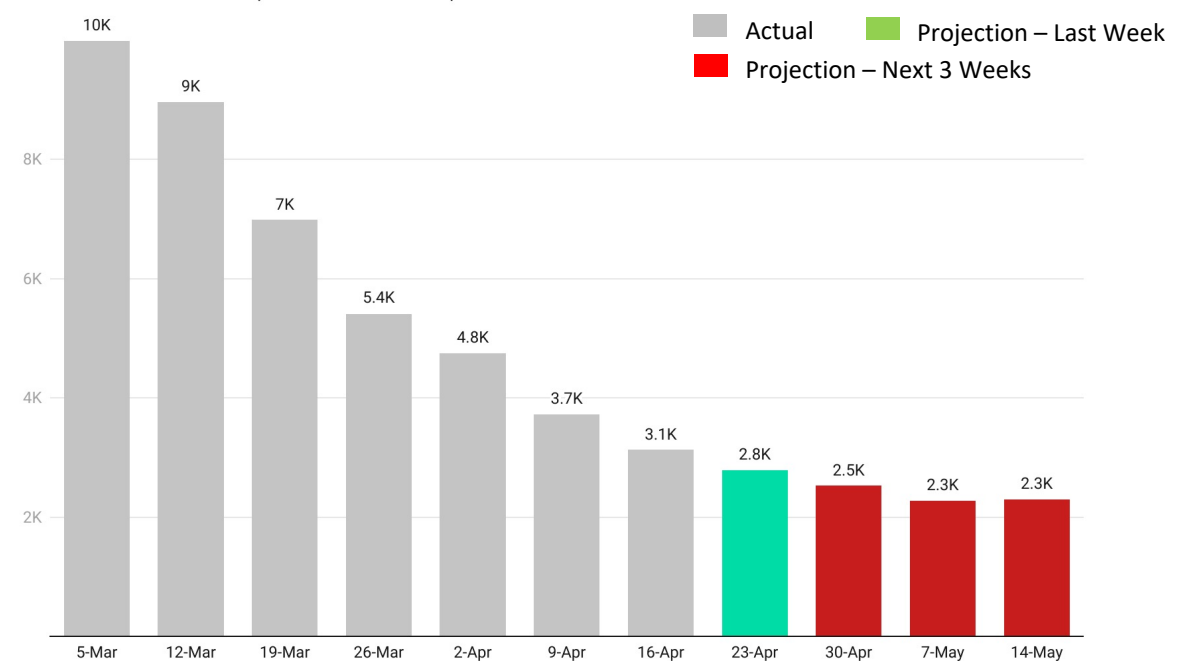


For the week ending on the date shown

Chart: Health Industry Advisor LLC • Source: Covid-19 Forecast Hub • Created with Datawrapper

Newly-Reported Deaths Per Week

Covid-19 Forecast Hub, Composite Forecast As of April 16



For the week ending on the date shown

Chart: Health Industry Advisor LLC • Source: Covid-19 Forecast Hub • Created with Datawrapper

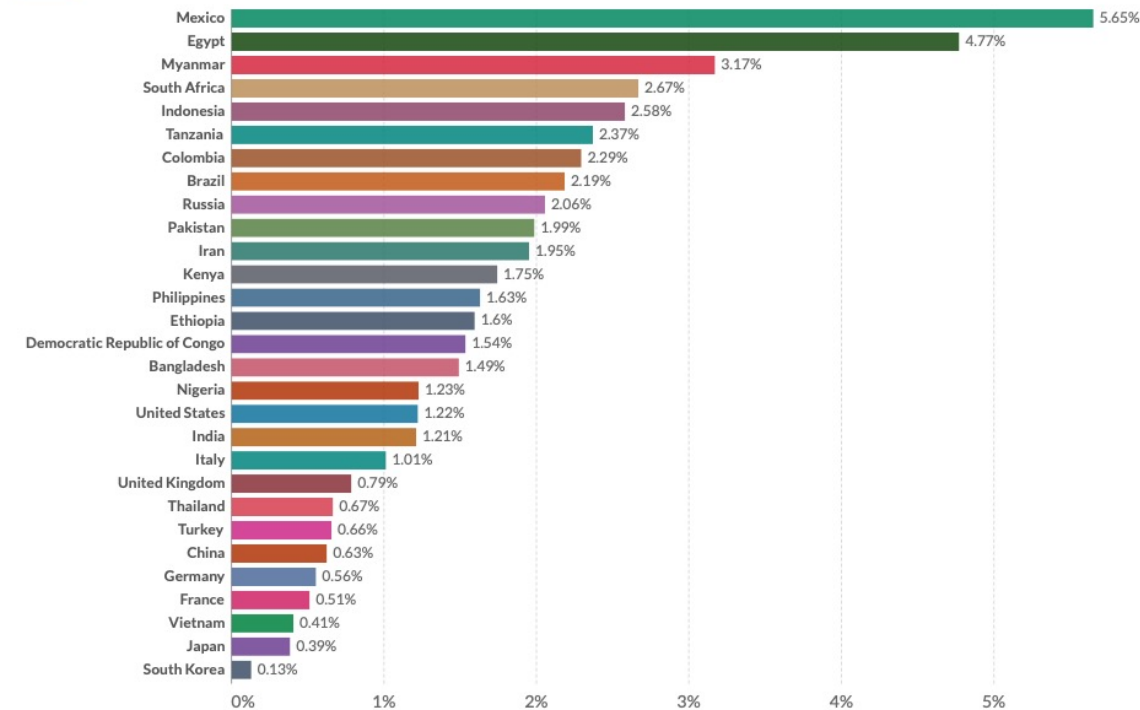
The case fatality rate in the United States ranks in the middle of the thirty largest countries globally

Case fatality rate of COVID-19, Apr 22, 2022

The case fatality rate (CFR) is the ratio between confirmed deaths and confirmed cases. The CFR can be a poor measure of the mortality risk of the disease. We explain this in detail at [OurWorldInData.org/mortality-risk-covid](https://ourworldindata.org/mortality-risk-covid)

Our World
in Data

LINEAR LOG



Source: Johns Hopkins University CSSE COVID-19 Data

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Source: Our World in Data website,
https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=latest&facet=none&pickerSort=desc&pickerMetric=total_vaccinations_per_hundred&Metric=Case+fatality+rate&Interval=Cumulative&Relative+to+Population=true&Color+by+test+positivity=false&country=CHN~IND~USA~IDN~PAK~BRA~NGA~BGD~RUS~MEX~JPN~ETH~PHL~EGY~VNM~COD~TUR~IRN~DEU~THA~GBR~FRA~ITA~TZA~ZAF~MMR~KEN~KOR~COL; accessed April 23, 2022

Deaths with Covid declined again last week, continuing a pattern that started in late January. It has been nine months since the number of deaths were this low

Deaths With Coronavirus

7-Day Average, Through April 22



Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Sources

- Bloomberg Vaccine Trackers, <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmH>
- Centers for Disease Control and Prevention, COVID Data Tracker <https://www.cdc.gov/covid-data-tracker/index.html#mobility>
- Centers for Disease Control and Prevention, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control and Prevention, National, Regional, and State Level Outpatient Illness and Viral Surveillance <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
- Centers for Disease Control and Prevention, Vaccines, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>
- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University <https://github.com/CSSEGISandData/COVID-19>
- Covid-19 Forecast Hub, <https://viz.covid19forecasthub.org>
- COVID-19 Projections Using Machine Learning, <https://covid19-projections.com>
- Institute for Health Metrics and Evaluation, COVID-19 estimate downloads <http://www.healthdata.org/covid/data-downloads>
- New York Times, Covid-19 data <https://github.com/nytimes/covid-19-data>
- Our World In Data, <https://ourworldindata.org/covid-vaccinations>
- U.S. Department of Health & Human Services <https://beta.healthdata.gov/dataset/COVID-19-Diagnostic-Laboratory-Testing-PCR-Testing/j8mb-icvb>
- U.S. Department of Health & Human Services: <https://healthdata.gov/dataset/covid-19-estimated-patient-impact-and-hospital-capacity-state>
- Worldometers.info: <https://www.worldometers.info/coronavirus/>
- Yale School of Public Health & Harvard TH Chan School of Public Health, <https://covidestim.or>