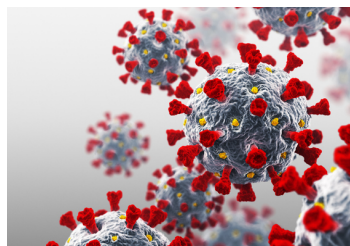


Covid-19 "Vital Signs"

Issue # 293

March 1, 2021



Covid-19 “Vital Signs”

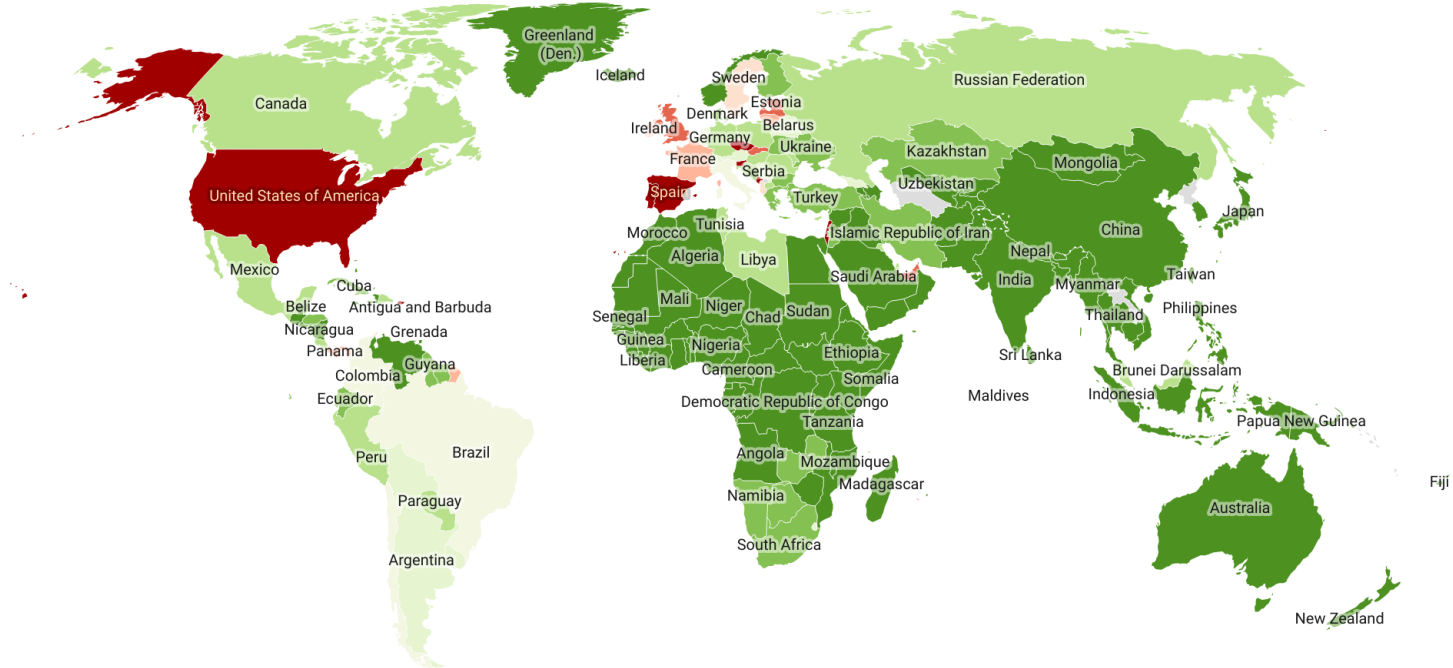
7-Day New Infections / Million: January 31

At the end of January, Spain and the United States were struggling with high new infection rates.

New Infections / Million

7-Day Moving Average, As of January 31

■ < 50 ■ 50–100 ■ 100–150 ■ 150–200 ■ 200–250 ■ 250–300 ■ 300–350 ■ 350–400 ■ 400–450 ■ ≥ 450



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

Covid-19 "Vital Signs"

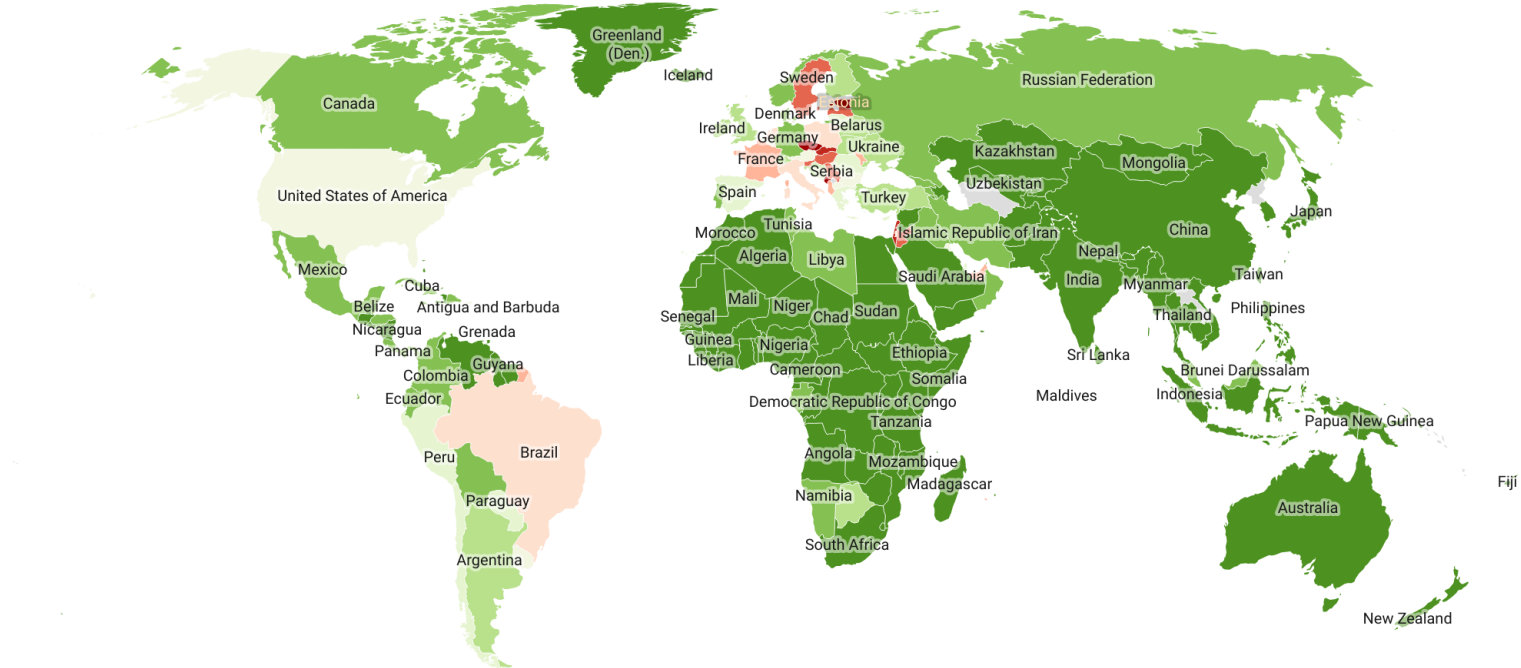
7-Day New Infections / Million: February 28

By the end of February, infection rates cooled in Spain and the United States but increased in Brazil.

New Infections / Million

7-Day Moving Average, As of January 31

■ < 50 ■ 50-100 ■ 100-150 ■ 150-200 ■ 200-250 ■ 250-300 ■ 300-350 ■ 350-400 ■ 400-450 ■ ≥ 450



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

Covid-19 "Vital Signs"

Highest Current Case Rates Worldwide

The US ranks 41st worldwide in new daily cases per capita. Brazil, the United Kingdom, and South Africa, despite new variant concerns, rank 34th, 63rd, and 111th, respectively.

7-Day New Daily Cases / Million

Fifteen Highest Rates & Other Countries of Interest, As of February 28

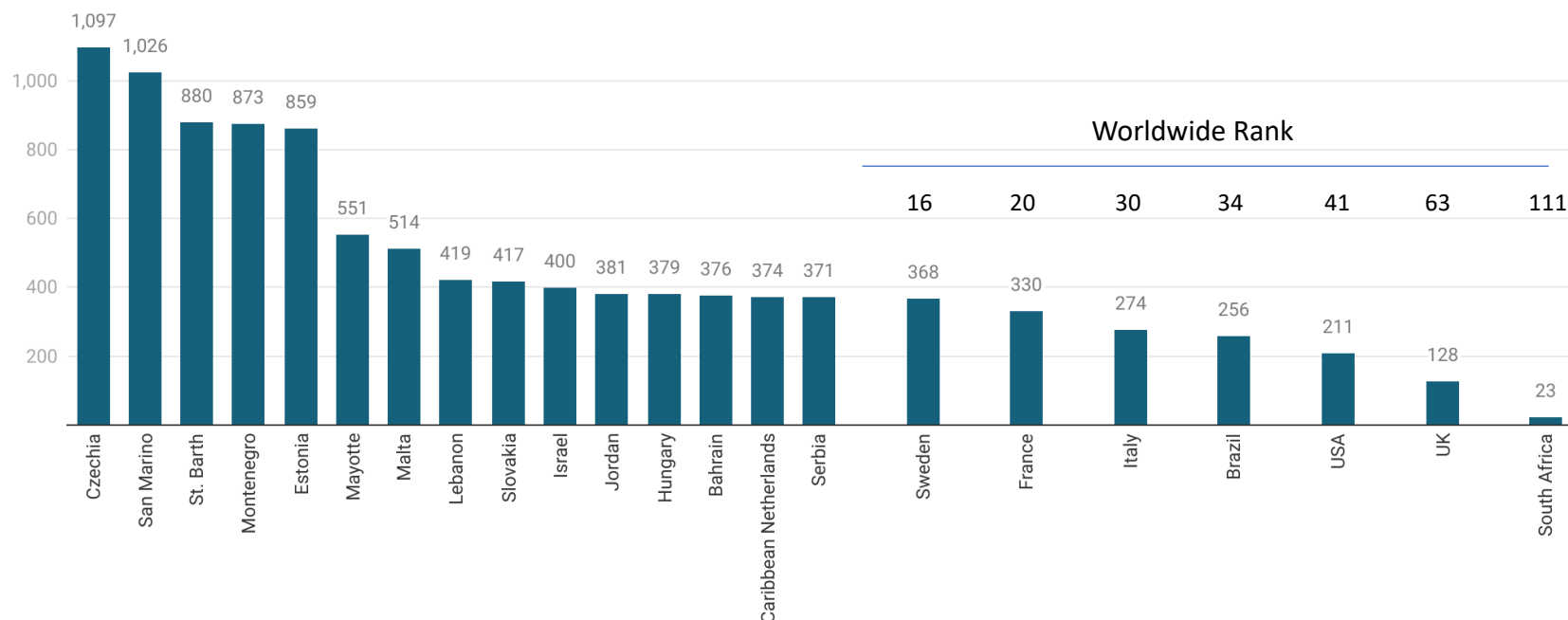


Chart: Health Industry Advisor LLC • Created with Datawrapper

Covid-19 "Vital Signs"

Newly Detected Cases / Million

Case rates defy concerns about emerging variants in the countries of origin: South Africa and the UK report relatively low and declining rates. Brazil's rate is increasing yet remains relatively moderate. Israel's rate had fallen sharply until turning up slightly about a week ago

Newly Detected Cases Per Million: Select Countries of Interest

7-Day Moving Average

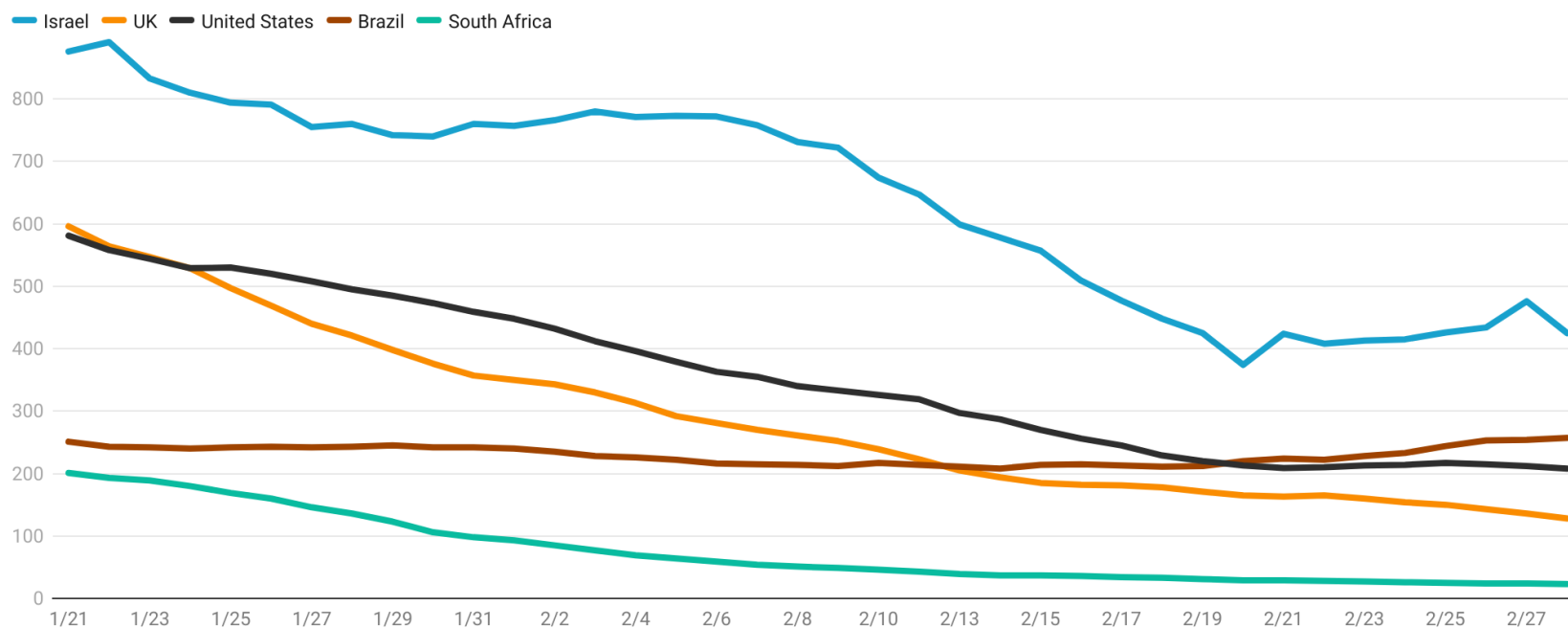


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

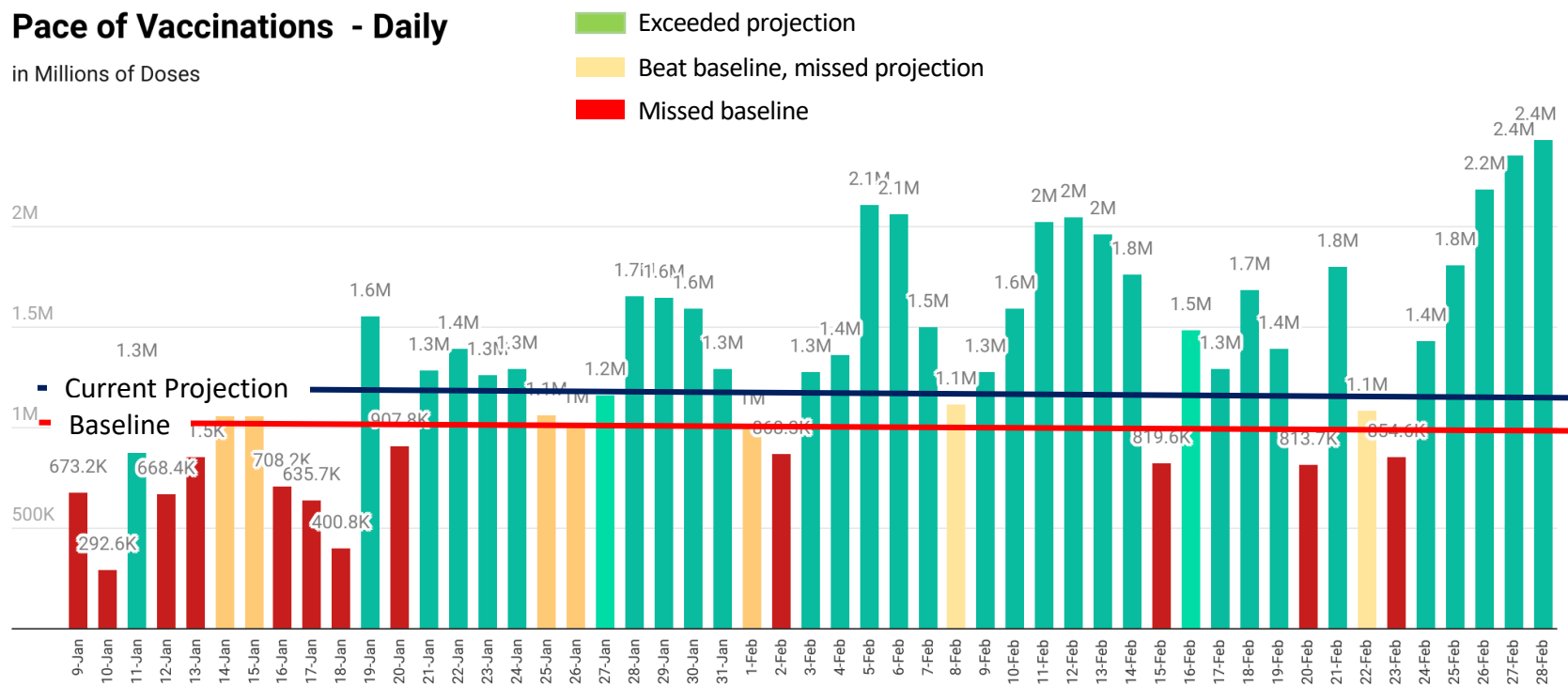
Covid-19 "Vital Signs"

Pace of Vaccinations

Vaccinations accelerated over the past five days, as earlier logistical issues eased. The US jabbed more than 2 million people each of the past three days

Pace of Vaccinations - Daily

in Millions of Doses



Baseline: 100 Million Doses in 100 Days Current Projection: Ramped-Up Vaccinations; Additional 100M Pfizer and Moderna doses; and JNJ vaccine available on 3/1

Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

“Current projection” is from Health Industry Advisor’s vaccination model, reflecting recent developments: increase pace of vaccinations; increase in Pfizer and Moderna doses to 300 million each; and anticipated availability of JNJ vaccine



Vaccine Tracking

To date, the US has administered 75 million doses, with 24.6 million people jabbed twice. As of yesterday, just less than 20% of U.S. adults have received at least one dose; nearly 10% have received two.

Vaccination Progress

Most Recent Two Weeks

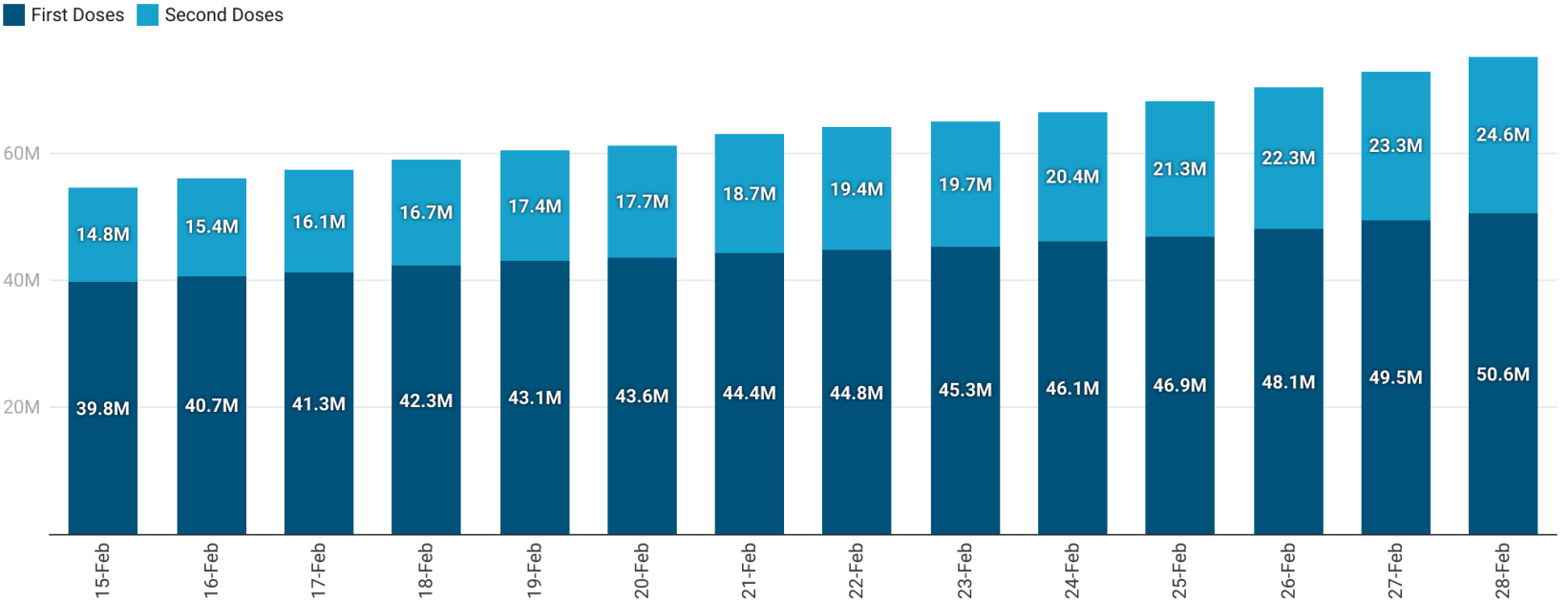


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

Vaccine data from: [Centers for Disease Control and Prevention](#) and [Bloomberg Vaccine Tracker](#)



Vaccines Distributed v. Unused

The US distributed an astounding 21.2 million additional doses in the last five days, rebuilding depleted inventories.

% of Doses Distributed & % Unused - Cumulative

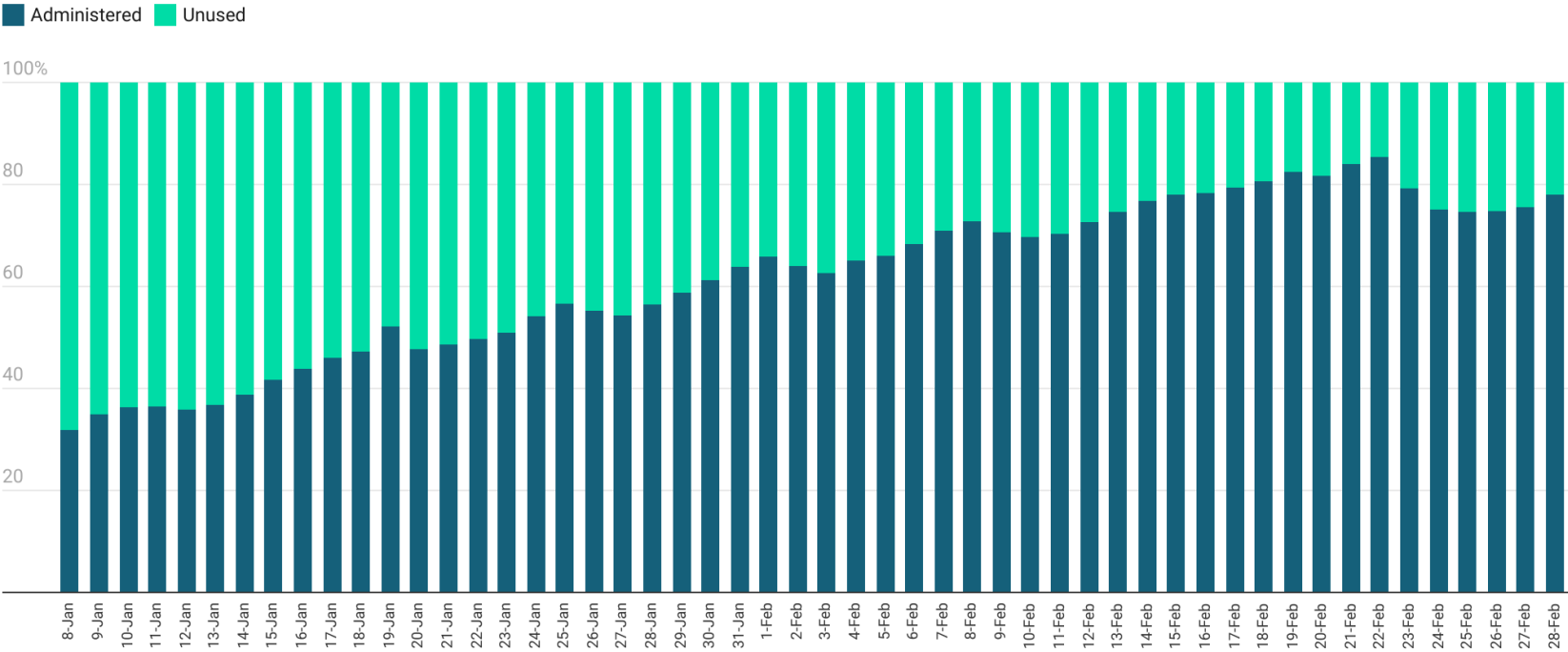


Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

Estimated Immunity By State

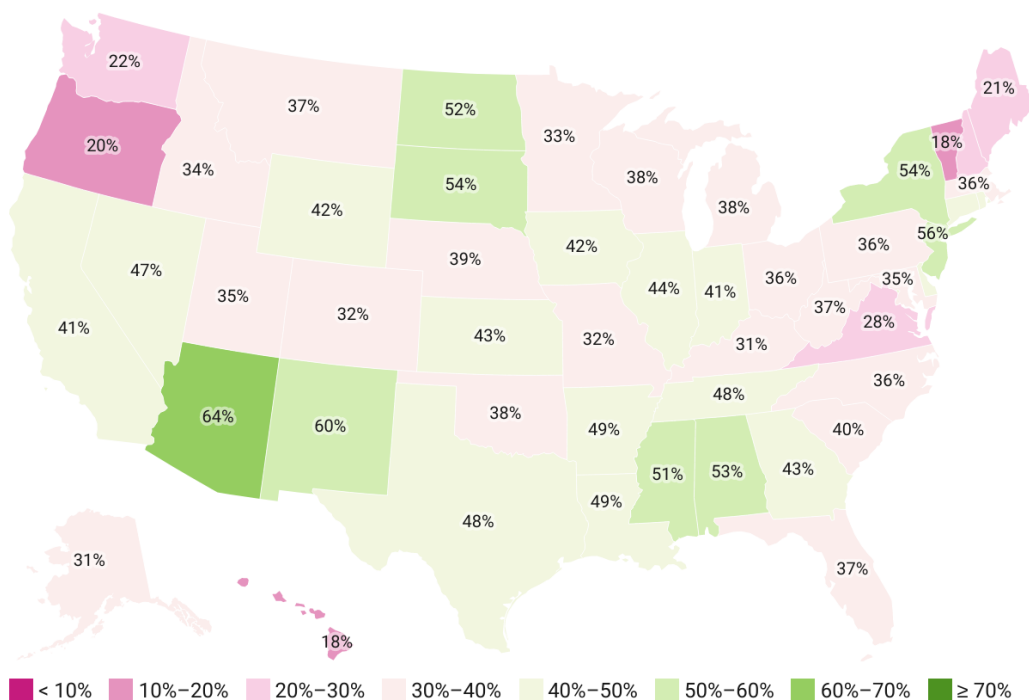
Estimated immunity exceeds 50% in eight states – Arizona, Arkansas, Mississippi, New Jersey, New Mexico, New York, North Dakota, and South Dakota.

- Public health experts have suggested that 60-80% of the population would need immunity, for herd immunity to be reached
- Immunity could result from an infection or via vaccination
- It is not established how long immunity, from either infection of vaccination, will last
- For purposes of this illustration, we use both reported vaccination rates and the Yale/Harvard* mean estimates of true infections

* <https://covidestim.org>

Estimated Immunity Prevalence, As of February 28

Based on Vaccinations To-Date & Yale/Harvard Estimated Infection Model



Presumed 14-day lag for immunity.

Map: Health Industry Advisor LLC • Source: Youyang Gu & Bloomberg • Created with Datawrapper

Immunity: Projected v. Estimated

With better-than-anticipated vaccine rates, estimated immunity levels are beginning to outpace our "Current Projection" model. Our model estimates 60% of the U.S. will be immune by May 30 and 70% by July 1.

Estimated Immunity

Current Estimates v. HIA Projection

— Estimated -Gu — HIA Projection Model — Estimated - Yale

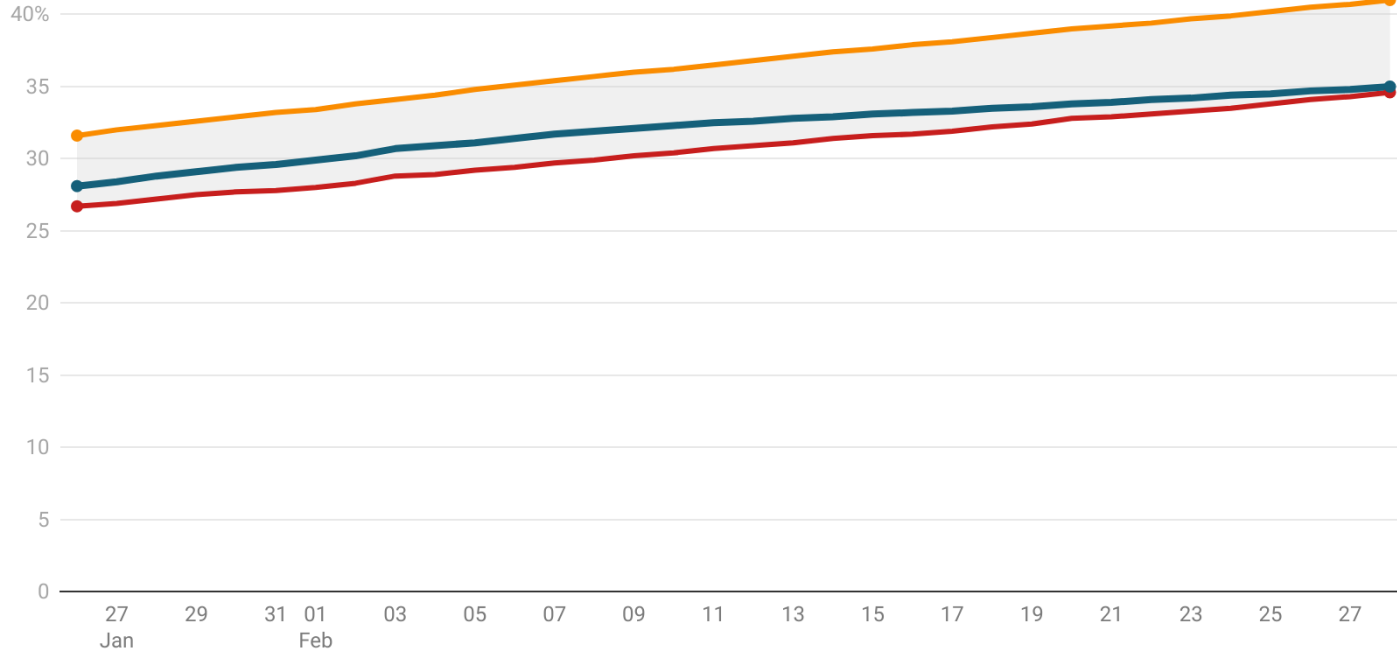


Chart: Health Industry Advisor LLC • Created with Datawrapper

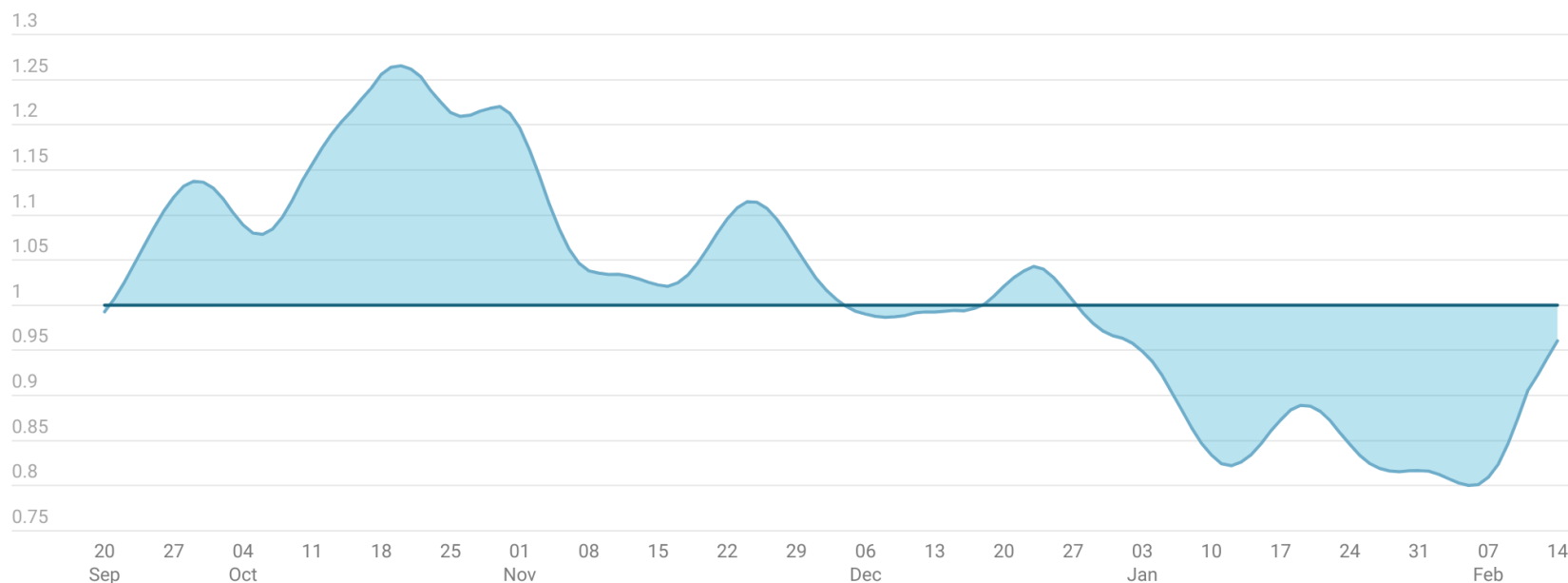
Reproduction Rate (R_t) – Gu* Model

Gu's R_t estimate signals a prolonged slowdown in infection spread. Of concern, however, R_t is approaching 1.0 as of mid-February.

Reproduction Rate (R_t) - US

*Youyang Gu: Covid-19projections.com

Youyang Gu Estimate, September 20, 2020 - February 14, 2021



R_t is an estimate of how many additional people a single person will infect

Chart: Health Industry Advisor LLC • Source: Youyang Gu • Created with Datawrapper

Covid-19 "Vital Signs"

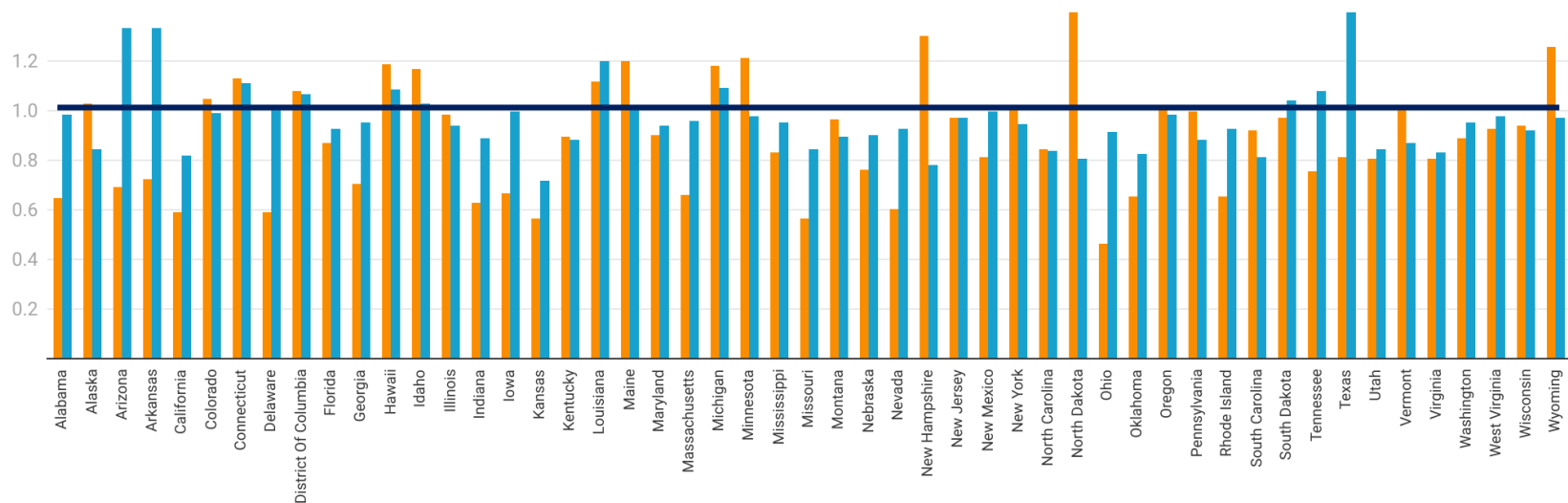
Reproduction Rate (R_t) Estimates By State

Estimated Reproduction Rates (R_t) signal infection spread across the US. Although using different methods, both Gu and Yale/Harvard agree that spread is slowing in most states. Both models believe that spread is increasing in Connecticut, Hawaii, Idaho, Louisiana, and Michigan.

Reproduction Rate (R_t)

Gu and Yale/Harvard Schools of Public Health

Yale Gu



Gu as of February 14; Yale/Harvard as of February 27

Chart: Health Industry Advisor LLC • Created with Datawrapper

Covid-19 "Vital Signs"

Estimated Daily Infections & New Case Rates

Estimated new infections and reported cases are plunging in the US. The Yale/Harvard model suggests that the infections have plummeted 80% since peaking in early-January; Gu estimates a 75% decline but, that infections began increasing again in mid-February

Estimated Daily Infections v. Detected Cases

Gu & Yale/Harvard Schools of Public Health Models

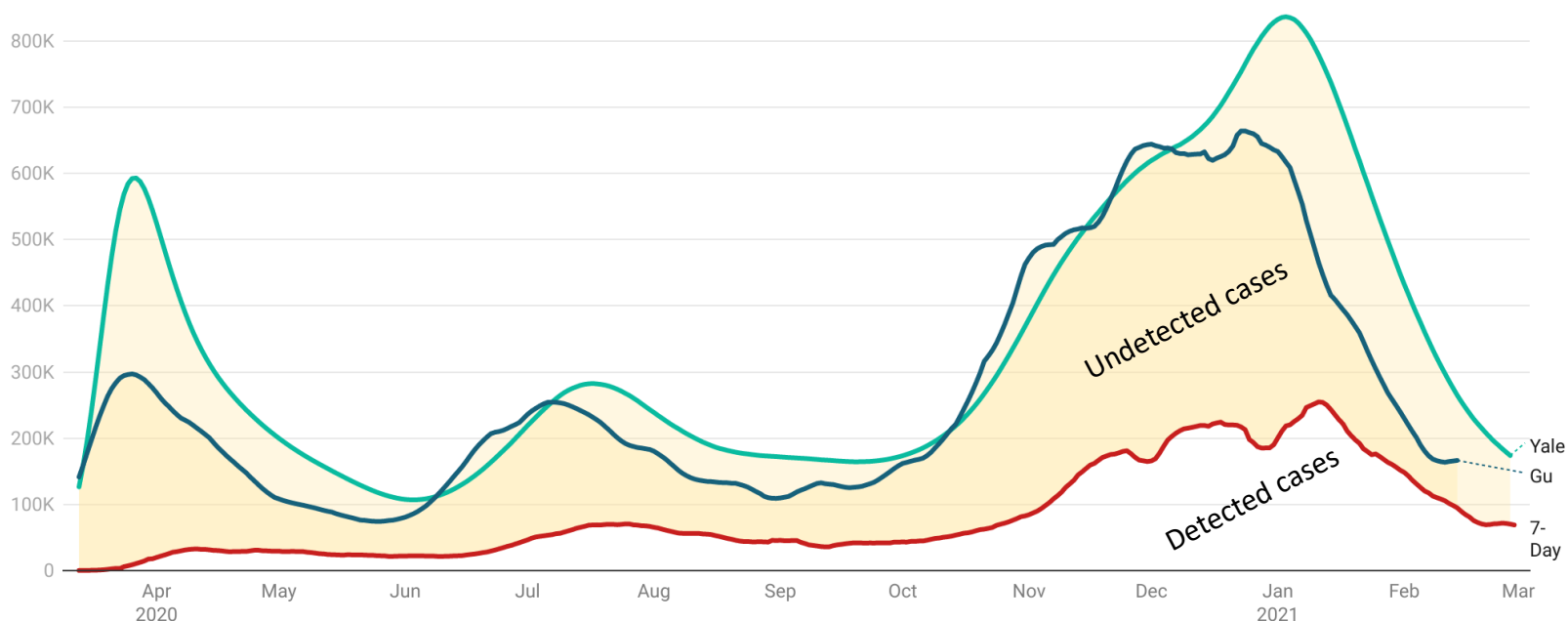


Chart: Health Industry Advisor LLC • Source: Youyang Gu, Yale School of Public Health • Created with Datawrapper

Two models:

- Youyang Gu: <https://covid19-projections.com>, lags by two weeks
- Yale School of Public Health: <https://covidestim.org>

Covid-19 "Vital Signs"

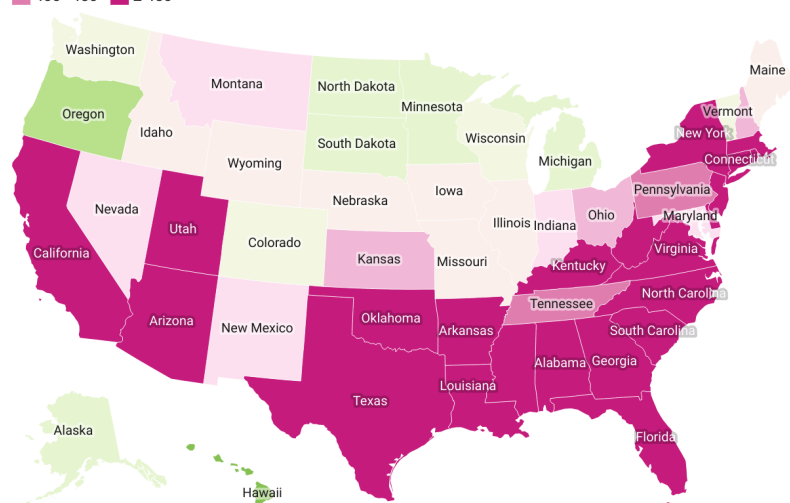
New Cases / Million

Much of the US rebounded from the high infection rates seen last month. For the U.S., yesterday's 7-day rate set an eighteen-week low.

January 31

New Cases / Million

7-Day Moving Average, As of January 31

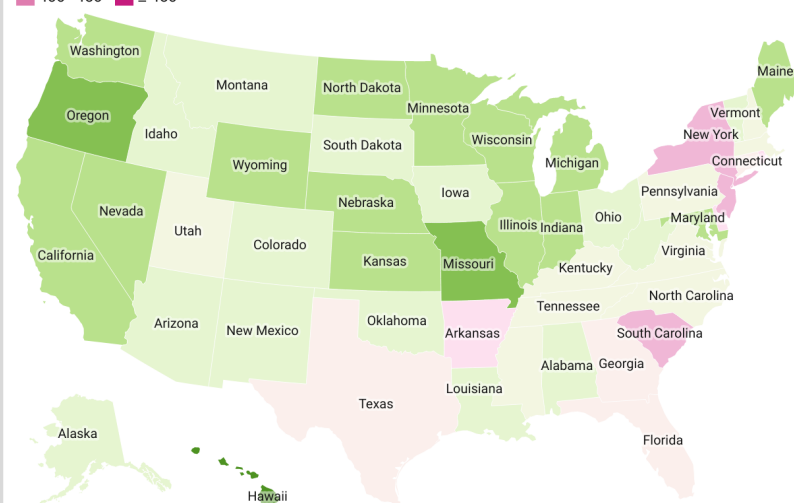


Map: Health Industry Advisor LLC • Created with Datawrapper

February 28

New Cases / Million

7-Day Moving Average, As of February 28



Map: Health Industry Advisor LLC • Created with Datawrapper

Covid-19 "Vital Signs"

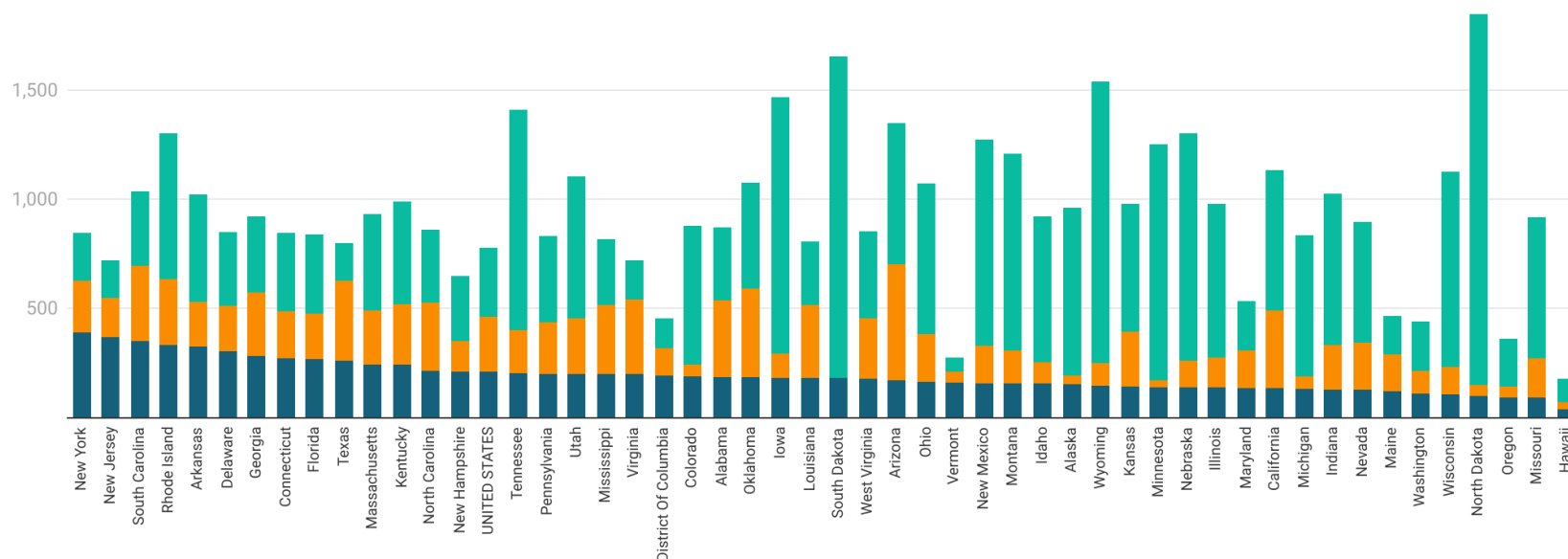
New Cases / Million

Every state has benefited from lower infection rates over the past month; these rates are materially lower than peak pandemic rates.

New Daily Infections / Million

7-Day Average: February 28 v. January 31 v. Peak

■ 2/28/21 ■ 1/31/21 ■ Peak



Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

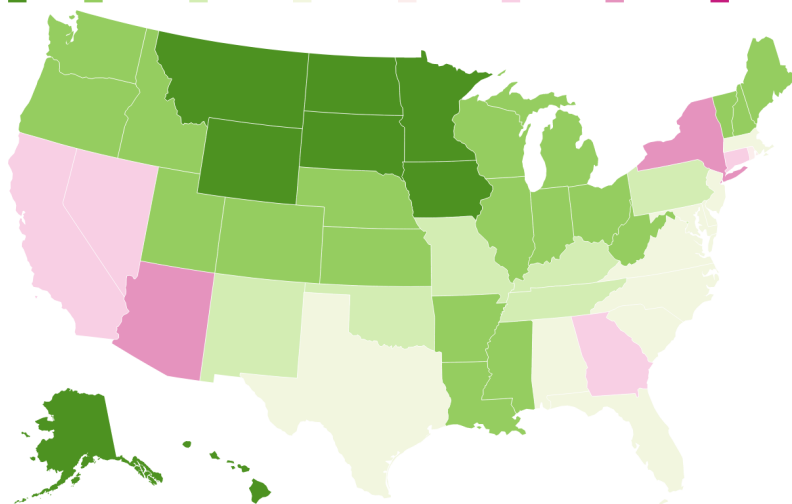
Covid-19 hospital census plunged in the past six weeks. Covid-19 patients occupied 15% of US beds yesterday versus 42% six weeks ago. Only New York is above 40% currently.

January 31

Covid-19 Patients As % of All Inpatient Beds

As of January 31

■ < 10%
 ■ 10%–20%
 ■ 20%–30%
 ■ 30%–40%
 ■ 40%–50%
 ■ 50%–60%
 ■ 60%–70%
 ■ ≥ 70%



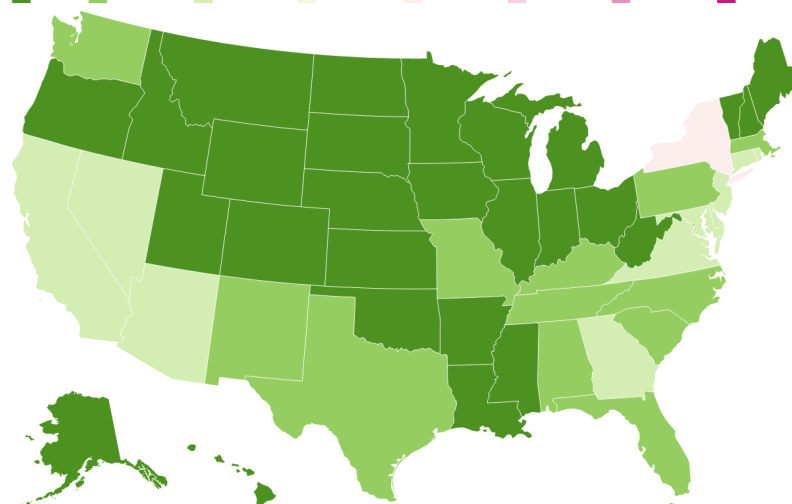
Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

February 28

Covid-19 Patients As % of All Inpatient Beds

As of February 28

■ < 10%
 ■ 10%–20%
 ■ 20%–30%
 ■ 30%–40%
 ■ 40%–50%
 ■ 50%–60%
 ■ 60%–70%
 ■ ≥ 70%



Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Covid-19 "Vital Signs"

Newly Detected Cases Per Day

In the US, 7-day new case rates dropped during each of the past three weeks, plunging 40% during that time. Outside the US, rates increased over the past two weeks, led by increases in Brazil, India, Czechia, France, Italy, Hungary, Jordan, and Turkey.

Newly Detected Cases

As of February 28

United States Outside the US

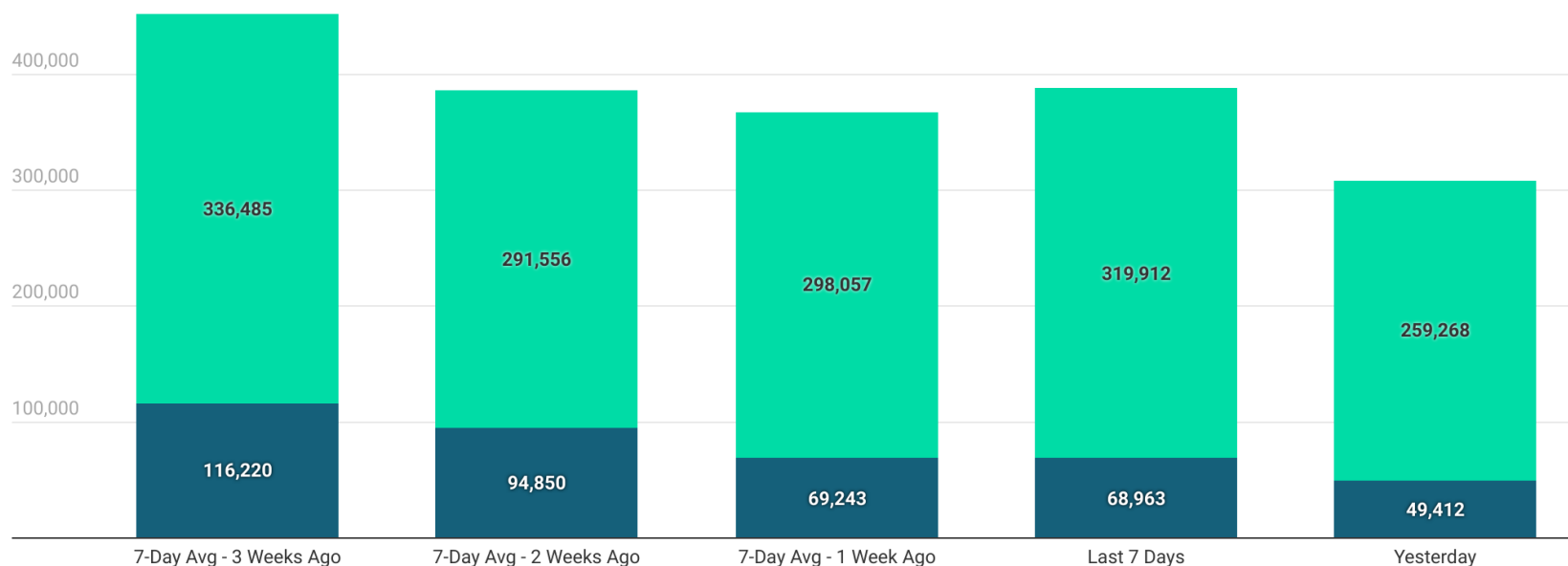


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

Covid-19 hospitalizations plunged over the past month, with 85,000 fewer patients yesterday than on January 6 (65% decline). Yesterday's census set an eighteen-week low. ICU and ventilator days declined each of the past three weeks.

Hospitalized Covid-19 Patients

Compared to Same Day, Prior Weeks, As of February 28

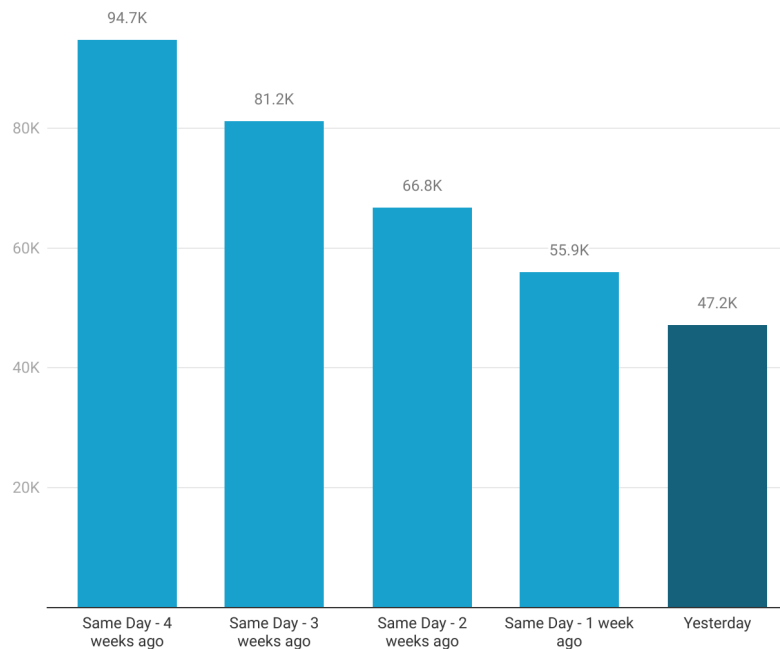


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients in the ICU

Compared to Same Day, Prior Weeks, As of February 28

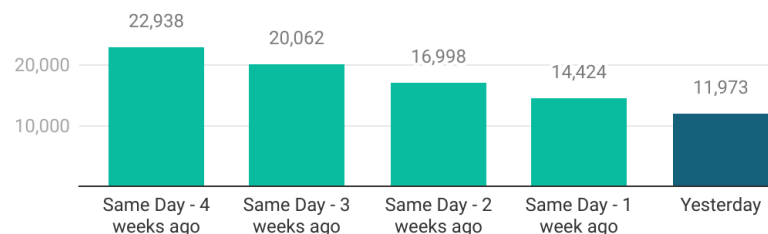


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients on Ventilators

Compared to Same Day, Prior Weeks, As of February 28

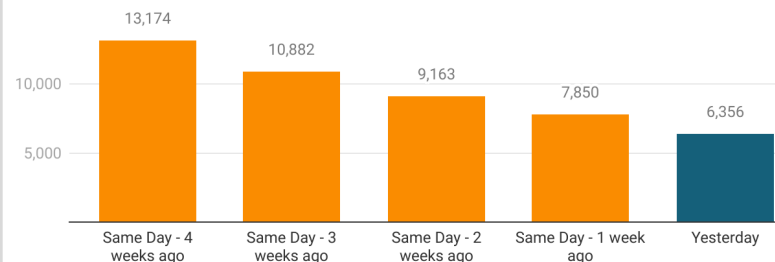


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Testing (US)

Test volume increased week-over-week, reversing recent trends. Test-positivity improved over the three preceding weeks, reaching a nineteen-week low. For the day, test-positivity matched a twenty-two-week low.

Tests / Million / Day (US)

As of February 28

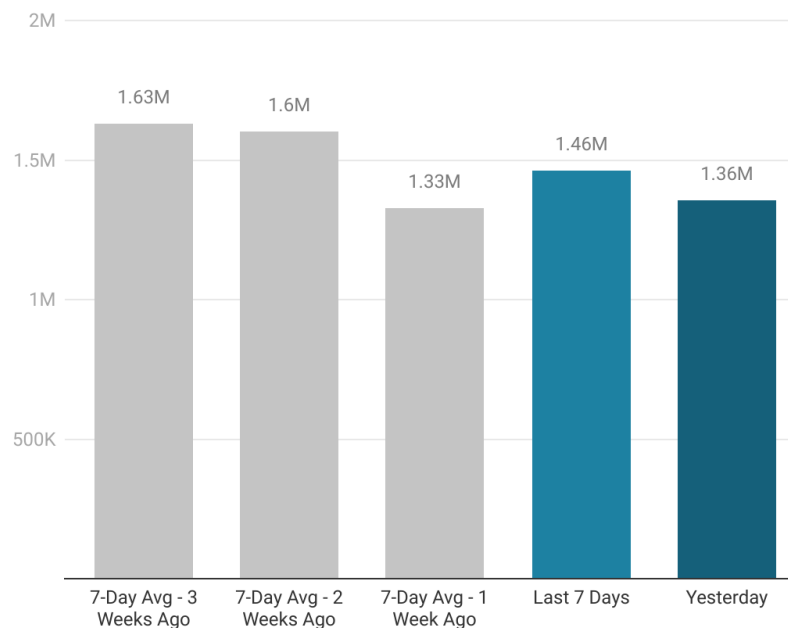


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity Rate

As of February 25

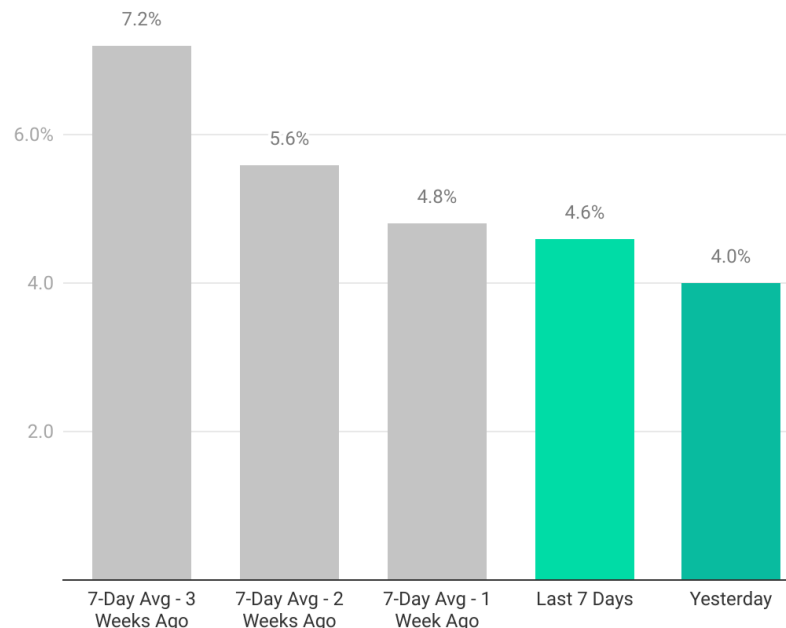


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Deaths Reported With Coronavirus

The 7-day average death rate fell slightly compared to a week ago. This rate is fallen more than 40% in five weeks and is now lower than its has been since the beginning of December.

Daily Deaths Reported With Coronavirus

As of February 28

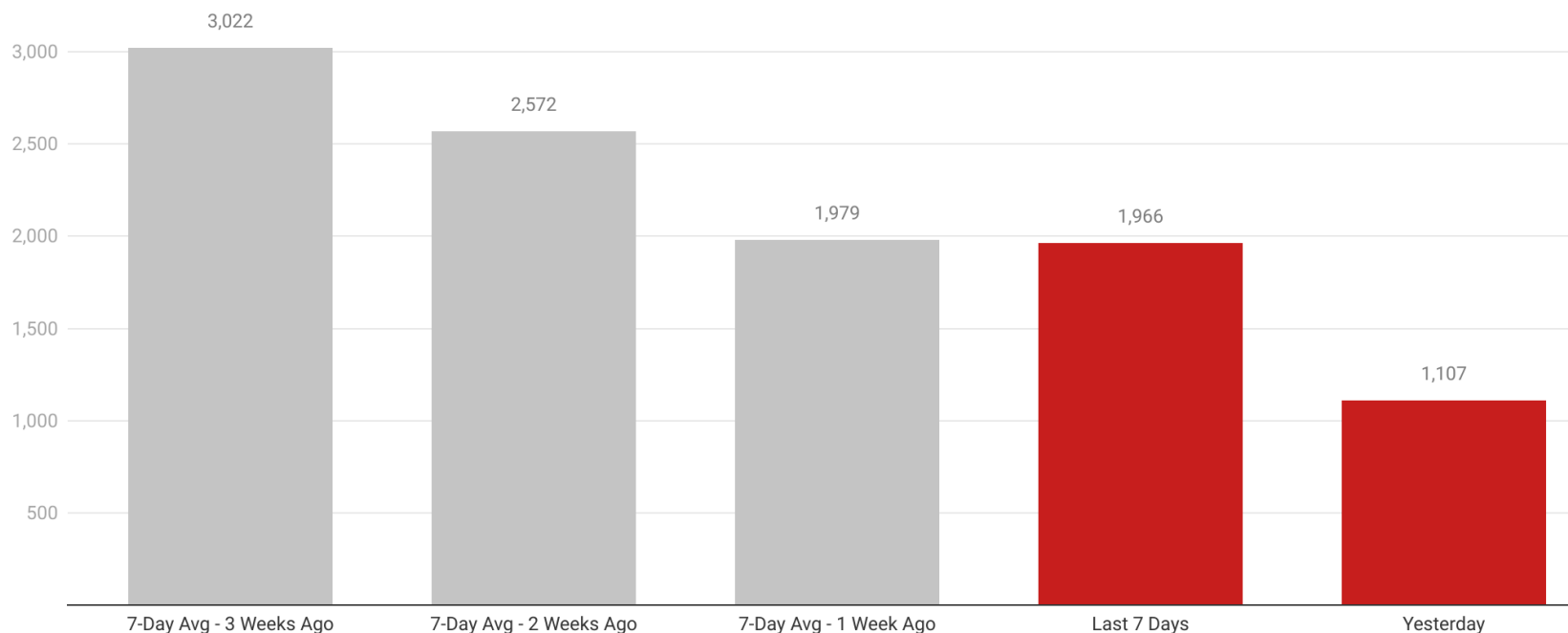


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Sources

The following data sources are accessed on a daily or weekly basis

- The Atlantic's Covid Tracking Project: <https://covidtracking.com>
- Worldometers.info: <https://www.worldometers.info/coronavirus/>
- 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, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- 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, Vaccines, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>
- 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>
- 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 Projections Using Machine Learning, <https://covid19-projections.com>
- Covid-19 Forecast Hub, <https://viz.covid19forecasthub.org>
- Oliver Wyman Pandemic Navigator, <https://pandemicnavigator.oliverwyman.com/forecast?mode=country®ion=United%20States&panel=mortality>
- [Rt.live](https://rt.live)
- Yale School of Public Health & Harvard TH Chan School of Public Health, <https://covidestim.org>
- Bloomberg Vaccine Trackers, <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmHW>