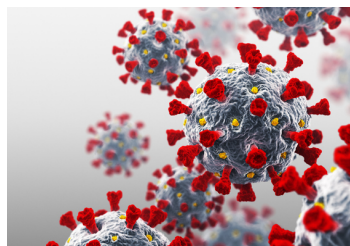


Covid-19 "Vital Signs"

Issue # 285

February 15, 2021



- The US stepped-up its vaccination efforts in the past two weeks:
 - **Daily vaccinations reached 1.6 million, 2 million, 2 million, 2 million, and 1.8 million the past five days.** Contrast this to early-January when we failed to poke even half that many people most days;
 - With more than 54 million administered doses, 14.4 million people have been poked twice;
 - **Three-in-four available doses have been administered, a remarkable improvement from the one-in-four in early-January;**
 - Based on doses administered to-date, immunity from vaccination grows to 8.7% of the population within the next few weeks. Expect this number to rise as vaccinations continue;
 - **Combined with immunity from prior Covid-19 infections, estimated full immunity reached 31.4%.**
- Estimated Reproduction Rates (Rt) suggest that virus spread is slowing across the US:
 - **Rt remained below 1.0 for the thirty-fifth straight day ([Gu model](#))**
 - No state experienced an Rt above 1.0 in models from both Gu and the [Yale and Harvard Schools of Public Health](#). Estimated Rt exceeded 1.0 in the Yale model for Connecticut, Massachusetts, Oregon, and Virginia but not the Gu model; Estimated Rt exceeded 1.0 in the Gu model for Alaska and South Dakota but not in the Yale model.
- Estimated actual infections in the US nosedived in the past several weeks:
 - **Estimated infections plunged 62% from Christmas Eve through January 31, using the Gu model. Gu's estimated infections have not been this low since October 16;**
 - **Using the Yale/Harvard model, estimated infections dropped 83% since January 3; This model similarly points back to October 15 as the last time estimated infections were this low.**
- Cases are dropping across the US and around the globe:
 - The 7-day US new case rate declined for the thirty-fourth straight day, falling an astonishing 64% during this time;
 - **Rates in every US state plummeted over the past five weeks. This period represents the most prolonged time during the pandemic without one or more states experiencing increasing Covid-19 case rates;**
 - Rates in every state are at least one-third lower than the state's peak; rates are less than half the peak in all but New Jersey, New York, South Carolina, and Vermont;
 - **Case rates are falling in each of the countries of origin for the emerging variants - Brazil, South Africa, and the UK; Brazil's case rate dropped 13.9% during the past two weeks; South Africa's, 61.5%; and the UK's, 45.6%;**
 - Each day this month, more countries experienced declining case rates than those with increasing rates; we have not observed this situation for such a prolonged period since at least mid-summer.
- Testing results support the view that infection spread has slowed:
 - **Test-positivity dropped to the lowest level seen since mid-October;**
- Hospitals across the country are seeing prolonged declines in Covid-19 patients:
 - **Hospitals reported 65,000 fewer inpatients yesterday than at the peak on January 6 - a drop of nearly 50%;** Covid-19 census had not been this low since November 11;
- Deaths are beginning to taper, following the earlier decline in new cases:
 - **The 7-day death total dropped 16% in the last two weeks.**

Covid-19 "Vital Signs"

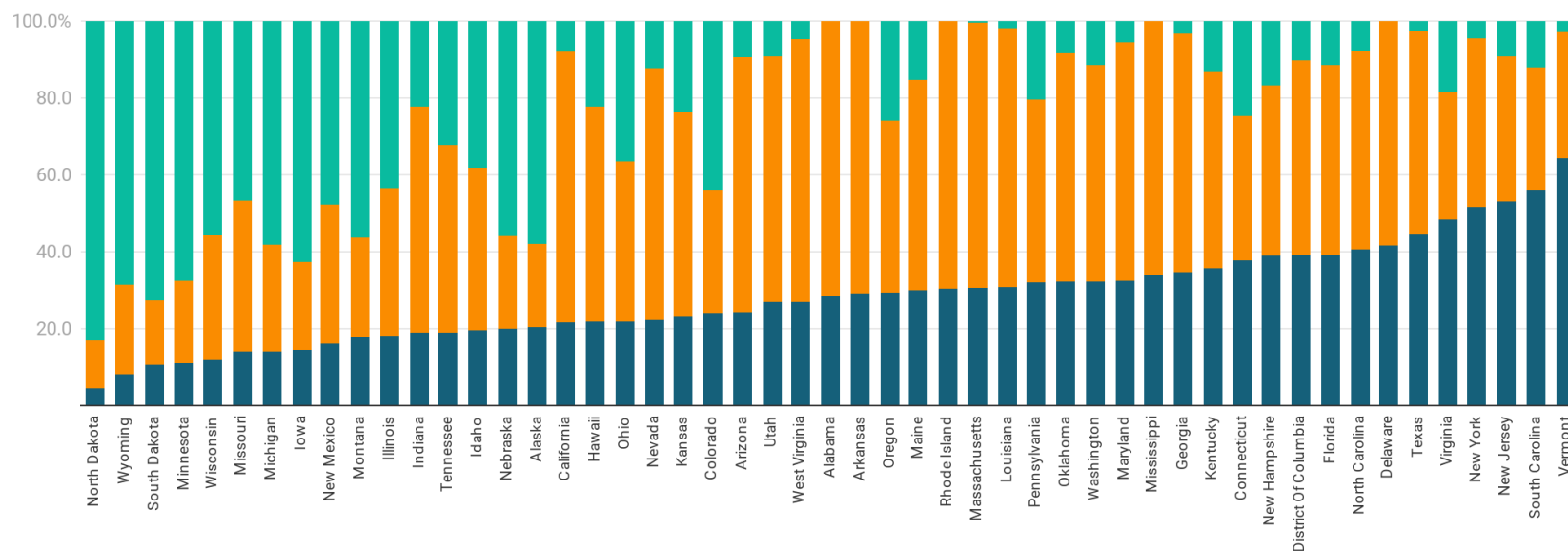
New Infection Rates: Current v. Last Month and Peak

Covid-19 cases have plunged in every state in the past five weeks, falling far below peak levels. Cases have been halved in all except four states – Vermont, South Carolina, New Jersey, and New York.

New Daily Infections / Million

Current v. 5 Weeks Ago v. Peak

2/14/21 1/10/21 Peak



Created with Datawrapper

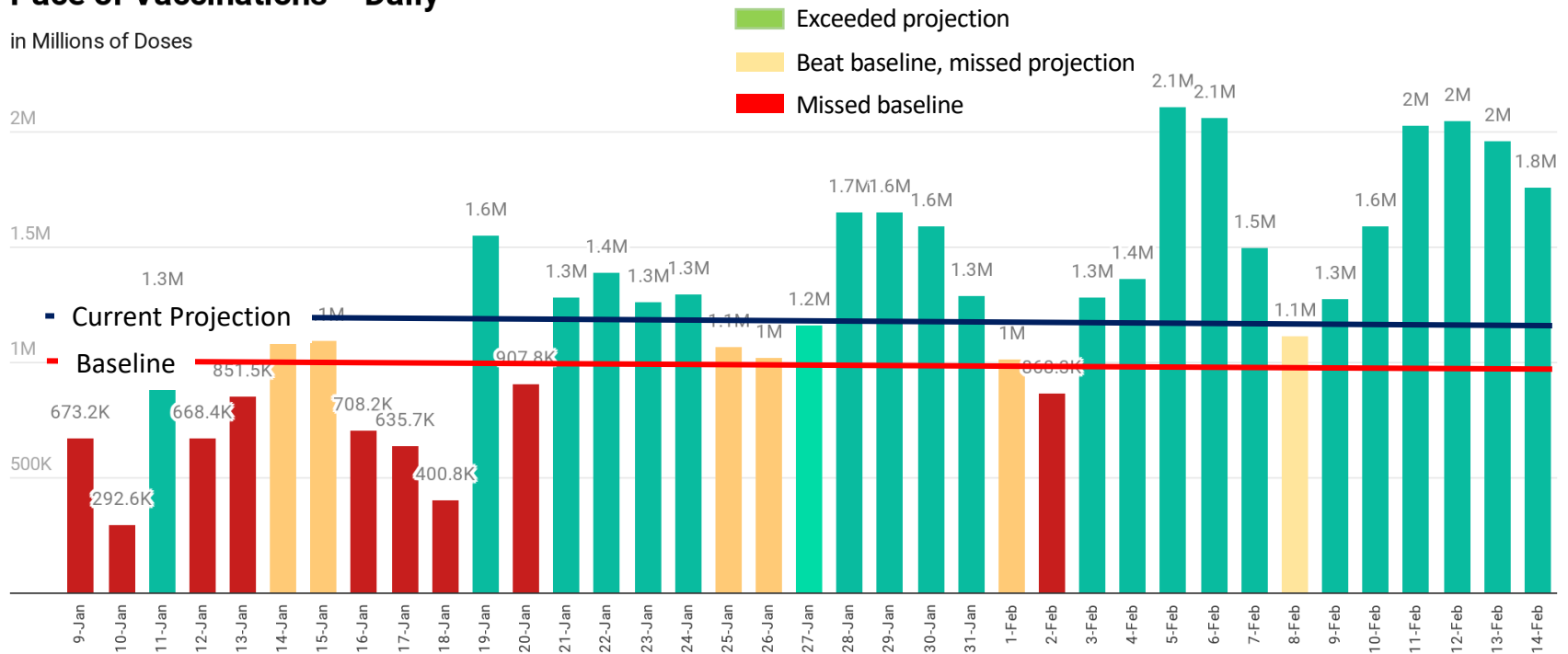


Pace of Vaccinations

The US jabbed more than 1.75 million citizens four straight days. Vaccinations surpassed our Current Projection on eleven of the past twelve 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 nearly 54 million doses, with 14.4 million people jabbed twice.

Vaccination Progress

Most Recent Four Weeks

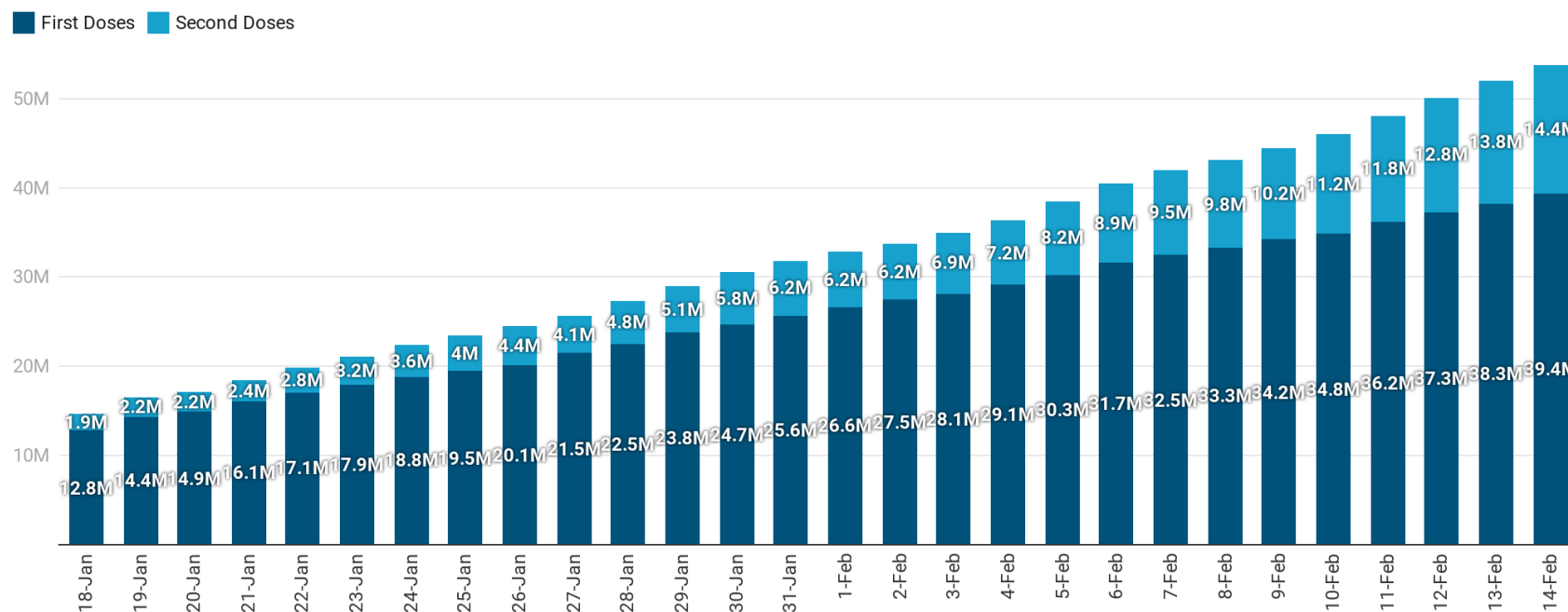


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

Vaccine data from: [Centers for Disease Control and Prevention](https://www.cdc.gov/vaccines/imz/downloads/#vaccine-tracker) and [Bloomberg Vaccine Tracker](https://www.bloomberg.com/health/vaccine-tracker/)



Vaccines Distributed v. Unused

The US is delivering more shots to arms lately, while the number of doses queued for use has steadied.

% of Doses Distributed & % Unused - Cumulative

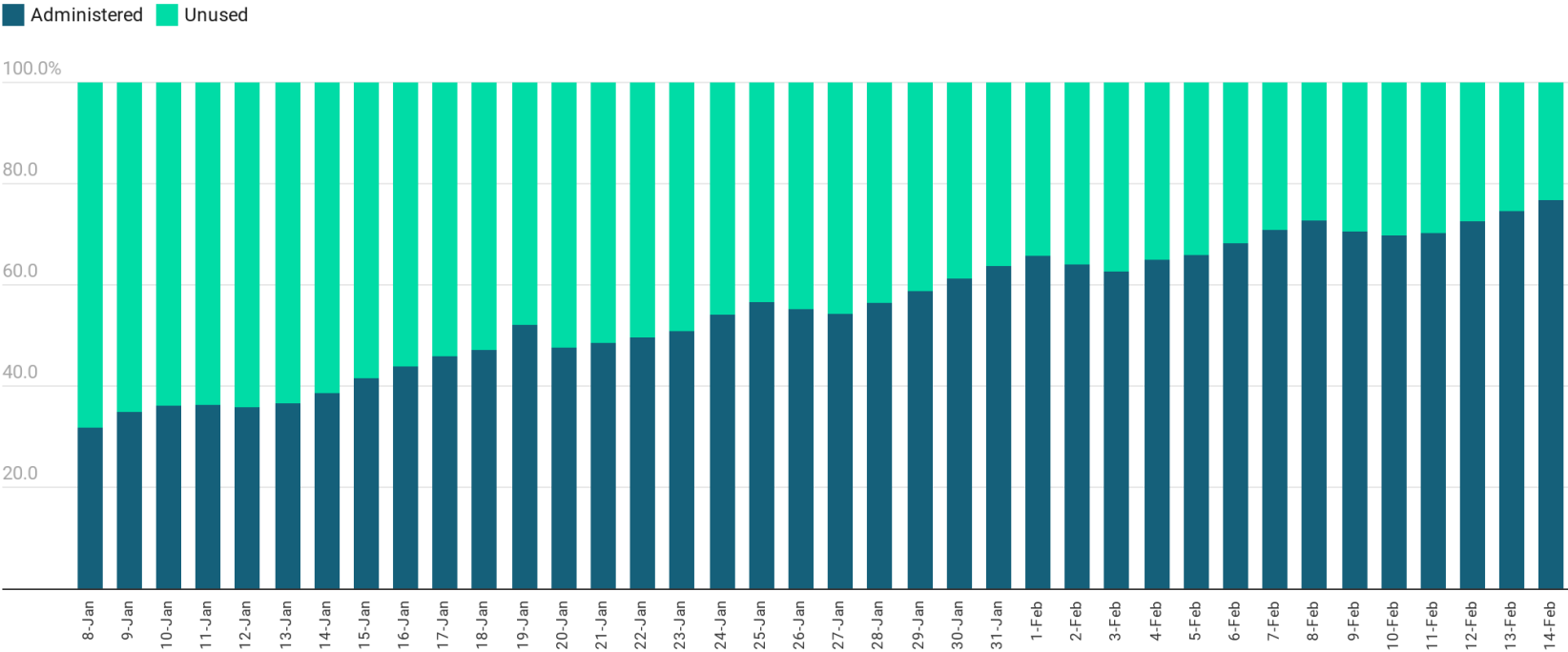


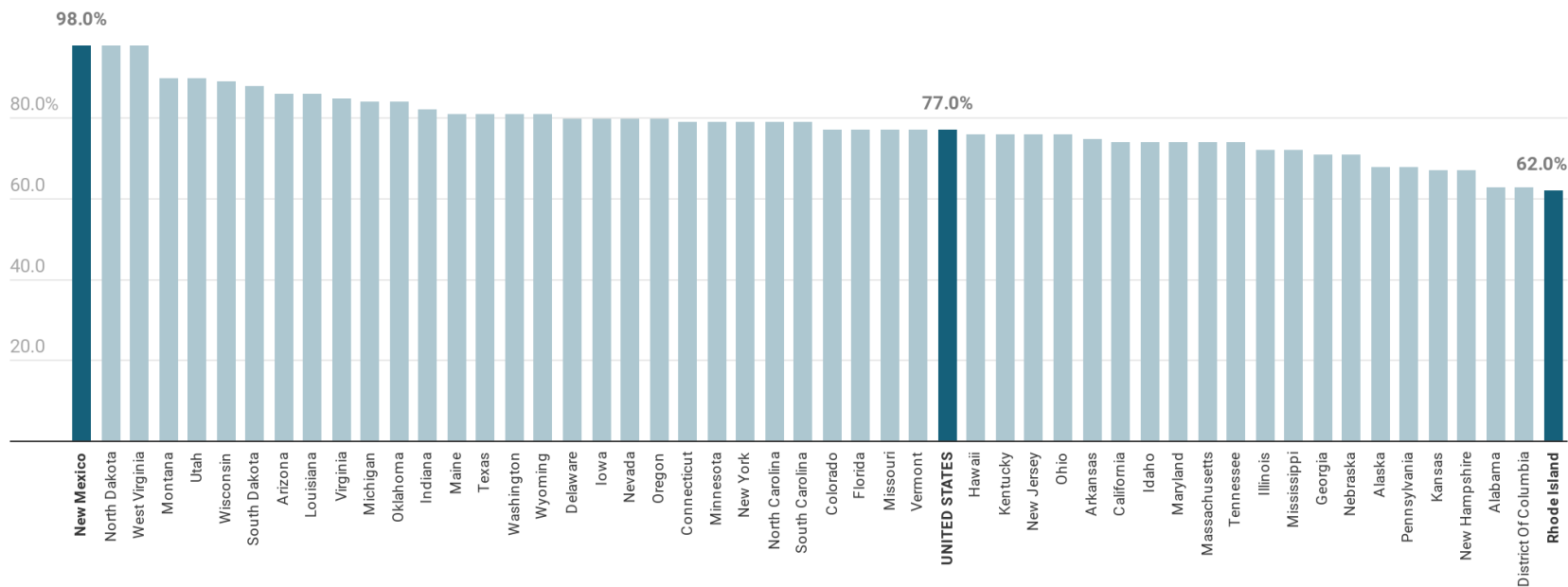
Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

Vaccines Distributed v. Administered

The US administered nearly eight-in-ten of all doses distributed. New Mexico, North Dakota and West Virginia perform best, administering nearly all available doses; Rhode Island administered 62% of available doses.

% of Allocated Supply Used

As of February 14



Doses include both first and second doses; Second doses represent about 12% of all doses nationally

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

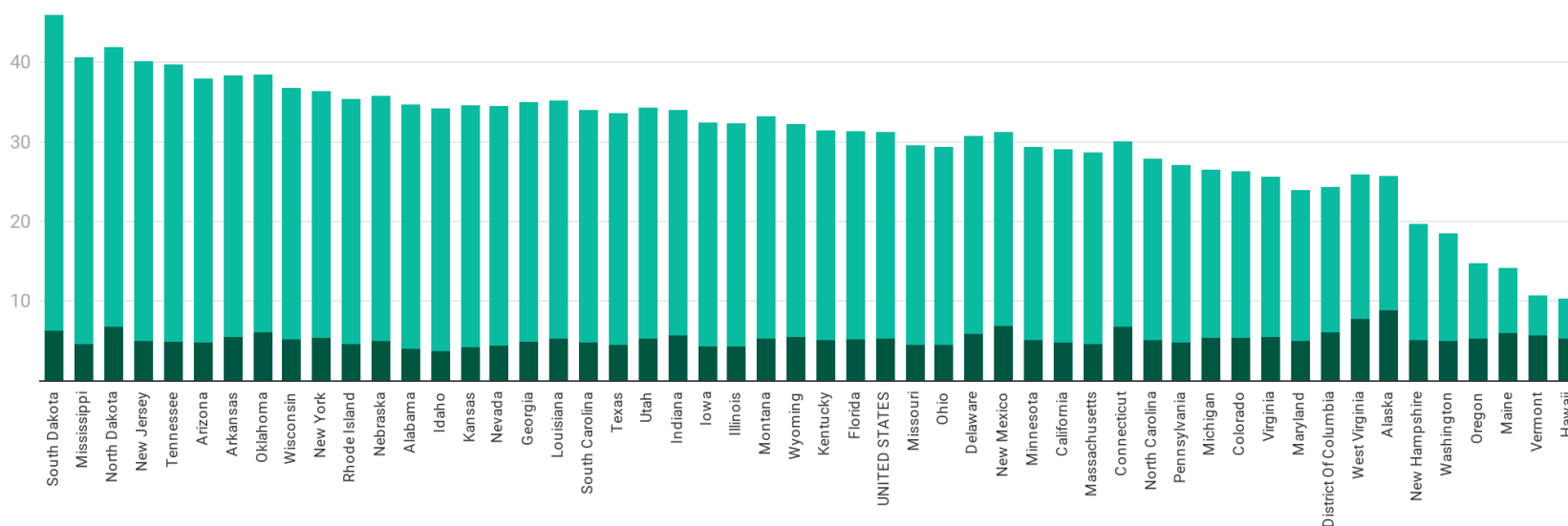
Estimated Immunity Levels By State

An estimated four-in-ten residents of Mississippi, North Dakota, and South Dakota enjoy immunity from Covid-19; for the US, it is more than three-in-ten. In Hawaii and Vermont, nine-in-ten residents are not immune from infection.

Estimated Immunity Levels

As of February 14

■ Via Vaccine ■ Via Infection



2-week lag from infection or vaccination to immunity. Based on Gu's mean infection estimates

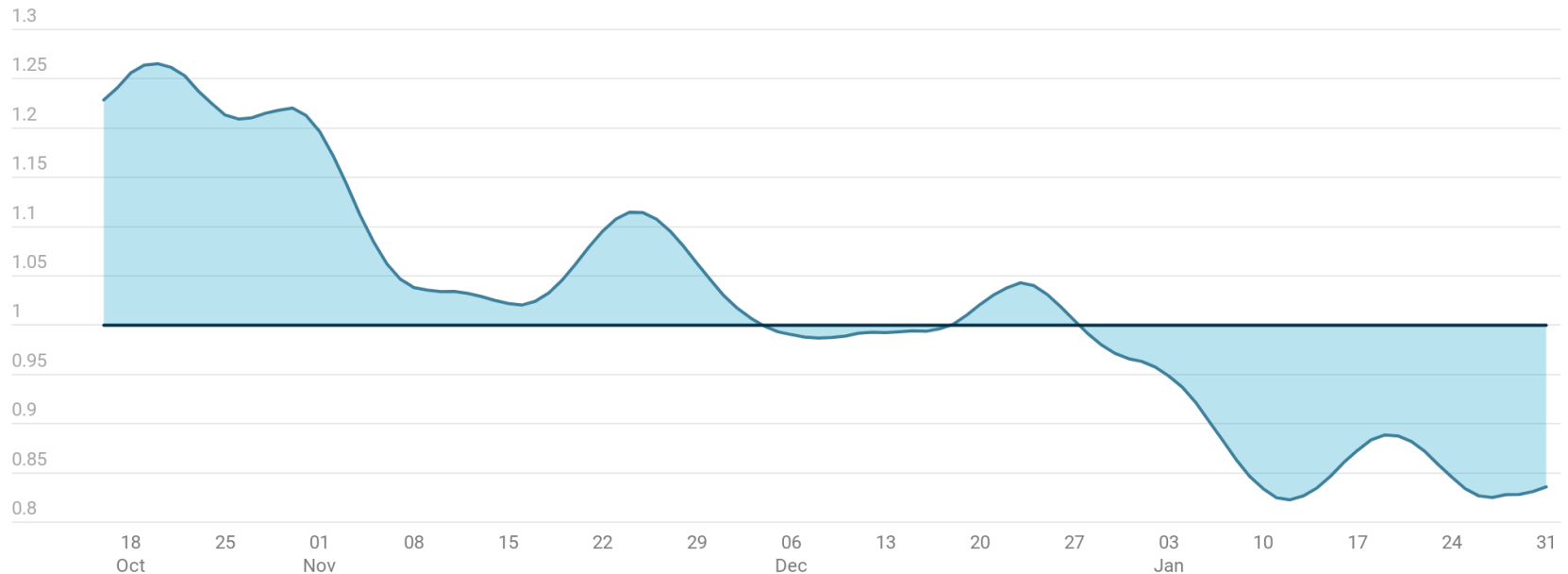
Chart: Health Industry Advisor LLC • Created with Datawrapper

Reproduction Rate (R_t) – Gu* Model

Gu's estimate of R_t remained below 1.0 for the thirty-fifth straight day.

Reproduction Rate (R_t) - US

Youyang Gu Estimate, October 16, 2020 - January 31, 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"

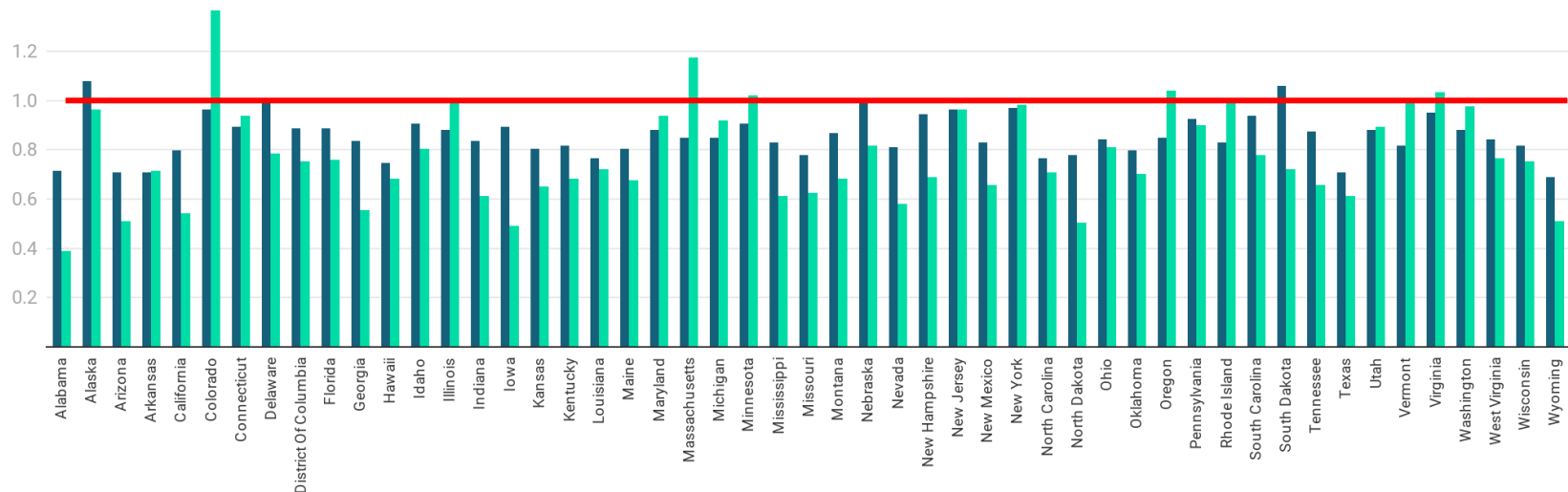
Reproduction Rate (R_t) Estimates By State

Estimated Reproduction Rates (R_t) suggest that infection spread is slowing across the US. Yale's estimate shows only Connecticut, Massachusetts, Oregon, and Virginia with increasing spread. Gu's estimate points only to only Alaska and South Dakota for increasing spread.

Reproduction Rate (R_t)

Gu and Yale/Harvard Schools of Public Health

■ Gu ■ Yale



Gu as of January 31; Yale/Harvard as of February 12

Chart: Health Industry Advisor LLC • Created with Datawrapper

Covid-19 “Vital Signs”

Newly Detected Cases / Million

Cases dropped in every country that was hard-hit by the virus in early-January.

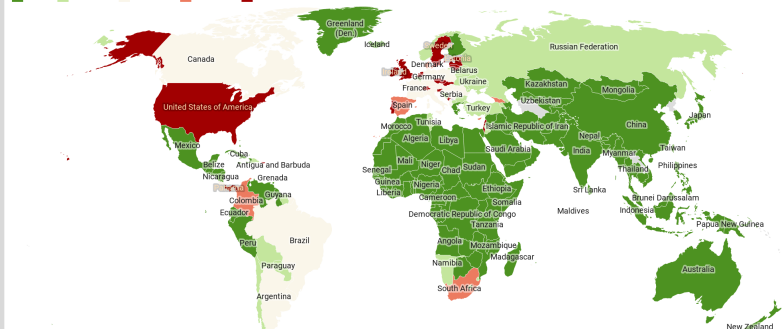
January 10

February 14

New Infections / Million

7-Day Moving Average, As of January 10

■ < 100 ■ 100-200 ■ 200-300 ■ 300-400 ■ ≥ 400



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

New Infections / Million

7-Day Moving Average, As of February 14

■ < 100 ■ 100-200 ■ 200-300 ■ 300-400 ■ ≥ 400



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

Covid-19 "Vital Signs"

Newly Detected Cases / Million

Case rates defy concerns about emerging variants in the countries of origin: Brazil, South Africa and the UK report relatively low and declining rates

Newly Detected Cases Per Million

7-Day Moving Average

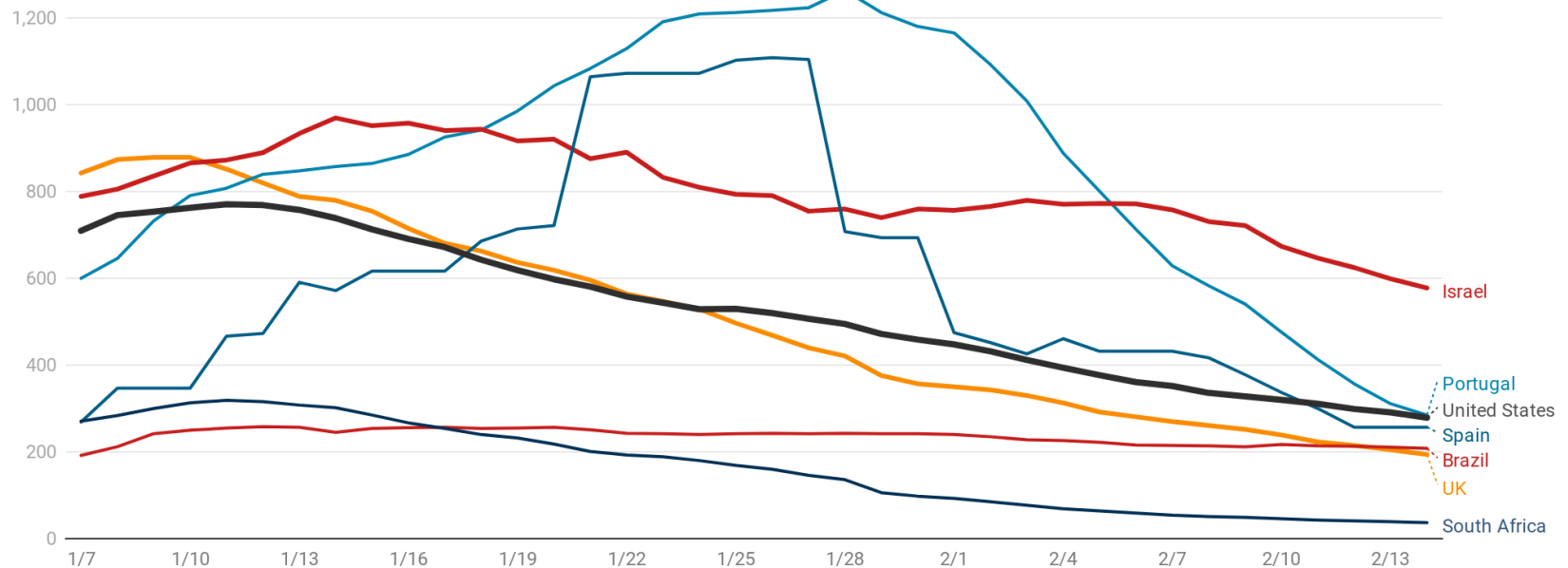


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

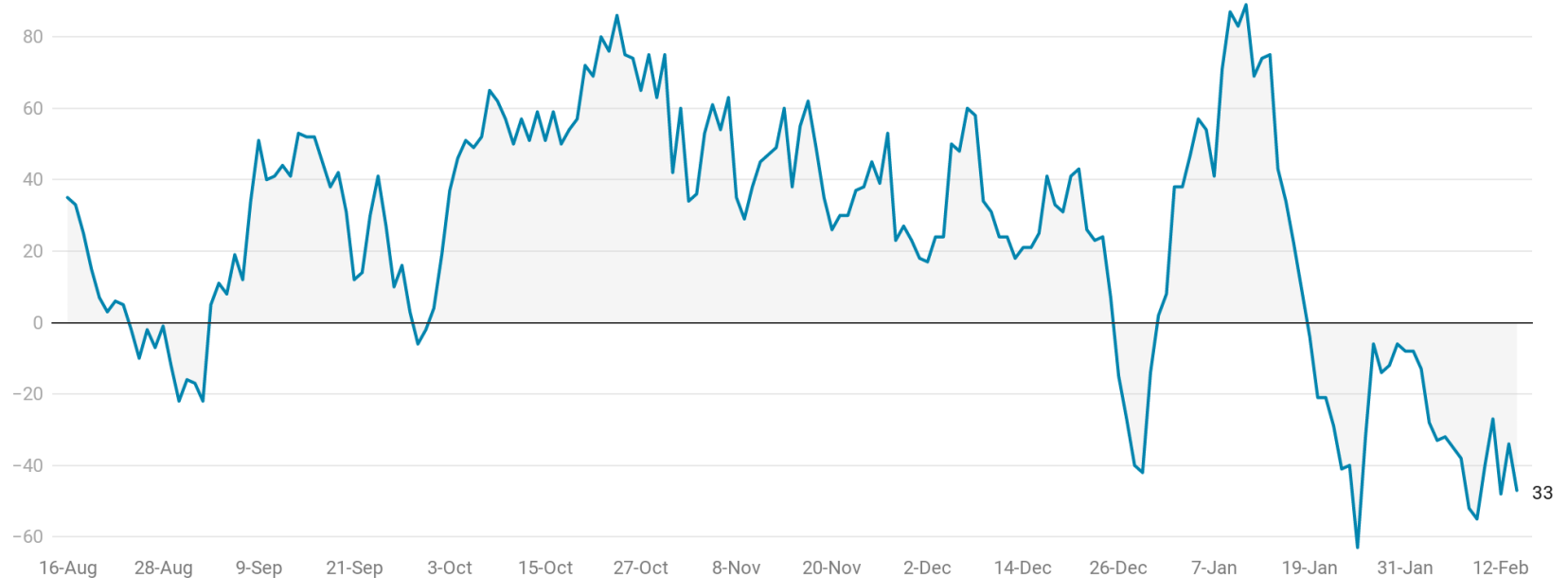
Covid-19 "Vital Signs"

World Infection Trend Index

For each day the past month, more countries reported declining cases than those reporting increasing cases. This index had not shown this prolonged trend since at least mid-summer.

World Infection Trend Index

Countries With Increasing Cases v. Countries With Declining Cases



Cases/Capita +/- 5% week-over-week

Chart: Health Industry Advisor LLC • Created with Datawrapper

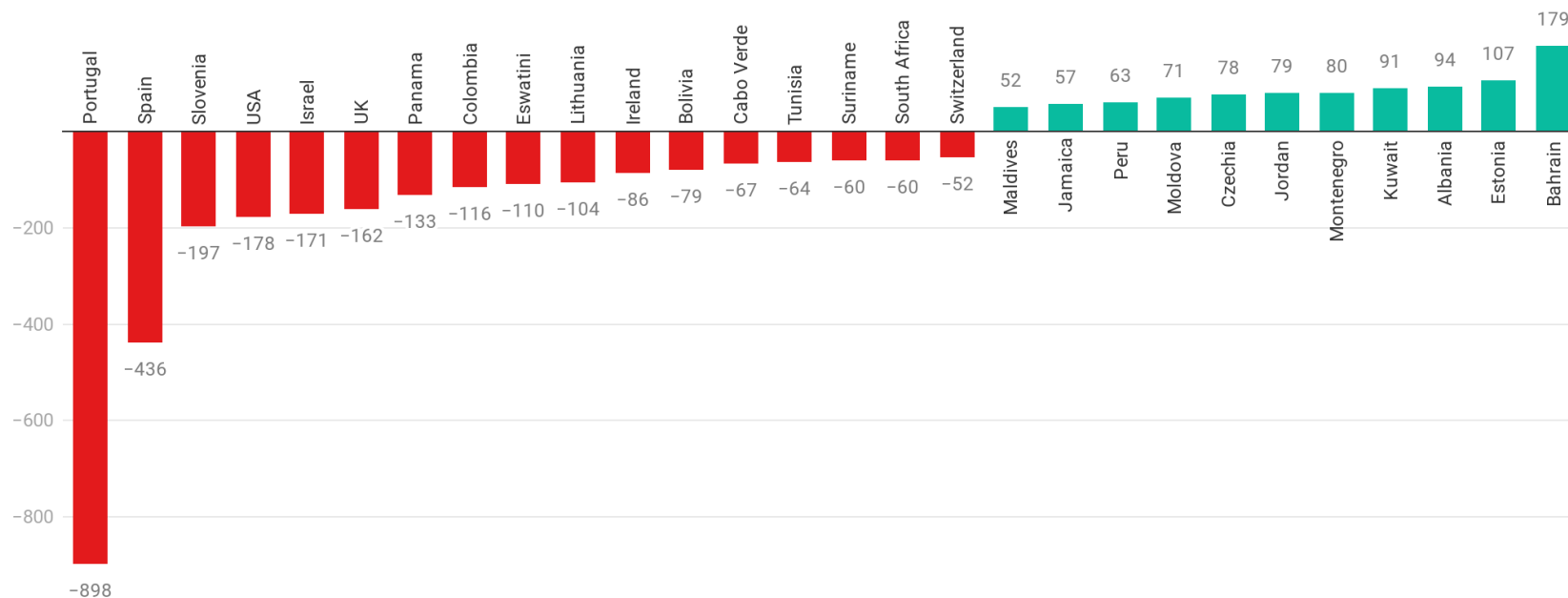
Covid-19 "Vital Signs"

Where Are Case Rates Increasing or Declining?

Countries with declining case rates outnumber those with increasing rates. Only two countries – Bahrain and Estonia – experienced rate increases > 100/million over the past two weeks. The US posted the fourth largest decline during this period; Israel, the fifth largest decline; and the UK, the sixth.

Where Are Cases Rates Increasing & Declining

7-Day Average, February 14 v. January 31



All countries > . 500,000 population, with change in new cases / million > +/- 50

Created with Datawrapper

Newly Detected Cases / Million - US

Newly detected cases (7-day average) in the US declined for the thirty-fourth straight day – plunging an astonishing 64% in that time. This rate lags those posted everyday since November 3.

Newly-Detected Cases / Million - US

7-Day Moving Average

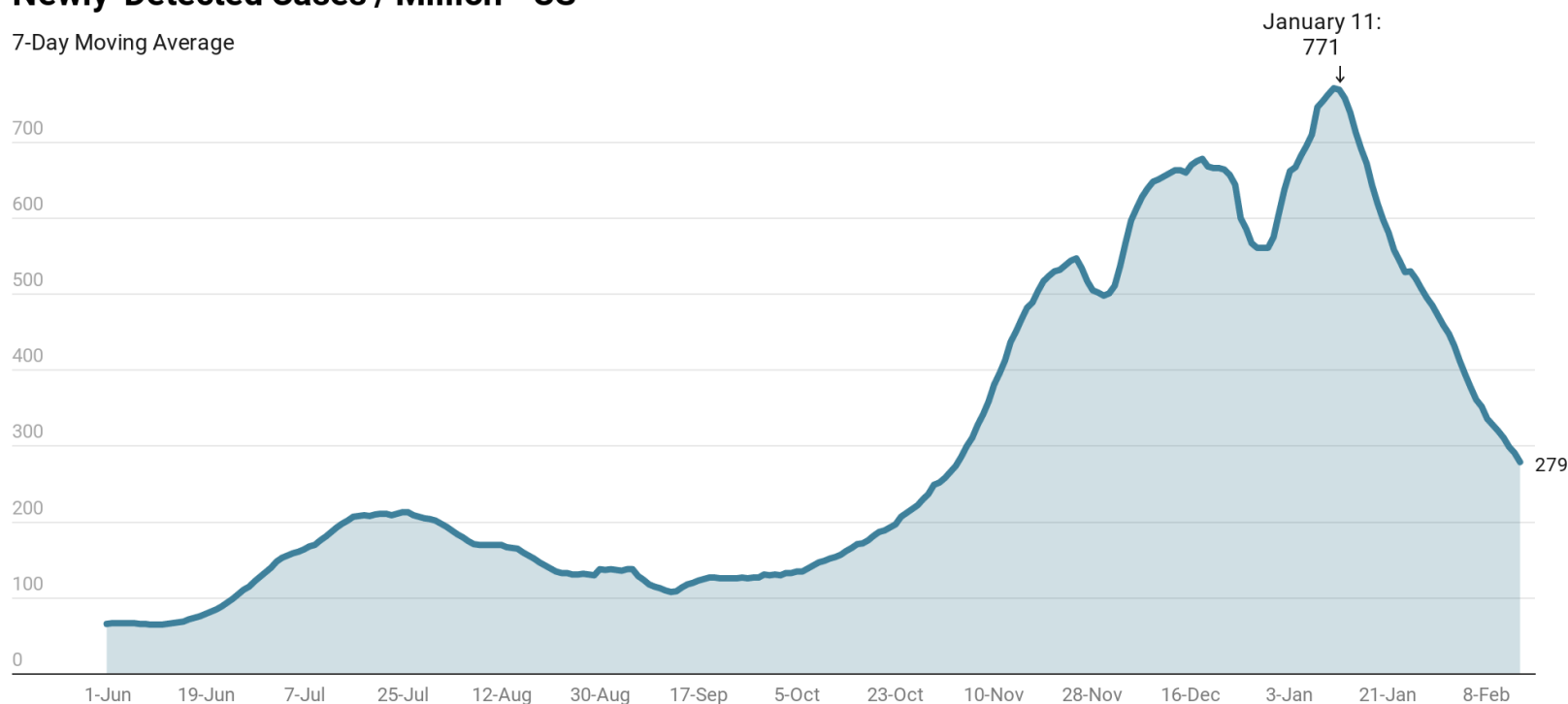


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Covid-19 "Vital Signs"

Estimated Daily Infections & New Case Rates

Estimated new infections and reported cases are plunging in the US. This model suggests that the infection prevalence in the US is now 35%; Gu estimates it to be 27.5%, as of January 31.

Estimated Daily Infections v. Detected Cases

Gu & Yale/Harvard Schools of Public Health Models

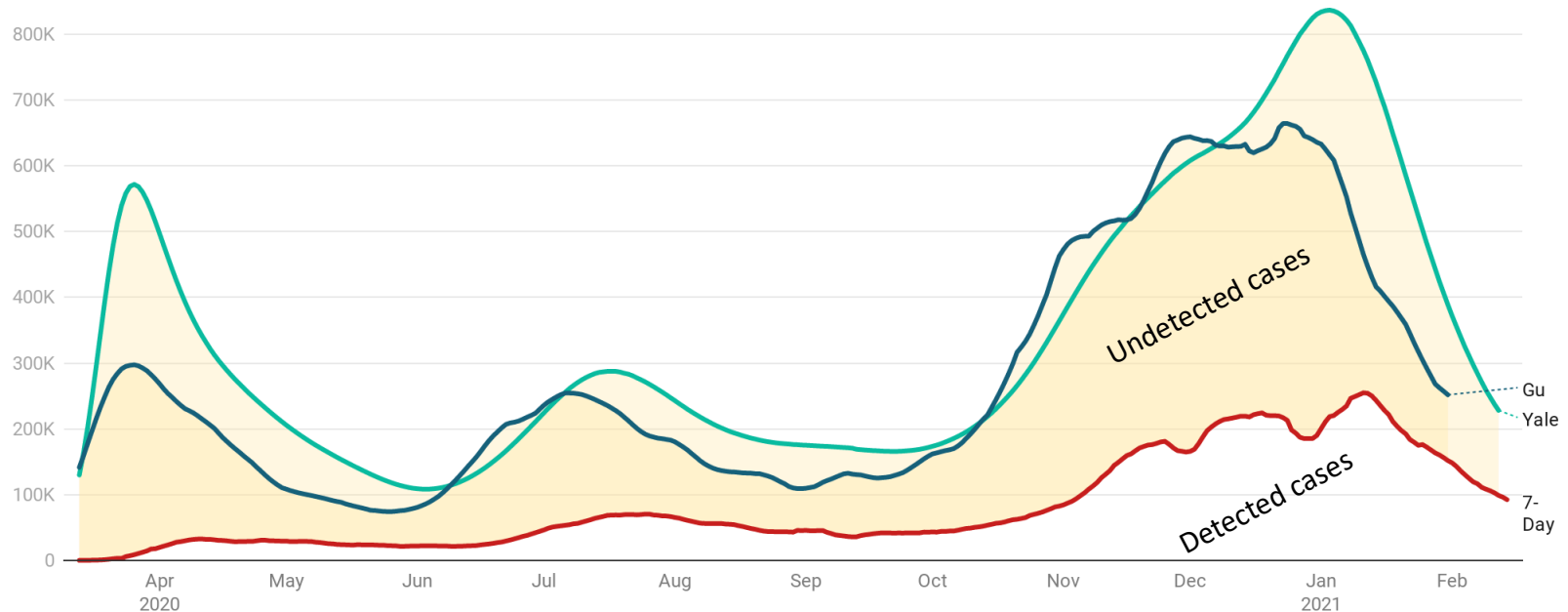


Chart: Health Industry Advisor LLC • Source: Youyang Gu, Yale School of Public Health • Created with Datawrapper

Two models:

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

Newly Detected Cases Per Day

Worldwide and in the US, 7-day new case rates dropped during each of the past three weeks.

Newly Detected Cases Per Day

As of February 14

United States Outside the US

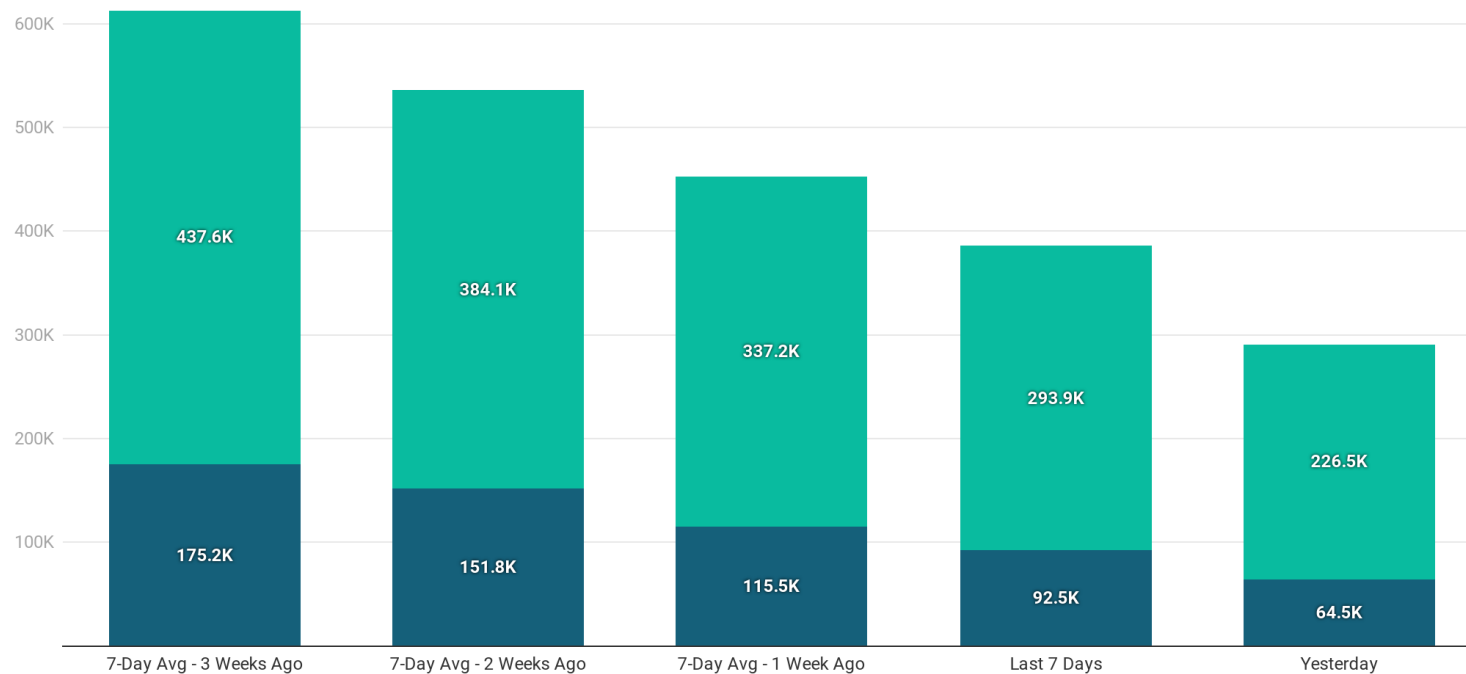


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

Covid-19 hospitalizations plunged over the past month, with 65,000 fewer patients yesterday than on January 6 (50%). Yesterday's Covid-19 census fell to its lowest point since November 11. ICU and ventilator days declined each of the past three weeks.

Hospitalized Covid-19 Patients

Compared to Same Day, Prior Weeks, As of February 14

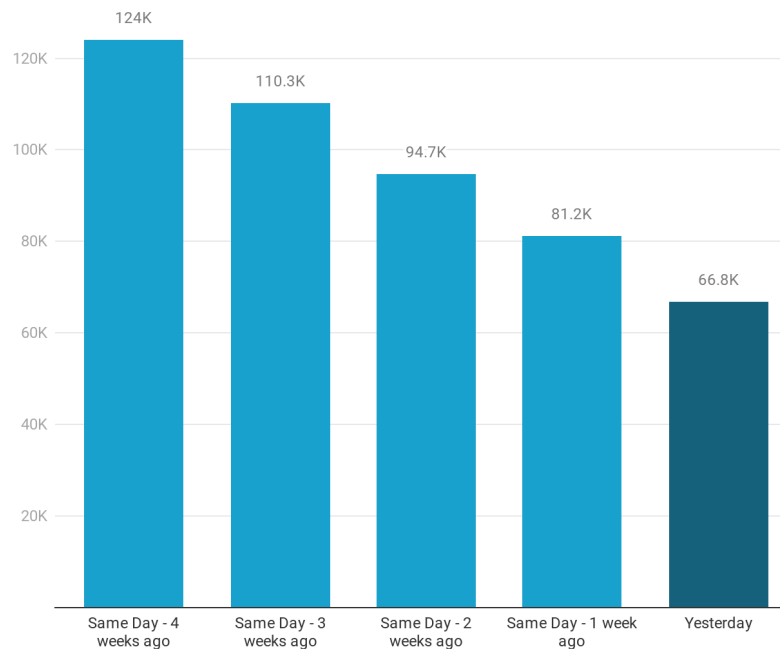


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients in the ICU

Compared to Same Day, Prior Weeks, As of February 14

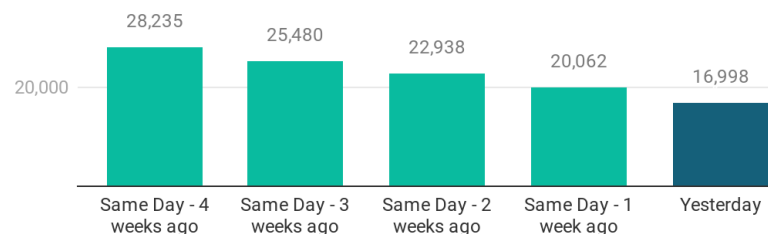


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients on Ventilators

Compared to Same Day, Prior Weeks, As of February 14

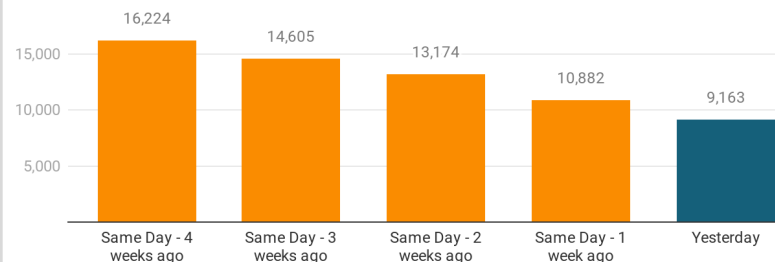


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Testing (US)

Test volume for the past seven days dropped from each of the prior three weeks – are fewer people fearing a recent exposure? The test-positive rate improved over the three preceding weeks. Yesterday, the daily and 7-day rates dropped to the lowest point since the third week of October.

Tests / Million / Day (US)

As of February 14

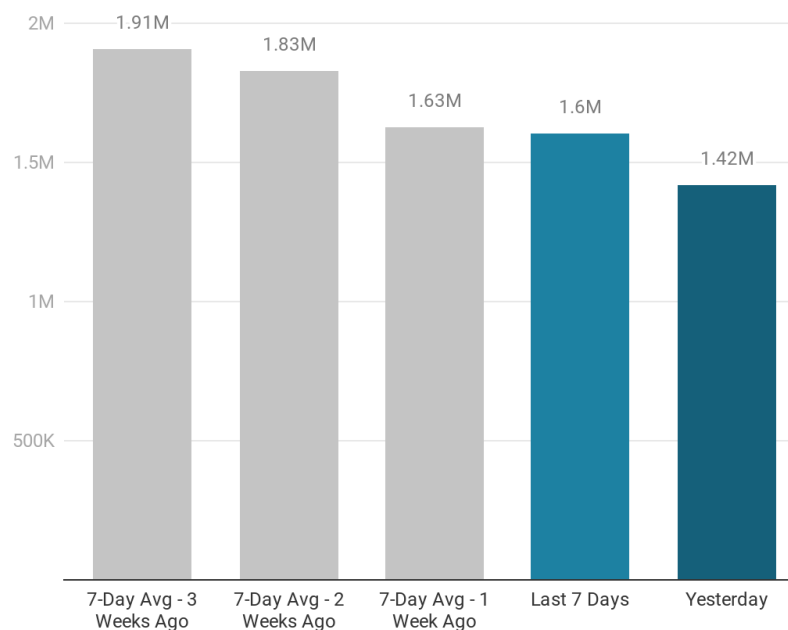


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity Rate

As of February 14

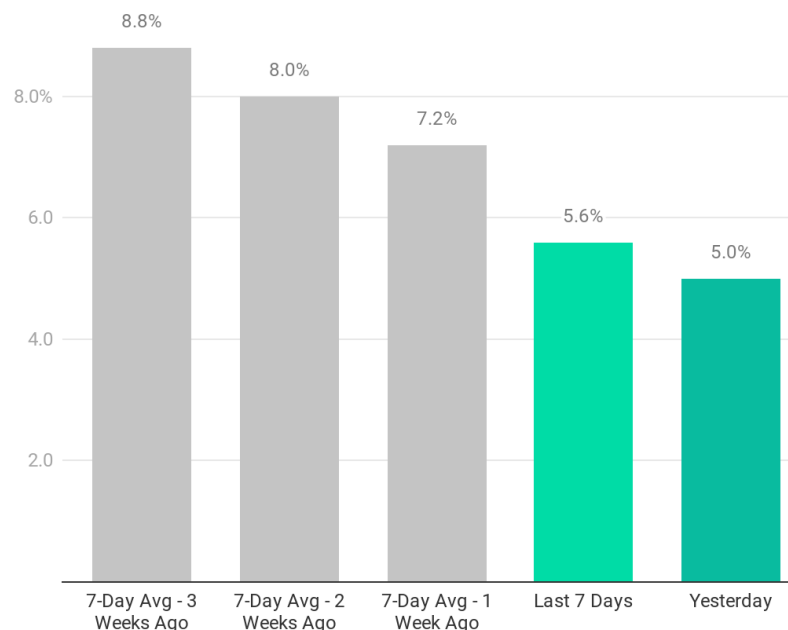


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Deaths Reported With Coronavirus

The 7-day average death rate fell lower than levels for each of the prior three weeks. Yesterday's 7-day day rate was lower than it has been since the beginning of the year.

Daily Deaths Reported With Coronavirus

As of February 14

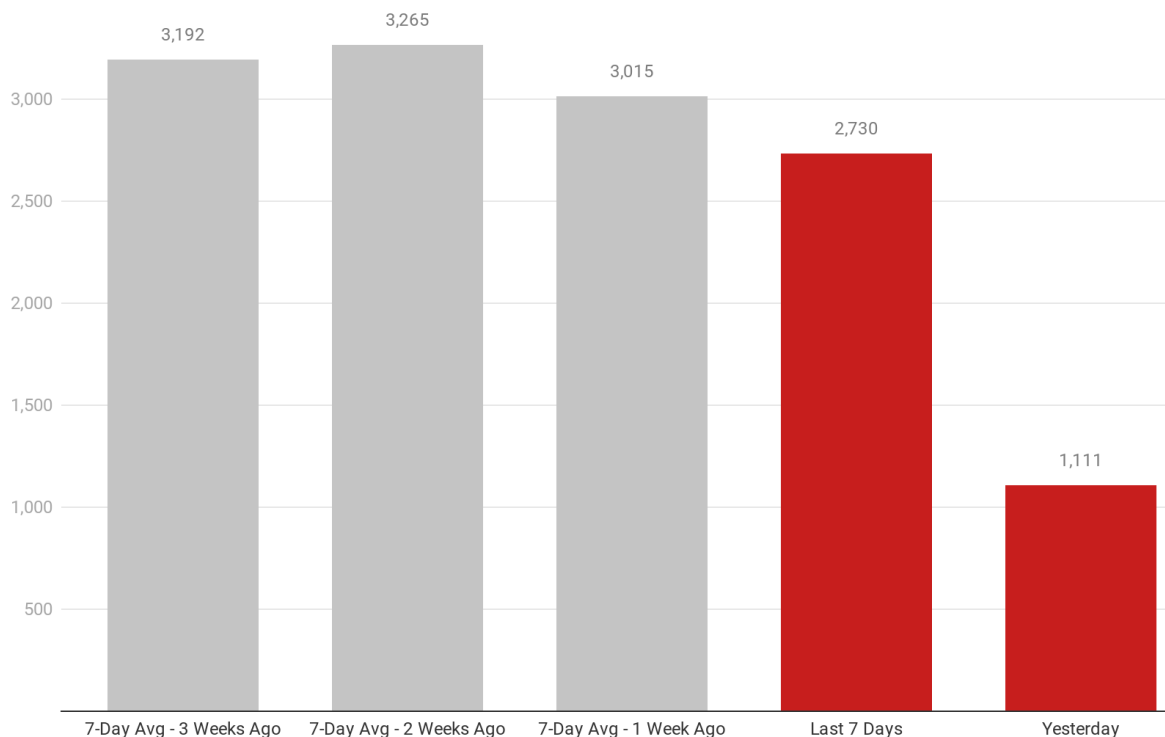


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

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>