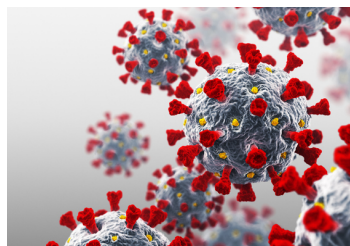


## Covid-19 "Vital Signs"

Issue # 281

February 8, 2021



- Vaccinations soared over the past several days:
  - The US administered more than 2 million doses each on Friday and Saturday and 1.5 million doses on Sunday. Sunday's dosage reflected reporting from just eighteen states, so the actual volume was substantially higher;
  - Daily shots exceeded the target reflected in our current projection model on nine of the last eleven days. Monday and Tuesday missed the mark, thanks to the widespread snowstorm. Our current projection model reflects the two available vaccines and the increased vaccination pace promised by President Biden after taking office.
  - The US stepped-up its ability to administer available doses over the past few weeks; as of yesterday, 71% of distributed doses ended-up in arms; the number of unused doses remained at the same level as early in January, while the number of pokes has surged.
- New cases and estimated infections fell again, continuing a month-long pattern:
  - Estimated new infections fell for the thirtieth straight day, plunging by nearly one-half in that time ([Gu model](#)). Gu estimates the Reproduction Rate ( $R_t$ ) was below 1.0 for the twenty-seventh straight day, signaling that transmission continues to recede;
  - The 7-day average new case rate declined for the twenty-seventh straight day, plunging a remarkable 54% during that time; This rate has not been this low since November 8;
  - New cases fell worldwide, including many areas recently hard-hit by the virus and those tied to the new variants.
- Covid-19 patients occupied fewer beds yesterday than at any time since November 18:
  - Covid-19 census declined for the twenty-sixth straight day, resulting in 51,000 patients yesterday than on January 6;
  - New York is the only state where Covid-19 patients occupy more than half the available beds; In early January, Covid-19 patients occupied more than 70% of beds in Arizona, California, Georgia, and Nevada and 60% in New York.
- Deaths reported with Covid-19 remain tragically high but declined the past week from the prior three weeks (8-12%)
- Test volume fell each of the past three weeks; however, test-positivity improved each week. These measures suggest improved test surveillance and fewer concerns about recent exposure.

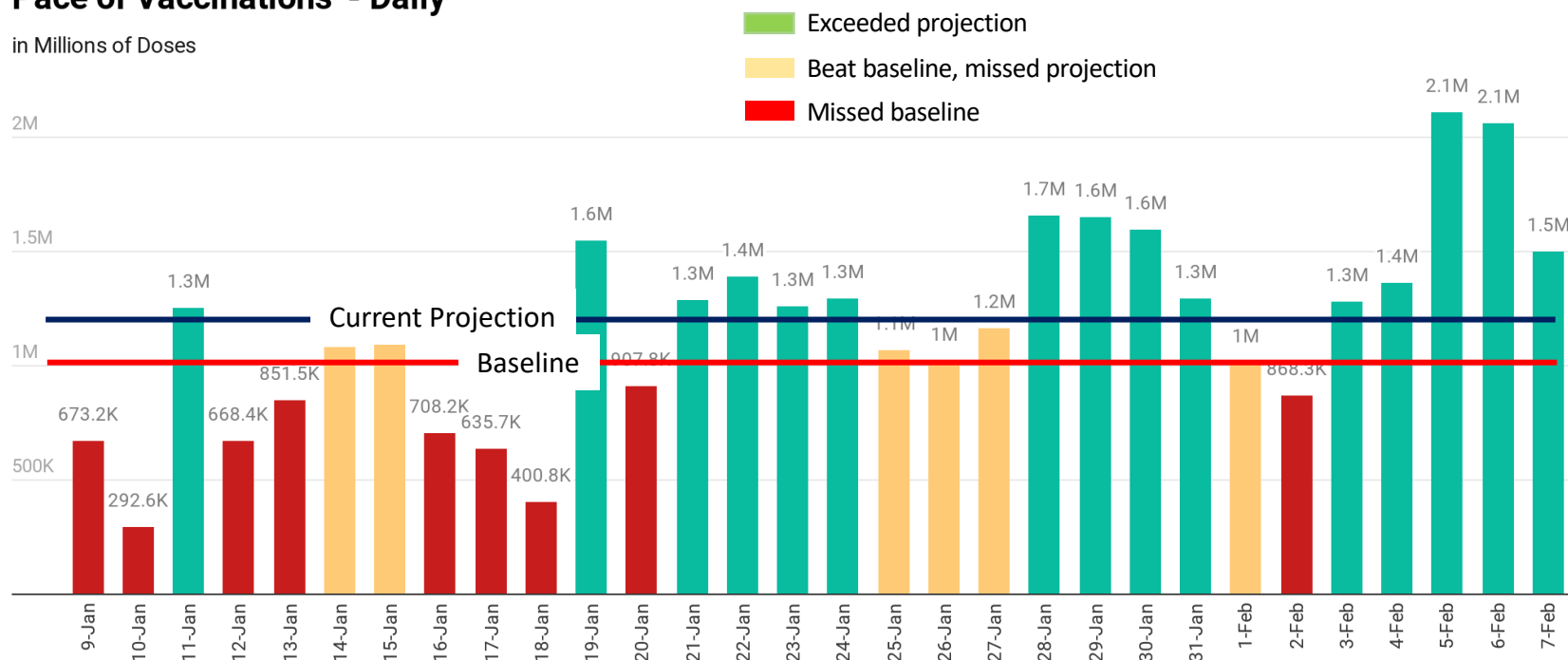
## Covid-19 "Vital Signs"

# Pace of Vaccinations

*Vaccinations soared over the past three days - even though thirty-two states failed to update numbers yesterday. Daily vaccinations surpassed our current projection on nine of the past eleven days, falling short only during last week's widespread snowstorm.*

## 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

## Covid-19 "Vital Signs"

# Vaccine Tracking

To date, the US has administered 42 million doses, with 9.5 million people receiving two pokes.

### Vaccination Progress

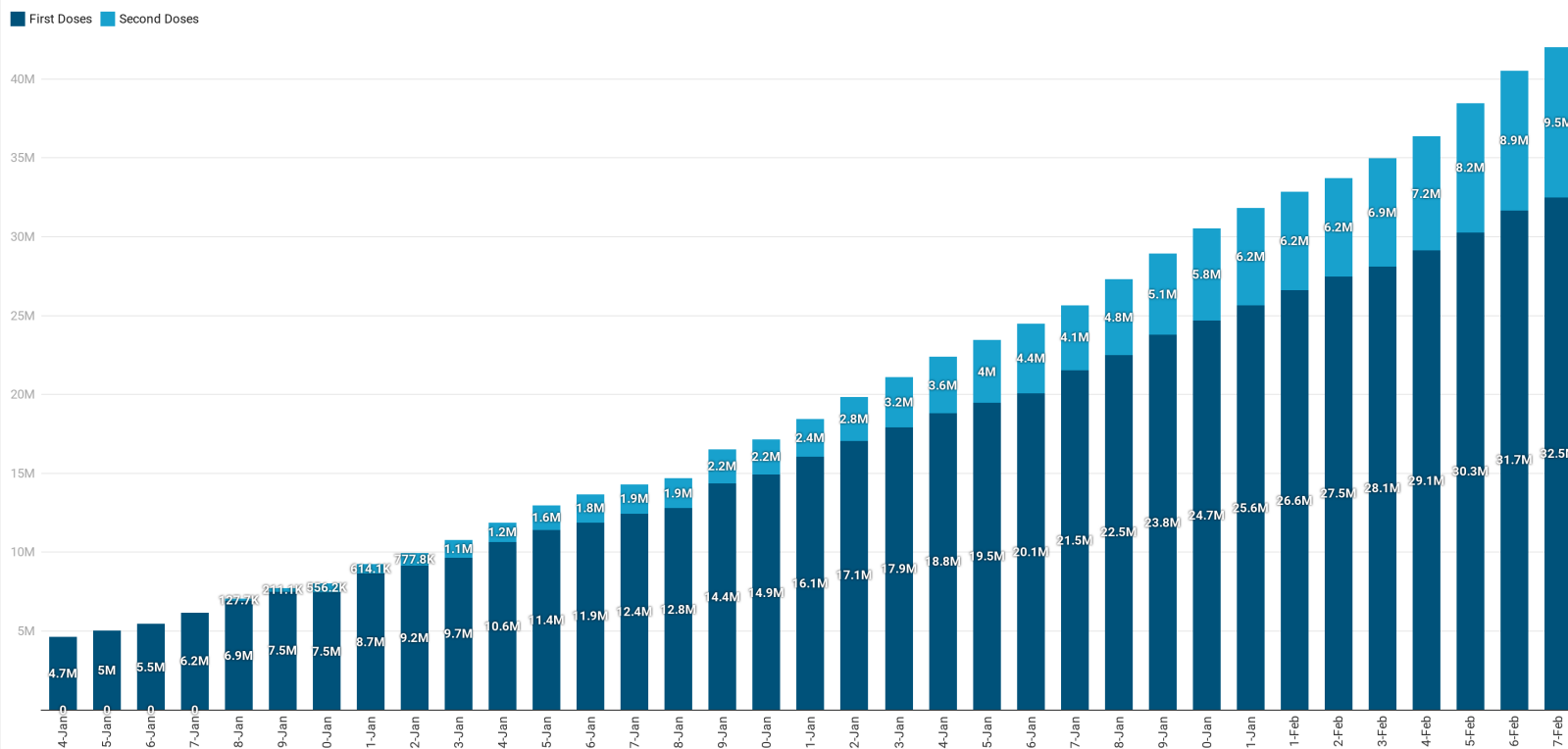


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

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

## Vaccines Distributed v. Unused

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

### Doses Administered & Unused By Day

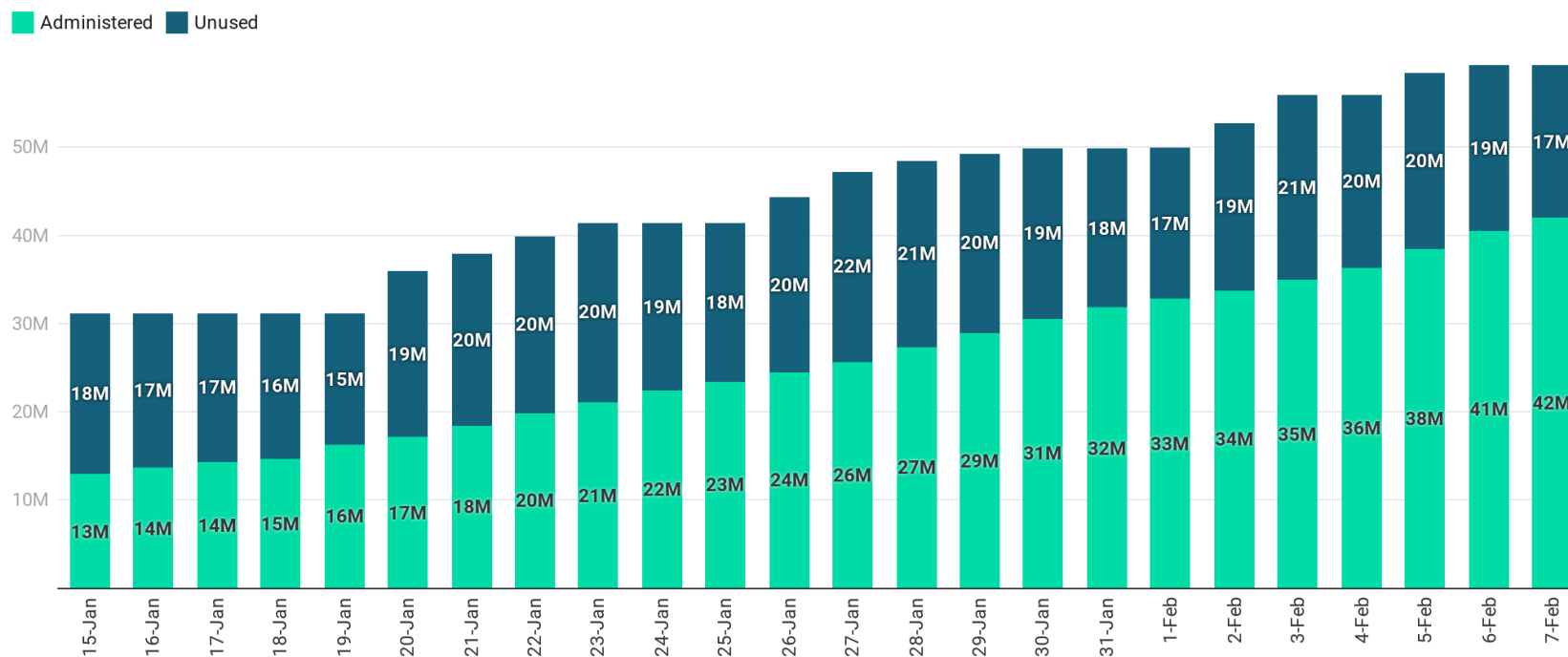


Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

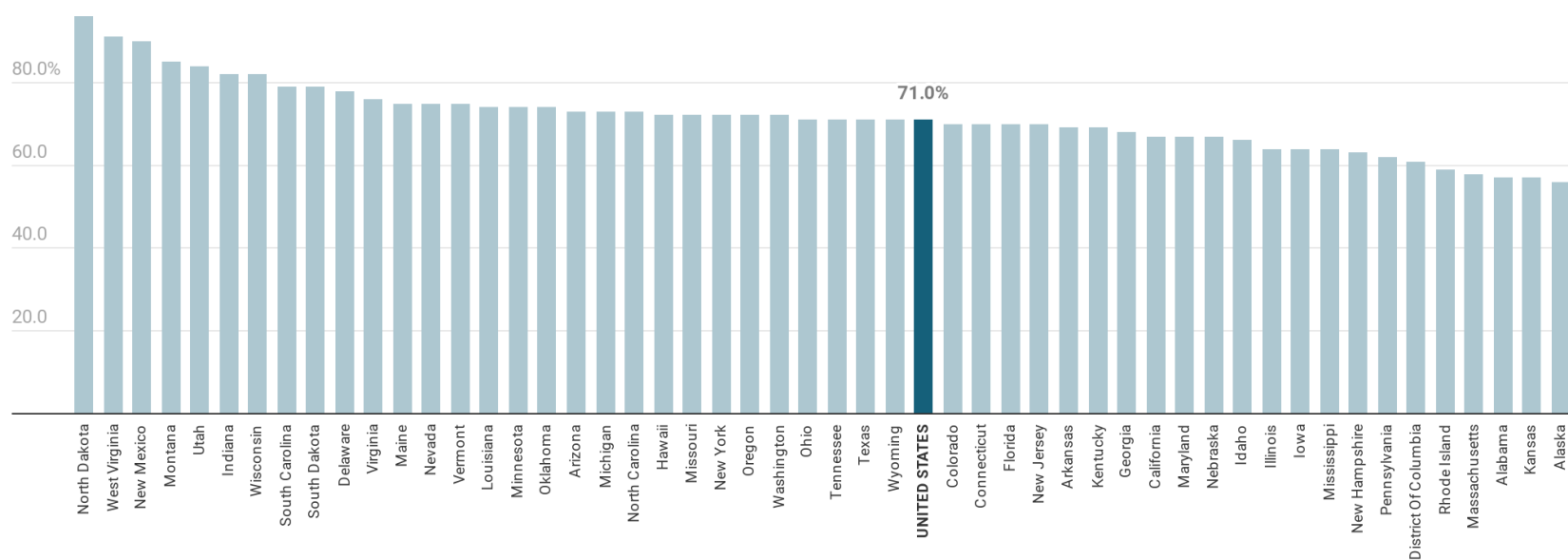


## Vaccines Distributed v. Administered

*The US administered seven-in-ten of all doses distributed; North Dakota performs best, administering nearly all its supply.*

### % of Allocated Supply Used

As of February 7



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

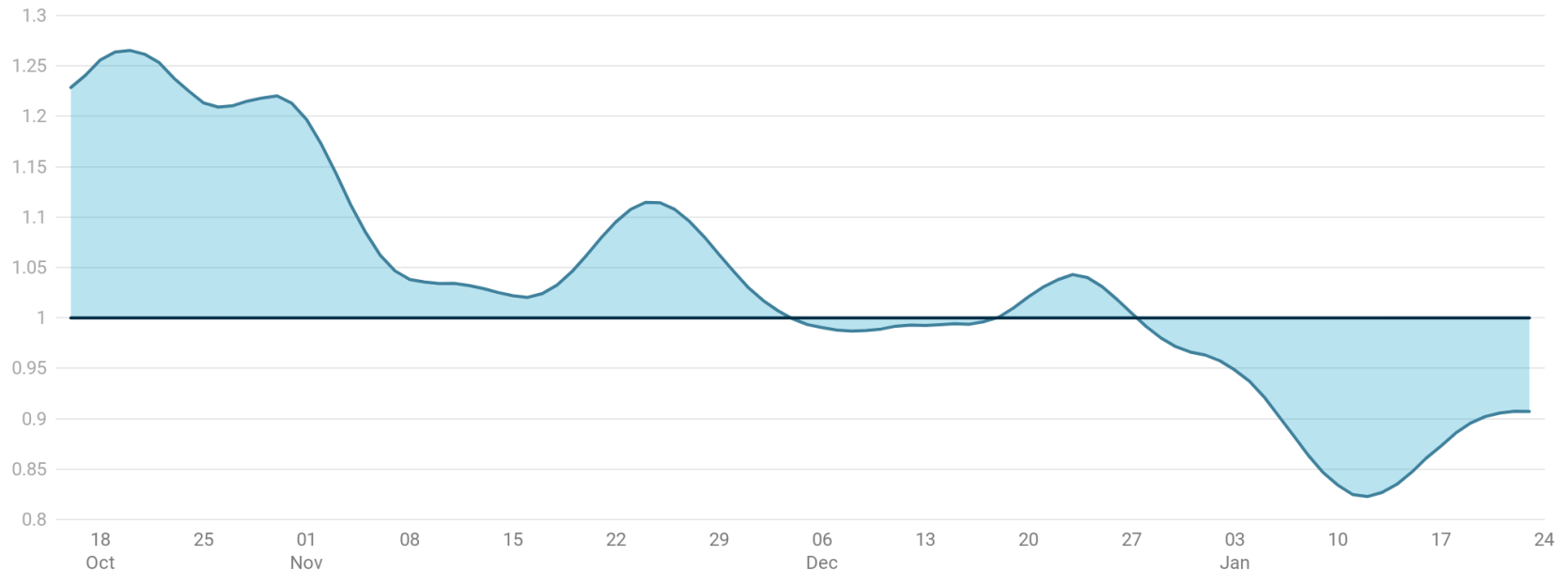
Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

## Reproduction Rate ( $R_t$ ) – Gu\* Model

*Gu's estimate of  $R_t$  remained below 1.0 for the twenty-seventh straight day. This rate turned up on January 11, however, flattened recently.*

### Reproduction Rate ( $R_t$ ) - US

Youyang Gu Estimate, October 16, 2020 - January 23, 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

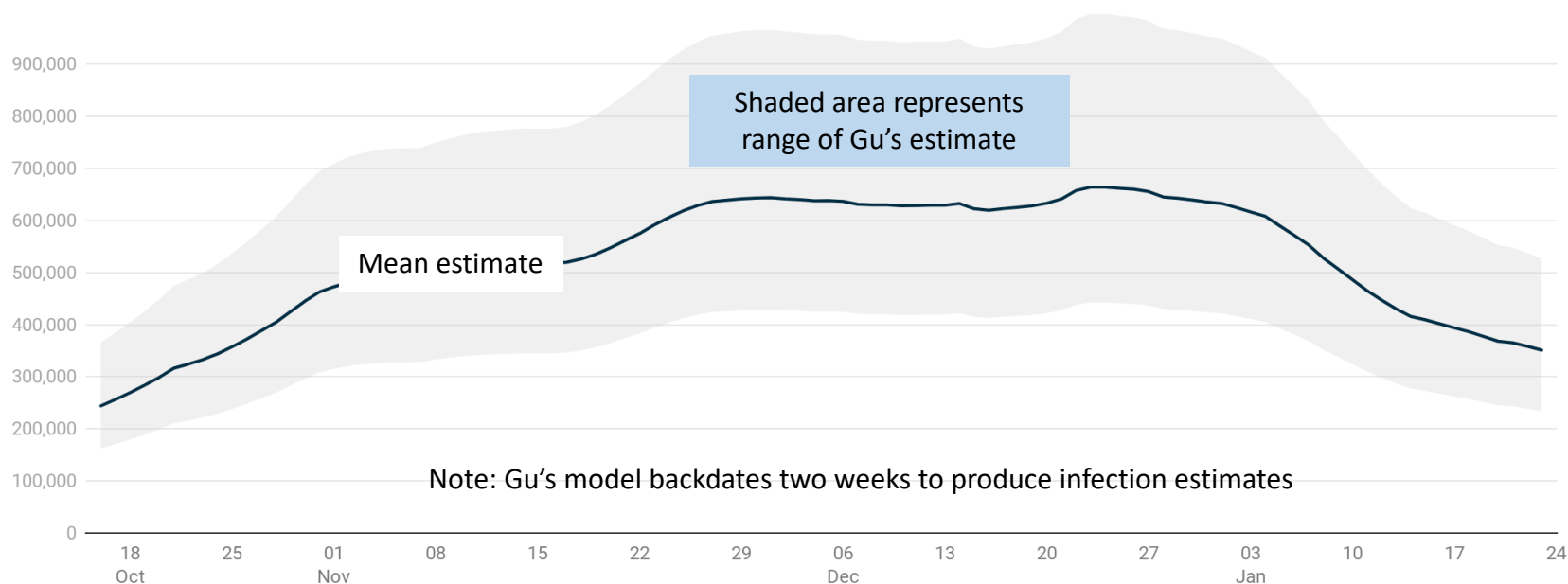
## Estimated New Daily Infections – Gu\* Model

*Estimated new infections fell for the thirtieth straight day, plunging by nearly one-half in that time. These new infections fell to the lowest point since October 24.*

### Estimated New Daily U.S. Infections

\*Youyang Gu: Covid-19projections.com

Youyang Gu Model, Through January 23



Using Youyang Gu's COVID-19 Projection Model

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

## Covid-19 “Vital Signs”

# Estimated Daily Infections & New Case Rates

*Gu’s estimated new infections parallel estimates from the Yale/Harvard Schools of Public Health and reported cases in the US.*

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

## Estimated Daily Infections v. Detected Cases

Gu & Yale School of Public Health Models

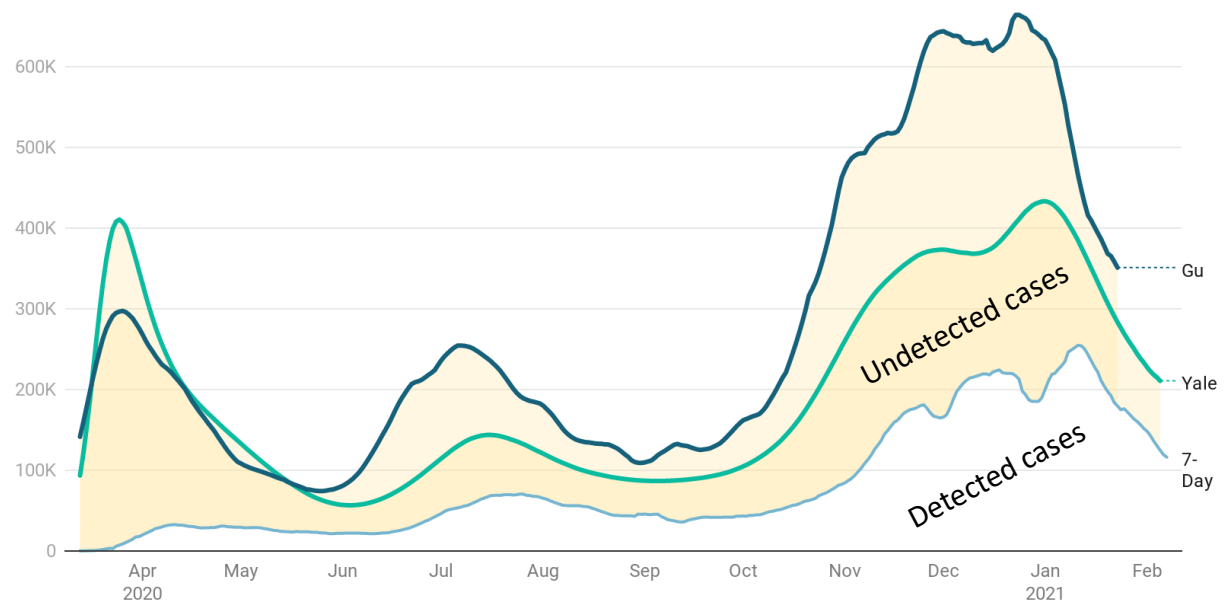


Chart: Health Industry Advisor LLC • Source: Youyang Gu, Yale School of Public Health • Created with Datawrapper

## Covid-19 "Vital Signs"

# Week-Over-Week Changes in New Cases

*On a week-over-week basis, US and worldwide new cases sank each of the past twenty-three days*

### Week-Over-Week Changes in Newly-Detected Cases: USA v. Worldwide

7-Day Moving Average, As of February 7

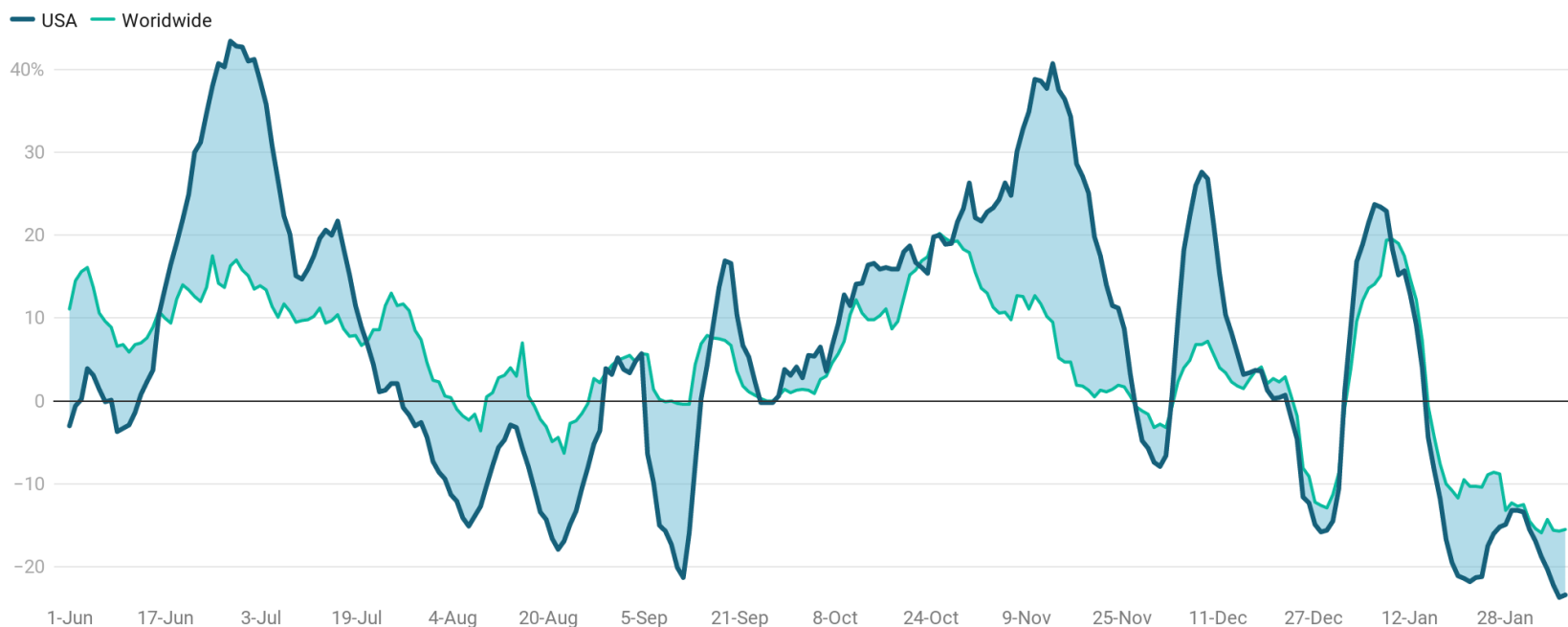


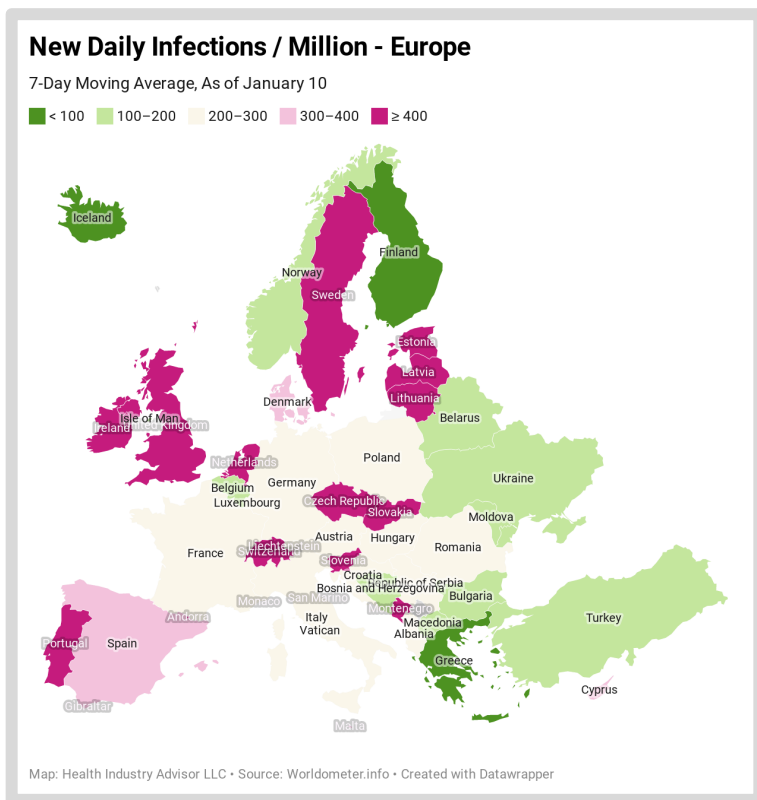
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

## Covid-19 "Vital Signs"

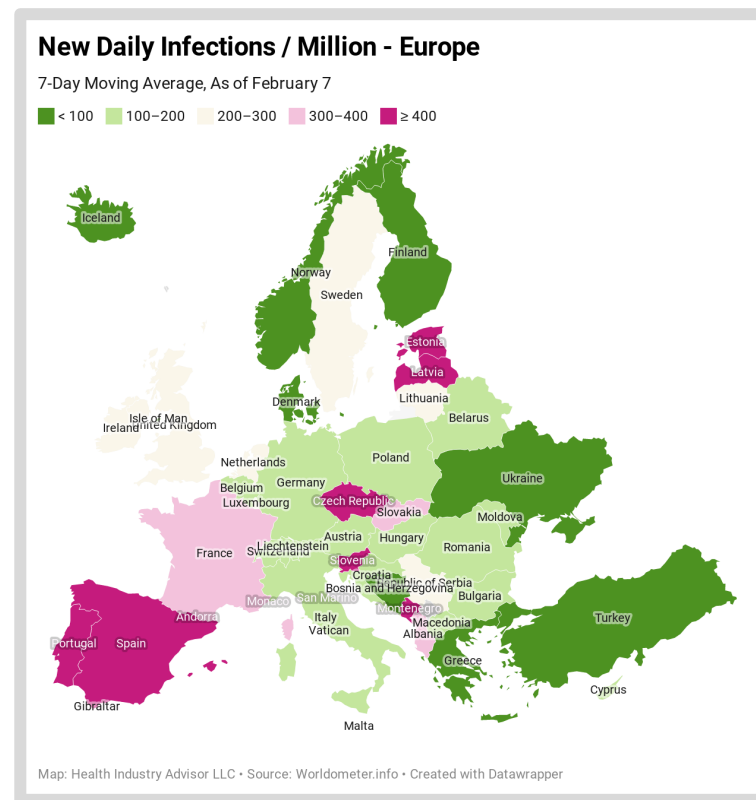
# Newly Detected Cases / Million

*Much of Europe rebounded from high Covid-19 rates over the past four weeks. Czech Republic, Estonia, Latvia, Montenegro, Slovenia, Spain and Portugal suffer from continued high rates.*

**January 10**



**February 7**



**Note: We adopt a stricter scale today, given the recent infection rate decline**

## Covid-19 "Vital Signs"

### Newly Detected Cases / Million

Many hard-hit countries welcomed declining case rates in the past several weeks. Israel's case rate moderated yet remains high. Countries tied to new variants boast either declining (South Africa, UK and US) or low rates (Brazil)

#### Newly Detected Cases Per Million

7-Day Moving Average

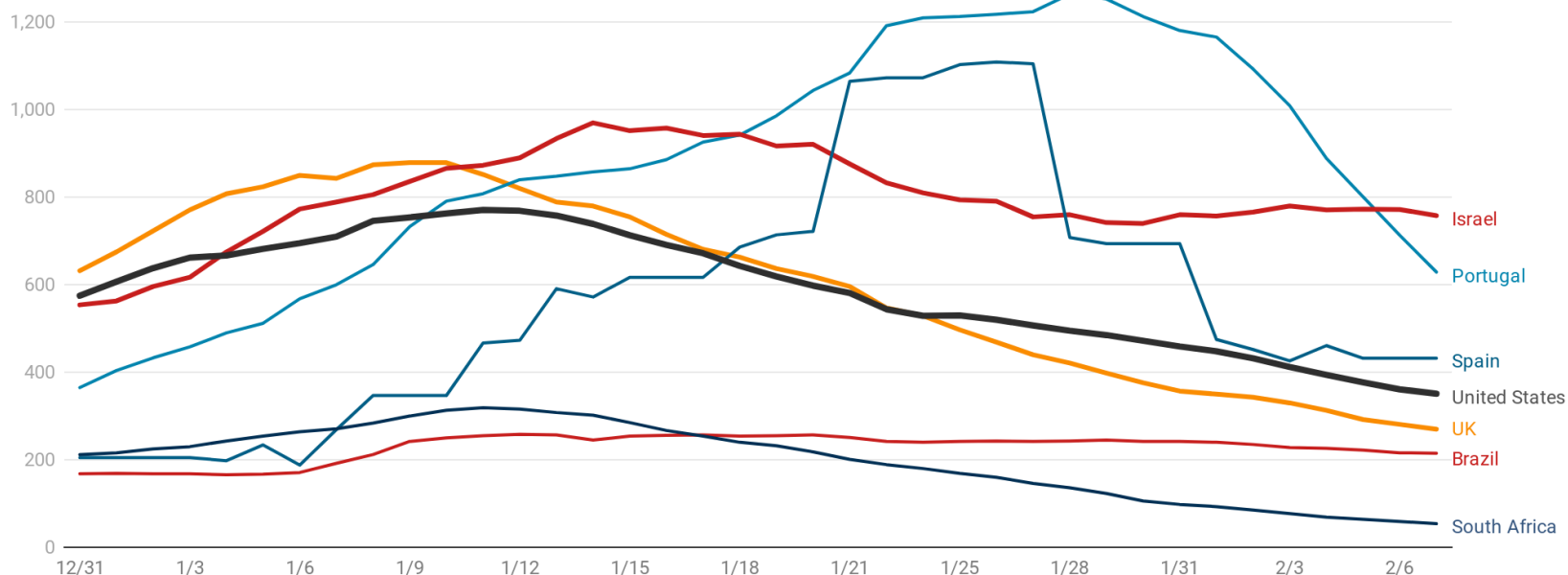


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

## Newly Detected Cases / Million - US

*Newly detected cases (7-day average) in the US declined for the twenty-seventh straight day – plunging a remarkable 54% in that time. This rate lags those posted everyday since November 8.*

### Newly-Detected Cases / Million - US

7-Day Moving Average

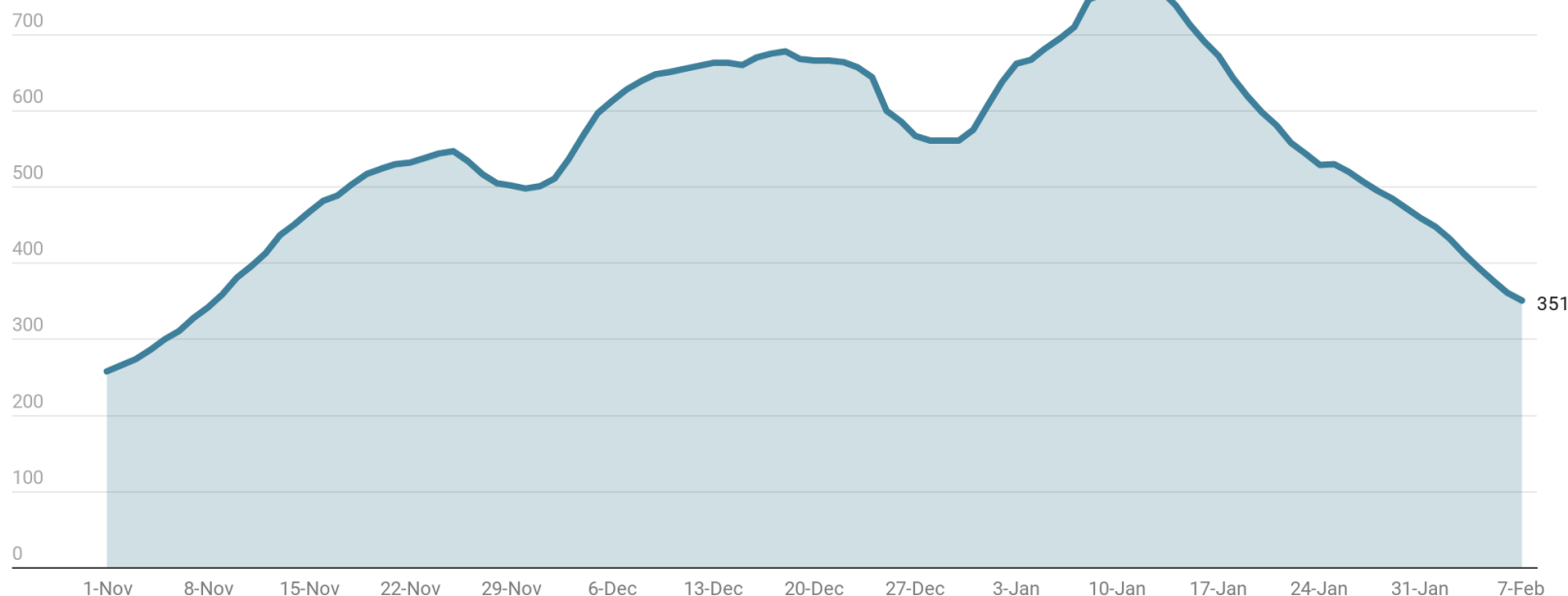


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

## Newly Detected Cases Per Day

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

### Newly Detected Cases Per Day

As of February 7

United States Outside the US

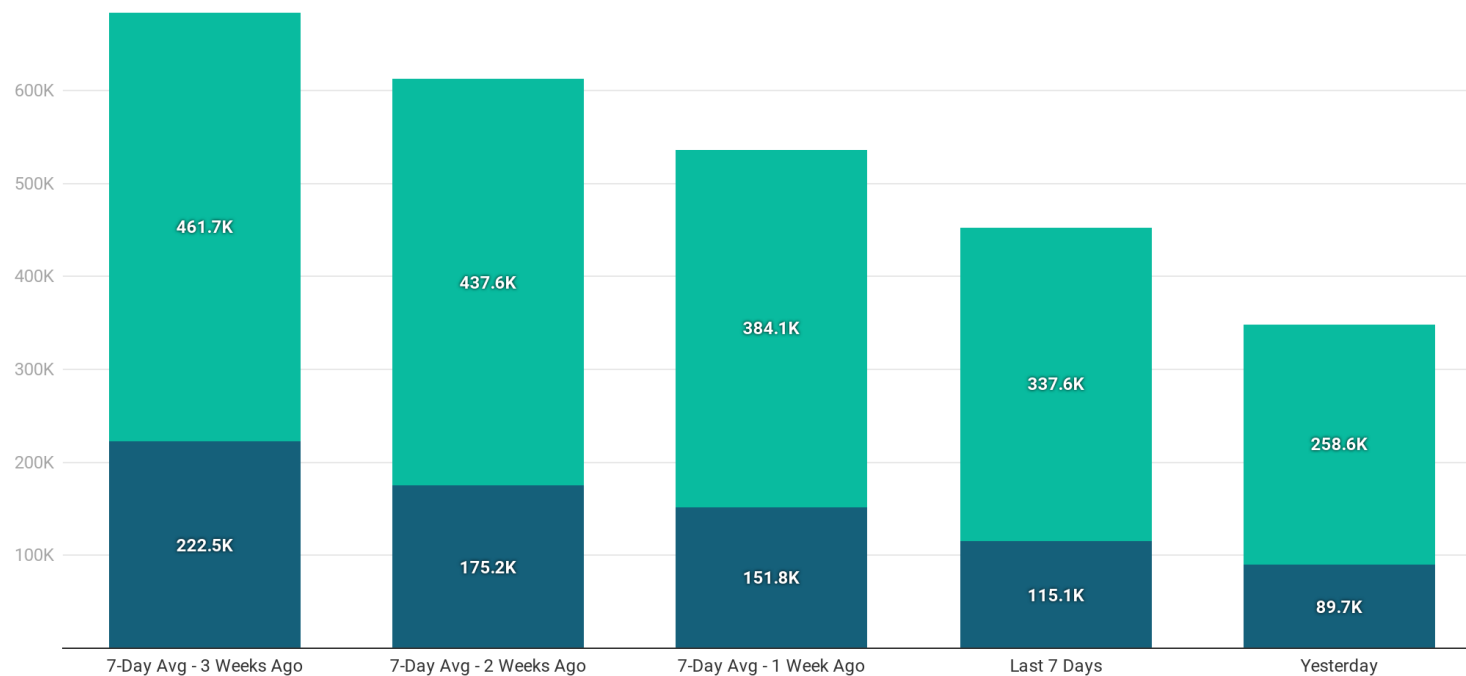


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

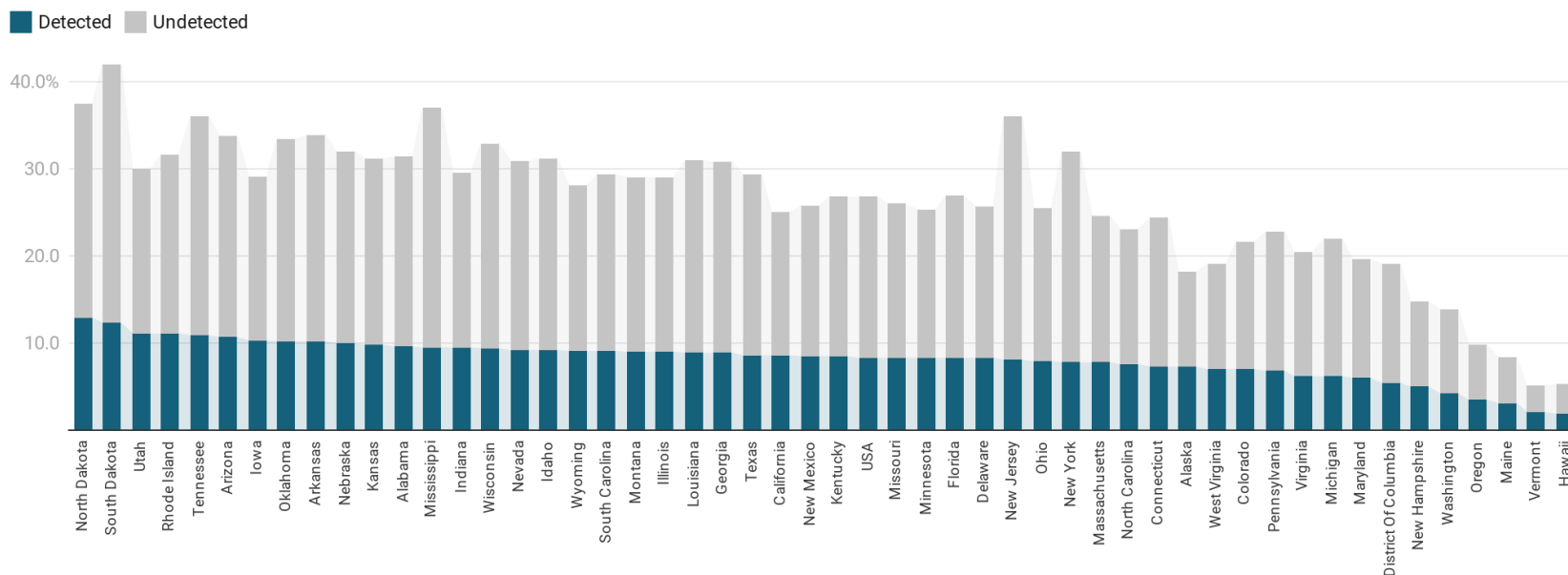
## Infection Prevalence By State

*South Dakota outpaces every other state in estimated infection prevalence, followed by North Dakota, Mississippi, New Jersey and New York. Vermont and Hawaii occupy the tail-end of this ranking.*

### Infection Prevalence

\*Youyang Gu: Covid-19projections.com

% of Population Infected - Detected & Undetected, As of February 7



Undetected Estimate from Youyang Gu Model - estimates are 14 days in arrears due to model design

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

## Covid-19 "Vital Signs"

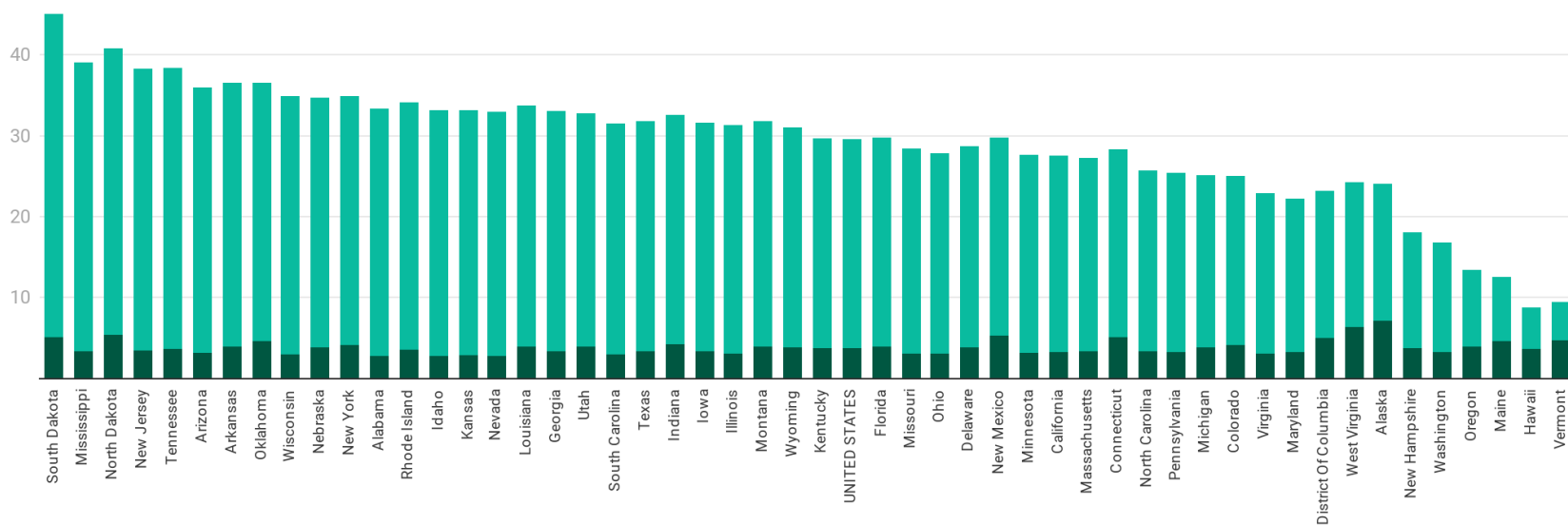
# Estimated Immunity Levels By State

*An estimated four-in-ten residents of North and South Dakota enjoy immunity from Covid-19; for the US, it is three-in-ten. In Hawaii and Vermont, nine-in-ten residents risk infection.*

## Estimated Immunity Levels

As of February 7

■ 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

## Covid-19 "Vital Signs"

# New Cases / Million

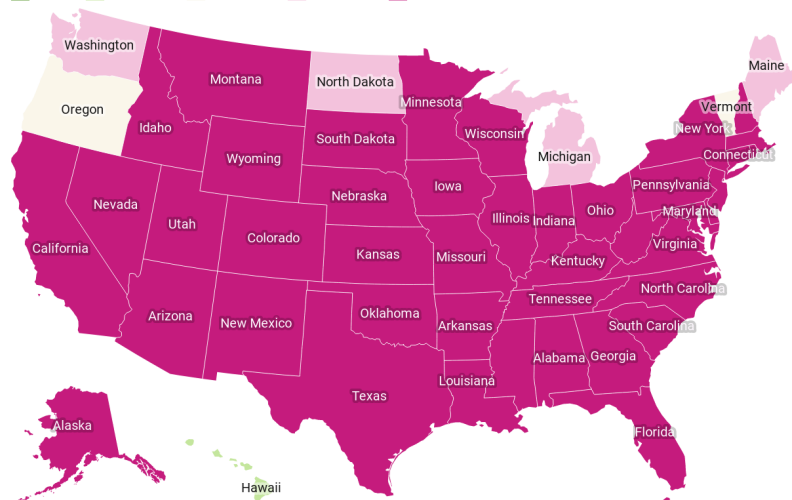
*Much of the US rebounded from the high infection rates seen early in January. Parts of the country, however, still suffer from higher rates than seen in the Summer and Fall, 2020.*

**January 10**

### New Cases / Million

7-Day Moving Average, As of January 10

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



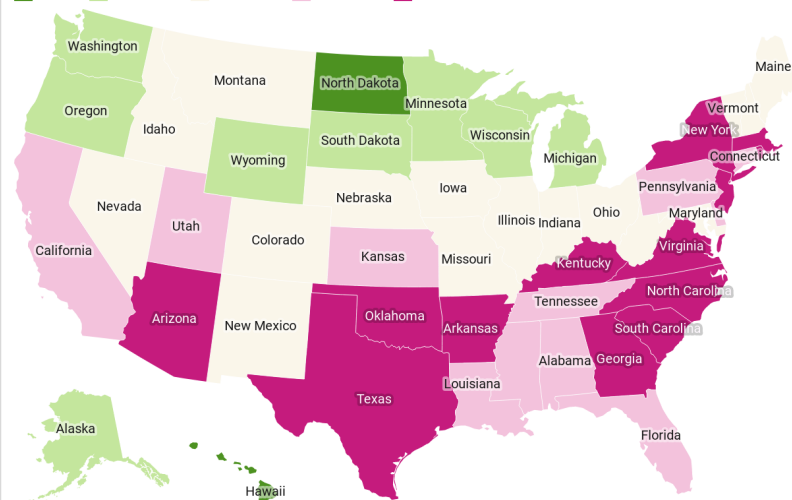
Map: Health Industry Advisor LLC • Created with Datawrapper

**February 7**

### New Cases / Million

7-Day Moving Average, As of February 7

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



Map: Health Industry Advisor LLC • Created with Datawrapper

**Note: We adopt a stricter scale today, given the recent infection rate decline**

## Covid-19 "Vital Signs"

# Covid-19 Hospitalizations

*Covid-19 hospitalizations plunged over the past month, with 51,000 fewer patients yesterday than on January 6 (39%). Yesterday's Covid-19 census fell to its lowest point since November 18. ICU and ventilator days declined each of the past three weeks.*

## Hospitalized Covid-19 Patients

Compared to Same Day, Prior Weeks, As of February 7

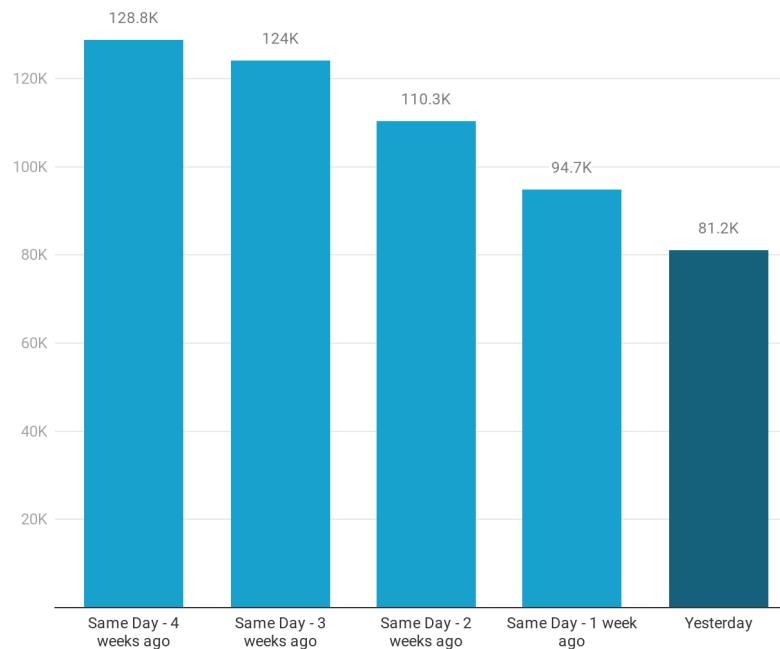


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

## Covid-19 Patients in the ICU

Compared to Same Day, Prior Weeks, As of February 7

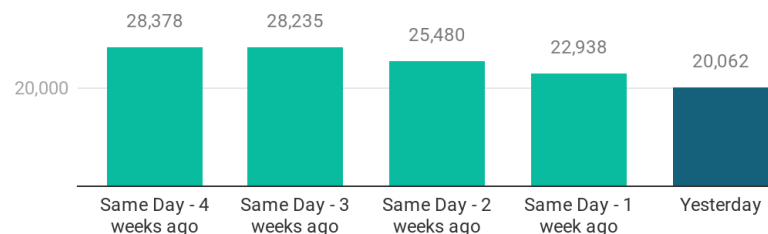


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

## Covid-19 Patients on Ventilators

Compared to Same Day, Prior Weeks, As of February 7

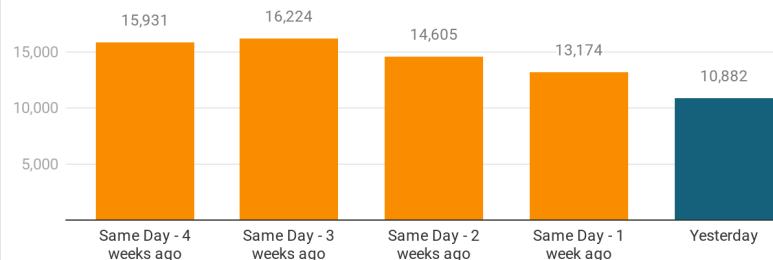


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

## Covid-19 "Vital Signs"

# Covid-19 Hospitalizations

*Covid-19 hospital census plunged in the past four weeks in every state. Covid-19 patients occupied 26% of US beds yesterday versus 42% four weeks ago.*

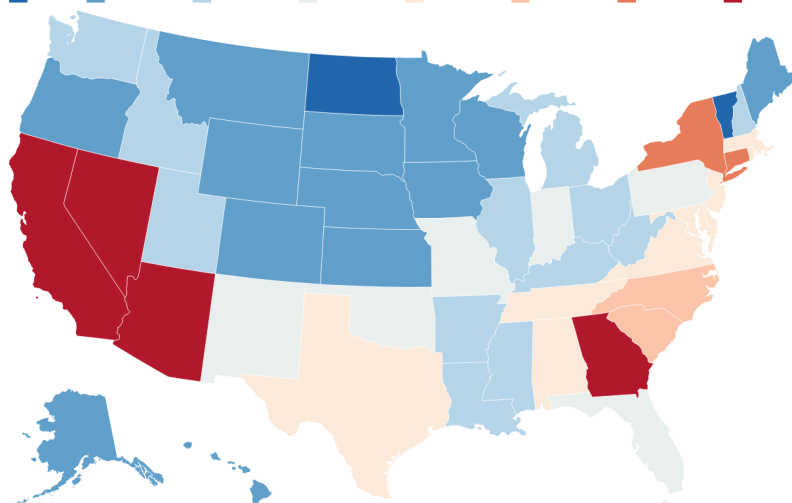
**January 10**

**February 7**

### Covid-19 Patients As % of All Inpatient Beds

As of January 10

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

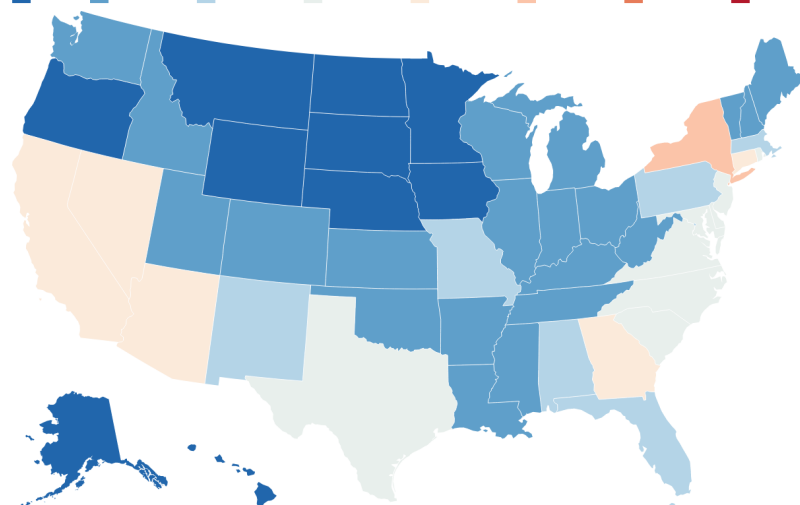


Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

### Covid-19 Patients As % of All Inpatient Beds

As of February 7

■ < 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"

# 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.*

## Tests / Million / Day (US)

As of February 7

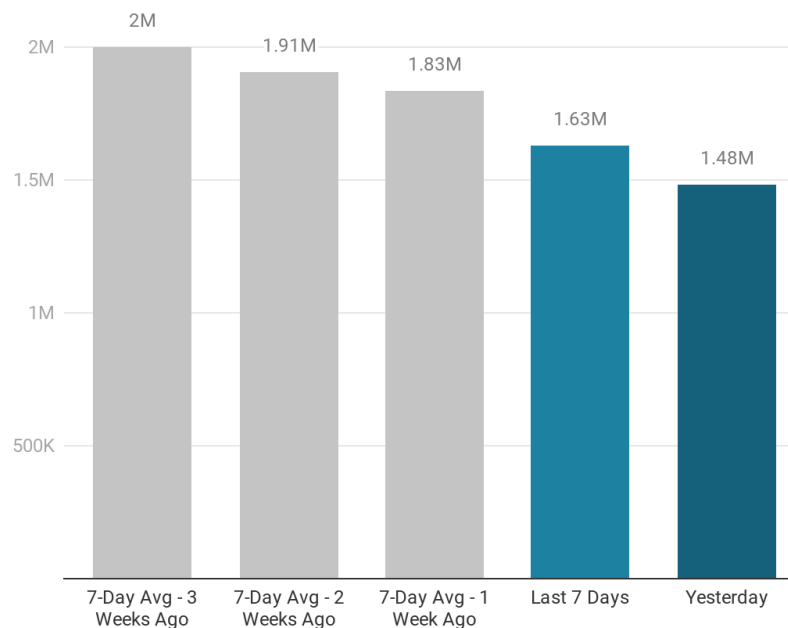


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

## Test-Positivity Rate

As of February 7

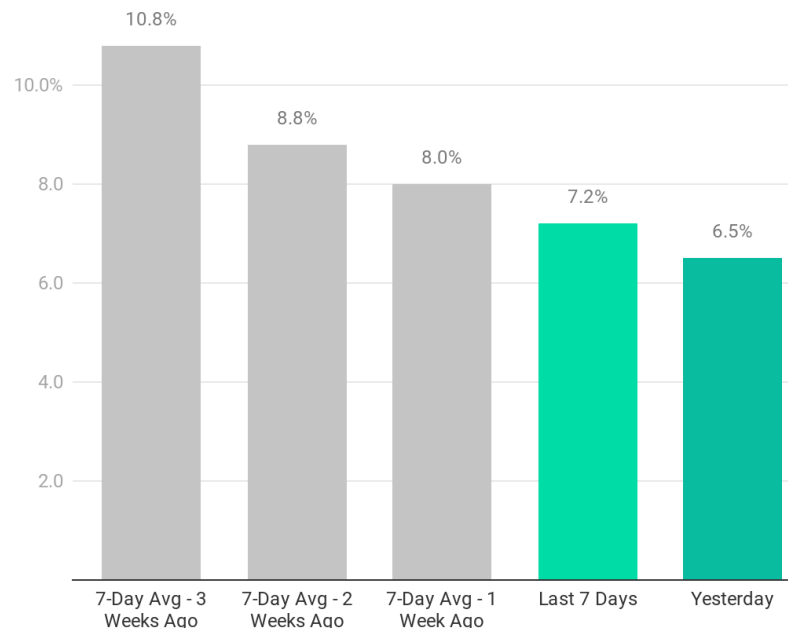
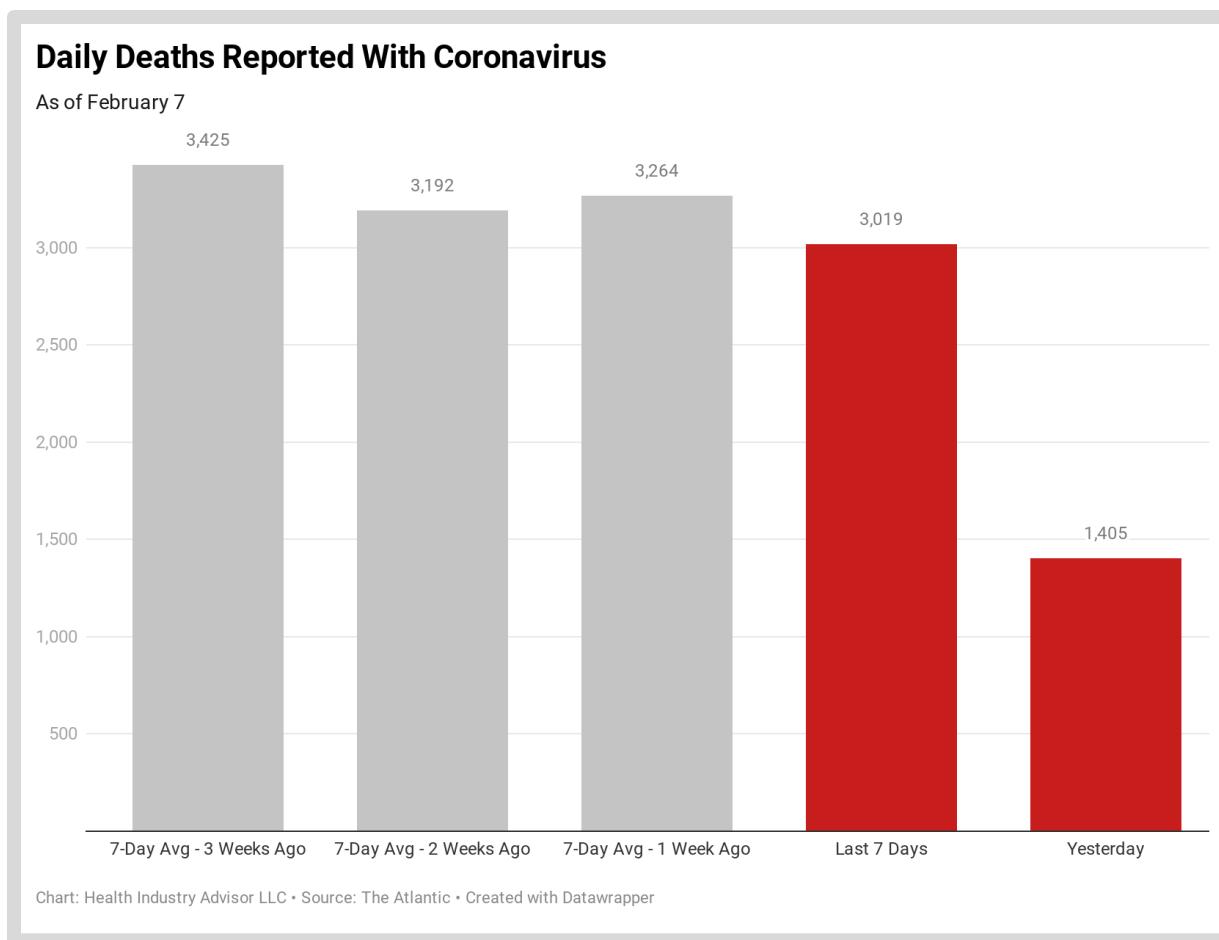


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

## Deaths Reported With Coronavirus

*The 7-day average death rate crept lower than it has been for each of the prior three weeks.*



## 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](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&region=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>