Health Industry Advisor, llc

"Strategic Advice in an Era of Unprecedented Change"

Covid-19 "Vital Signs"

Issue # 276

February 2, 2021

Covid-19
"Vital Signs"

Highlights

- **The US "only" vaccinated 1 million people yesterday, a number suppressed by the widespread storm**. The total vaccinated reached 32.2 million, with **6.2 million Americans now having received two doses of the Covid-19 vaccine**;
- Despite yesterday's low numbers, the vaccination pace has quickened in the past two weeks. Early in January, vaccinations only exceeded the original "100 million doses in 100 days" pace a single time; it has done so now on twelve consecutive days. On nine of these days, the pace exceeded the more ambitious target included in our current projection model;
- **Estimated immunity levels reached 28% in the US**, with most of this achieved via infection. Immunity via vaccination could overtake immunity via infection in mid-May, based on our current projection model;
- **The US could reach 60% immunity by the end of May, 70% by early July, and 80% by early August.** Public health experts suggest that we could achieve herd immunity somewhere between 60% and 80%;
- **Estimated new daily infections fell for the twenty-sixth straight day**, as of January 18 (Gu model; He backdates his estimate by 14 days). The decline in infections slowed in the latter part of this period;
- Similarly, Gu's estimate of the **reproduction rate (Rt) remained below 1.0 for the twenty-second straight day; this rate, however, has inched higher each of the last seven days;**
- **New daily cases are free-falling in the US and across the world. The US 7-day rate dropped by more than 40% in the past three weeks; outside the US, this rate declined nearly 25% during this time;**
- Rates have tumbled in hard-hit Arkansas, California, Georgia, Oklahoma, Tennessee, Utah, and West Virginia;
- Covid-19 hospitalizations plunged across the country: **Covid-19 hospital census fell by nearly 50,000 patients in the last four weeks.** These patients occupied only 30% of US hospital beds yesterday, compared to 40% earlier in January. Rates hover above 60% in Arizona and New York; above 50% in California, Connecticut, Georgia, and Nevada;
- **Deaths reported with coronavirus have not budged from the tragically-high levels seen over the last three weeks.** These should ease soon, given the drop in new cases detected in January.

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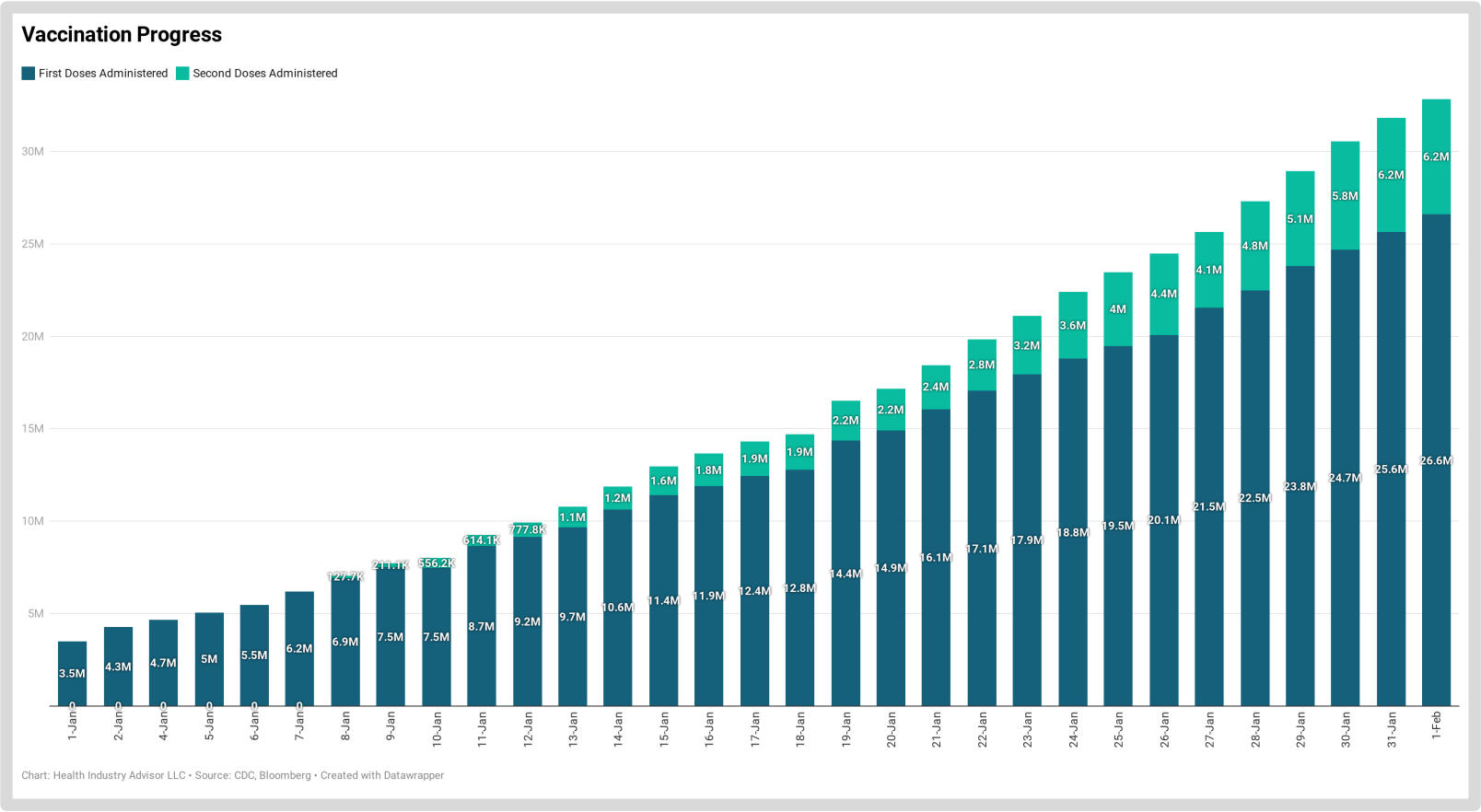
Vaccine Tracking

With the snowstorm crippling much of the country, only 1 million doses were administered yesterday. To date, the US has administered 32.8 million doses, with 6.2 million people having received two doses.



Vaccine data from: Centers for Disease Control and Prevention and Bloomberg Vaccine Tracker

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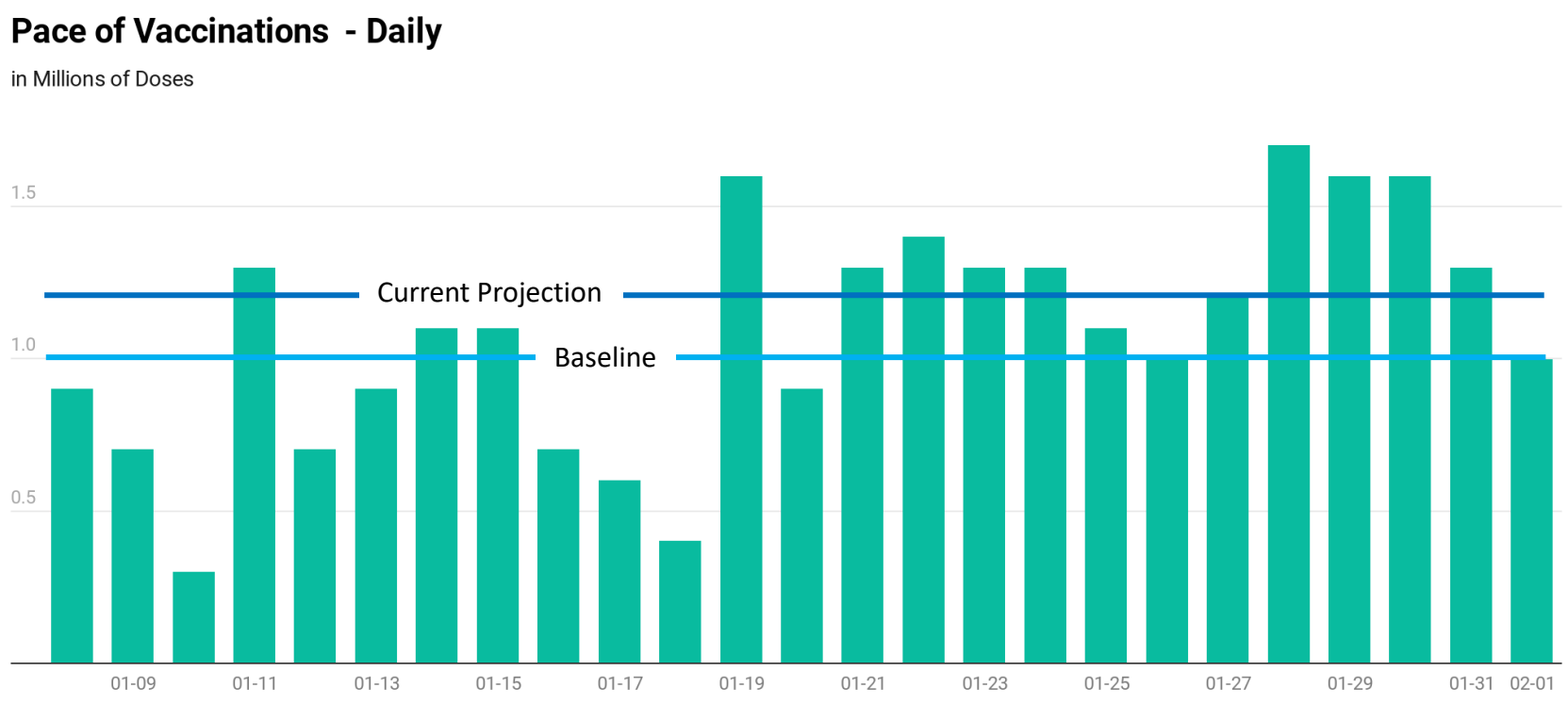
Pace of Vaccinations

The vaccination effort struggled early but has gained momentum in recent days. In early January, daily vaccinations fell short of even the modest "100 million doses in 100 days target" ("baseline"). Daily vaccinations exceeded the more ambitious "current projection" pace four of the past five days



"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

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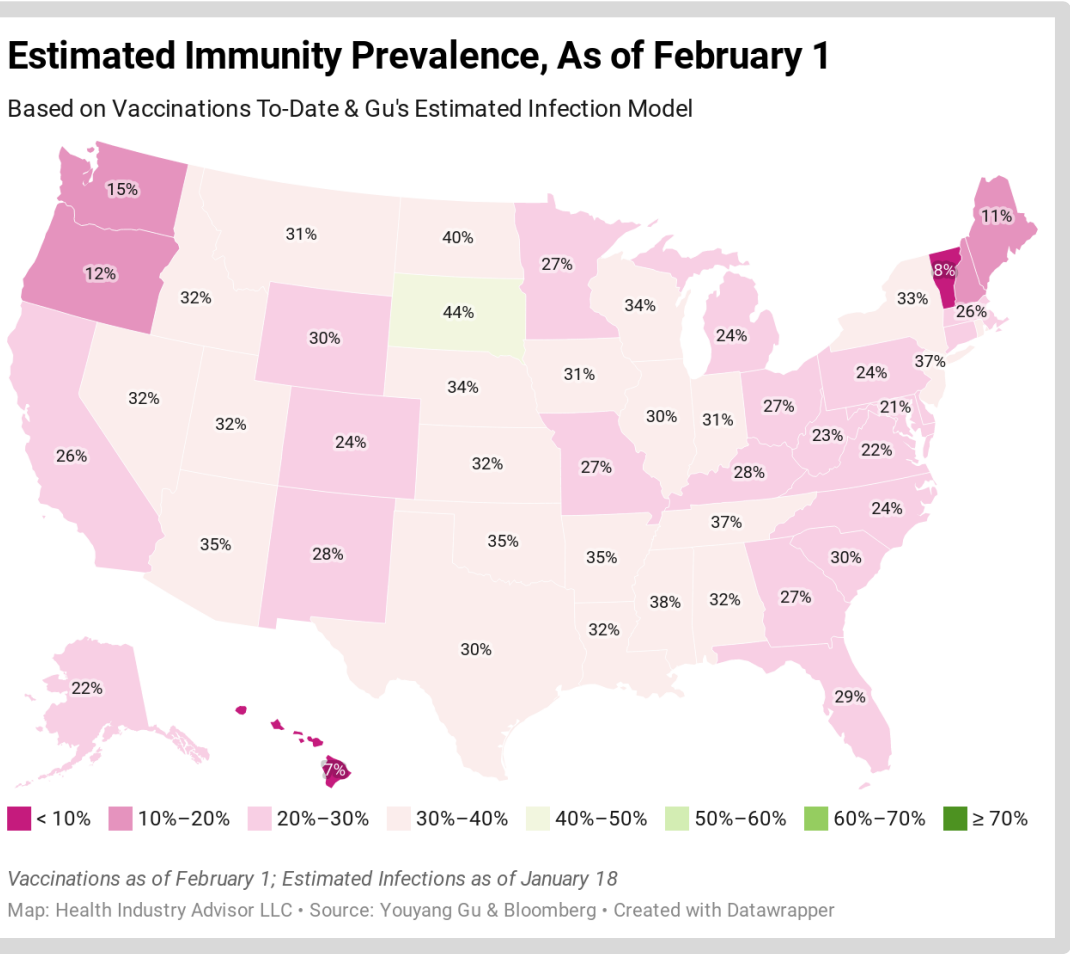
Estimated Immunity By State

South Dakota and North Dakota may be furthest along toward herd immunity levels – still, no state is on the brink of herd immunity yet

- 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 Youyang Gu's* mean estimates of true infections

* https://covid19-projections.com



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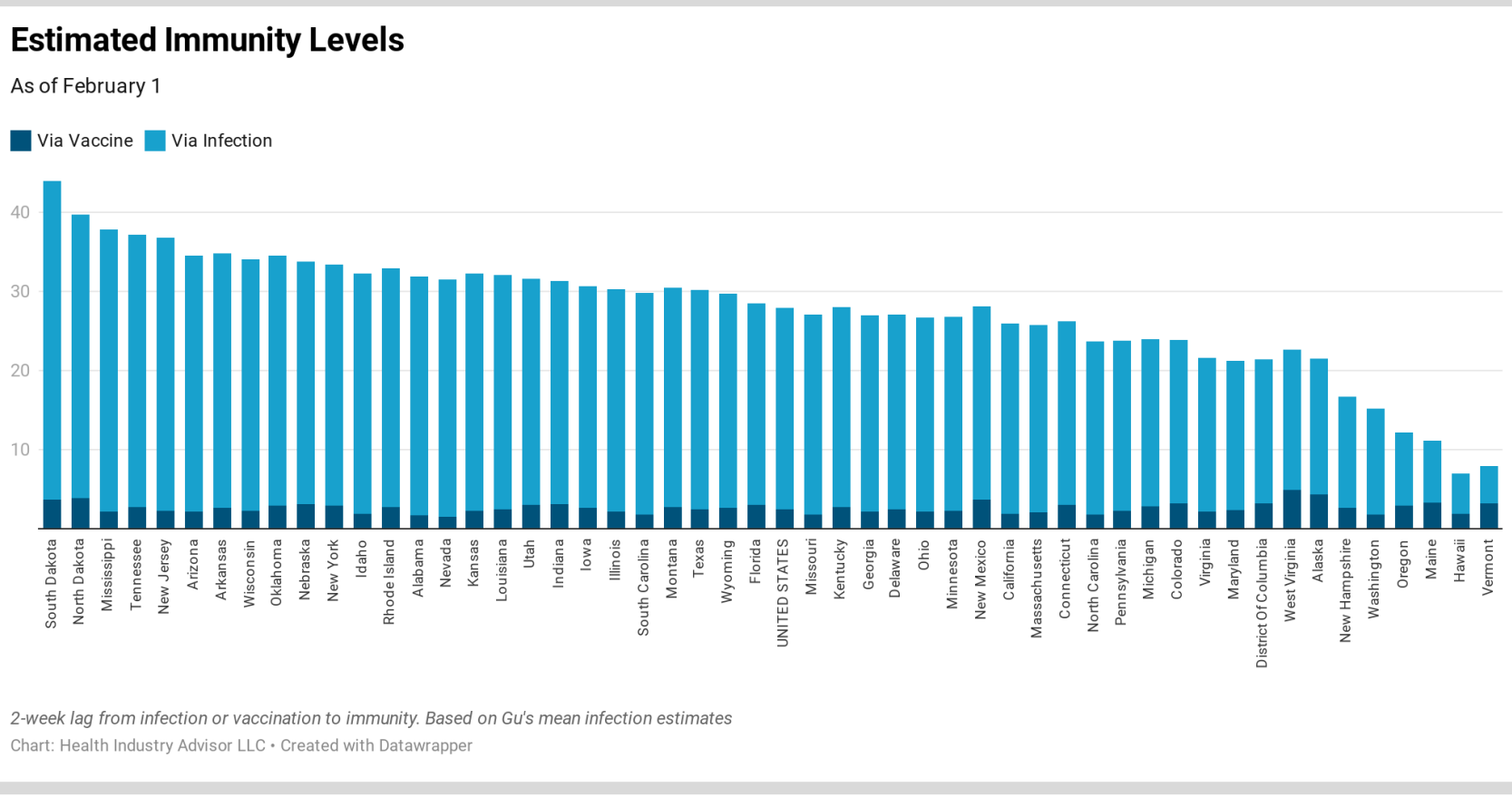
Estimated Immunity Levels By State

Immunity in the US approaches 28%, mostly reached via infections. South Dakota residents exceed 44% immunity, with North Dakota residents nearing 40%.



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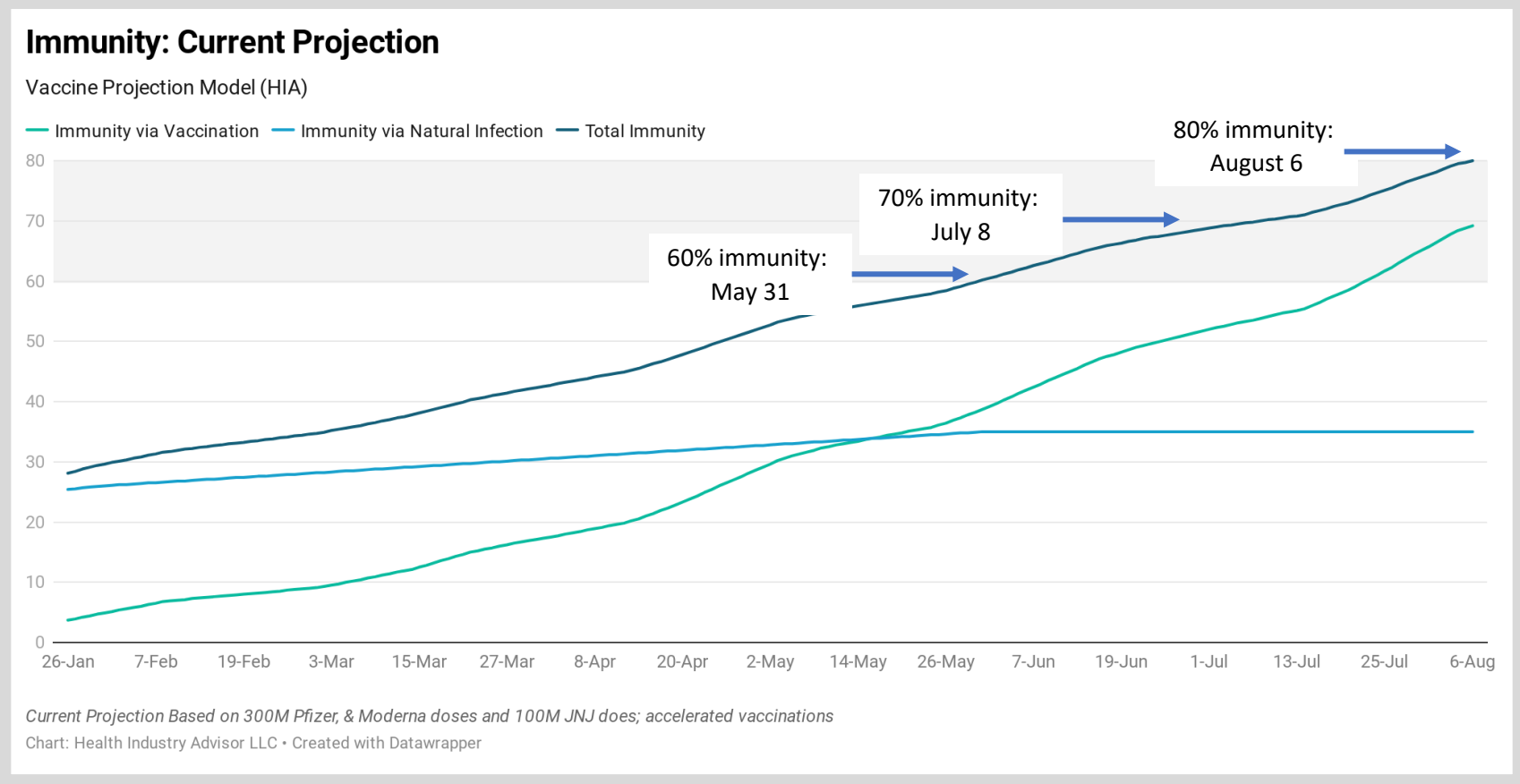
Immunity Projection Model

Herd immunity requires between 60% to 80% immunity, which can be achieved via vaccination or infection. The US could reach 60% by May 31, 70% by July 8 and 80% by August 6, based on our Current Projection model



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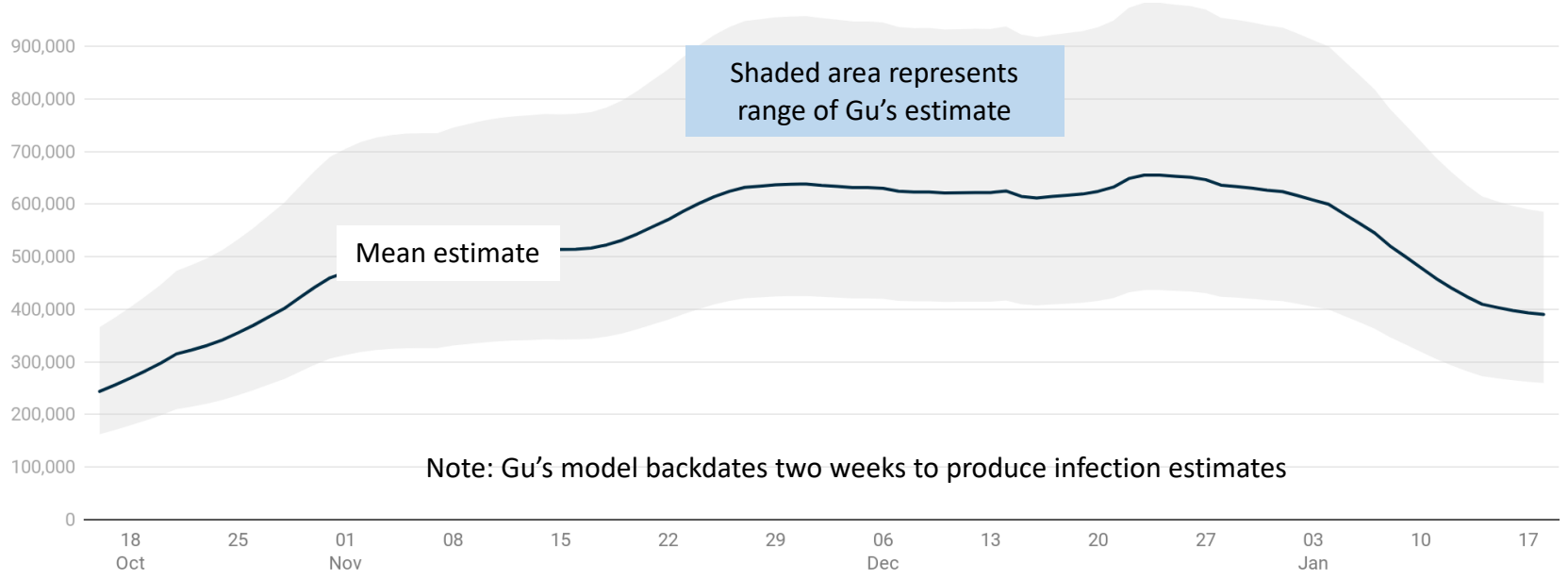
Estimated New Daily Infections – Gu* Model

Estimated new infections fell for the twenty-sixth straight day on January 18; however, the rate of decline eased recently. There were fewer new infections on January 18 than any day since October 27



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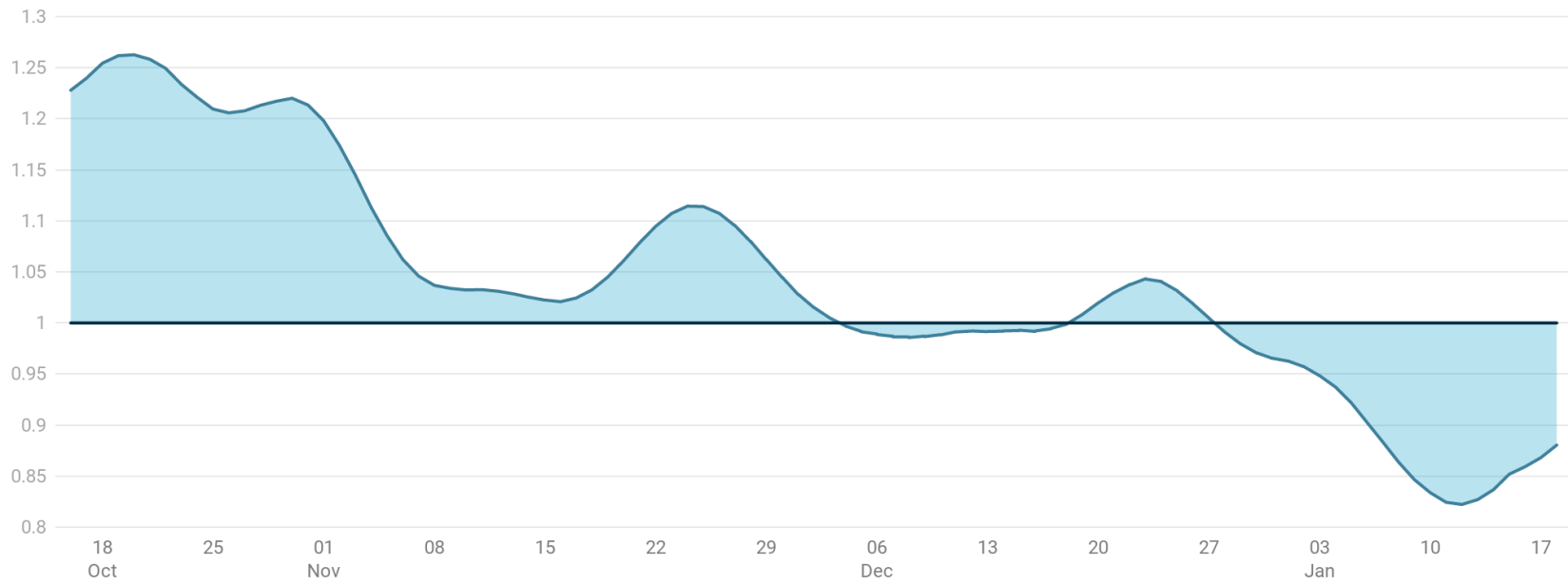
Reproduction Rate (R_t) – Gu* Model

Gu's estimate of R_t remained below 1.0 for the twenty-second straight day. This rate, however, has increased each of the past seven days



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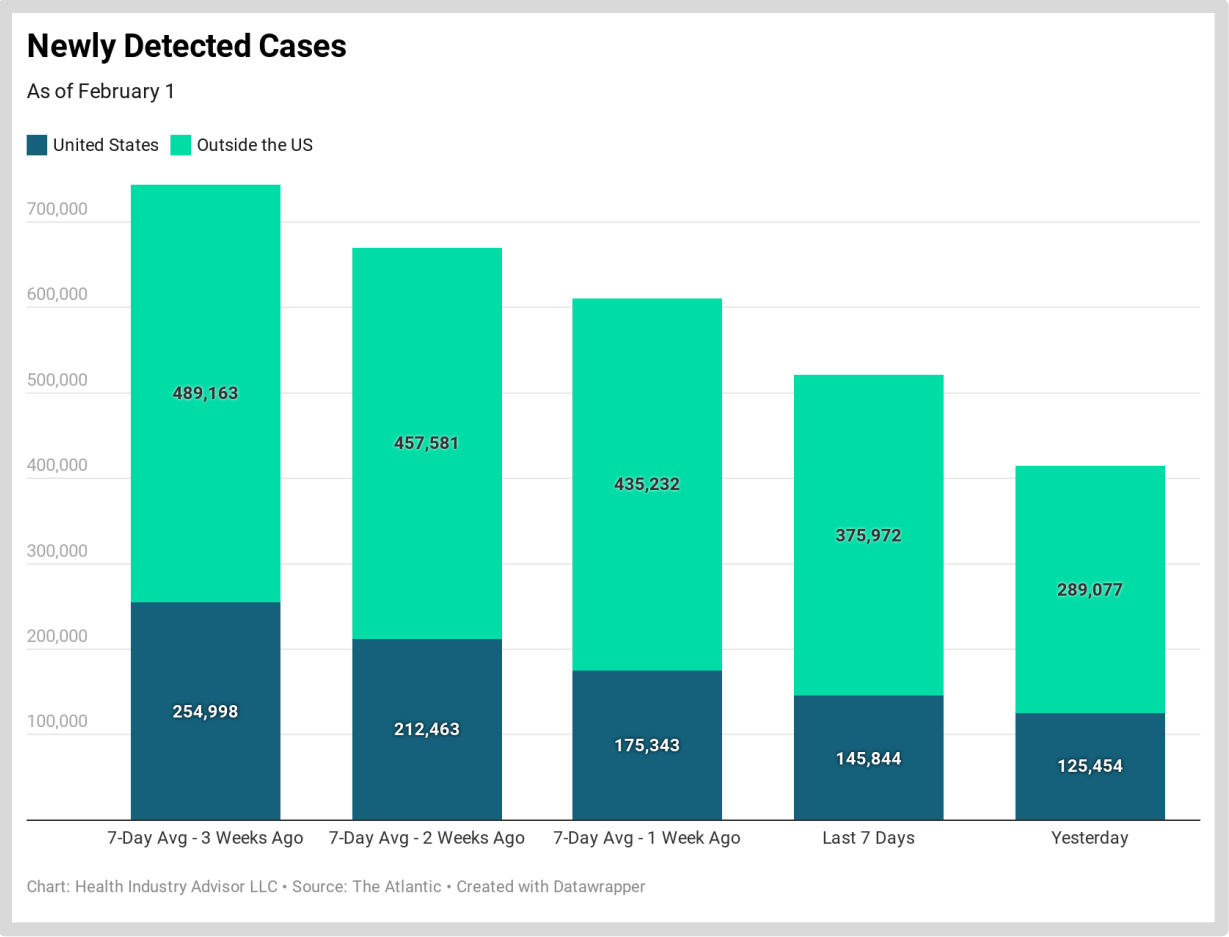
Newly Detected Cases Per Day

7-day new case rates have plunged over the past several weeks, both in the US and outside the US. The US rate fell to its lowest point since November 13



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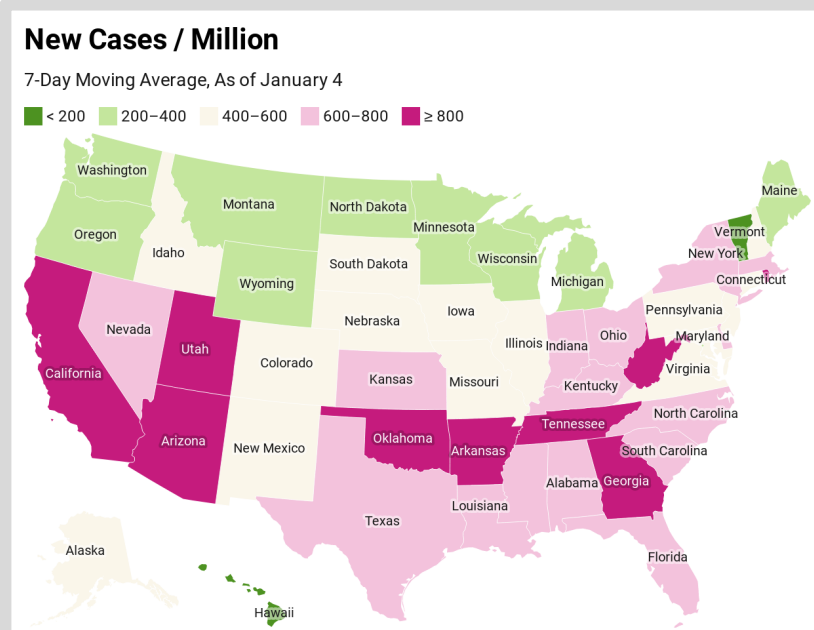
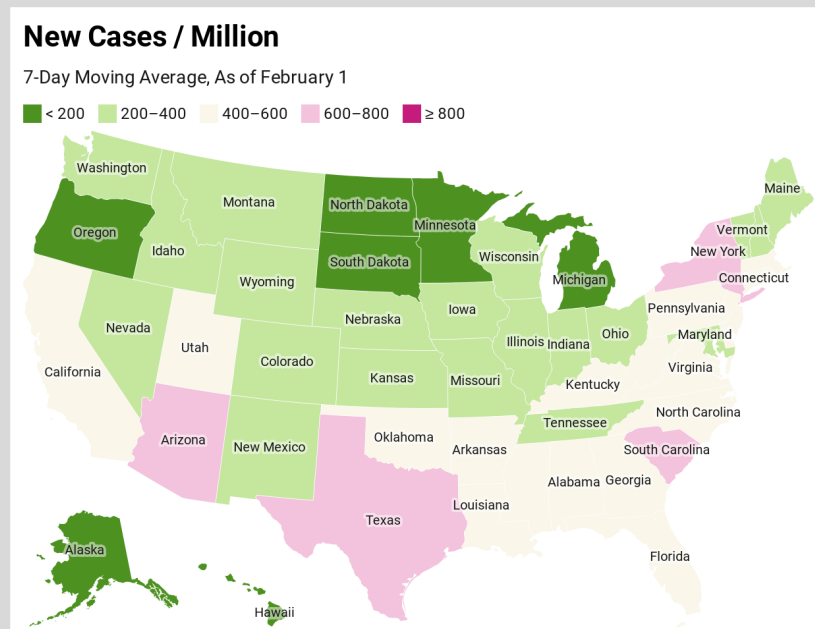
New Cases / Million

New cases rates tumbled in January across the country, particularly in hard-hit Arkansas, California, Georgia, Oklahoma, Tennessee, Utah and West Virginia. Rates remain highest in Arizona, Connecticut, New York, South Carolina and Texas

January 4



February 1



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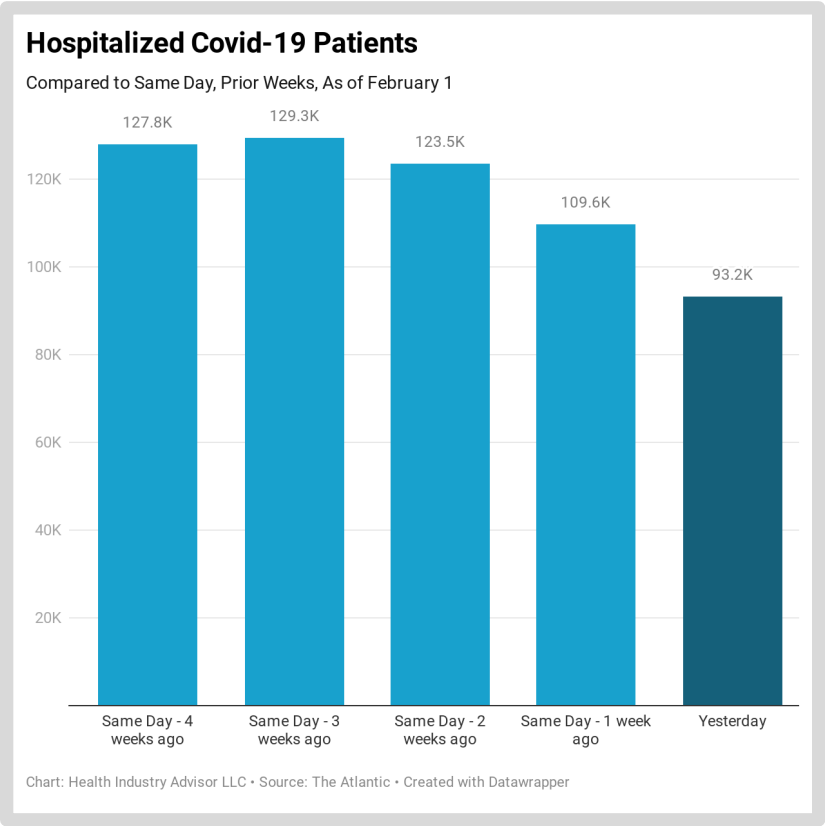
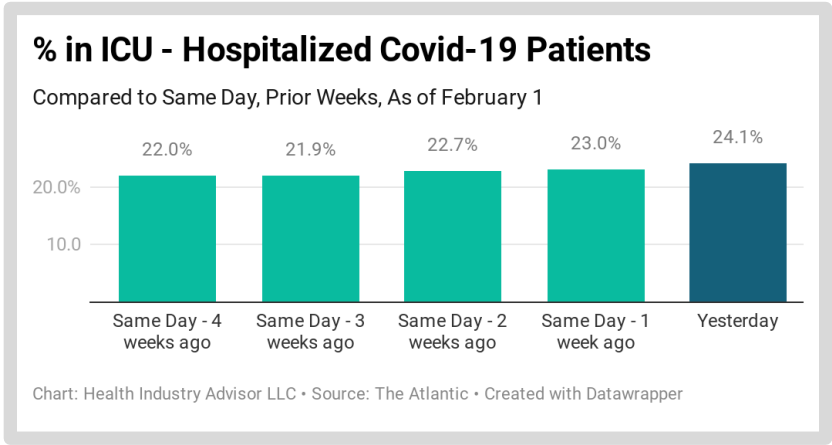
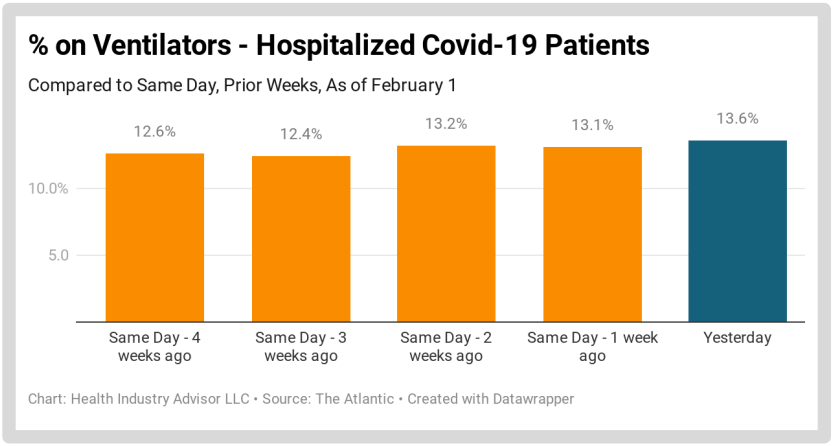
Covid-19 Hospitalizations

Covid-19 hospitalizations are plunging, with nearly 50k fewer patients yesterday than on January 6 (37.5%). Yesterday's Covid-19 census was lower than any day since November 20







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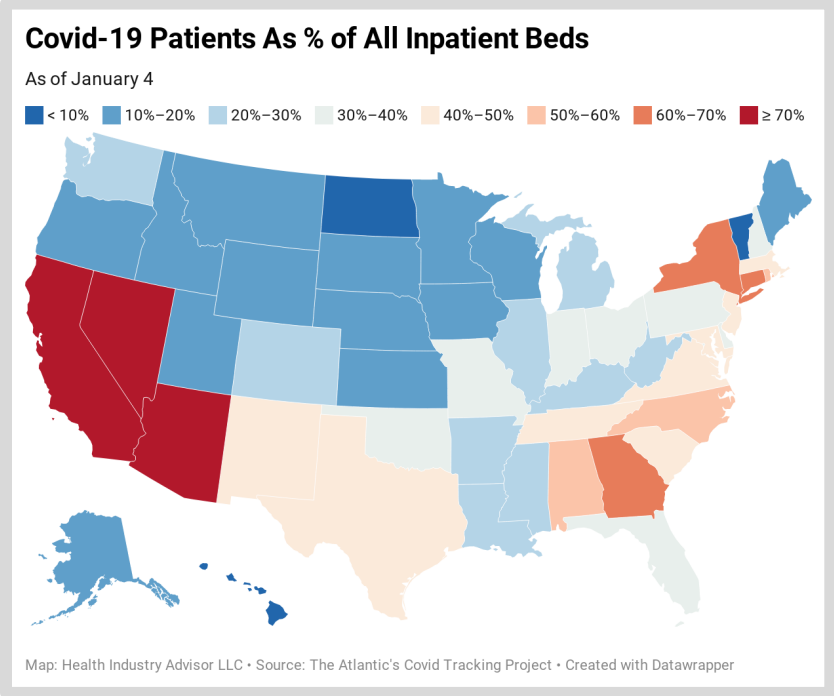
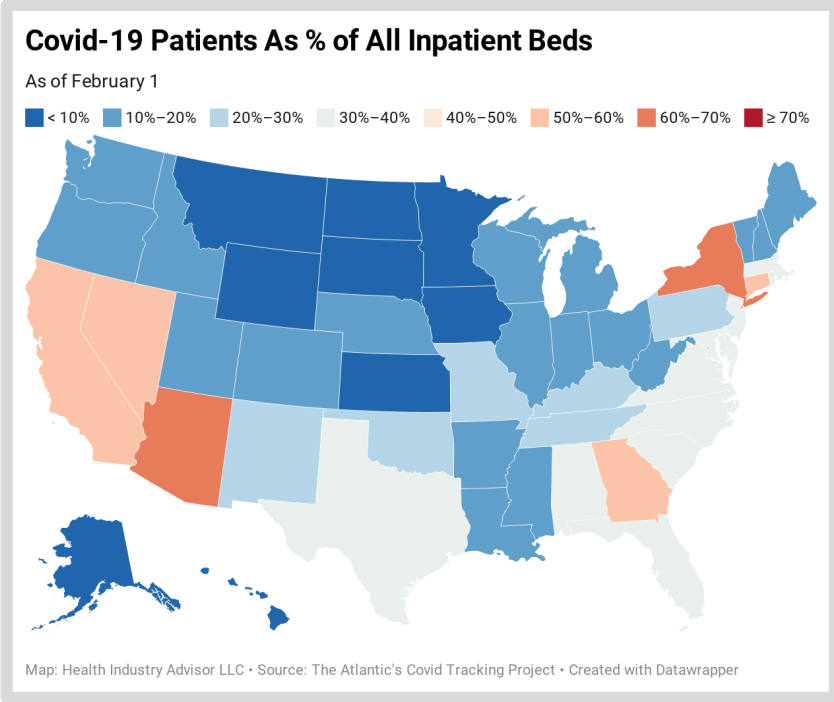
Covid-19 Hospitalizations

Covid-19 hospital census plummeted during January in all states except New York, where it held steady. Covid-19 patients occupied less than 30% of US beds yesterday; this rate was 40% four weeks ago. Current rates are concerning (50% or higher) in Arizona, California, Connecticut, Georgia, Nevada and New York

January 4



February 1



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Testing (US)

Test volume for the past seven days dropped from each of the prior three weeks. The test-positive rate, however, improved over the three preceding weeks. The improved test-positive rate strengthens the case that infections are declining

Tests / Million / Day (US)

As of February 1

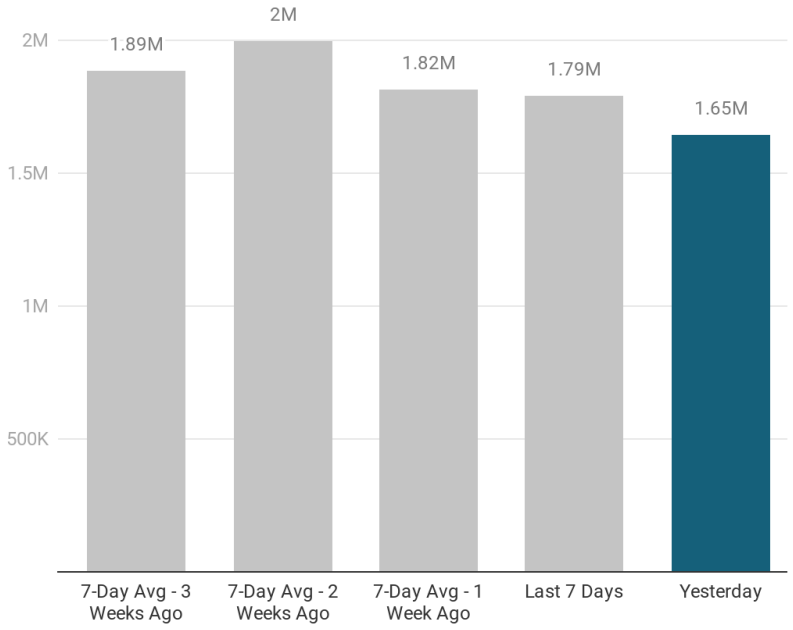

Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity Rate

As of February 1

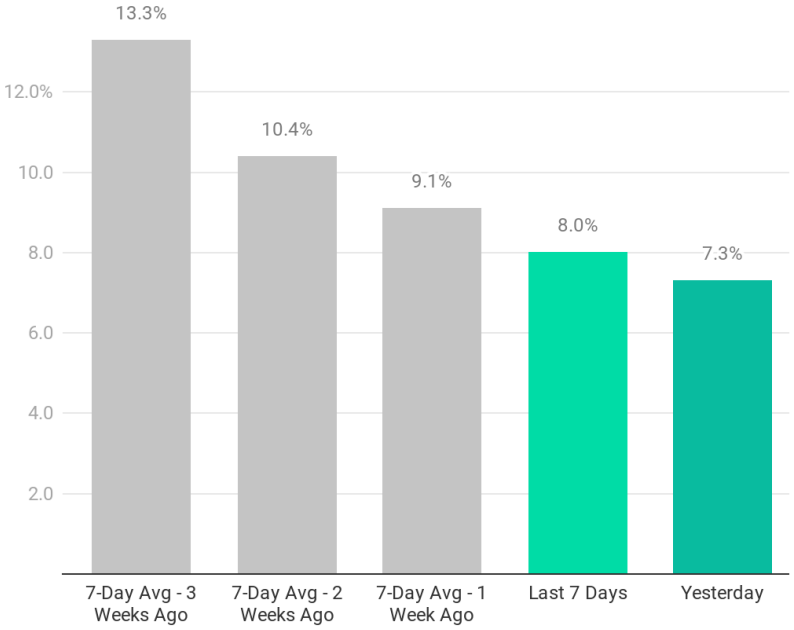

Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

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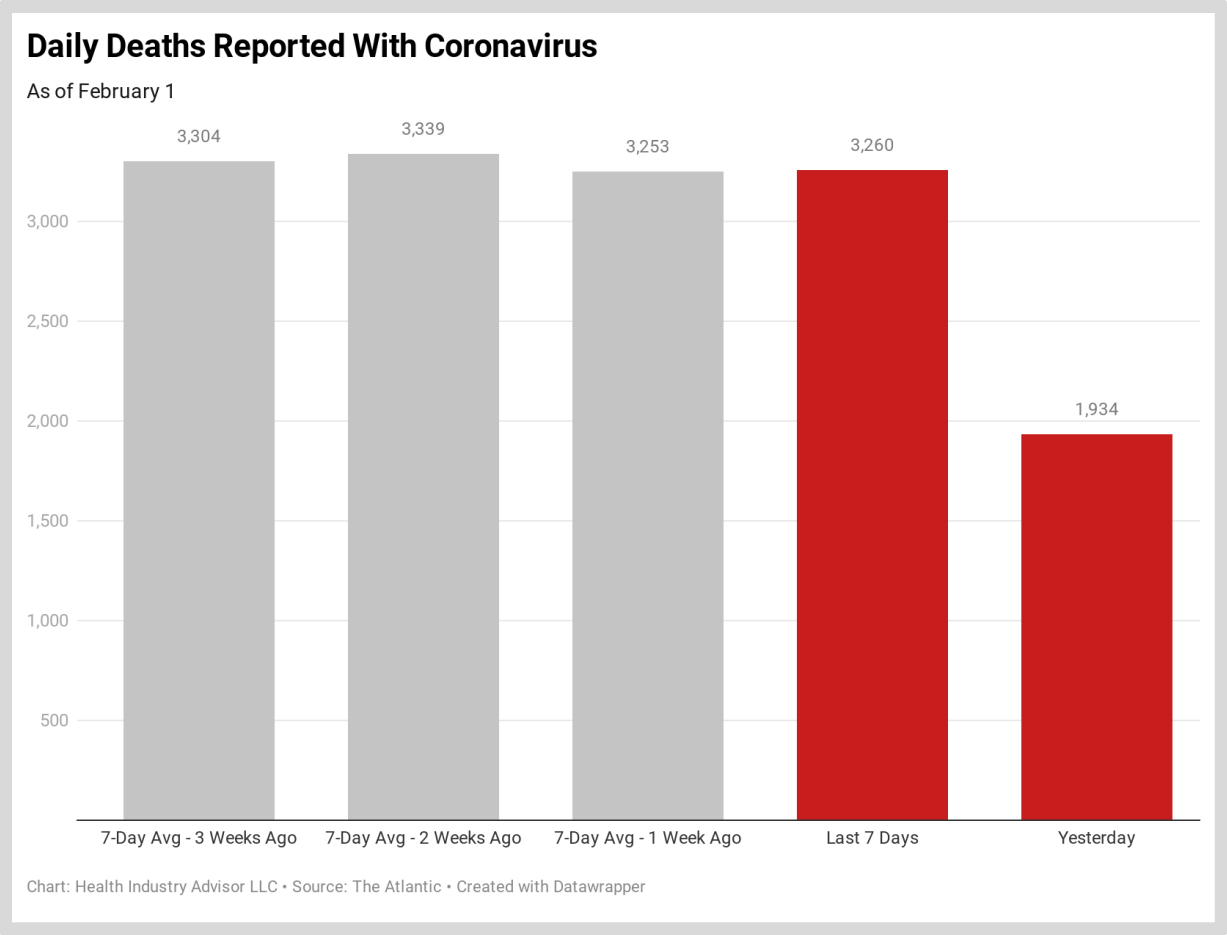
Deaths Reported With Coronavirus

The 7-day average death rate remains tragically high, despite stabilizing over the past several weeks



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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&region=United%20States&panel=mortality
- 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