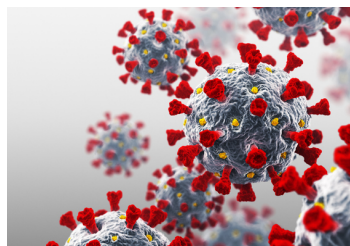


Covid-19 "Vital Signs"

Issue # 273

January 29, 2021



Vaccines

- **Johnson & Johnson (JNJ) released Phase 3 clinical trial results of its Covid-19 vaccine candidate. These results show an overall 66% efficacy and a solid safety performance. JNJ will now apply for Emergency Use Authorization (EUA), with FDA approval possible by late-February.**
- The JNJ vaccine is a crucial addition to our arsenal, as it has several advantages over the Pfizer/BioNtech and Moderna vaccines: Still, the JNJ vaccine is a crucial addition to our arsenal, as it has several advantages over the Pfizer/BioNtech and Moderna vaccines:
 - It requires only a single dose.
 - It can be distributed and stored at typical refrigeration temperatures.
 - JNJ should produce 1 billion doses in 2021.
- **This week's developments turbocharge the vaccination effort. These developments accelerate timetables for getting Americans vaccinated and for reaching herd immunity by months. The US now could vaccinate 60% of Americans nearly six months sooner; it may achieve herd immunity three-to-five months sooner**, under reasonable assumptions about vaccination pace, natural and required immunity levels, etc.

Case Rates & Hospitalizations

- While waiting for our turn to be vaccinated, **we anxiously watch for a resurgence in infections from the new variants. Thankfully, we are going in the opposite direction, as cases and Covid-19 hospitalizations are falling every day.**
- Test volumes were at or near peak levels yesterday after plateauing earlier in the month. **Test-positive rates have plummeted over the past four weeks; yesterday's rate and the rate for the past seven days were barely more than half the rate from four weeks ago.**
- **New cases have been falling for at least two weeks. Yesterday's 7-day rate was lower than it has been since November 17.** New cases yesterday were one-third lower than the number reported just two Thursdays ago. Hardest-hit states are leading this improvement: Just three weeks ago, ten states were averaging 800 or more new cases per day per million people; as of yesterday, only Arizona was above this mark. Arizona's rate, however, dropped by one-third over these three weeks.
- The stress on our nation's hospitals has eased this month too. **There were 28,000 fewer Covid-19 patients in the hospital yesterday than three weeks ago.** At that time, Arizona, California, and Nevada were devoting 70% or more of inpatients beds to Covid-19; yesterday, none of these states did so. Still, the stress from Covid-19 patient volumes remains high in at least Arizona, California, Connecticut, Georgia, Nevada, and New York.

Covid-19 "Vital Signs"

Estimated Timing of Getting Vaccinated and Reaching Herd Immunity

Developments this week may have moved up the timetable for getting 60% of Americans vaccinated by nearly 6 months and for reaching herd immunity by 3-5 months

Several developments have accelerated the timetable for Americans getting vaccinated and for reaching herd immunity from Covid-19: 1) President Biden announced an acceleration of the pace of vaccinations; 2) the government increased the contracted doses from both Pfizer/BioNtech and Moderna to 300 million from 200 million; and 3) JNJ released results from its Phase 3 clinical vaccine trial.

	60% of US Population Vaccinated (all required doses)	Herd Immunity Presuming 70% required from with vaccine or infection	
		30% Natural Immunity	35% Natural Immunity
Base Case	December 14	December 16	October 2
Improving vaccination pace	November 11	November 6	September 7
Adding 3 rd set of 100 million doses from Pfizer/BioNtech and Moderna	September 5	August 31	August 2
Adding JNJ vaccine by 3/1	June 26	July 18	June 25

This model and the dates illustrated are based on myriad assumptions including dose availability, pace of vaccinations, time between first and second doses, time from vaccination or infection to immunity, sustainability of immunity, effectiveness of the vaccines against new variants, etc.. Thus, these are presented to illustrate the impact of certain recent developments. HIA claims no responsibility for the accuracy of these estimates and no obligation to update them based on future events and circumstances.

Covid-19 "Vital Signs"

Vaccine Tracking

As of yesterday, about 27.3 million doses were reportedly administered. There were 1.65 million doses administered yesterday and an average of 1.26 million daily over the past seven days. An estimated 4 million people have received two doses

Vaccination Progress

■ First Doses Administered ■ Second Doses Administered

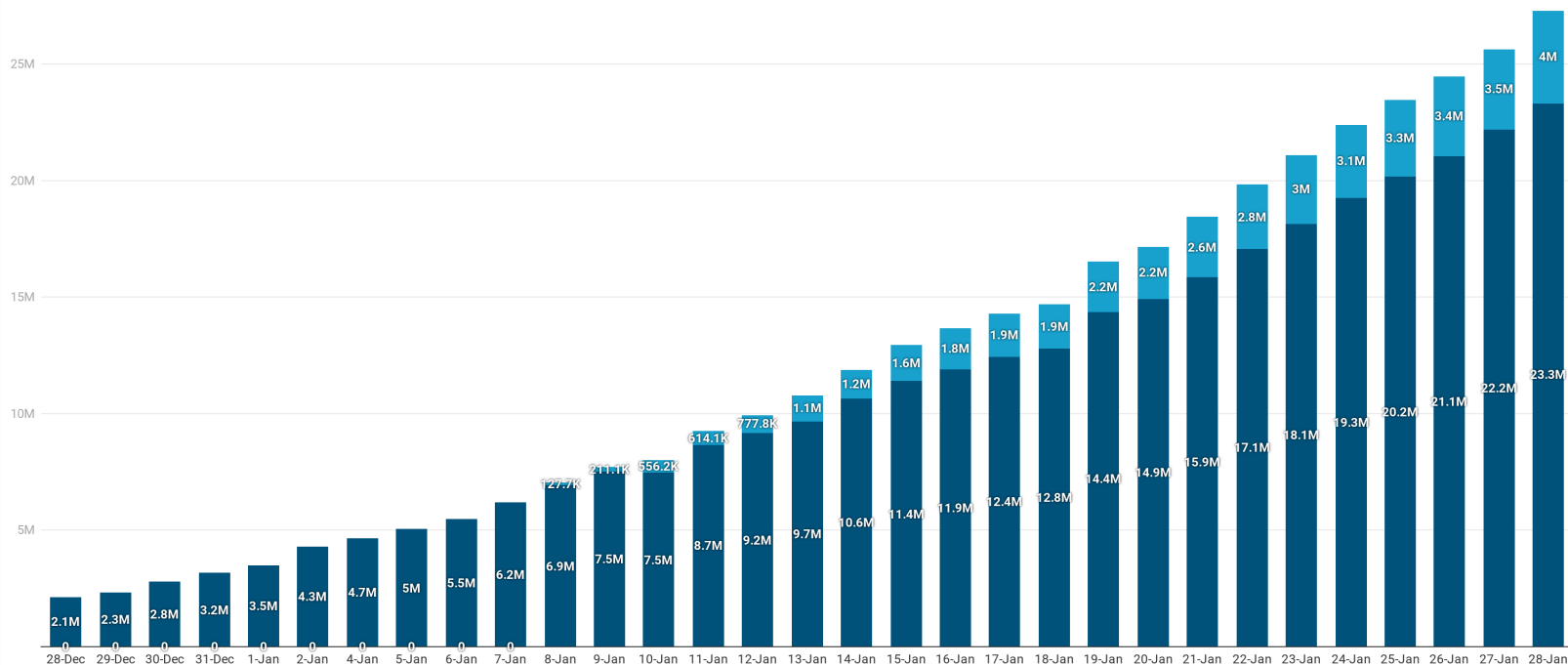


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

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

Testing (US)

Test volume finally picked up yesterday, with more than 2.1 million tests performed in the US. The test-positive rate continued its strong improvement, strengthening the case that infections are declining

Tests / Million / Day (US)

As of January 28

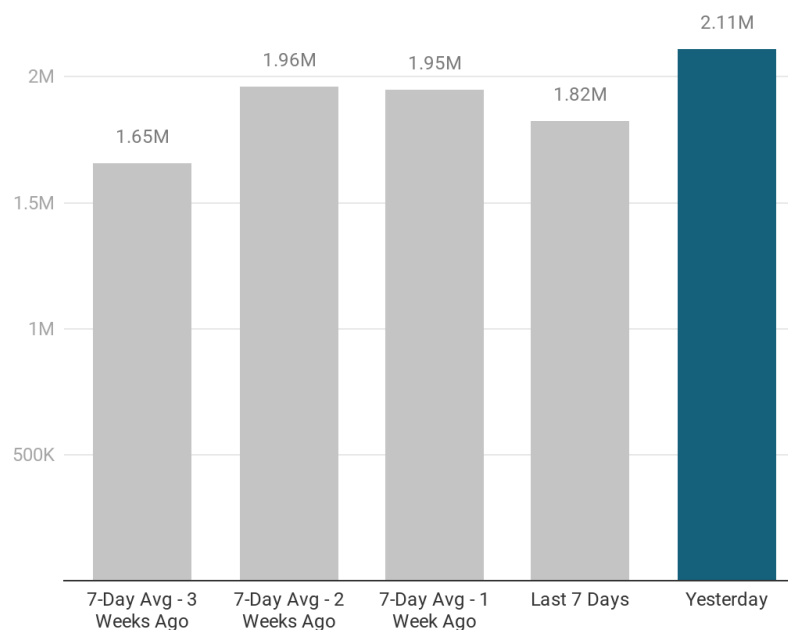


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity Rate

As of January 28

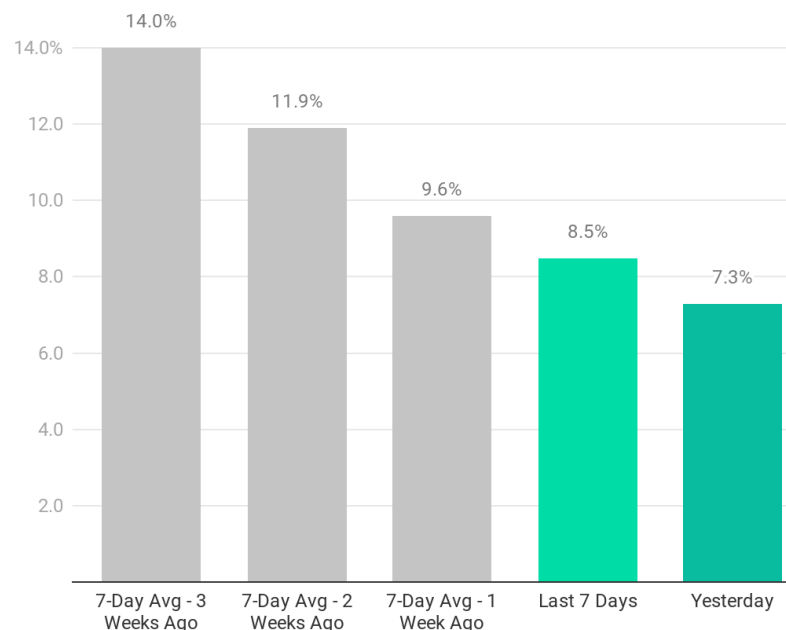
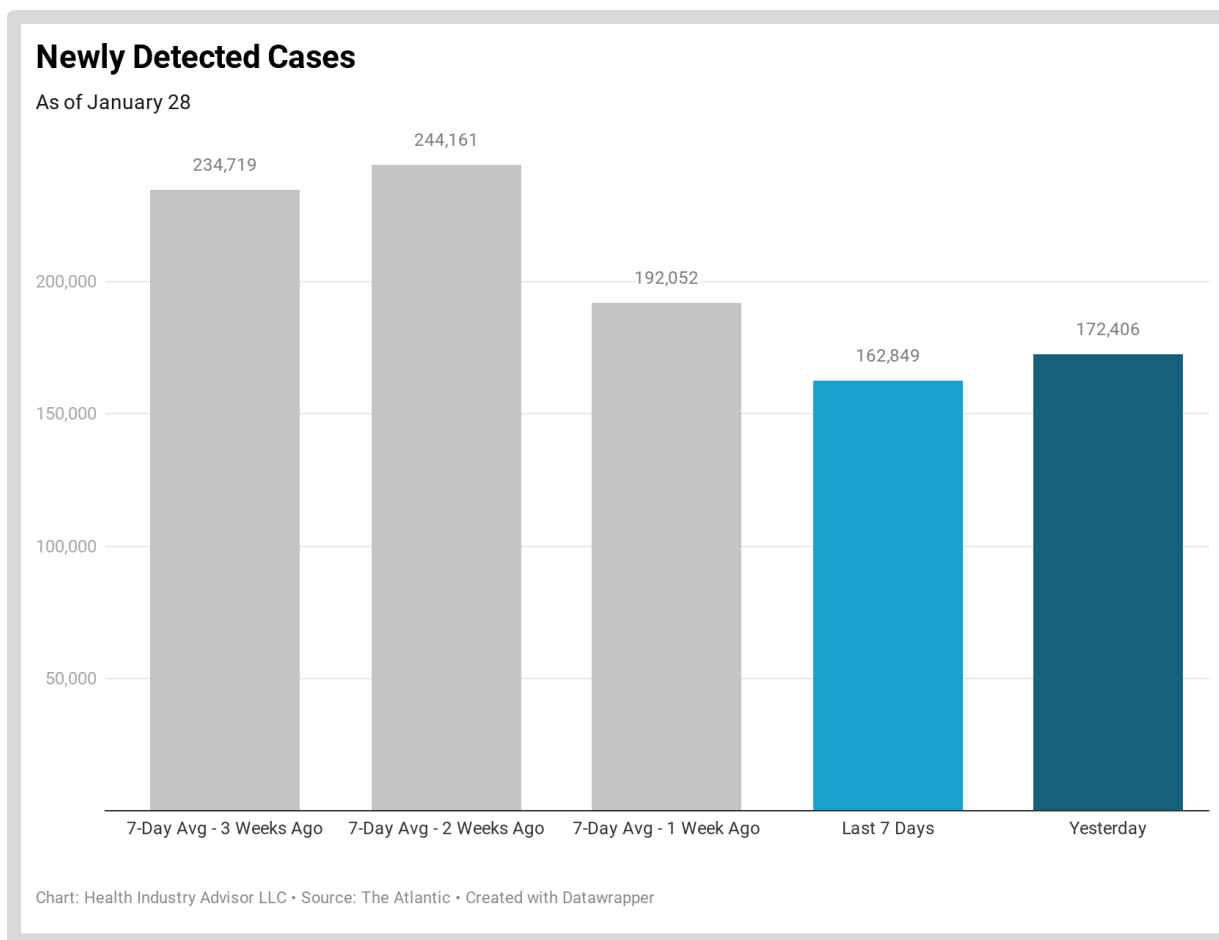


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Newly Detected Cases Per Day

The 7-day new case rate has dropped sharply from its peak two weeks ago. Reported new cases in the US yesterday were higher than the 7-day average however, this typical for a Thursday.



Covid-19 "Vital Signs"

New Cases / Million

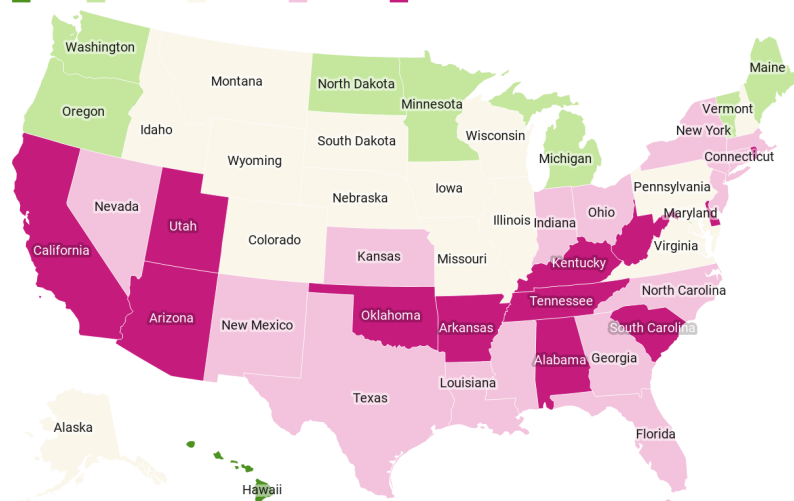
The picture of new cases per capita is substantially improved from three weeks ago

January 7

New Cases / Million

7-Day Moving Average, As of January 7

■ < 200 ■ 200-400 ■ 400-600 ■ 600-800 ■ ≥ 800



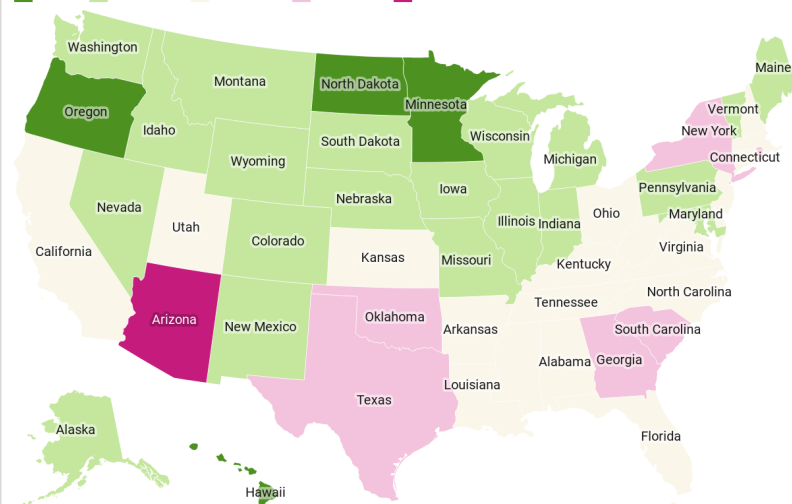
Map: Health Industry Advisor LLC • Created with Datawrapper

January 28

New Cases / Million

7-Day Moving Average, As of January 28

■ < 200 ■ 200-400 ■ 400-600 ■ 600-800 ■ ≥ 800



Map: Health Industry Advisor LLC • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

Hospitalizations have declined twenty of the past twenty-two days, dropping more by 28k (21%) in that time. Yesterday's Covid-19 census was its lowest since December 7 (despite being mid-week when census tends to peak)

Hospitalized Covid-19 Patients

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

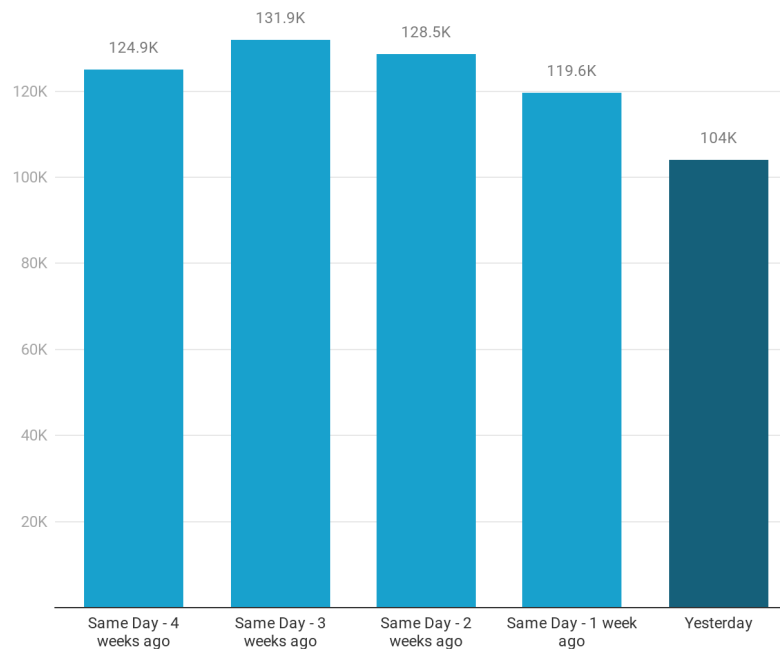


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

% in ICU - Hospitalized Covid-19 Patients

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

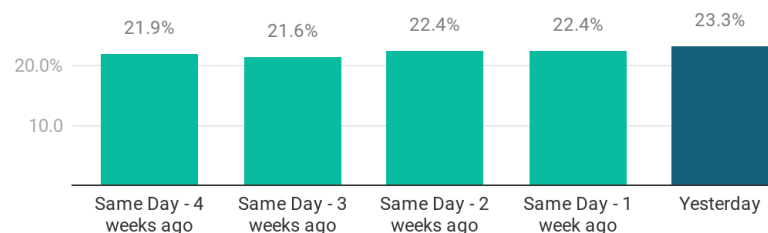


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

% on Ventilators - Hospitalized Covid-19 Patients

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

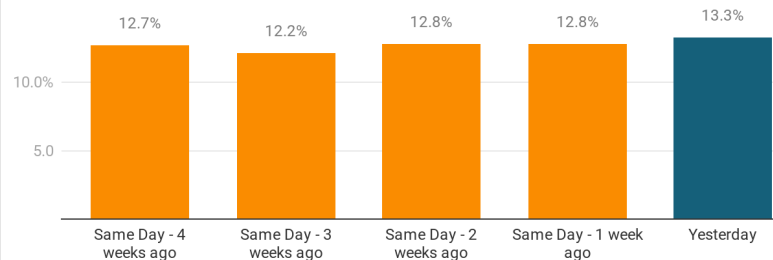


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

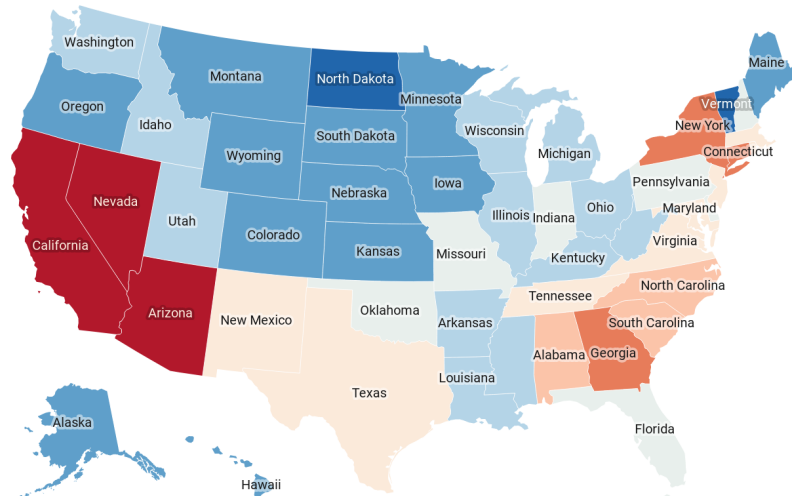
Covid-19 hospital census remains too high in Arizona, California, Connecticut, Nevada and New York and, to a lesser degree, Georgia and Nevada. Nonetheless, the picture has vastly improved over the past three weeks

January 7

Covid-19 Patients As % of All Inpatient Beds

As of January 7

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



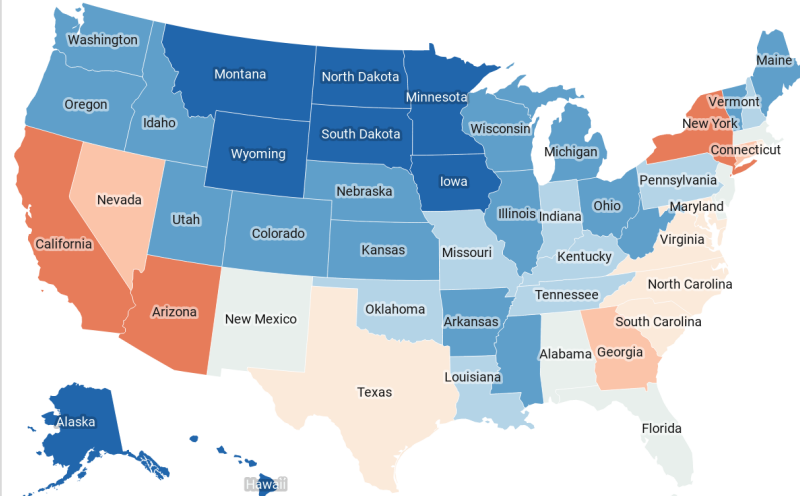
Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

January 28

Covid-19 Patients As % of All Inpatient Beds

As of January 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

Deaths Reported With Coronavirus

There were a more than 4,000 deaths reported with coronavirus again yesterday. The 7-day average death rate is above the prior week's rate and comparable to the rate from two week's ago

Daily Deaths Reported With Coronavirus

As of January 28

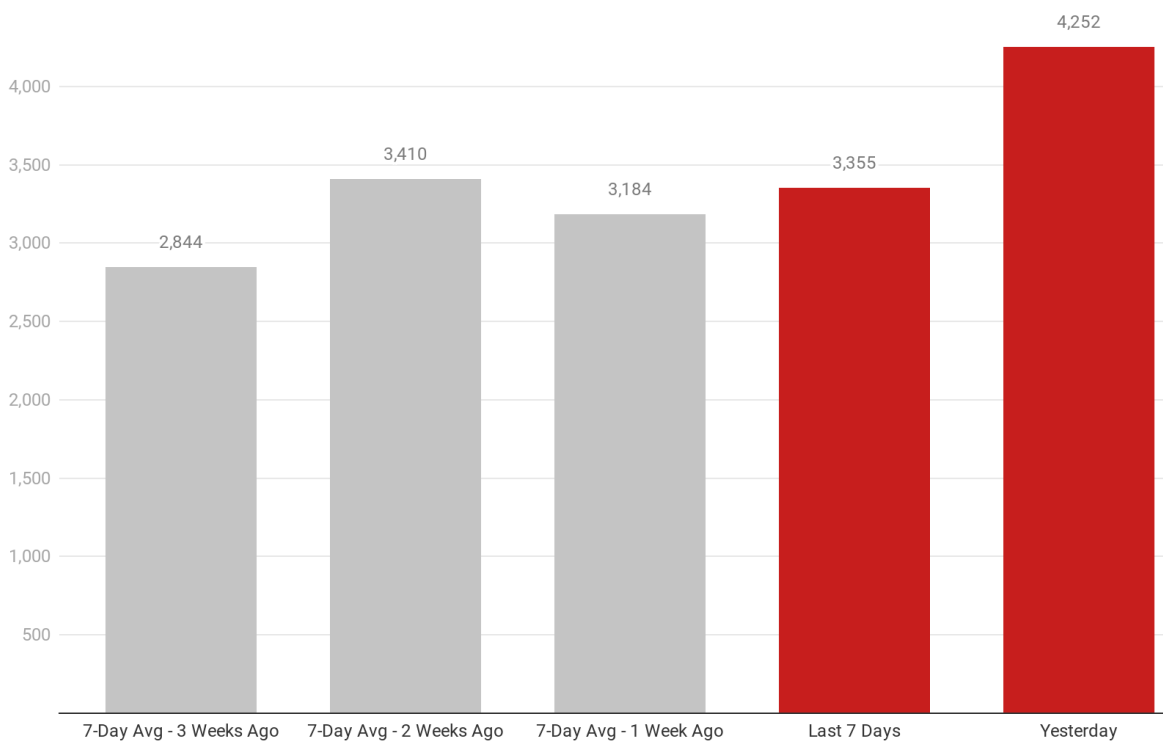


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Metro Areas in the US

The improved case rate over the past several weeks can be seen at the Metro Area-level

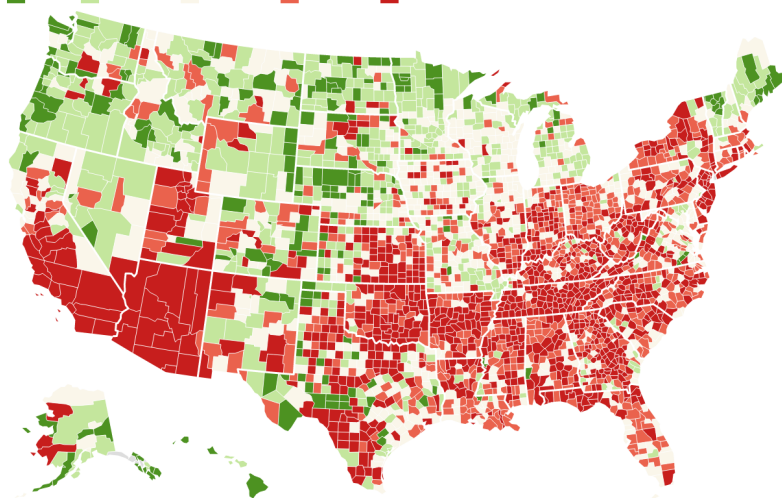
January 7

January 28

New Daily Infections / Million

7-Day Moving Average, As of January 7

< 200 200-400 400-600 600-800 ≥ 800

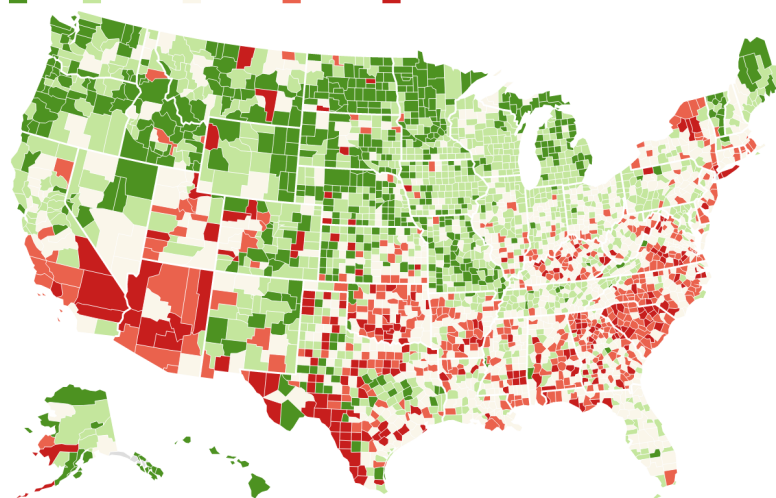


Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections / Million

7-Day Moving Average, As of January 28

< 200 200-400 400-600 600-800 ≥ 800



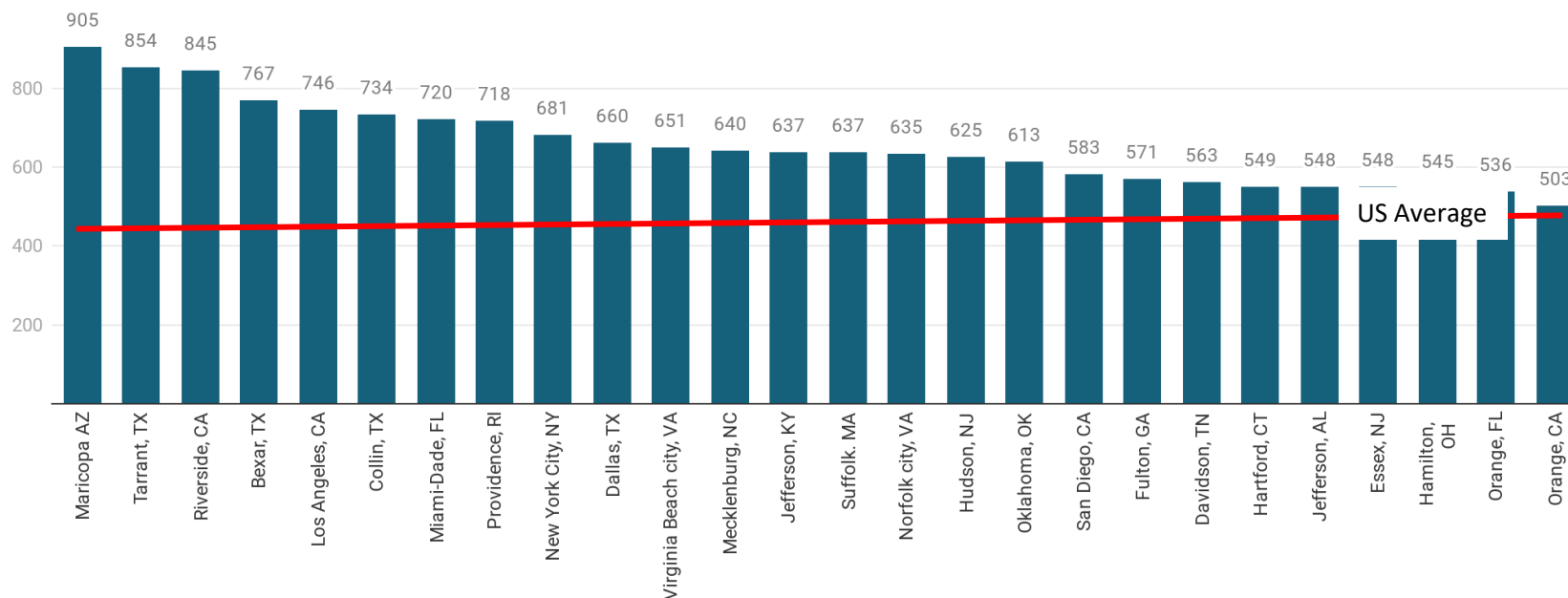
Map: Health Industry Advisor LLC • Created with Datawrapper

Large Central Metro Areas in the US

Among Large Central Metro Areas with relatively high case rates are Maricopa (AZ). Los Angeles and Riverside (CA), Bexar and Tarrant (TX), Miami-Dade, and New York City

New Daily Cases / Million Population - Large Central Metro Areas

7-Day Moving Average, As of January 28



Health Industry Advisor LLC analysis

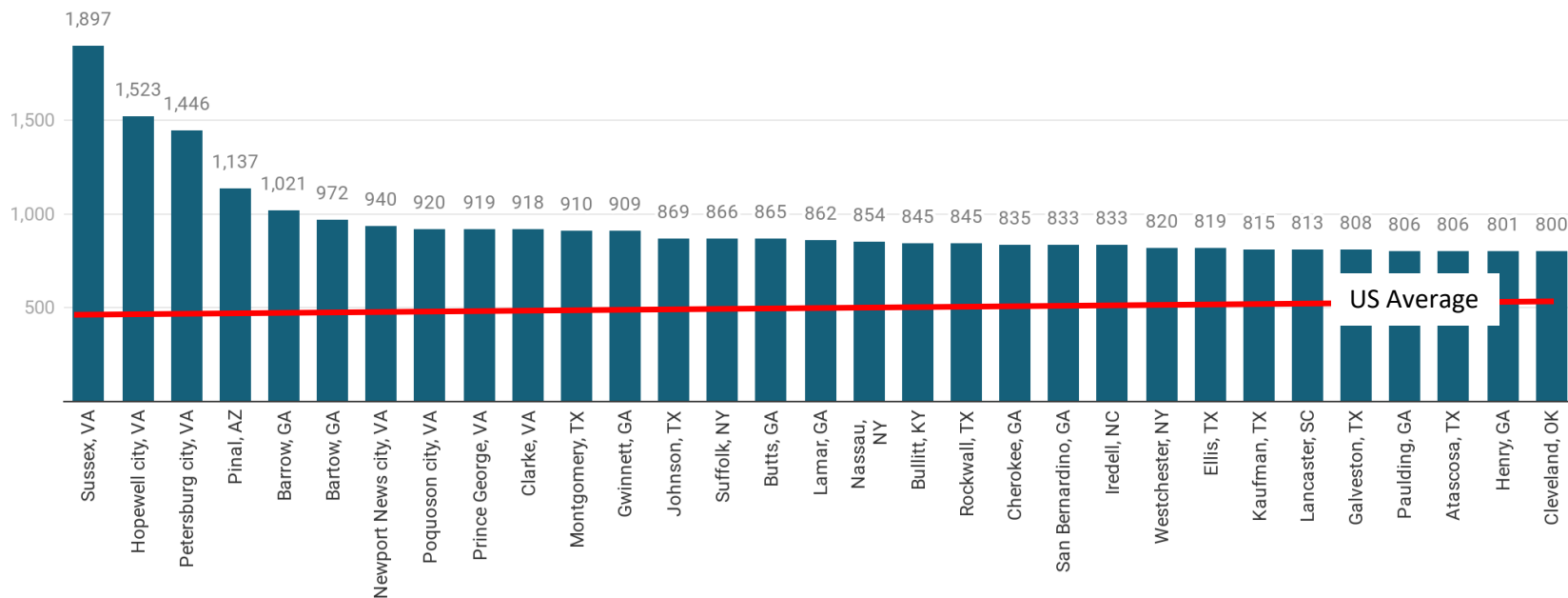
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Large Fringe Metro Areas in the US

Virginia is home to seven of the tent large fringe metro areas with the highest 7-day new case rates;

New Daily Cases / Million Population - Large Fringe Metro Areas

7-Day Moving Average, As of January 28



Health Industry Advisor LLC analysis

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

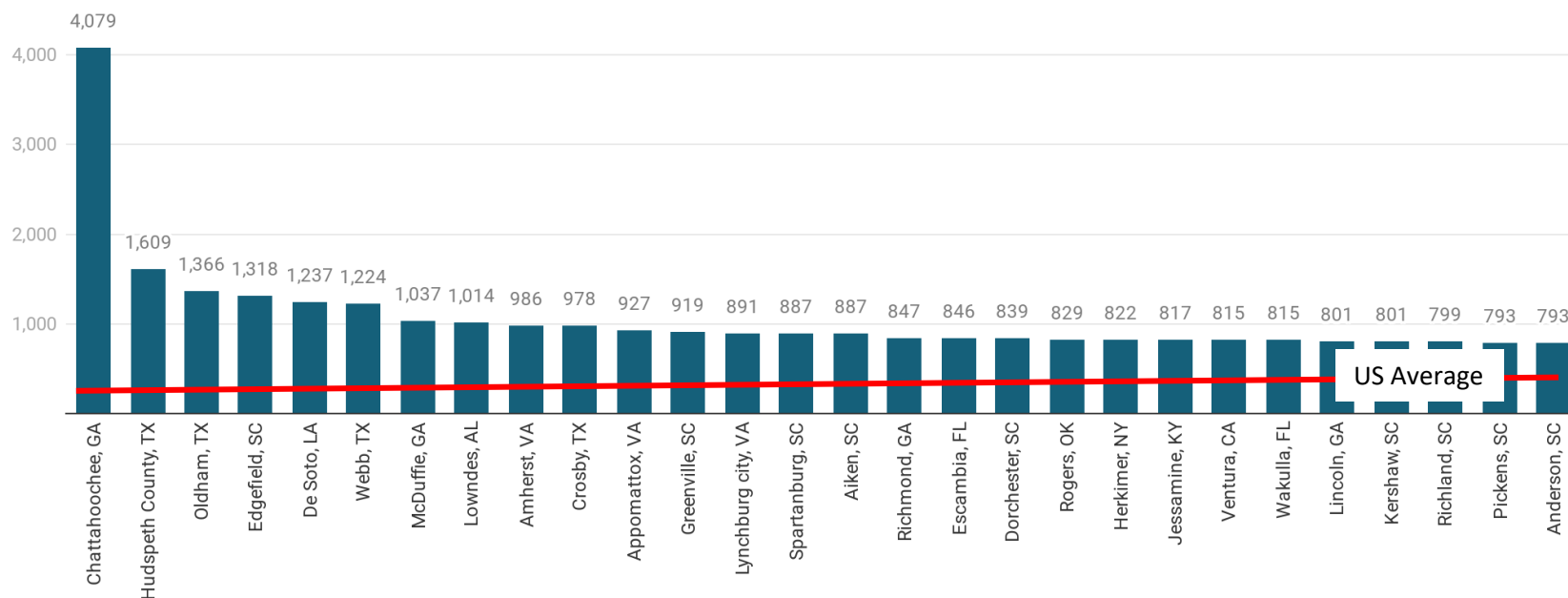
Covid-19 "Vital Signs"

Medium Metro Areas in the US

The Georgia-South Carolina-Virginia region accounted for sixteen of the twenty-five medium metro areas with the highest 7-day new case rates

New Daily Cases / Million Population - Medium Metro Areas

7-Day Moving Average, As of January 28



Health Industry Advisor LLC analysis

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

Metro Areas With Major Universities

Cleveland County, home to the University of Oklahoma, reported the highest new case rate of the 33 such areas we track; Johnson County (University of Iowa), the lowest.

Metro Areas With Major Universities: New Daily Cases / 1M Population

7-Day Average, As of January 28

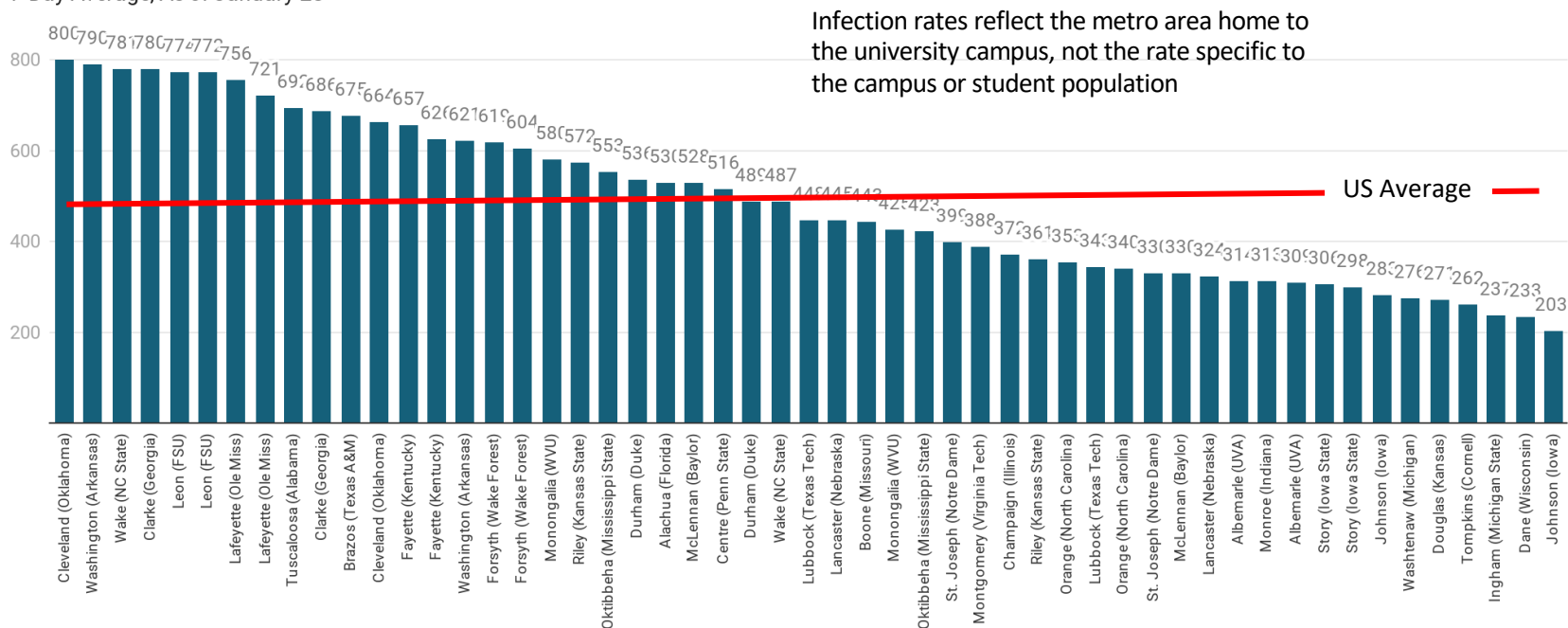


Chart: Health Industry Advisor LLC • Created with Datawrapper

Metro Areas With Major Universities

Following the national pattern, new case rates declined week-over-week in twenty-one of the thirty-three metro areas that we track. Wake County, home of the North Carolina State University and Riley County, home to North Carolina State University reported the sharpest decline; Tuscaloosa County (University of Alabama) the sharpest increase

Metro Areas With Major Universities: Week-Over-Week Change In New Daily Cases / 1M Population

7-Day Average, January 28 v. January 21

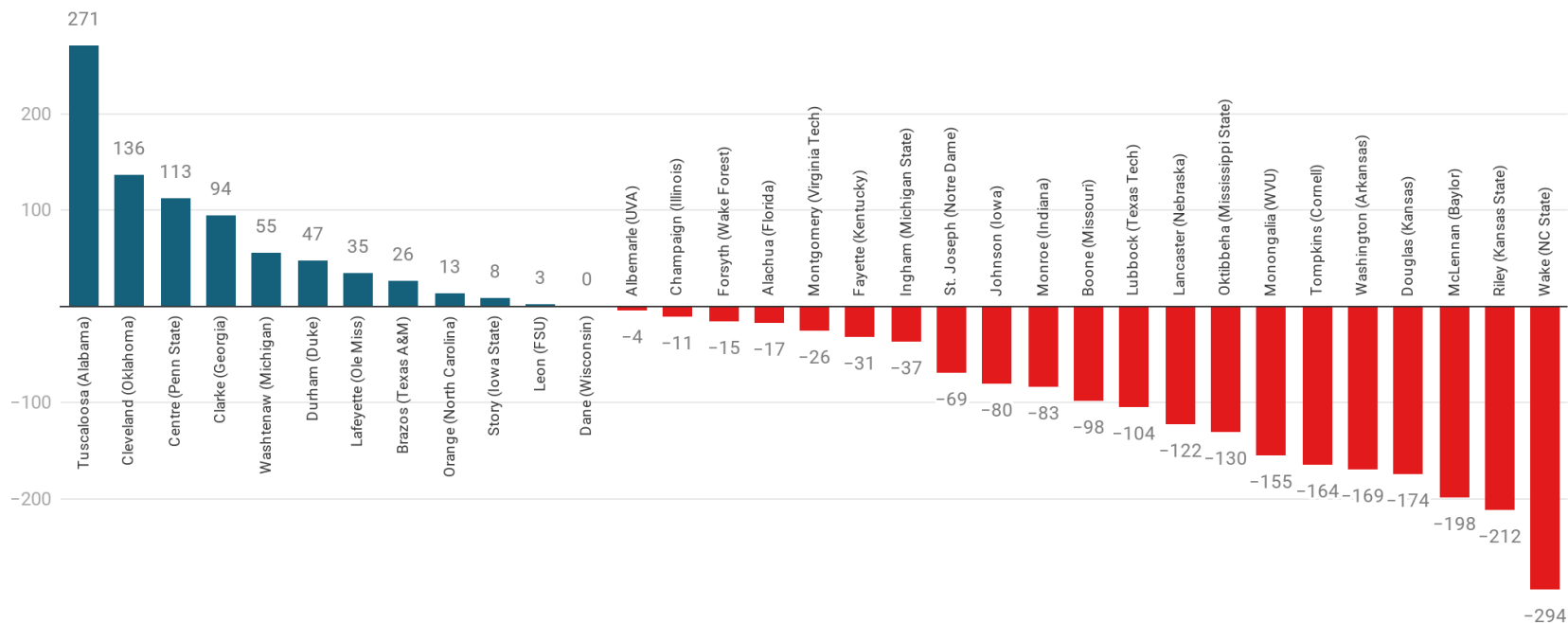


Chart: Health Industry Advisor LLC • Created with Datawrapper

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>