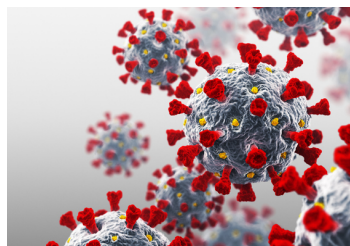


Covid-19 "Vital Signs"

Issue # 278

February 4, 2021

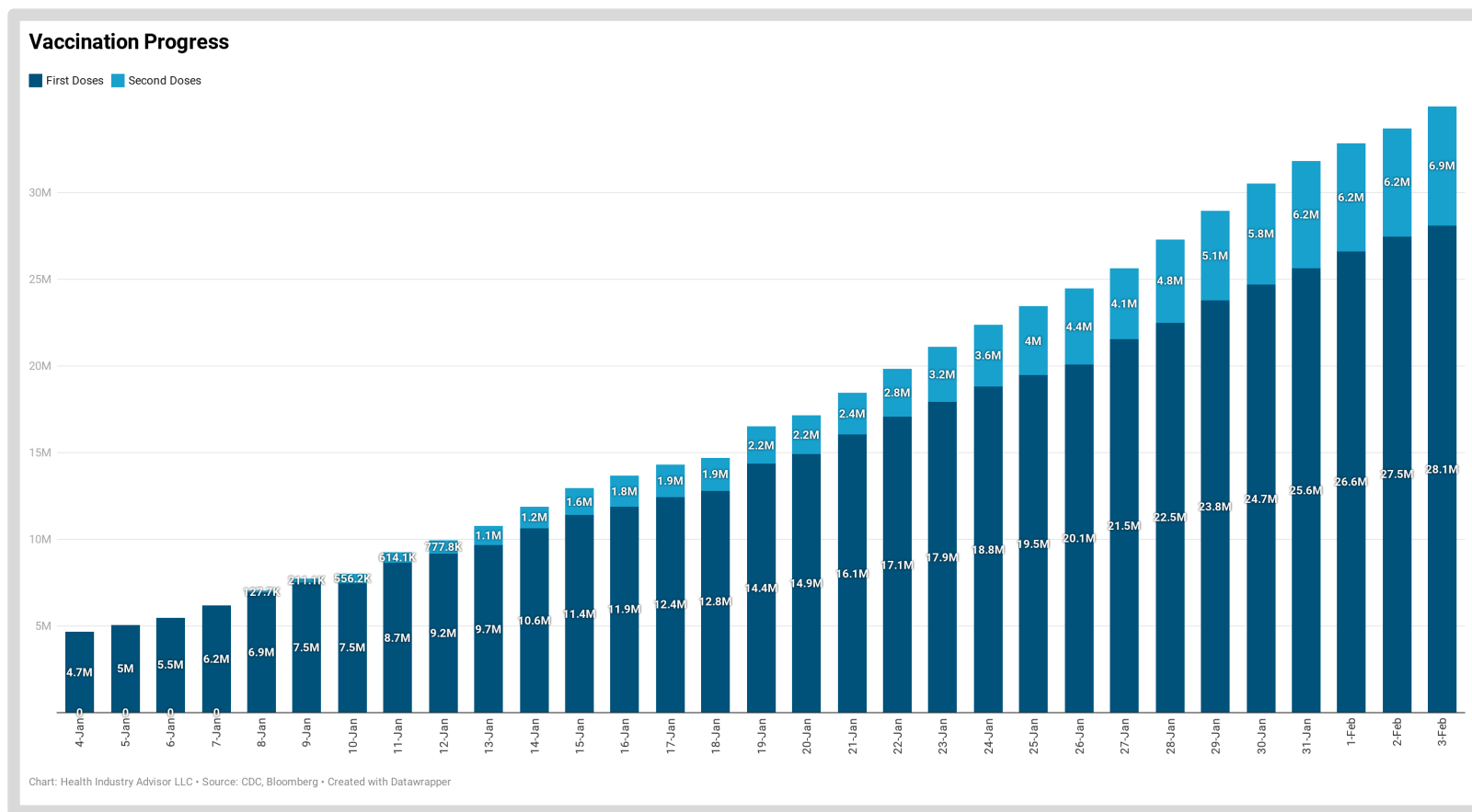


- The burden on US hospitals has tempered in the last month and should diminish further this month:
 - **Covid-19 patient census dropped by 41,000 in four weeks (31%).** Yesterday's census was lower than on any day since November 27;
 - **The number of ICU and ventilator patients fell by about 25% in the past four weeks;**
 - Four weeks ago, Arizona, California, and Nevada devoted more than 70% of inpatient beds to Covid-19 patients; As of yesterday, these states cut this to less than 60%; New York committed more than 60% of its beds to Covid-19 patients yesterday, the only state above this rate. For the US, this rate fell to 29%, from 42% four weeks ago;
 - **Projected hospital admissions plummet during February in every state except Vermont, according to the ensemble forecast published yesterday by the CDC; for the US, projected admissions drop 30% this month.**
- Vaccinations picked up yesterday, but the impact thus far on immunity remains low:
 - **The US vaccinated 1.3 million people yesterday;** to date, we have administered 32.5 million doses. Nearly 7 million Americans have received two doses;
 - **With the lag between vaccination and immunity, only 3% of Americans may have gained immunity via vaccination thus far;** Alaska and West Virginia are setting the pace here, with 5.6% and 5% of residents now immune via vaccination, respectively.
- Estimated immunity is rising across the US but, herd immunity is still months away:
 - **For the US, estimated immunity is nearing 29%;**
 - South Dakota leads the country, with estimated immunity reaching 44%; North Dakota is at 40%;
- Estimated immunity exceeds one-in-three residents in Arizona, Arkansas, Mississippi, Nebraska, New Jersey, New York, North Dakota, Oklahoma, Rhode Island, South Dakota, Tennessee, and Wisconsin;
- These estimates assume that immunity is sustainable, even as new variants emerge
- Covid-19 testing reflects the drop in new infections:
 - Test volume dropped each of the past two weeks, receding about 13% in that time;
 - **The test-positive rate improved, however, dropping by more than 35% in the past three weeks;**
 - Could these reflect diminishing suspicion of possible infections and fewer Covid-19 like symptoms?
- New cases continue falling in the US:
 - **The 7-day new case rate has declined twenty-two straight days; yesterday's rate was lower than any day since November 12;**
 - This rate has declined 44% in the past four weeks; during this time, the rate outside the US has fallen 25%;
 - **Rates have declined in every state since early-January.** States hardest hit in early-January - Arizona, Arkansas, California, Oklahoma, South Carolina, Tennessee, Utah, and West Virginia - have made remarkable progress since. South Carolina and Texas now have the highest rates in the country.
- Deaths with Covid-19 remain too high but, these may have begun to decline:
 - **Deaths averaged 3,150 per day over the past week, down 8% week-over-week.**

Covid-19 "Vital Signs"

Vaccine Tracking

1.3 million doses were administered in the US yesterday. To date, the US has administered 32.5 million doses, with 6.9 million people having received two doses.



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

Covid-19 "Vital Signs"

Newly Detected Cases / Million - US

Newly detected cases (7-day average) in the US have now declined on twenty-three straight days. – dropping a remarkable 44% in that time. This rate is as low as it has been since November 12

Newly-Detected Cases / Million - US

7-Day Moving Average

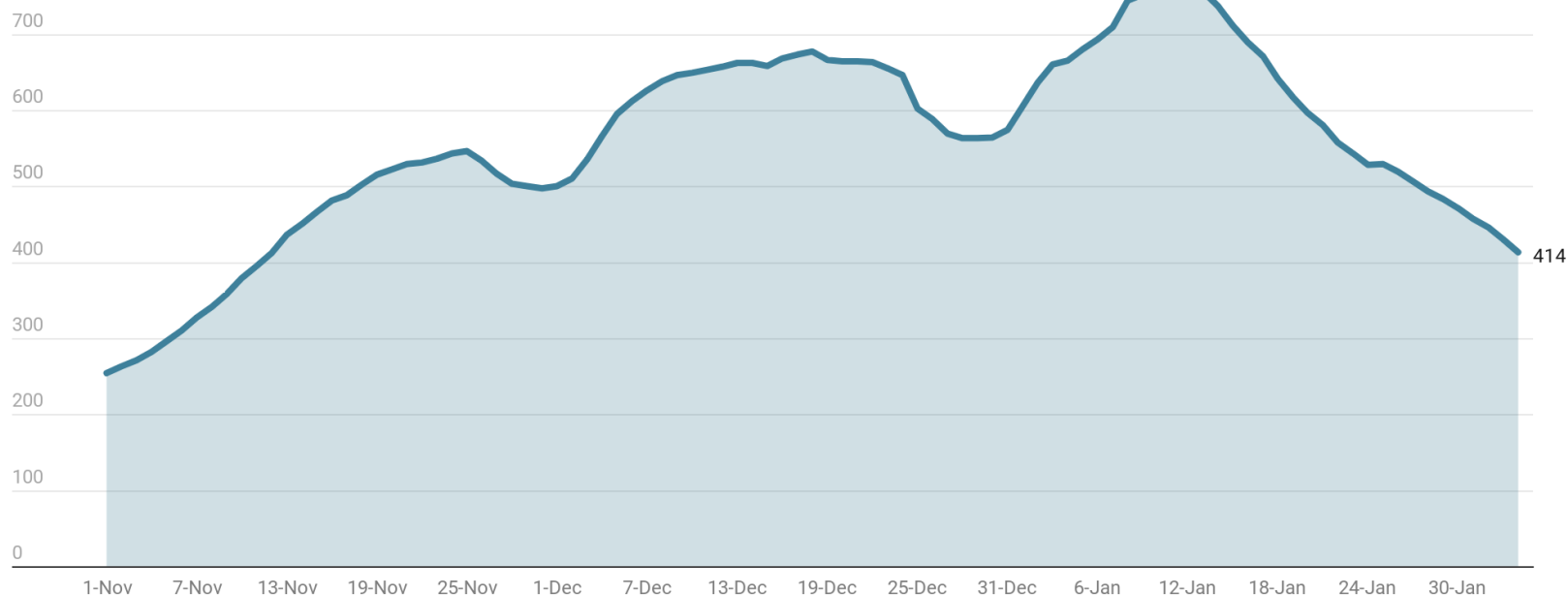


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases Per Day

The US 7-day new case rate plunged by 46% over the past three weeks. Outside the US, this rate dropped 25% during this three-week period

Newly Detected Cases Per Day

As of February 3

United States Outside the US

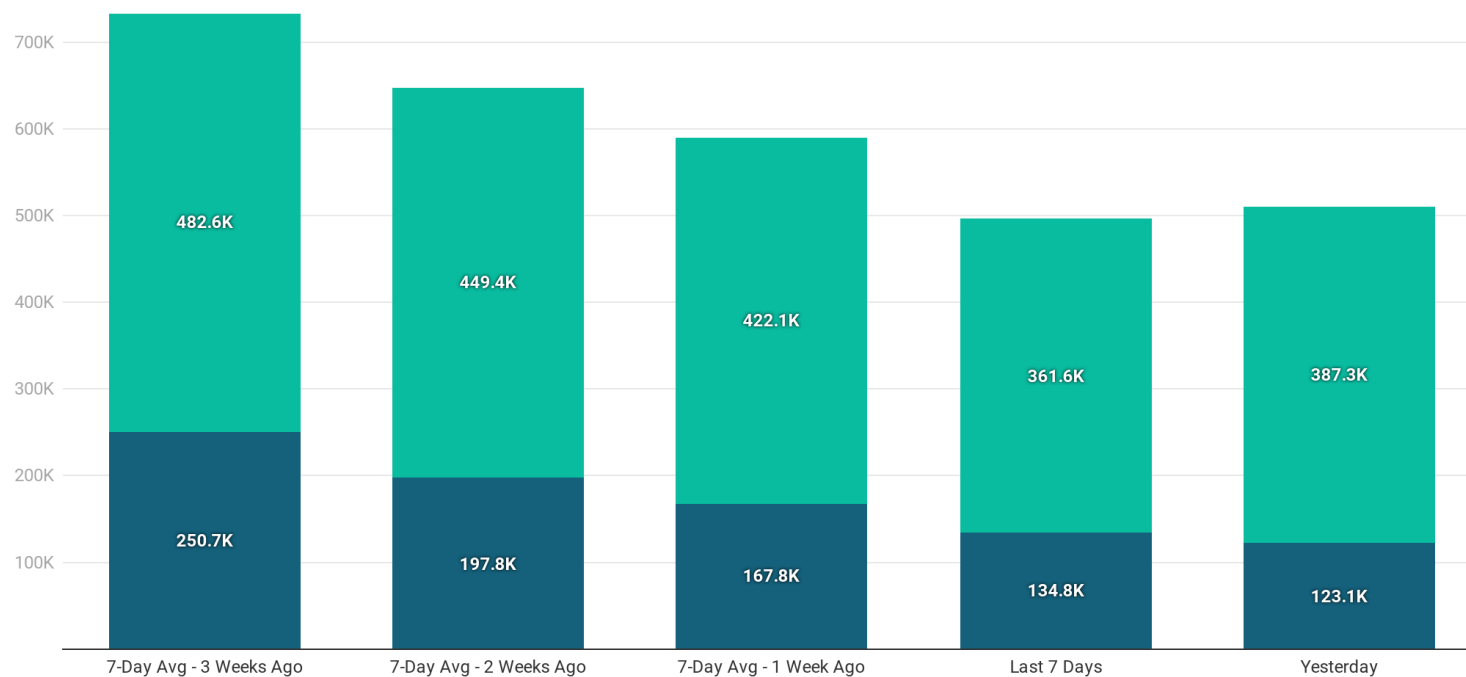


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

Covid-19 hospitalizations are plunging, with nearly 41k fewer patients yesterday than on January 6 (31%). Yesterday's Covid-19 census was lower than any day since November 27. ICU and ventilator days have dropped ~25% each in the past three weeks

Hospitalized Covid-19 Patients

Compared to Same Day, Prior Weeks, As of February 3

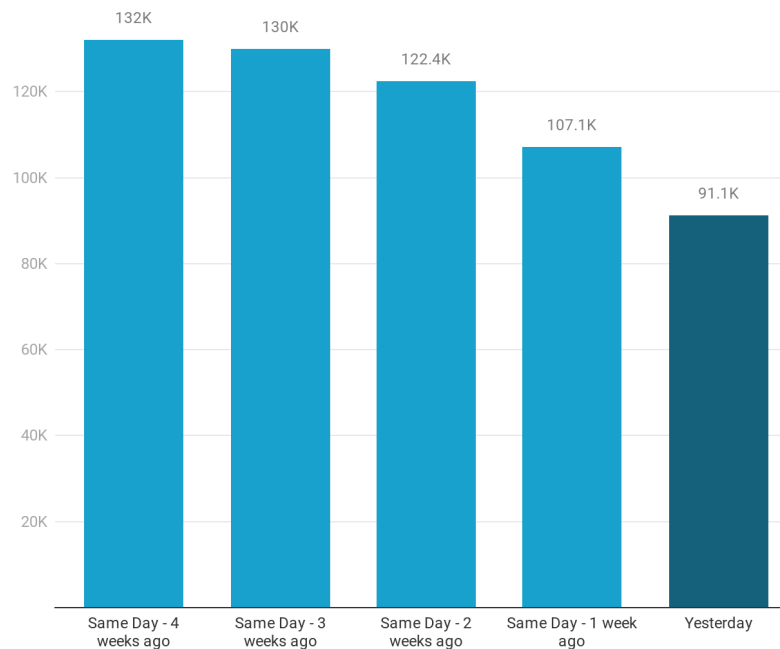


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients in the ICU

Compared to Same Day, Prior Weeks, As of February 3

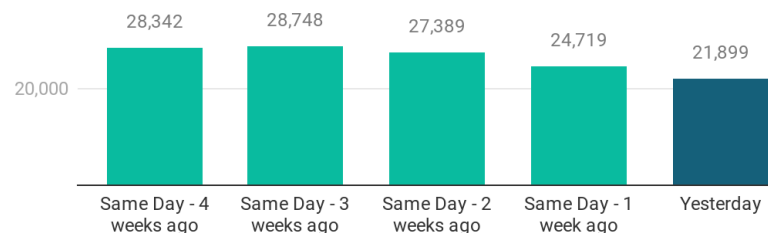


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 Patients on Ventilators

Compared to Same Day, Prior Weeks, As of February 3

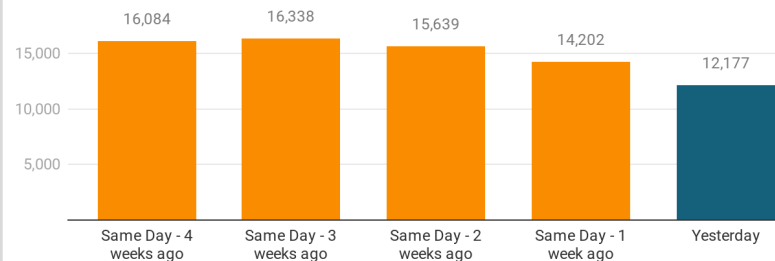


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

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

Tests / Million / Day (US)

As of February 3

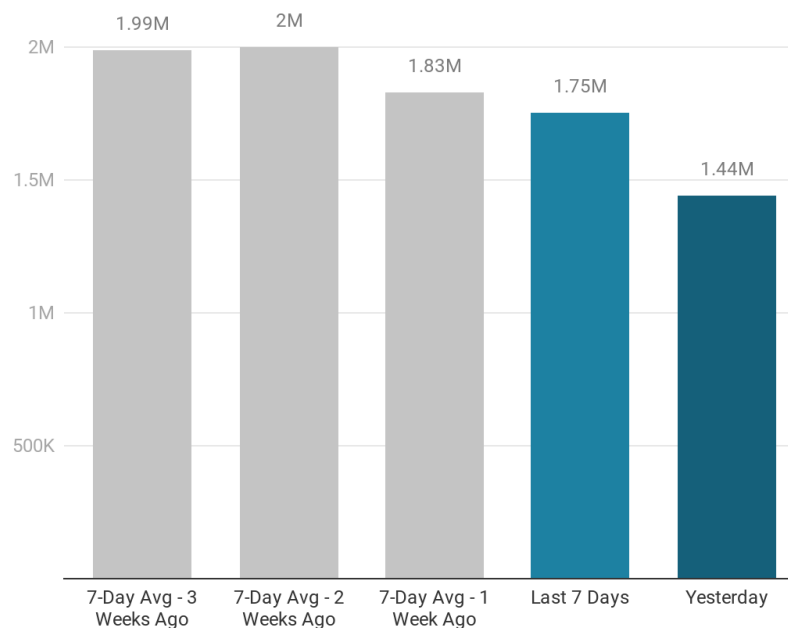


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity Rate

As of February 3

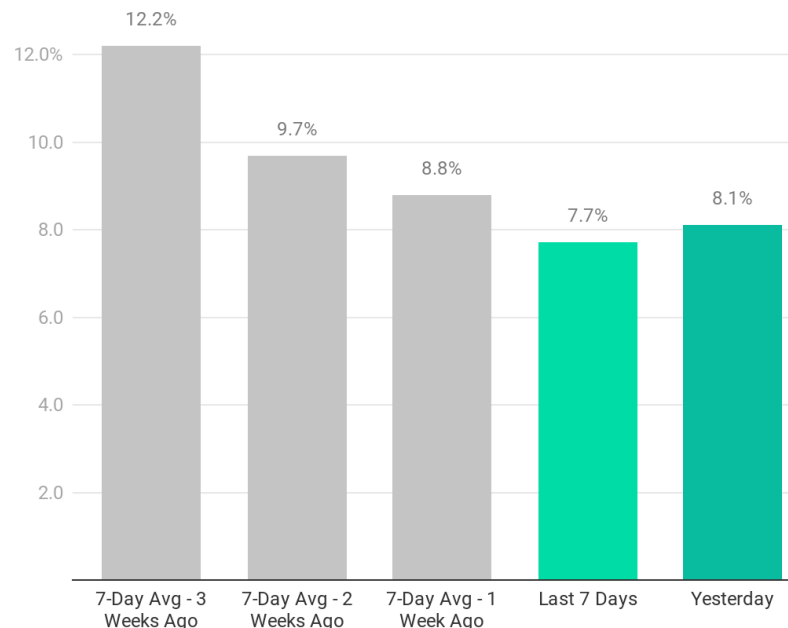
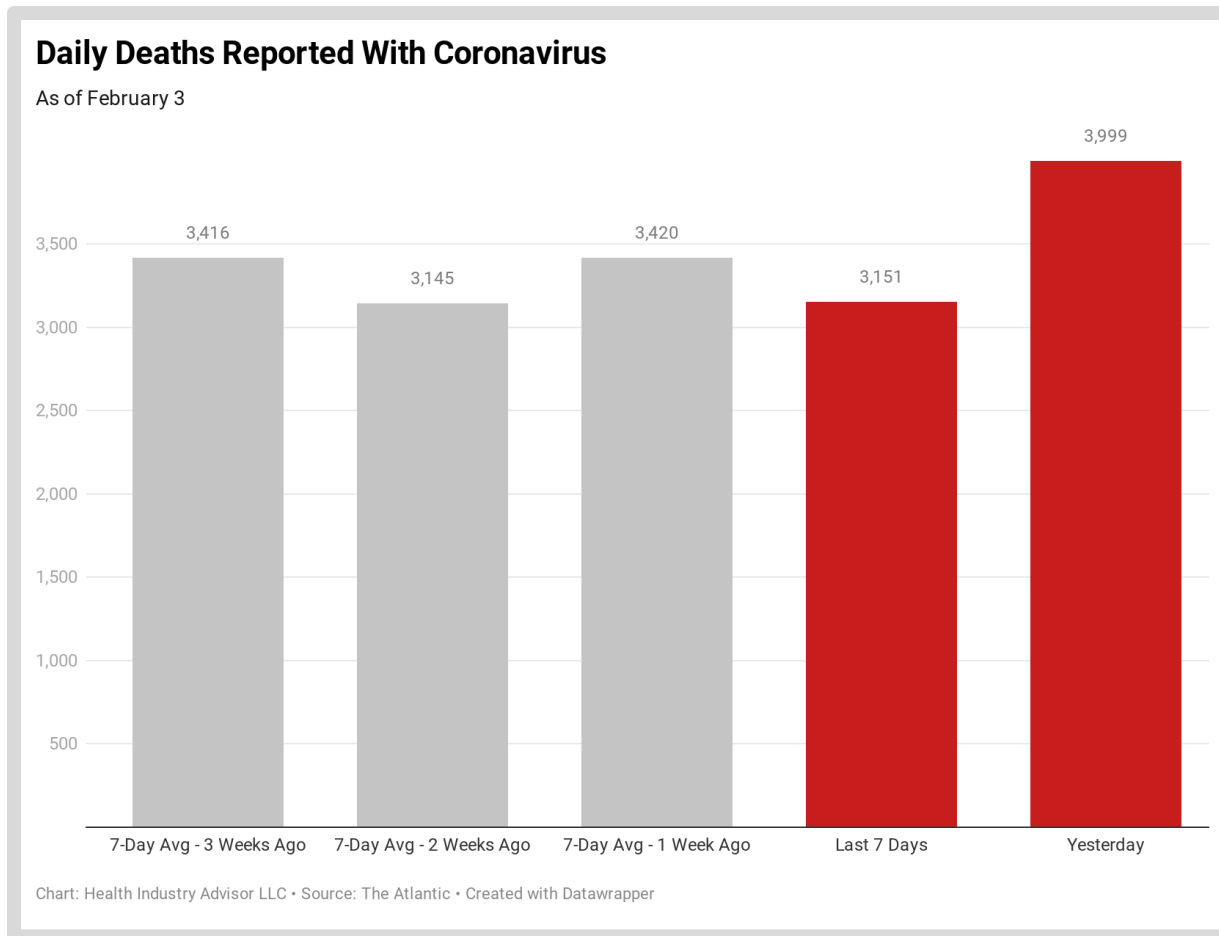


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Deaths Reported With Coronavirus

The 7-day average death rate inched lower compared to one week ago



Covid-19
"Vital Signs"

State-By-State Scorecard: Scoring Grid

Designed to reflect five critical measures of a state's current experience with Covid-19

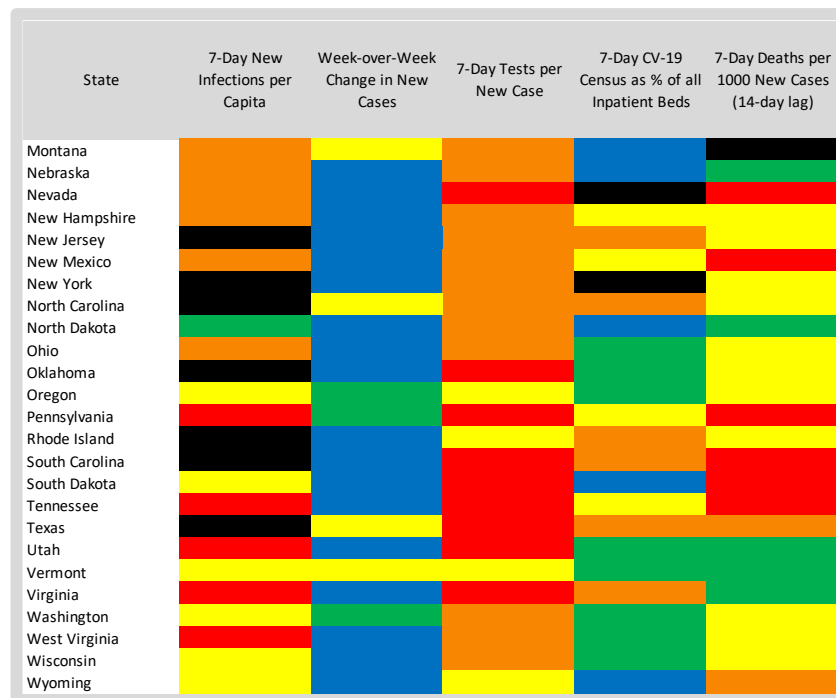
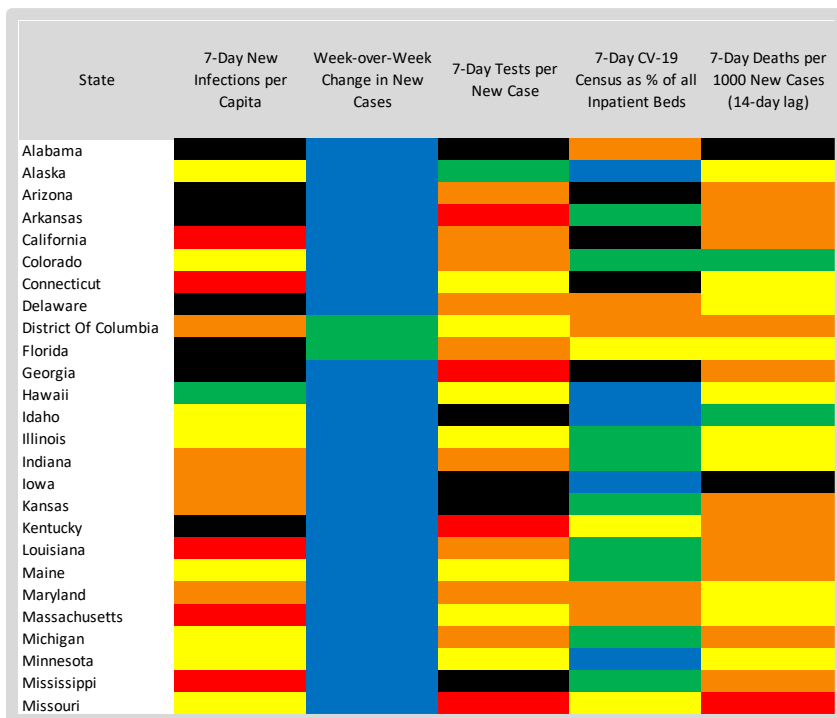


Metric		Black	Red	Orange	Yellow	Green	Blue
7-Day Average New Daily Reported Infections per Capita	Greater than	450	350	250	150	50	0
Week-over-Week Change in Newly Reported Cases	Greater than	30%	20%	10%	0%	-10%	N/A
7-Day Average Viral Tests per 7-Day Average Newly Reported Cases	Less than	5	10	25	50	75	N/A
Covid-19 Inpatient Census as % of All Inpatient Beds	Greater than	50%	40%	30%	20%	10%	0%
7-Day Deaths per 1000 New Cases (14-day lag)	Greater than	25	20	15	10	5	0

Covid-19 "Vital Signs"

State-By-State Scorecard:

Overall, new case rates remain too high across many parts of the country; however, the week-over-week changes in new cases are encouraging. The hospital crisis may be concentrated in a handful of states



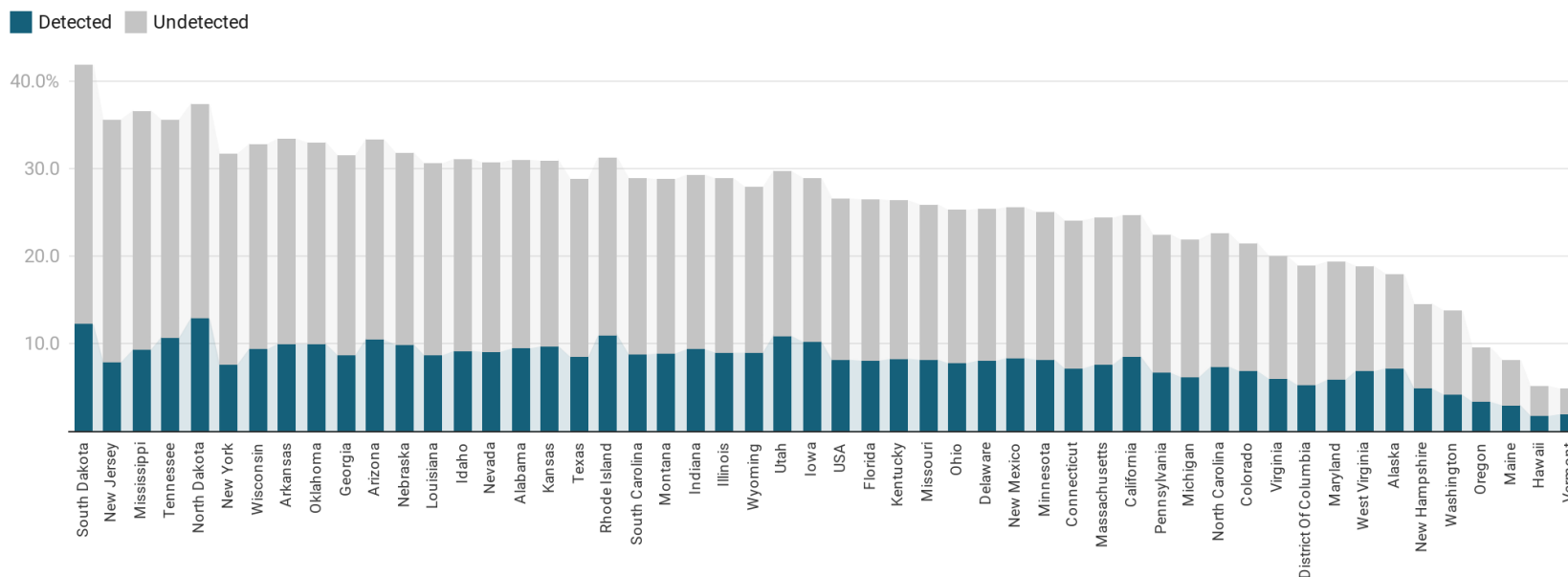
Covid-19 "Vital Signs"

Infection Prevalence By State

*South Dakota leads the country in estimated % of residents infected, at 42%;
Estimated infection prevalence exceeds 30% in eighteen states*

Infection Prevalence

% of Population Infected - Detected & Undetected, As of February 3



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

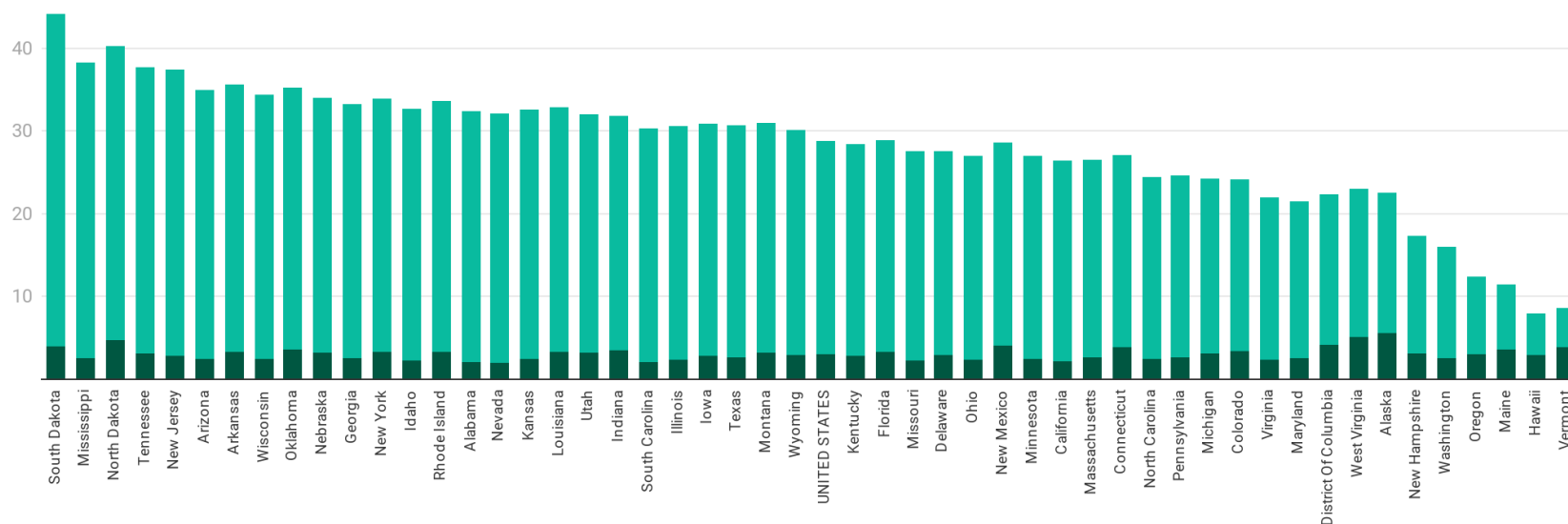
The US is nearing 29% immunity, mostly via infections. South Dakota residents exceed 44% immunity, with North Dakota residents at 40%. At least one-in-three residents may have immunity in twelve states

Estimated Immunity Levels

*Youyang Gu: Covid-19projections.com

As of February 3

■ 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

New cases rates tumbled in January across the country, particularly in states hard-hit early in January. Rates remain highest in South Carolina and Texas

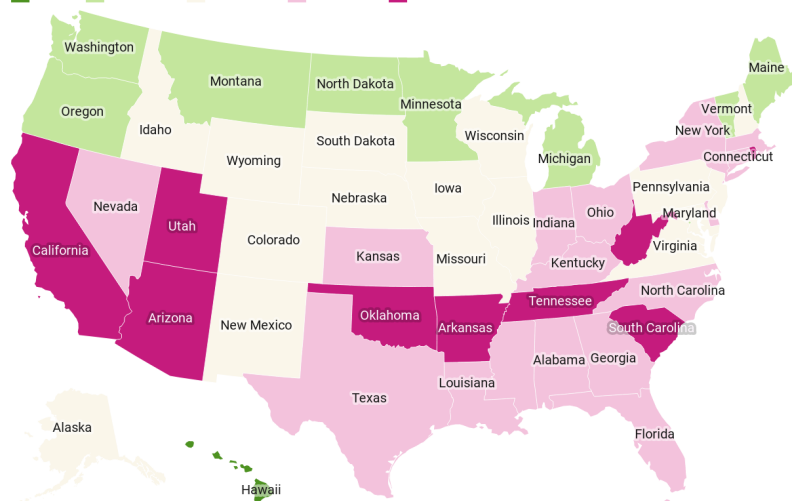
January 6

February 3

New Cases / Million

7-Day Moving Average, As of January 6

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

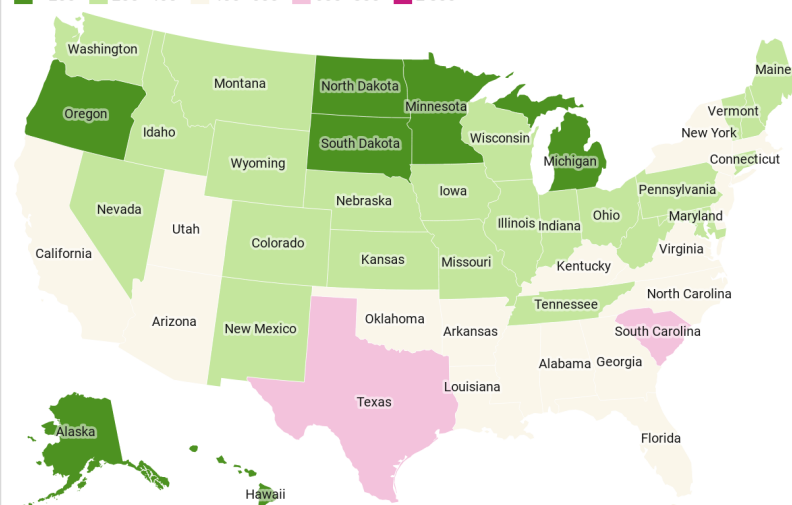


Map: Health Industry Advisor LLC • Created with Datawrapper

New Cases / Million

7-Day Moving Average, As of February 3

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



Map: Health Industry Advisor LLC • Created with Datawrapper

Newly Detected Cases Per Million

Rates dropped in nearly every state since early January

Alabama - California

Colorado – Georgia

Newly Detected Cases / Million

7-day Average



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

Newly Detected Cases / Million

7-day Average

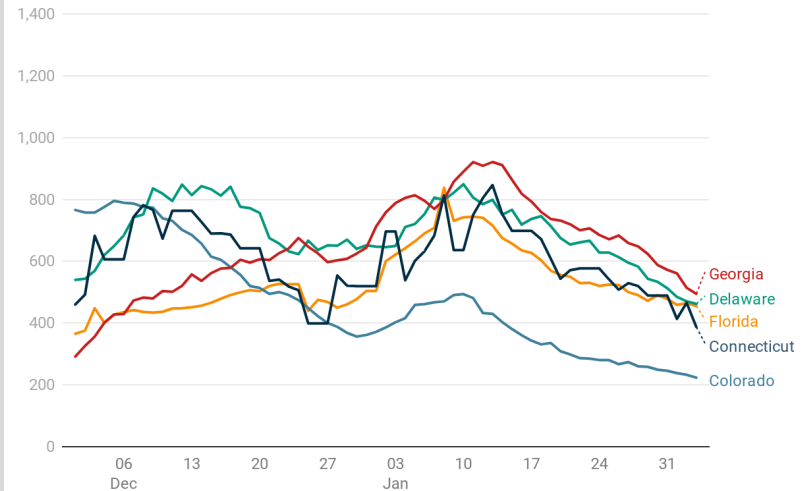


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases Per Million

Rates dropped in nearly every state since early January

Hawaii - Iowa

Louisiana - Maryland

Newly Detected Cases / Million

7-day Average

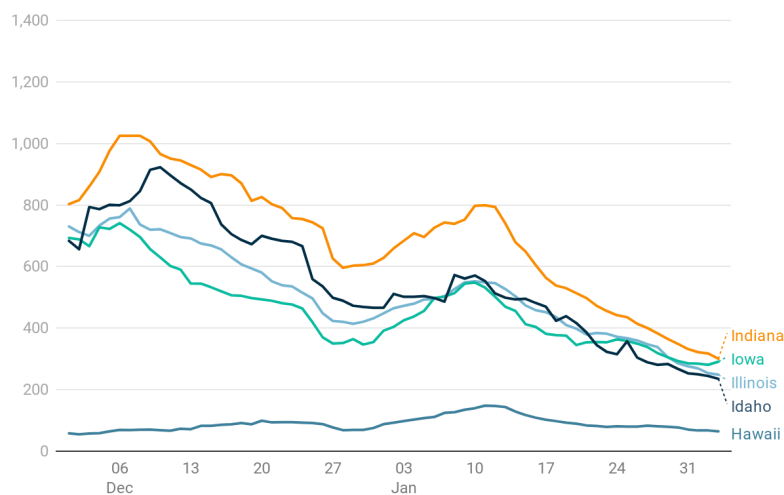


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases / Million

7-day Average

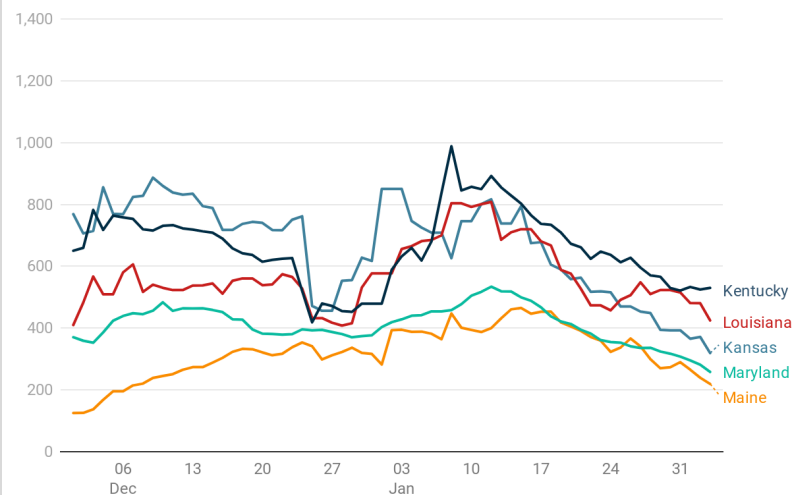


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases Per Million

Rates dropped in nearly every state since early January

Massachusetts - Missouri

Montana – New Jersey

Newly Detected Cases / Million

7-day Average



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

Newly Detected Cases / Million

7-day Average



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

Newly Detected Cases Per Million

Rates dropped in nearly every state since early January

New Mexico - Ohio

Oklahoma – South Carolina

Newly Detected Cases / Million

7-day Average

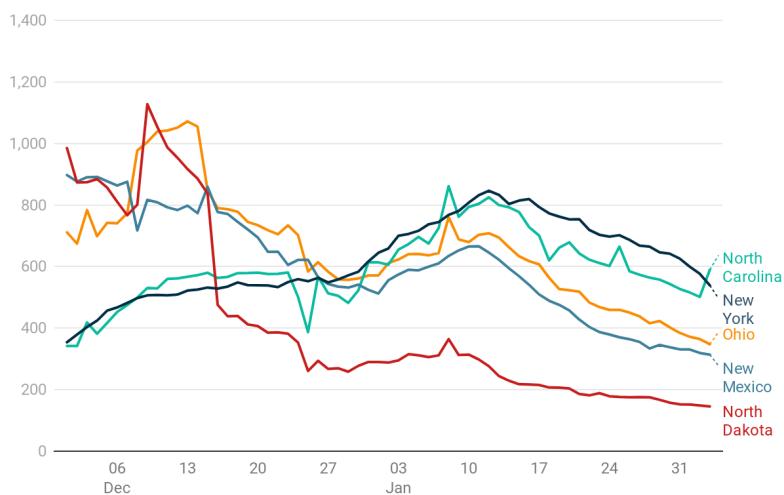


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases / Million

7-day Average

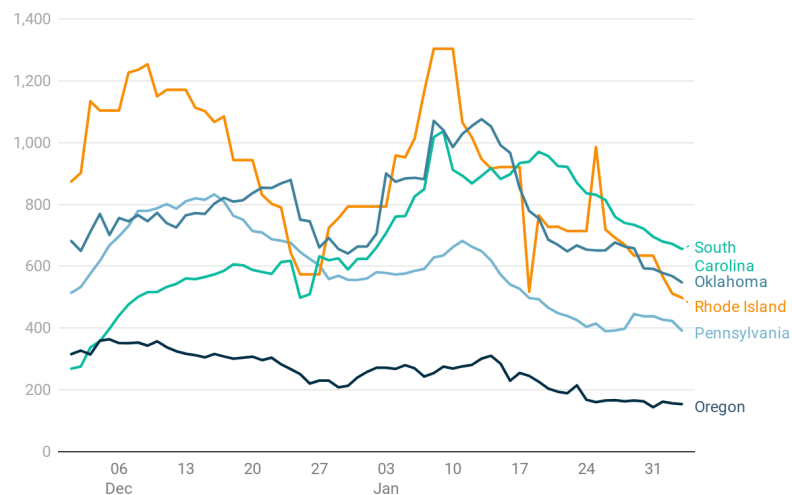


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases Per Million

Rates dropped in nearly every state since early January

Tennessee - Vermont

Virginia - Wyoming

Newly Detected Cases / Million

7-day Average

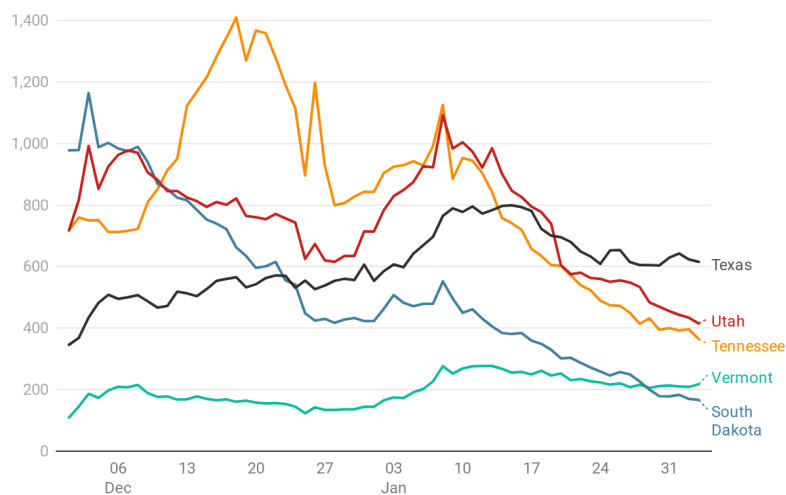


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases / Million

7-day Average



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

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

Covid-19 hospital census plummeted in the past four weeks in all states except New York. Covid-19 patients occupied less than 30% of US beds yesterday; versus 42% four weeks ago. Current rates are still too high in Arizona, California, Connecticut, Georgia, Nevada and New York

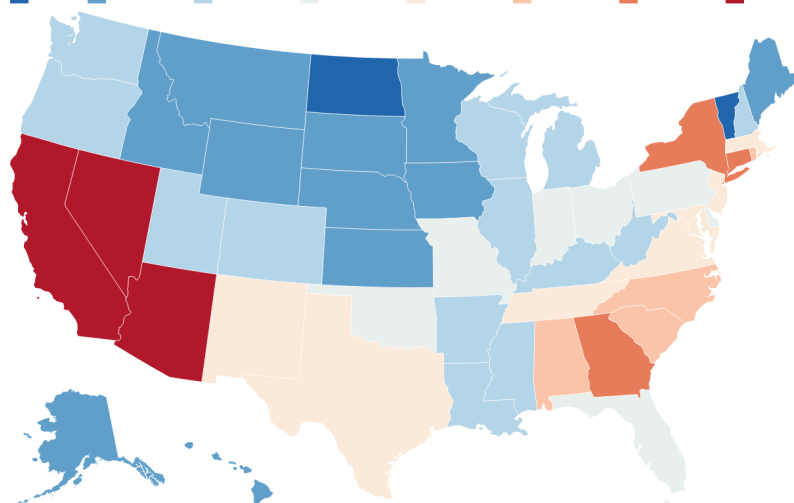
January 6

February 3

Covid-19 Patients As % of All Inpatient Beds

As of January 6

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

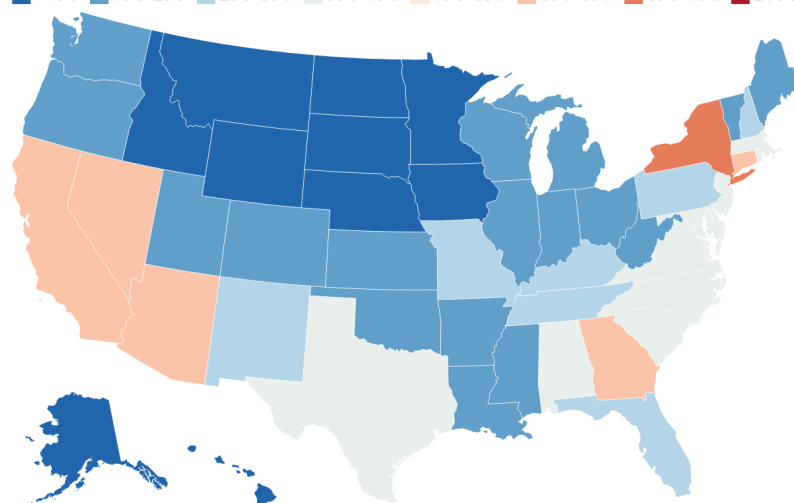


Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Covid-19 Patients As % of All Inpatient Beds

As of February 3

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



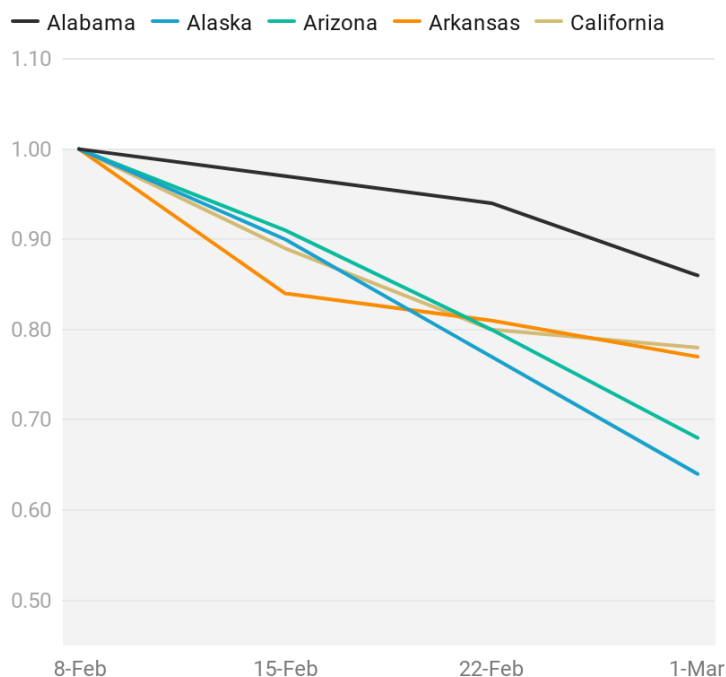
Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Projections of Hospital Admissions (US) – 1 of 5

Hospital admissions are projected to decline over the next few weeks across most of the country

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

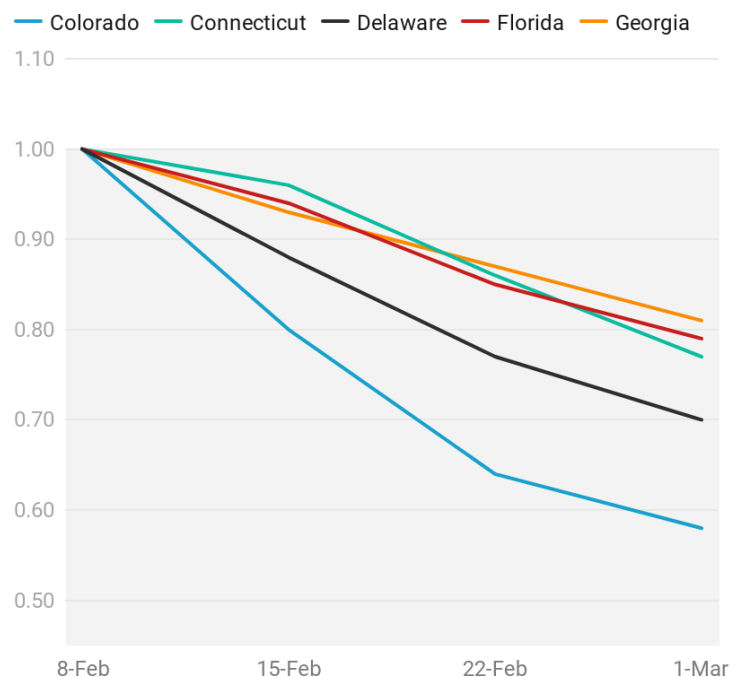


Updated February 2

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated February 2

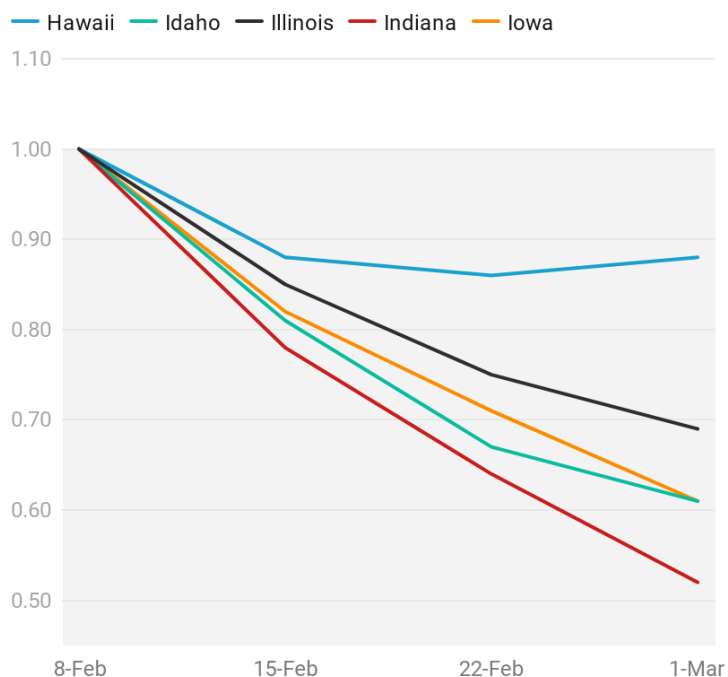
Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

Projections of Hospital Admissions (US) – 2 of 5

Hospital admissions are projected to decline over the next few weeks across most of the country

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

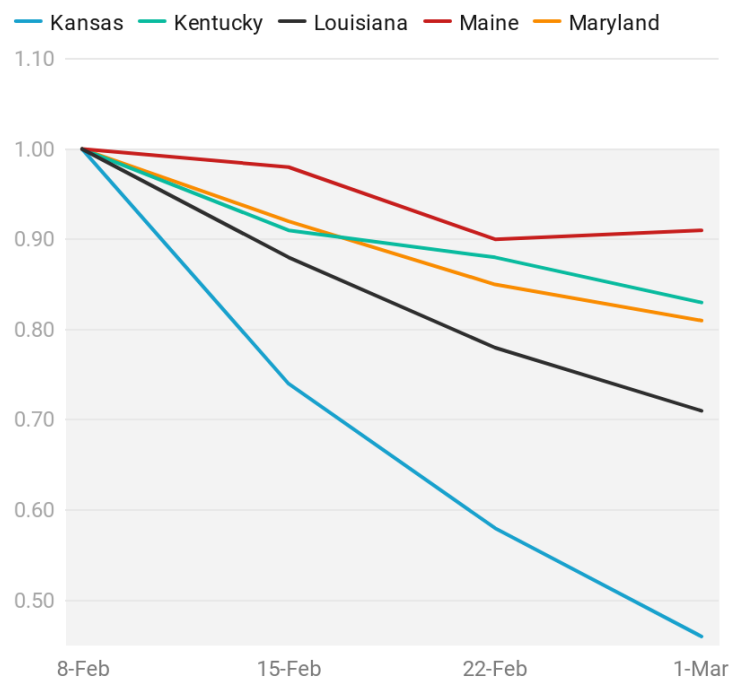


Updated February 2

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated February 2

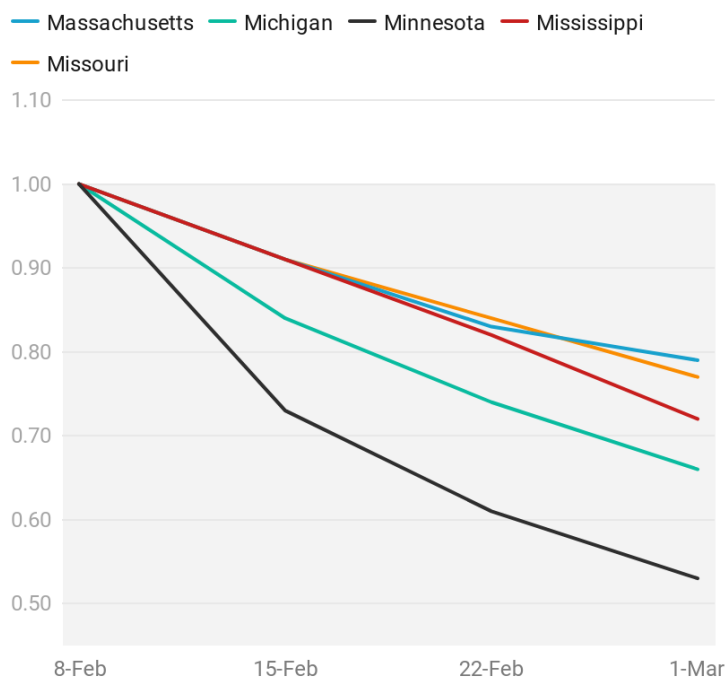
Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

Projections of Hospital Admissions (US) – 3 of 5

Hospital admissions are projected to decline over the next few weeks across most of the country

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

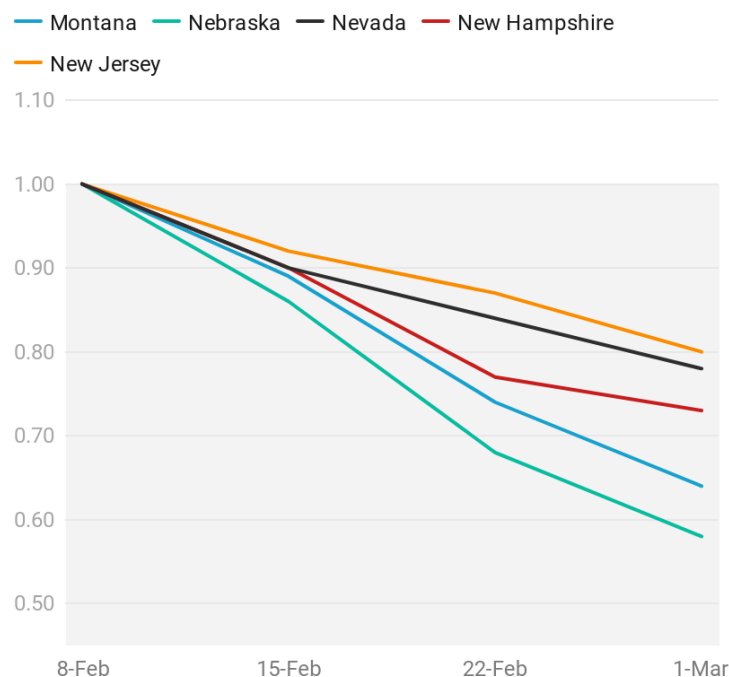


Updated February 2

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated February 2

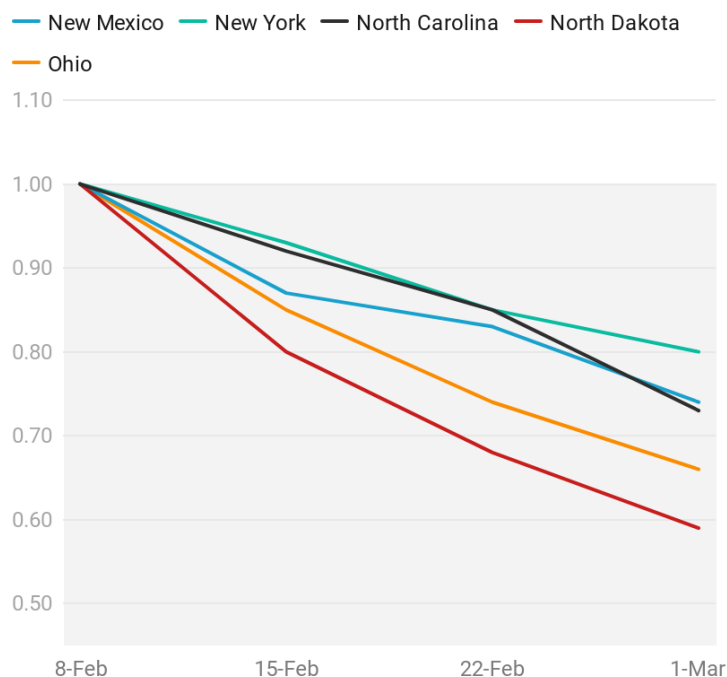
Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

Projections of Hospital Admissions (US) - 4 of 5

Hospital admissions are projected to decline over the next few weeks across most of the country

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

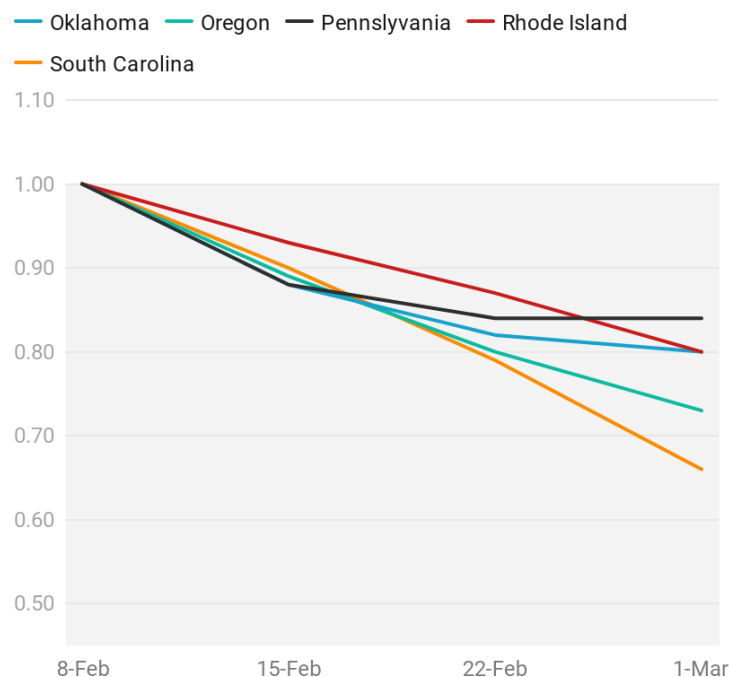


Updated February 2

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated February 2

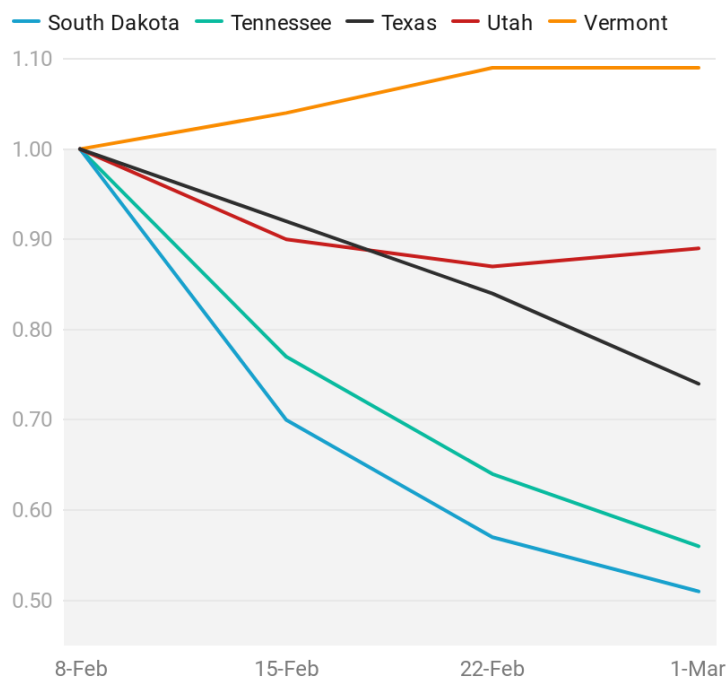
Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

Projections of Hospital Admissions (US) – 5 of 5

Hospital admissions are projected to decline over the next few weeks across most of the country – Vermont is the lone exception

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

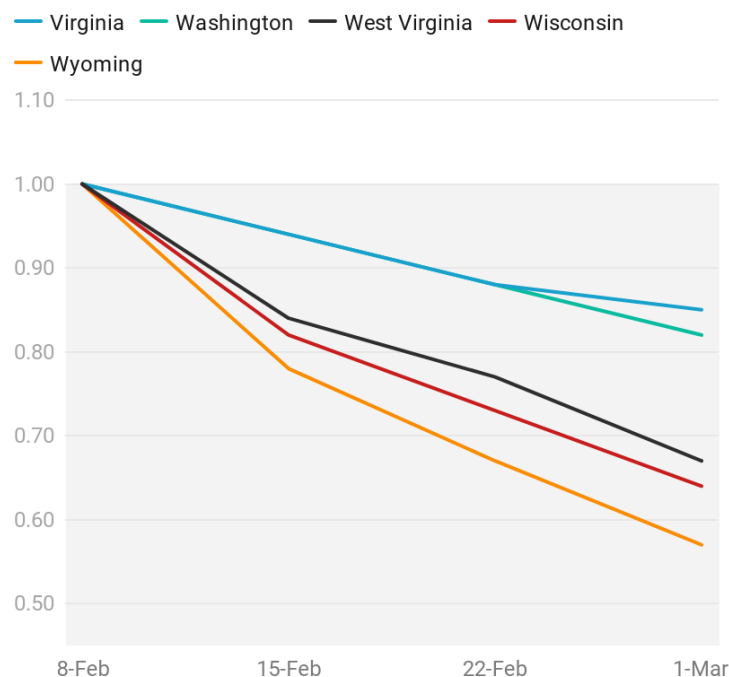


Updated February 2

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated February 2

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

State-By-State Data Table (1 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
Alabama	9.5%	1,673	987	47.1%	465	2	31%	-18%	55
Alaska	7.2%	379	10,312	1.9%	196	53	6%	-18%	12
Arizona	10.5%	1,865	5,707	9.9%	566	10	57%	-40%	19
Arkansas	10.0%	1,652	4,758	11.4%	543	9	18%	-11%	17
California	8.5%	1,075	6,561	6.1%	438	15	55%	-22%	17
Colorado	6.9%	984	5,058	4.4%	223	23	12%	-18%	9
Connecticut	7.2%	2,007	9,983	3.9%	387	26	50%	-27%	13
Delaware	8.1%	1,160	7,211	6.4%	462	16	34%	-22%	13
District Of Columbia	5.3%	1,312	9,698	2.8%	270	36	30%	-9%	17
Florida	8.1%	1,258	5,154	8.6%	455	11	29%	-9%	14
Georgia	8.7%	1,374	3,070	16.1%	495	6	52%	-25%	17
Hawaii	1.8%	292	2,594	2.6%	64	40	6%	-22%	11
Idaho	9.2%	975	951	25.7%	235	4	9%	-19%	7
Illinois	9.0%	1,690	7,045	3.5%	249	28	17%	-29%	13
Indiana	9.4%	1,499	5,645	5.3%	300	19	19%	-25%	10
Iowa	10.2%	1,577	865	24.6%	291	3	9%	-14%	62
Kansas	9.7%	1,337	1,328	23.6%	319	4	11%	-30%	16
Kentucky	8.3%	865	2,898	18.3%	530	5	22%	-11%	15

Covid-19 "Vital Signs"

State-By-State Data Table (2 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
Louisiana	8.7%	1,937	5,577	7.6%	425	13	19%	-23%	17
Maine	3.0%	466	7,564	2.9%	219	34	15%	-36%	17
Maryland	5.9%	1,194	5,856	4.4%	258	23	38%	-23%	13
Massachusetts	7.6%	2,116	14,013	3.2%	444	32	34%	-24%	12
Michigan	6.2%	1,566	3,654	4.6%	166	22	14%	-19%	20
Minnesota	8.2%	1,117	4,695	3.5%	163	29	8%	-18%	12
Mississippi	9.3%	2,069	2,006	20.7%	415	5	16%	-27%	19
Missouri	8.2%	1,247	2,316	8.8%	249	9	21%	-23%	25
Montana	8.9%	1,219	5,422	5.6%	305	18	7%	0%	39
Nebraska	9.9%	998	5,924	4.9%	289	20	10%	-34%	9
Nevada	9.1%	1,420	3,051	10.4%	317	10	51%	-22%	21
New Hampshire	4.9%	791	5,939	5.6%	332	18	20%	-24%	13
New Jersey	7.9%	2,442	4,969	9.5%	471	11	38%	-17%	12
New Mexico	8.4%	1,592	7,171	4.4%	314	23	27%	-12%	21
New York	7.6%	2,276	10,907	4.9%	539	20	62%	-19%	13
North Carolina	7.4%	913	6,078	9.7%	590	10	38%	3%	13

Covid-19 "Vital Signs"

State-By-State Data Table (3 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths / 1000 New Cases, 14-Day Lag
North Dakota	12.9%	1,866	3,554	4.1%	145	24	3%	-17%	6
Ohio	7.8%	978	3,573	9.7%	348	10	17%	-21%	12
Oklahoma	10.0%	923	4,263	12.9%	548	8	19%	-19%	14
Oregon	3.4%	472	3,849	4.1%	154	25	11%	-8%	11
Pennsylvania	6.7%	1,724	3,709	10.6%	392	9	22%	0%	22
Rhode Island	11.0%	2,075	15,801	3.2%	498	32	38%	-28%	12
South Carolina	8.8%	1,436	6,342	10.3%	656	10	38%	-14%	21
South Dakota	12.3%	2,014	833	20.0%	166	5	7%	-33%	23
Tennessee	10.7%	1,468	2,769	13.1%	364	8	21%	-19%	25
Texas	8.5%	1,320	4,223	16.4%	615	7	38%	0%	15
Utah	10.9%	529	3,480	11.9%	415	8	15%	-24%	6
Vermont	2.0%	287	7,266	3.0%	217	33	10%	5%	6
Virginia	6.0%	770	3,149	13.2%	415	8	39%	-25%	8
Washington	4.2%	588	3,151	6.7%	207	15	17%	-2%	13
West Virginia	6.9%	1,152	6,206	6.0%	375	17	15%	-23%	14
Wisconsin	9.4%	1,022	4,578	5.4%	218	21	12%	-16%	13
Wyoming	9.0%	1,078	9,840	2.3%	227	43	4%	-26%	15

Table: 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>