



Health
Industry
Adv



Issue # 210
Thursday, November 12, 2020

COVID-19 Report

Highlights

- The number of new cases being detected each day in the United States is of great concern:
 - We are averaging nearly 130k new cases every day
 - **On a week-over-week basis, new cases yesterday were up 41% - a rate only surpassed in late-June**
 - **Making it worse, this rate of week-over-week increase has itself increased eight consecutive days** (think of it this way - the roller coaster is racing fast; its accelerating . . . and the rate of acceleration is increasing!. In physics terms, that's called "jerk", as in its "jerking us" ever-faster by the second. That may be thrilling at the amusement park; its not great in this context)
- There is a bit of encouraging news - North Dakota and South Dakota, two states with the highest rates of new cases experienced at any time during the pandemic, are showing signs of decelerating case growth. Indeed the week-over-week case growth in these states is among the lowest of all states
- The increasing test-positivity rate in the U.S. also is concerning:
 - This **test-positive rate has increased on thirty-five of the past thirty-eight days**
 - **The current rate exceeds the CDC guideline for Phase 3 re-openings**
 - In fifteen states, the rate is more than double the CDC guideline
 - It is occurring despite **record test volumes - testing has set new highs twenty of the past twenty-four days, and is 80% higher than it was in mid-September**
- Fortunately, the stress that the new cases is placing on the healthcare system has been muted - the question is, how much more can it absorb?
 - **Covid-19 census per new case has now declined eleven consecutive days and thirty of the past thirty-three**; this rate has been halved since mid-September and by 3/4's since mid-May
 - **The % of Covid-19 patients that were in the ICU has declined nine consecutive days**, and is nearly 1/4 lower than it was in mid-September and 1/3 lower than in mid-April
 - **The % of Covid-19 patients that were on a ventilator has declined eight of the past nine days** and is down 60% since mid-May and 80% since mid-March
 - Even with the lowered rate of hospitalizations, increasing cases, if unchecked, could strain available resources. **Six states - Nevada, Wisconsin, Illinois, Connecticut, Michigan and South Dakota - are each devoting at least 3 of every ten beds to Covid-19 patients.** Of note, eight states have experienced higher rates at some point during the pandemic, including Connecticut, New Jersey and New York, which exceeded 100% for a time
- **Deaths with the coronavirus have now increased (on a 7-day moving average basis) nine consecutive days**
 - This is related to the recent rise in new cases, as the case fatality rate, on a 4-week lag from case-to-death basis, has been stable for the past month
 - **Unfortunately, if this rate remains stable, deaths will continue to increase, following the pattern of new case growth**

State-By-State Scorecard

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

At his point, we have elected not to provide an overall score – in our view, different audiences would assign different priorities to each of the five measures

For example, health systems might weigh the Covid-19 census as a % of available beds; A community might weigh the deaths per case highest



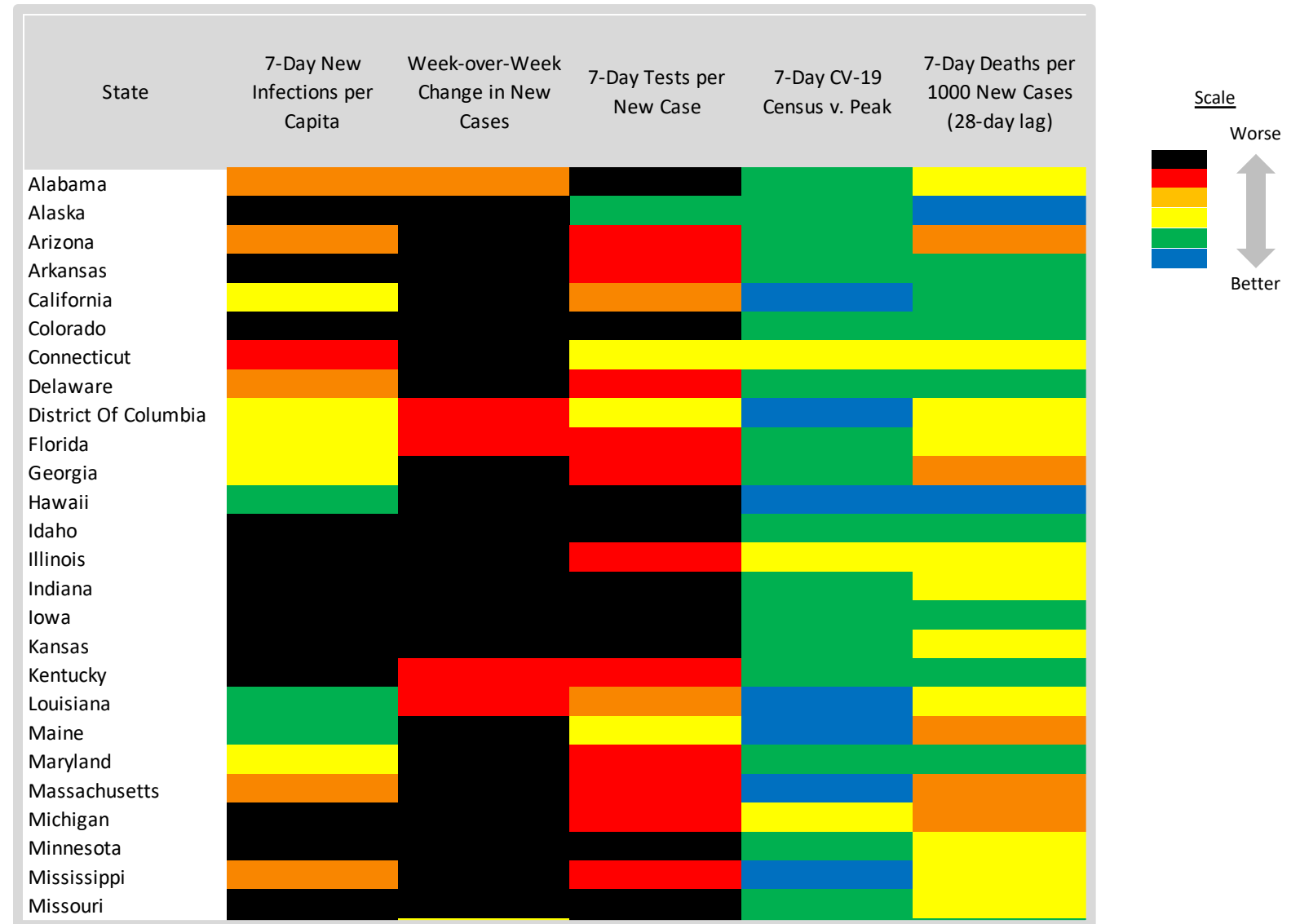
Metric		Black	Red	Orange	Yellow	Green	Blue
7-Day Average New Daily Reported Infections per Capita	Greater than	450	350	250	150	50	0
Week-over-Week Change in Newly Reported Cases	Greater than	30%	20%	10%	0%	-10%	N/A
7-Day Average Viral Tests per 7-Day Average Newly Reported Cases	Less than	5	10	25	50	75	N/A
Covid-19 Inpatient Census as % of All Inpatient Beds	Greater than	75%	60%	45%	30%	15%	0%
7-Day Deaths per 1000 New Cases (28-day lag)	Greater than	50	40	30	20	10	0

Note: this week, we convert from Covid-19 census v. peak Covid-19 census to Covid-19 census as a % of available inpatient beds. In our view, this provides a better indication of the strain that Covid-19 is placing on inpatient resources.

Scorecard (1 of 2)

Several states are of concern, based on poor scores on cases/capita, weekly increases in cases and testing/case, most notably: Colorado, Idaho, Illinois, Indiana, Iowa, Kansas,, Kentucky, Michigan, Minnesota and Missouri

States to keep an eye on bed capacity: Connecticut, Illinois and Michigan

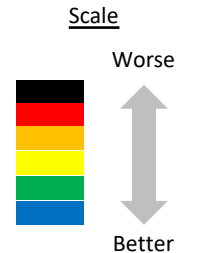
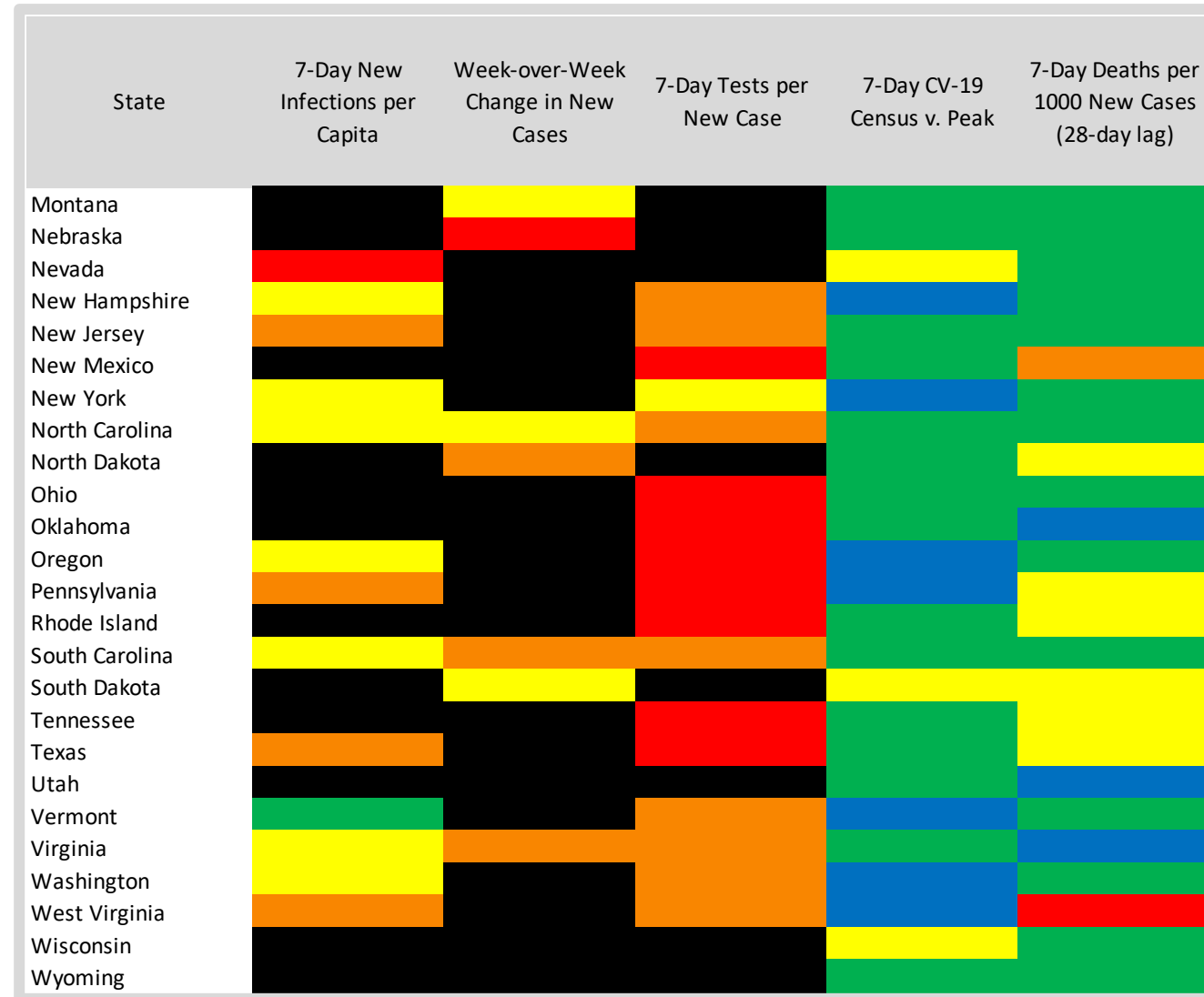


Scorecard (page 2 of 2)

Several states are of concern, based on poor scores on cases/capita, weekly increases in cases and testing/case, most notably: Nebraska, New Mexico, Ohio, Oklahoma, Rhode Island, Tennessee, Utah, Wisconsin and Wyoming

States to keep an eye on bed capacity: Nevada, North Dakota and Wisconsin

West Virginia's case fatality rate (based on new cases detected 4 weeks ago) is of concern



Worldwide, we are experiencing ~573k new cases each day

The United States is averaging ~130k new cases each day

* - 7-day moving average basis

Newly Detected Daily Cases - U.S. & Worldwide

7-Day Moving Average, As of November 11

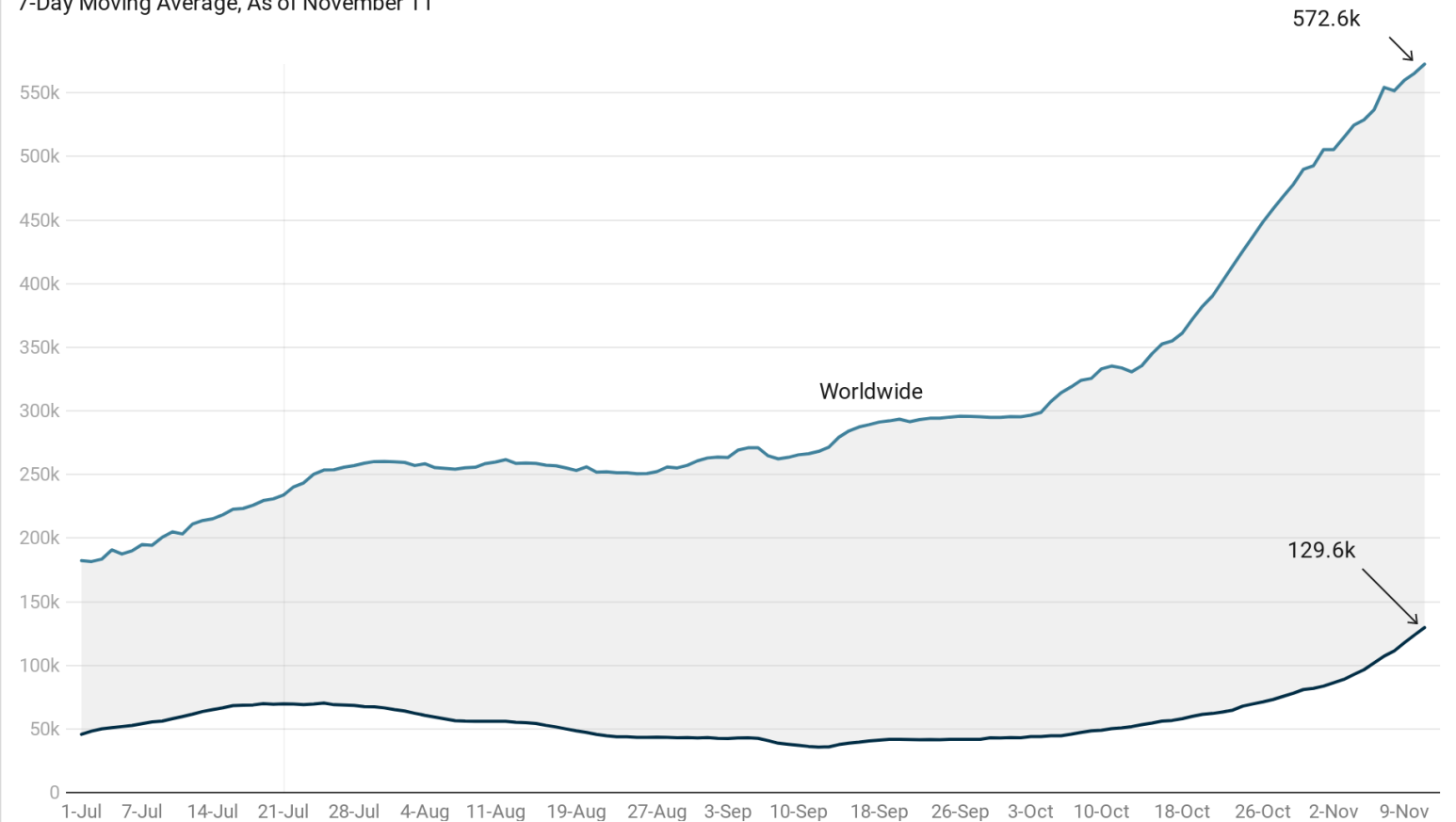


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Worldwide, the rate of growth slowed over the past two weeks

The U.S. is moving in the opposite direction, with the rate of change in new cases *increasing* throughout November (accelerating growth) – and approaching the week-over-week rate of increase experienced in late-June/early-July

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

7-Day Moving Average

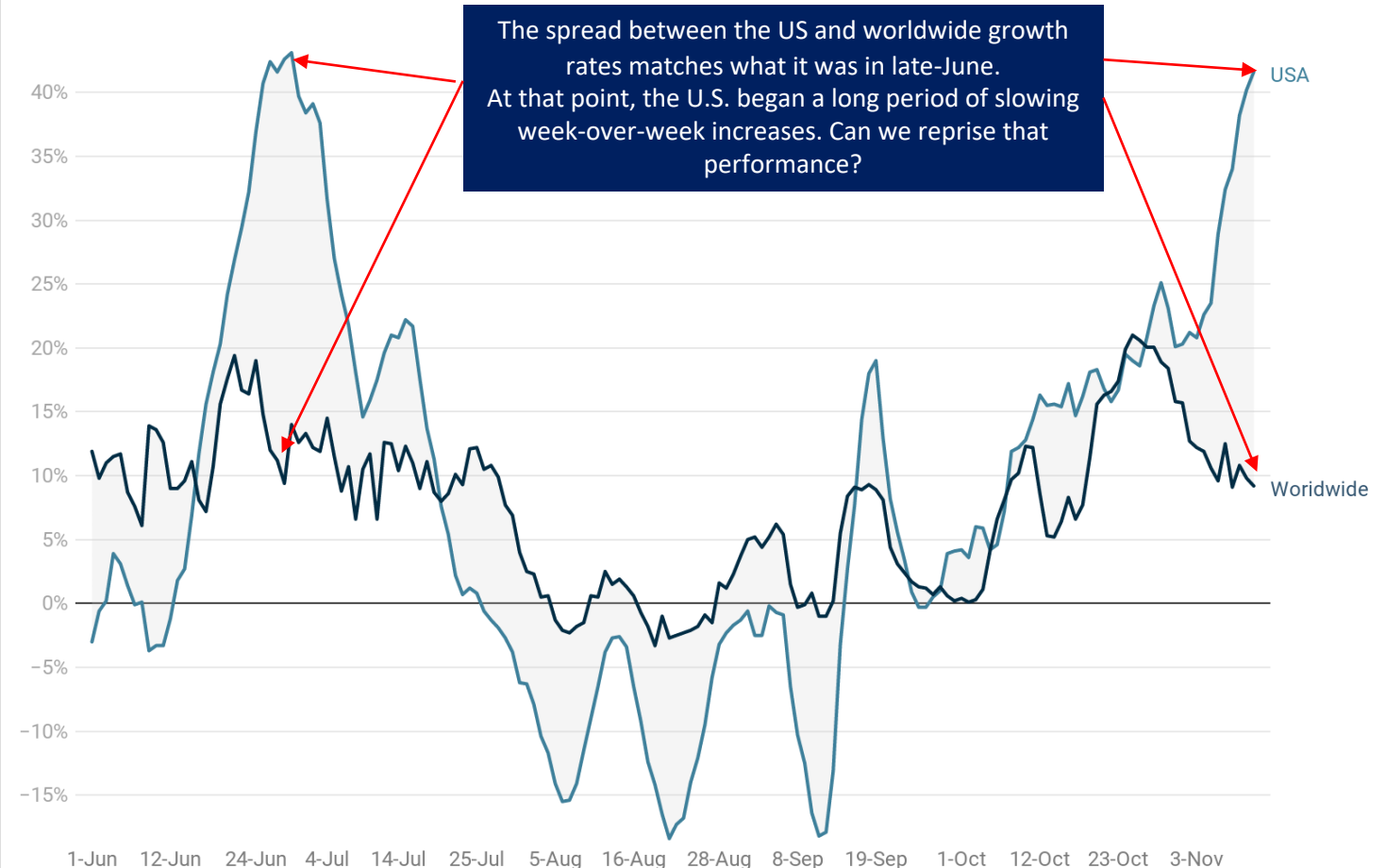


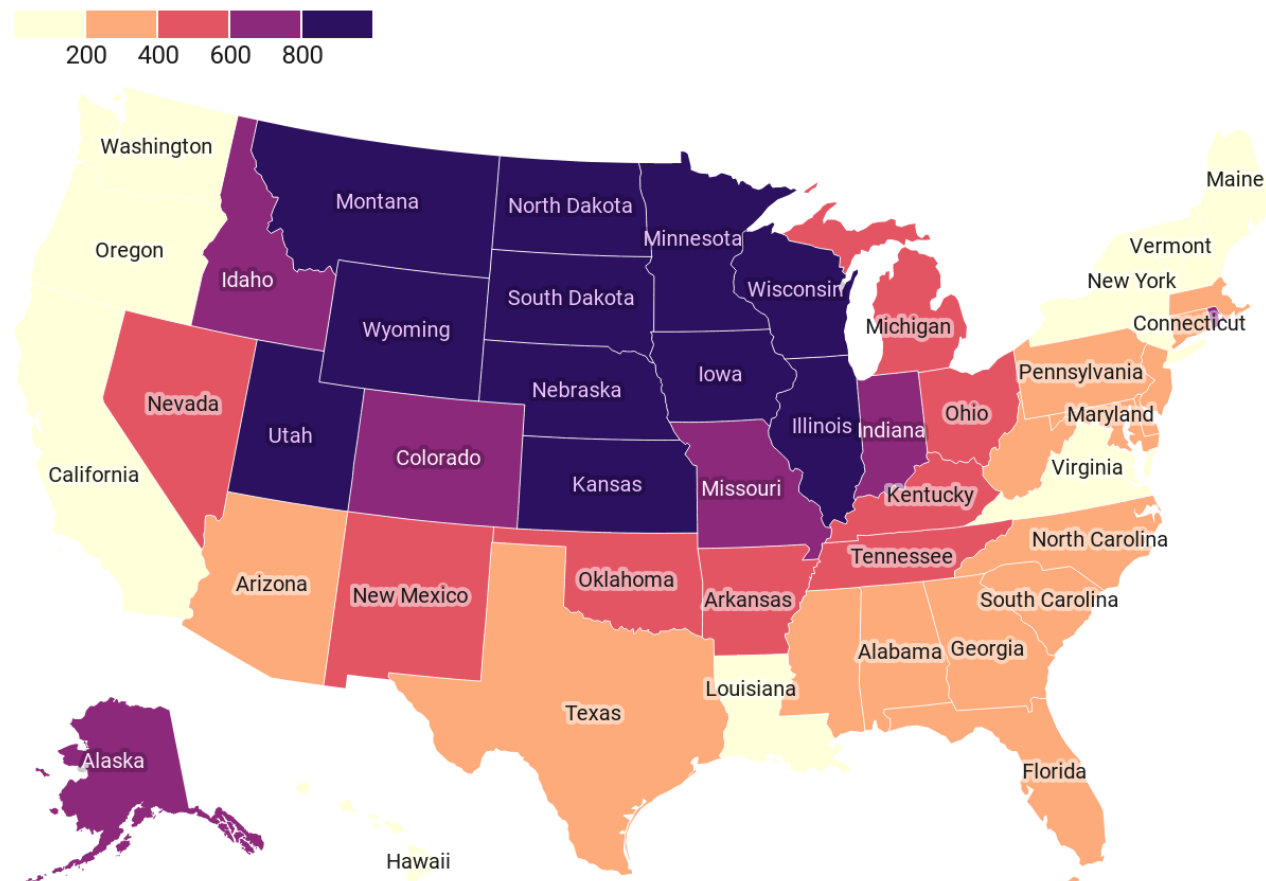
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly detected cases per capita are high across the country

The highest rates are found in the Upper Midwest, the Plains and the Mountain States

New Cases / Million

7-Day Moving Average, As of November 11



Map: Health Industry Advisor LLC • Created with Datawrapper

States that have been recently hard-hit by the virus spread have surpassed 4% of the population known to have been infected

Given the high test-positive rates in these states, the true rates are likely much higher

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Given the high test-positive rates in these states, the true rates are likely much higher

What % of Each State's Population Has/Had A Known Infection?

Reported Cases / Population, As of November 11

The map displays the percentage of the population that has/had a known COVID-19 infection across the United States as of November 11. The color scale ranges from 1.5% (light yellow) to 4.5% (dark purple). States with higher percentages (4.0% to 4.5%) include North Dakota, South Dakota, Nebraska, Wisconsin, and Iowa. States with percentages between 3.0% and 4.0% include Montana, Wyoming, Idaho, Utah, Nevada, Arizona, New Mexico, Colorado, Kansas, Missouri, Illinois, Indiana, Michigan, Ohio, Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Louisiana, Texas, and Florida. States with percentages between 2.0% and 3.0% include Washington, Oregon, California, Nevada, Utah, Colorado, New Mexico, Arizona, New Mexico, Colorado, Kansas, Missouri, Illinois, Indiana, Michigan, Ohio, Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Louisiana, Texas, and Florida. States with percentages between 1.5% and 2.0% include Alaska, Hawaii, and Maine.

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

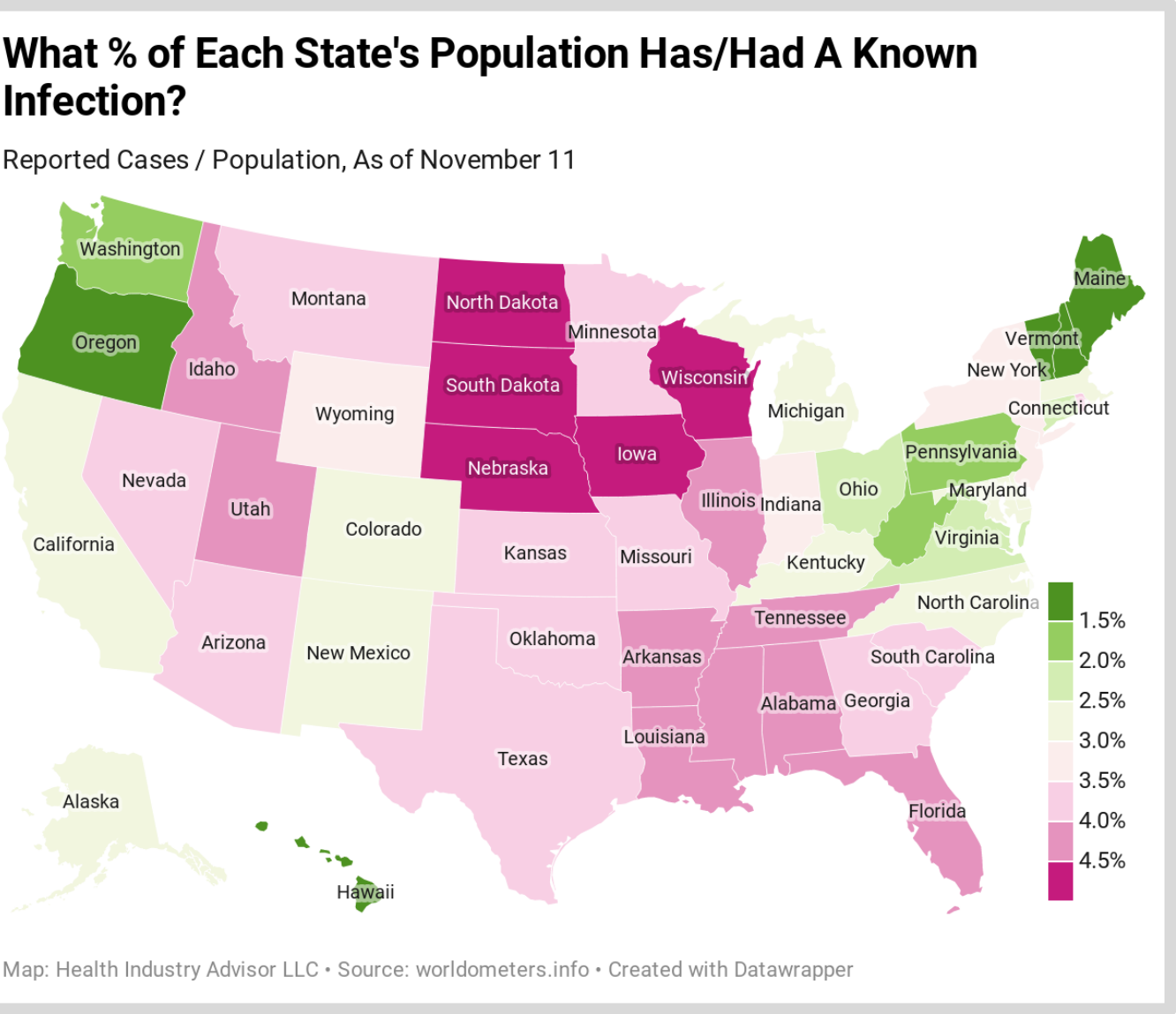
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State	Percentage (%)
Washington	2.0
Oregon	2.5
Idaho	3.0
Montana	3.5
Wyoming	3.0
Utah	3.5
Nevada	3.0
California	2.5
Arizona	3.0
New Mexico	2.5
Colorado	2.5
Kansas	3.0
Missouri	3.0
Illinois	3.5
Indiana	3.0
Michigan	2.5
Ohio	2.5
Pennsylvania	2.5
Maryland	2.5
Virginia	2.5
North Carolina	2.5
South Carolina	3.0
Georgia	3.0
Alabama	3.5
Louisiana	3.5
Tennessee	3.5
Arkansas	3.5
Oklahoma	3.0
Texas	3.0
Florida	3.5
Alaska	1.5
Hawaii	1.5
Maine	1.5
Vermont	1.5
New York	1.5
Connecticut	1.5

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



What % of Each State's Population Has/Had A Known Infection?

Reported Cases / Population, As of November 11

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

In the United States, Covid-19 patients are occupying 21% of available inpatient beds

Nevada has the highest rate at this point - 42%, followed by Wisconsin at 39%

In April, Connecticut, New Jersey and New York each experienced Covid-19 patients exceeding the inpatient bed capacity; Massachusetts exceeded 80% of capacity

Covid-19 Census As % of All Inpatient Beds

As of November 11 and at Peak

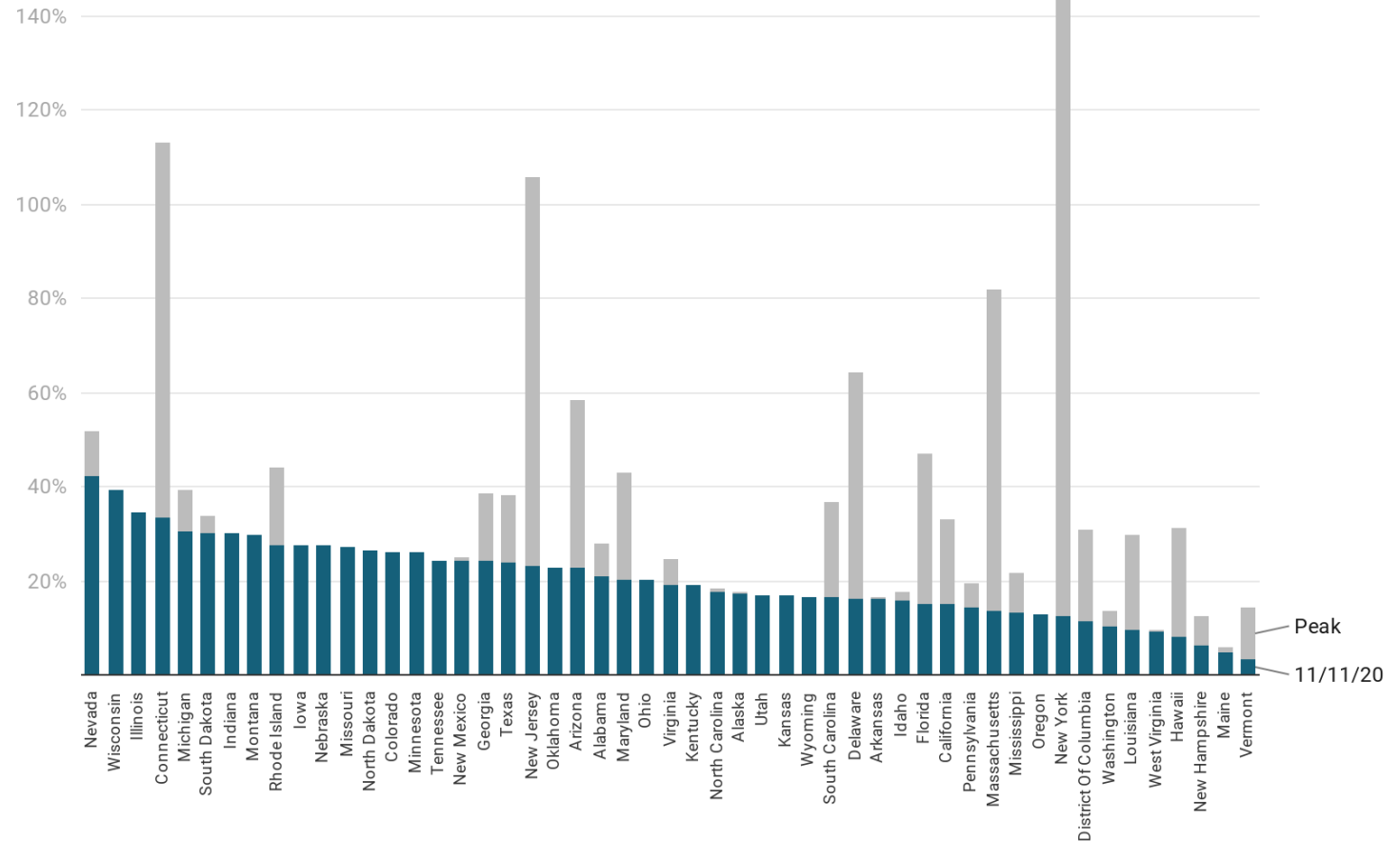


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid tracking Project & the Institute for Health Metrics and Evaluation • Created with Datawrapper

The highest average census per new case is currently experienced in D.C., followed by Louisiana and Georgia

The lowest rates are found in Utah, Minnesota, Alaska and Iowa

Contrast these rates to those experienced in selected hard-hit states during earlier surges:

- Arizona: 305 (4/20)
- California: 416 (4/17)
- Connecticut: 293 (4/29)
- Massachusetts: 475 (6/21)
- Michigan: 422 (4/21)
- New York: 330 (5/22)

Covid-19 Census / 100 New Cases

7-Day Moving Average, As of November 11

U.S. Peak (4/19)

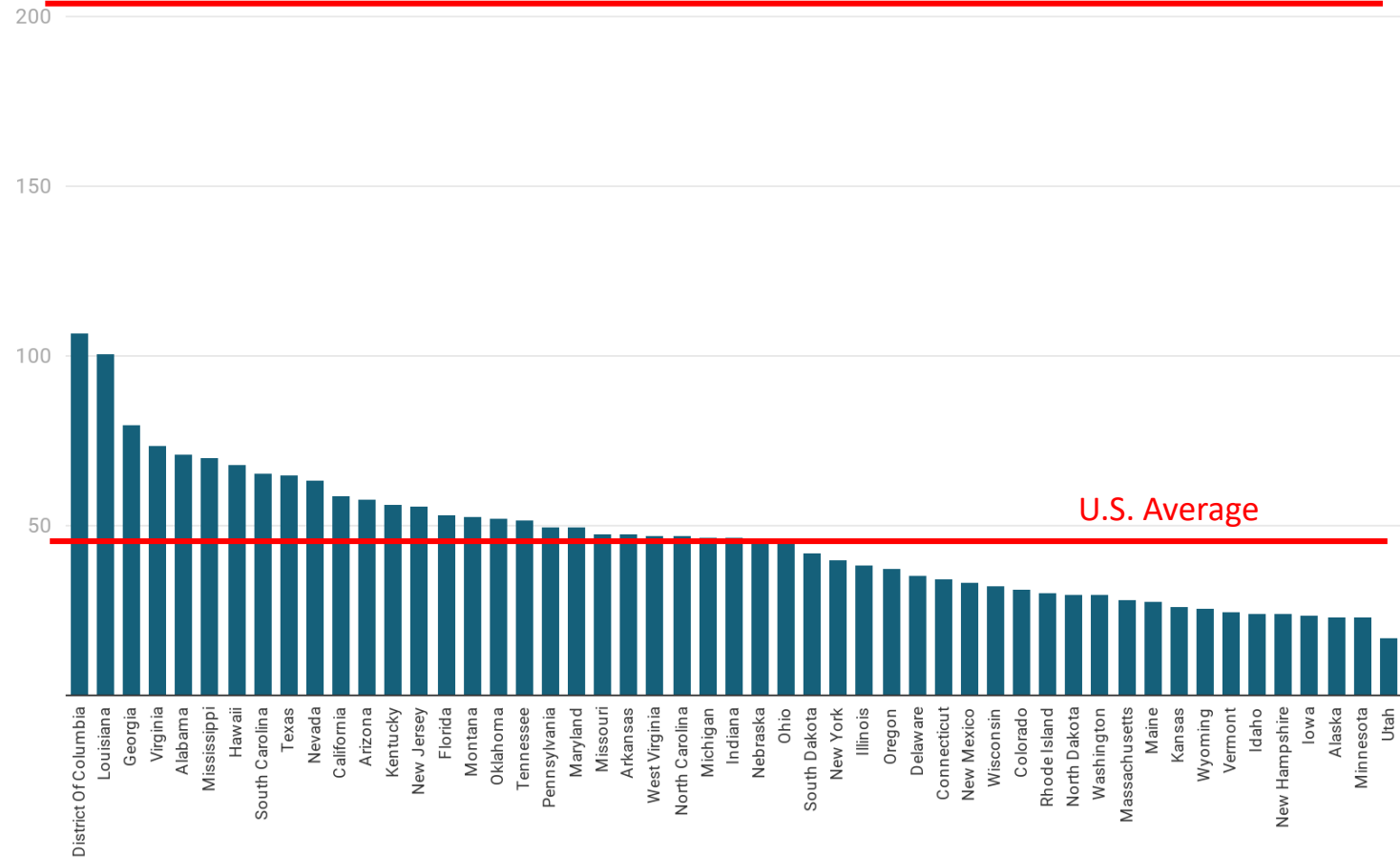


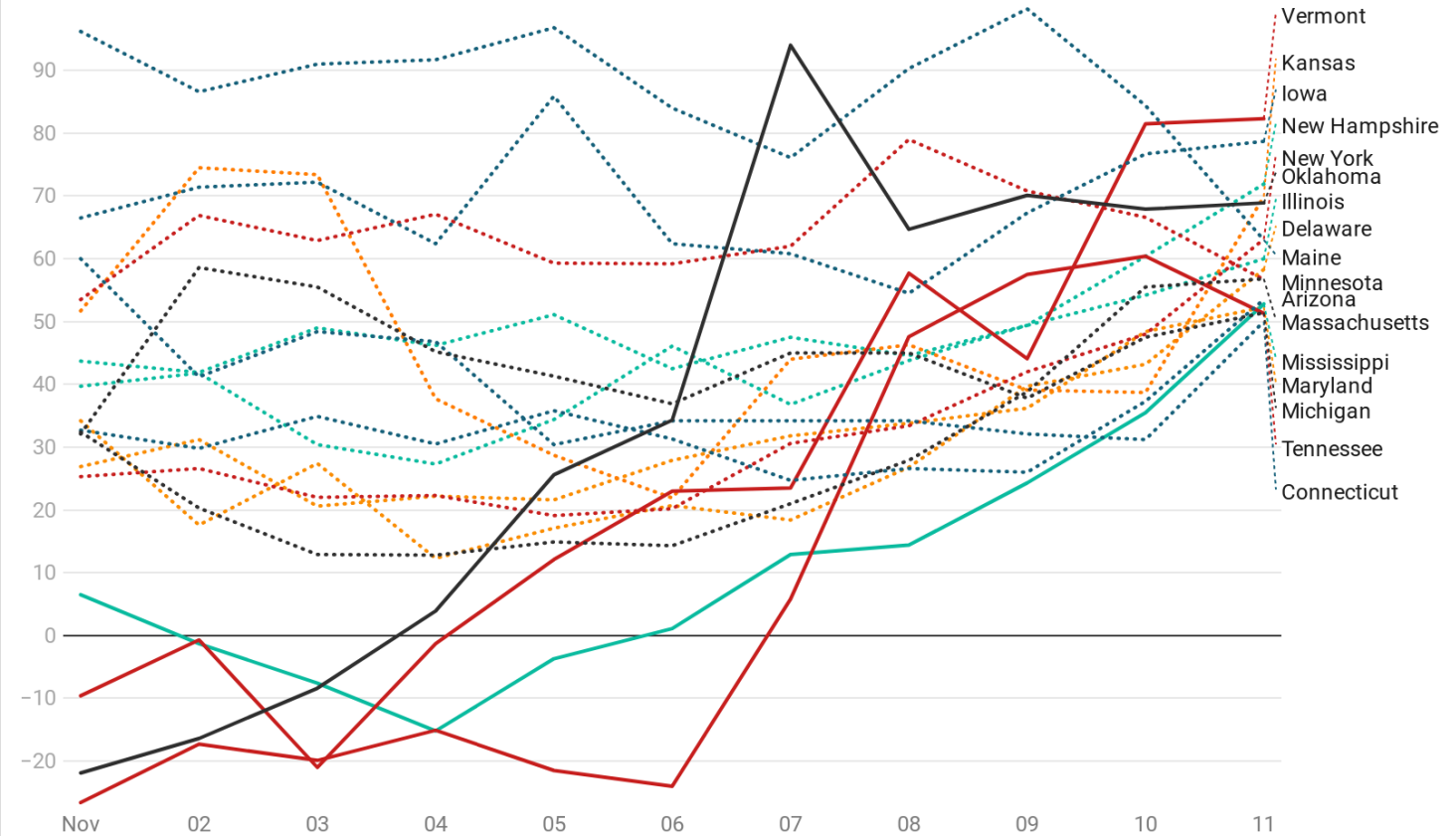
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid tracking Project & worldometers.info • Created with Datawrapper

Seventeen states have experienced week-over-week increases in new cases >50%, as of yesterday

Four of these states – Mississippi, Oklahoma, Tennessee and Vermont – had experienced declining cases week-over-week earlier in November

Week-Over-Week Change in New Cases

7-Day Moving Average, Through November 11



States with current rate >50%

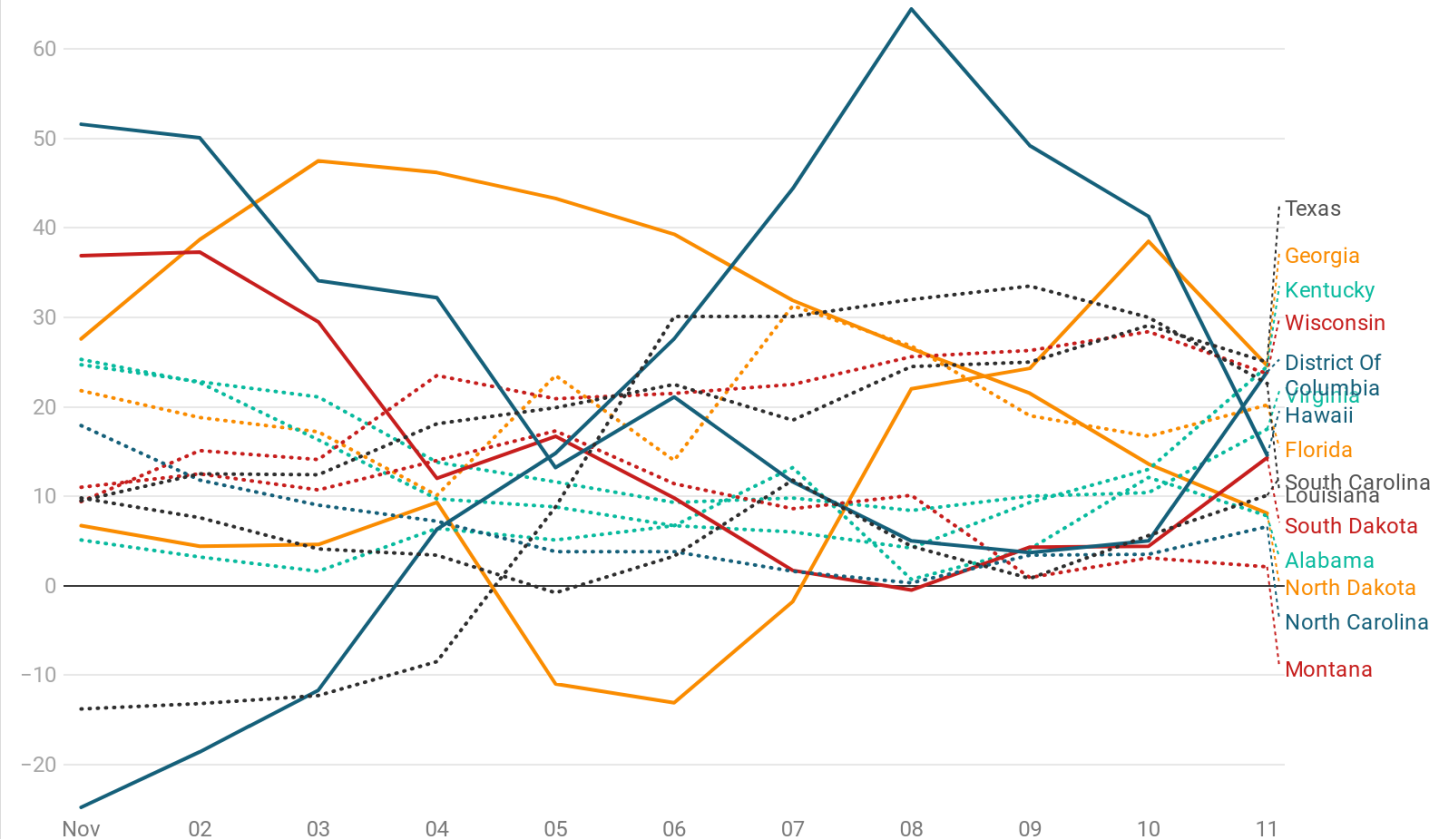
Chart: Health Industry Advisor LLC • Source: worldometers.infor • Created with Datawrapper

Fourteen states plus the District of Columbia have experienced week-over-week increases in new cases <25%, as of yesterday

Four of these states – Georgia, Hawaii, North Dakota and South Dakota, plus D.C. – had experienced week-over-week increases near or above 40% earlier in November

Week-Over-Week Change in New Cases

7-Day Moving Average, Through November 11



States with current rate <25%

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

On average, less than 1-in-4 Covid-19 inpatients are in the ICU

Rates are highest in Utah, Arkansas and Vermont, where >1-in-3 are in the ICU

% of Covid-19 Inpatients in the ICU

November 11

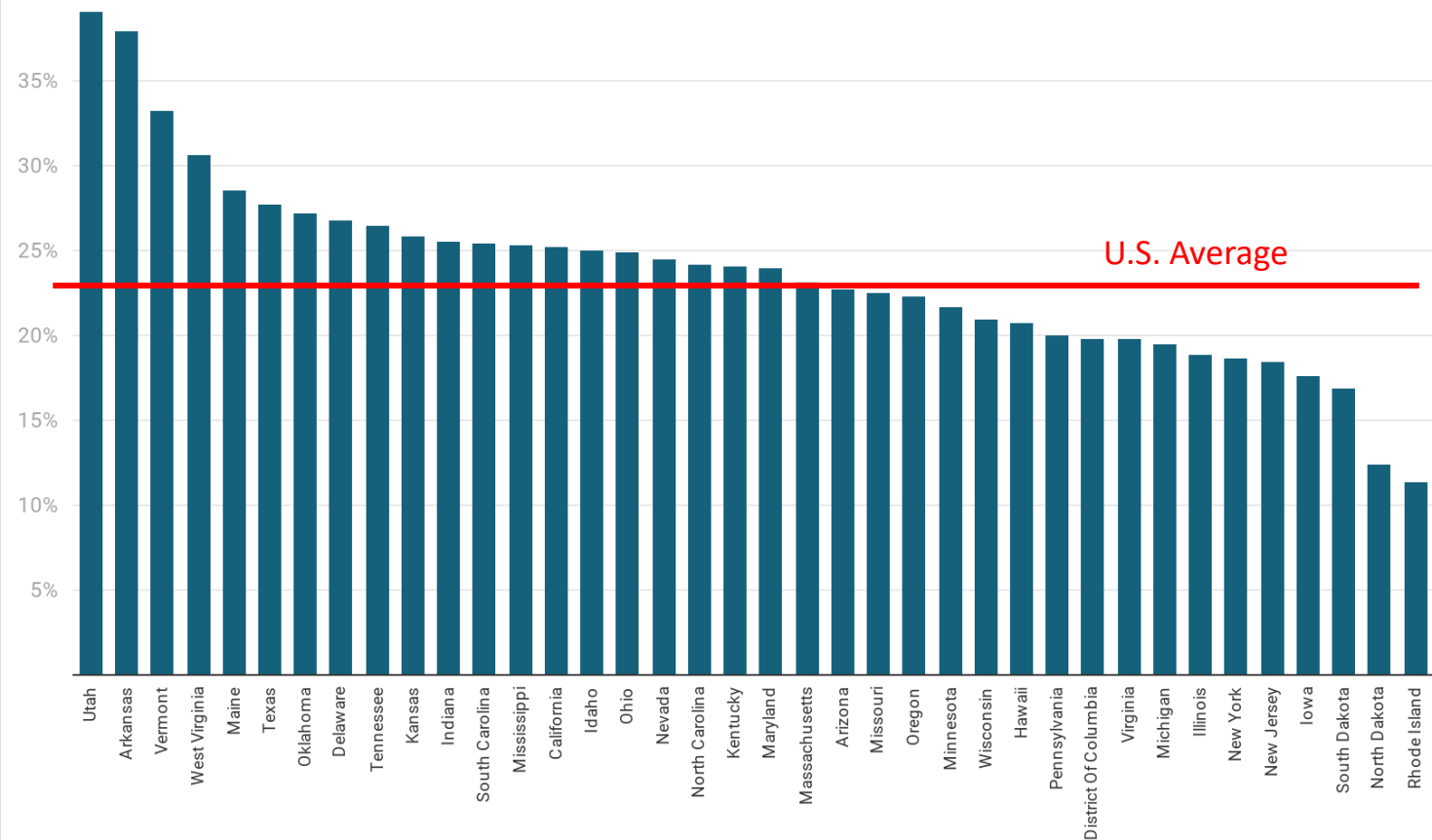


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project • Created with Datawrapper

Covid-19 Hospitalizations, while increasing, have not kept pace with the increase in newly-detected cases:

The average Covid-19 census per 100 new cases has declined on eleven consecutive days and thirty of the past thirty-three days

This rate has been reduced by 1/2 since mid-September and by 3/4 since mid-May

Covid-19 Hospital Census / 100 Daily New Detected Cases

7-Day Moving Average, As of November 11

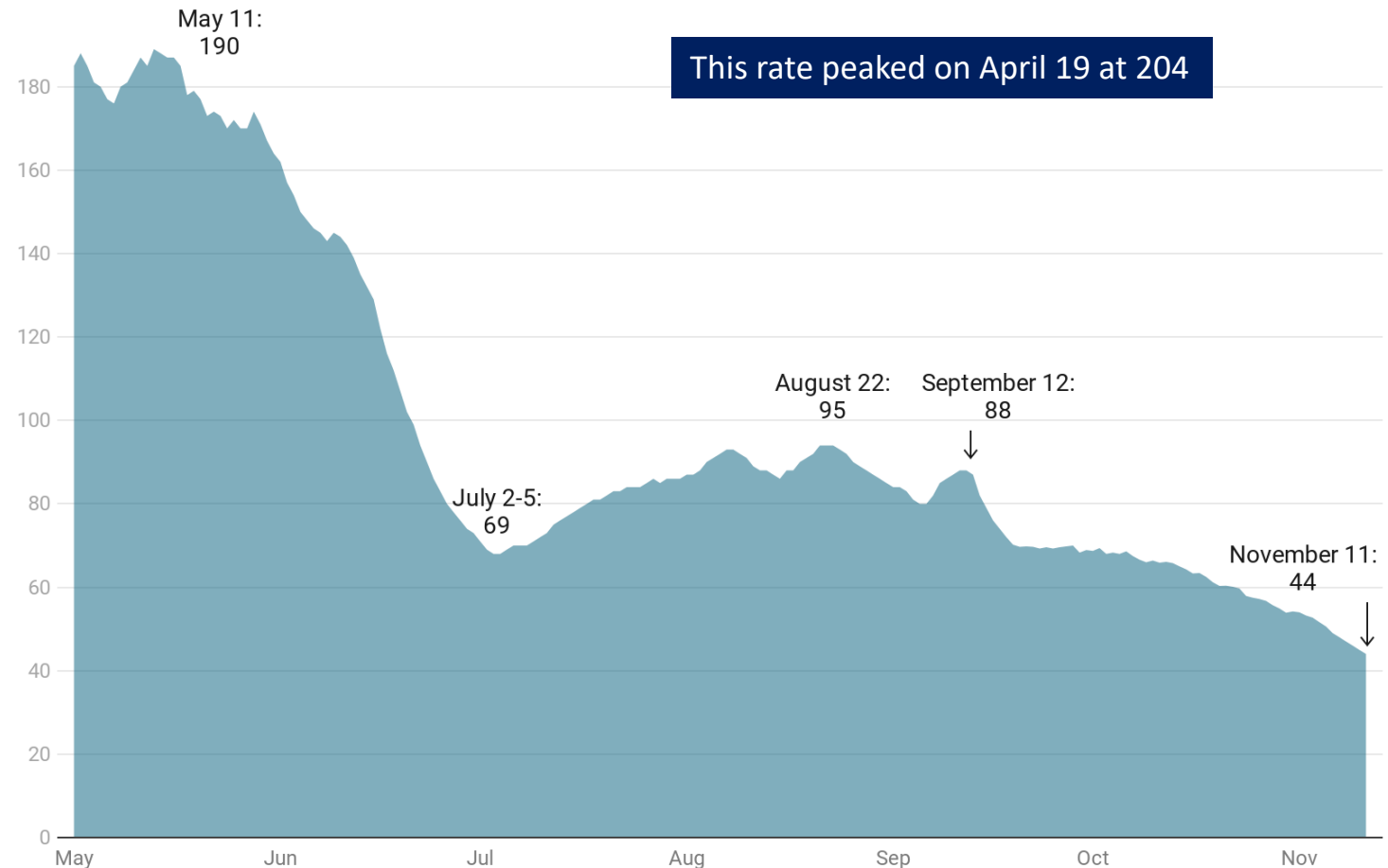


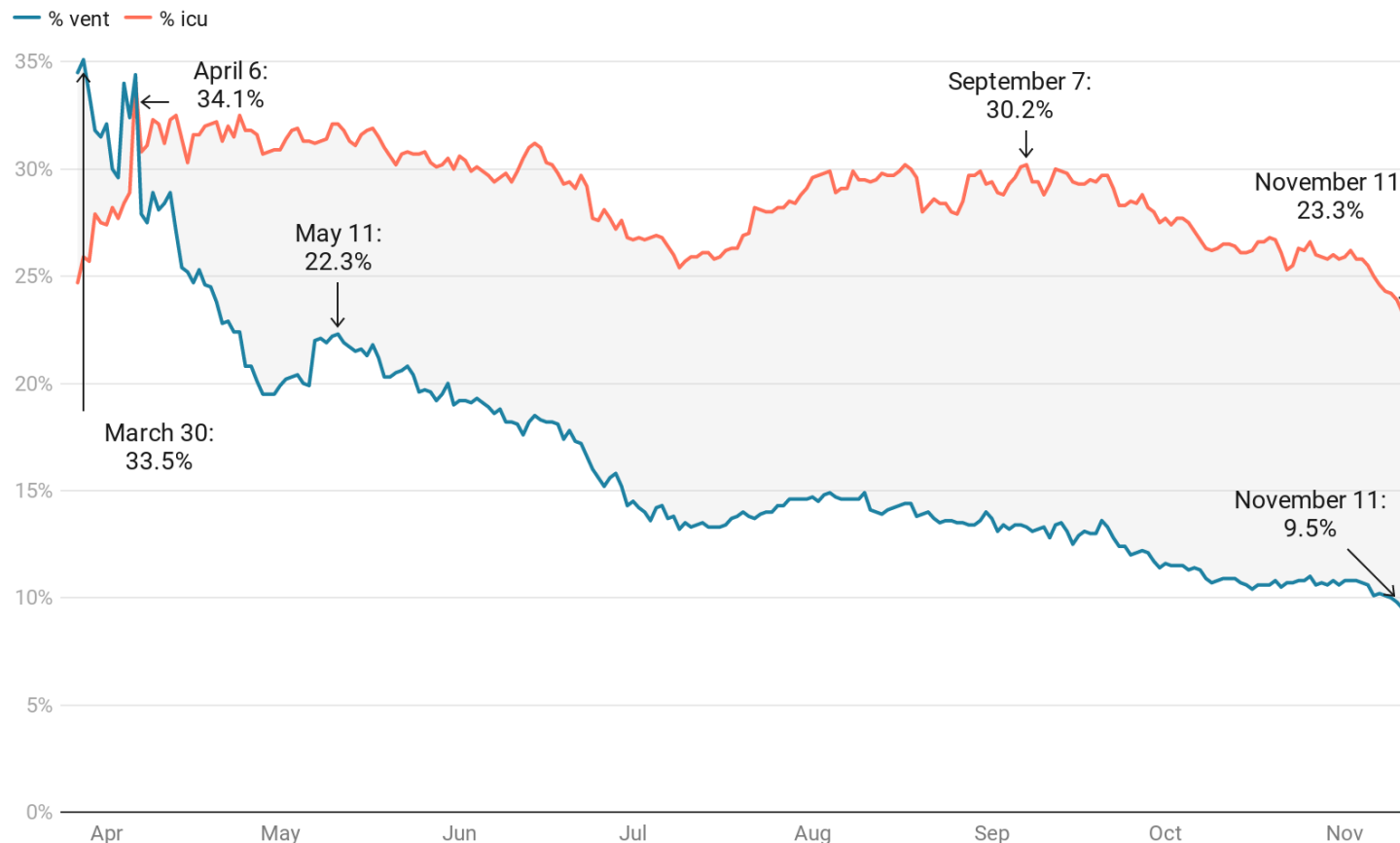
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

The likelihood of a hospitalized Covid-19 patient would require ICU care has declined 23% since early-September and nearly 32% since early-April

The likelihood of a hospitalized Covid-19 patients would be on a ventilator has reduced by nearly 60% since mid-May and by >80% since March

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of November 11



Health Industry Advisor LLC analysis

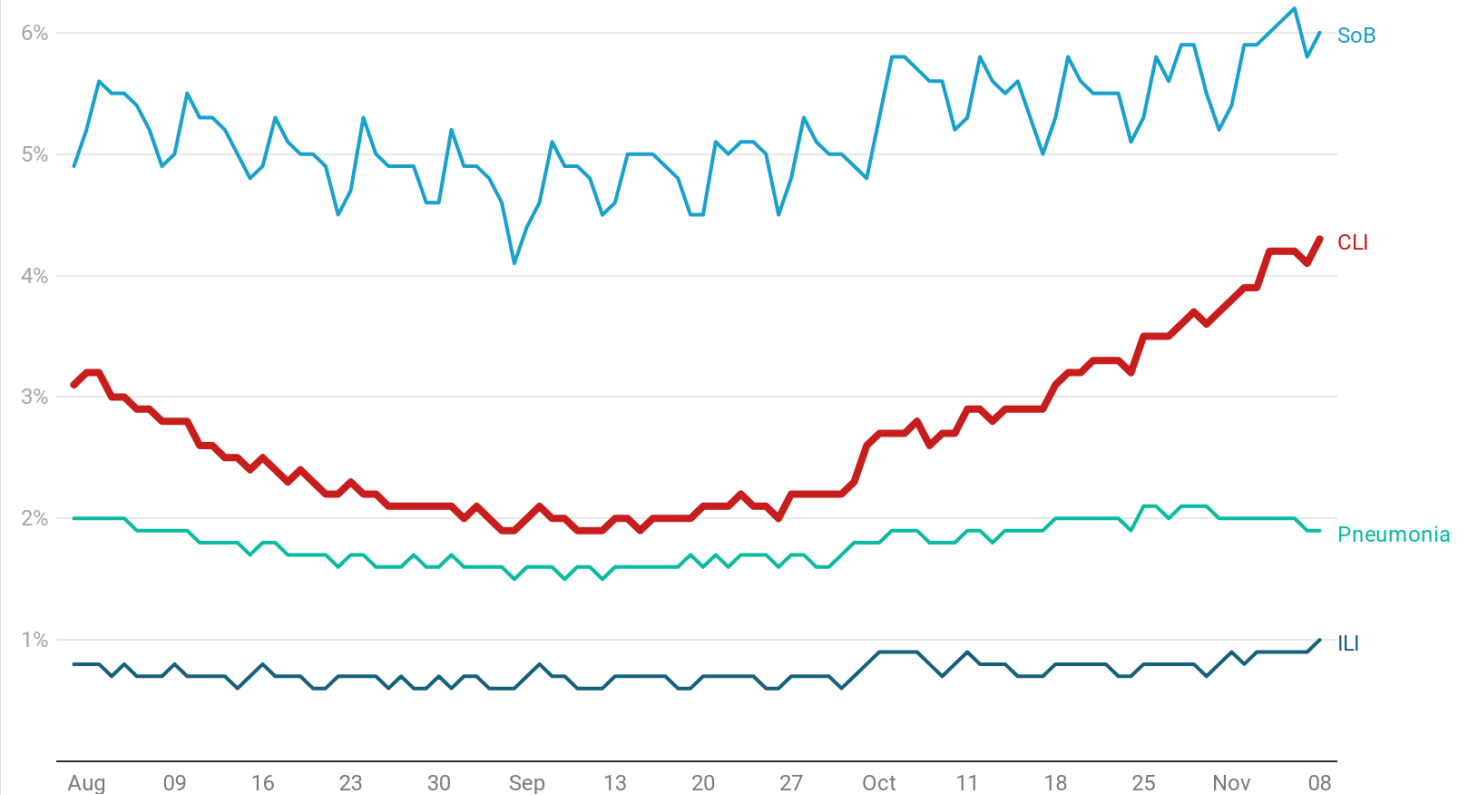
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

The % of ER visits for COVID-19-like illnesses (CLI) has increased for the past six weeks

This rate remains lower, however, than it was in March/April, and the rate of influenza visits remains low

% of Emergency Department Visits for COVID-Like Illness (CLI), Influenza-Like Illness (ILI), Pneumonia & Shortness-of-Breath (SoB)

As of November 8



Health Industry Advisor LLC analysis

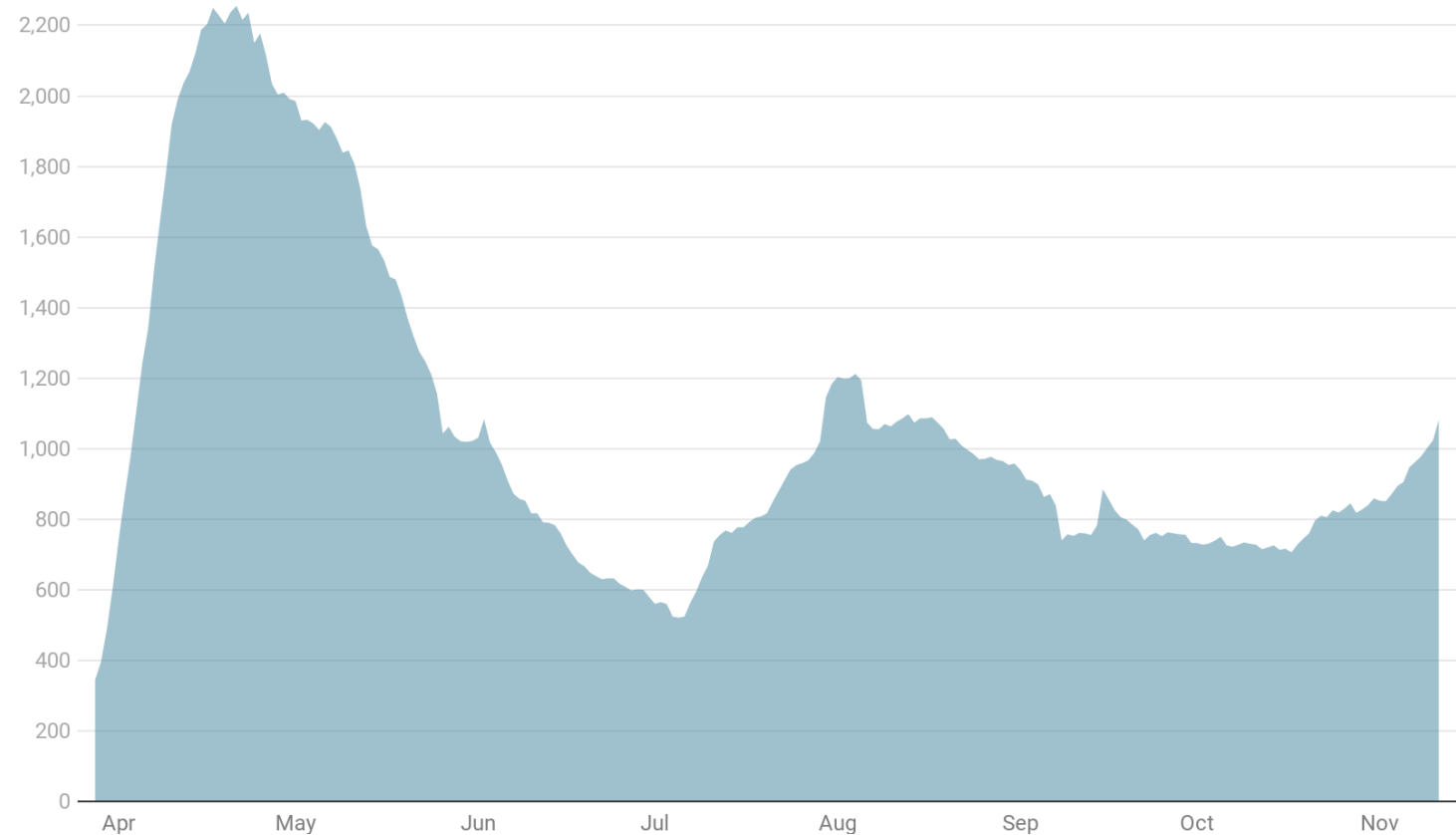
Chart: Health Industry Advisor LLC • Source: Centers for Disease Control • Created with Datawrapper

The recent uptick in newly-detected cases is resulting in increased deaths:

The 7-day average deaths per day has been increasing since mid-October

Deaths Reported With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of November 11



Health Industry Advisor LLC analysis

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

Deaths with coronavirus,
relative to new cases
(lagged 4 weeks) have
moved within a narrow
range for the past month

This rate declined rapidly in
July and August

7-day Average Deaths / 7-Day Average New Cases (4-Week Lag)



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

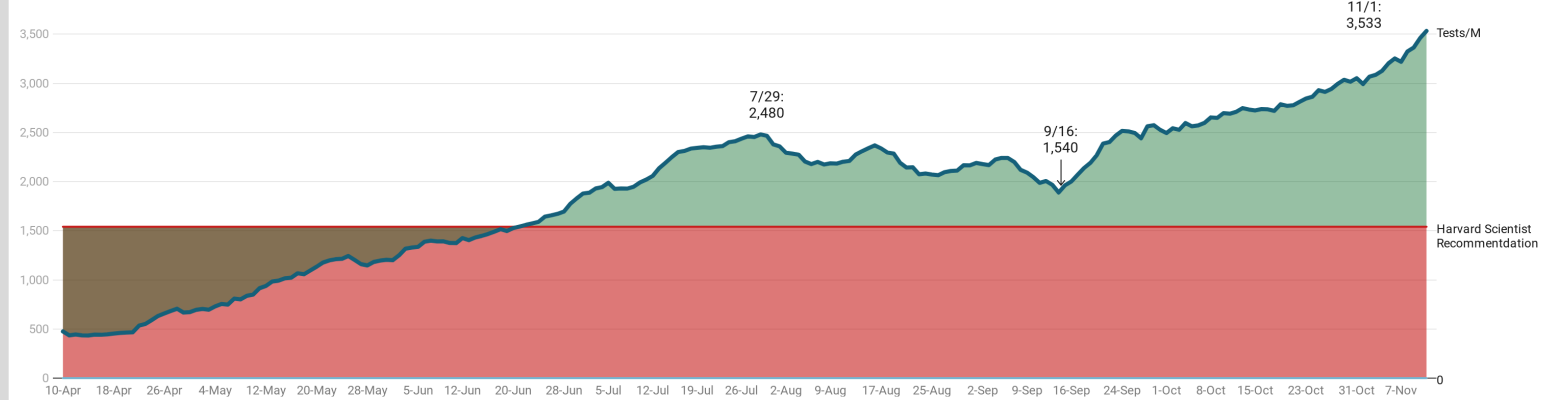
The 7-day average testing volume has increased by 80% since mid-September – setting new highs twenty of the past 24 days

The 7-day test-positive rate, however, has been trending upward since the beginning of October - increasing on thirty-five of the past thirty-eight days

This rate is now above the target established by the CDC for Phase 3 re-openings

Daily Tests Per 1 Million - United States

Trailing 7-Day Moving Average, As of November 11

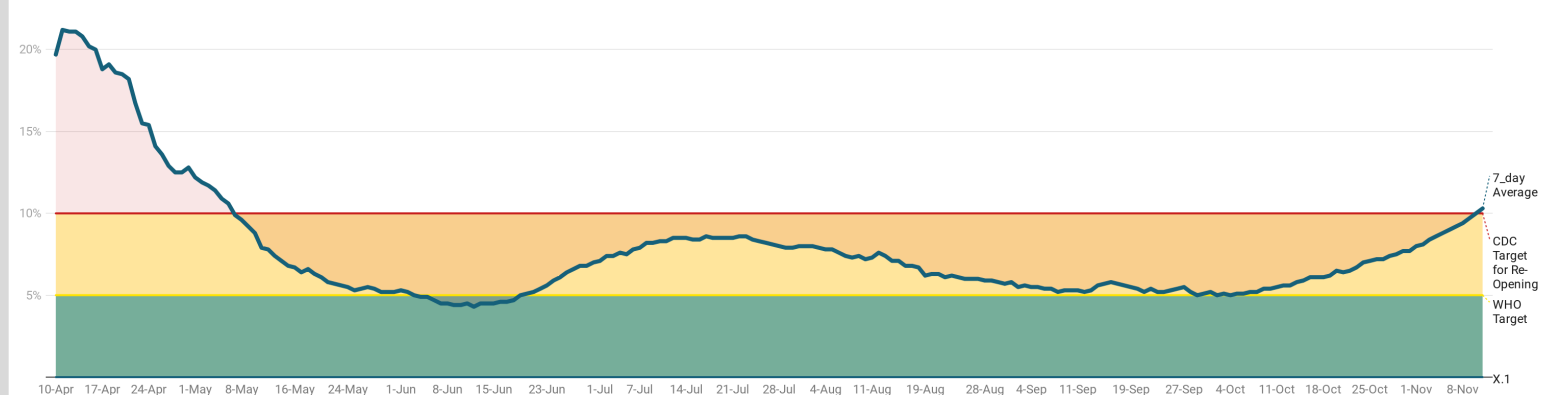


Health Industry Advisor LLC analysis

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

Test-Positive Rate - United States

Trailing 7-Day Moving Average, As of November 11



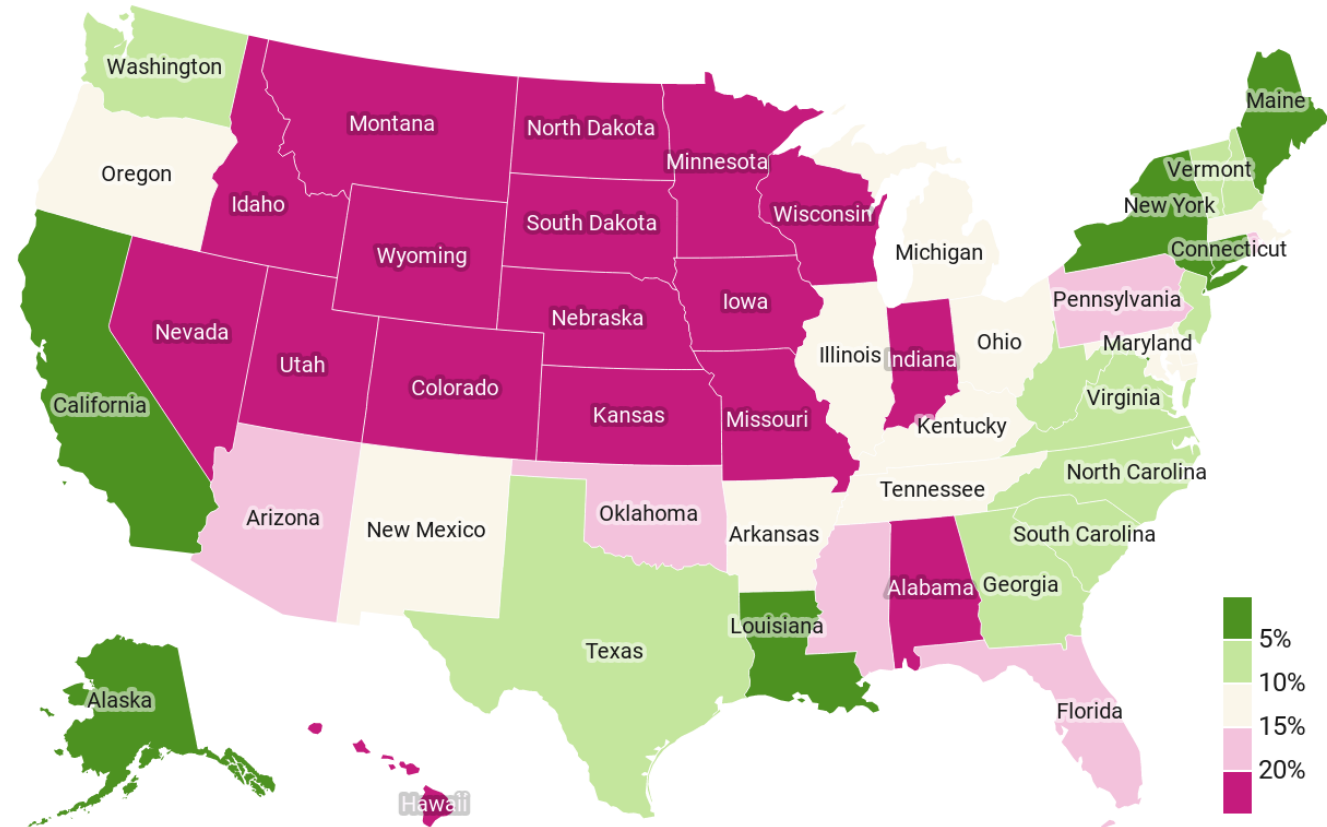
Health Industry Advisor LLC analysis

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

High test-positive rates continue to plague the Midwest, Plains and Mountain States

Test-Positive Rate

7-Day Moving Average, As of November 11



Health Industry Advisor LLC analysis

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

State-By-State Comparisons (page 1 of 3):

Areas of greatest concern:

High rates of new cases per capita in Alaska, Colorado, Idaho, Illinois, Iowa and Kansas

High % of beds devoted to Covid-19 patients in Colorado, Connecticut, Illinois, Indiana and Iowa

High week-over-week increases in new cases in Arizona, Arkansas, Colorado, Connecticut, Delaware, Illinois, Iowa and Kansas

High case fatality rates in Arizona and Kansas

State-By-State Comparisons

As of November 11

State	Cases per 1M Population	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, 28-Day Lag
Alabama	42.6k	653	1,532	20.6%	316	5	21%	14%	29
Alaska	27.6k	131	40,390	1.7%	672	60	17%	32%	9
Arizona	36.4k	856	1,899	15.0%	285	7	23%	50%	33
Arkansas	41.8k	704	3,761	13.1%	492	8	16%	52%	16
California	25.2k	458	3,764	4.3%	157	24	15%	41%	12
Colorado	24.7k	424	2,670	22.0%	614	4	26%	55%	19
Connecticut	23.8k	1,323	9,509	3.9%	375	25	34%	51%	28
Delaware	28.1k	744	2,048	13.0%	265	8	16%	54%	13
District Of Columbia	26k	931	6,069	2.6%	157	39	12%	26%	23
Florida	39.9k	806	1,462	16.4%	245	6	15%	21%	20
Georgia	39k	829	1,867	8.1%	224	8	24%	34%	31
Hawaii	11.4k	157	80	100.0%	74	1	8%	34%	5
Idaho	43k	409	1,803	37.2%	702	3	16%	44%	17
Illinois	41.3k	852	7,074	12.8%	902	8	35%	65%	29
Indiana	33.3k	707	2,232	31.0%	692	3	30%	52%	27
Iowa	52.9k	602	2,277	50.1%	1,356	2	28%	89%	14
Kansas	37.9k	417	1,960	42.6%	843	2	17%	69%	24

State-By-State Comparisons (page 2 of 3):

Areas of greatest concern:

High rates of new cases per capita in Minnesota, Missouri, Montana and Nebraska

High % of beds devoted to Covid-19 patients in Michigan, Minnesota, Missouri, Montana, Nebraska and Nevada

High week-over-week increases in new cases in Maine, Maryland, Massachusetts, Michigan, Nevada, New Hampshire and New York

High case fatality rates in Maine, Massachusetts, Michigan and New Mexico

State-By-State Comparisons

As of November 11

State	Cases per 1M Population	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, 28-Day Lag
Kentucky	28.5k	359	4,138	11.1%	458	9	19%	22%	14
Louisiana	40.8k	1,303	3,042	4.6%	139	22	10%	20%	27
Maine	6.1k	118	5,029	2.4%	120	42	5%	83%	38
Maryland	26.2k	703	1,932	11.8%	228	8	20%	60%	18
Massachusetts	25.5k	1,471	2,882	10.2%	293	10	14%	67%	36
Michigan	25.2k	815	5,562	10.2%	568	10	31%	56%	38
Minnesota	34.5k	498	3,163	26.9%	852	4	26%	72%	24
Mississippi	43.5k	1,175	2,101	16.3%	342	6	13%	46%	22
Missouri	37.7k	567	1,885	34.3%	670	3	27%	57%	23
Montana	39.4k	442	4,069	20.1%	817	5	30%	5%	16
Nebraska	45.4k	377	2,627	38.4%	875	3	28%	24%	12
Nevada	36.8k	609	1,659	26.0%	432	4	42%	52%	16
New Hampshire	9.7k	362	1,781	8.0%	167	11	6%	73%	15
New Jersey	30.3k	1,870	5,078	5.8%	300	17	23%	55%	13
New Mexico	28.2k	552	5,423	10.4%	598	9	24%	45%	34
New York	29.7k	1,743	7,596	2.4%	185	41	13%	64%	15
North Carolina	28.7k	448	3,760	6.4%	242	16	18%	8%	14

(page 3 of 3):

Areas of greatest concern:

High rates of new cases per capita in North Dakota, Rhode Island, South Dakota, Utah, Wisconsin and Wyoming

High % of beds devoted to Covid-19 patients in North Dakota, Rhode Island, South Dakota and Wisconsin

High week-over-week increases in new cases in Ohio, Oklahoma, Tennessee, Utah, Vermont and Washington

High case fatality rates in West Virginia

State-By-State Comparisons

As of November 11

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North Dakota	75.3k	900	2,347	72.5%	1,701	1	27%	13%	29
Ohio	22.9k	484	4,465	10.2%	454	10	20%	59%	17
Oklahoma	36k	371	3,286	16.0%	526	6	23%	79%	9
Oregon	12.5k	176	1,537	12.6%	194	8	13%	57%	15
Pennsylvania	19.4k	721	1,564	18.3%	282	6	14%	52%	27
Rhode Island	37.5k	1,173	3,272	19.2%	628	5	28%	50%	21
South Carolina	36.7k	792	3,741	6.0%	225	17	17%	10%	15
South Dakota	66.3k	641	2,636	54.0%	1,438	2	30%	10%	25
Tennessee	42.9k	550	4,466	11.0%	493	9	24%	62%	22
Texas	36.4k	675	2,971	9.8%	329	9	24%	33%	22
Utah	43.6k	211	1,427	56.9%	813	2	17%	50%	6
Vermont	4.1k	95	1,189	5.2%	61	19	3%	116%	16
Virginia	23k	438	2,401	7.4%	179	13	19%	15%	8
Washington	16.5k	327	2,800	6.7%	190	15	10%	58%	15
West Virginia	16.9k	309	5,508	6.1%	337	16	9%	46%	48
Wisconsin	49.1k	422	2,984	36.2%	1,028	3	39%	32%	15
Wyoming	33.5k	219	2,679	39.9%	1,069	3	17%	54%	17

Data 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, National, Regional, and State Level Outpatient Illness and Viral Surveillance
<https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
- Centers for Disease Control, COVID-19 Laboratory-Confirmed Hospitalizations
https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control, COVID Data Tracker <https://www.cdc.gov/covid-data-tracker/index.html#mobility>
- 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>