Health Industry Advisor, llc

"Strategic Advice in an Era of Unprecedented Change"

Covid-19 Report

Issue # 254

January 7, 2021

Covid-19 Highlights

- **Reported cases and deaths were higher-than-normal on both Tuesday and Wednesday. This could be the result of increased infection spread or "catching-up" on the reporting interruptions during the extended holiday period**
- **Estimated "true" infections continue to rise, based on models from both Yuyang Gu and the Yale School of Public Health**
- Yesterday, the CDC published an updated ensemble forecast of Covid-19 hospital admissions for the next four weeks
  - **Admissions are projected to increase significantly throughout January in Florida, Georgia, Maine, New York, South Carolina, Vermont, and Washington**
  - Admissions are expected to increase, albeit at a lower rate, in Alabama, Hawaii, Idaho, Kentucky, New Hampshire, North Carolina, Texas and Virginia
  - Admissions are projected to decline significantly throughout January in Illinois, Iowa, Montana, North Dakota, South Dakota, Wisconsin and Wyoming
  - **California, which has been hard-hit with hospitalizations, is projected to experience modestly higher admissions in the first half of January before they begin to taper later in the month**
- **Reproduction rates (Rt) have generally been increasing since the beginning of December**
  - **These reproduction rates are highest (and rising) in Alaska, Arizona, Kentucky, Oregon, Utah and Washington**
  - Rates are also high in Georgia, Colorado, Hawaii, Maryland, Nevada, New York, Ohio, South Carolina and Virginia
  - **Of note, these rates have been declining in California and Tennessee and are below 1.0 in both states**
- Newly detected cases per capita
  - **Arizona currently has the highest rate of new cases per capita in the country; this rate has sharply increased since Christmas**
  - **California's rate has stabilized recently, at a modestly lower rate than just before Christmas**
  - **Rates have fallen sharply in Michigan, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming**
  - **Rates have steadily increased in New York and North Carolina; t**hey have risen recently in South Carolina, Texas, Utah and West Virginia
- Covid-19 hospitalizations are an on-going concern. However, **the challenge with hospital occupancy seems to be particularly acute in Arizona, California, Connecticut, Georgia, Nevada, and New York**

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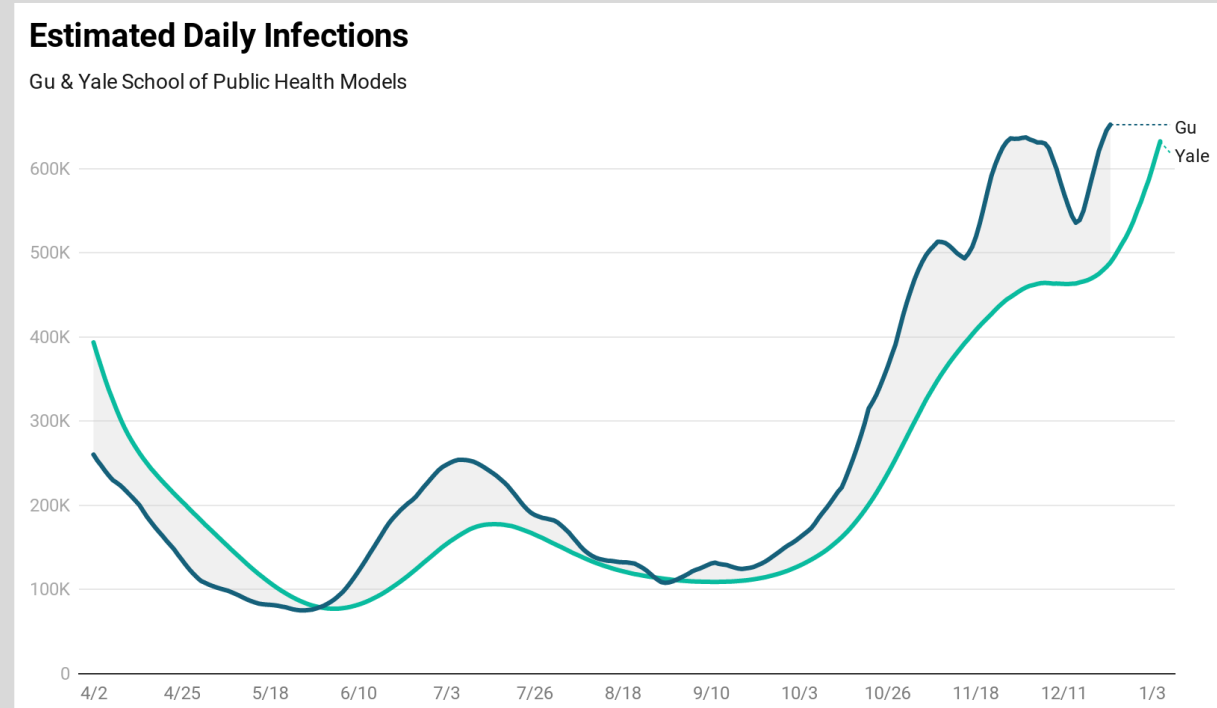
Two Models of Estimated Daily Infections

Covid-19

Models from both Youyang Gu and the Yale School of Public Health suggests that actual infections are spiking. Gu estimates infection prevalence of 21.7% as of December 23

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



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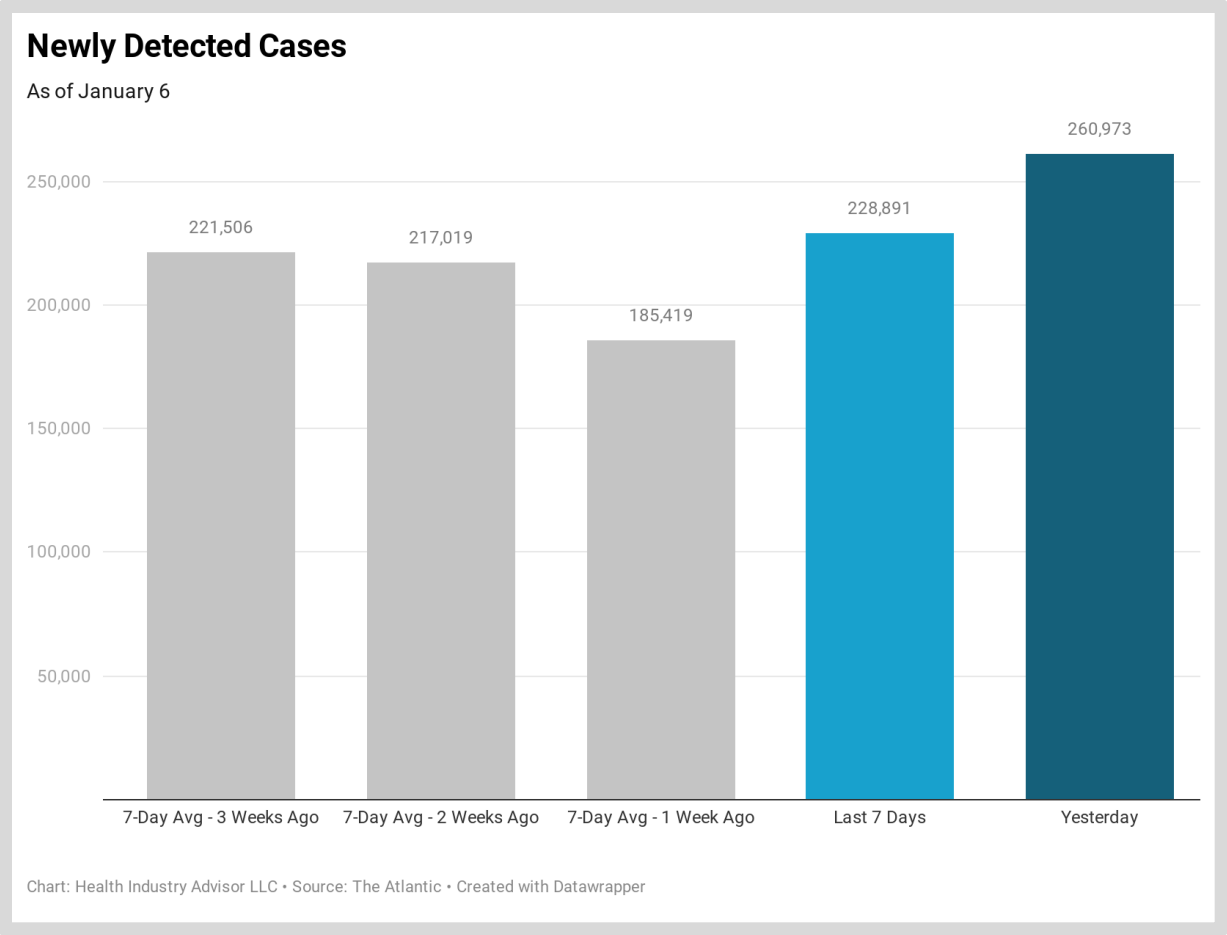
Newly Detected Cases

Covid-19

There were an unusually high number of newly detected cases reported on Tuesday and Wednesday - resulting in the highest 7-day average seen since the pandemic began



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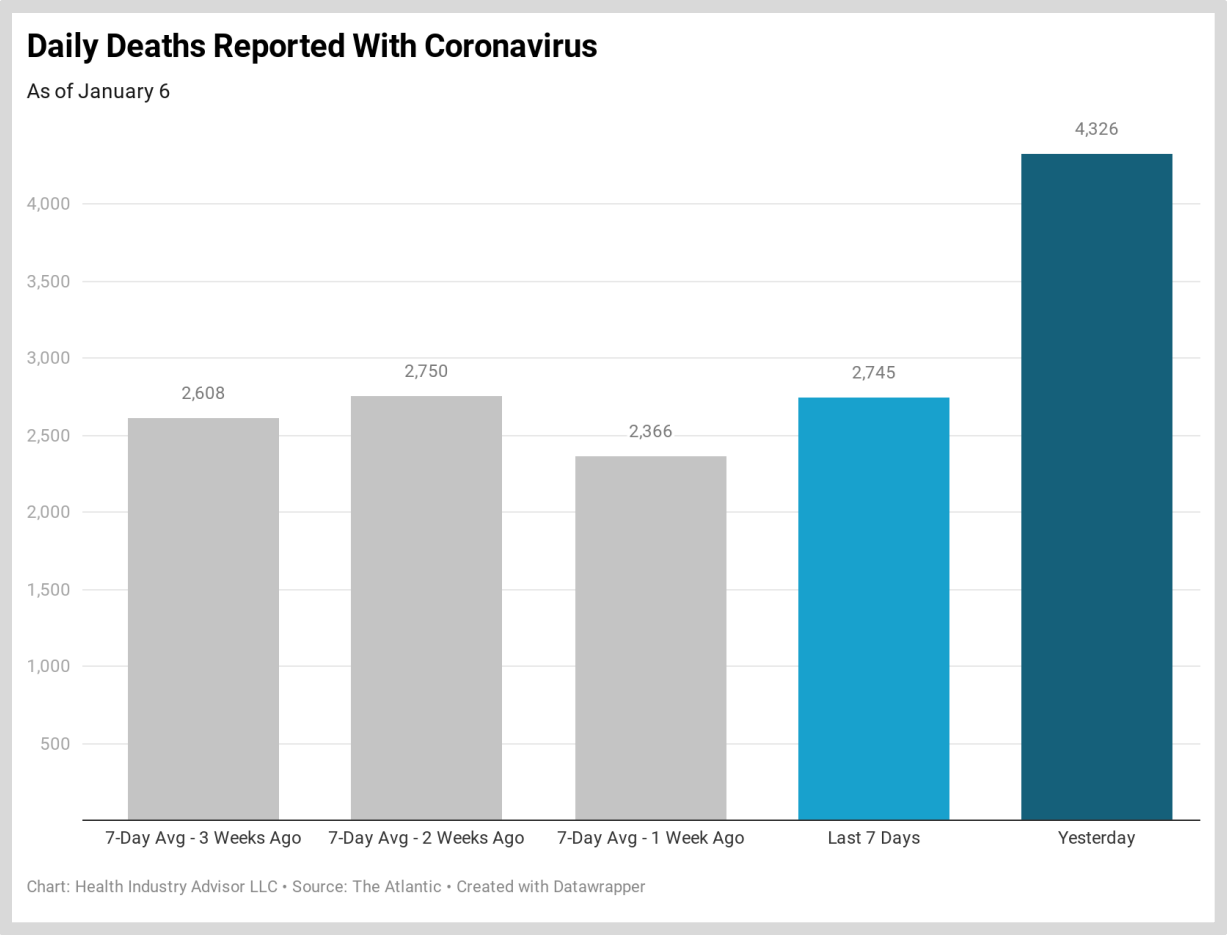
Deaths Reported With Coronavirus

Covid-19

There were a significant number of deaths reported with coronavirus each of the past two days; the 7-day average, however, is comparable to the number reported prior to Christmas



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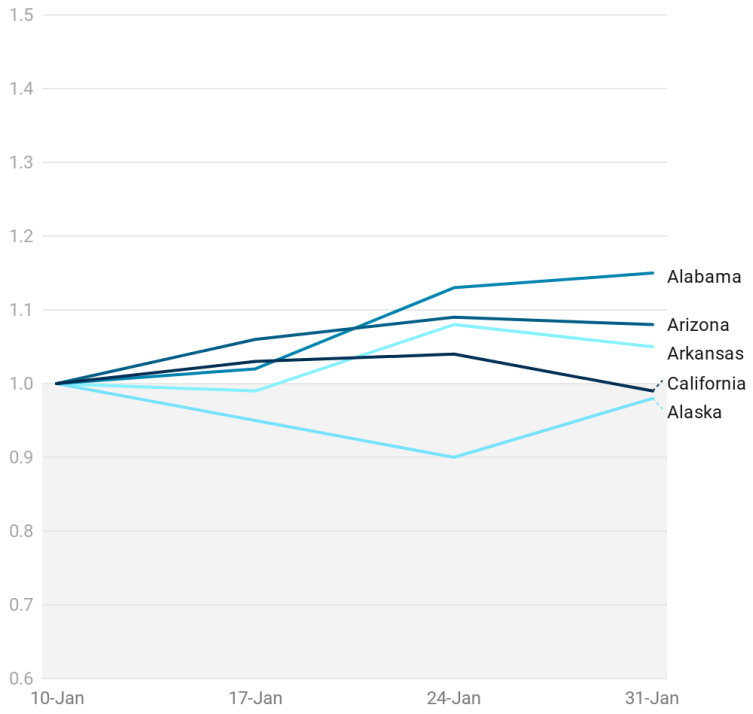
Projections of Hospital Admissions (US)

Covid-19

Hospital admissions in Florida and Georgia are projected to increase throughout the month; California and Connecticut start to get some relief near the end of the month

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week

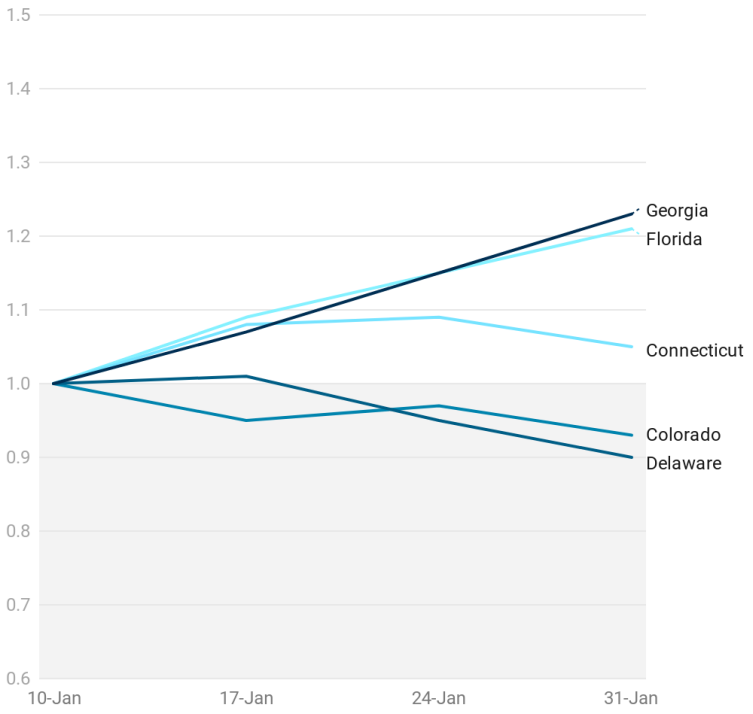


Updated January 6, 2021. Accessed January 6, 2021

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

Projected Hospital Admissions

Next Three Weeks, Indexed To This Week



Updated January 6, 2021. Accessed January 6, 2021

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

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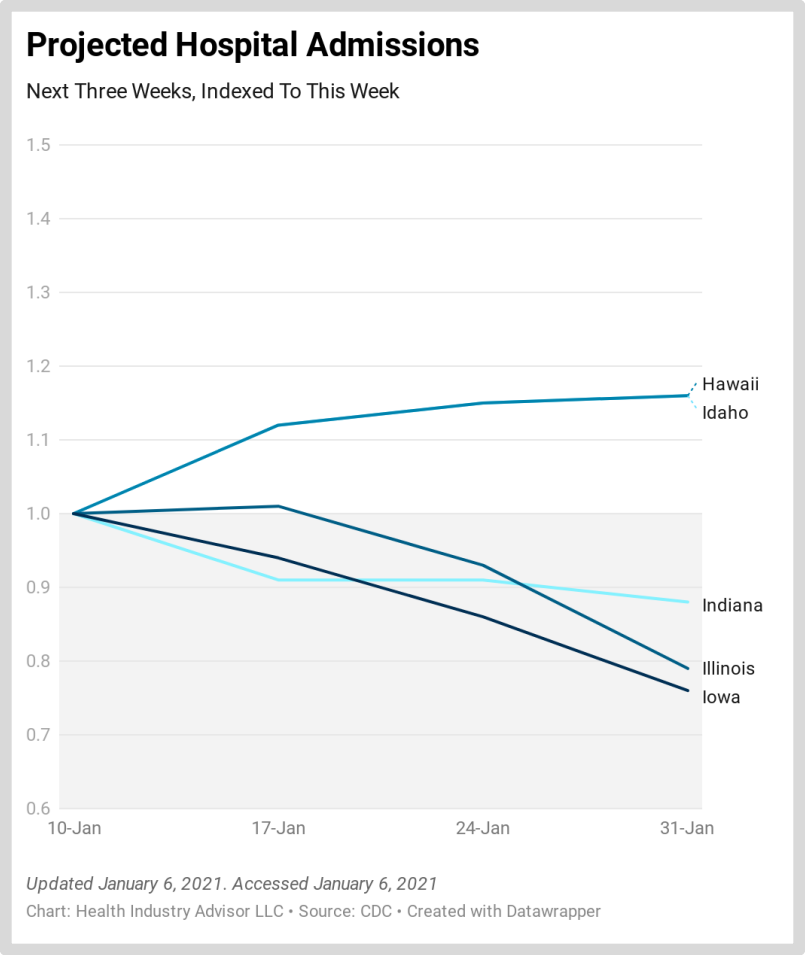
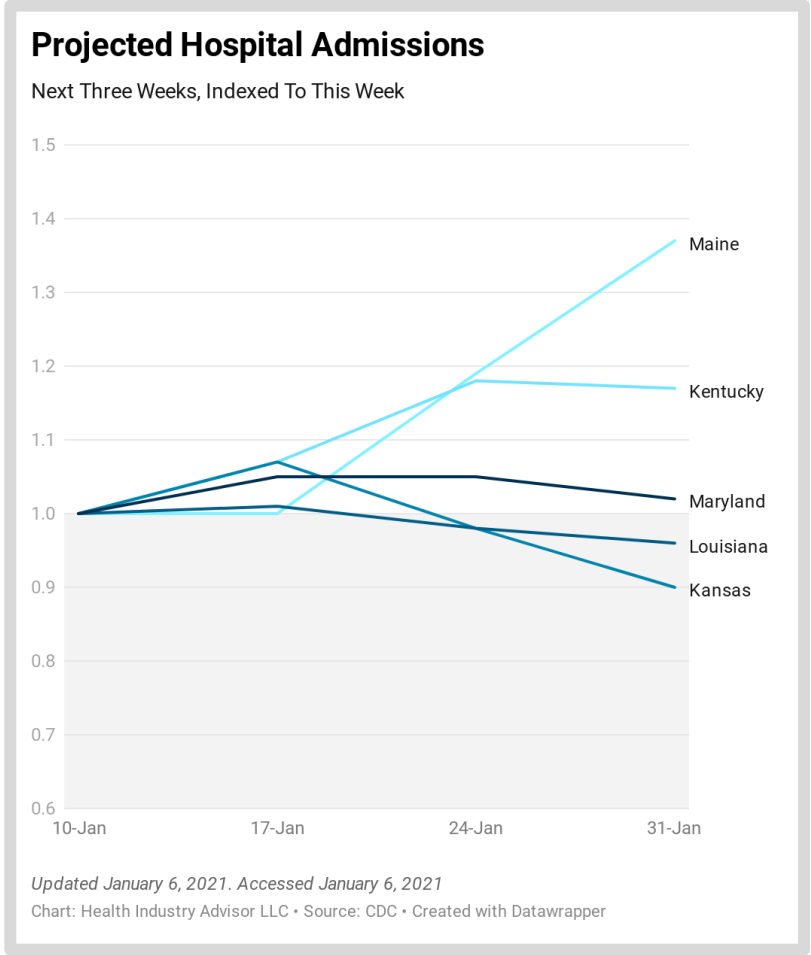
Projections of Hospital Admissions (US)

Covid-19

Several Midwestern states are projected to see sharp declines this month in hospital admissions; Maine and Kentucky, to as lesser degree are projected to see a sharp increases





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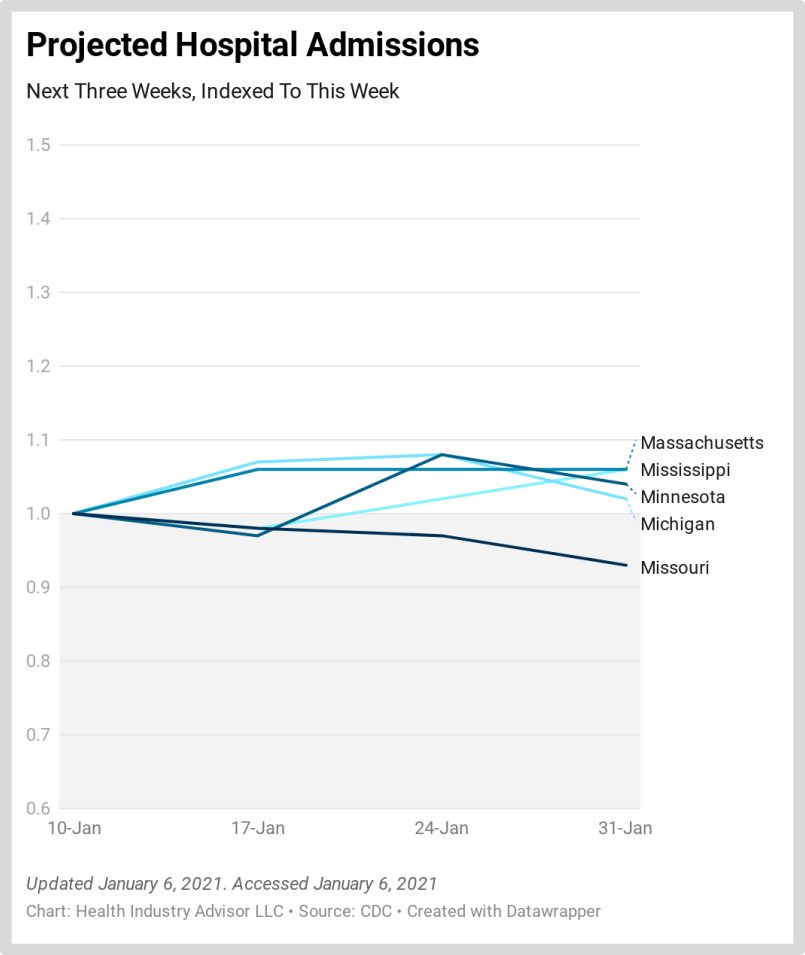
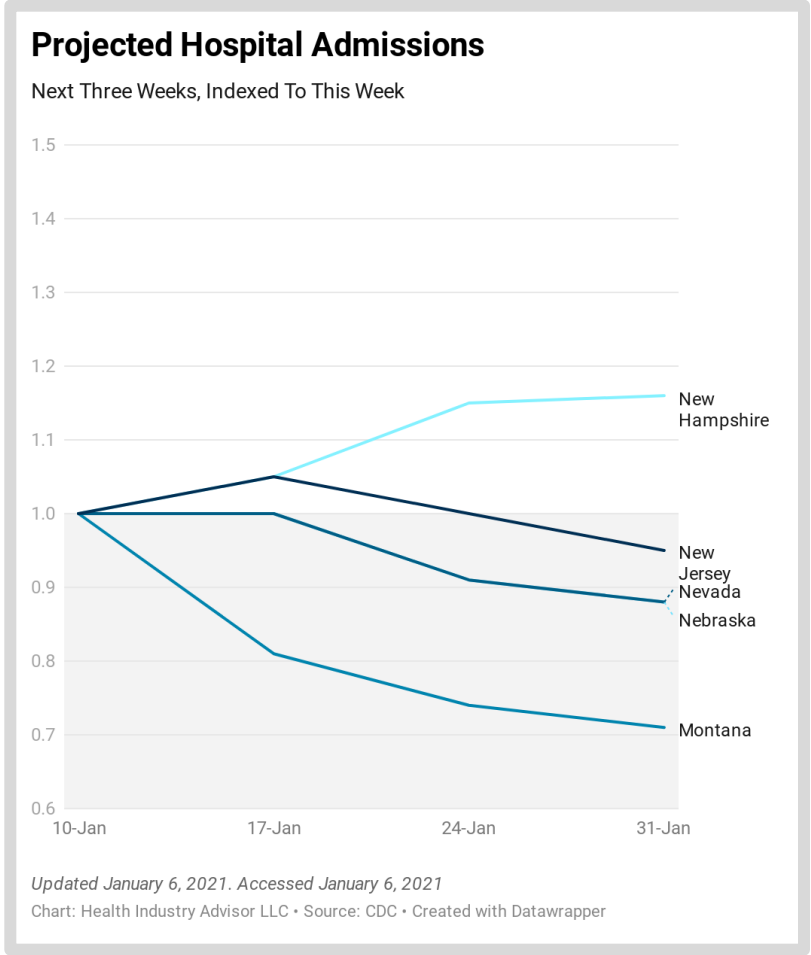
Projections of Hospital Admissions (US)

Covid-19

Nebraska, New Jersey and Nevada are projected to see decline in admissions in the second half of the month; Admissions are projected to decline in Montana throughout the month





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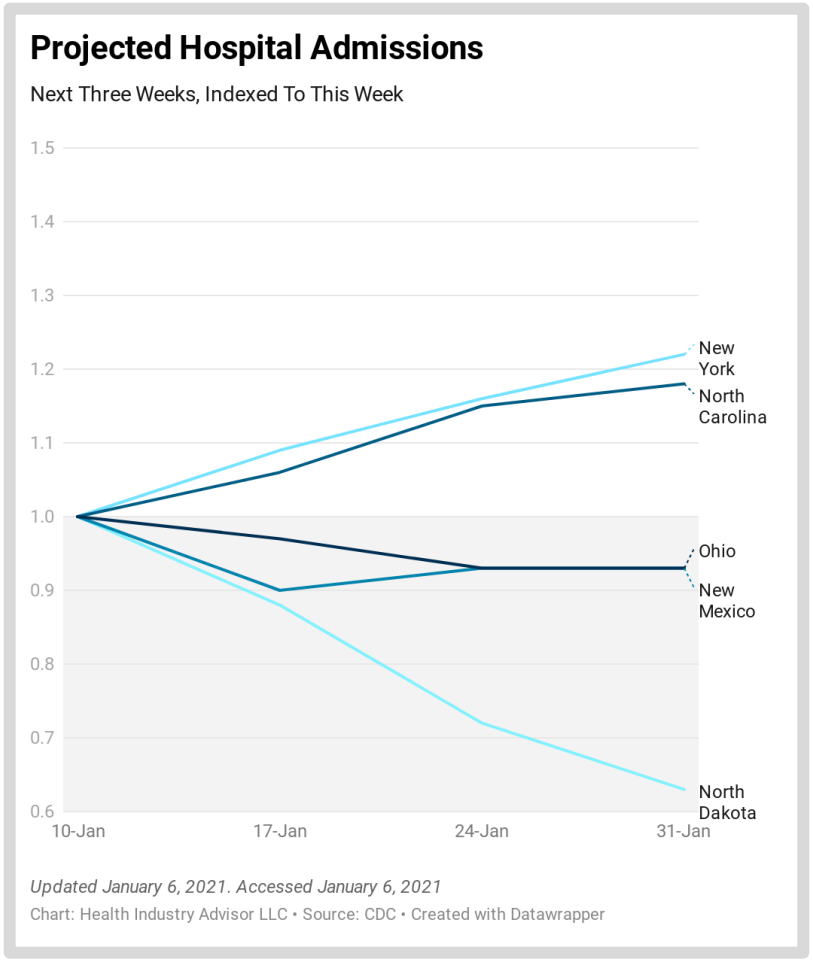
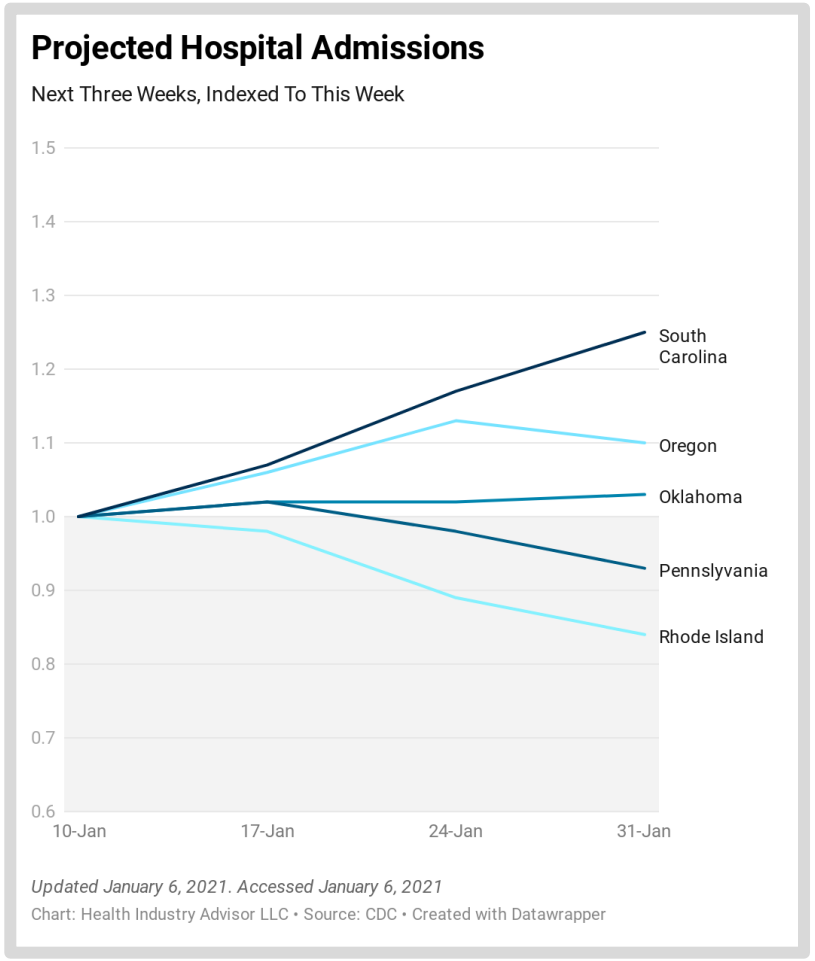
Projections of Hospital Admissions (US)

Covid-19

New York, North Carlina and South Carolina are projected to see sharp increases in hospital admissions this month; Ohio, Pennsylvania and Rhode Island ae projected to see declining admissions





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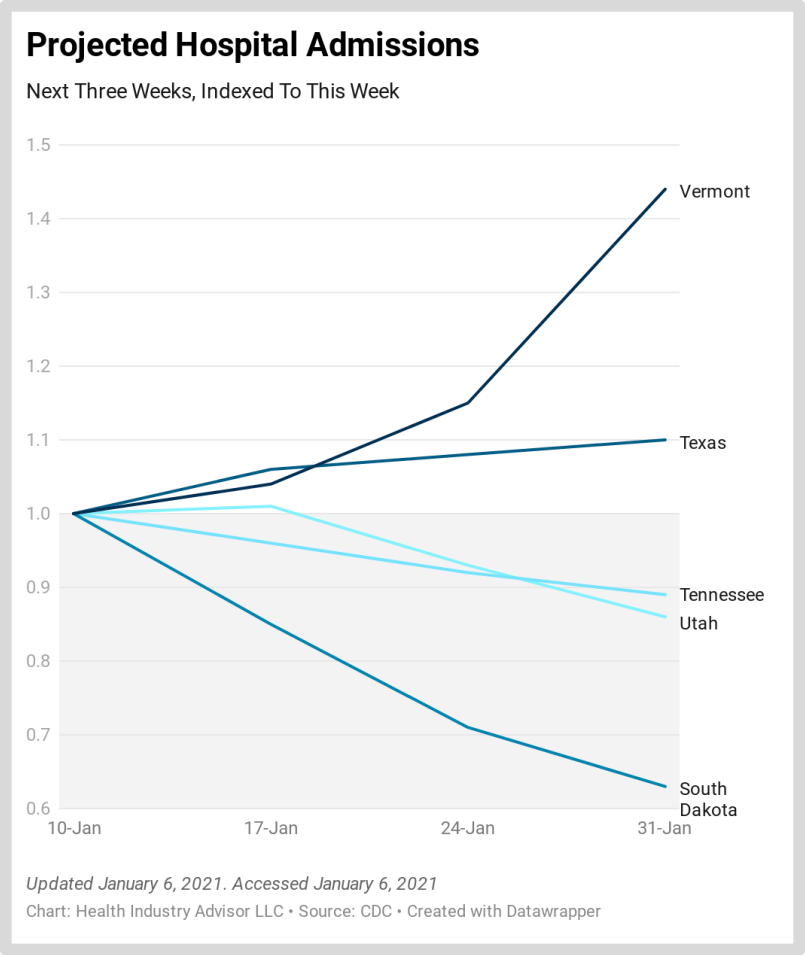
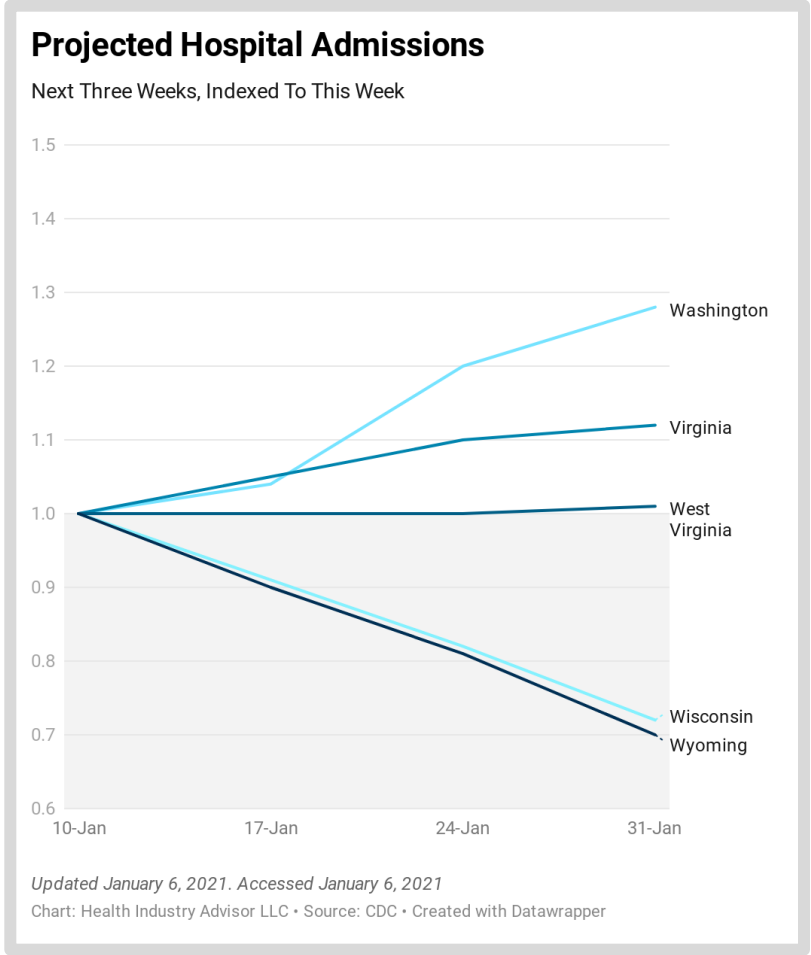
Projections of Hospital Admissions (US)

Covid-19

Vermont and Washington are projected to see sharply more admissions this month; Texas and Virginia are also projected to see increases in admissions, Several states in the Upper Midwest are projected to see declining admissions





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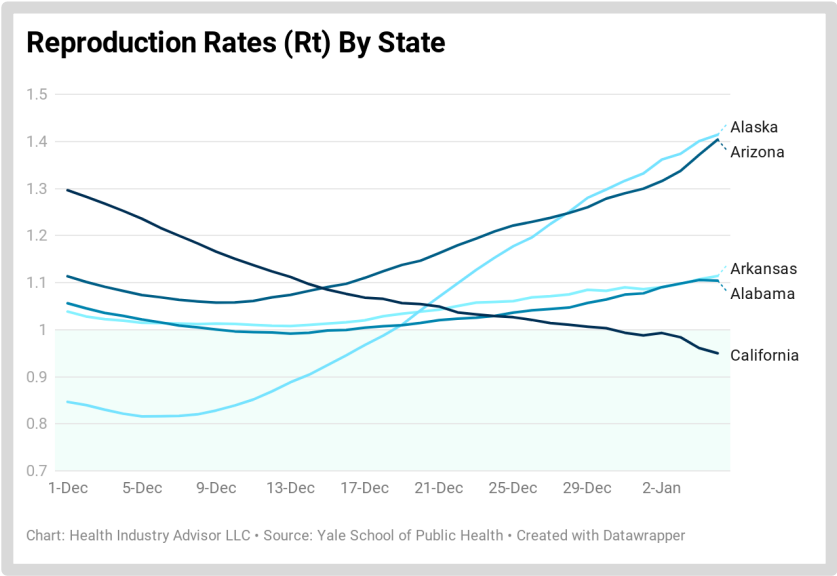
Covid-19

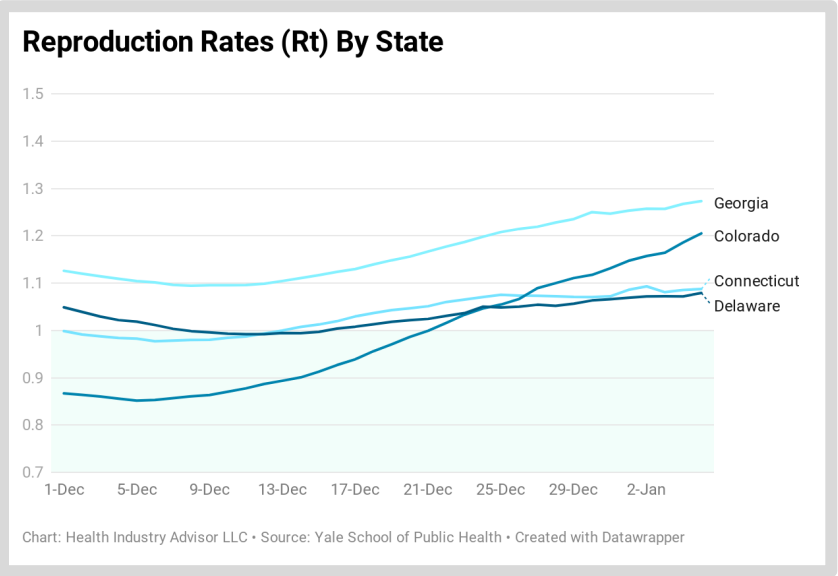
Reproduction Rate (R_t)

This rate has declined in California but has increased sharply in Arizona and Alaska; it also has increased in Alabama, Arkansas, Colorado and Georgia

Alabama - California



Colorado – Georgia
Note: Data unavailable for Florida



Reproduction Rates (R_t) are an indication of how fast the virus is spreading. Rates > 1 suggest that spread is increasing; <1, that it is declining

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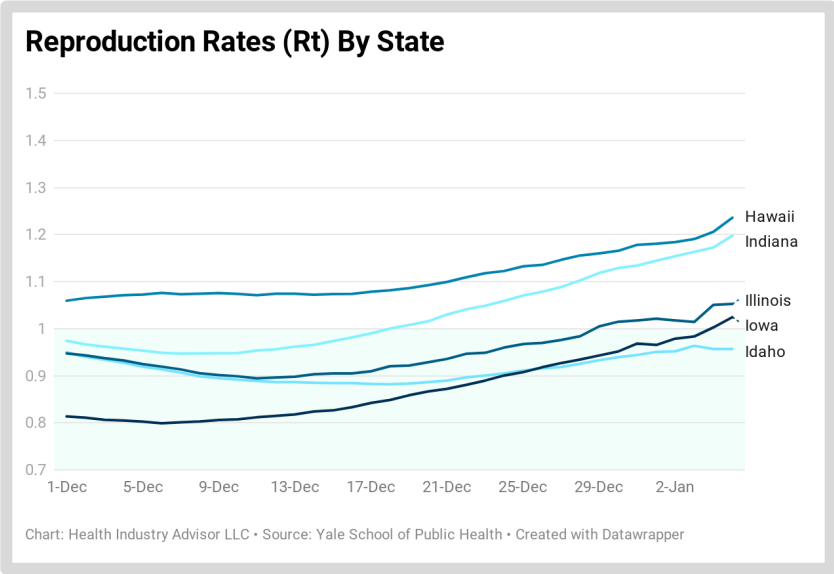
Covid-19

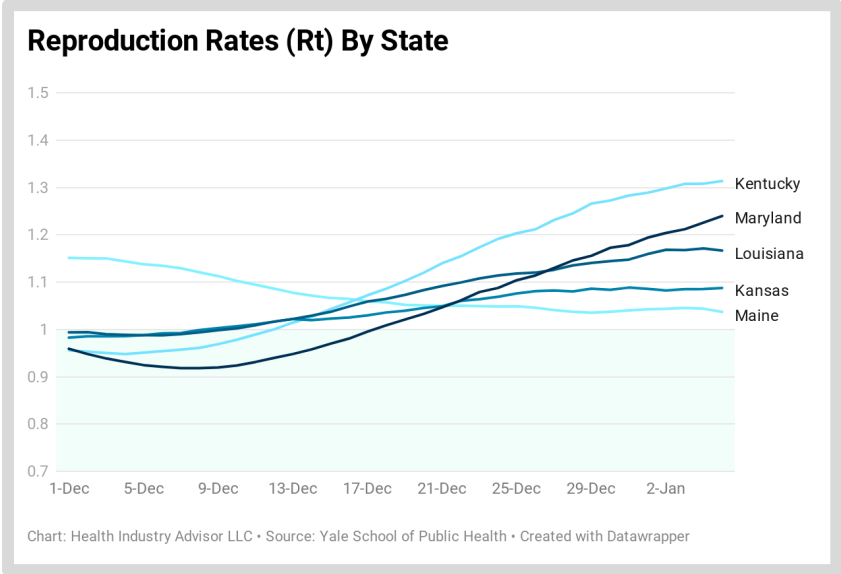
Reproduction Rate (R_t)

Maine's rate is declining but, remains >1; Idaho's rate is increasing but, remains <1

Hawaii - Iowa



Louisiana - Maryland



Reproduction Rates (R_t) are an indication of how fast the virus is spreading. Rates > 1 suggest that spread is increasing; <1, that it is declining

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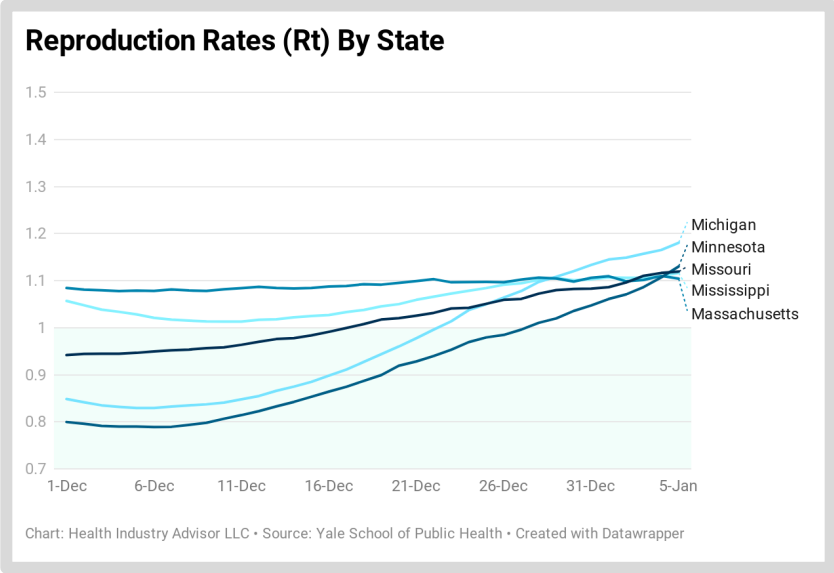
Reproduction Rate (R_t)

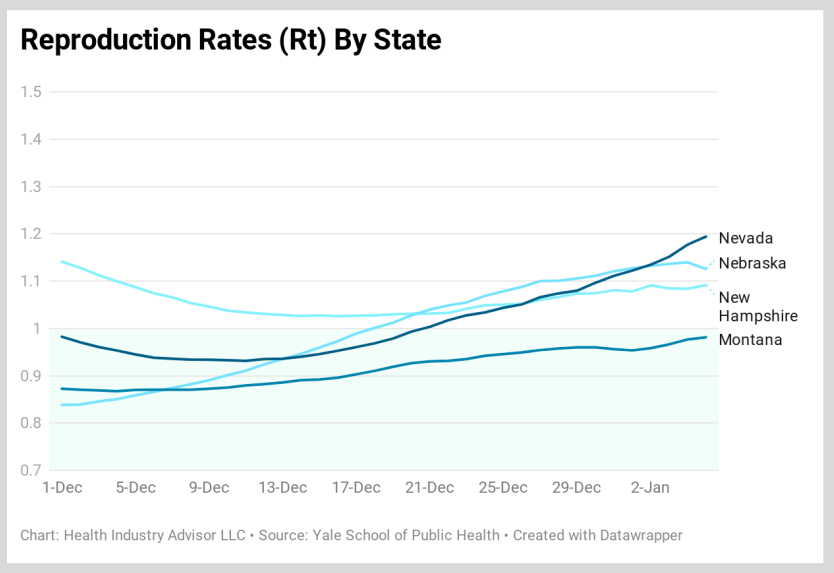
Covid-19

Montana's is increasing bit, remains <1

Massachusetts - Missouri



Montana – New Jersey
Note: Data unavailable for New Jersey



Reproduction Rates (R_t) are an indication of how fast the virus is spreading. Rates > 1 suggest that spread is increasing; <1, that it is declining

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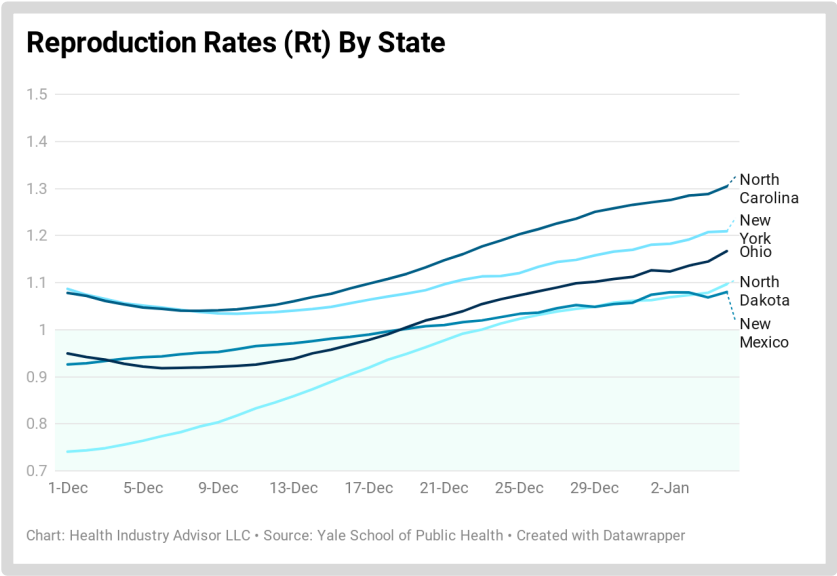
Reproduction Rate (R_t)

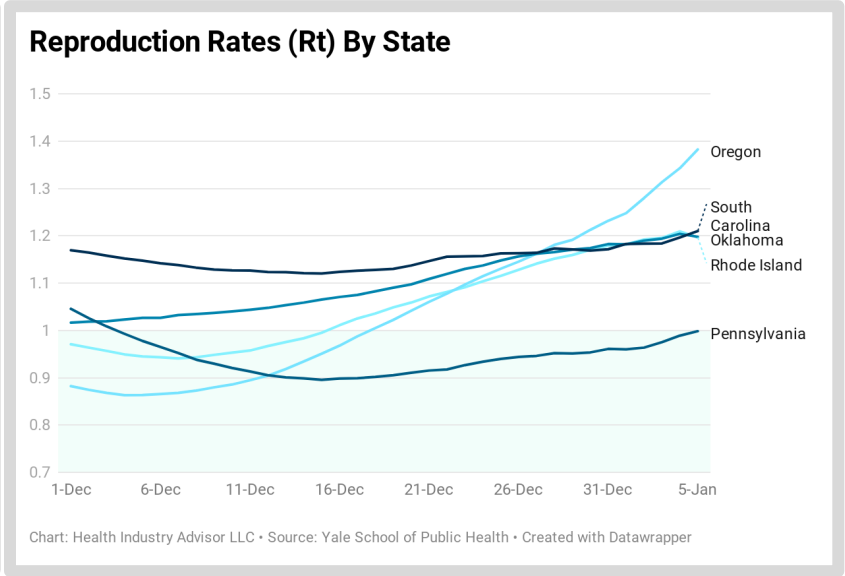
Covid-19

Rates are increasing in each of the states; Pennsylvania's is now at 1

New Mexico - Ohio



Oklahoma – South Carolina



Reproduction Rates (R_t) are an indication of how fast the virus is spreading. Rates > 1 suggest that spread is increasing; <1, that it is declining

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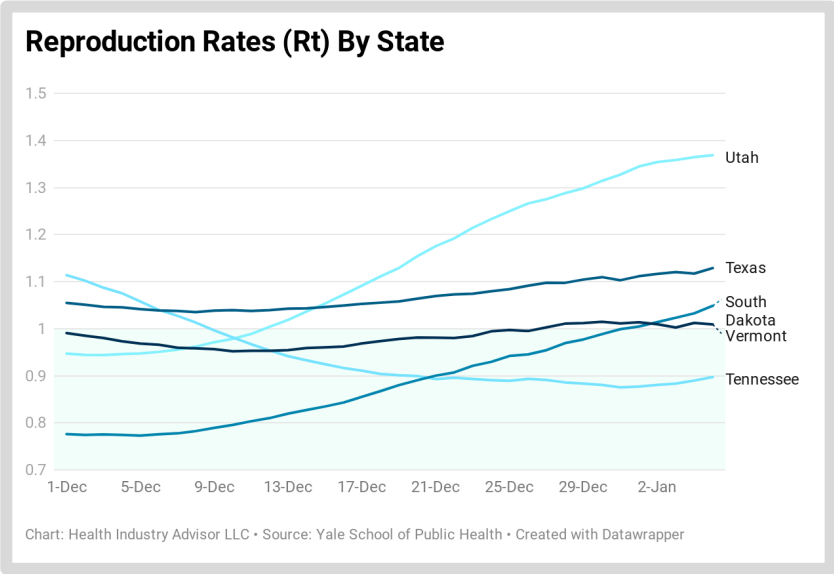
Reproduction Rate (R_t)

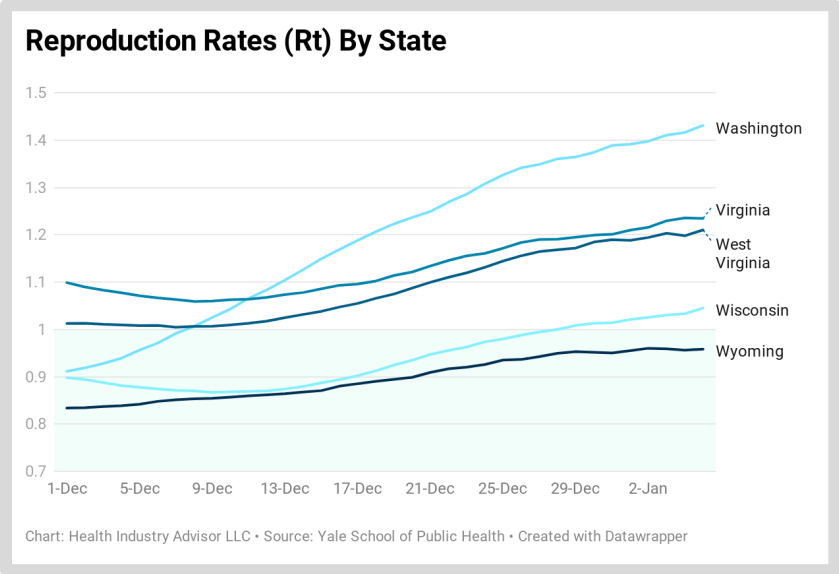
Covid-19

Tennessee's rate has dropped below 1

Tennessee - Vermont



Virginia - Wyoming



Reproduction Rates (R_t) are an indication of how fast the virus is spreading. Rates > 1 suggest that spread is increasing; <1, that it is declining

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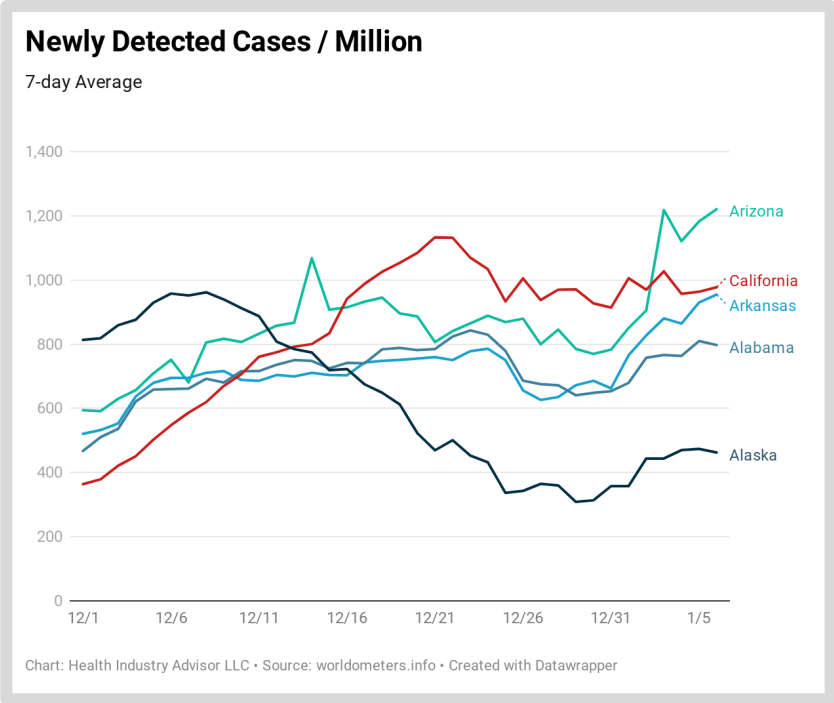
Newly Detected Cases Per Million

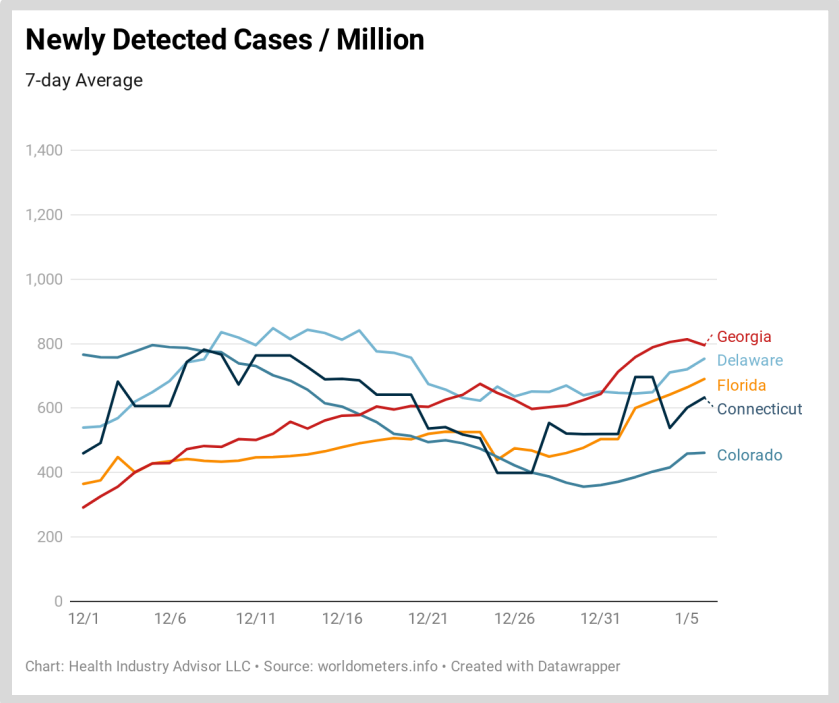
Covid-19

Cases in Arizona are high and rising; California's rate seems to have stabilized albeit at a high level

Alabama - California



Colorado – Georgia



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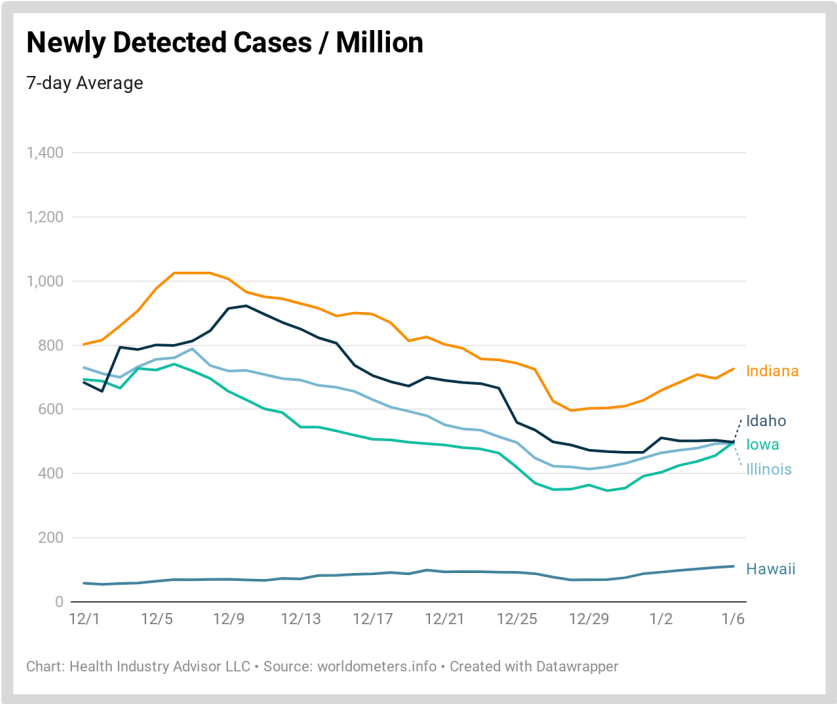
Newly Detected Cases Per Million

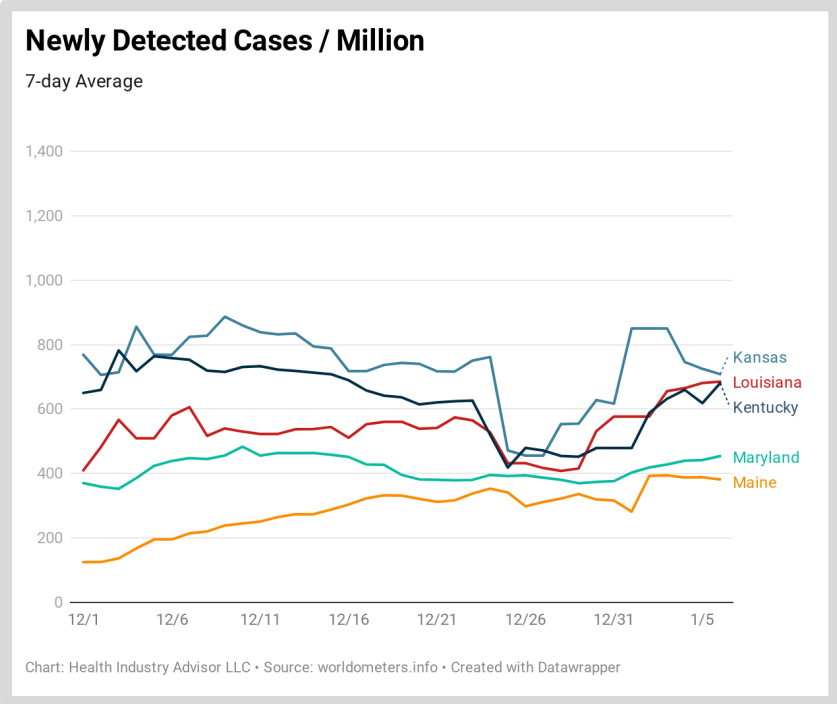
Covid-19

Maine's rate is increasing but, remains relatively low

Hawaii - Iowa



Louisiana - Maryland



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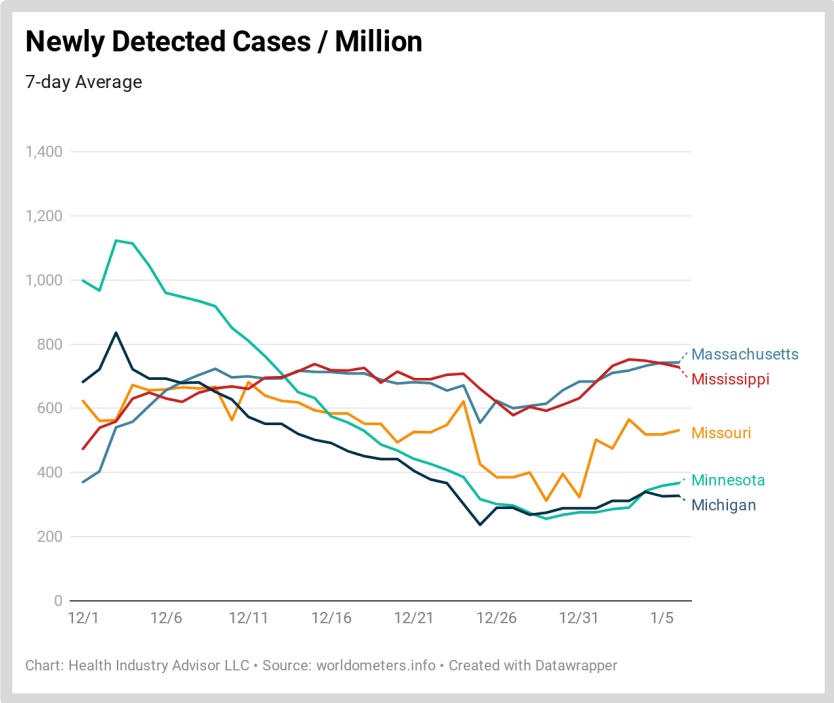
Newly Detected Cases Per Million

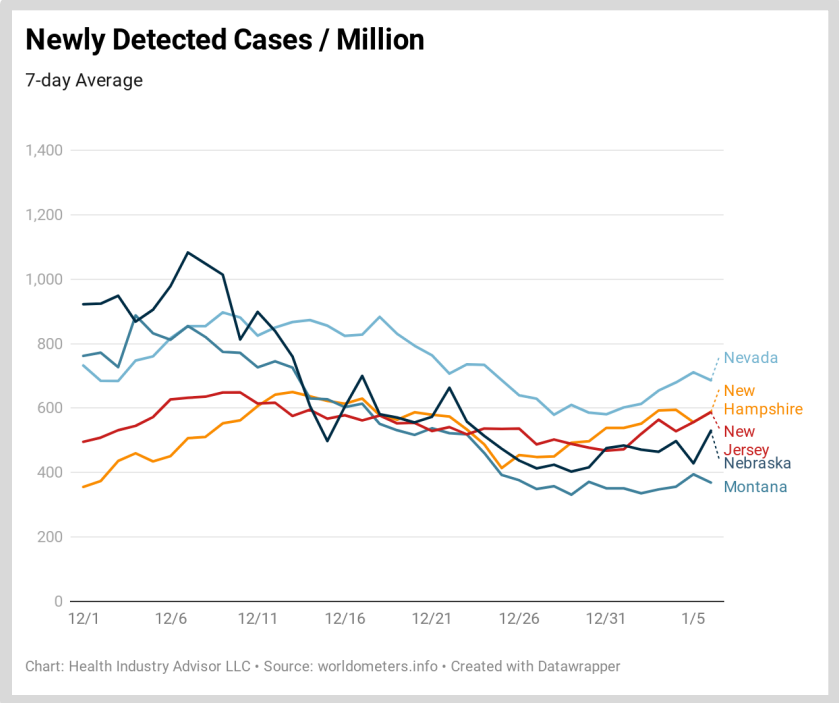
Covid-19

Rates have dropped significantly in Michigan, Minnesota, Montana and Nebraska; rate has declined as well in Nevada

Massachusetts - Missouri



Montana – New Jersey



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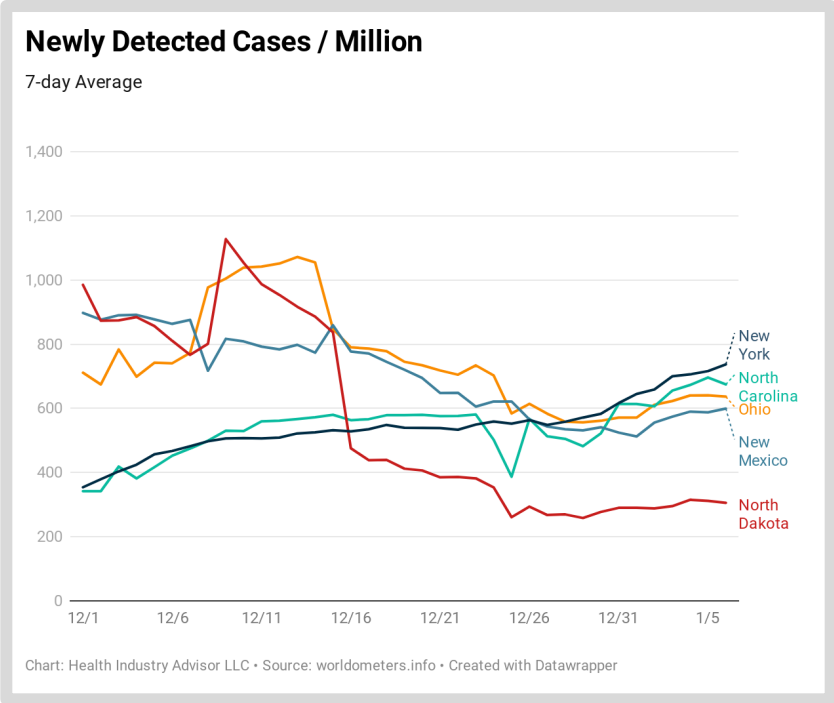
Covid-19

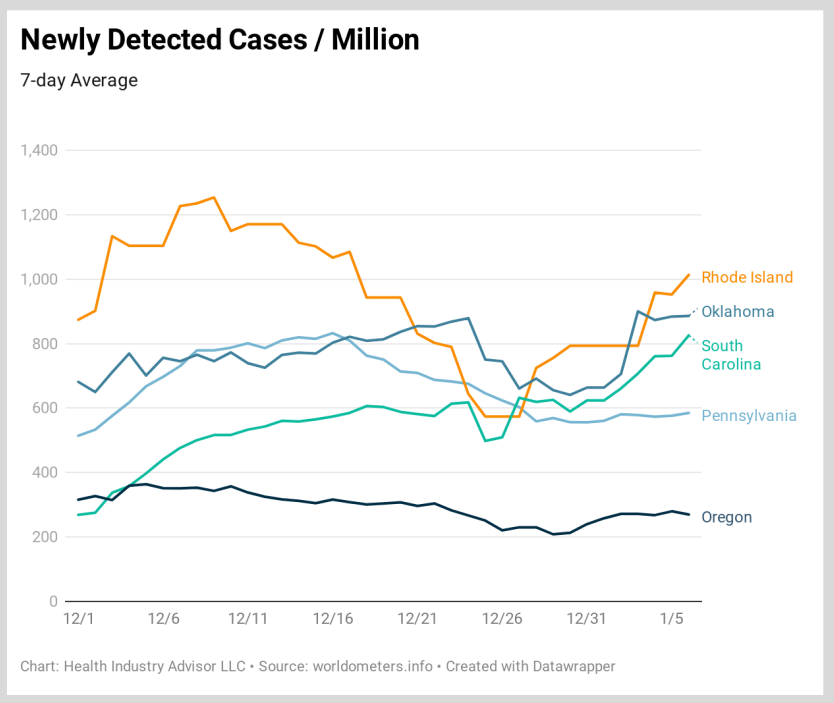
Newly Detected Cases Per Million

Rates have steadily increased in New York and North Carolina; Rates have rebounded from holiday-lulls in Rhode Island and Oklahoma. Rate has recently increased in South Carolina

New Mexico - Ohio



Oklahoma – South Carolina



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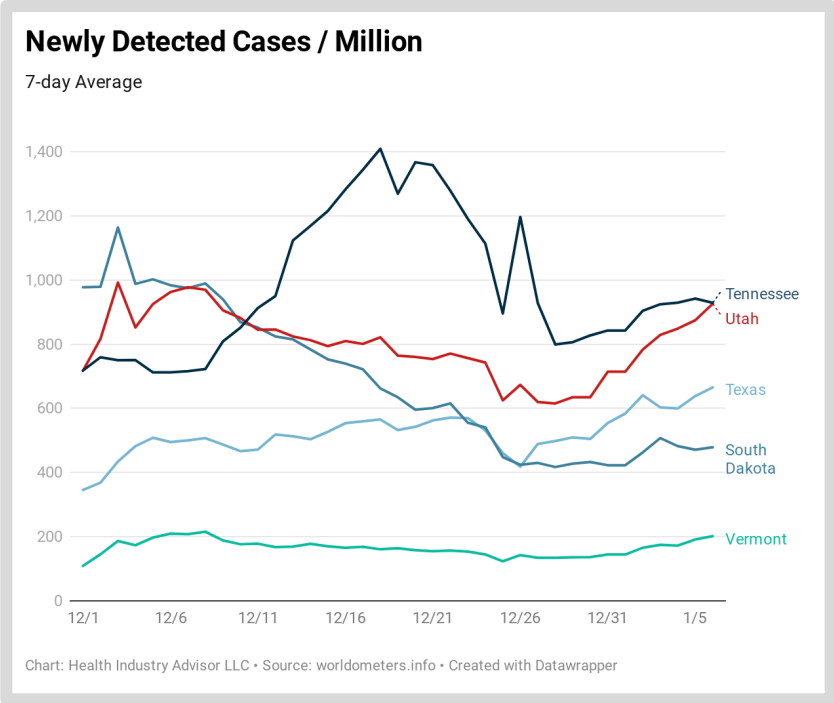
Newly Detected Cases Per Million

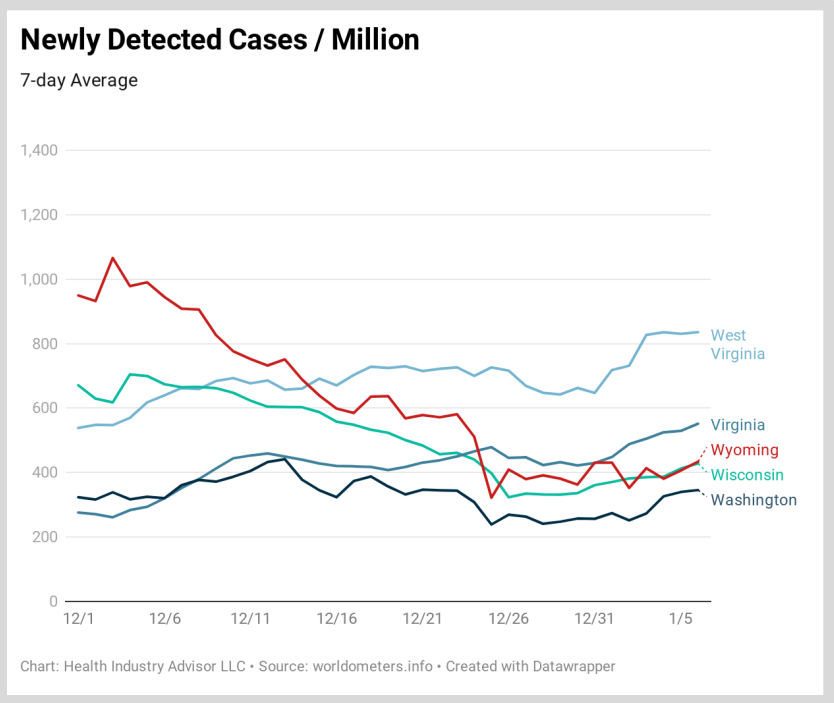
Covid-19

Tennessee's rate has improved but, remains high; Utah, Texas and West Virginia are experiencing recent increases in rate; South Dakota and Wyoming have seen significant reductions in rates

Tennessee - Vermont



Virginia - Wyoming



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State-By-State Scorecard: Scoring Grid

Covid-19

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

Worse ← → Better

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

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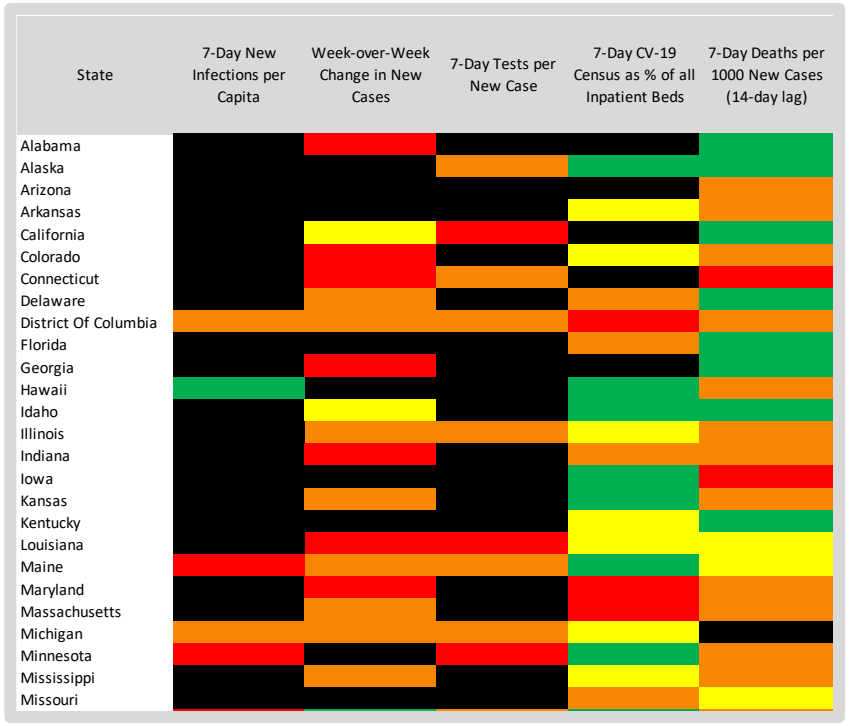
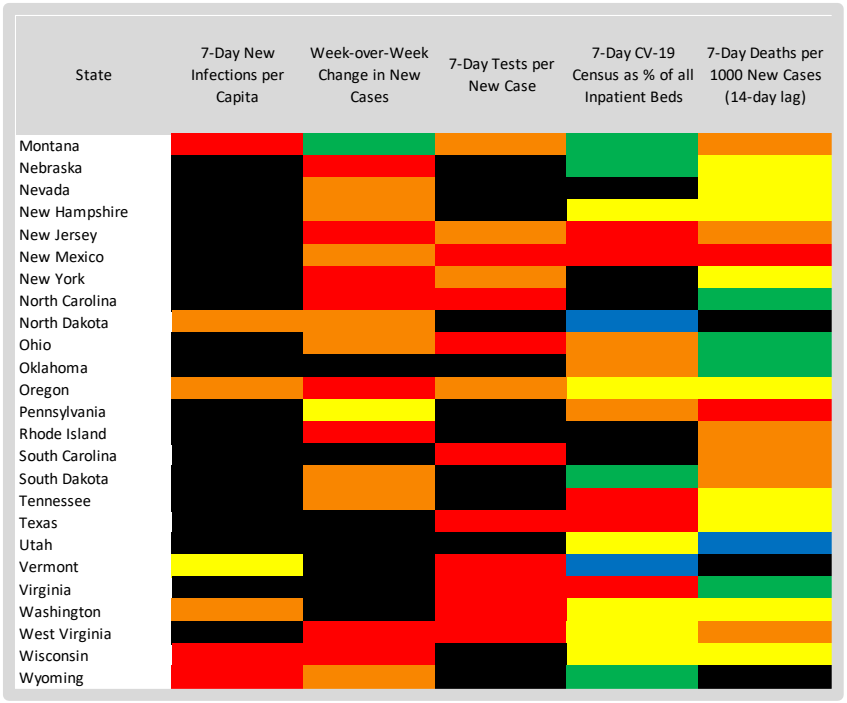
State-By-State Scorecard:

Covid-19

Overall, a very discouraging picture across the country; One surprising exception- the hospital crisis may be concentrated in a handful of states





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

Covid-19

Hawaii has the fewest deaths per capita; Arizona now has the highest case rate per capita (7-day average); California is 4th. California has the highest Covid-19 bed occupancy; Arizona ranks 3rd

State-By-State Comparisons

As of January 6

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	7.7%	1,019	1,901	42.0%	797	2	52%	23%	8
Alaska	6.4%	299	8,577	5.4%	462	19	15%	48%	7
Arizona	7.8%	1,297	3,276	37.3%	1,221	3	81%	59%	16
Arkansas	7.9%	1,293	3,349	23.3%	954	4	26%	39%	16
California	6.3%	709	6,962	13.7%	977	7	86%	5%	9
Colorado	6.0%	877	1,487	31.0%	461	3	20%	29%	15
Connecticut	5.5%	1,747	9,264	6.8%	633	15	65%	22%	21
Delaware	6.3%	973	2,413	31.2%	753	3	38%	18%	6
District Of Columbia	4.3%	1,142	7,963	4.4%	349	23	42%	13%	16
Florida	6.5%	1,040	2,213	30.5%	690	3	36%	45%	10
Georgia	6.7%	1,052	2,939	20.4%	795	4	69%	27%	7
Hawaii	1.6%	211	116	100.0%	111	1	13%	60%	15
Idaho	8.1%	830	1,056	47.7%	498	2	14%	6%	10
Illinois	7.8%	1,478	5,867	8.4%	495	12	27%	18%	19
Indiana	7.9%	1,299	1,522	47.7%	726	2	33%	20%	16
Iowa	9.1%	1,287	784	46.2%	498	2	14%	44%	23
Kansas	8.0%	1,039	1,779	39.6%	708	3	17%	13%	19
Kentucky	6.3%	628	3,309	20.6%	680	5	29%	42%	9

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

Covid-19

New Jersey and New York have the highest number of deaths per capita; Nevada and New York rank 2nd and 5th respectively in Covid-19 bed occupancy

State-By-State Comparisons

As of January 6

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	7.0%	1,652	4,616	14.8%	685	7	28%	29%	13
Maine	2.0%	277	5,161	7.4%	382	14	18%	19%	12
Maryland	4.8%	1,014	2,094	21.7%	454	5	47%	21%	18
Massachusetts	5.7%	1,847	2,482	29.9%	743	3	50%	13%	16
Michigan	5.5%	1,368	3,603	9.1%	327	11	26%	13%	25
Minnesota	7.5%	992	1,835	20.0%	367	5	16%	37%	17
Mississippi	7.6%	1,684	3,413	21.4%	729	5	26%	19%	18
Missouri	7.0%	1,033	946	48.2%	532	2	35%	34%	14
Montana	7.8%	950	4,055	9.1%	369	11	13%	-1%	17
Nebraska	8.8%	880	1,225	43.7%	530	2	16%	27%	12
Nevada	7.6%	1,070	2,610	26.3%	686	4	85%	17%	14
New Hampshire	3.5%	600	2,240	26.3%	588	4	30%	18%	15
New Jersey	6.2%	2,211	6,681	20.5%	588	11	48%	23%	16
New Mexico	7.1%	1,260	5,307	11.3%	599	9	41%	11%	23
New York	5.6%	1,999	9,291	7.9%	737	13	67%	26%	14
North Carolina	5.5%	675	4,941	13.7%	674	7	55%	29%	8

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

Covid-19

Infection prevalence is over 10% in North and South Dakota, 1.3% in Vermont; Vermont has the 2nd fewest deaths per capita; South Carolina now has the 2md highest case rate per capita (7-day average)

State-By-State Comparisons

As of January 6

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	12.3%	1,751	491	62.2%	306	2	6%	10%	26
Ohio	6.3%	801	3,597	17.7%	636	6	30%	13%	9
Oklahoma	7.8%	665	3,955	22.4%	886	4	37%	38%	7
Oregon	2.8%	369	3,680	6.7%	270	14	20%	27%	11
Pennsylvania	5.3%	1,329	1,392	41.7%	585	2	39%	5%	20
Rhode Island	8.9%	1,784	3,302	30.7%	1,013	3	51%	28%	19
South Carolina	6.4%	1,084	4,884	16.9%	826	6	52%	40%	15
South Dakota	11.4%	1,717	1,224	39.1%	479	3	15%	11%	16
Tennessee	9.0%	1,080	3,780	24.6%	929	4	45%	12%	10
Texas	6.4%	1,012	3,587	17.8%	665	5	48%	32%	13
Utah	9.0%	415	2,233	41.5%	926	2	21%	46%	4
Vermont	1.3%	244	1,852	10.9%	202	9	8%	48%	27
Virginia	4.4%	612	3,625	15.2%	552	7	44%	31%	9
Washington	3.4%	489	2,859	11.8%	346	8	24%	34%	10
West Virginia	5.2%	829	7,495	11.1%	836	9	27%	26%	18
Wisconsin	8.4%	865	1,277	38.0%	428	3	21%	27%	12
Wyoming	7.9%	802	961	45.1%	434	2	10%	20%	25

Table: Health Industry Advisor LLC • Created with Datawrapper

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Covid-19

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
- Oliver Wyman Pandemic Navigator, https://pandemicnavigator.oliverwyman.com/forecast?mode=country&region=United%20States&panel=mortality
- Bloomberg Vaccine Trackers, https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmHW