

Measure	Desired Change	Yesterday in the U.S.
No. of Tests	Increase	Up 4.5% (Cumulative)
Positive Test Rate	Decline	Steady at 19.5%
No. of Cases	Plateau	Up 4.7%, rate continues to slow
% of Deaths Per Case	Decline	Up slightly to 5.2% (from 5.1%)
No. of Deaths / 1M Pop.	Plateau	Up to 112.3
Recoveries : Deaths	Increase (>1:1)	1.71

We are tracking the 17 countries (and 20 of the top 23) with the most total coronavirus cases (India, Ireland and Peru - 17th, 18th and 19th in most cases, respectively, recently moved into this top group and, have not yet been included in our dataset). The 20 we are tracking represent 87.8% of all cases in the world. Additionally, we are tracking all fifty U.S. states, the District of Columbia and New York City.

Highlights from Friday include:

- Recoveries were significant again in the U.S. on Friday at 5,666 - bringing the total number of persons having recovered from the virus to 63,510. Given the [World Health Organization](#)'s published guideline of expected recovery time, we continue to anticipate seeing an extended period of accelerating pace of recoveries.
- Massachusetts, Mississippi, Rhode Island and South Carolina appear to have finally broken the exponential case growth trend. This leaves only Nebraska and South Dakota as having yet to break this trend.

Breaking this trend is a critical early step in containing the virus.

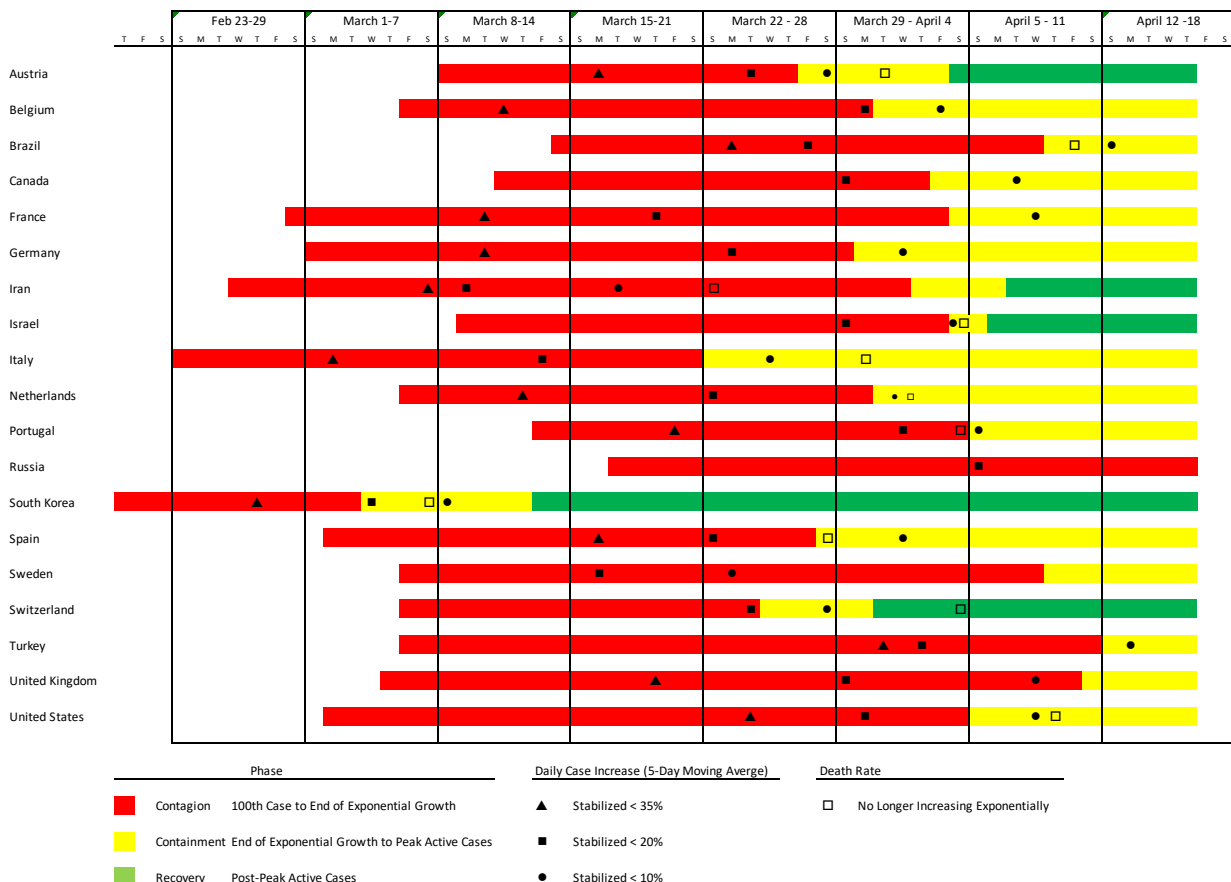
- Total cases surpassed 700,000 in the U.S. Still, case growth is slowing significantly across the U.S., except for South Dakota, which is the only state still experiencing double digit daily growth rates. Twenty-six states now have daily growth rates of 5% or less. An interesting aside, Washington state – the original epicenter – has slowed its case growth rate to a point that it would take more than 56 days now for cases to double.
- Testing was about 150,000 for the 4th consecutive day and the positive test rate is fairly stable at 19.5%. The U.S. ranks 10th in testing per capita, among the countries we are tracking. Testing rates are at least 2x in Switzerland, Portugal, Israel and Germany as the U.S., and nearly 2x in Spain and Austria.
- China yesterday reported about 1,300 previously-unreported deaths, increasing the total by nearly 40%.
- Brazil, after seeing a peak in active cases on April 12, now appears headed toward a new or, at least a secondary peak, as active cases jumped for the third consecutive day.
- Russia is the one country among those we are tracking that has yet to break from the exponential case growth. It now ranks 11th in total cases in the world.

Virus Progression: Hardest Hit Countries

Hardest-Hit Countries Continue Progressing Toward Containment and Recovery; Only Russia Among These Countries Still Experiencing Exponential Growth

Austria, China (not pictured), Iran, Israel, South Korea and Switzerland are already in Recovery (past peak cases); only Russia is still experiencing exponential case growth.

The graphic illustrates in color when the country first recorded 100 total cases (start of the "contagion" phase); when growth stopped following an exponential pattern (start of the "containment" phase); and, when peak total cases were recorded (start of the "recovery" phase). It uses symbols to indicate when average daily case growth rates fell (and were sustained) below certain benchmarks, as well as when deaths stopped growing exponentially.



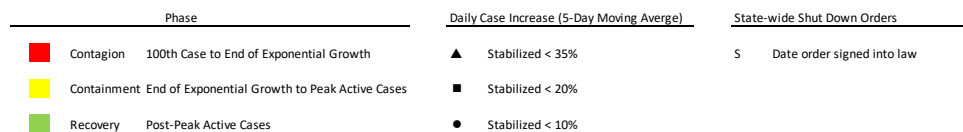
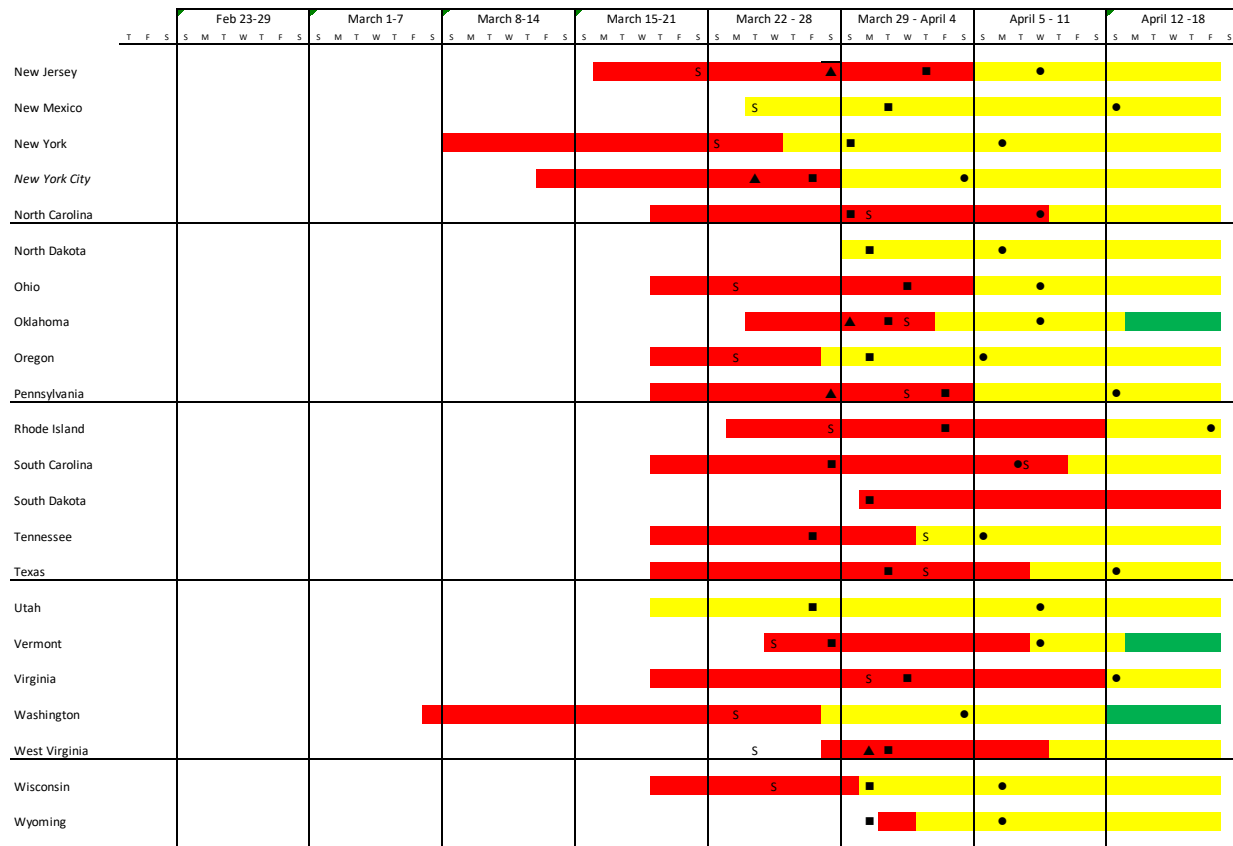
Virus Progression: US States, District of Columbia and New York City

The Majority of U.S. States are in Containment and Well on Their Way Toward Recovery

It now appears that Massachusetts, Mississippi, Rhode Island and South Carolina are no longer experiencing exponential case growth (shading changed from red to yellow). Only Nebraska and South Dakota have yet to demonstrably stop the exponential growth in cases.

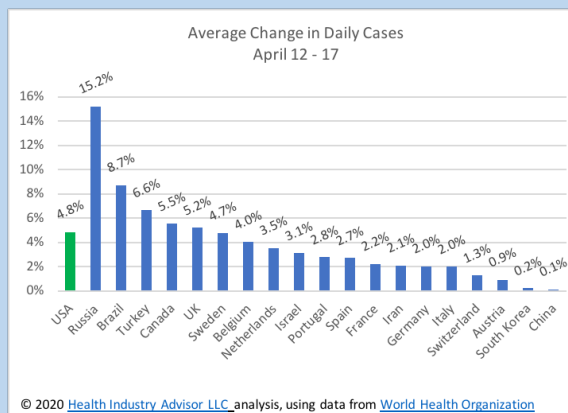
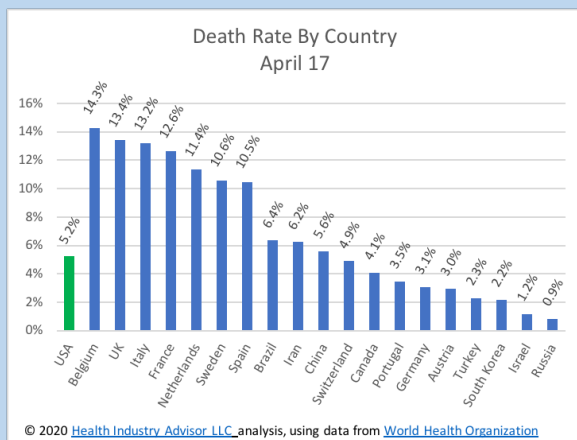
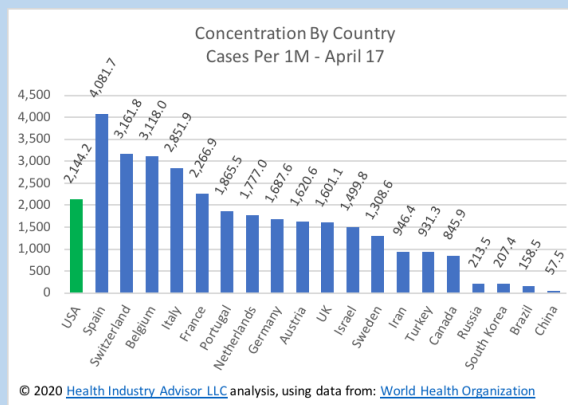
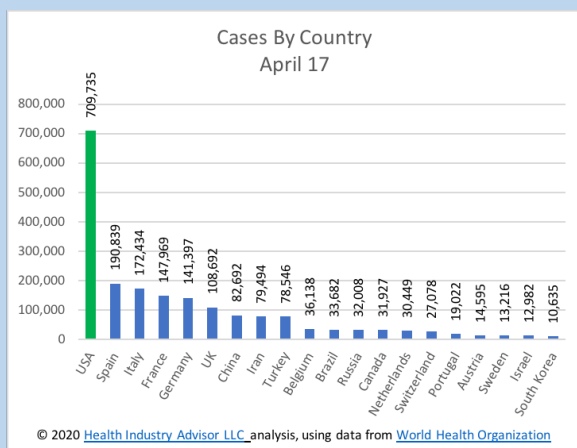


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Global Statistics

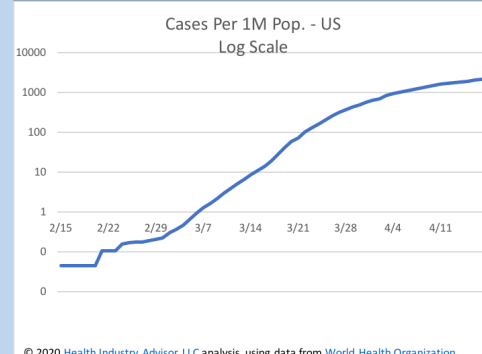
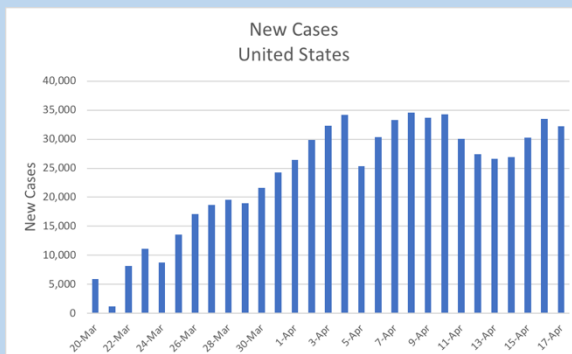
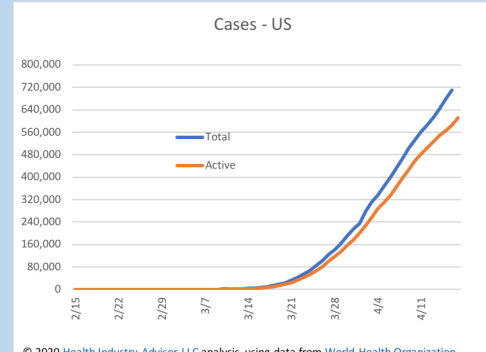
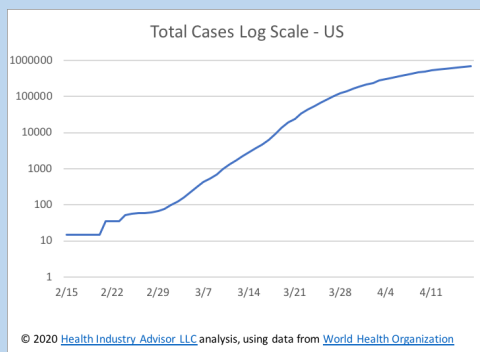
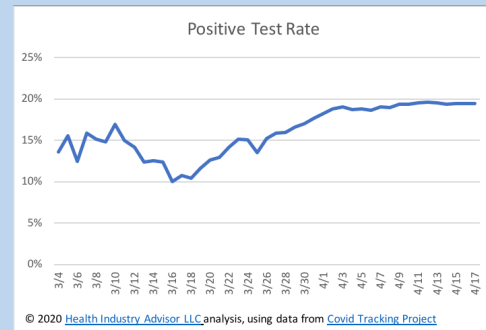
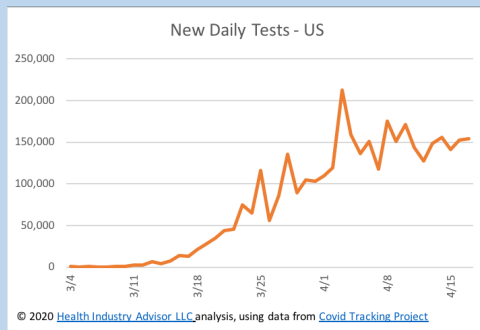
The U.S Far Outpaces the World In Total Cases, is 6th in Cases Per Capita and 10th in Death Rate. Case Growth is Falling In All of the Hardest-Hit Countries, Except Russia



Cases and Death Rates in the U.S.

Case Growth has Begun to Plateau in the U.S.; Deaths Counts Now Included Presumed Cases, Still Appeared to Have Peaked

Cases in the U.S. are no longer growing at an exponential rate; active cases, however, have yet to peak. As infected persons begin to recover, active cases are beginning to separate from total cases.



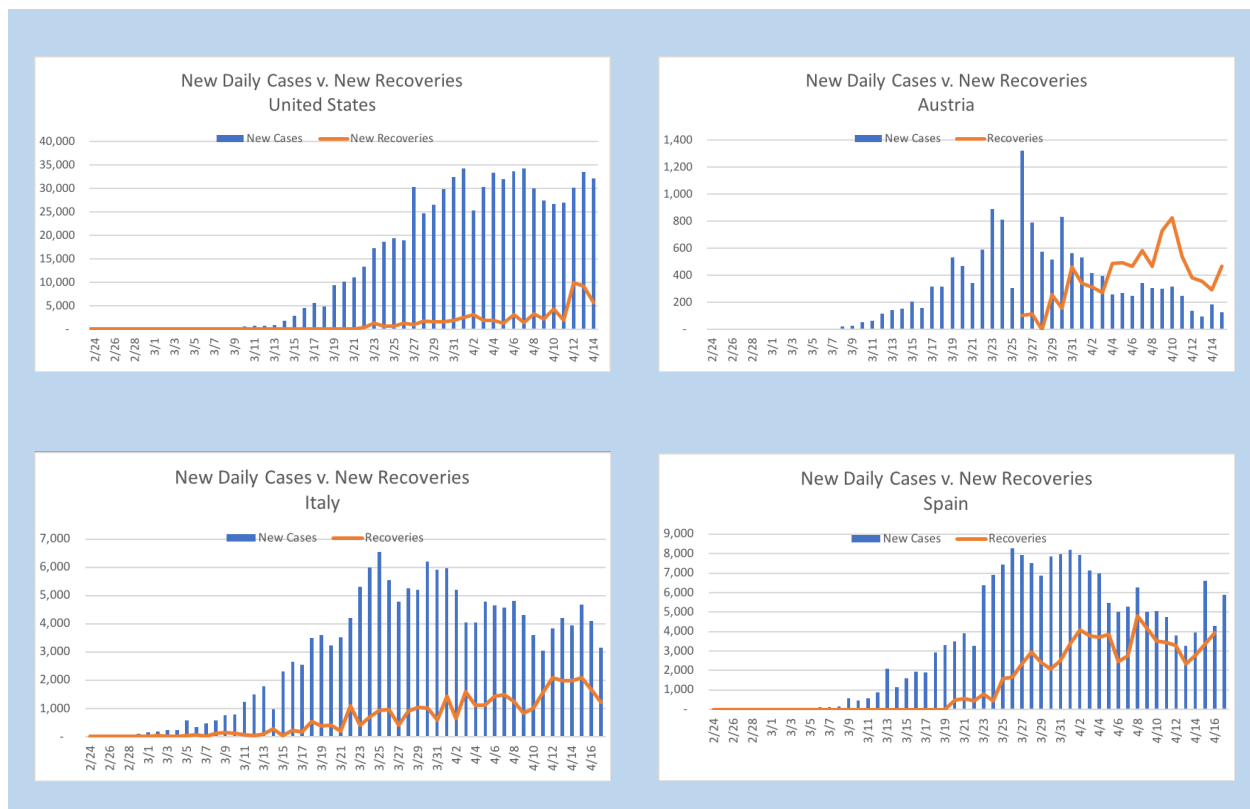
Recovery Rates

Recovery Rates From the Coronavirus Are Showing Signs of Accelerating in the U.S.

Recoveries from the coronavirus were in excess of 8,000 each of the past two days, compared to just over 2,000 each day the preceding 3 weeks.

According to a [World Health Organization report](#), recoveries from the coronavirus should occur in about 2 weeks for mild cases, 3-6 weeks for severe or critical cases. Given that we would expect to see a 2-4 week lag between the pattern for new cases and that for new recoveries. This would suggest that the U.S. should soon see an acceleration in recoveries, although it hasn't become fully apparent yet..

Actual patterns for the United States, Austria, Italy and Spain are shown below.



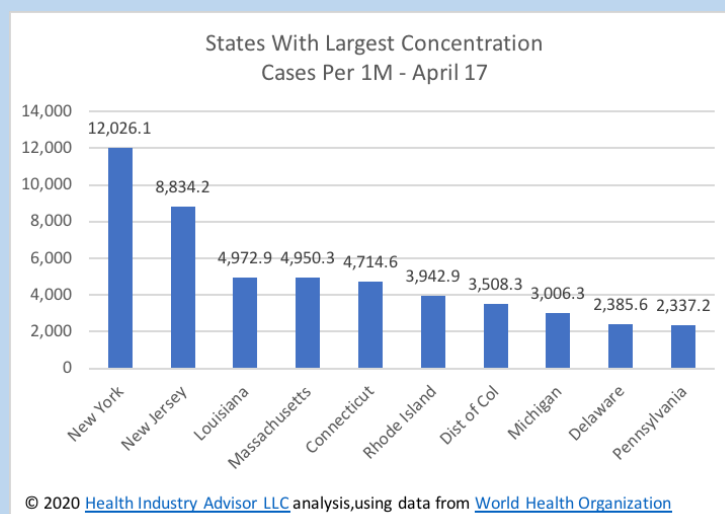
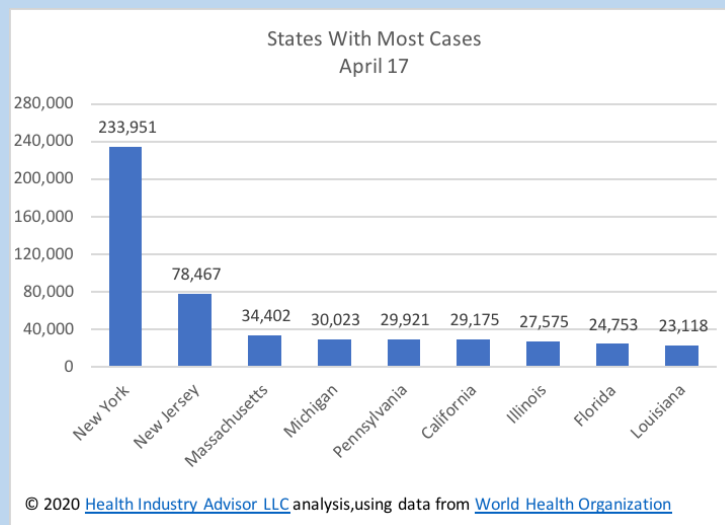
Hardest-Hit States

New York Has Experienced Far More Coronavirus Cases, and More Cases Per Capita Than Any State

New York, which now has more than 225,000 cases, represent 33.0% of all coronavirus cases in the U.S.; the top ten states account 75.5% of all cases, and 87.0% of all deaths (New York by itself accounts for 49.5% of the deaths in the U.S.).

Cases per capita in New York, New Jersey, Louisiana Massachusetts and Connecticut are greater than any of the hardest-hit countries in the world.

Michigan has the highest death rate (7.4%), followed by New York (7.3%), Connecticut (6.2%), and Oklahoma (both 5.5%).

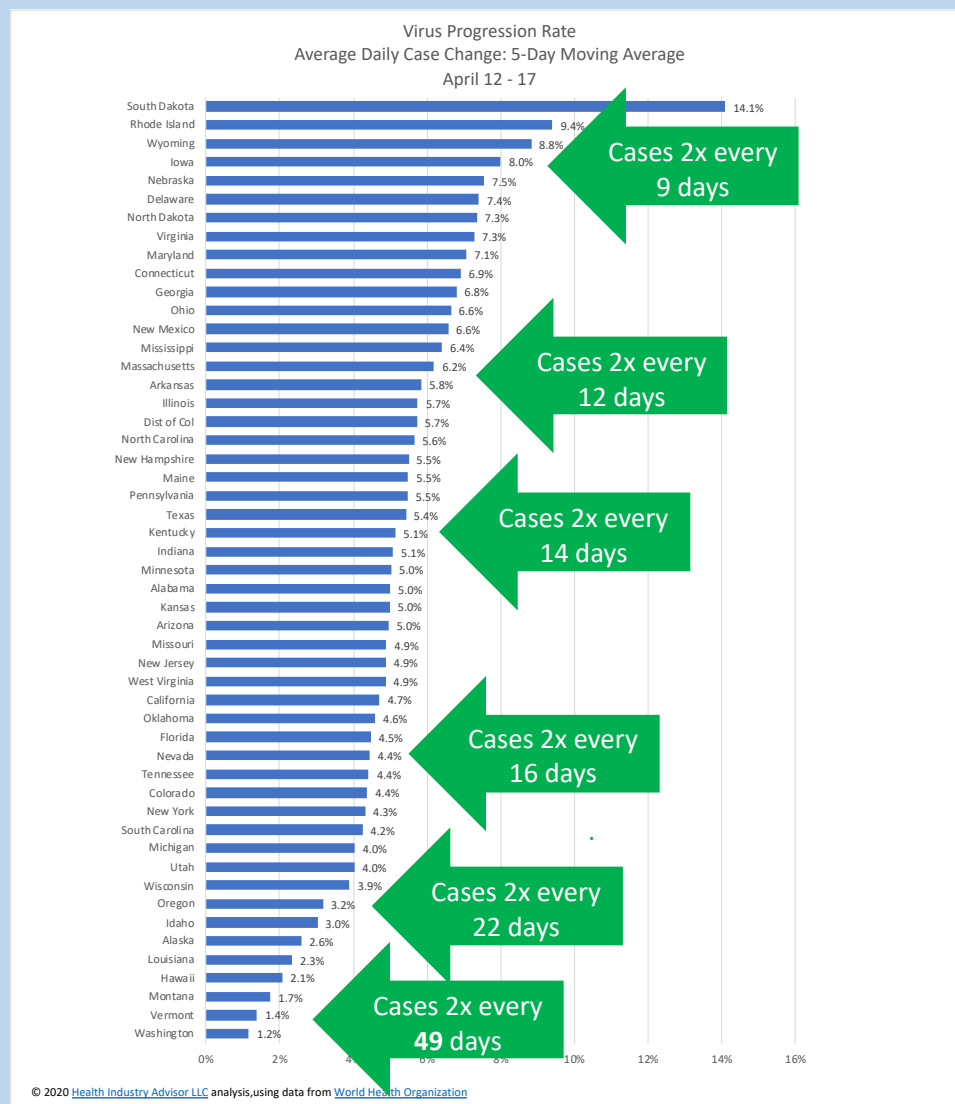


Daily Case Growth Rates By State

Case Growth Rates Continue to Fall Dramatically Across the U.S.

Only South Dakota and Rhode Island continue to show daily case increases (5-day moving average) of > 10%. The rate is so low in Hawaii, Montana, Vermont and Wyoming that it would take a month now for cases to double, in Alaska, Idaho and Louisiana it would take about 3 weeks.

The rate for the U.S. overall is down to 4.9%. At that rate, cases double every 14-15 days.



State-By State Statistics and Rankings.

New York Continues To Experience the Most Cases, Cases Per Capita and Deaths

This table provided statistics and ranking of each of the 50 states and the District of Columbia.

As of April 17

State	Confirmed Cases	Rank	Cases per 1M Population	Rank	Deaths	Rank	Death Rate	Rank	5-day Moving Average Case Growth Rate	Rank	Tests per 1M Population	Rank
Alabama	4,572	(22)	932.5	(24)	151	(23)	3.3%	(28)	5.0%	(27)	7,780	(38)
Alaska	309	(51)	422.4	(48)	9	(47)	2.9%	(33)	2.6%	(46)	12,796	(17)
Arizona	4,507	(23)	619.2	(37)	169	(22)	3.7%	(21)	5.0%	(29)	7,087	(43)
Arkansas	1,700	(39)	563.3	(45)	37	(40)	2.2%	(42)	5.8%	(16)	7,856	(36)
California	29,175	(6)	738.4	(33)	1,041	(7)	3.6%	(24)	4.7%	(33)	6,294	(48)
Colorado	9,047	(17)	1,571.0	(15)	391	(17)	4.3%	(15)	4.4%	(38)	7,563	(39)
Connecticut	16,809	(12)	4,714.6	(5)	1,036	(8)	6.2%	(3)	6.9%	(10)	15,486	(12)
Delaware	2,323	(34)	2,385.6	(9)	61	(36)	2.6%	(39)	7.4%	(6)	14,763	(14)
District Of Columbia	2,476	(31)	3,508.3	(7)	86	(32)	3.5%	(26)	5.7%	(18)	18,470	(6)
Florida	24,753	(8)	1,152.5	(20)	726	(10)	2.9%	(32)	4.5%	(35)	11,744	(21)
Georgia	17,432	(11)	1,641.8	(13)	668	(11)	3.8%	(20)	6.8%	(11)	6,962	(44)
Hawaii	553	(47)	390.6	(50)	9	(47)	1.6%	(48)	2.1%	(48)	15,460	(13)
Idaho	1,655	(40)	923.5	(25)	43	(38)	2.6%	(40)	3.0%	(45)	9,588	(29)
Illinois	27,575	(7)	2,176.1	(11)	1,134	(6)	4.1%	(16)	5.7%	(17)	10,152	(27)
Indiana	10,154	(15)	1,508.3	(16)	519	(13)	5.1%	(9)	5.1%	(25)	8,254	(33)
Iowa	2,332	(33)	739.1	(32)	64	(35)	2.7%	(38)	8.0%	(4)	6,957	(45)
Kansas	1,705	(38)	585.2	(41)	84	(33)	4.9%	(11)	5.0%	(28)	5,810	(51)
Kentucky	2,522	(30)	564.5	(44)	137	(27)	5.4%	(5)	5.1%	(24)	6,891	(46)
Louisiana	23,118	(9)	4,972.9	(3)	1,213	(5)	5.2%	(8)	2.3%	(47)	28,301	(3)
Maine	827	(44)	615.2	(38)	29	(42)	3.5%	(25)	5.5%	(21)	11,158	(23)
Maryland	11,572	(13)	1,914.1	(12)	425	(15)	3.7%	(23)	7.1%	(9)	10,329	(25)
Massachusetts	34,402	(3)	4,950.3	(4)	1,404	(4)	4.1%	(17)	6.2%	(15)	21,777	(4)
Michigan	30,023	(4)	3,006.3	(8)	2,227	(3)	7.4%	(1)	4.0%	(41)	10,280	(26)
Minnesota	2,071	(35)	367.2	(51)	111	(31)	5.4%	(7)	5.0%	(26)	7,789	(37)
Mississippi	3,793	(27)	1,274.5	(18)	140	(26)	3.7%	(22)	6.4%	(14)	12,625	(18)
Missouri	5,283	(21)	860.8	(28)	182	(20)	3.4%	(27)	4.9%	(30)	8,464	(32)
Montana	422	(49)	394.8	(49)	8	(49)	1.9%	(47)	1.7%	(49)	9,834	(28)
Nebraska	1,138	(43)	588.3	(40)	24	(43)	2.1%	(44)	7.5%	(5)	7,220	(41)
Nevada	3,524	(28)	1,144.1	(21)	142	(25)	4.0%	(18)	4.4%	(36)	12,301	(20)
New Hampshire	1,287	(42)	946.5	(23)	37	(40)	2.9%	(34)	5.5%	(20)	9,565	(30)
New Jersey	78,467	(2)	8,834.2	(2)	3,840	(2)	4.9%	(12)	4.9%	(31)	17,945	(8)
New Mexico	1,711	(37)	816.0	(29)	51	(37)	3.0%	(31)	6.6%	(13)	17,020	(10)
New York	233,951	(1)	12,026.1	(1)	17,131	(1)	7.3%	(2)	4.3%	(39)	29,219	(1)
North Carolina	6,031	(20)	575.0	(43)	172	(21)	2.9%	(35)	5.6%	(19)	7,186	(42)
North Dakota	439	(48)	576.1	(42)	9	(47)	2.1%	(46)	7.3%	(7)	16,408	(11)
Ohio	9,107	(16)	779.1	(31)	418	(16)	4.6%	(13)	6.6%	(12)	6,672	(47)
Oklahoma	2,465	(32)	623.0	(36)	136	(28)	5.5%	(4)	4.6%	(34)	7,860	(35)
Oregon	1,785	(36)	423.2	(47)	70	(34)	3.9%	(19)	3.2%	(44)	8,898	(31)
Pennsylvania	29,921	(5)	2,337.2	(10)	957	(9)	3.2%	(29)	5.5%	(22)	11,521	(22)
Rhode Island	4,177	(24)	3,942.9	(6)	118	(29)	2.8%	(37)	9.4%	(2)	29,113	(2)
South Carolina	4,086	(25)	793.6	(30)	116	(30)	2.8%	(36)	4.2%	(40)	7,321	(40)
South Dakota	1,411	(41)	1,595.0	(14)	7	(50)	0.5%	(50)	14.1%	(1)	12,799	(16)
Tennessee	6,589	(19)	964.3	(22)	142	(25)	2.2%	(43)	4.4%	(37)	13,122	(15)
Texas	17,760	(10)	612.5	(39)	439	(14)	2.5%	(41)	5.4%	(23)	6,080	(49)
Utah	2,805	(29)	874.9	(27)	23	(44)	0.8%	(49)	4.0%	(42)	18,313	(7)
Vermont	779	(45)	1,248.4	(19)	35	(41)	4.5%	(14)	1.4%	(50)	19,386	(5)
Virginia	7,491	(18)	877.6	(26)	231	(18)	3.1%	(30)	7.3%	(8)	5,823	(50)
Washington	11,159	(14)	1,465.4	(17)	599	(12)	5.4%	(6)	1.2%	(51)	17,671	(9)
West Virginia	775	(46)	433.7	(46)	16	(45)	2.1%	(45)	4.9%	(32)	10,436	(24)
Wisconsin	4,045	(26)	694.7	(35)	205	(19)	5.1%	(10)	3.9%	(43)	8,032	(34)
Wyoming	412	(50)	711.9	(34)	2	(51)	0.5%	(51)	8.8%	(3)	12,512	(19)
United States	709,735		2,161.8		37,154		5.2%		4.8%		10,792	

Information throughout the Dashboard is provided as a courtesy, based on data from the above-named sources. HIA has no responsibility for the accuracy and updating of any data. Sources: worldometers.info; covidtracking.com, <https://covid19.healthdata.org/united-states-of-america>, and nyc.gov. Graphics depict data as of the date in the header.

Opening Up America

The President Released His Guidelines For Getting the Country Moving

On Thursday, April 16, 2020, President Trump released his guidelines for three phases of [Opening Up America Again](#). Each state governor, however, retains the authority to determine how and when to open their states, based on the unique circumstances of their respective states.

The President outlined a staged approach, based on the state meeting certain “gating” criteria:

- Symptoms
 - Downward trajectory of influenza-like illness (ILI) reported within a 14-day period, and
 - Downward trajectory of COVID-19 syndromic cases reported within a 14-day period
- Cases
 - Downward trajectory of documented cases reported within a 14-day period, or
 - Downward trajectory of positive tests as a percent of total tests within a 14-day period (flat or increasing volume of tests)
- Hospitals
 - Treat all patients without crisis care, and
 - Robust testing program in place for at-risk healthcare workers, including emergency antibody testing

Whether these criteria will be applied is ultimately a state-by-state decision, and will be subject to other considerations (including political ones.) Therefore, no certainty can be provided as to how closely these state-by-state decisions will follow the guidelines suggested.

These considerations notwithstanding, the following pages are intended to paint a picture of how closely each state is tracking toward the guidelines suggested by the President and the CDC. Note: these measures are not necessarily those that will be used by the states, however, they could serve as useful proxies. **Still, no one should rely on any of the following for a determination of what actions each state will take, and when.**

Hospital Resources

The Institute For Health Metrics and Evaluation (IHME) Has Been Regularly Updating Projections of Peak Hospital Resource Needs

IHME has been a source of planning insights to governmental and health officials, concerned about whether hospital resource capacity could meet the demand of treating infected persons.

The following table provides two dates for each state: 1) the date which IHME projects the state will reach peak resource demand and 2) the date at which IHME projects that social distancing rules can be relaxed. Both projections assume that social distancing will continue until infections are minimized and containment is implemented.

Institute for Health Metrics and Evaluation (IHME) Projections

State	Peak Hospital Use	Relaxed Social Distancing Date	State	Peak Hospital Use	Relaxed Social Distancing Date
Alabama	17-Apr	18-May	Montana	17-Apr	4-May
Alaska	18-Apr	11-May	Nebraska	1-May	29-Jun
Arizona	10-Apr	8-Jun	Nevada	7-Apr	18-May
Arkansas	30-Apr	22-Jun	New Hampshire	15-Apr	11-May
California	14-Apr	18-May	New Jersey	15-Apr	1-Jun
Colorado	17-Apr	25-May	New Mexico	18-Apr	18-May
Connecticut	16-Apr	1-Jun	New York	15-Apr	1-Jun
Delaware	17-Apr	18-May	North Carolina	15-Apr	11-May
District of Columbia	15-Apr	8-Jun	North Dakota	4-May	29-Jun
Florida	14-Apr	1-Jun	Ohio	15-Apr	18-May
Georgia	15-Apr	15-Jun	Oklahoma	15-Apr	15-Jun
Hawaii	18-Apr	4-May	Oregon	17-Apr	25-May
Idaho	10-Apr	11-May	Pennsylvania	15-Apr	1-Jun
Illinois	17-Apr	25-May	Rhode Island	23-Apr	8-Jun
Indiana	15-Apr	25-May	South Carolina	15-Apr	1-Jun
Iowa	7-May	29-Jun	South Dakota	10-May	22-Jun
Kansas	17-Apr	1-Jun	Tennessee	4-Apr	25-May
Kentucky	21-Apr	8-Jun	Texas	15-Apr	1-Jun
Louisiana	14-Apr	18-May	Utah	24-Apr	15-Jun
Maine	16-Apr	18-May	Vermont	1-Apr	4-May
Maryland	18-Apr	8-Jun	Virginia	23-Apr	8-Jun
Massachusetts	18-Apr	8-Jun	Washington	5-Apr	18-May
Michigan	10-Apr	18-May	West Virginia	14-Apr	4-May
Minnesota	18-Apr	25-May	Wisconsin	11-Apr	18-May
Mississippi	23-Apr	1-Jun	Wyoming	30-Apr	25-May
Missouri	15-Apr	1-Jun			

Source: <https://covid19.healthdata.org/united-states-of-america>, accessed April 18, 2020

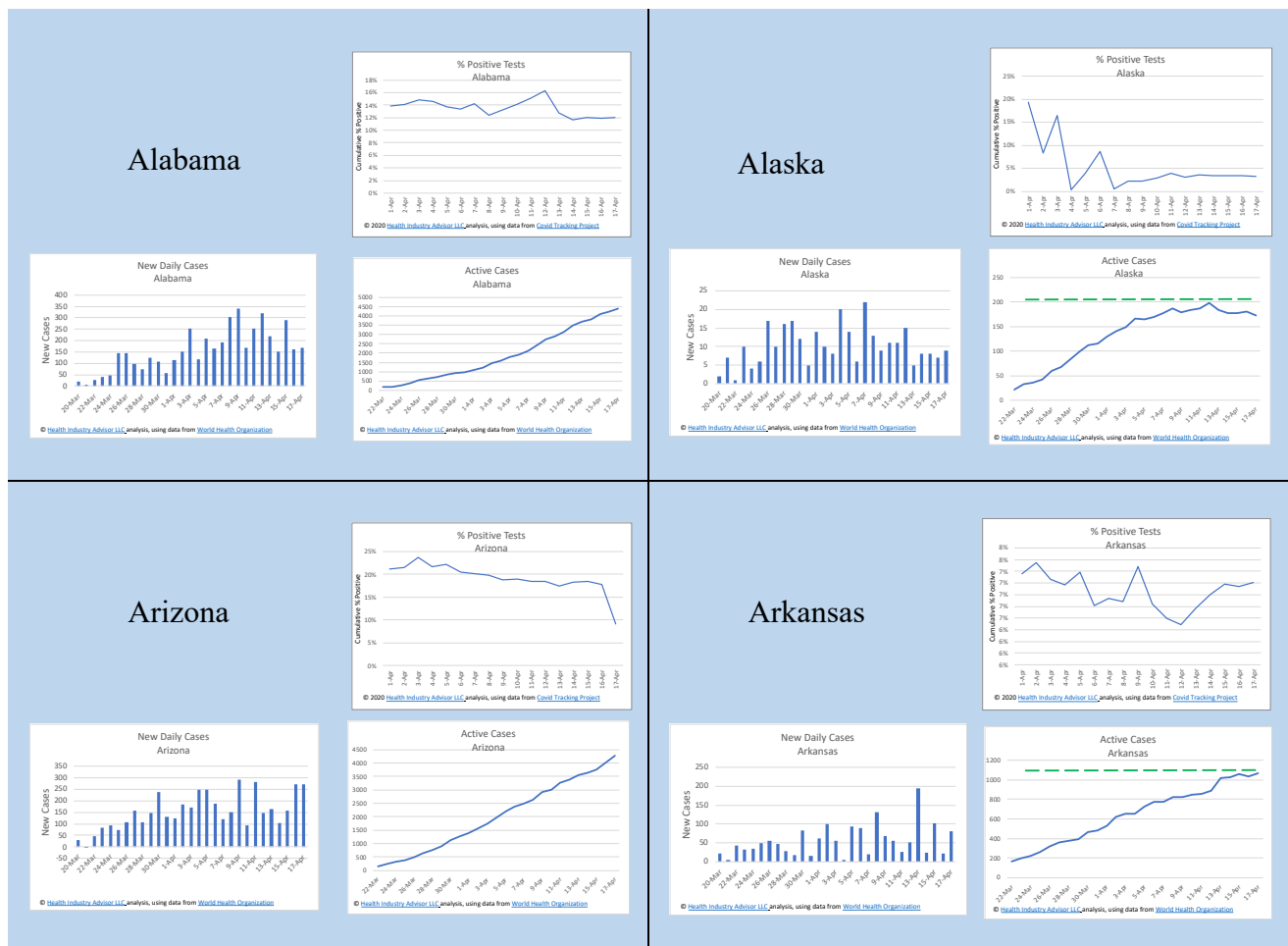
Dates assume "Current social distancing assumed until infections minimized and containment implemented"

"Relaxing social distancing may be possible with containment strategies that include testing, contact tracing, isolation, and limiting gathering size."

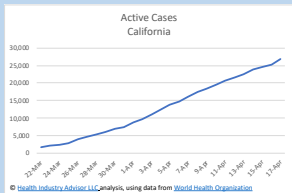
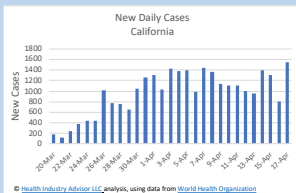
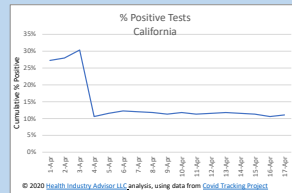
Testing Rates, Active and New Cases

Each State Provides At Least Daily Updates On Testing and Cases

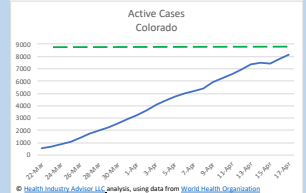
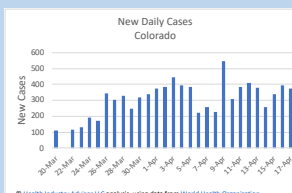
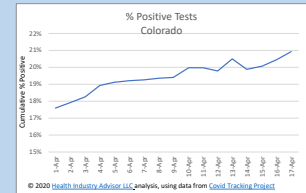
We have been tracking daily case information by state for more than past month and, have now added daily testing information. On the following pages, we provide three graphs for each state: 1) the daily cumulative tests deemed positive as a % of all tests, 2) daily new cases and 3) daily active cases (still infected). We would anticipate that each of these should show stabilization or decline over a period of time (the President's guidelines say 14 days), in order for the state to be determined as ready to proceed with relaxing any restrictive orders.



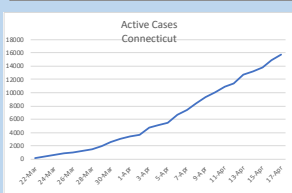
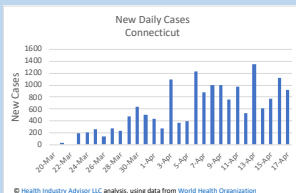
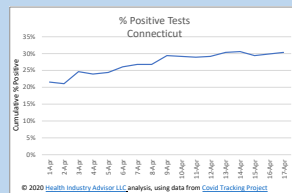
California



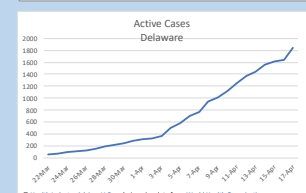
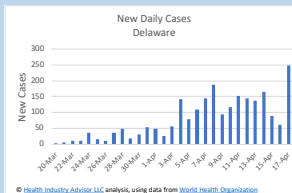
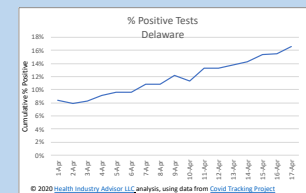
Colorado



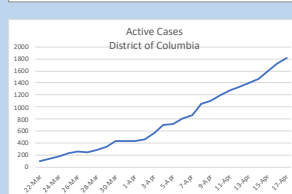
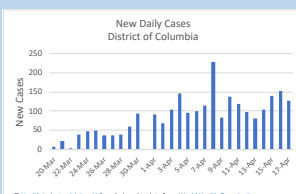
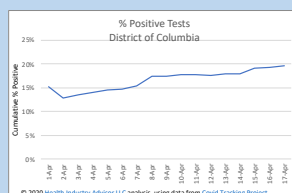
Connecticut



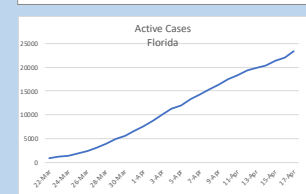
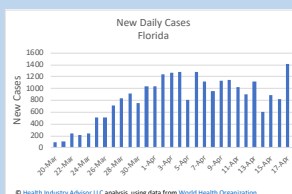
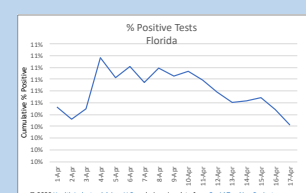
Delaware

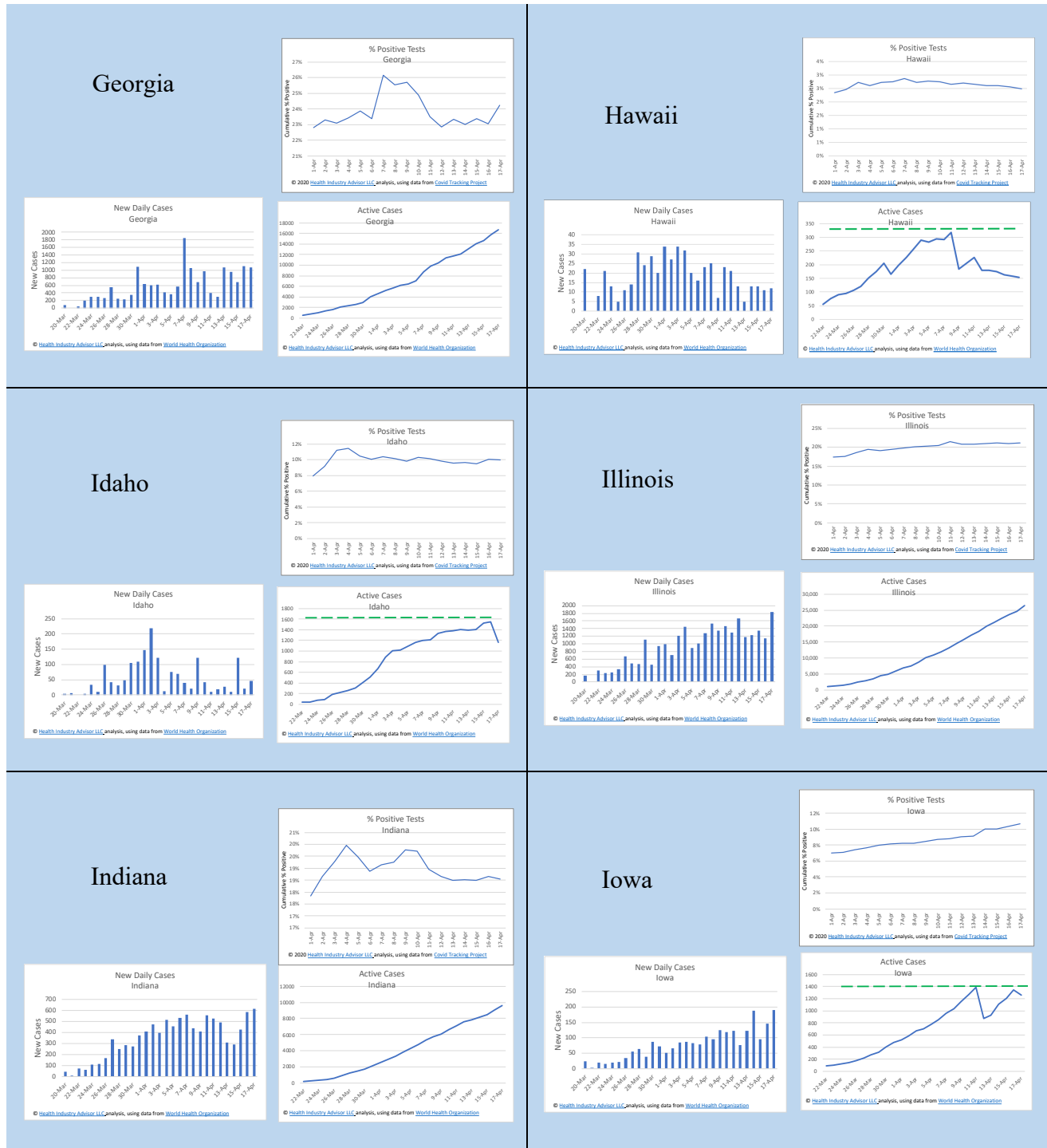


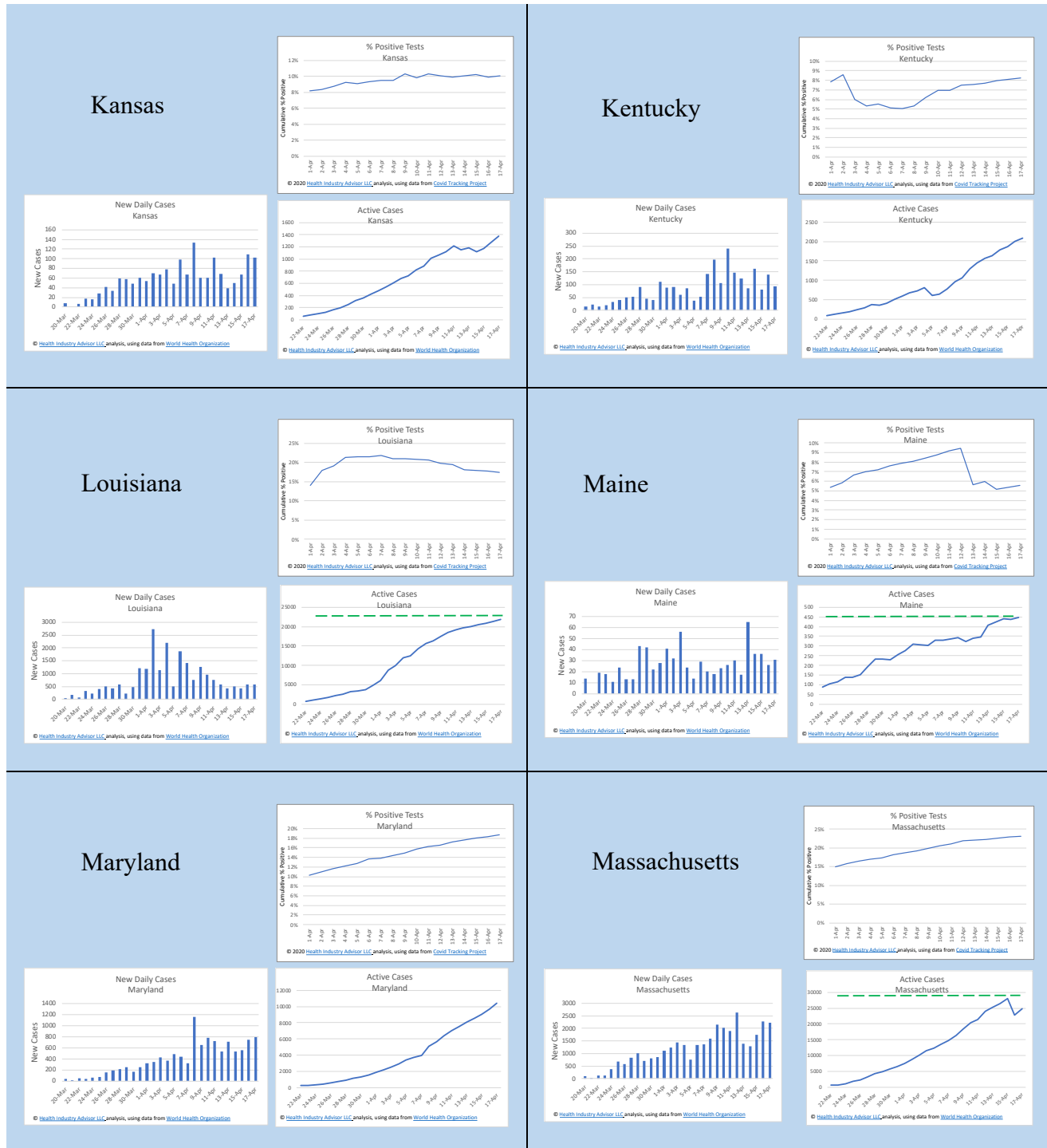
District of Columbia

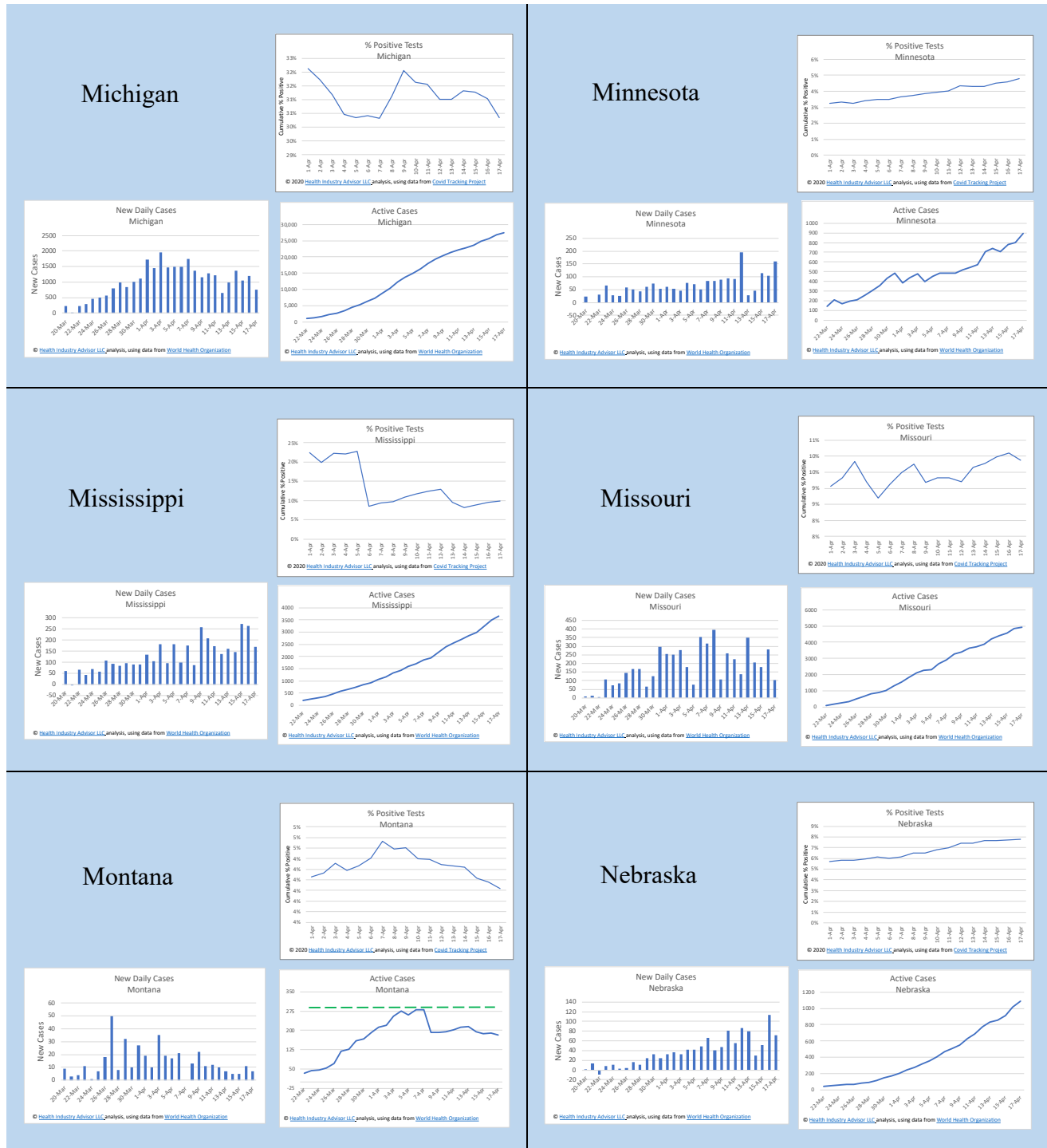


Florida





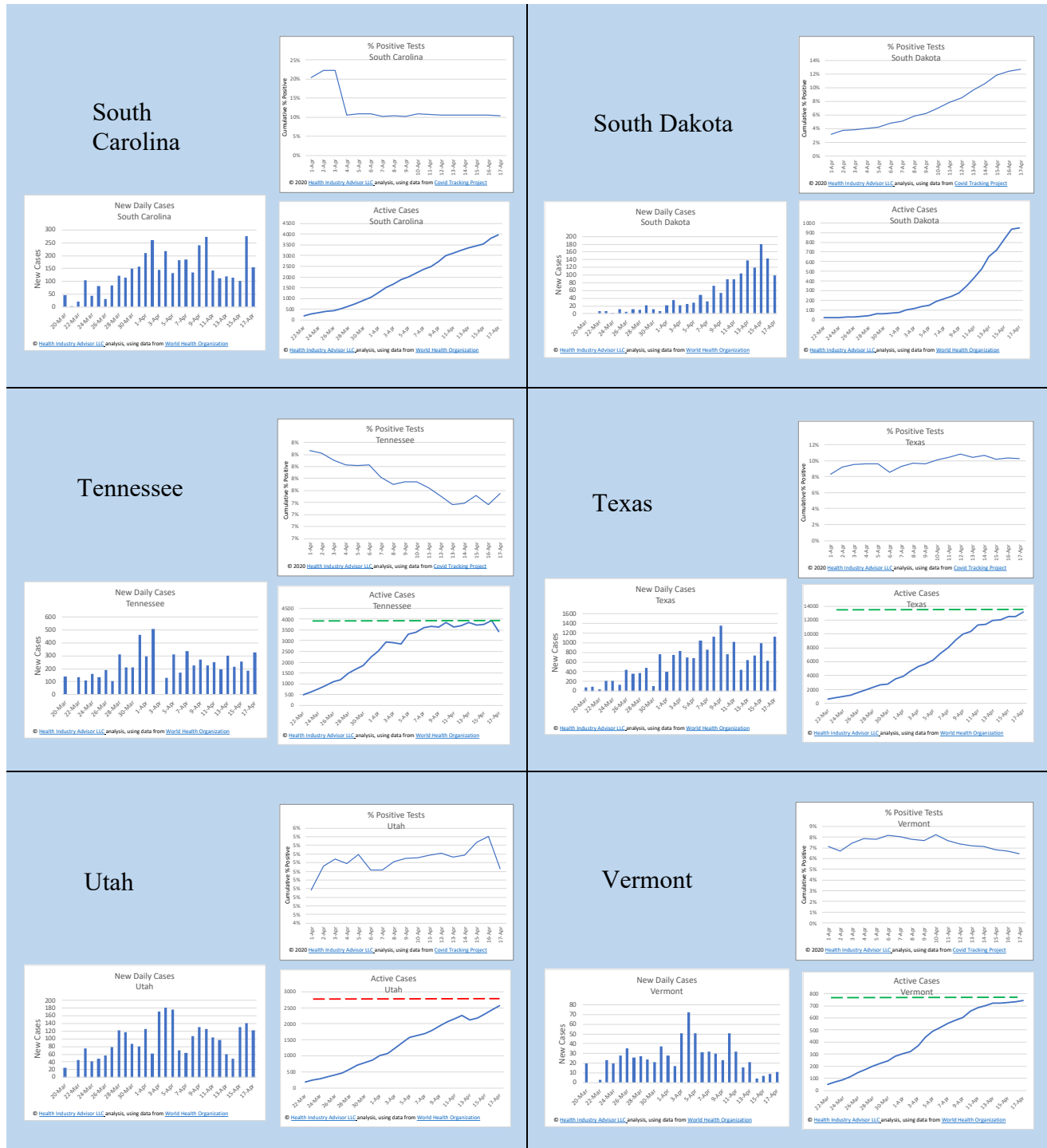




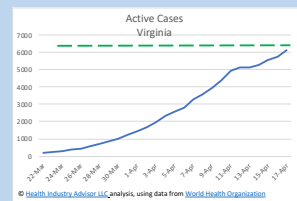
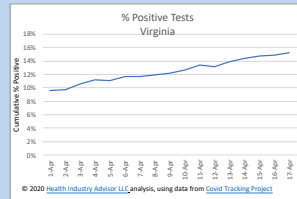
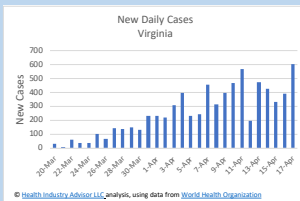


Information throughout the Dashboard is provided as a courtesy, based on data from the above-named sources. HIA has no responsibility for the accuracy and updating of any data. Sources: worldometers.info; covidtracking.com, <https://covid19.healthdata.org/united-states-of-america>, and nyc.gov. Graphics depict data as of the date in the header.

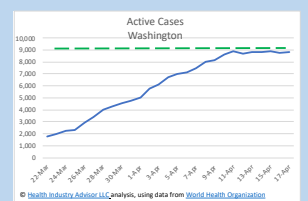
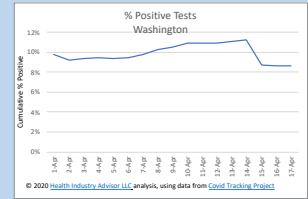
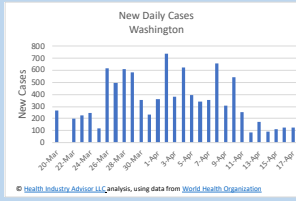




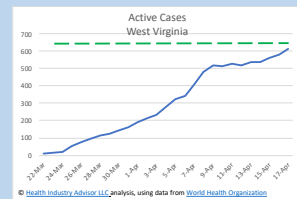
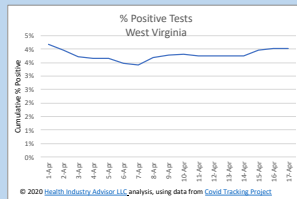
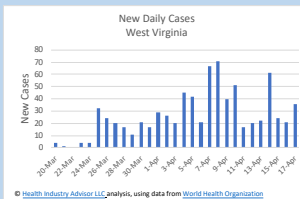
Virginia



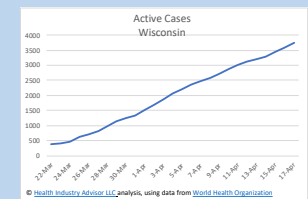
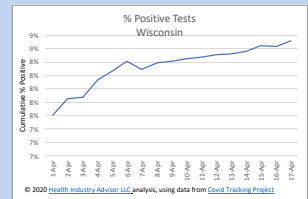
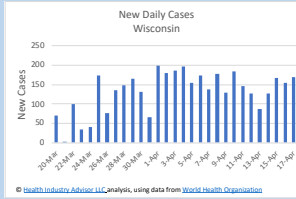
Washington



West Virginia



Wisconsin



Wyoming

