

COVID-19 Dashboard

Issue # 76
Monday, June 15, 2020

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	~495,000
Test-Positivity Rate	Decline	4.4% test-positive on Sunday; 4.5% for past 7 days
Number of Cases	Plateau	New Cases up 3.0% week-over-week (after adjusting for accounting changes)
Deaths % of Total Cases	Decline	5.5%
Number of Deaths / 1M Population	Plateau	356.1
Recoveries : Death	Increase	7.38

- Let's start with the (legitimately) bad news: 13 states are still experiencing their highest new daily infection rates per capita: Alabama, Alaska, Arizona, Arkansas, California, Florida, Nevada, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee and Texas. (Oklahoma's is a relatively low 39 new daily cases per million population.) Utah, which had been among these recently, has seen its rate decline since last Thursday; Mississippi's has declined since Friday
- The greatest concern continues to be in Alabama, Arizona, Arkansas, Mississippi, North Carolina, South Carolina and Utah, due to the combination of high current rates of new daily infections and one or more of the following: high test-positive rates, near-peak hospitalizations of COVID-19 patients and increasing case growth
- California, Florida, Georgia and Texas, while not on the "greatest concern" list, remain of concern due to their infection rates and their population. In these states, the challenge seems to be concentrated in several large metro areas: Los Angeles and Riverside, California; Miami-Dade and Palm Beach, Florida; Gwinnett and Meriwether, Georgia; and, Chambers, Dallas, Galveston, Hays, Hunt and Travis, Texas
- On the encouraging side: there were 5,000 fewer New Cases on Sunday than on Saturday. This broke a string of 4 consecutive days of increasing new cases. On a week-over-week basis, cases are up 3%; they are also up 2.5% versus 2 weeks ago; they are down, however, by 2.5% versus 3 weeks ago; and, down 3.3% versus 4 weeks ago.
 - It now appears that the United States experienced a "trough" in new cases for the two-week period from May 24 - June 7. Perhaps, the uptick since is the result of relaxed restrictions.
 - Still, the infection rate remains lower than at any time from the beginning of the pandemic through May 23
- Deaths from the virus continued to decline: the 331 deaths recorded on Sunday were the fewest recorded on any day since May 25. It also was the 5th consecutive day of fewer than 1,000 deaths, and the 9th in the last 10. As a result, the death rate per case fell further, to 5.45%. Compared to its peak of 5.98% on May 16, this lower rate is the equivalent of 11,370 fewer deaths
- Hospitalized COVID-19 patients dropped 2.1% on a day-over-day basis; 11.9% week-over-week; and 19.6% versus two weeks ago

COUNTRY-BY-COUNTRY INFORMATION

Countries Included

"Strategic Guidance in an Era of Unprecedented Change"

- In Mid-March, we began tracking the twenty countries with the most coronavirus cases; in mid-April, we expanded it to the thirty countries with the most cases
- We now have visibility to all 213 countries and 2 conveyances that have at least 1 coronavirus case
- Case and death information is sourced from the [worldometers.info](https://www.worldometers.info), the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University and the New York Times, each of which are accessed daily; analysis by Health Industry Advisor LLC

Country-by-Country Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

Top 30 Countries By Total Cases
As of June 14

Country	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population - Past 7 Days	Rank7	New Daily Infections Per 1M Population (5-Day M.A.)	Rank8
USA	2,162,228	(1)	6,534	(5)	117,858	(1)	5.5%	(12)	356.2	(7)	1.1%	(19)	1,511	(7)	70.5	(9)
Brazil	867,882	(2)	4,084	(12)	43,389	(2)	5.0%	(13)	204.2	(11)	3.2%	(10)	336	(20)	118.4	(4)
Russia	528,964	(3)	3,625	(15)	6,948	(13)	1.3%	(25)	47.6	(18)	1.7%	(14)	2,113	(2)	59.9	(10)
India	332,783	(4)	241	(29)	9,520	(9)	2.9%	(19)	6.9	(28)	3.9%	(5)	103	(24)	8.4	(25)
UK	295,889	(5)	4,360	(10)	41,698	(3)	14.1%	(4)	614.4	(2)	0.5%	(22)	2,507	(1)	19.9	(18)
Spain	291,008	(6)	6,224	(6)	27,136	(6)	9.3%	(8)	580.4	(3)	0.1%	(27)	1,227	(8)	8.4	(26)
Italy	236,989	(7)	3,919	(13)	34,345	(4)	14.5%	(3)	568.0	(4)	0.1%	(29)	908	(12)	4.7	(28)
Peru	229,736	(8)	6,972	(3)	6,688	(14)	2.9%	(18)	203.0	(12)	2.4%	(11)	731	(13)	157.8	(3)
Germany	187,671	(9)	2,240	(20)	8,870	(10)	4.7%	(14)	105.9	(15)	0.1%	(28)	588	(16)	2.8	(29)
Iran	187,427	(10)	2,233	(21)	8,837	(11)	4.7%	(15)	105.3	(16)	1.3%	(16)	271	(21)	27.4	(17)
Turkey	178,239	(11)	2,114	(22)	4,807	(17)	2.7%	(20)	57.0	(17)	0.7%	(21)	497	(18)	14.5	(21)
Chile	174,293	(12)	9,121	(2)	3,323	(20)	1.9%	(22)	173.9	(13)	4.1%	(4)	981	(10)	330.0	(2)
France	157,220	(13)	2,409	(19)	29,407	(5)	18.7%	(1)	450.6	(6)	0.3%	(25)	0	(29)	8.1	(27)
Mexico	142,690	(14)	1,107	(24)	16,872	(7)	11.8%	(6)	130.9	(14)	3.5%	(8)	77	(26)	35.1	(13)
Pakistan	139,230	(15)	631	(26)	2,632	(21)	1.9%	(23)	11.9	(26)	5.1%	(2)	120	(23)	28.0	(16)
Saudi Arabia	127,541	(16)	3,666	(14)	972	(26)	0.8%	(26)	27.9	(22)	3.3%	(9)	607	(15)	109.1	(6)
Canada	98,787	(17)	2,618	(18)	8,146	(12)	8.2%	(10)	215.9	(10)	0.4%	(23)	968	(11)	11.3	(22)
Bangladesh	87,520	(18)	532	(27)	1,171	(25)	1.3%	(24)	7.1	(27)	4.1%	(3)	92	(25)	19.3	(19)
China	83,132	(19)	58	(30)	4,634	(18)	5.6%	(11)	3.2	(30)	0.0%	(30)	0	(28)	0.0	(30)
Qatar	79,602	(20)	28,350	(1)	73	(29)	0.1%	(29)	26.0	(23)	2.1%	(13)	1,790	(5)	550.1	(1)
South Africa	70,038	(21)	1,182	(23)	1,480	(24)	2.1%	(21)	25.0	(24)	5.7%	(1)	486	(19)	57.5	(11)
Belgium	60,029	(22)	5,181	(8)	9,655	(8)	16.1%	(2)	833.2	(1)	0.2%	(26)	1,092	(9)	10.2	(24)
Belarus	53,973	(23)	5,712	(7)	308	(27)	0.6%	(28)	32.6	(20)	1.4%	(15)	1,685	(6)	78.5	(7)
Sweden	51,614	(24)	5,112	(9)	4,874	(16)	9.4%	(7)	482.7	(5)	2.4%	(12)	700	(14)	112.7	(5)
Colombia	50,939	(25)	1,002	(25)	1,667	(22)	3.3%	(17)	32.8	(19)	3.9%	(7)	237	(22)	34.8	(14)
Netherlands	48,783	(26)	2,847	(16)	6,059	(15)	12.4%	(5)	353.6	(8)	0.4%	(24)	558	(17)	10.3	(23)
Ecuador	46,751	(27)	2,652	(17)	3,896	(19)	8.3%	(9)	221.0	(9)	1.3%	(17)	54	(27)	32.1	(15)
Egypt	44,598	(28)	436	(28)	1,575	(23)	3.5%	(16)	15.4	(25)	3.9%	(6)	0	(29)	15.2	(20)
UAE	42,294	(29)	4,279	(11)	289	(28)	0.7%	(27)	29.2	(21)	1.2%	(18)	1,813	(4)	48.4	(12)
Singapore	40,604	(30)	6,943	(4)	26	(30)	0.1%	(30)	4.4	(29)	1.1%	(20)	1,958	(3)	71.5	(8)

Note: China does not report test volumes

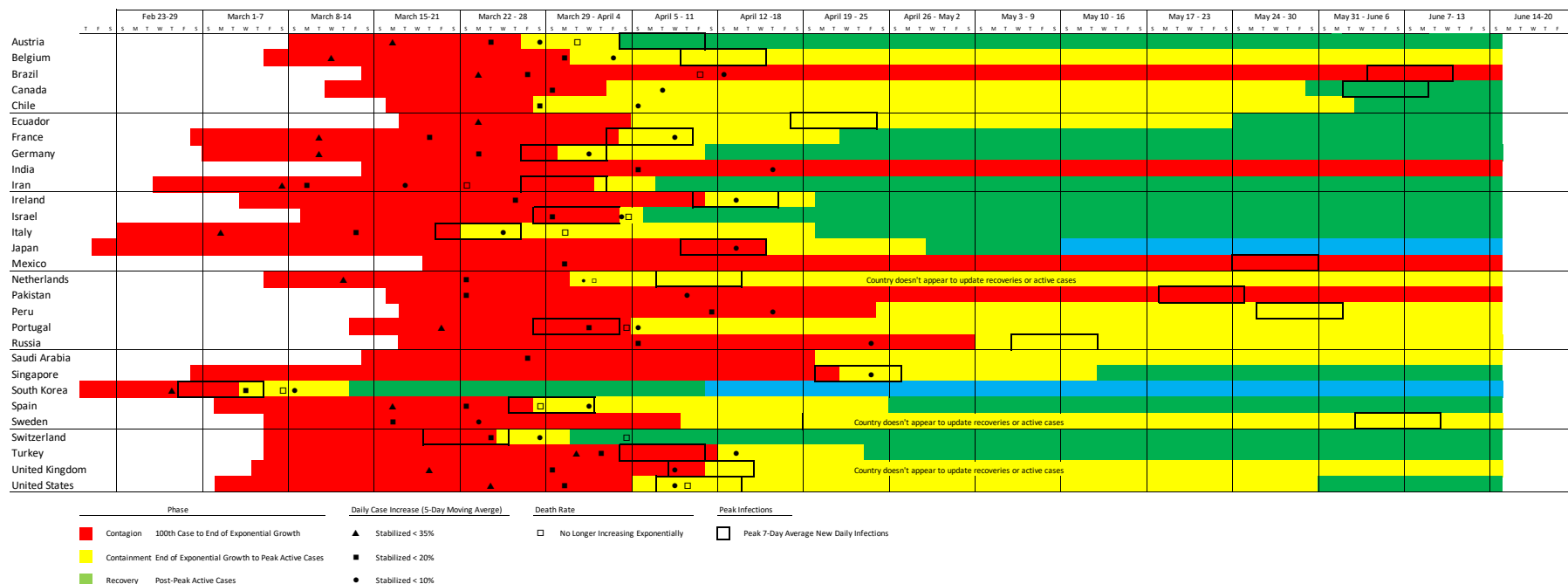
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

VIRUS PROGRESSION BY COUNTRY

Country-by-Country Virus Progression – Original 30 Hardest-Hit Countries

“Strategic Guidance in an Era of Unprecedented Change”

This graphic illustrates 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.



Country-By-Country Listing of Countries By Total Cases

"Strategic Guidance in an Era of Unprecedented Change"

Countries making large upward movements are highlighted

When we first expanded our tracking to 30 countries in mid-April, they represented the most countries with cases in the world. Since that time, Austria, Israel, Japan and South Korea have dropped in the rankings. Among the countries that have moved up:

- Afghanistan
- Argentina
- Bangladesh
- Belarus
- Columbia
- Denmark
- Dominican Republic
- Indonesia
- Kuwait
- Poland
- Qatar
- Panama
- Philippines
- Romania
- South Africa
- UAE
- Ukraine

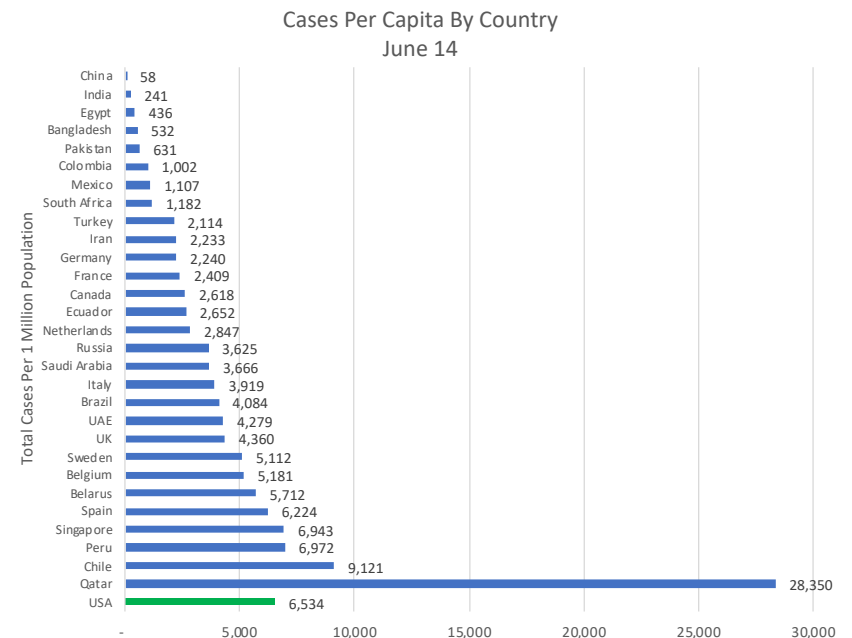
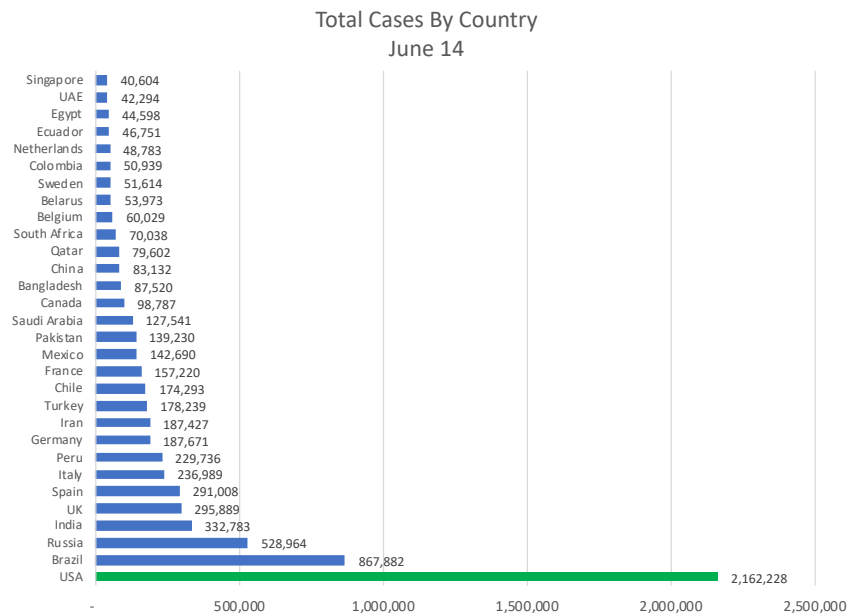
The original 30 still account for 85.5% of all cases worldwide.

Total Cases								
Rank	Country	14-Jun	Rank	Country	6-May	Rank	Country	27-Apr
1	USA	2,162,228	1	USA	1,263,092	1	USA	1,010,356
2	Brazil	867,882	2	Spain	253,682	2	Spain	229,422
3	Russia	528,964	3	Italy	214,457	3	Italy	199,414
4	India	332,783	4	UK	201,101	4	France	128,339
5	UK	295,889	5	France	174,191	5	Germany	158,758
6	Spain	291,008	6	Germany	168,162	6	UK	157,149
7	Italy	236,989	7	Russia	165,929	7	Turkey	112,261
8	Peru	229,736	8	Turkey	131,744	8	Iran	91,472
9	Germany	187,671	9	Brazil	126,611	9	Russia	87,147
10	Iran	187,427	10	Iran	101,650	10	China	82,830
11	Turkey	178,239	11	China	82,883	11	Brazil	66,501
12	Chile	174,293	12	Canada	63,496	12	Canada	48,500
13	France	157,220	13	Peru	54,817	13	Belgium	46,687
14	Mexico	142,690	14	India	52,987	14	Netherlands	38,245
15	Pakistan	139,230	15	Belgium	50,781	15	India	29,451
16	Saudi Arabia	127,541	16	Netherlands	41,319	16	Switzerland	29,164
17	Canada	98,787	17	Saudi Arabia	31,938	17	Peru	28,669
19	China	83,132	18	Switzerland	30,060	18	Portugal	24,070
22	Belgium	60,029	19	Ecuador	29,420	19	Ecuador	23,240
24	Sweden	51,614	20	Portugal	26,182	20	Ireland	19,648
26	Netherlands	48,783	21	Mexico	26,025	21	Sweden	18,926
27	Ecuador	46,751	22	Sweden	23,918	22	Saudi Arabia	18,811
30	Singapore	40,604	23	Pakistan	23,214	23	Israel	15,555
32	Portugal	36,690	24	Chile	23,048	24	Austria	15,274
36	Switzerland	31,117	25	Ireland	22,248	25	Mexico	14,677
39	Ireland	25,303	26	Singapore	20,198	26	Singapore	14,423
46	Israel	19,055	29	Israel	16,310	27	Pakistan	13,915
49	Japan	17,429	31	Austria	15,684	28	Chile	13,813
50	Austria	17,109	32	Japan	15,253	29	Japan	13,614
56	S. Korea	12,085	38	S. Korea	10,806	35	South Korea	10,738
	Others	1,155,891		Others	356,176		Others	301,446
	World	7,984,169			3,817,382		World	3,062,515
30 countries' share		85.5%			90.7%			90.2%

Country-by-Country Cases & Cases Per Capita

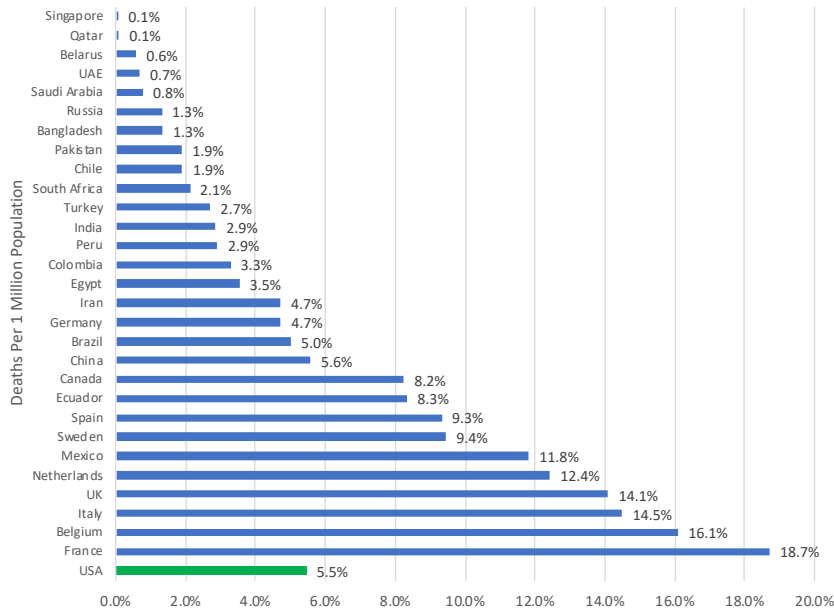
"Strategic Guidance in an Era of Unprecedented Change"

Countries Ranked 1-30 In Total Cases

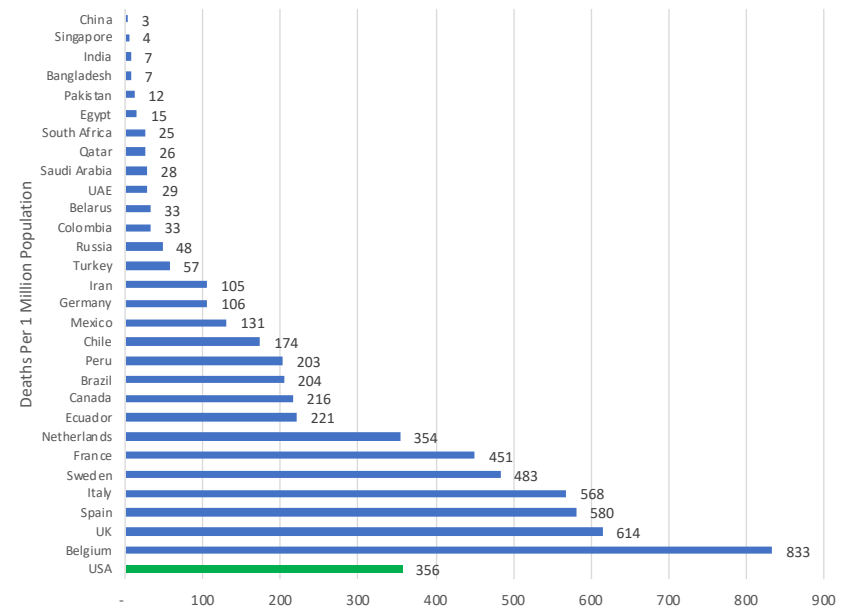


Countries Ranked 1-30 In Total Cases

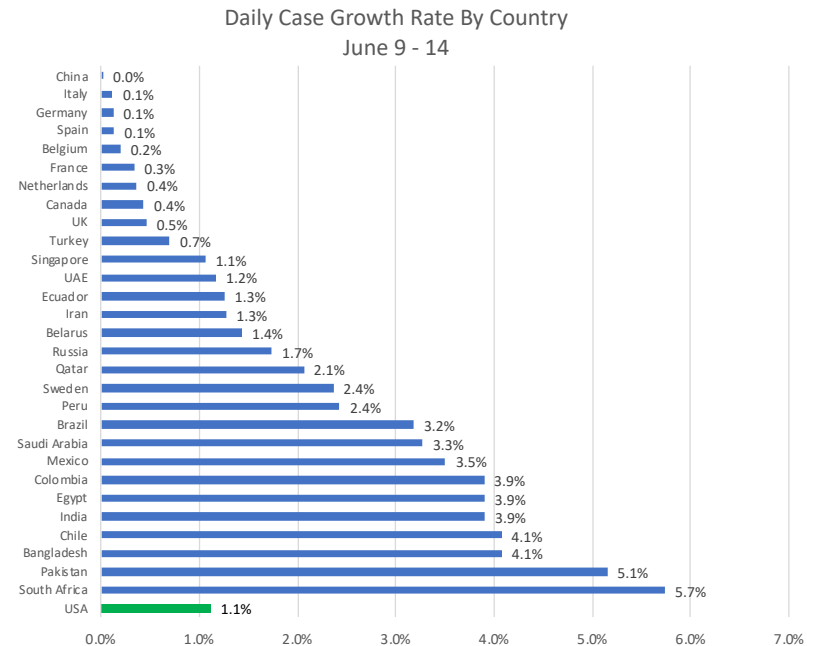
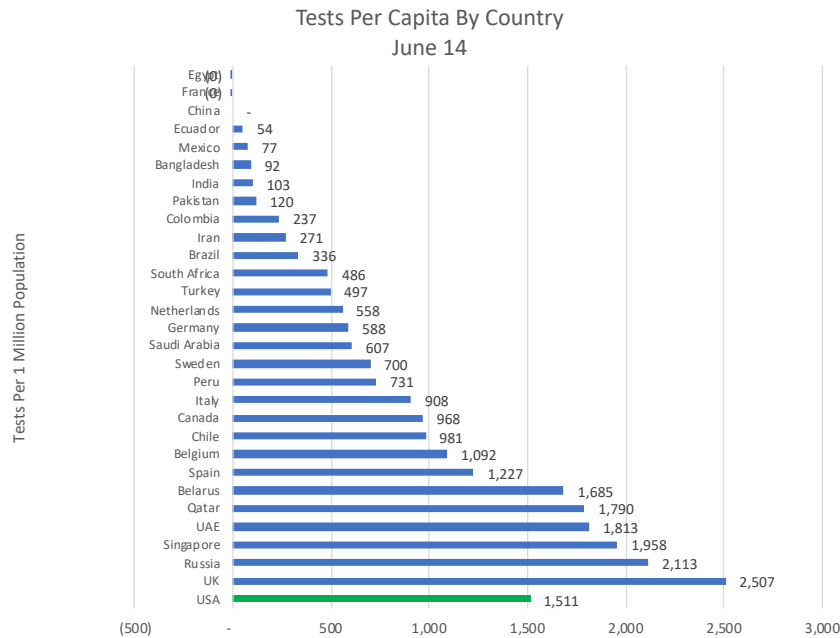
Death Rate By Country
June 14



Deaths Per Capita By Country
June 14



Countries Ranked 1-30 In Total Cases



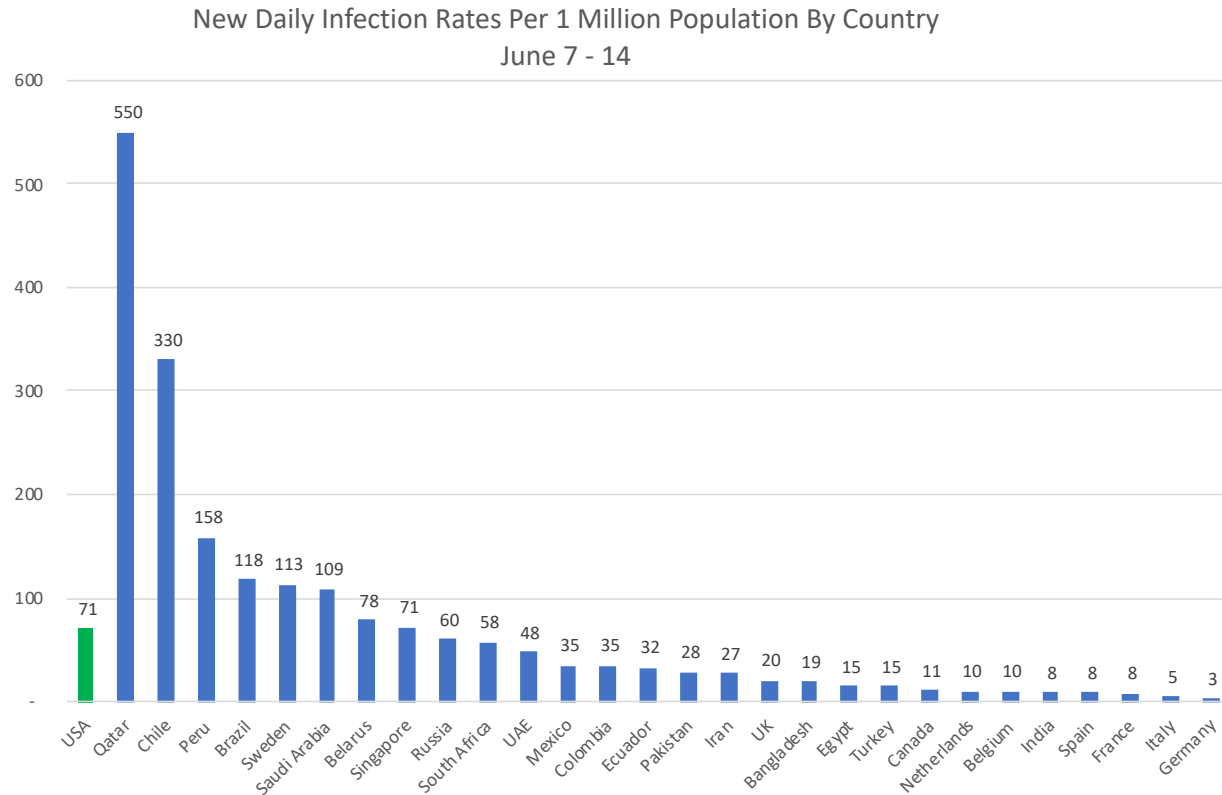
Daily Tests Per Capita For Past Week

Daily Case Growth – 5-Day Moving Average

Country-by-Country New Daily Infection Rates

"Strategic Guidance in an Era of Unprecedented Change"

Countries Ranked 1-30 In Total Cases



UNITED STATES & STATE-BY-STATE INFORMATION

STATE-BY-STATE OVERALL ASSESSMENT SCORECARD

State-By-State Overall Assessment Scorecard

"Strategic Guidance in an Era of Unprecedented Change"

Status, as of June 14

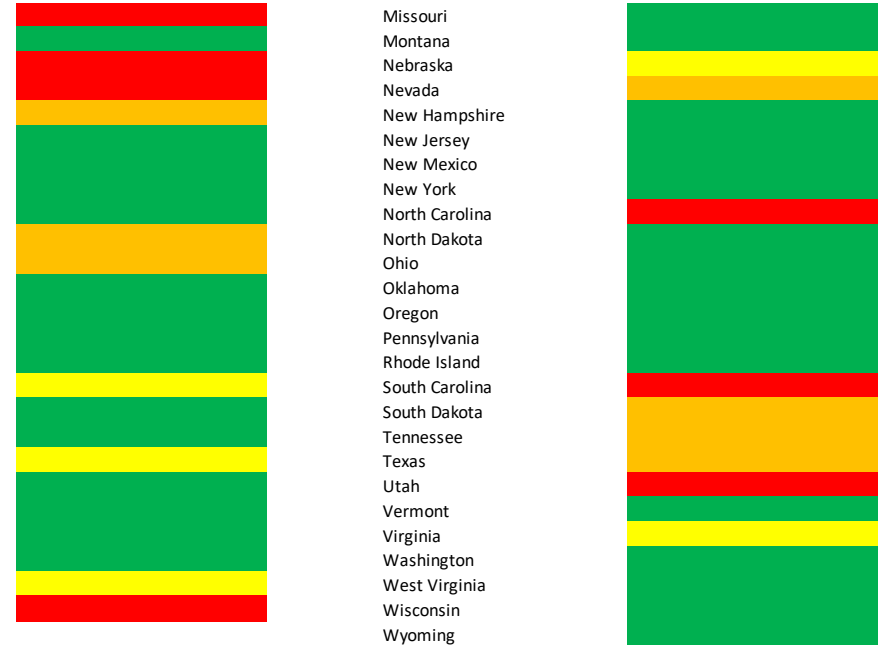
Several factors should be considered when assessing where a state stands with its virus progression status:

- Current rate of new infections
 - relative to its peak (is it declining or near its peak?)
- Test-positive rate
- Rate of change in cases
- Hospitalized patients v. its peak

We combined these criteria into a single score, reflective of our relative degree of concern of each state's current status (High, Moderately High, Moderate, Low)

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District Of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi

Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming



Key

High
Moderately High
Moderate
Low

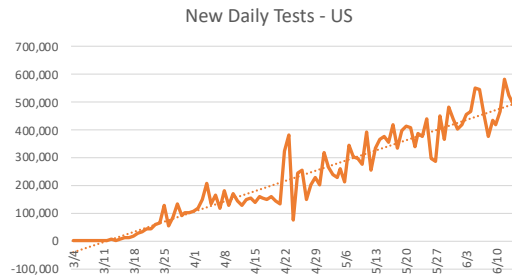


United States Overall Statistics

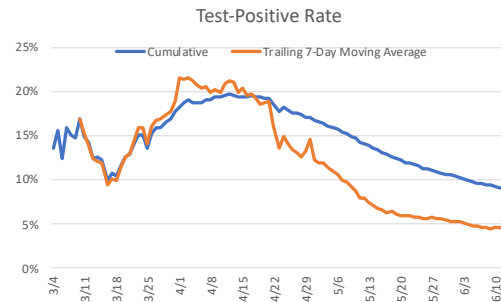
"Strategic Guidance in an Era of Unprecedented Change"

New York and Michigan made accounting adjustments to the case totals on June 5. These had the effect of adding 8.7 new daily infections per million to the US totals. Data here has not been adjusted to account for these accounting changes

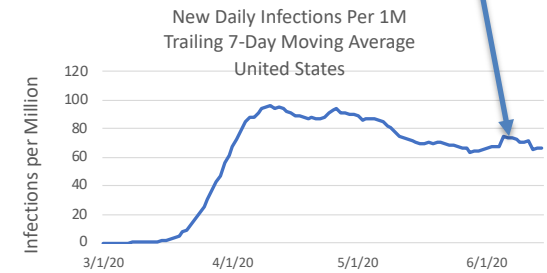
With significantly increased testing, the US is now meeting the WHO standard of <10% test-positives. This suggests that asymptomatic cases are being captured and that we have a better view of true infection rates. Further, new daily infections continue to decline; the death rate seems to have stabilized.



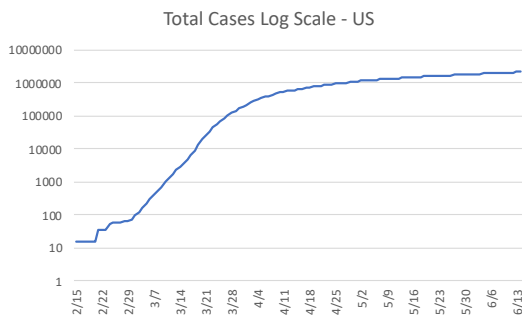
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



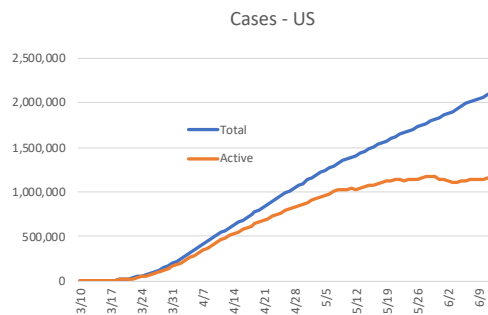
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



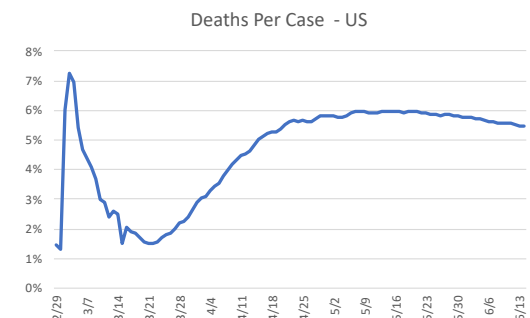
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

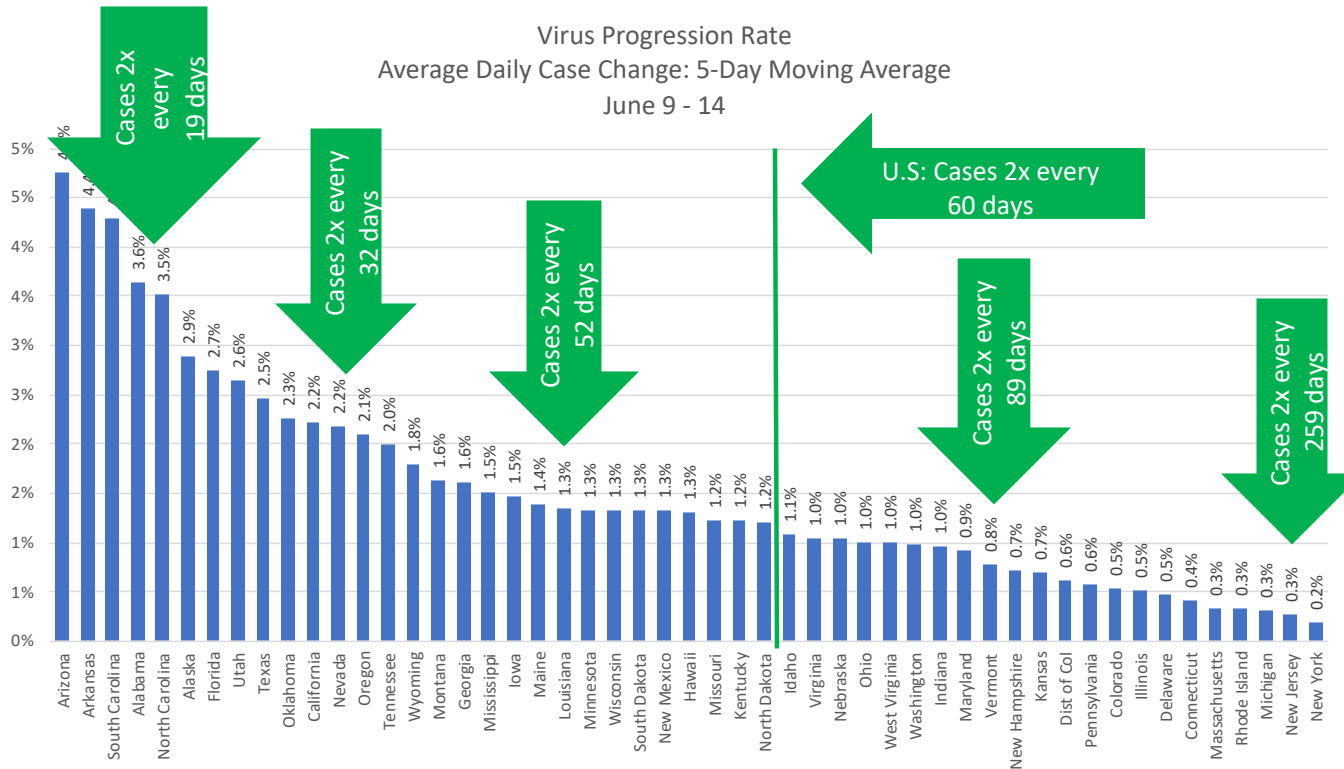


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Average Daily Case Growth

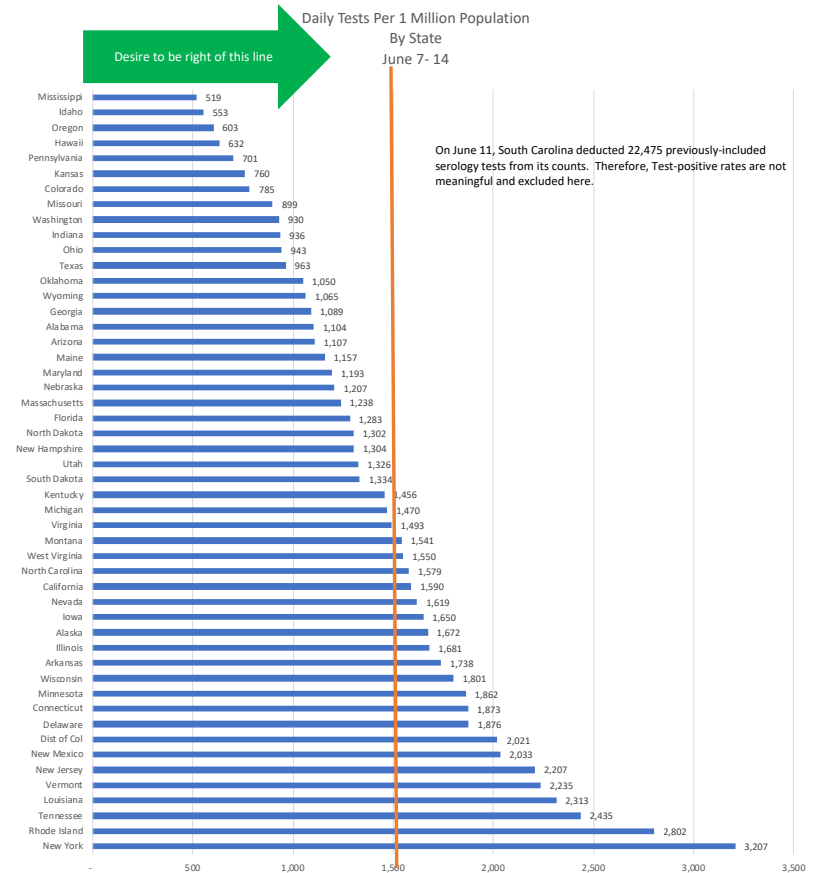
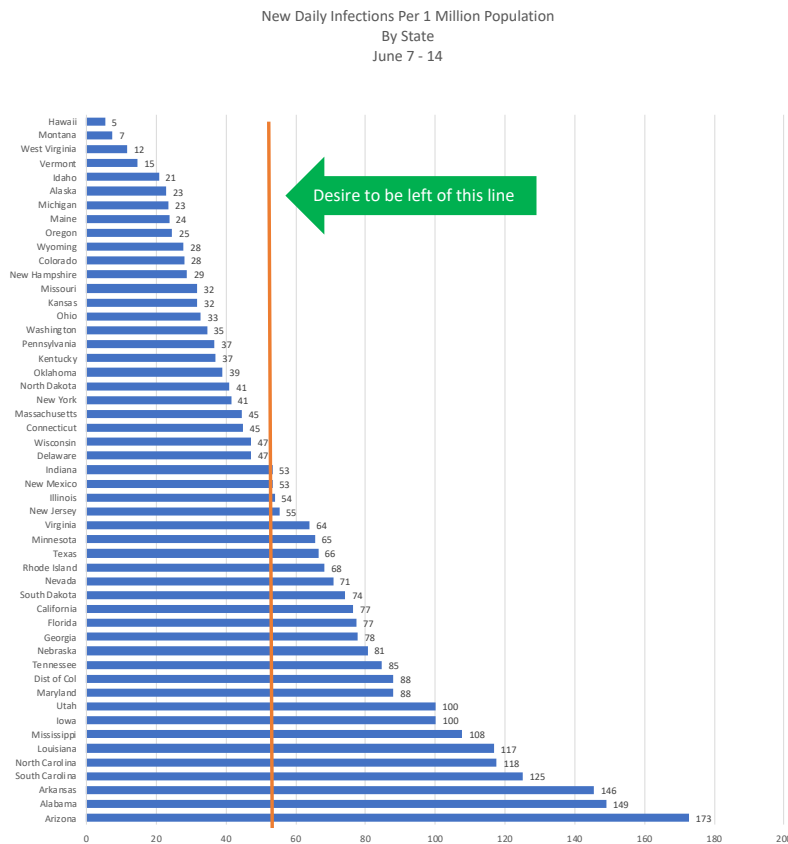
"Strategic Guidance in an Era of Unprecedented Change"

At the height of the epidemic, cases in some states were doubling every few days. Now, they would take from 15 – 367 days to double



State-by-State New Daily Infections & Tests Per Capita

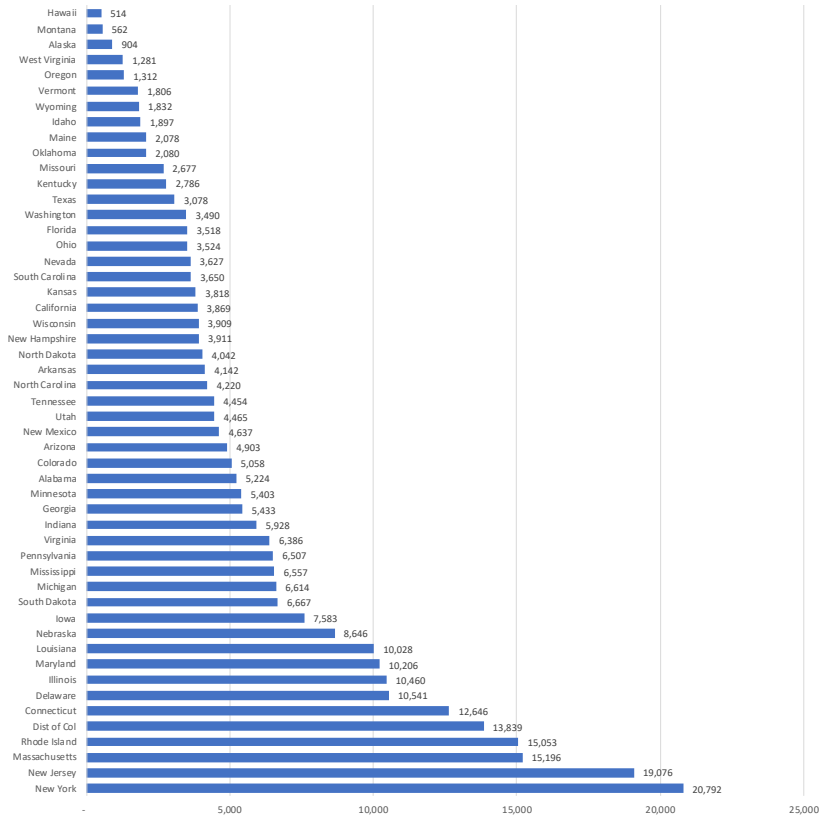
"Strategic Guidance in an Era of Unprecedented Change"



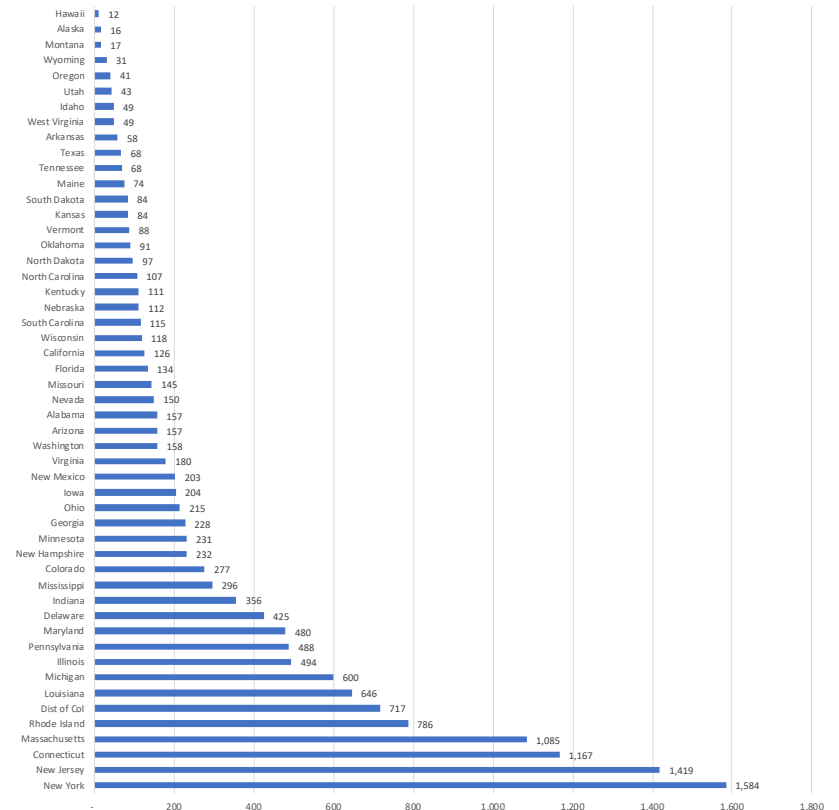
State-by-State Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

Total Cases Per 1 Million Population
By State
As of June 14



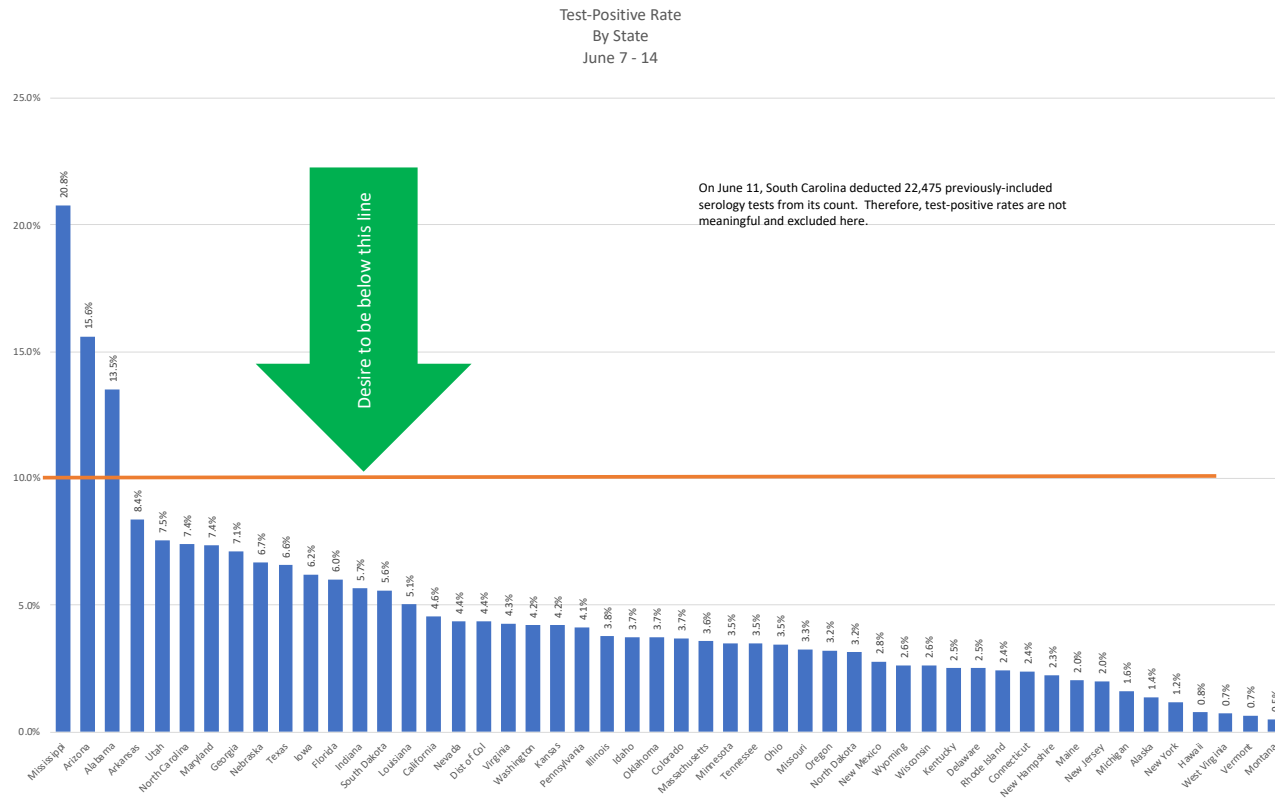
Deaths Per 1 Million Population
By State
As of June 14



Which States Are Performing Sufficient Tests?

"Strategic Guidance in an Era of Unprecedented Change"

The [World Health Organization](#) suggested that the test-positive rate should be 10% or lower, for testing to be sufficient to assess the true prevalence of the virus. Only Arizona and Mississippi failed to meet this guideline for the past week.



As of June 14

State	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population Past 7 days	Rank7	New Daily Cases Per 1M Population (5-Day M.A.)	Rank8
Alabama	25,615	(23)	5,224.2	(21)	773	(25)	3.0%	(36)	157.7	(25)	3.6%	(4)	1,104	(35)	132.8	(3)
Alaska	661	(50)	903.6	(49)	12	(51)	1.8%	(45)	16.4	(50)	2.9%	(6)	1,672	(15)	23.0	(46)
Arizona	35,691	(18)	4,903.5	(23)	1,186	(20)	3.3%	(31)	162.9	(23)	4.8%	(1)	1,107	(34)	176.8	(1)
Arkansas	12,501	(32)	4,142.4	(28)	179	(39)	1.4%	(48)	59.3	(43)	4.4%	(2)	1,738	(13)	141.7	(2)
California	152,882	(3)	3,869.2	(32)	5,089	(7)	3.3%	(30)	128.8	(29)	2.2%	(11)	1,590	(18)	77.1	(13)
Colorado	29,130	(21)	5,058.4	(22)	1,599	(16)	5.5%	(11)	277.7	(15)	0.5%	(43)	785	(44)	29.0	(42)
Connecticut	45,088	(14)	12,646.4	(6)	4,201	(8)	9.3%	(1)	1,178.3	(3)	0.4%	(46)	1,873	(10)	47.1	(29)
Delaware	10,264	(36)	10,540.5	(7)	422	(34)	4.1%	(25)	433.4	(12)	0.5%	(45)	1,876	(9)	56.3	(24)
District Of Columbia	9,767	(37)	13,839.2	(5)	515	(29)	5.3%	(13)	729.7	(6)	0.6%	(41)	2,021	(8)	89.1	(11)
Florida	75,568	(8)	3,518.4	(37)	2,934	(11)	3.9%	(27)	136.6	(28)	2.7%	(7)	1,283	(29)	72.1	(18)
Georgia	57,681	(11)	5,432.7	(19)	2,451	(13)	4.2%	(23)	230.8	(18)	1.6%	(17)	1,089	(36)	73.2	(16)
Hawaii	728	(49)	514.2	(51)	17	(50)	2.3%	(42)	12.0	(51)	1.3%	(26)	632	(47)	5.0	(51)
Idaho	3,399	(43)	1,896.7	(44)	87	(44)	2.6%	(39)	48.5	(45)	1.1%	(30)	553	(49)	20.7	(47)
Illinois	132,543	(4)	10,459.7	(8)	6,308	(4)	4.8%	(17)	497.8	(9)	0.5%	(44)	1,681	(14)	56.2	(25)
Indiana	39,909	(17)	5,928.1	(18)	2,422	(14)	6.1%	(9)	359.8	(13)	1.0%	(36)	936	(41)	54.0	(27)
Iowa	23,926	(24)	7,583.3	(12)	652	(27)	2.7%	(38)	206.7	(21)	1.5%	(19)	1,650	(16)	101.4	(8)
Kansas	11,124	(35)	3,818.3	(33)	245	(37)	2.2%	(44)	84.1	(39)	0.7%	(40)	760	(45)	32.2	(38)
Kentucky	12,445	(33)	2,785.6	(40)	499	(30)	4.0%	(26)	111.7	(32)	1.2%	(28)	1,456	(24)	37.0	(34)
Louisiana	46,619	(13)	10,028.2	(10)	3,019	(9)	6.5%	(7)	649.4	(7)	1.3%	(21)	2,313	(4)	116.7	(4)
Maine	2,793	(45)	2,077.8	(43)	100	(42)	3.6%	(29)	74.4	(40)	1.4%	(20)	1,157	(33)	24.8	(45)
Maryland	61,701	(10)	10,205.8	(9)	2,939	(10)	4.8%	(16)	486.1	(11)	0.9%	(37)	1,193	(32)	90.3	(10)
Massachusetts	105,603	(5)	15,195.8	(3)	7,624	(3)	7.2%	(6)	1,097.1	(4)	0.3%	(47)	1,238	(30)	46.5	(30)
Michigan	66,054	(9)	6,614.1	(14)	6,016	(6)	9.1%	(2)	602.4	(8)	0.3%	(49)	1,470	(23)	26.5	(44)
Minnesota	30,471	(19)	5,403.0	(20)	1,329	(18)	4.4%	(22)	235.7	(16)	1.3%	(22)	1,862	(11)	67.7	(21)
Mississippi	19,516	(26)	6,557.5	(15)	891	(23)	4.6%	(19)	299.4	(14)	1.5%	(18)	519	(50)	111.1	(6)

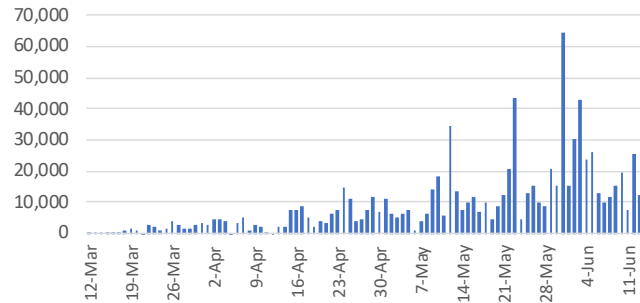
As of June 14

State	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population Past 7 days	Rank7	New Daily Cases Per 1M Population (5-Day M.A.)	Rank8
Missouri	16,428	(29)	2,676.7	(41)	895	(22)	5.4%	(12)	145.8	(27)	1.2%	(27)	899	(43)	29.1	(41)
Montana	601	(51)	562.3	(50)	19	(48)	3.2%	(33)	17.8	(49)	1.6%	(16)	1,541	(21)	6.3	(50)
Nebraska	16,725	(28)	8,646.1	(11)	216	(38)	1.3%	(49)	111.7	(33)	1.0%	(32)	1,207	(31)	80.5	(12)
Nevada	11,173	(34)	3,627.4	(35)	464	(32)	4.2%	(24)	150.6	(26)	2.2%	(12)	1,619	(17)	68.9	(19)
New Hampshire	5,318	(42)	3,911.1	(30)	320	(36)	6.0%	(10)	235.3	(17)	0.7%	(39)	1,304	(27)	29.4	(40)
New Jersey	169,441	(2)	19,076.5	(2)	12,733	(2)	7.5%	(5)	1,433.5	(2)	0.3%	(50)	2,207	(6)	57.3	(23)
New Mexico	9,723	(38)	4,637.0	(24)	435	(33)	4.5%	(20)	207.5	(20)	1.3%	(25)	2,033	(7)	55.9	(26)
New York	404,470	(1)	20,791.6	(1)	30,911	(1)	7.6%	(3)	1,589.0	(1)	0.2%	(51)	3,207	(1)	44.1	(32)
North Carolina	44,263	(15)	4,220.3	(27)	1,132	(21)	2.6%	(40)	107.9	(34)	3.5%	(5)	1,579	(19)	110.7	(7)
North Dakota	3,080	(44)	4,041.7	(29)	74	(46)	2.4%	(41)	97.1	(35)	1.2%	(29)	1,302	(28)	45.4	(31)
Ohio	41,193	(16)	3,524.1	(36)	2,562	(12)	6.2%	(8)	219.2	(19)	1.0%	(33)	943	(40)	33.1	(37)
Oklahoma	8,231	(39)	2,080.1	(42)	359	(35)	4.4%	(21)	90.7	(36)	2.3%	(10)	1,050	(38)	36.6	(35)
Oregon	5,535	(41)	1,312.3	(47)	174	(40)	3.1%	(34)	41.3	(47)	2.1%	(13)	603	(48)	29.6	(39)
Pennsylvania	83,299	(7)	6,506.7	(16)	6,290	(5)	7.6%	(4)	491.3	(10)	0.6%	(42)	701	(46)	38.8	(33)
Rhode Island	15,947	(30)	15,053.4	(4)	833	(24)	5.2%	(14)	786.3	(5)	0.3%	(48)	2,802	(2)	68.2	(20)
South Carolina	18,795	(27)	3,650.4	(34)	600	(28)	3.2%	(32)	116.5	(31)	4.3%	(3)	291	(51)	112.1	(5)
South Dakota	5,898	(40)	6,667.0	(13)	75	(45)	1.3%	(50)	84.8	(38)	1.3%	(24)	1,334	(25)	75.3	(14)
Tennessee	30,432	(20)	4,453.6	(26)	475	(31)	1.6%	(47)	69.5	(41)	2.0%	(14)	2,435	(3)	72.5	(17)
Texas	89,242	(6)	3,077.7	(39)	1,996	(15)	2.2%	(43)	68.8	(42)	2.5%	(9)	963	(39)	64.4	(22)
Utah	14,313	(31)	4,464.5	(25)	139	(41)	1.0%	(51)	43.4	(46)	2.6%	(8)	1,326	(26)	97.3	(9)
Vermont	1,127	(47)	1,806.1	(46)	55	(47)	4.9%	(15)	88.1	(37)	0.8%	(38)	2,235	(5)	18.1	(48)
Virginia	54,506	(12)	6,385.8	(17)	1,546	(17)	2.8%	(37)	181.1	(22)	1.0%	(31)	1,493	(22)	74.8	(15)
Washington	26,573	(22)	3,489.6	(38)	1,221	(19)	4.6%	(18)	160.3	(24)	1.0%	(35)	930	(42)	34.6	(36)
West Virginia	2,290	(46)	1,281.4	(48)	88	(43)	3.8%	(28)	49.2	(44)	1.0%	(34)	1,550	(20)	11.0	(49)
Wisconsin	22,758	(25)	3,908.7	(31)	692	(26)	3.0%	(35)	118.9	(30)	1.3%	(23)	1,801	(12)	47.8	(28)
Wyoming	1,060	(48)	1,831.5	(45)	18	(49)	1.7%	(46)	31.1	(48)	1.8%	(15)	1,065	(37)	27.4	(43)
United States	2,162,228		6,532.4		117,858		5.5%		329.7		1.1%		1,423		67.3	

UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

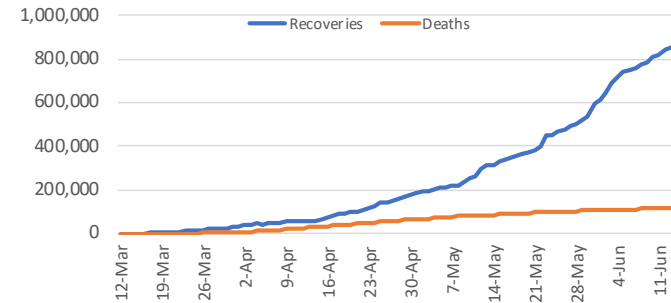
"Strategic Guidance in an Era of Unprecedented Change"

New Daily Recoveries
United States



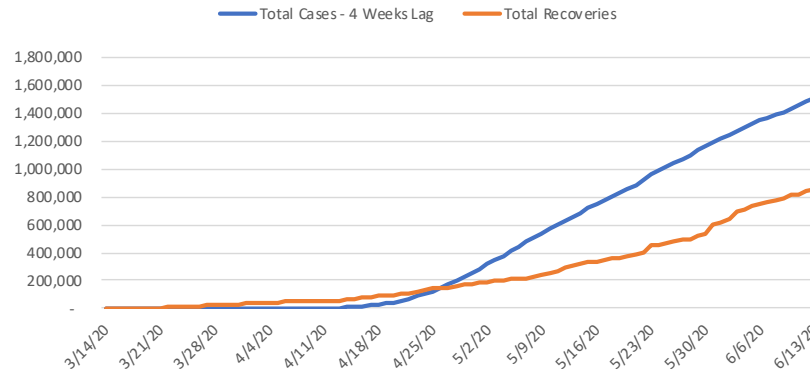
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

Recoveries v. Deaths
United States



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

Total Cases - 4-Week Lag v. Total Recoveries



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

"Strategic Guidance in an Era of Unprecedented Change"

Which states seem to be lagging in reporting?

At this point, we should be expecting far more recoveries in the U.S.

Comparing the reported recoveries to Total Cases 4 weeks ago*, this shortfall is ~350-500k

* - 4 weeks is the presumed time from infection-onset to recovery referenced by many states

State	Recoveries	Expected Recoveries	
		Low	High
Alabama	13,508	9,417	10,594
Alaska	411	317	356
Arizona	6,333	11,150	12,543
Arkansas	8,110	3,807	4,283
California	40,545	64,212	72,239
Colorado	2,569	17,550	19,744
Connecticut	8,596	29,935	33,677
Delaware	6,172	6,136	6,903
District Of Columbia	1,143	5,698	6,411
Florida	14,745	36,470	41,029
Georgia	1,446	30,161	33,931
Hawaii	629	512	576
Idaho	2,837	1,935	2,177
Illinois	83,806	75,353	84,772
Indiana	28,522	22,222	25,000
Iowa	14,383	11,721	13,186
Kansas	6,127	6,361	7,156
Kentucky	3,409	6,150	6,919
Louisiana	33,904	27,546	30,989
Maine	2,173	1,350	1,518
Maryland	4,541	31,043	34,924
Massachusetts	84,621	68,808	77,409
Michigan	44,964	40,914	46,028
Minnesota	26,090	12,534	14,101
Mississippi	13,356	9,037	10,166
Missouri	3,699	8,846	9,951

Low = 80% of Total Cases 4 week ago
High = 90% of Total Cases 4 week ago

State	Recoveries	Expected Recoveries	
		Low	High
Montana	510	374	421
Nebraska	10,121	8,278	9,313
Nevada	8,038	5,486	6,171
New Hampshire	3,987	2,877	3,236
New Jersey	32,904	118,558	133,377
New Mexico	4,114	4,750	5,344
New York	86,001	287,878	323,862
North Carolina	23,653	14,927	16,793
North Dakota	2,658	1,520	1,710
Ohio	8,553	22,343	25,136
Oklahoma	6,578	4,248	4,779
Oregon	2,396	2,898	3,261
Pennsylvania	56,472	52,653	59,234
Rhode Island	1,435	10,139	11,407
South Carolina	8,682	7,053	7,934
South Dakota	4,899	3,190	3,588
Tennessee	19,896	13,910	15,649
Texas	58,341	38,942	43,809
Utah	8,252	5,790	6,514
Vermont	909	752	846
Virginia	7,178	24,310	27,349
Washington	8,629	15,426	17,355
West Virginia	1,578	1,192	1,341
Wisconsin	16,558	10,034	11,289
Wyoming	834	603	679
United States	870,050	1,222,131	1,374,898

- States seemingly up-to-date with reporting recoveries
- States only reporting ~ 1/2 expected recoveries
- States well-behind in reporting recoveries

VIRUS PROGRESSION: ROADMAP TO RECOVERY

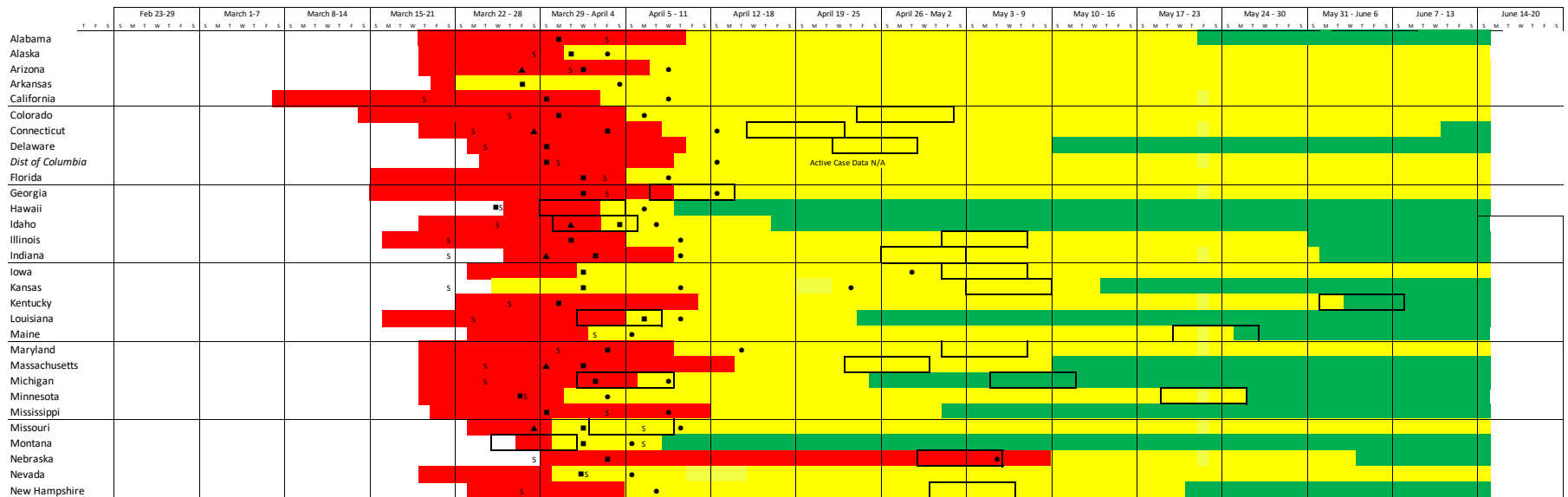
“Strategic Guidance in an Era of Unprecedented Change”

The graphic on the following two pages illustrates when the state 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.

A state is not shaded green until active cases appear to have peaked.

State-by-State Virus Progression – 1 of 2

“Strategic Guidance in an Era of Unprecedented Change”

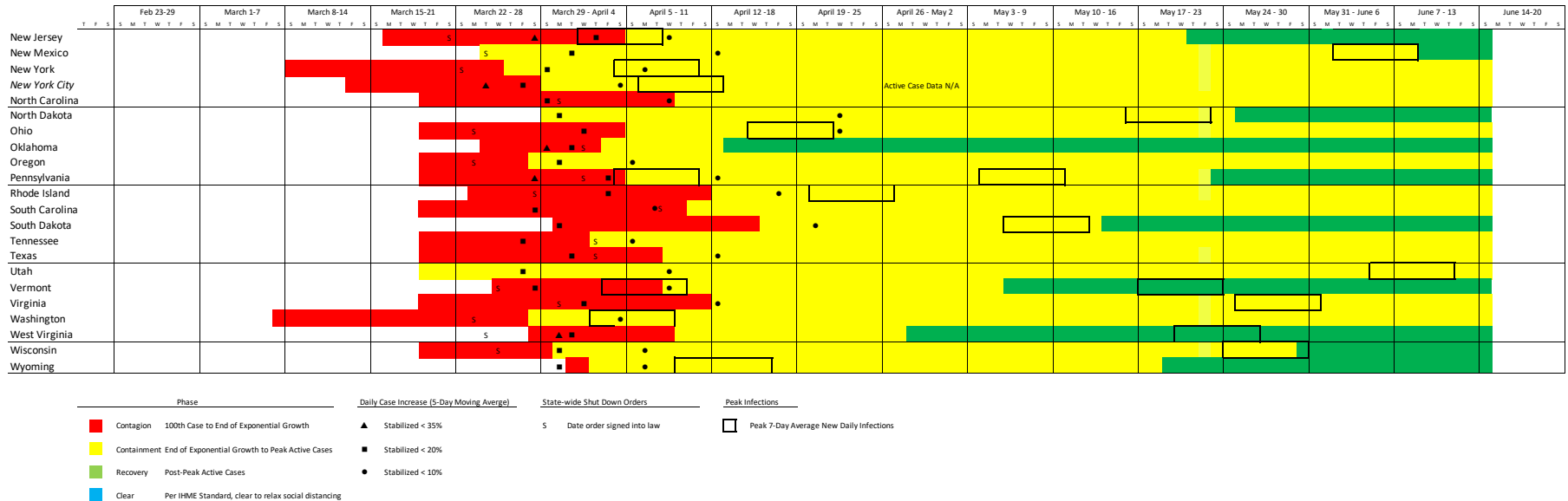


Legend on following page

© 2020 [Health Industry Advisor LLC](https://www.healthindustryadvisor.com) analysis, using data from [worldometers.info](https://www.worldometers.info)

State-by-State Virus Progression – 2 of 2

“Strategic Guidance in an Era of Unprecedented Change”



© 2020 [Health Industry Advisor LLC](https://www.healthindustryadvisor.com) analysis, using data from [worldometers.info](https://www.worldometers.info)

STATE TEST, INFECTION AND CASE TRENDS

"Strategic Guidance in an Era of Unprecedented Change"

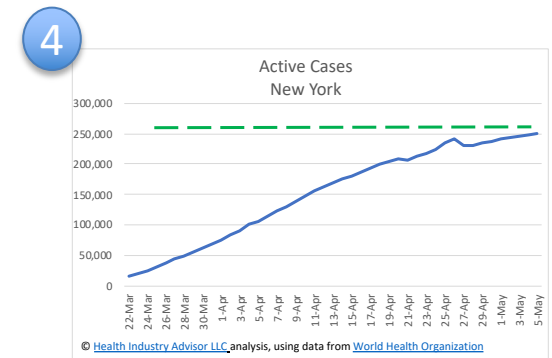
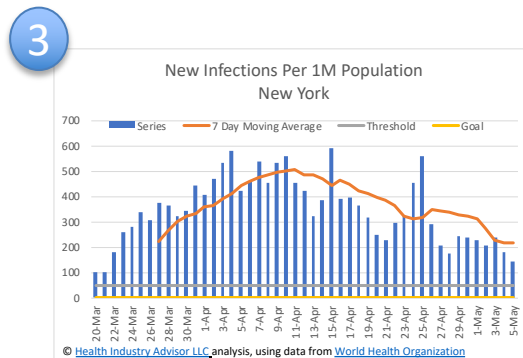
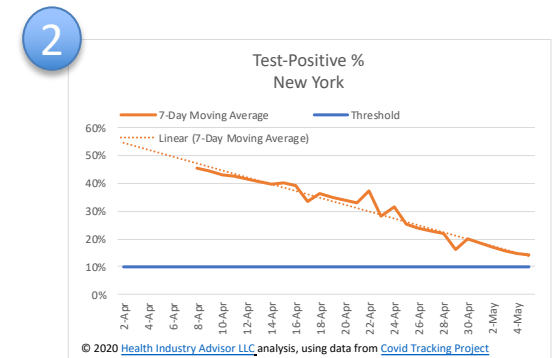
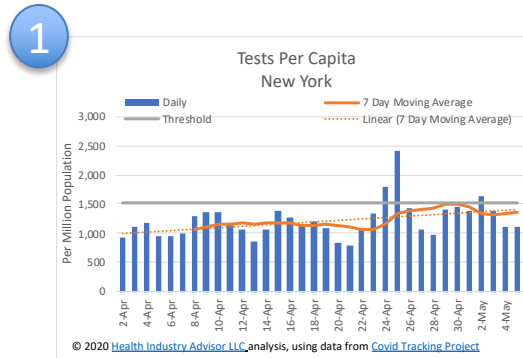
On Mondays, Wednesday and Fridays we provide graphics relevant to judging how far a state (or the District of Columbia) has progressed against the virus. Seventeen states (or, sixteen and D.C.) are presented at a time. Today, we provide:

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas

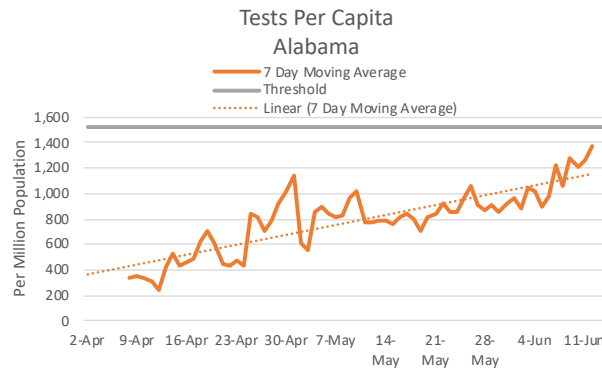
"Strategic Guidance in an Era of Unprecedented Change"

How to "read" these charts:

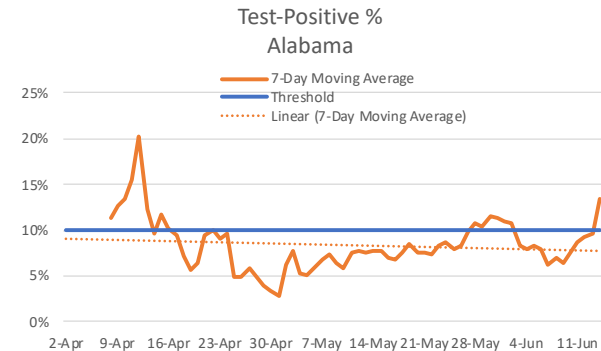
- Chart 1 – Desire to see tests per capita:
 - Above the threshold
 - Increasing or stable
- Chart 2 - Desire to see Test-Positive %:
 - Below the threshold
 - Declining or stable
- Chart 3 - Desire to see New Infections Per Capita:
 - Below the threshold
 - Declining or stable
- Chart 4 - Desire to see Active Cases:
 - Declining



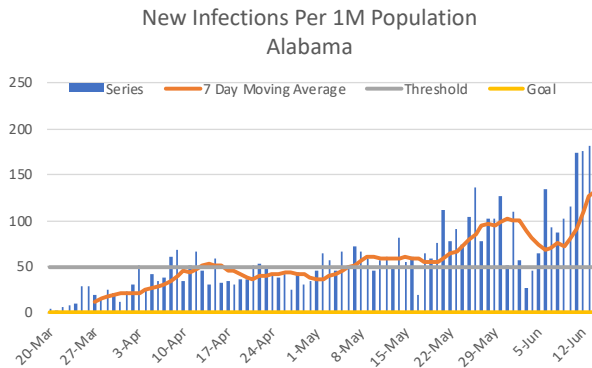
"Strategic Guidance in an Era of Unprecedented Change"



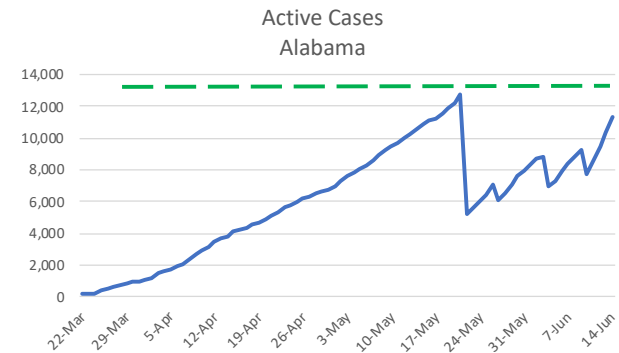
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



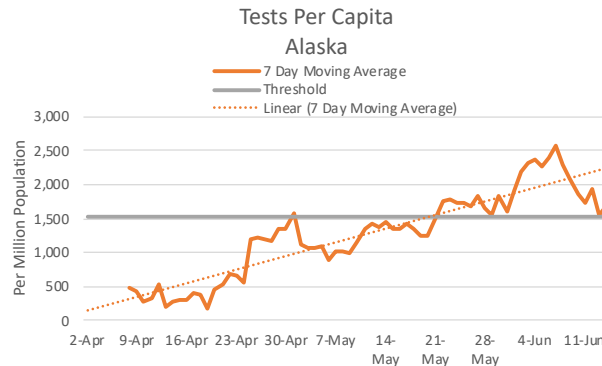
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



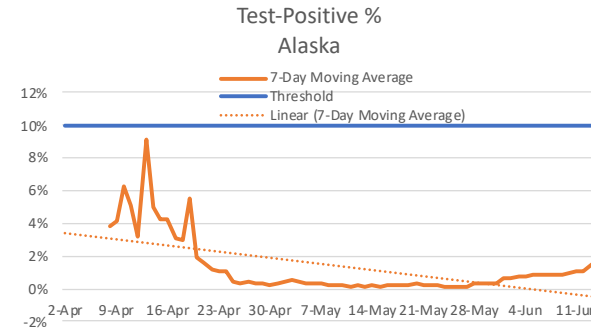
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

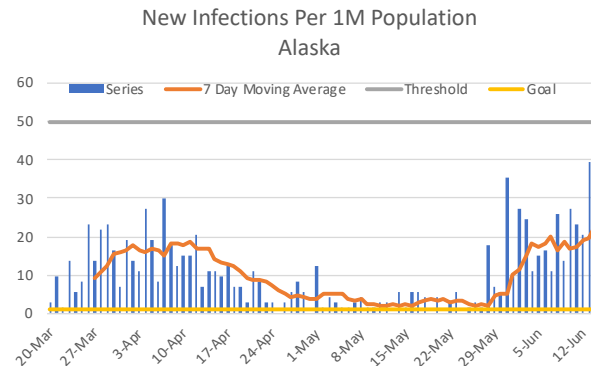
"Strategic Guidance in an Era of Unprecedented Change"



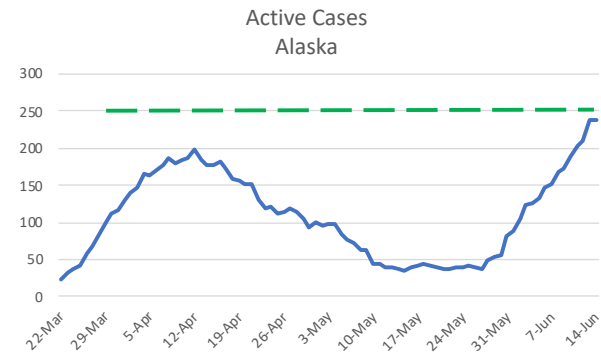
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

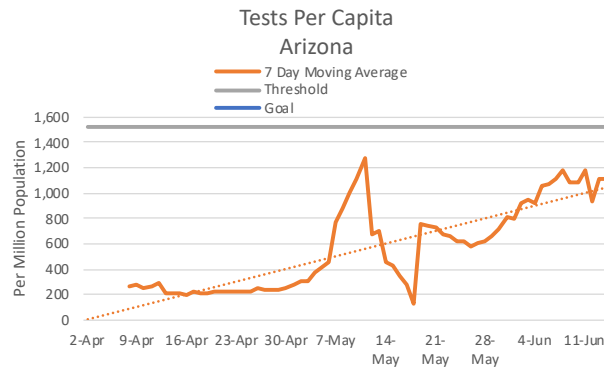


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

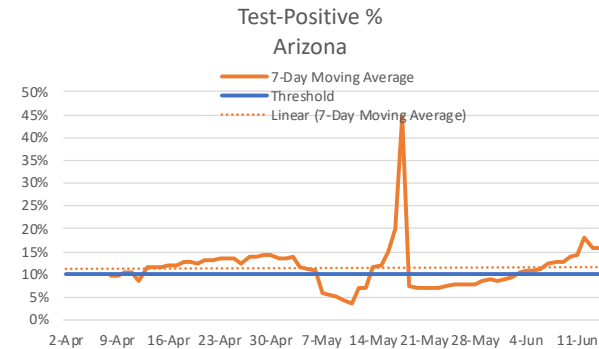


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

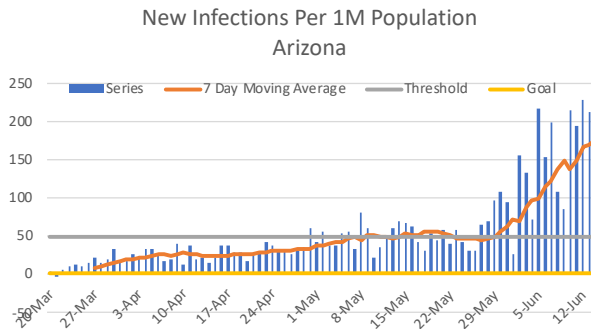
"Strategic Guidance in an Era of Unprecedented Change"



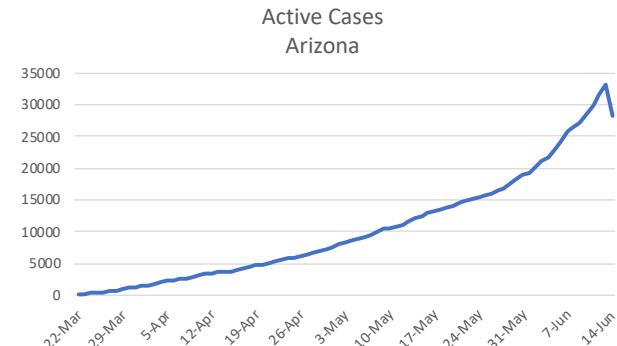
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

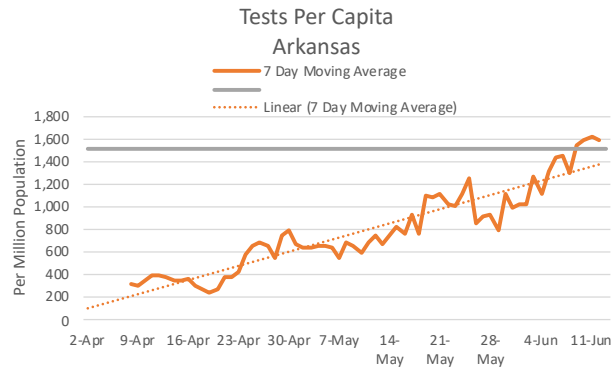


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

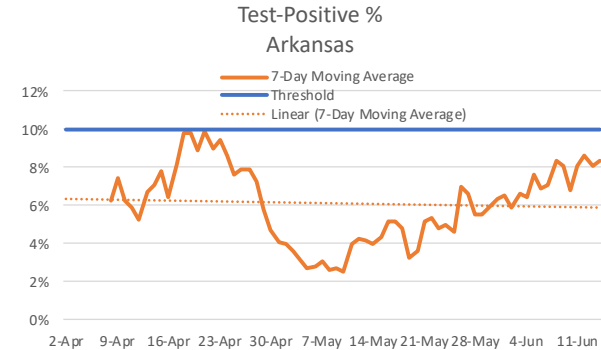


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

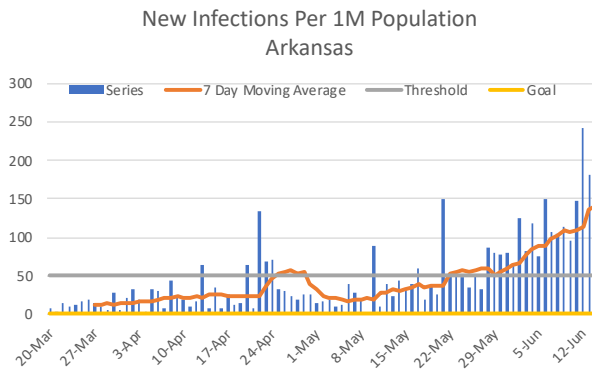
"Strategic Guidance in an Era of Unprecedented Change"



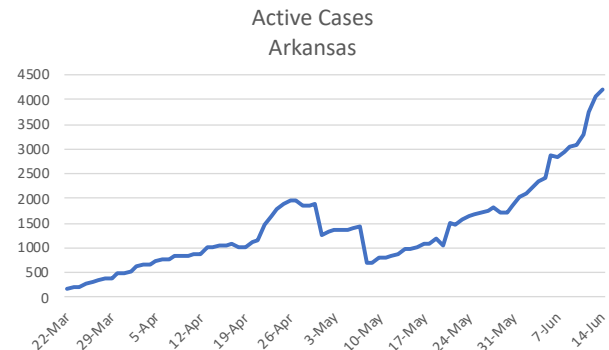
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

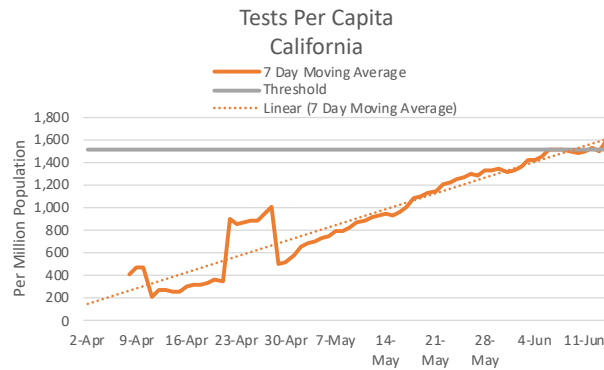


© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

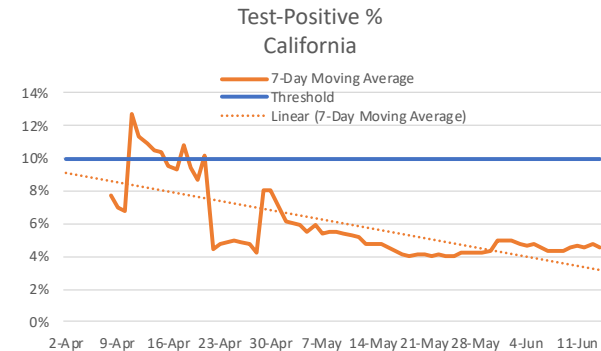


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

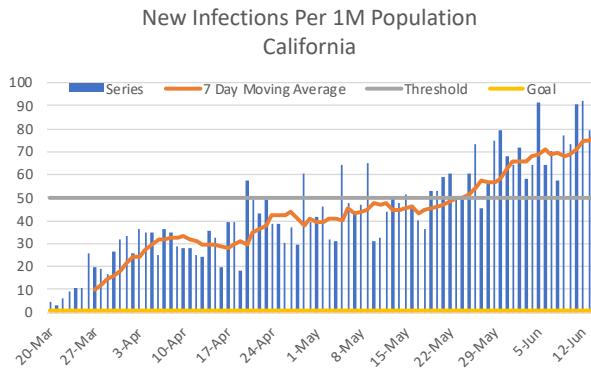
"Strategic Guidance in an Era of Unprecedented Change"



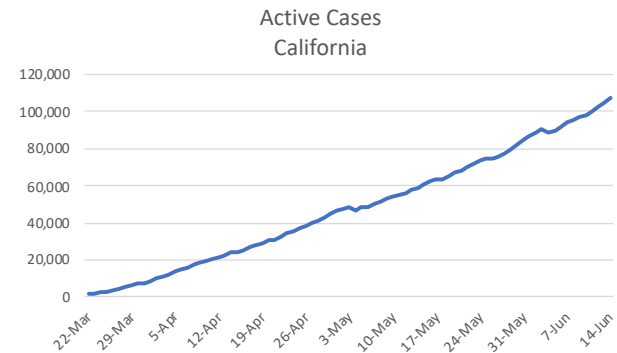
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

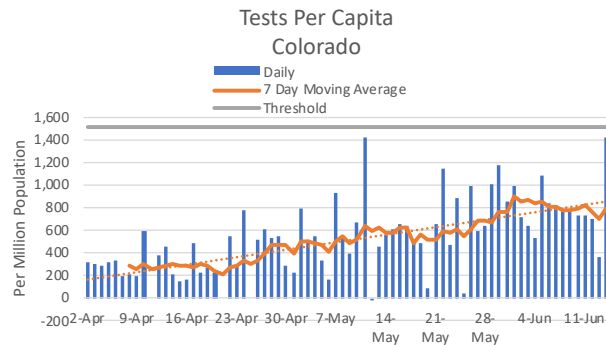


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

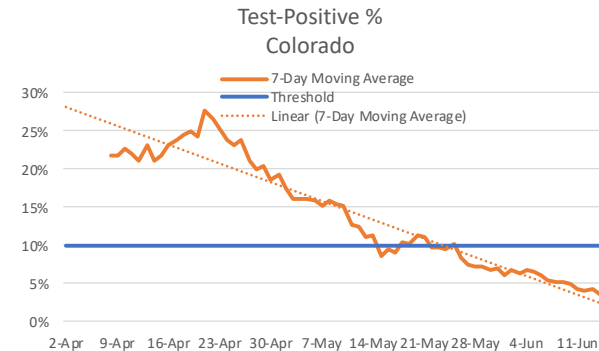


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

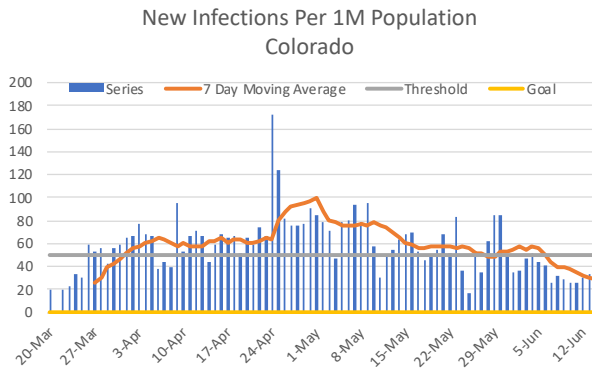
"Strategic Guidance in an Era of Unprecedented Change"



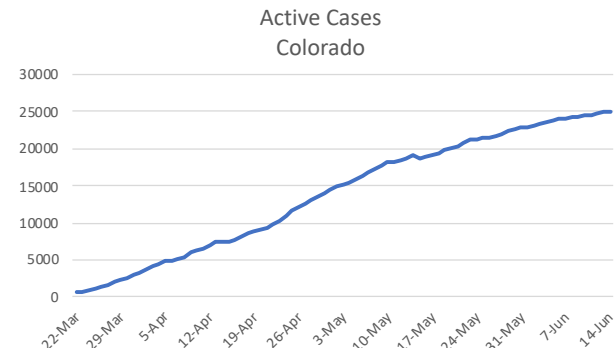
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

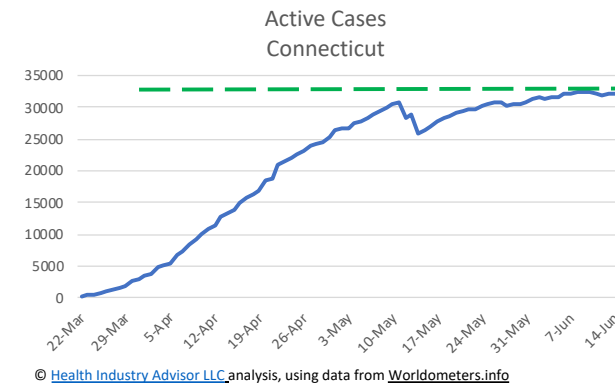
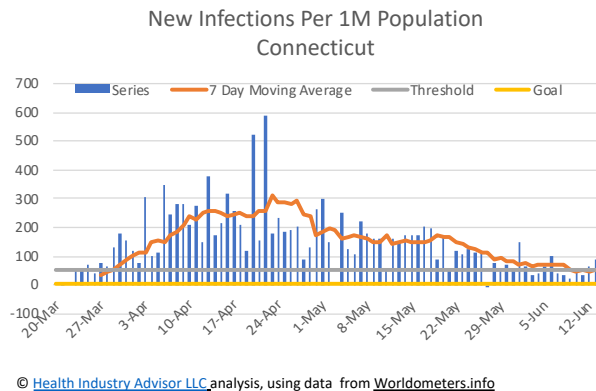
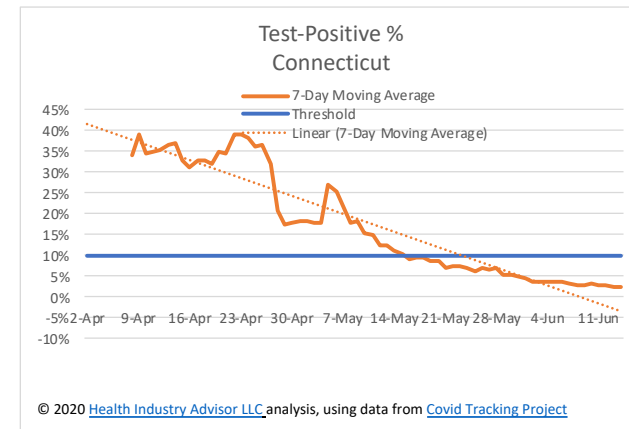
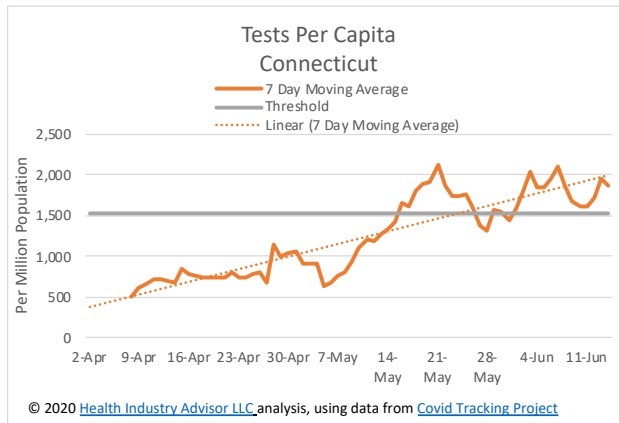


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

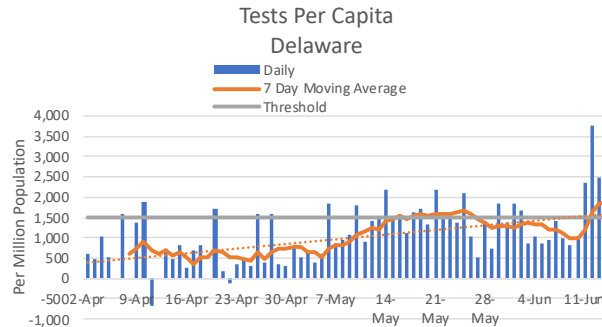


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

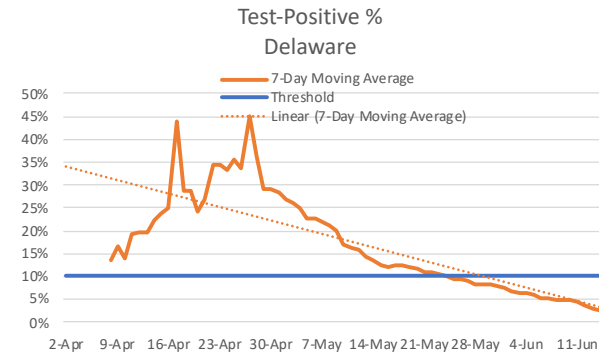
"Strategic Guidance in an Era of Unprecedented Change"



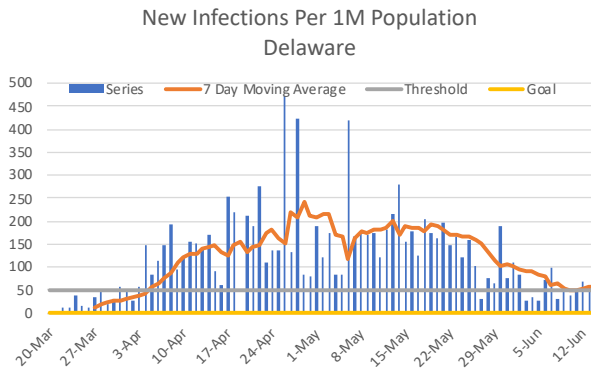
"Strategic Guidance in an Era of Unprecedented Change"



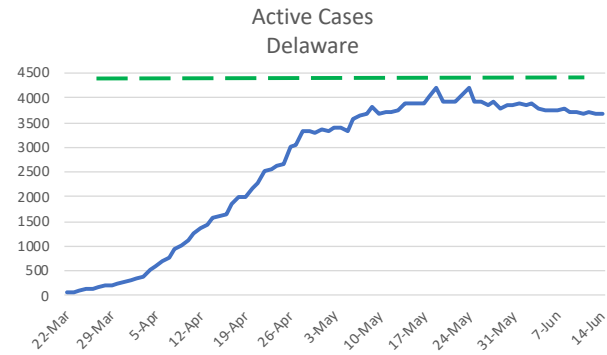
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



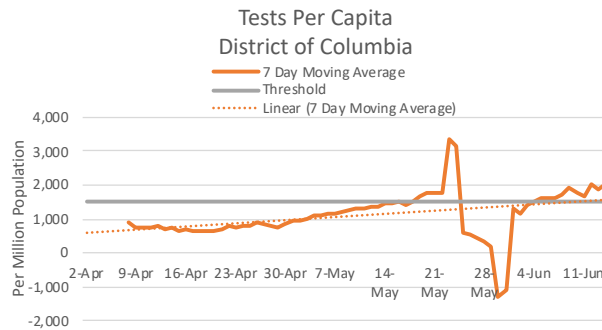
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



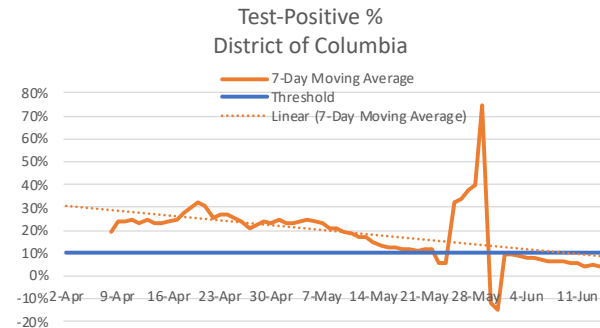
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

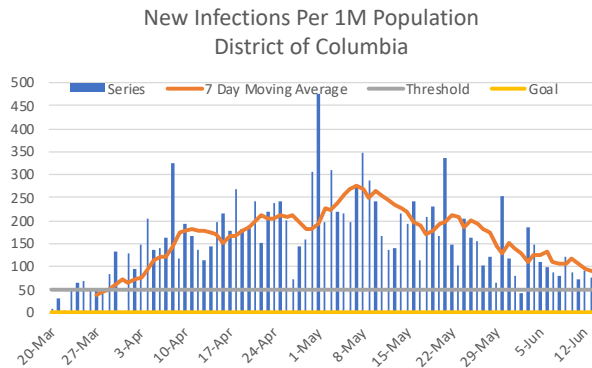
"Strategic Guidance in an Era of Unprecedented Change"



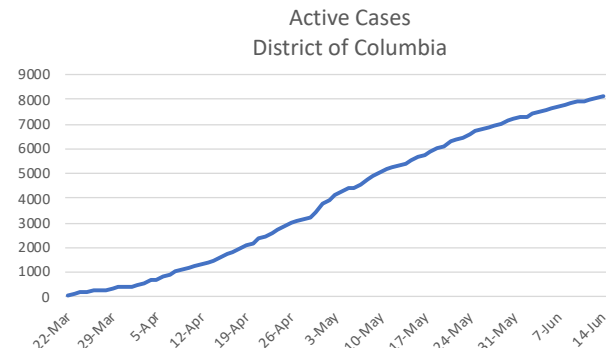
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

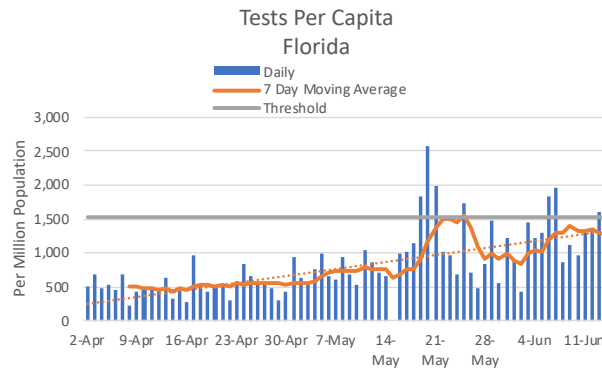


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

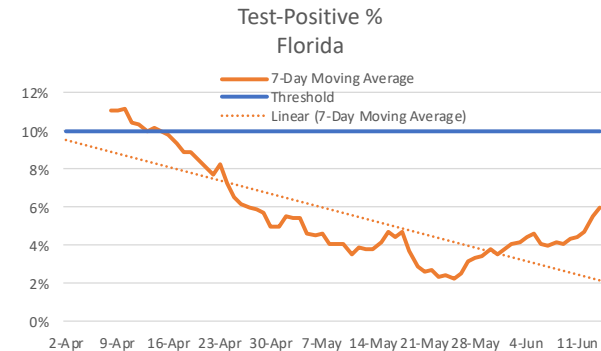


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

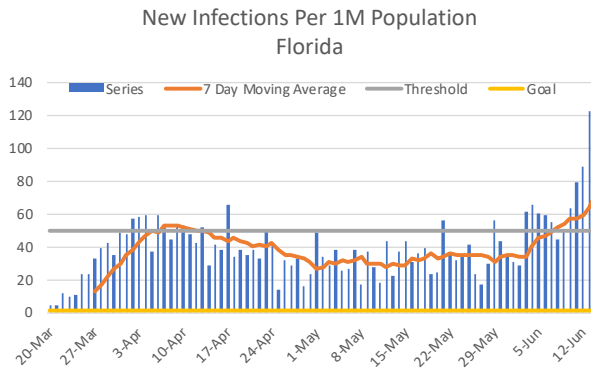
"Strategic Guidance in an Era of Unprecedented Change"



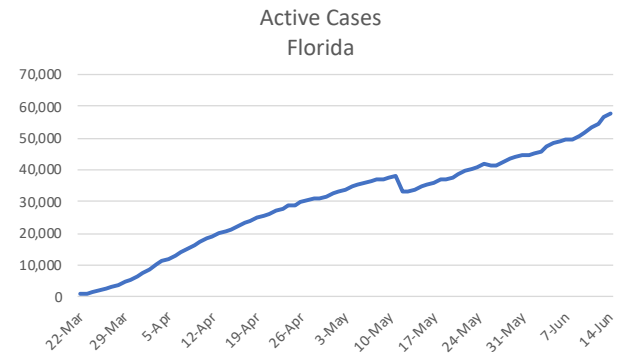
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



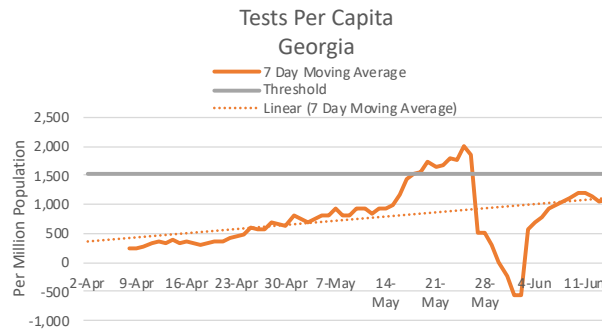
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



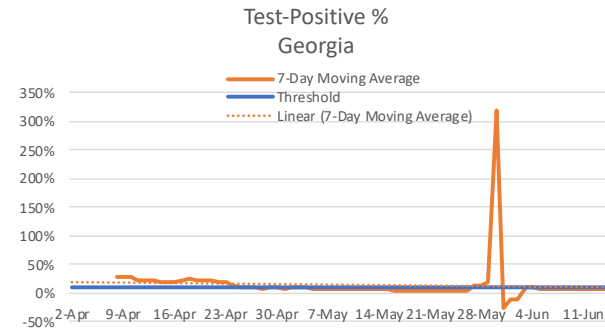
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

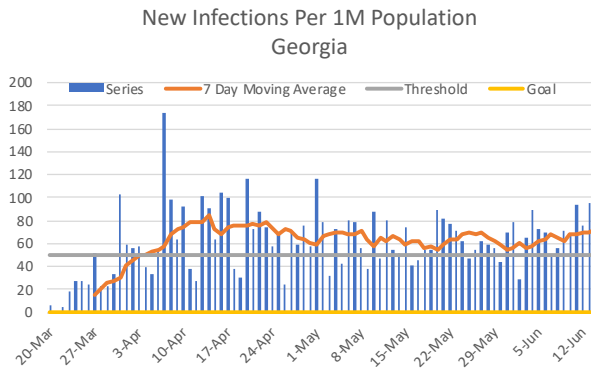
"Strategic Guidance in an Era of Unprecedented Change"



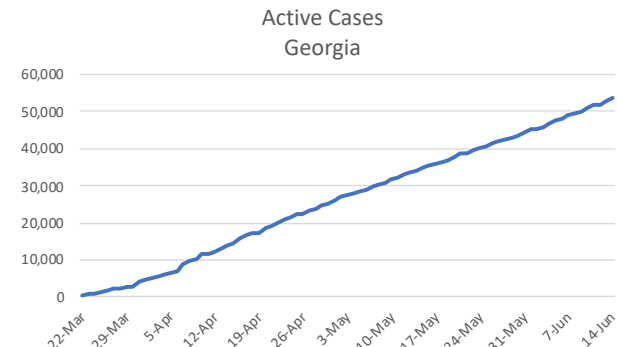
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



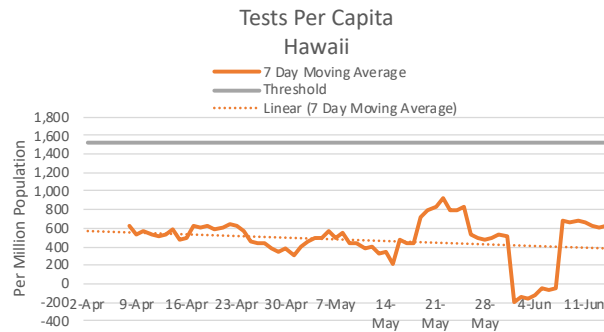
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



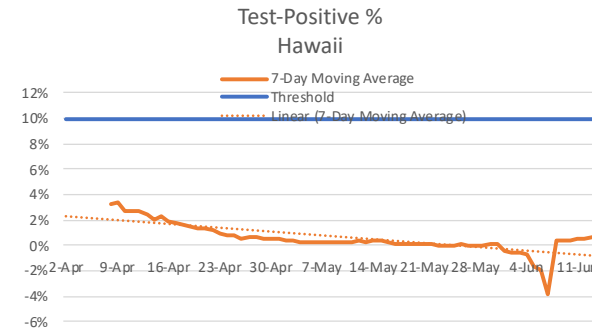
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

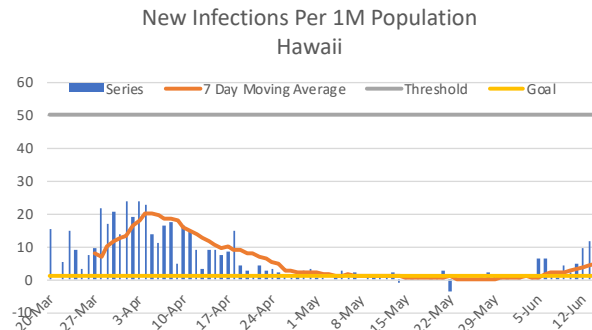
"Strategic Guidance in an Era of Unprecedented Change"



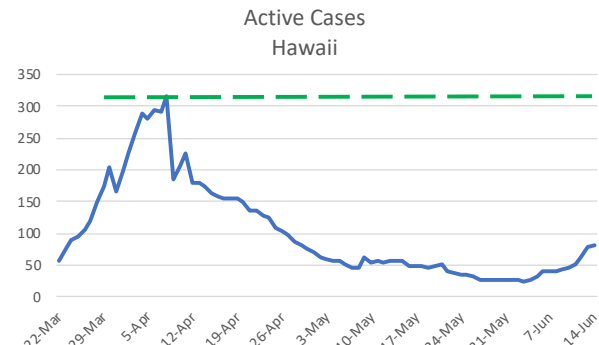
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

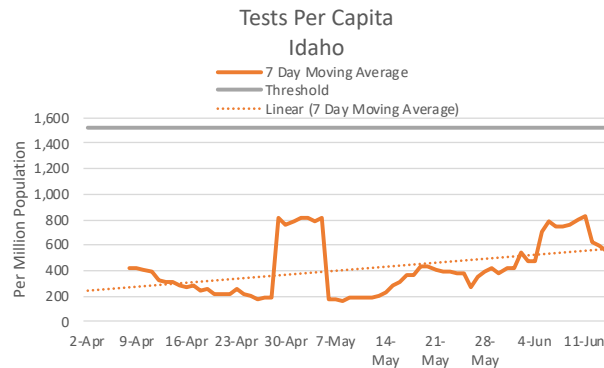


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

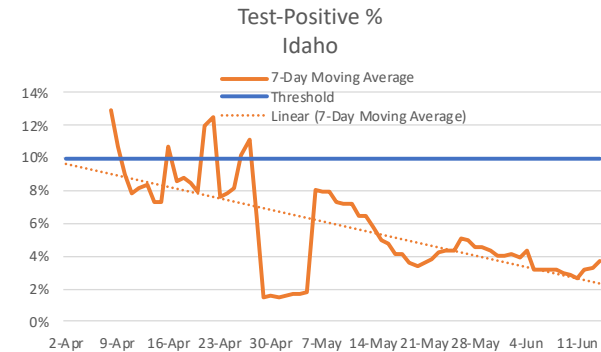


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

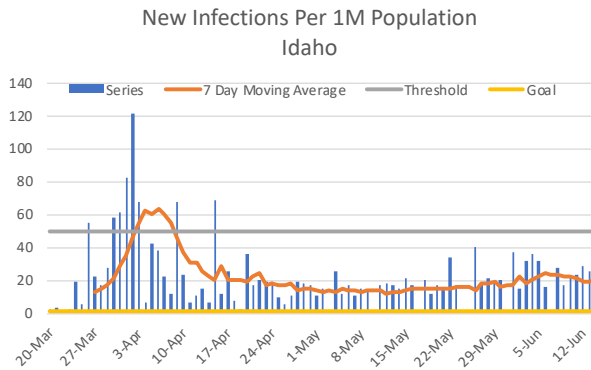
"Strategic Guidance in an Era of Unprecedented Change"



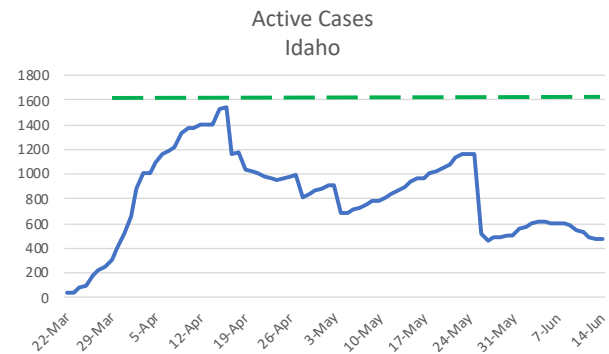
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



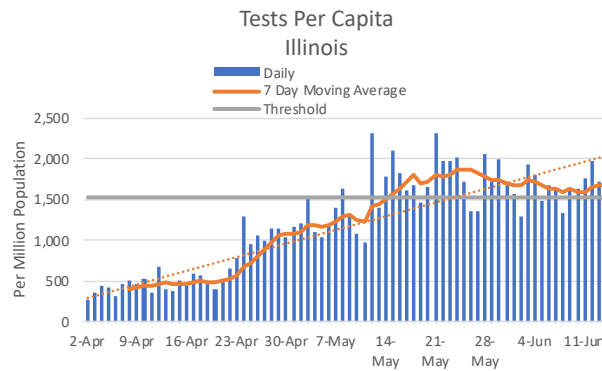
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



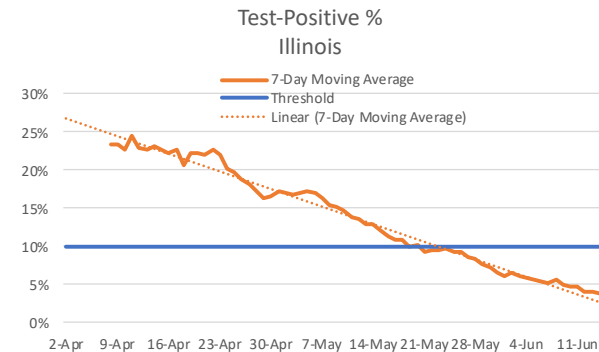
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

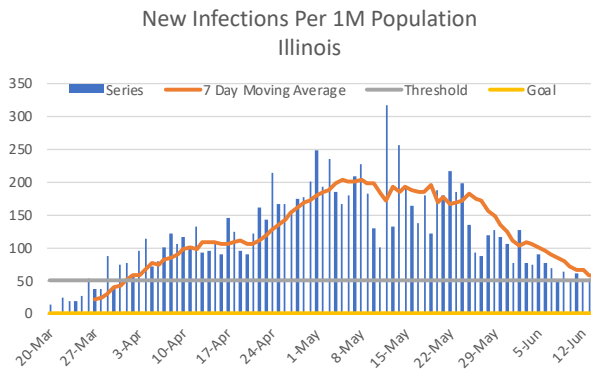
"Strategic Guidance in an Era of Unprecedented Change"



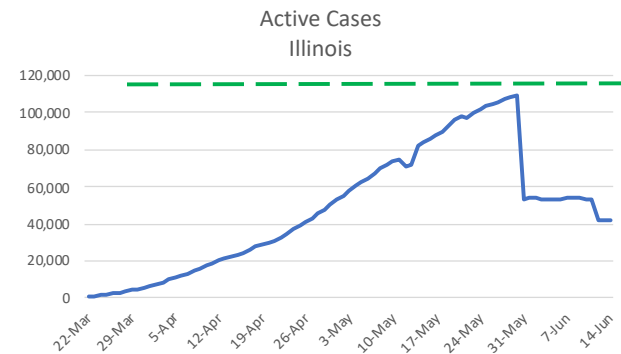
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



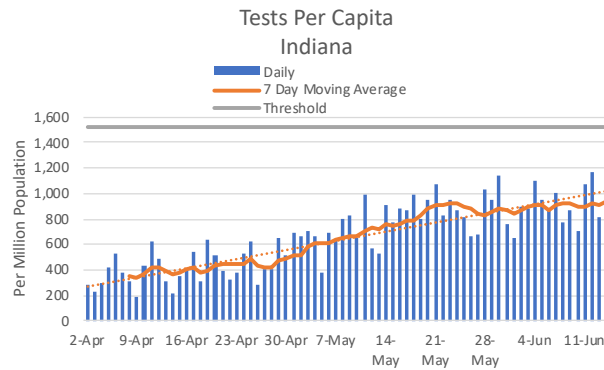
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



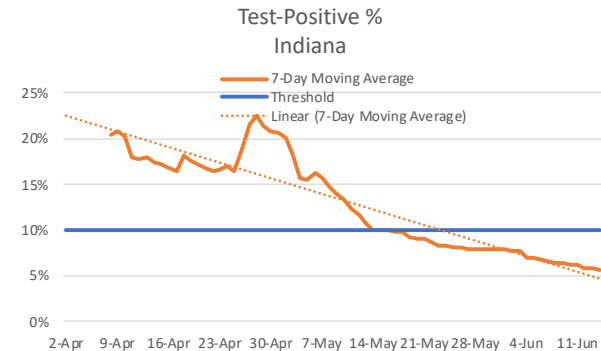
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

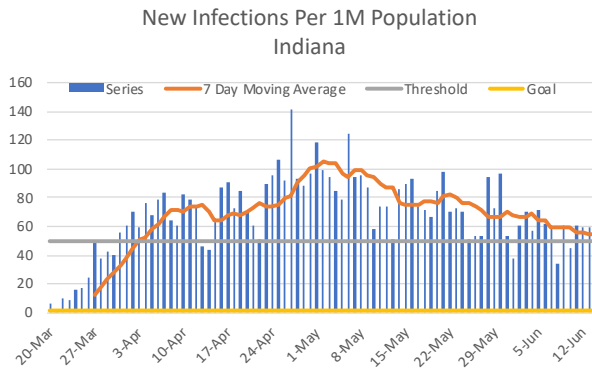
"Strategic Guidance in an Era of Unprecedented Change"



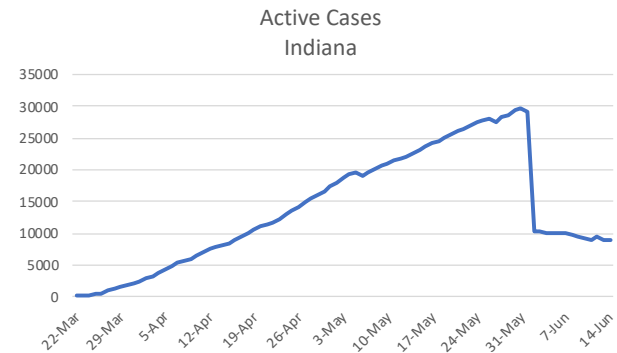
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



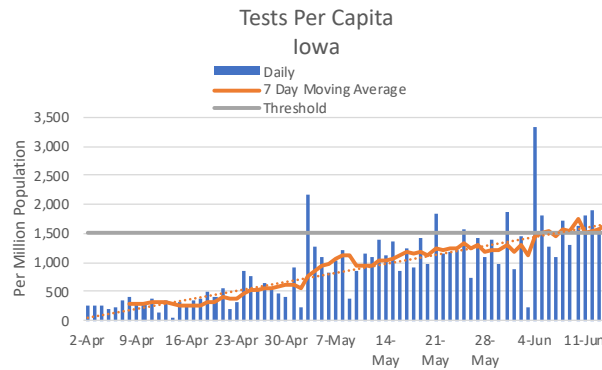
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



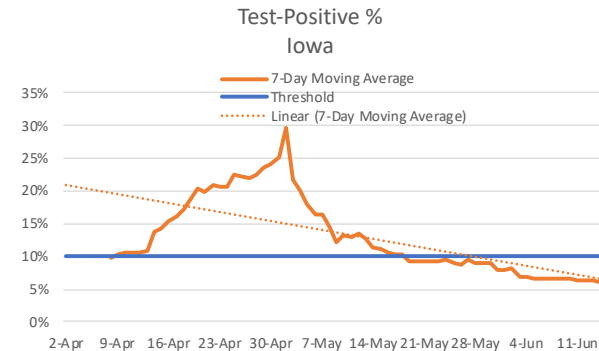
© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

State-by-State Test, New Daily Infection and Active Case Trends

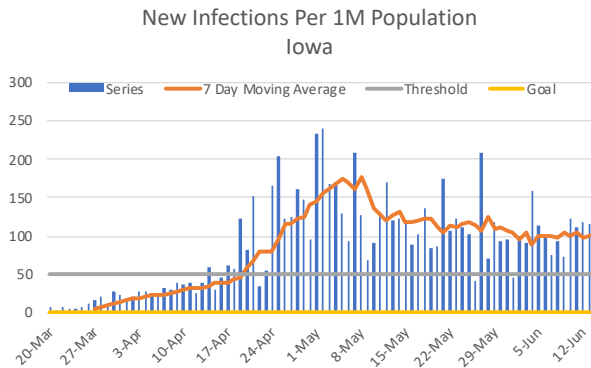
"Strategic Guidance in an Era of Unprecedented Change"



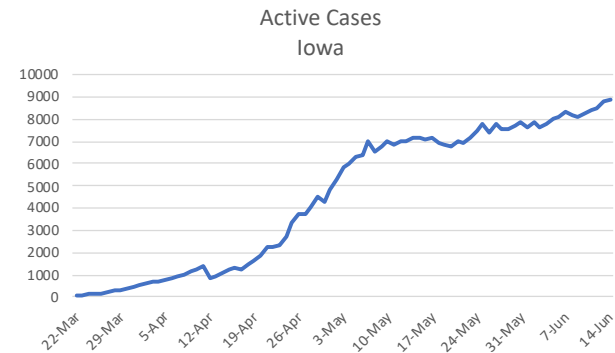
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)

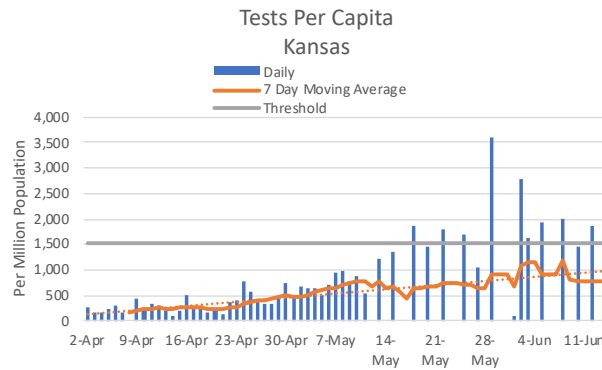


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

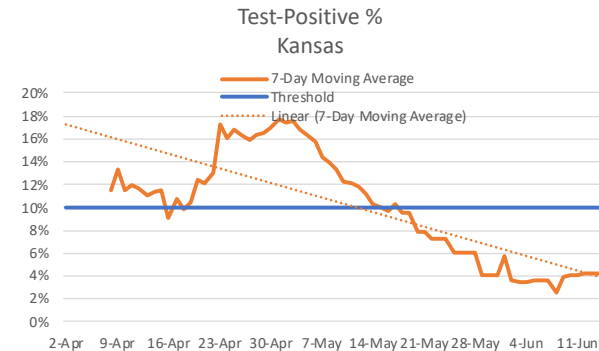


© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)

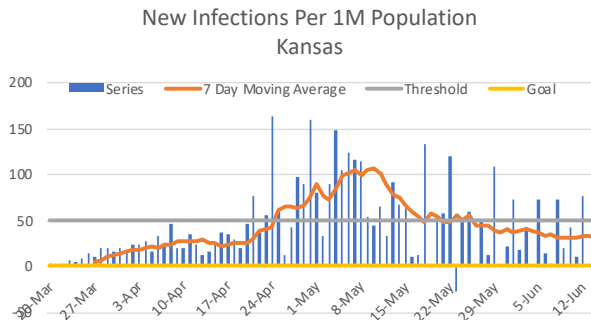
"Strategic Guidance in an Era of Unprecedented Change"



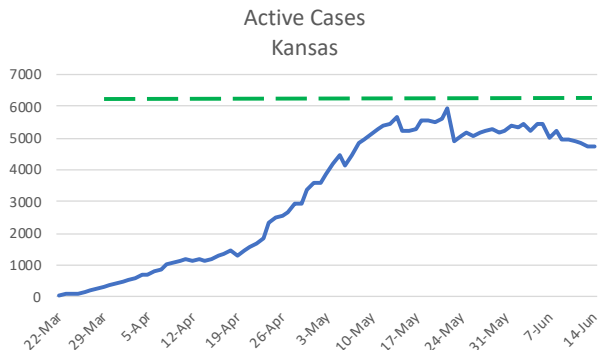
© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© 2020 [Health Industry Advisor LLC](#) analysis, using data from [Covid Tracking Project](#)



© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)



© [Health Industry Advisor LLC](#) analysis, using data from [Worldometers.info](#)