

COVID-19 Dashboard

Issue # 74
Saturday, June 13, 2020

Day's Highlights

"Strategic Guidance in an Era of Unprecedented Change"

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	~584,000 – most ever
Test-Positivity Rate	Decline	4.1% test-positive on Friday; 4.4% for past 7 days
Number of Cases	Plateau	New Cases down <1% week-over-week (after adjusting for accounting changes)
Deaths % of Total Cases	Decline	5.15%
Number of Deaths / 1M Population	Plateau	352.9
Recoveries : Death	Increase	7.21

- A special acknowledgement to our friends who live and work in New York. Hardest-hit of all the states by the virus, New York posted the lowest rate of case growth in the country over the past 5 days - 0.02%!
- Yesterday, the United States reported the highest number of tests since the pandemic began - 583,928, with a 4.0% test-positive rate (the second lowest to-date)
- With the increased testing, there was a significant increase in new cases - nearly 4,000 more than on Thursday. This is the 3rd consecutive daily increase. Nonetheless, new cases are slightly lower this week than last; and, new daily infections per capita over the past week remain near the lowest they been (the only time these have been lower were during the period from May 28-31)
- Deaths per case declined again yesterday, to 5.52%; this continues a downward pattern that began on May 20 when the rate was 5.96%. Daily deaths from the virus have average 776 during the past week; over a 3-day span in early May, they averaged 2,336
- We continue to be concerned about the virus progression in Alabama, Arizona, Arkansas, Mississippi, North Carolina, South Carolina and Mississippi. Each of these states have a relatively high current new daily infection rate, and one of more of the following: an infection rate either yet to peak or near its peak; high test-positive rate; hospitalization rates at or near a peak and high rate of recent case growth
 - Larger counties (and their largest cities) in these states that have hit current infection rates include: Autauga County (Prattville), Alabama; Montgomery, Alabama; Maricopa County (Phoenix), Arizona; Pima County (Tucson), Arizona; Hinds County (Jackson), Mississippi; Mecklenburg (Charlotte), North Carolina; and, Salt Lake, Utah
 - Other Large Central Metro Areas with among the highest new daily infections per capita: Baltimore, Los Angeles, Milwaukee, Providence, Richmond and Riverside, California

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 11

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	2,116,922	(1)	6,397	(5)	116,825	(1)	5.5%	(12)	353.0	(8)	1.1%	(19)	1,521	(6)	66.2	(9)
Brazil	829,902	(2)	3,906	(13)	41,901	(2)	5.0%	(13)	197.2	(11)	3.7%	(6)	254	(21)	129.8	(4)
Russia	511,423	(3)	3,505	(14)	6,715	(13)	1.3%	(25)	46.0	(18)	1.8%	(14)	2,119	(3)	60.0	(10)
India	309,603	(4)	224	(29)	8,890	(9)	2.9%	(18)	6.4	(28)	3.8%	(5)	101	(24)	7.6	(25)
UK	292,950	(5)	4,316	(10)	41,481	(3)	14.2%	(4)	611.2	(2)	0.5%	(22)	2,568	(2)	19.9	(18)
Spain	290,289	(6)	6,209	(6)	27,136	(6)	9.3%	(8)	580.4	(3)	0.1%	(28)	1,227	(8)	7.1	(26)
Italy	236,305	(7)	3,908	(12)	34,223	(4)	14.5%	(3)	566.0	(4)	0.1%	(29)	945	(11)	4.3	(28)
Peru	220,749	(8)	6,700	(4)	6,308	(14)	2.9%	(19)	191.5	(12)	2.4%	(11)	697	(14)	147.1	(3)
Germany	187,251	(9)	2,235	(20)	8,863	(10)	4.7%	(15)	105.8	(15)	0.1%	(27)	588	(15)	3.3	(29)
Iran	182,525	(10)	2,175	(21)	8,659	(11)	4.7%	(14)	103.2	(16)	1.2%	(17)	266	(20)	25.6	(16)
Turkey	175,218	(11)	2,079	(22)	4,778	(17)	2.7%	(20)	56.7	(17)	0.6%	(21)	464	(19)	12.1	(21)
Chile	160,846	(12)	8,418	(2)	2,870	(20)	1.8%	(23)	150.2	(13)	3.7%	(7)	980	(10)	279.4	(2)
France	156,287	(13)	2,395	(19)	29,374	(5)	18.8%	(1)	450.1	(6)	0.3%	(25)	0	(30)	7.1	(27)
Mexico	133,974	(14)	1,040	(24)	15,944	(7)	11.9%	(6)	123.7	(14)	3.4%	(9)	61	(26)	31.6	(13)
Pakistan	125,933	(15)	571	(26)	2,463	(21)	2.0%	(22)	11.2	(26)	4.9%	(2)	110	(23)	24.5	(17)
Saudi Arabia	119,942	(16)	3,448	(15)	893	(26)	0.7%	(26)	25.7	(22)	3.3%	(10)	547	(17)	103.7	(5)
Canada	97,943	(17)	2,596	(18)	8,049	(12)	8.2%	(10)	213.4	(10)	0.5%	(23)	914	(12)	11.9	(22)
China	83,064	(18)	58	(30)	4,634	(18)	5.6%	(11)	3.2	(30)	0.0%	(30)	0	(28)	0.0	(30)
Bangladesh	81,523	(19)	495	(27)	1,095	(25)	1.3%	(24)	6.7	(27)	4.4%	(3)	88	(25)	19.1	(19)
Qatar	76,588	(20)	27,277	(1)	70	(29)	0.1%	(29)	24.9	(23)	2.2%	(12)	1,745	(5)	555.5	(1)
South Africa	61,927	(21)	1,045	(23)	1,354	(24)	2.2%	(21)	22.8	(24)	5.1%	(1)	505	(18)	46.0	(12)
Belgium	59,819	(22)	5,163	(8)	9,646	(8)	16.1%	(2)	832.5	(1)	0.2%	(26)	1,042	(9)	10.2	(24)
Belarus	52,520	(23)	5,558	(7)	298	(27)	0.6%	(28)	31.5	(19)	1.6%	(15)	1,512	(7)	82.3	(7)
Sweden	49,684	(24)	4,921	(9)	4,854	(16)	9.8%	(7)	480.8	(5)	2.1%	(13)	700	(13)	98.1	(6)
Netherlands	48,461	(25)	2,829	(16)	6,053	(15)	12.5%	(5)	353.3	(7)	0.4%	(24)	558	(16)	10.4	(23)
Colombia	46,858	(26)	921	(25)	1,545	(22)	3.3%	(17)	30.4	(20)	3.6%	(8)	234	(22)	30.0	(15)
Ecuador	45,778	(27)	2,597	(17)	3,828	(19)	8.4%	(9)	217.1	(9)	1.2%	(18)	59	(27)	30.2	(14)
UAE	41,499	(28)	4,199	(11)	287	(28)	0.7%	(27)	29.0	(21)	1.3%	(16)	6,938	(1)	54.5	(11)
Egypt	41,303	(29)	404	(28)	1,422	(23)	3.4%	(16)	13.9	(25)	3.9%	(4)	0	(28)	14.1	(20)
Singapore	39,850	(30)	6,814	(3)	25	(30)	0.1%	(30)	4.3	(29)	1.0%	(20)	1,958	(4)	66.3	(8)

Note: China does not report test volumes

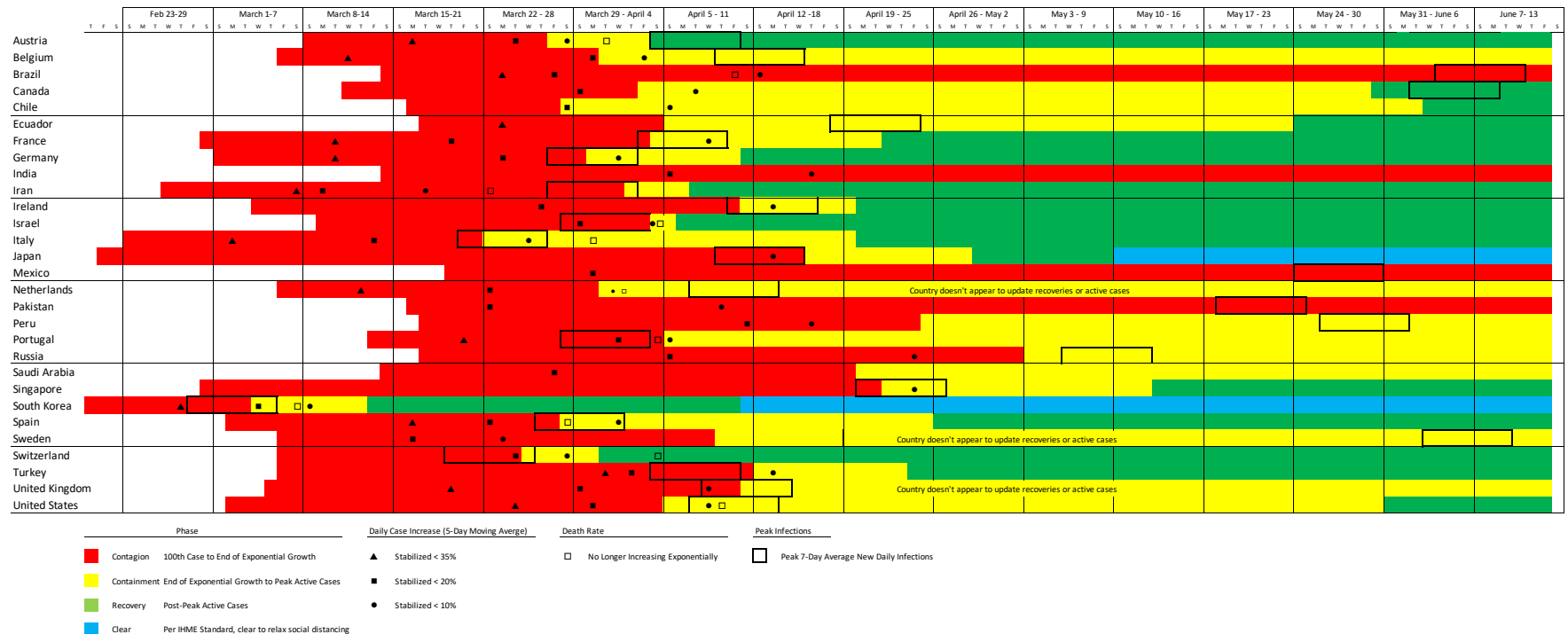
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VIRUS PROGRESSION BY COUNTRY

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 86.0% of all cases worldwide.

		Total Cases						
Rank	Country	12-Jun	Rank	Country	6-May	Rank	Country	27-Apr
1	USA	2,116,922	1	USA	1,263,092	1	USA	1,010,356
2	Brazil	829,902	2	Spain	253,682	2	Spain	229,422
3	Russia	511,423	3	Italy	214,457	3	Italy	199,414
4	India	309,603	4	UK	201,101	4	France	128,339
5	UK	292,950	5	France	174,191	5	Germany	158,758
6	Spain	290,289	6	Germany	168,162	6	UK	157,149
7	Italy	236,305	7	Russia	165,929	7	Turkey	112,261
8	Peru	220,749	8	Turkey	131,744	8	Iran	91,472
9	Germany	187,251	9	Brazil	126,611	9	Russia	87,147
10	Iran	182,525	10	Iran	101,650	10	China	82,830
11	Turkey	175,218	11	China	82,883	11	Brazil	66,501
12	Chile	160,846	12	Canada	63,496	12	Canada	48,500
13	France	156,287	13	Peru	54,817	13	Belgium	46,687
14	Mexico	133,974	14	India	52,987	14	Netherlands	38,245
15	Pakistan	125,933	15	Belgium	50,781	15	India	29,451
16	Saudi Arabia	119,942	16	Netherlands	41,319	16	Switzerland	29,164
17	Canada	97,943	17	Saudi Arabia	31,938	17	Peru	28,669
18	China	83,064	18	Switzerland	30,060	18	Portugal	24,070
22	Belgium	59,819	19	Ecuador	29,420	19	Ecuador	23,240
24	Sweden	49,684	20	Portugal	26,182	20	Ireland	19,648
25	Netherlands	48,461	21	Mexico	26,025	21	Sweden	18,926
27	Ecuador	45,778	22	Sweden	23,918	22	Saudi Arabia	18,811
30	Singapore	39,850	23	Pakistan	23,214	23	Israel	15,555
32	Portugal	36,180	24	Chile	23,048	24	Austria	15,274
34	Switzerland	31,063	25	Ireland	22,248	25	Mexico	14,677
38	Ireland	25,250	26	Singapore	20,198	26	Singapore	14,423
45	Israel	18,795	29	Israel	16,310	27	Pakistan	13,915
47	Japan	17,332	31	Austria	15,684	28	Chile	13,813
49	Austria	17,064	32	Japan	15,253	29	Japan	13,614
56	S. Korea	12,003	38	S. Korea	10,806	35	South Korea	10,738
	Others	1,093,611		Others	356,176		Others	301,446
	World	7,726,016			3,817,382		World	3,062,515

30 countries' share

85.8%

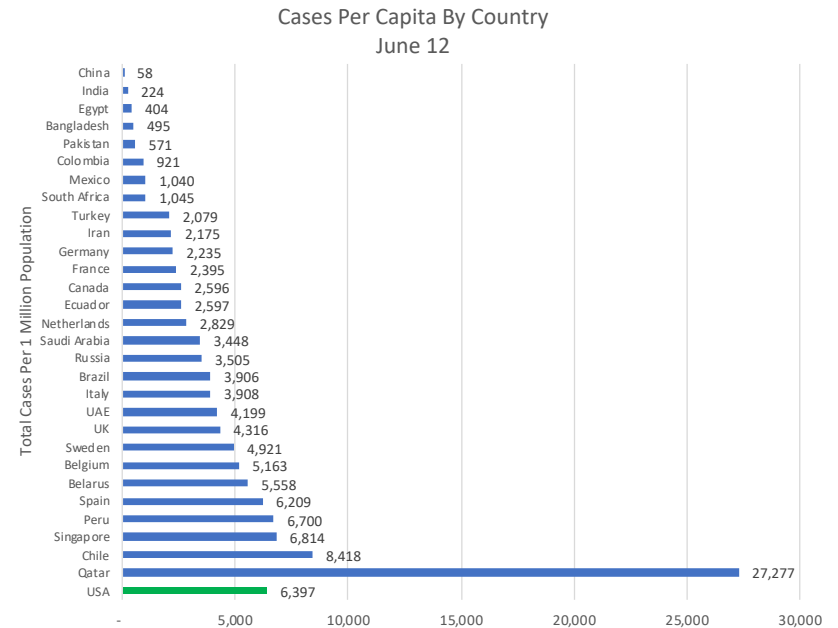
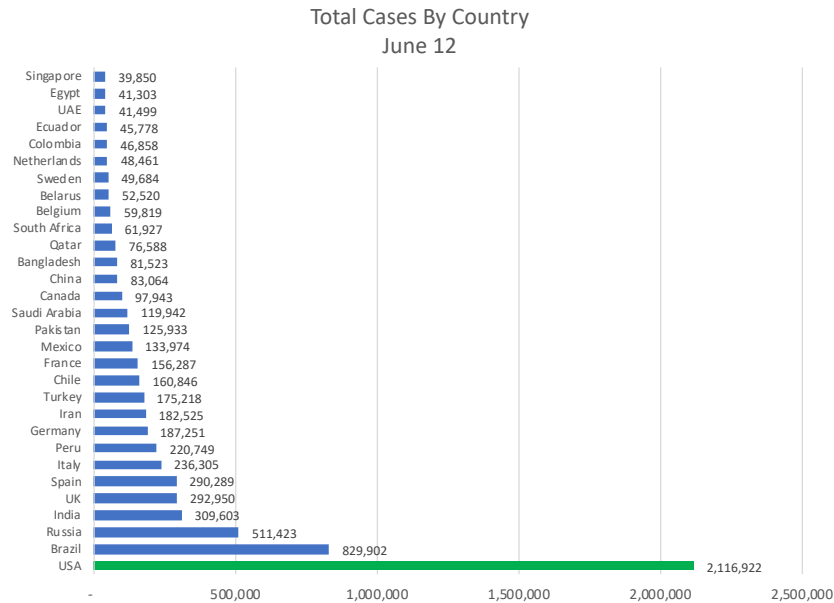
90.7%

90.2%

Country-by-Country Cases & Cases Per Capita

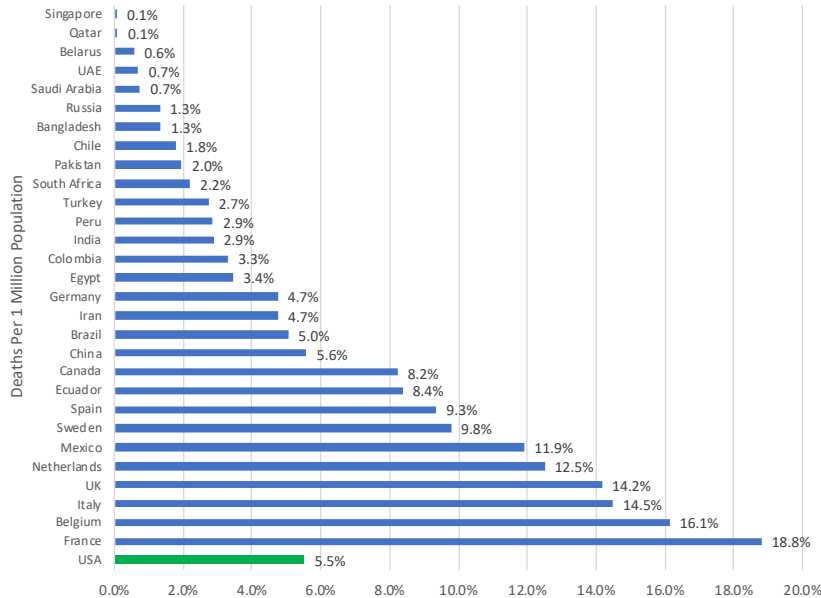
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Countries Ranked 1-30 In Total Cases

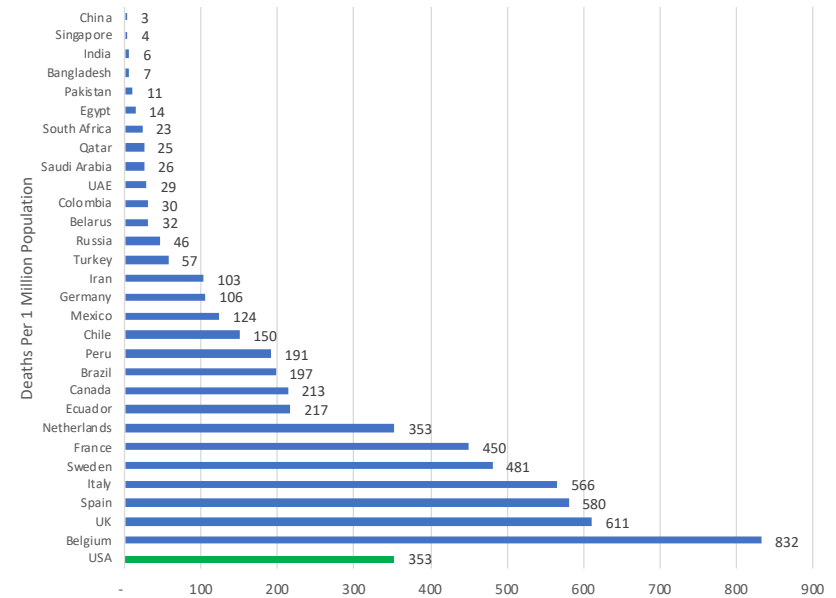


Countries Ranked 1-30 In Total Cases

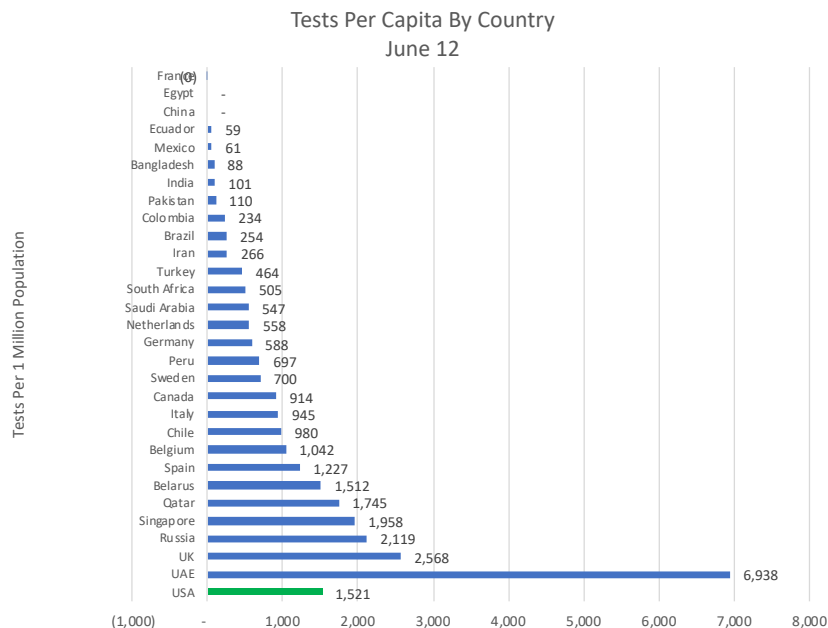
Death Rate By Country
June 12



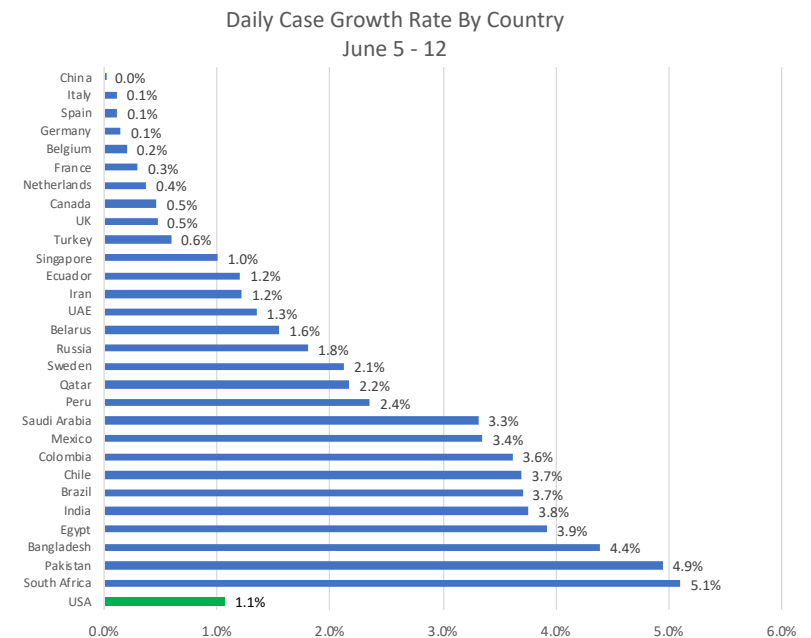
Deaths Per Capita By Country
June 12



Countries Ranked 1-30 In Total Cases



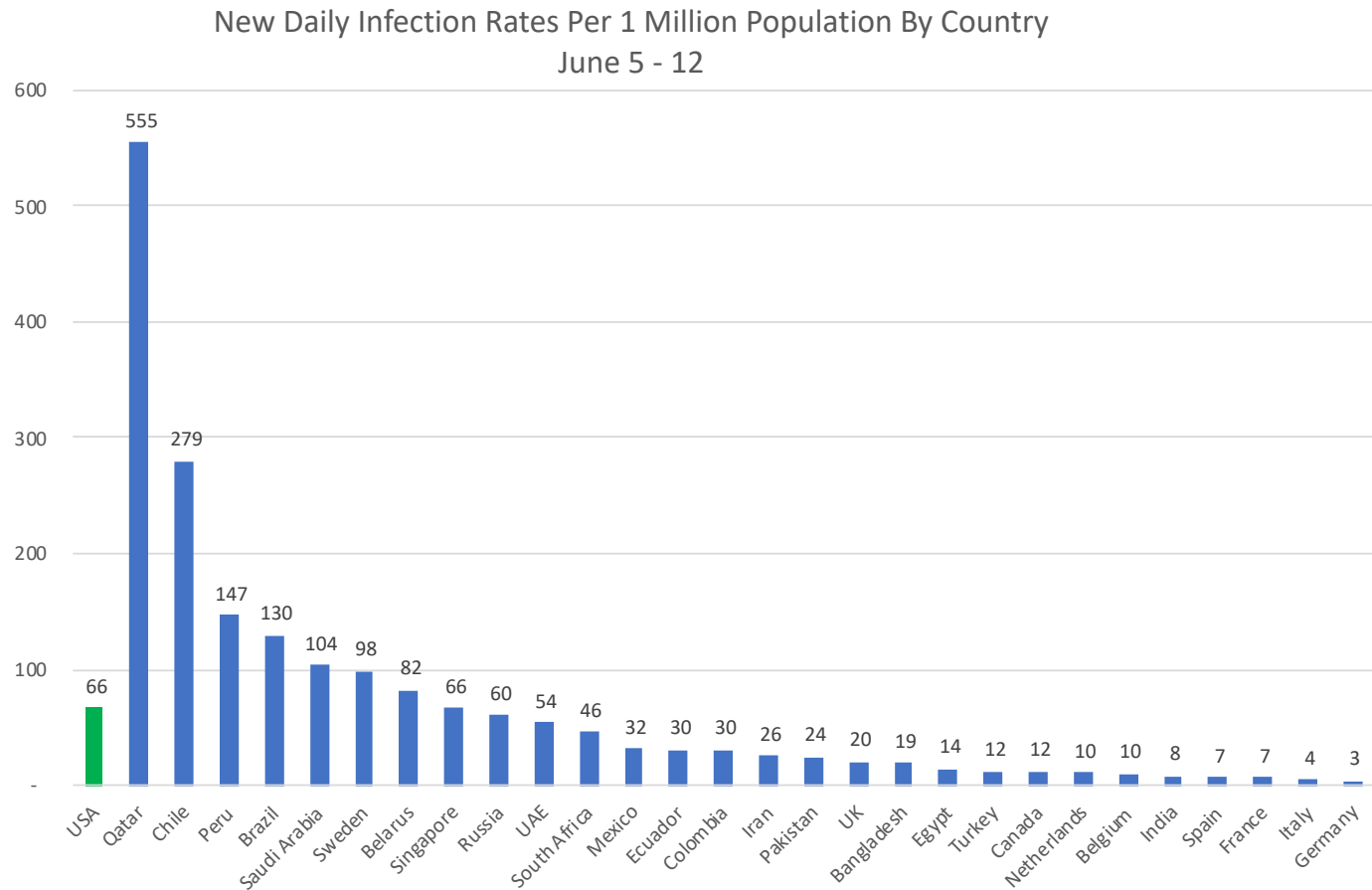
Daily Tests Per Capita For Past Week



Daily Case Growth – 5-Day Moving Average

Country-by-Country New Daily Infection Rates

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UNITED STATES & STATE-BY-STATE INFORMATION

STATE-BY-STATE OVERALL ASSESSMENT SCORECARD

State-By-State Overall Assessment Scorecard

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Status, as of June 12

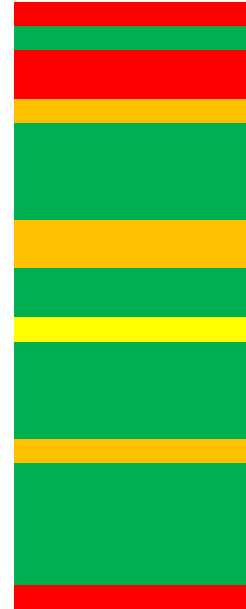
Several factors should be considered when assessing where a state stands with its virus progression status:

- 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

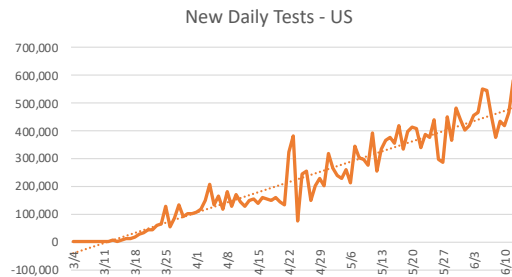


United States Overall Statistics

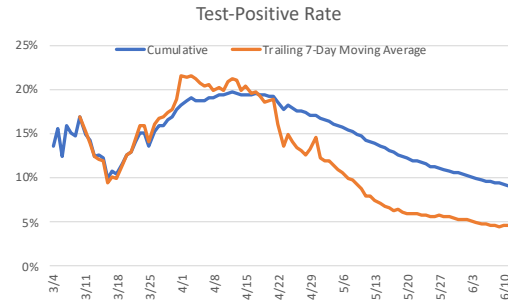
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New York and Michigan made accounting adjustments to the case totals on June 5. These had the effect of adding 8.7 new daily infections per million to the US totals. Data here has not been adjusted to account for these accounting changes

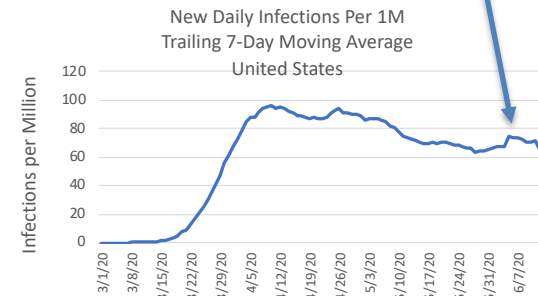
With significantly increased testing, the US is now meeting the WHO standard of <10% test-positives. This suggests that asymptomatic cases are being captured and that we have a better view of true infection rates. Further, new daily infections continue to decline; the death rate seems to have stabilized.



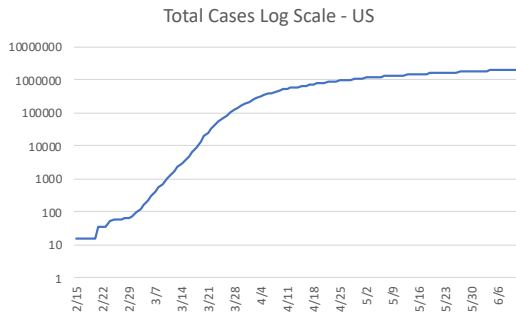
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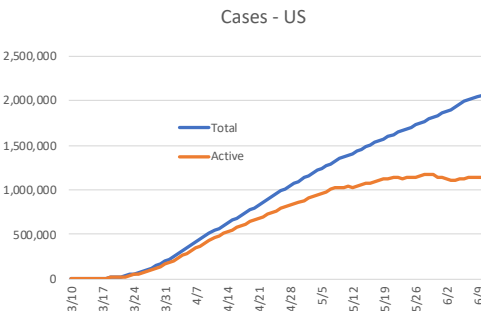
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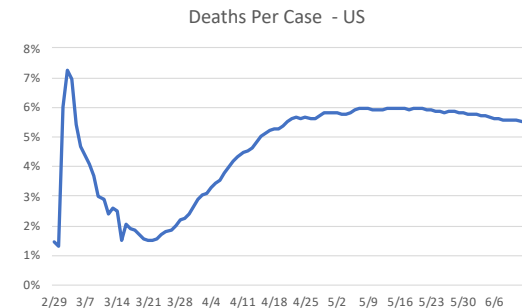
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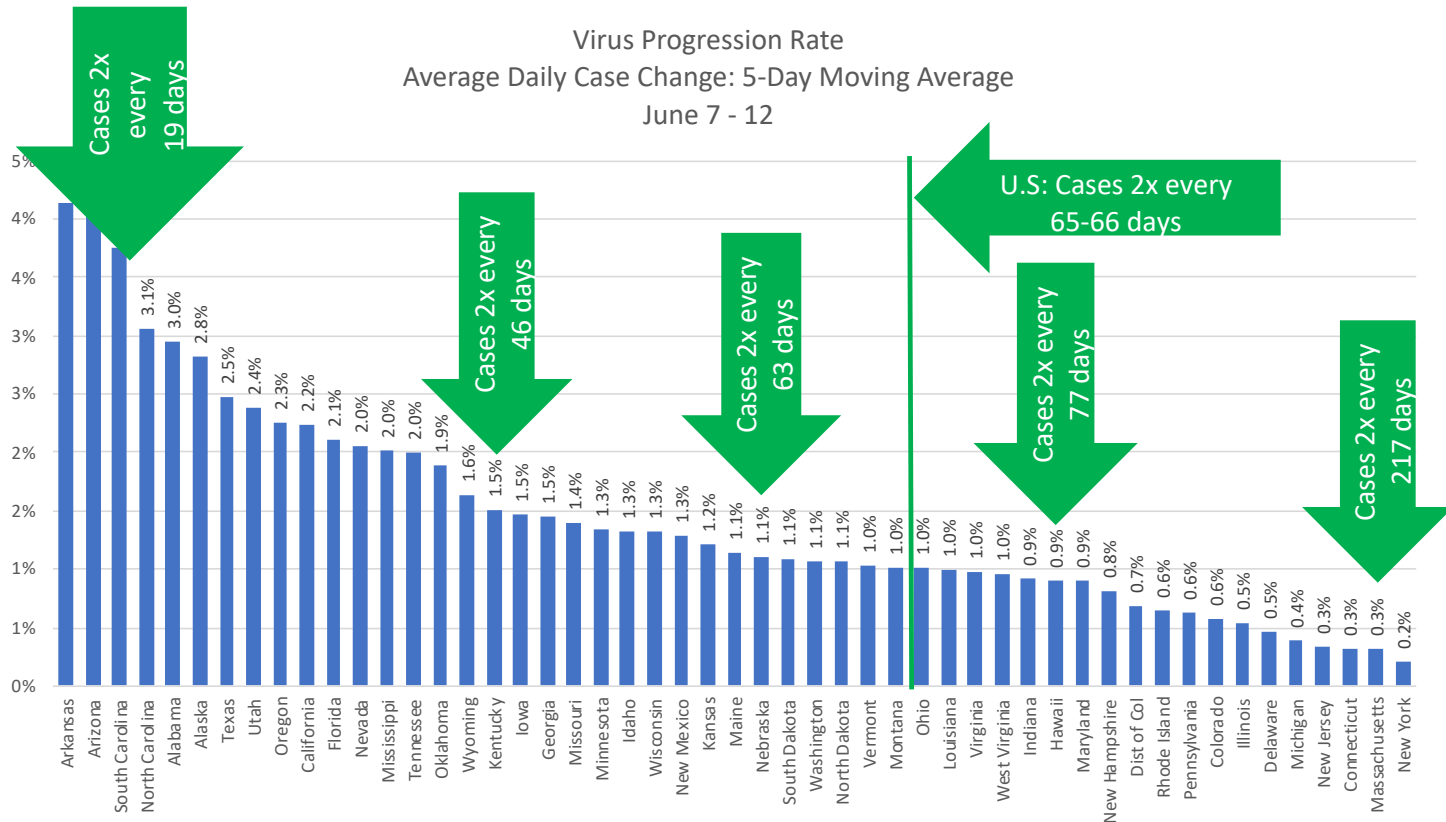


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Average Daily Case Growth

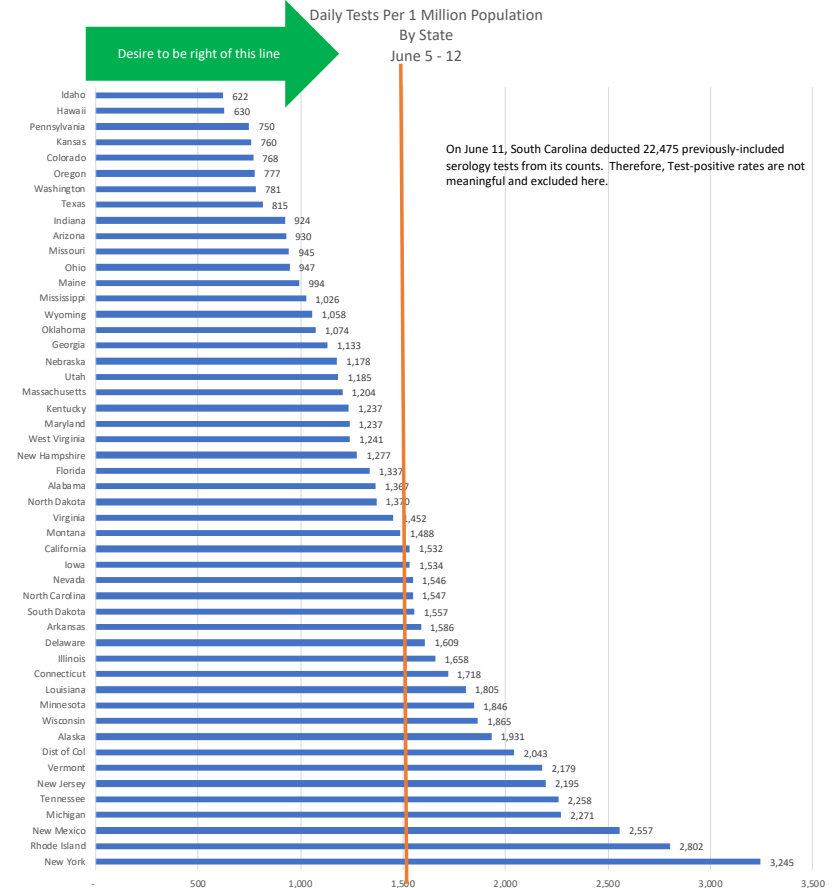
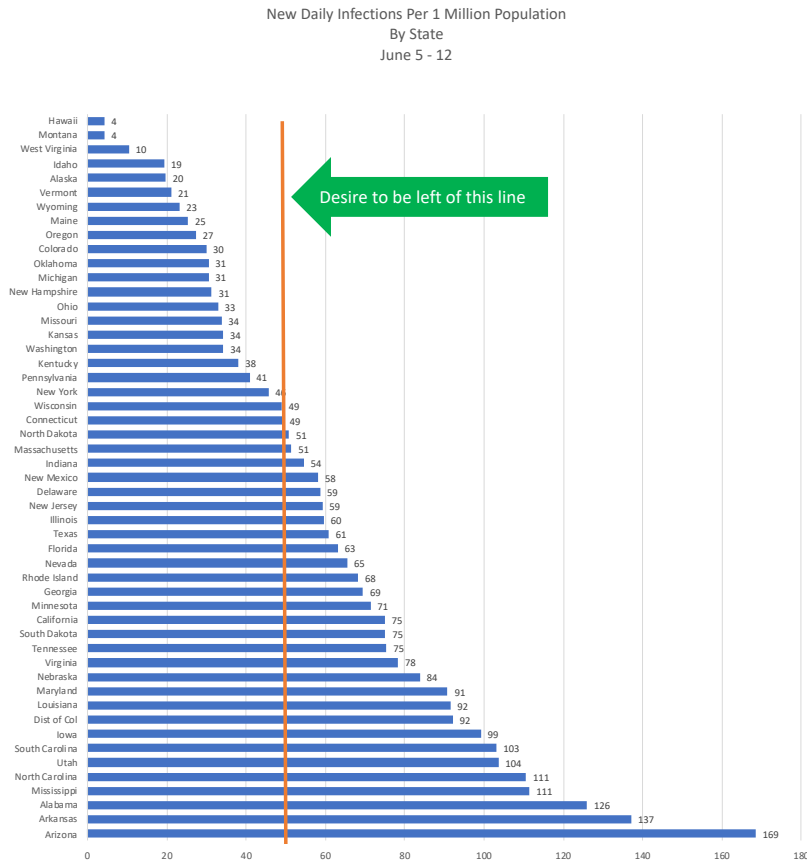
"Strategic Guidance in an Era of Unprecedented Change"

At the height of the epidemic, cases in some states were doubling every few days. Now, they would take from 17 – 340 days to double



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

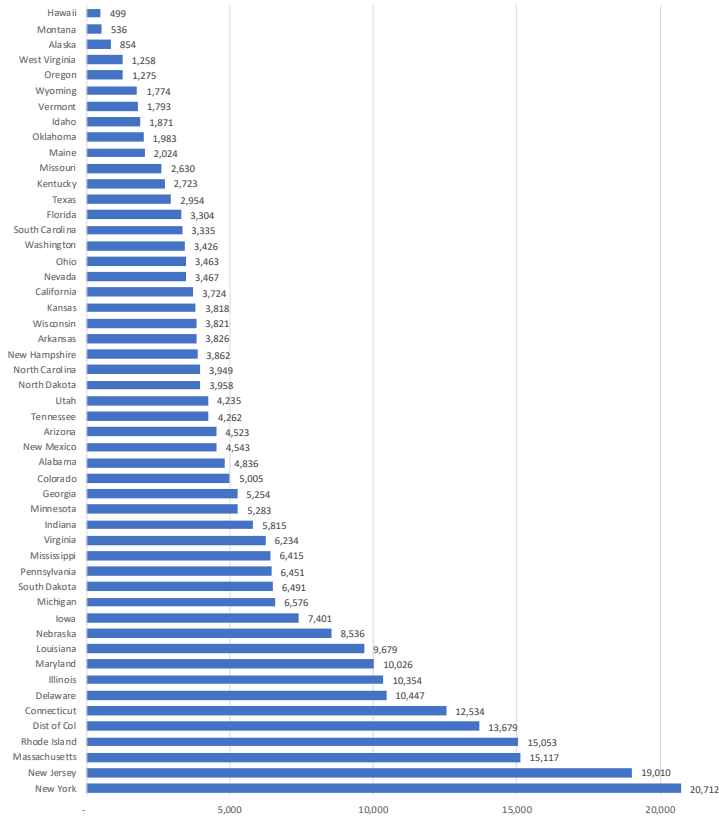
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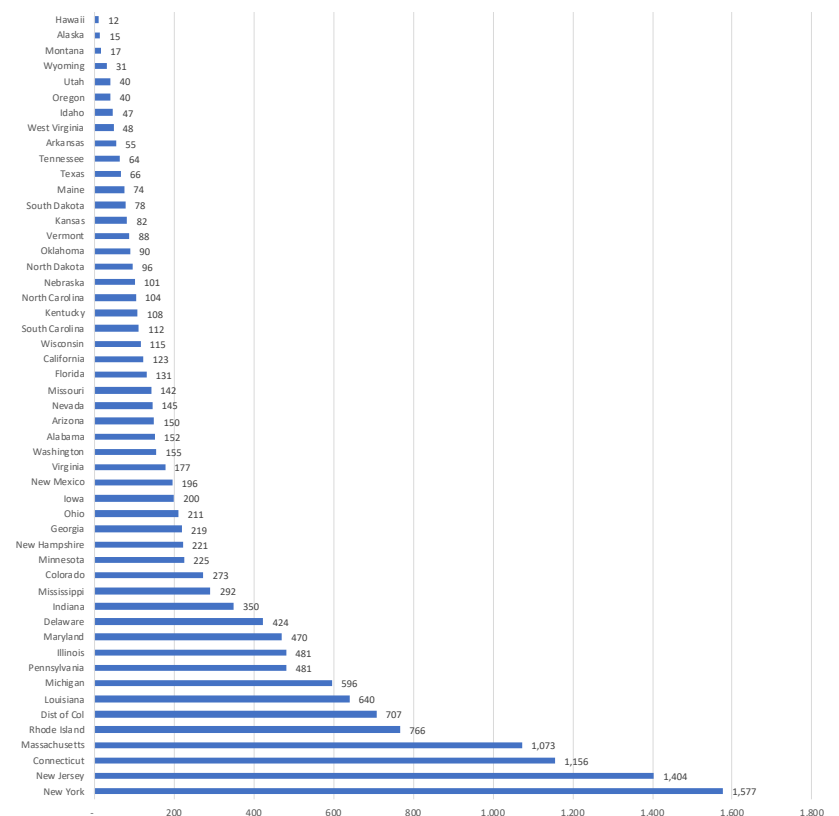
State-by-State Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

Total Cases Per 1 Million Population
By State
As of June 12



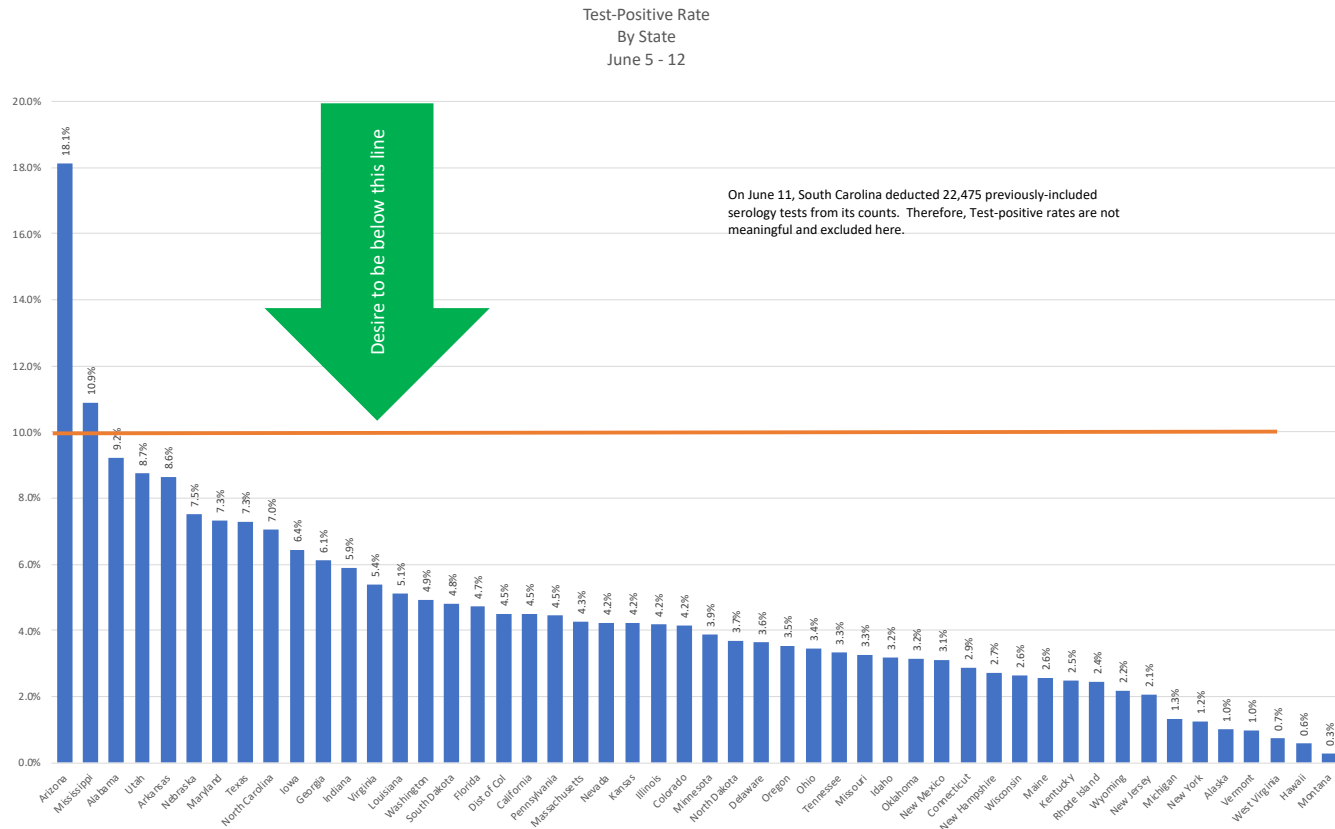
Deaths Per 1 Million Population
By State
As of June 12



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 12

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	23,710	(23)	4,835.6	(22)	769	(25)	3.2%	(33)	156.8	(25)	3.0%	(5)	1,367	(25)	109.9	(4)
Alaska	625	(50)	854.4	(49)	12	(51)	1.9%	(45)	16.4	(50)	2.8%	(6)	1,931	(9)	18.9	(48)
Arizona	32,918	(18)	4,522.5	(24)	1,144	(20)	3.5%	(30)	157.2	(24)	4.1%	(2)	930	(41)	167.0	(1)
Arkansas	11,547	(33)	3,826.3	(30)	176	(39)	1.5%	(48)	58.3	(43)	4.1%	(1)	1,586	(16)	113.2	(3)
California	147,132	(3)	3,723.7	(33)	4,988	(7)	3.4%	(32)	126.2	(29)	2.2%	(10)	1,532	(21)	74.8	(16)
Colorado	28,822	(21)	5,004.9	(21)	1,595	(16)	5.5%	(11)	277.0	(15)	0.6%	(44)	768	(46)	31.9	(39)
Connecticut	44,689	(14)	12,534.5	(6)	4,159	(8)	9.3%	(1)	1,166.5	(3)	0.3%	(49)	1,718	(13)	49.0	(33)
Delaware	10,173	(36)	10,447.1	(7)	414	(34)	4.1%	(26)	425.2	(12)	0.5%	(46)	1,609	(15)	52.8	(30)
District Of Columbia	9,654	(37)	13,679.1	(5)	506	(29)	5.2%	(13)	717.0	(6)	0.7%	(41)	2,043	(8)	94.9	(11)
Florida	70,971	(8)	3,304.4	(38)	2,881	(11)	4.1%	(27)	134.1	(28)	2.1%	(11)	1,337	(26)	59.1	(27)
Georgia	55,783	(11)	5,253.9	(20)	2,418	(13)	4.3%	(23)	227.7	(18)	1.5%	(19)	1,133	(34)	69.0	(19)
Hawaii	706	(49)	498.6	(51)	17	(50)	2.4%	(42)	12.0	(51)	0.9%	(38)	630	(49)	3.7	(50)
Idaho	3,353	(43)	1,871.0	(44)	87	(44)	2.6%	(40)	48.5	(45)	1.3%	(22)	622	(50)	19.8	(46)
Illinois	131,198	(4)	10,353.5	(8)	6,260	(4)	4.8%	(17)	494.0	(9)	0.5%	(45)	1,658	(14)	65.9	(23)
Indiana	39,146	(17)	5,814.7	(18)	2,396	(14)	6.1%	(9)	355.9	(13)	0.9%	(37)	924	(42)	56.3	(28)
Iowa	23,350	(24)	7,400.8	(12)	644	(27)	2.8%	(38)	204.1	(20)	1.5%	(18)	1,534	(20)	98.4	(9)
Kansas	11,124	(34)	3,818.3	(32)	245	(37)	2.2%	(44)	84.1	(38)	1.2%	(25)	760	(47)	33.9	(38)
Kentucky	12,166	(32)	2,723.1	(40)	497	(30)	4.1%	(25)	111.2	(33)	1.5%	(17)	1,237	(30)	39.6	(34)
Louisiana	44,995	(13)	9,678.9	(10)	3,002	(9)	6.7%	(7)	645.8	(7)	1.0%	(34)	1,805	(12)	89.4	(13)
Maine	2,721	(45)	2,024.2	(42)	100	(42)	3.7%	(29)	74.4	(40)	1.1%	(26)	994	(38)	23.5	(44)
Maryland	60,613	(10)	10,025.8	(9)	2,900	(10)	4.8%	(16)	479.7	(11)	0.9%	(39)	1,237	(29)	102.5	(7)
Massachusetts	105,059	(5)	15,117.5	(3)	7,538	(3)	7.2%	(6)	1,084.7	(4)	0.3%	(50)	1,204	(31)	53.5	(29)
Michigan	65,672	(9)	6,575.8	(13)	5,990	(6)	9.1%	(2)	599.8	(8)	0.4%	(47)	2,271	(4)	103.1	(6)
Minnesota	29,795	(19)	5,283.1	(19)	1,305	(18)	4.4%	(22)	231.4	(17)	1.3%	(21)	1,846	(11)	77.1	(15)
Mississippi	19,091	(26)	6,414.7	(16)	881	(23)	4.6%	(18)	296.0	(14)	2.0%	(13)	1,026	(37)	92.3	(12)

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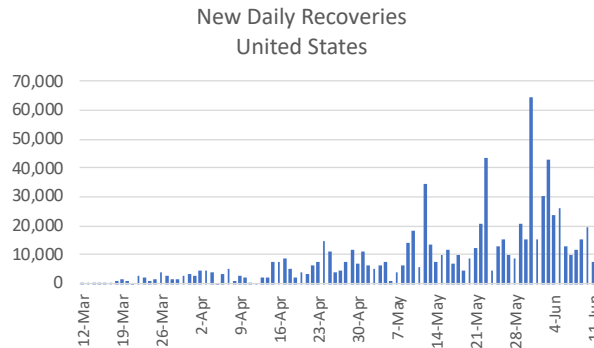
As of June 12

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	16,141	(29)	2,629.9	(41)	887	(22)	5.5%	(12)	144.5	(27)	1.4%	(20)	945	(40)	31.9	(41)
Montana	573	(51)	536.1	(50)	18	(49)	3.1%	(35)	16.8	(49)	1.0%	(32)	1,488	(22)	3.2	(51)
Nebraska	16,513	(28)	8,536.5	(11)	216	(38)	1.3%	(49)	111.7	(32)	1.1%	(27)	1,178	(33)	67.1	(22)
Nevada	10,678	(35)	3,466.7	(34)	462	(32)	4.3%	(24)	150.0	(26)	2.0%	(12)	1,546	(19)	60.7	(24)
New Hampshire	5,251	(42)	3,861.9	(29)	315	(36)	6.0%	(10)	231.7	(16)	0.8%	(40)	1,277	(27)	35.0	(37)
New Jersey	168,846	(2)	19,009.5	(2)	12,601	(2)	7.5%	(5)	1,418.7	(2)	0.3%	(48)	2,195	(6)	59.3	(26)
New Mexico	9,526	(38)	4,543.1	(23)	426	(33)	4.5%	(21)	203.2	(21)	1.3%	(24)	2,557	(3)	69.1	(18)
New York	402,914	(1)	20,711.6	(1)	30,824	(1)	7.7%	(3)	1,584.5	(1)	0.2%	(51)	3,245	(1)	133.1	(2)
North Carolina	41,416	(15)	3,948.9	(28)	1,121	(21)	2.7%	(39)	106.9	(34)	3.1%	(4)	1,547	(18)	102.1	(8)
North Dakota	3,016	(44)	3,957.7	(27)	74	(46)	2.5%	(41)	97.1	(35)	1.1%	(30)	1,370	(24)	51.4	(31)
Ohio	40,480	(16)	3,463.1	(35)	2,514	(12)	6.2%	(8)	215.1	(19)	1.0%	(33)	947	(39)	31.9	(40)
Oklahoma	7,848	(39)	1,983.3	(43)	359	(35)	4.6%	(20)	90.7	(36)	1.9%	(15)	1,074	(35)	26.0	(42)
Oregon	5,377	(41)	1,274.9	(47)	173	(40)	3.2%	(34)	41.0	(47)	2.3%	(9)	777	(45)	25.8	(43)
Pennsylvania	82,582	(7)	6,450.7	(15)	6,248	(5)	7.6%	(4)	488.0	(10)	0.6%	(43)	750	(48)	39.1	(35)
Rhode Island	15,947	(30)	15,053.4	(4)	833	(24)	5.2%	(14)	786.3	(5)	0.6%	(42)	2,802	(2)	72.4	(17)
South Carolina	17,170	(27)	3,334.8	(37)	593	(28)	3.5%	(31)	115.2	(31)	3.7%	(3)	132	(51)	95.3	(10)
South Dakota	5,742	(40)	6,490.6	(14)	74	(46)	1.3%	(50)	83.6	(39)	1.1%	(28)	1,557	(17)	67.5	(20)
Tennessee	29,126	(20)	4,262.4	(25)	468	(31)	1.6%	(47)	68.5	(41)	2.0%	(14)	2,258	(5)	67.3	(21)
Texas	85,641	(6)	2,953.6	(39)	1,966	(15)	2.3%	(43)	67.8	(42)	2.5%	(7)	815	(43)	60.4	(25)
Utah	13,577	(31)	4,234.9	(26)	139	(41)	1.0%	(51)	43.4	(46)	2.4%	(8)	1,185	(32)	108.7	(5)
Vermont	1,119	(47)	1,793.3	(45)	55	(47)	4.9%	(15)	88.1	(37)	1.0%	(31)	2,179	(7)	19.2	(47)
Virginia	53,211	(12)	6,234.1	(17)	1,534	(17)	2.9%	(37)	179.7	(22)	1.0%	(35)	1,452	(23)	80.2	(14)
Washington	26,087	(22)	3,425.8	(36)	1,202	(19)	4.6%	(19)	157.8	(23)	1.1%	(29)	781	(44)	35.9	(36)
West Virginia	2,249	(46)	1,258.4	(48)	88	(43)	3.9%	(28)	49.2	(44)	1.0%	(36)	1,241	(28)	9.2	(49)
Wisconsin	22,246	(25)	3,820.7	(31)	689	(26)	3.1%	(36)	118.3	(30)	1.3%	(23)	1,865	(10)	49.9	(32)
Wyoming	1,027	(48)	1,774.5	(46)	18	(49)	1.8%	(46)	31.1	(48)	1.6%	(16)	1,058	(36)	21.7	(45)
United States	2,116,922		6,395.5		116,825		5.5%		329.7		1.1%		1,417		67.3	

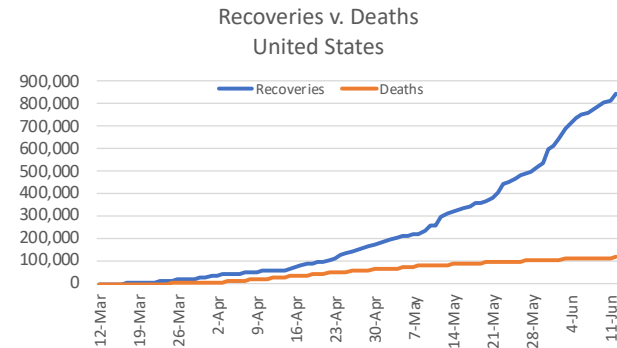
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UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

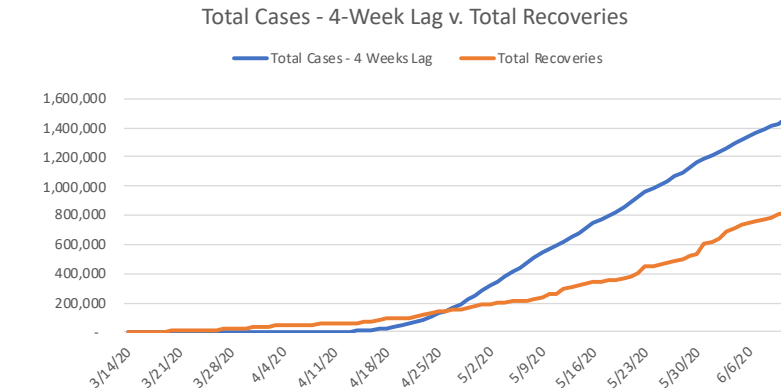
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Which states seem to be lagging in reporting?

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	9,098	10,236
Alaska	403	310	349
Arizona	174	10,535	11,852
Arkansas	7,607	3,570	4,017
California	39,682	61,455	69,137
Colorado	2,488	16,986	19,109
Connecticut	8,596	28,868	32,477
Delaware	6,062	5,898	6,636
District Of Columbia	1,143	5,497	6,184
Florida	13,787	35,310	39,724
Georgia	1,446	29,418	33,095
Hawaii	627	510	574
Idaho	2,776	1,911	2,150
Illinois	83,169	72,295	81,332
Indiana	27,321	21,324	23,990
Iowa	14,227	11,239	12,644
Kansas	6,005	6,309	7,097
Kentucky	3,390	5,955	6,700
Louisiana	33,904	27,070	30,453
Maine	2,105	1,282	1,443
Maryland	4,474	29,589	33,287
Massachusetts	84,621	66,737	75,079
Michigan	42,041	40,063	45,071
Minnesota	25,028	11,392	12,816
Mississippi	13,356	8,641	9,721
Missouri	3,645	8,587	9,661
Montana	489	373	419
Nebraska	9,610	7,818	8,795
Nevada	7,545	5,291	5,953
New Hampshire	3,843	2,771	3,118
New Jersey	30,998	116,392	130,941
New Mexico	3,983	4,530	5,096
New York	85,572	284,813	320,414
North Carolina	23,653	13,995	15,745
North Dakota	2,573	1,409	1,585
Ohio	8,553	21,569	24,265
Oklahoma	6,391	4,069	4,577
Oregon	2,370	2,833	3,187
Pennsylvania	55,677	51,409	57,835
Rhode Island	1,435	9,775	10,997
South Carolina	8,682	6,726	7,566
South Dakota	4,573	3,110	3,498
Tennessee	19,425	13,576	15,273
Texas	55,300	37,430	42,108
Utah	7,935	5,530	6,222
Vermont	907	746	840
Virginia	6,895	22,938	25,805
Washington	8,333	15,023	16,901
West Virginia	1,568	1,158	1,302
Wisconsin	15,783	9,348	10,517
Wyoming	814	573	644
United States	841,934	1,187,428	1,335,857

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

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

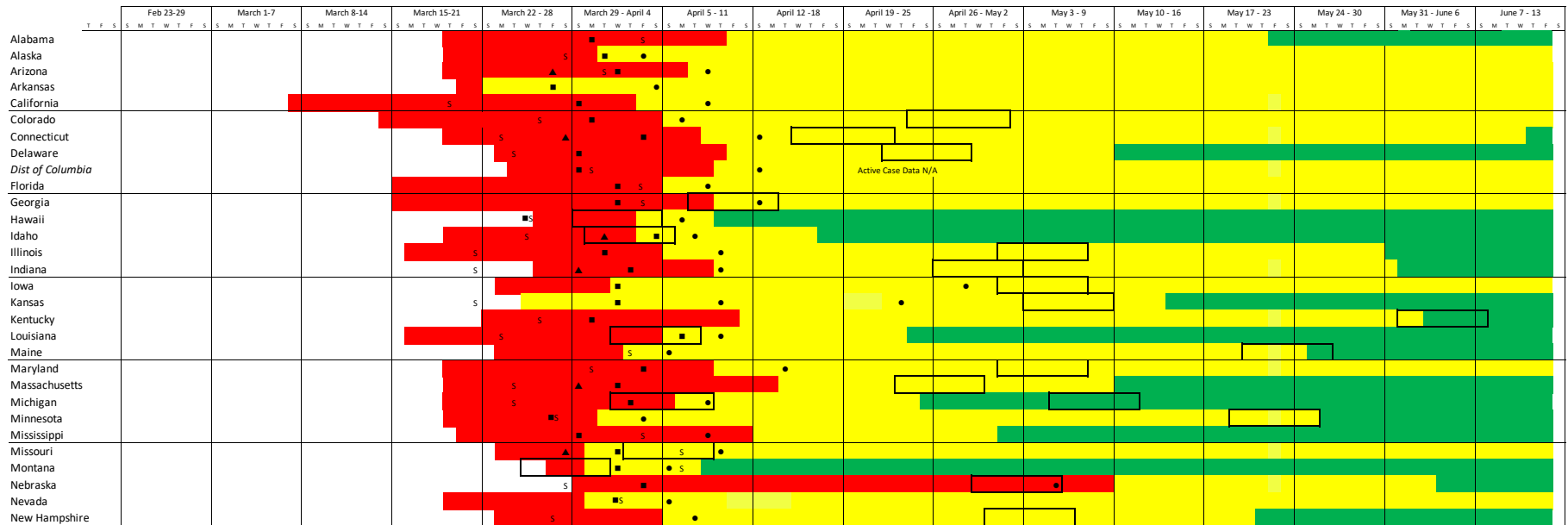
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The graphic on the following two pages illustrates when the state first recorded 100 total cases (start of the “contagion” phase); when growth stopped following an exponential pattern (start of the “containment” phase); and, when peak total cases were 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

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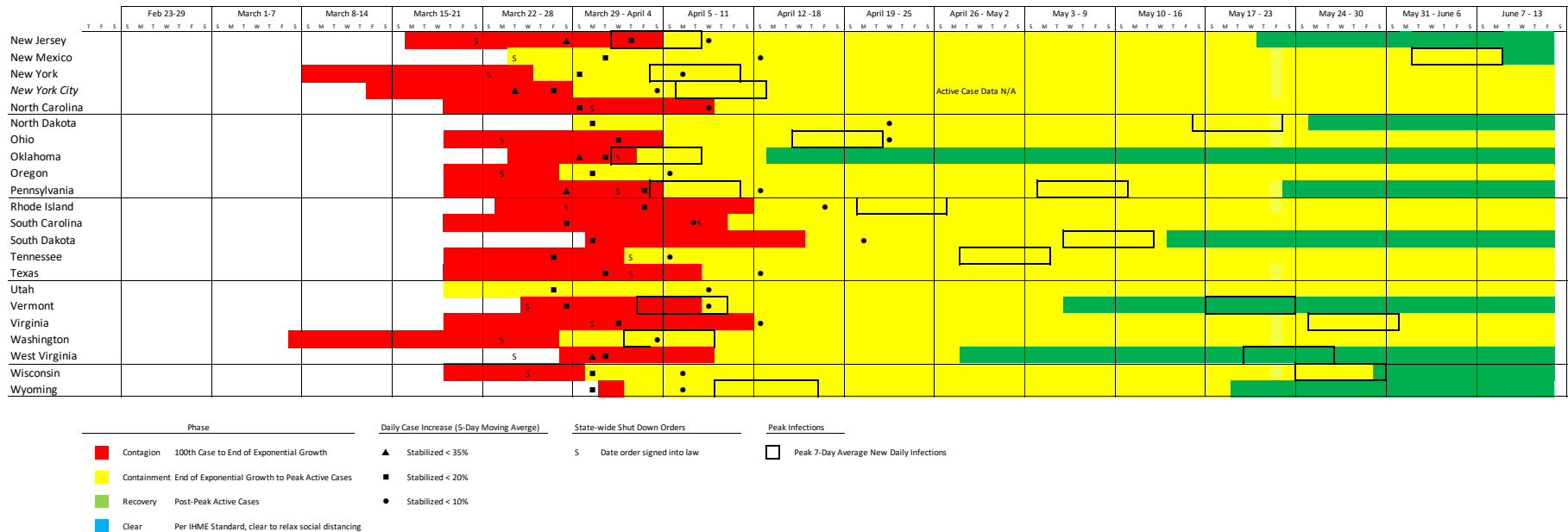


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State-by-State Virus Progression – 2 of 2

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U.S. COUNTY-BY-COUNTY INFORMATION

Case and Death Information By County For States With Increasing Infection Rates

"Strategic Guidance in an Era of Unprecedented Change"

- On the following pages, case and death information¹ is presented by county/municipality in the United States
 - New York case and death information are reported on a combined basis for Bronx, Kings, New York, Queens and Richmond counties
 - Cities that are not otherwise part of a county are listed separately
- Counties are grouped according to the 2013 Rural/Urban classification from Center for Disease Control, "[NCHS Urban-Rural Classification Scheme for Counties](#)"³:
 - **Large Central Metro Areas** – Located in MSA of 1 million population that: 1) contain the entire population of the largest principal city of the MSA, or 2) are completely contained within the largest principal city of the MSA, or 3) contain at least 250,000 residents of any principal city in the MSA
 - **Large Fringe Metro Areas** – Located in in MSA of 1 million or more population
 - **Medium Metro Areas** – Located in in MSA of 250,000-999,999 population
 - **Small Metro Areas** – Located in MSAs of less than 250,000 population
 - **Micropolitan Areas** – Located in micropolitan statistical area
 - **Non-Core Areas** - not in micropolitan statistical areas data access website
- Population information is the 2019 official estimate from the US Census Bureau²

1. Data from [The New York Times](#), based on reports from state and local health agencies. Accessed May 10-20, 2020

2. "Annual Estimates of the Resident Population for Counties in the United States: April 1, 2010 to July 1, 2019 (CO-EST2019-ANNRES)", Source: U.S. Census Bureau, Population Division, Release Date: March 2020. Accessed May 12, 2020

3. Urban-Rural Classification of counties from CDC's "[NCHS Urban-Rural Classification Scheme for Counties](#)". Accessed May 19, 2020

“Strategic Guidance in an Era of Unprecedented Change”

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occurred in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
1073	Jefferson	Alabama	1	2,282	3,548	78	78	yes	117	182	5.1%
1007	Bibb	Alabama	2	96	4,750	120	141		1	49	1.0%
1009	Blount	Alabama	2	89	1,555	60	60	yes	1	17	1.1%
1021	Chilton	Alabama	2	127	2,909	49	65		2	46	1.6%
1117	Shelby	Alabama	2	599	2,816	35	63		20	94	3.3%
1115	St. Clair	Alabama	2	161	1,854	31	53		2	23	1.2%
1127	Walker	Alabama	2	510	8,135	260	355		6	96	1.2%
1001	Autauga	Alabama	3	316	5,738	192	192	yes	6	109	1.9%
1051	Elmore	Alabama	3	483	6,295	182	192		9	117	1.9%
1083	Limestone	Alabama	3	164	1,760	83	83	yes	-	-	0.0%
1085	Lowndes	Alabama	3	330	33,465	898	971		14	1,420	4.2%
1089	Madison	Alabama	3	449	1,255	30	32		5	14	1.1%
1097	Mobile	Alabama	3	2,612	6,427	99	121		128	315	4.9%
1101	Montgomery	Alabama	3	2,472	11,433	390	390	yes	66	305	2.7%
1113	Russell	Alabama	3	253	4,435	175	175	yes	-	-	0.0%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
4013	Maricopa	Arizona	1	16,148	3,716	162	162	yes	532	122	3.3%
4021	Pinal	Arizona	2	1,281	3,041	113	113	yes	42	100	3.3%
4019	Pima	Arizona	3	3,483	3,431	115	115	yes	218	215	6.3%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
5035	Crittenden	Arkansas	2	500	10,575	224	338		9	190	1.8%
5007	Benton	Arkansas	3	1,219	4,518	220	231	yes	5	19	0.4%
5033	Crawford	Arkansas	3	47	750	27	41		-	-	0.0%
5045	Faulkner	Arkansas	3	136	1,130	33	34		3	25	2.2%
5053	Grant	Arkansas	3	22	1,223	32	48		-	-	0.0%
5085	Lonoke	Arkansas	3	67	920	22	37		-	-	0.0%
5087	Madison	Arkansas	3	67	4,102	289	289	yes	-	-	0.0%
5105	Perry	Arkansas	3	15	1,466	14	70		-	-	0.0%
5119	Pulaski	Arkansas	3	1,225	3,189	69	81		41	107	3.3%
5125	Saline	Arkansas	3	163	1,359	51	51	yes	2	17	1.2%
5131	Sebastian	Arkansas	3	109	869	54	60		2	16	1.8%
5143	Washington	Arkansas	3	1,389	6,086	387	387	yes	10	44	0.7%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

Mississippi – Large Central, Large Fringe & Medium Metro Areas

“Strategic Guidance in an Era of Unprecedented Change”

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
28009	Benton	Mississippi	2	17	2,081	52	70		-	-	0.0%
28033	DeSoto	Mississippi	2	664	3,672	70	83	yes	11	61	1.7%
28093	Marshall	Mississippi	2	98	2,923	47	64	yes	3	89	3.1%
28137	Tate	Mississippi	2	118	4,308	141	188		1	37	0.8%
28143	Tunica	Mississippi	2	61	6,215	44	160		3	306	4.9%
28029	Copiah	Mississippi	3	366	13,163	190	411		5	180	1.4%
28045	Hancock	Mississippi	3	94	2,006	12	64		12	256	12.8%
28047	Harrison	Mississippi	3	311	1,547	30	33	yes	7	35	2.3%
28049	Hinds	Mississippi	3	1,206	5,299	83	102		26	114	2.2%
28059	Jackson	Mississippi	3	339	2,393	25	72		16	113	4.7%
28089	Madison	Mississippi	3	843	8,106	104	265		30	288	3.6%
28121	Rankin	Mississippi	3	505	3,407	47	87		10	67	2.0%
28127	Simpson	Mississippi	3	117	4,461	71	136		1	38	0.9%
28163	Yazoo	Mississippi	3	329	14,508	208	435		6	265	1.8%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

“Strategic Guidance in an Era of Unprecedented Change”

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
37119	Mecklenburg	North Carolina	1	6,155	5,722	174	177		123	114	2.0%
37183	Wake	North Carolina	1	2,723	2,545	90	90	yes	42	39	1.5%
37025	Cabarrus	North Carolina	2	641	3,063	82	82	yes	24	115	3.7%
37053	Currituck	North Carolina	2	15	558	-	27		-	-	0.0%
37069	Franklin	North Carolina	2	202	3,068	72	113		21	319	10.4%
37071	Gaston	North Carolina	2	406	1,852	68	68	yes	8	37	2.0%
37073	Gates	North Carolina	2	24	2,093	12	125		1	87	4.2%
37097	Iredell	North Carolina	2	378	2,137	72	72	yes	5	28	1.3%
37101	Johnston	North Carolina	2	699	3,486	105	130		24	120	3.4%
37109	Lincoln	North Carolina	2	113	1,363	45	60		-	-	0.0%
37159	Rowan	North Carolina	2	830	6,069	119	160		40	292	4.8%
37179	Union	North Carolina	2	656	2,818	75	85	yes	22	94	3.4%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

South Carolina & Utah– Large Central & Large Fringe Metro Areas

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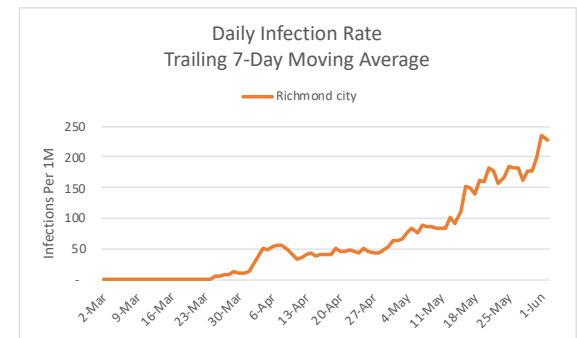
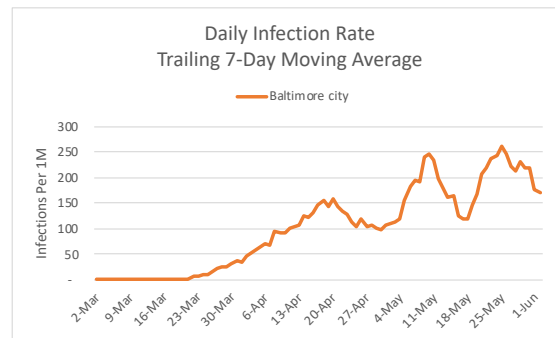
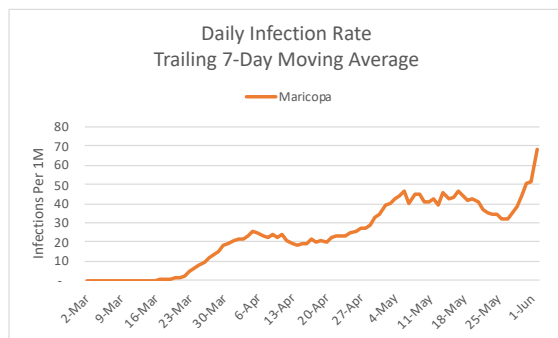
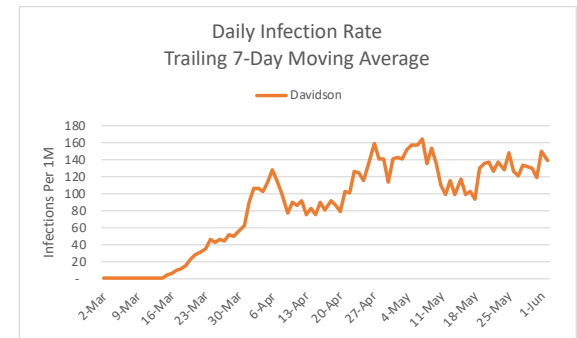
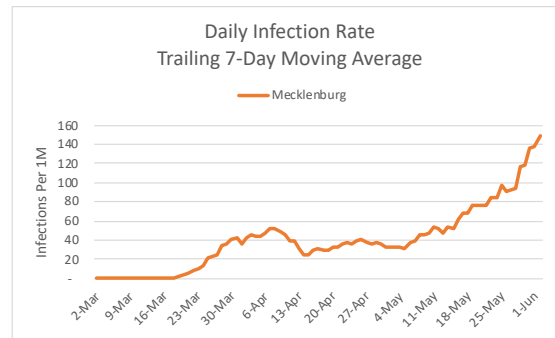
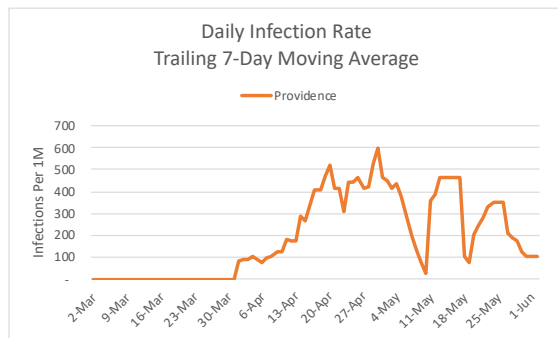
FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7- Day MA)	Peak Daily Inf Rate (Trailing 7- Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
45023	Chester	South Carolina	2	113	3,534	89	152		1	31	0.9%
45057	Lancaster	South Carolina	2	232	2,487	77	106		6	64	2.6%
45091	York	South Carolina	2	557	2,064	66	66	yes	10	37	1.8%
49035	Salt Lake	Utah	1	6,783	5,970	129	129	yes	87	77	1.3%
49045	Tooele	Utah	2	158	2,277	37	51		-	-	0.0%

2013 Rural/Urban classification from Center for Disease Control, [“NCHS Urban-Rural Classification Scheme for Counties”](#)

County-By-County Counties/Municipalities With Highest New Infection Rates

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