Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COVID-19 Dashboard

Issue # 75

Sunday, June 14, 2020

Day's Highlights

"Strategic Guidance in an Era of Unprecedented Change"

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	~523,000 – most ever
Test-Positivity Rate	Decline	4.9% test-positive on Friday; 4.5% for past 7 days
Number of Cases	Plateau	New Cases up <1.3% week-over-week (after adjusting for accounting changes)
Deaths % of Total Cases	Decline	5.5%
Number of Deaths / 1M Population	Plateau	355.1
Recoveries : Death	Increase	7.27

- Testing in the United States was strong again on Saturday (523,000), even though it was down from the record posted on Friday (584,000). Test-positive % was 4.9% for the day and 4.5% for the week. As a reminder, the World Health Organization identified an upper limit of 10% to deem testing as sufficient to provide strong surveillance. The Center for Disease control uses this same 10% upper limit for it "Robust Testing" criteria to qualify for Phase 3 of its plan for relaxing restrictions. Only Arizona and Mississippi have failed to meet his standard over the past week
- With the high test volume the past several days, the United States has also experienced its 4th consecutive day in increasing new infections. New cases are up 1.3% on a week-over-week basis (after adjusting for accounting changes made by New York and Michigan on June 5). At this point, it is difficult to determine the degree to which this is resulting from a true increasing prevalence of the virus:
  - test volume on a week-over-week basis is down but only by 0.4%
  - test-positive % is down from 4.5% from 4.8% on a week-over-week basis
  - new cases per day are also up 2.5% over 2 weeks ago however, they are down by 3.4% and 4.2% versus 3 and 4 weeks ago, respectively (on about 20% more tests this week)
  - Patients in the hospital for COVID-19 have declined by 11.7% the past week, 19.4% in the past 2 weeks, 25.7% the past 3 weeks and 3.6% the past month
- The increasing infections seem to be concentrated in about 13 states, which have yet to establish a solid peak in new daily infections per capita (listed in descending order of new daily infections per capita for the past week): Arkansas, Arizona, Alabama, Mississippi, North Carolina, South Carolina, California, Florida, Nevada, Texas, Oklahoma, Oregon and Alaska (in "fairness", Oklahoma, Oregon and Alaska are reporting here than 40 new daily cases per million for the past week)
- Balancing these states are those that have experienced the most significant declines in new daily infections per capita from their peak (in descending order of % decline from peak): New York, New Jersey, Massachusetts, Connecticut, Michigan, Rhode Island, Delaware, Hawaii, Vermont, Colorado and Montana
- Hospitalizations are a key indicator of whether a state is equipped to handle increasing infections. Seven states has shown both an increase in hospitalized COVID-19 patients over the past week and are at or near a peak in the hospitalizations: Arizona, Mississippi, North Carolina, North Dakota, South Carolina, Texas and Utah
- Taking into account current infection rates, rate of changes in cases, use of hospital beds versus peak use and test-positive %:
  - Six states should be of greatest concern at this time: Alabama, Arizona, Arkansas, Mississippi, North Carolina and South Carolina.
  - Following these, eleven states are worthy of monitoring: California, Florida, Georgia, Iowa, Nebraska, Nevada, New Mexico, South Dakota, Tennessee, Texas and Utah
  - Louisiana, Minnesota and Virginia fall into the 3rd group of states, certainly not out of the woods yet but, trending in the right direction
  - The remaining states all enjoy a combination of relatively low new infection rates and either low rates of increased cases, low hospitalization rates and/or low test-positive rates
- The death rate continued on its downward trend, falling just below 5.5% (5.486%). It has moved down steadily since reaching 5.96% on May 20. Saturday was the 4th consecutive day (and the 7th in the last 8) in which fewer than 1,000 deaths were recorded. It has not been since May 30 that the United States had 3 consecutive days of fewer than 1,000 deaths

COUNTRY-BY-COUNTRY INFORMATION

Countries Included

- 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, 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

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Country-by-Country

Comparative Statistics

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Top 30 Countries By Total Cases
As of June 13

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	2,142,224	(1)	6,474	(5)	117,527	(1)	5.5%	(12)	355.2	(7)	1.1%	(19)	3,461,322	(1)	69.9	(8)
Brazil	850,796	(2)	4,004	(12)	42,791	(2)	5.0%	(13)	201.4	(11)	3.7%	(8)	210,193	(11)	131.7	(4)
Russia	520,129	(3)	3,564	(14)	6,829	(13)	1.3%	(25)	46.8	(18)	1.8%	(14)	2,069,889	(2)	59.6	(10)
India	321,626	(4)	233	(29)	9,199	(9)	2.9%	(19)	6.7	(28)	3.9%	(5)	786,272	(4)	8.1	(26)
UK	294,375	(5)	4,337	(10)	41,662	(3)	14.2%	(4)	613.9	(2)	0.5%	(22)	934,933	(3)	20.6	(18)
Spain	290,685	(6)	6,217	(6)	27,136	(6)	9.3%	(8)	580.4	(3)	0.1%	(28)	625,488	(7)	8.1	(25)
Italy	236,651	(7)	3,914	(13)	34,301	(4)	14.5%	(3)	567.3	(4)	0.1%	(29)	642,135	(6)	4.5	(28)
Peru	225,132	(8)	6,833	(4)	6,498	(14)	2.9%	(18)	197.2	(12)	2.4%	(12)	186,124	(13)	154.4	(3)
Germany	187,423	(9)	2,237	(20)	8,867	(10)	4.7%	(14)	105.8	(15)	0.1%	(27)	663,176	(5)	2.9	(29)
Iran	184,955	(10)	2,203	(21)	8,730	(11)	4.7%	(15)	104.0	(16)	1.2%	(18)	172,429	(14)	26.5	(16)
Turkey	176,677	(11)	2,096	(22)	4,792	(17)	2.7%	(20)	56.8	(17)	0.6%	(21)	365,666	(8)	13.2	(21)
Chile	167,355	(12)	8,758	(2)	3,101	(20)	1.9%	(23)	162.3	(13)	3.8%	(6)	112,002	(19)	298.4	(2)
France	156,813	(13)	2,403	(19)	29,398	(5)	18.7%	(1)	450.4	(6)	0.3%	(25)	194,774	(12)	8.0	(27)
Mexico	139,196	(14)	1,080	(24)	16,448	(7)	11.8%	(6)	127.6	(14)	3.5%	(9)	55,885	(25)	34.3	(13)
Pakistan	132,405	(15)	600	(26)	2,551	(21)	1.9%	(22)	11.6	(26)	5.0%	(2)	119,432	(18)	26.0	(17)
Saudi Arabia	123,308	(16)	3,545	(15)	932	(26)	0.8%	(26)	26.8	(22)	3.2%	(10)	151,455	(16)	103.6	(6)
Canada	98,410	(17)	2,609	(18)	8,107	(12)	8.2%	(10)	214.9	(10)	0.4%	(23)	294,913	(10)	11.5	(22)
Bangladesh	84,379	(18)	513	(27)	1,139	(25)	1.3%	(24)	6.9	(27)	4.3%	(3)	69,660	(21)	19.3	(19)
China	83,075	(19)	58	(30)	4,634	(18)	5.6%	(11)	3.2	(30)	0.0%	(30)	0	(30)	0.0	(30)
Qatar	78,416	(20)	27,928	(1)	70	(29)	0.1%	(29)	24.9	(23)	2.3%	(13)	28,185	(27)	588.2	(1)
South Africa	65,736	(21)	1,109	(23)	1,423	(24)	2.2%	(21)	24.0	(24)	5.3%	(1)	153,263	(15)	50.1	(12)
Belgium	59,918	(22)	5,171	(8)	9,650	(8)	16.1%	(2)	832.8	(1)	0.2%	(26)	132,904	(17)	9.8	(24)
Belarus	53,241	(23)	5,634	(7)	303	(27)	0.6%	(28)	32.1	(19)	1.5%	(15)	92,829	(20)	80.2	(7)
Sweden	50,931	(24)	5,045	(9)	4,874	(16)	9.6%	(7)	482.8	(5)	2.4%	(11)	42,530	(26)	114.9	(5)
Colombia	48,746	(25)	959	(25)	1,592	(22)	3.3%	(17)	31.3	(20)	3.7%	(7)	67,854	(22)	31.6	(15)
Netherlands	48,640	(26)	2,839	(16)	6,057	(15)	12.5%	(5)	353.5	(8)	0.4%	(24)	61,773	(23)	10.5	(23)
Ecuador	46,356	(27)	2,629	(17)	3,874	(19)	8.4%	(9)	219.7	(9)	1.3%	(16)	18,136	(29)	33.8	(14)
Egypt	42,980	(28)	420	(28)	1,484	(23)	3.5%	(16)	14.5	(25)	3.9%	(4)	19,097	(28)	14.7	(20)
UAE	41,990	(29)	4,248	(11)	288	(28)	0.7%	(27)	29.1	(21)	1.3%	(17)	339,003	(9)	52.9	(11)
Singapore	40,197	(30)	6,873	(3)	26	(30)	0.1%	(30)	4.4	(29)	1.0%	(20)	59,833	(24)	65.0	(9)

Note: China does not report test volumes

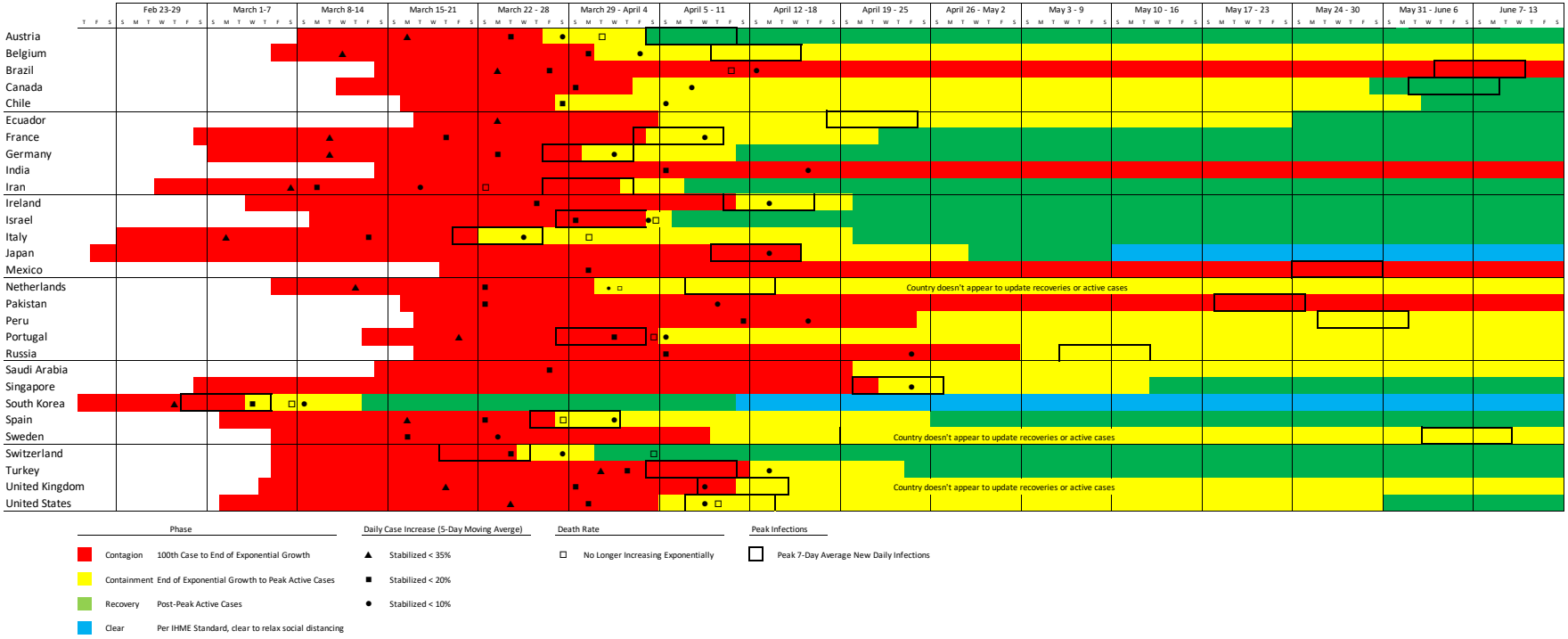
VIRUS PROGRESSION BY COUNTRY

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.



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"Strategic Guidance in an Era of Unprecedented Change"

Country-By-Country
Listing of Countries By Total Cases

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 85.7% of all cases worldwide.

		Total Cases						
Rank	Country	13-Jun	Rank	Country	6-May	Rank	Country	27-Apr
1	USA	2,142,224	1	USA	1,263,092	1	USA	1,010,356
2	Brazil	850,796	2	Spain	253,682	2	Spain	229,422
3	Russia	520,129	3	Italy	214,457	3	Italy	199,414
4	India	321,626	4	UK	201,101	4	France	128,339
5	UK	294,375	5	France	174,191	5	Germany	158,758
6	Spain	290,685	6	Germany	168,162	6	UK	157,149
7	Italy	236,651	7	Russia	165,929	7	Turkey	112,261
8	Peru	225,132	8	Turkey	131,744	8	Iran	91,472
9	Germany	187,423	9	Brazil	126,611	9	Russia	87,147
10	Iran	184,955	10	Iran	101,650	10	China	82,830
11	Turkey	176,677	11	China	82,883	11	Brazil	66,501
12	Chile	167,355	12	Canada	63,496	12	Canada	48,500
13	France	156,813	13	Peru	54,817	13	Belgium	46,687
14	Mexico	139,196	14	India	52,987	14	Netherlands	38,245
15	Pakistan	132,405	15	Belgium	50,781	15	India	29,451
16	Saudi Arabia	123,308	16	Netherlands	41,319	16	Switzerland	29,164
17	Canada	98,410	17	Saudi Arabia	31,938	17	Peru	28,669
19	China	83,075	18	Switzerland	30,060	18	Portugal	24,070
22	Belgium	59,918	19	Ecuador	29,420	19	Ecuador	23,240
24	Sweden	50,931	20	Portugal	26,182	20	Ireland	19,648
26	Netherlands	48,640	21	Mexico	26,025	21	Sweden	18,926
27	Ecuador	46,356	22	Sweden	23,918	22	Saudi Arabia	18,811
30	Singapore	40,197	23	Pakistan	23,214	23	Israel	15,555
32	Portugal	36,463	24	Chile	23,048	24	Austria	15,274
34	Switzerland	31,094	25	Ireland	22,248	25	Mexico	14,677
39	Ireland	25,295	26	Singapore	20,198	26	Singapore	14,423
45	Israel	18,972	29	Israel	16,310	27	Pakistan	13,915
48	Japan	17,382	31	Austria	15,684	28	Chile	13,813
49	Austria	17,078	32	Japan	15,253	29	Japan	13,614
56	S. Korea	12,051	38	S. Korea	10,806	35	South Korea	10,738
	Others	1,124,267		Others	356,176		Others	301,446
	World	7,859,879			3,817,382		World	3,062,515
	30 countries' share	85.7%			90.7%			90.2%

Country-by-Country

Cases & Cases Per Capita

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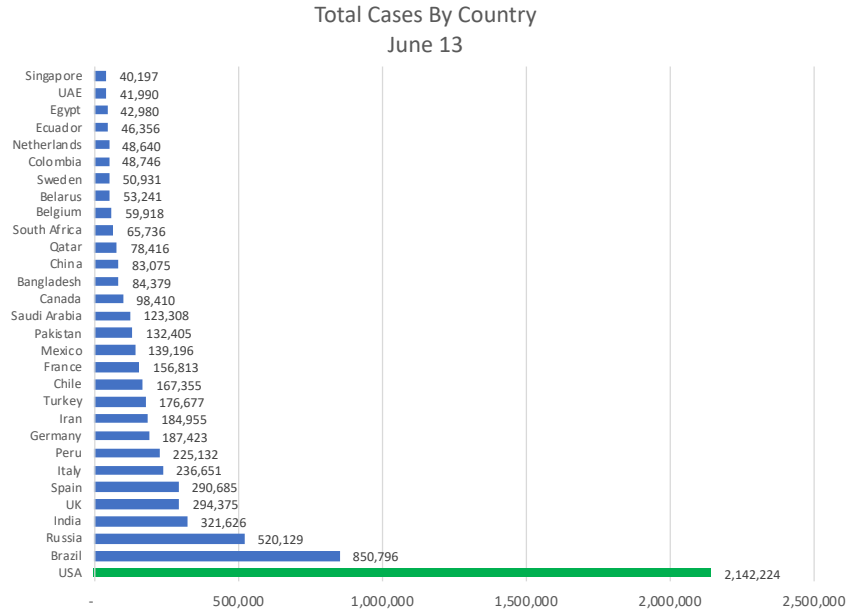
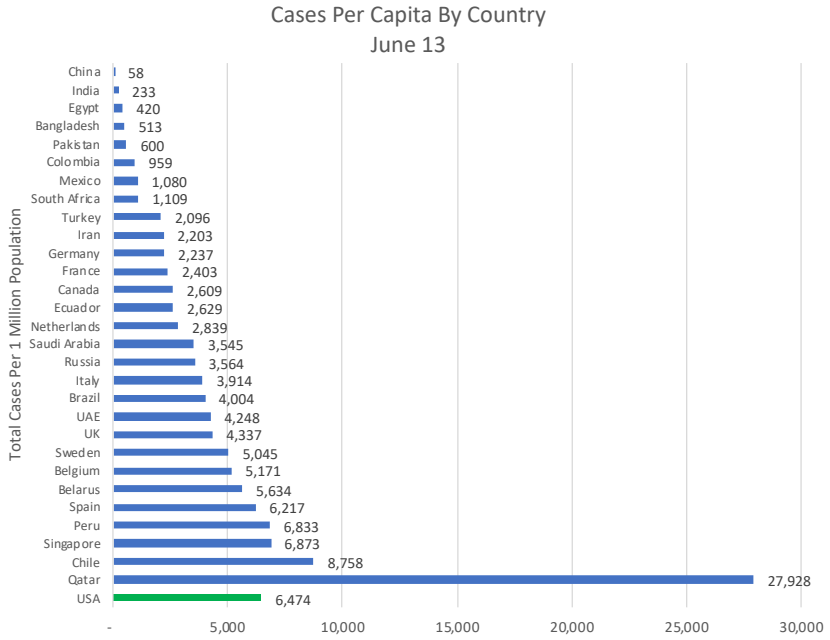
Countries Ranked 1-30 In Total Cases





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Country-by-Country

Deaths Per Cases & Per Capita

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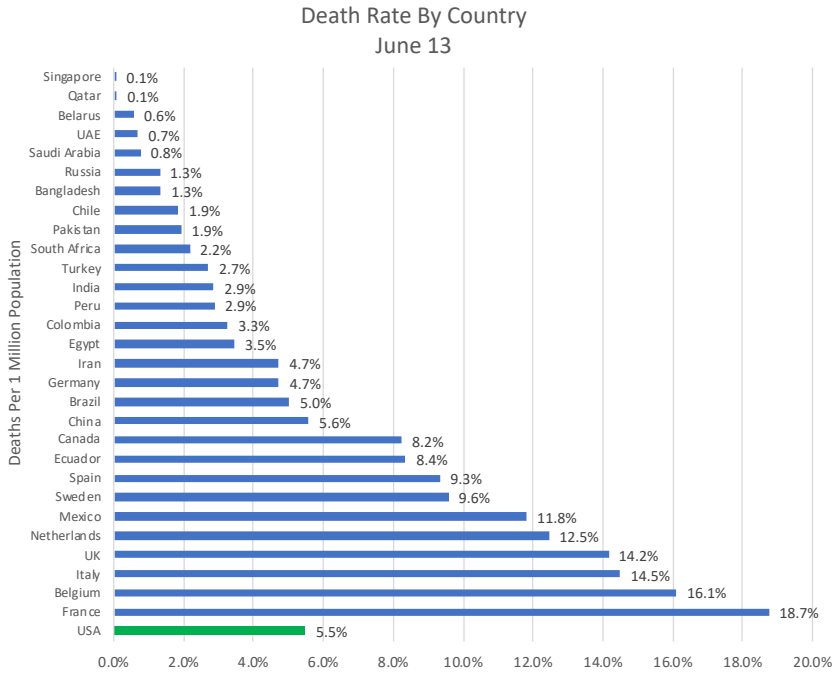
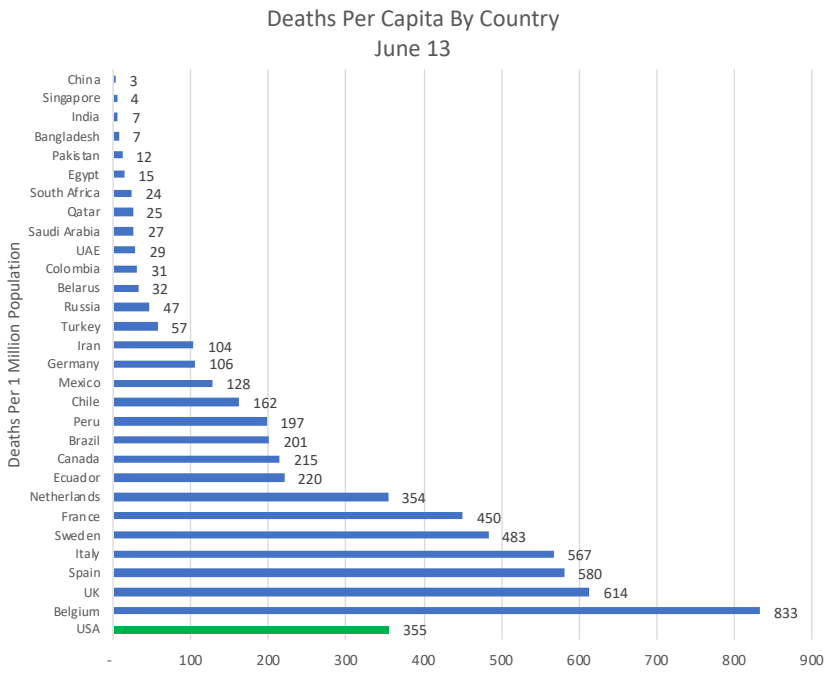
Countries Ranked 1-30 In Total Cases



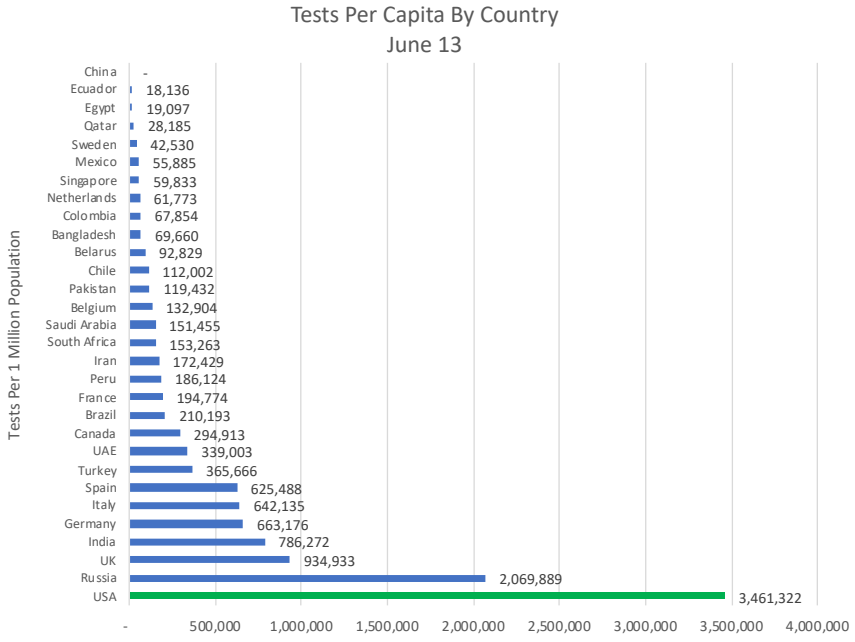


Country-by-Country

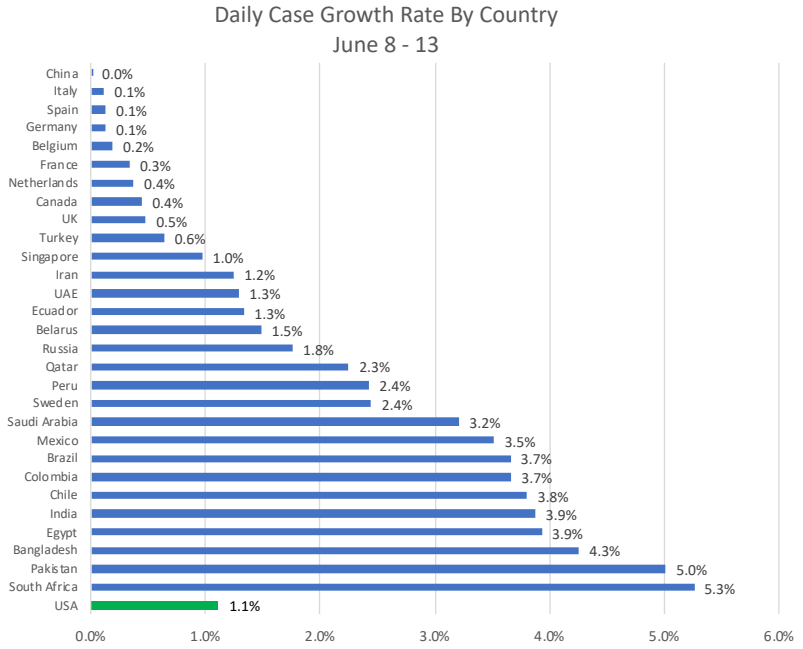
Daily Tests Per Capita & Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"

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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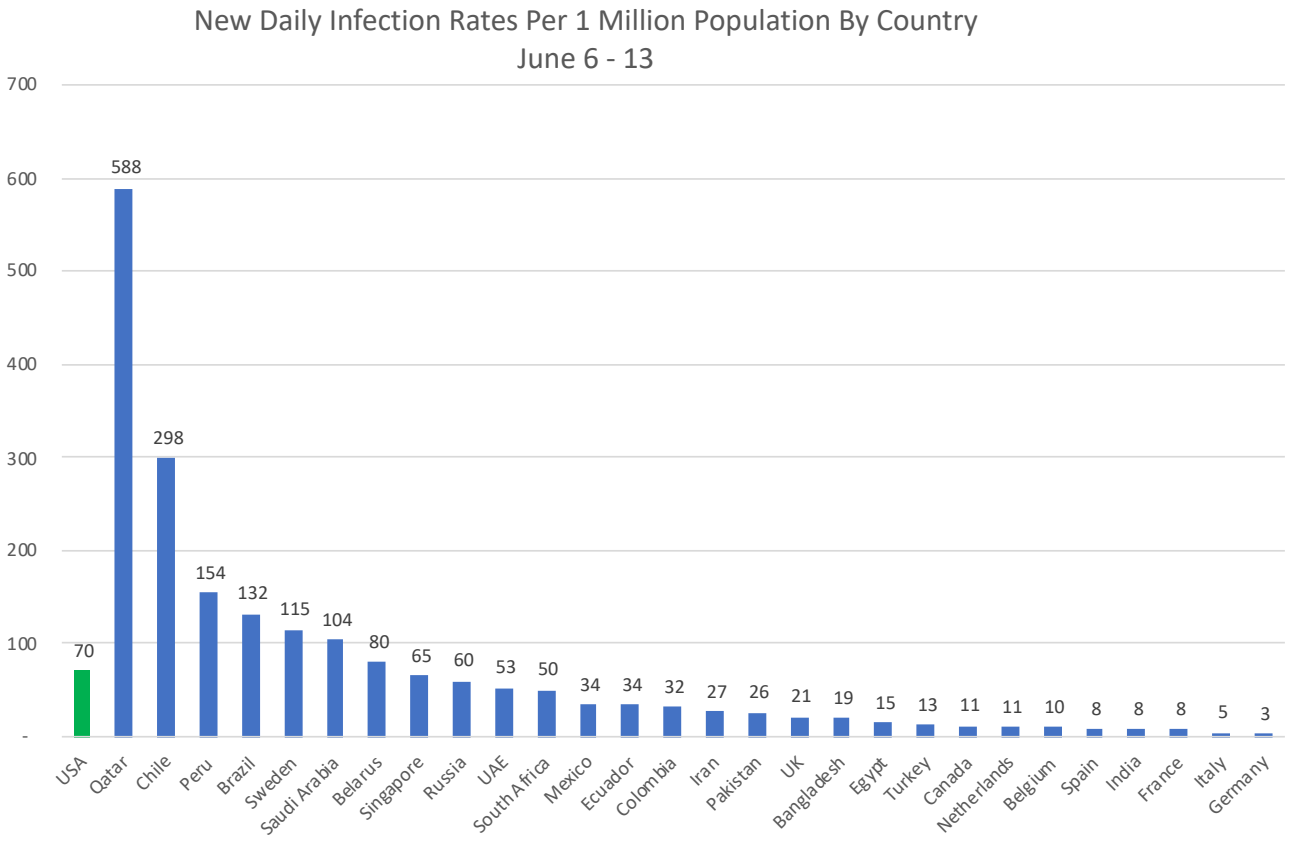

UNITED STATES & STATE-BY-STATE INFORMATION

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"Strategic Guidance in an Era of Unprecedented Change"

STATE-BY-STATE
OVERALL ASSESSMENT SCORECARD

COVID-19 Dashboard
Sunday, June 14, 2020

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State-By-State
Overall Assessment Scorecard

"Strategic Guidance in an Era of Unprecedented Change"

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)

Status, as of June 13

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State-By-State

States Yet to Achieve Peak New Daily Infection Rates

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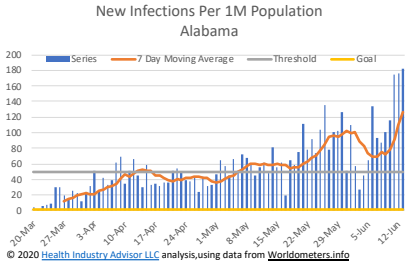

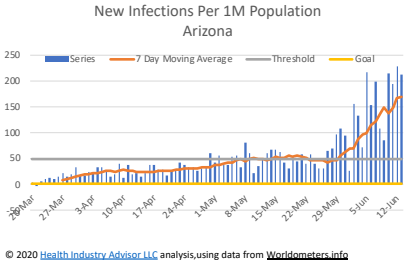

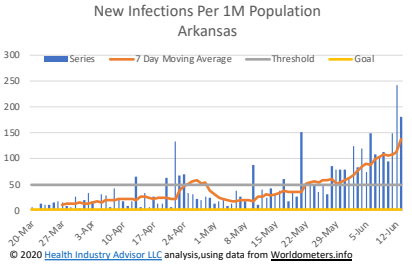

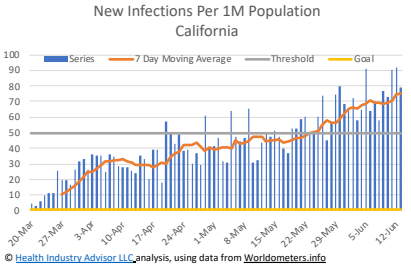

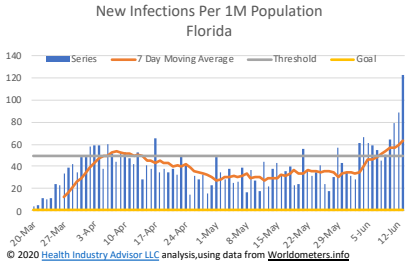

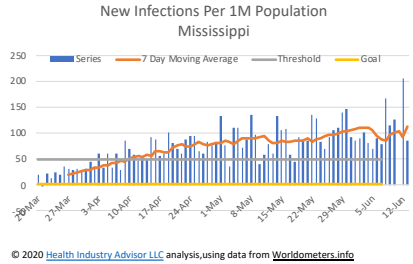

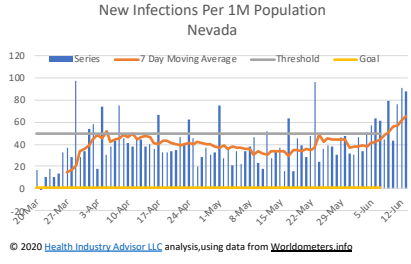

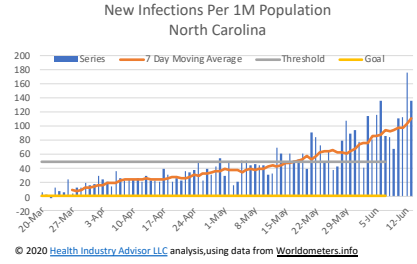

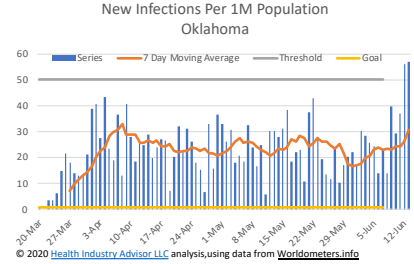

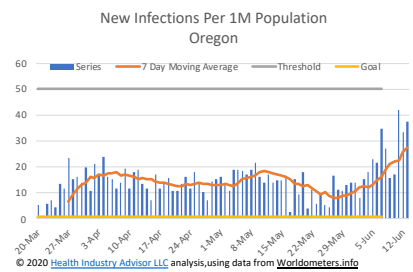

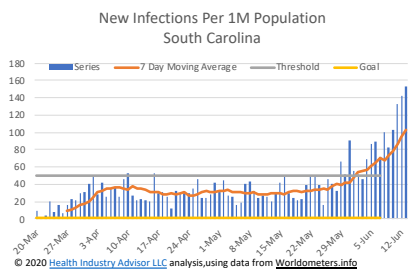

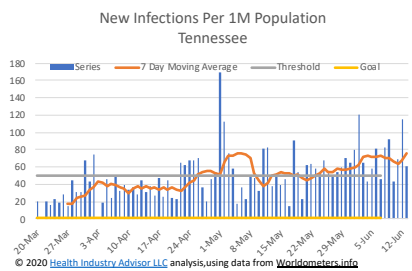

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State-By-State

States With Largest Declines From Peak New Daily Infection Rates

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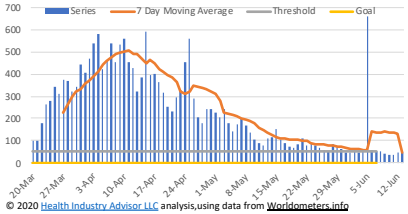
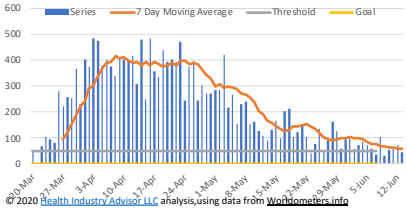
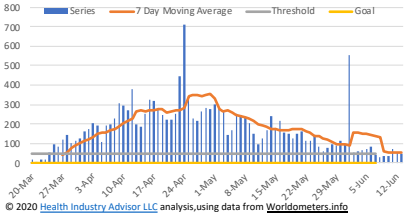
New Infections Per 1M Population
New York



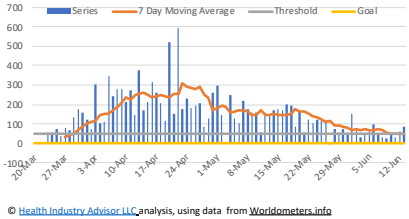
New Infections Per 1M Population
New Jersey



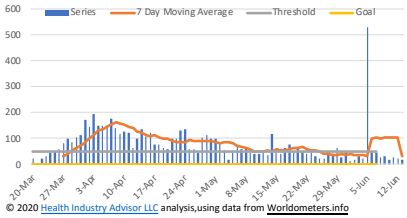
New Infections Per 1M Population
Massachusetts



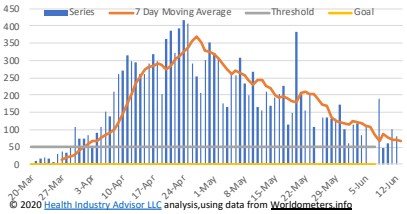
New Infections Per 1M Population
Connecticut



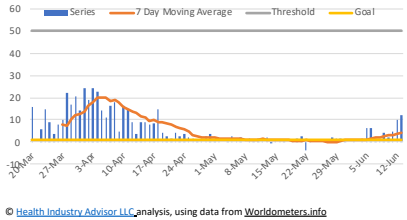
New Infections Per 1M Population
Michigan



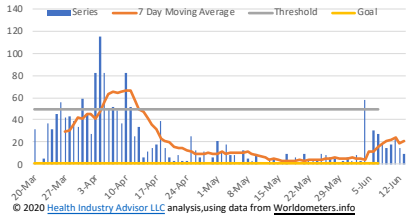
New Infections Per 1M Population
Rhode Island



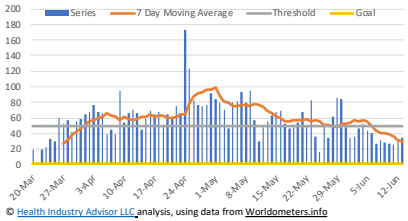
New Infections Per 1M Population
Hawaii



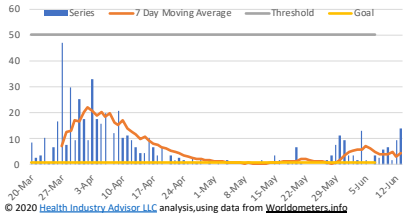
New Infections Per 1M Population
Vermont



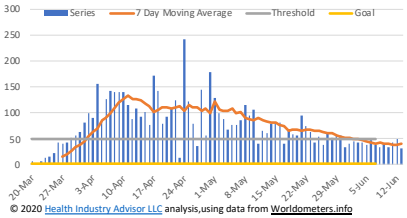
New Infections Per 1M Population
Colorado



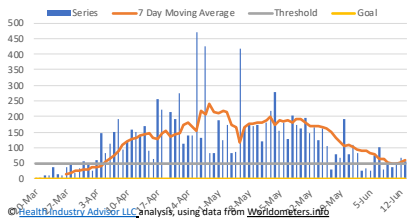
New Infections Per 1M Population
Montana



New Infections Per 1M Population
Pennsylvania



New Infections Per 1M Population
Delaware



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State-By-State

Trends in COVID-19 Hospitalizations

"Strategic Guidance in an Era of Unprecedented Change"

State 1	PEAK	7-Day	14-Day	28-Day	7-Day % of Peak
Montana	29	600%	250%	133%	24%
Arkansas	46	71%	-14%	20%	33%
Utah	236	61%	70%	40%	83%
Wyoming	19	25%	-62%	-38%	26%
Texas	2242	23%	28%	25%	97%
North Dakota	41	21%	3%	6%	85%
North Carolir	823	16%	29%	71%	92%
South Carolir	541	15%	35%		95%
Mississippi	710	13%	15%	7%	100%
Arizona	1412	10%	45%	79%	95%
Oregon	321	10%	2%	-13%	41%
West Virgini	108	7%	-12%	-47%	27%
Georgia	1025	3%	-5%	-19%	82%
New Mexico	223	2%	-7%	-20%	80%
Nevada	522	1%	-5%	-17%	63%
Oklahoma	383	-3%	0%	-14%	40%
California	5236	-3%	5%	0%	86%
Indiana	1558	-6%	-24%	-32%	58%
Louisiana	2134	-7%	-20%	-47%	26%
Colorado	1084	-8%	-35%	-59%	26%
South Dakota	106	-9%	-9%	13%	82%
Washington	655	-9%	-29%	-32%	35%
New Hampsl	126	-10%	-28%	-31%	58%
Missouri	1043	-11%	-12%	-23%	57%
Nebraska	211	-13%			78%

State 1	PEAK	7-Day	14-Day	28-Day	7-Day % of Peak
Maine	60	-17%	-37%	-22%	53%
Kentucky	525	-17%	-18%	8%	98%
Minnesota	606	-18%	-34%	-21%	67%
Ohio	1078	-18%	-36%	-40%	51%
Virginia	1625	-18%	-35%	-36%	63%
District Of Cc	337	-21%	-47%	-63%	30%
Illinois	5036	-22%	-37%	-51%	44%
Rhode Island	352	-23%	-36%	-48%	40%
Maryland	1711	-25%	-36%	-47%	49%
Pennsylvania	2800	-25%	-35%	-53%	32%
Michigan	3986	-26%	-18%	-49%	16%
New Jersey	8270	-28%	-47%	-61%	18%
Delaware	447	-29%	-38%	-48%	47%
Connecticut	1972	-30%	-56%	-77%	12%
Massachuset	3977	-30%	-44%	-60%	29%
Vermont	77	-31%	-35%	-45%	21%
Iowa	417	-33%	-46%	-48%	54%
New York	18825	-33%	-52%	-72%	10%
Wisconsin	748	-42%	-54%	-48%	38%

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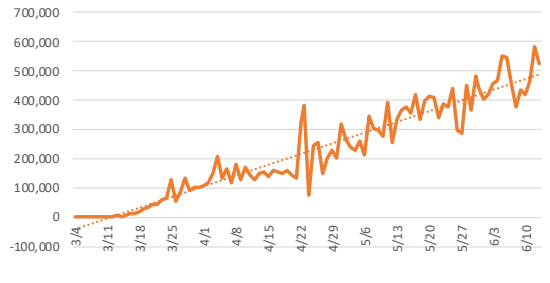
United States

Overall Statistics

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

"Strategic Guidance in an Era of Unprecedented Change"

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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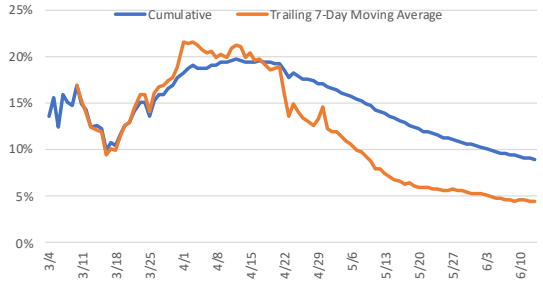

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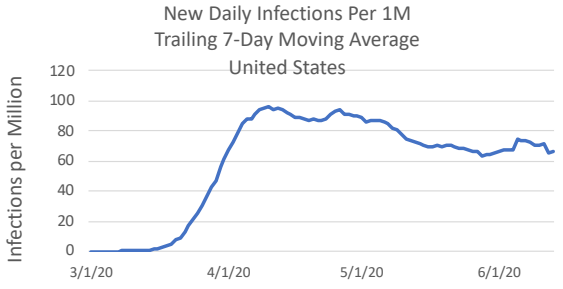

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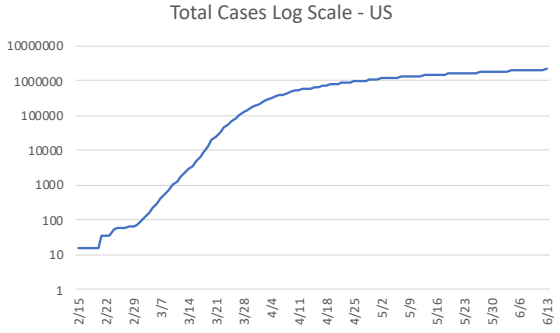

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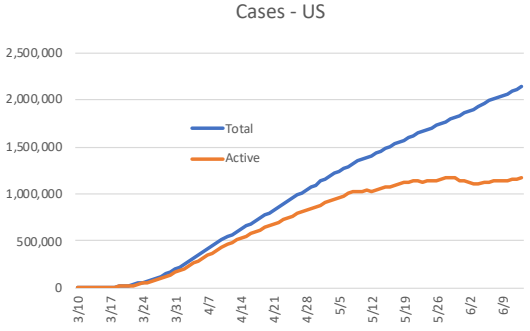

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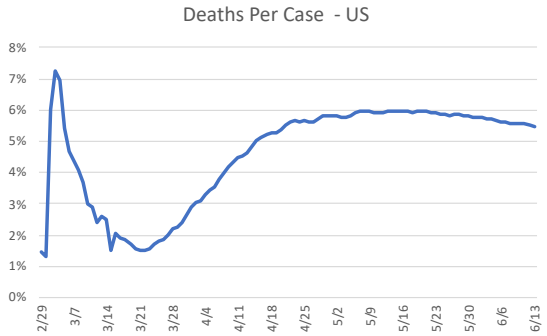

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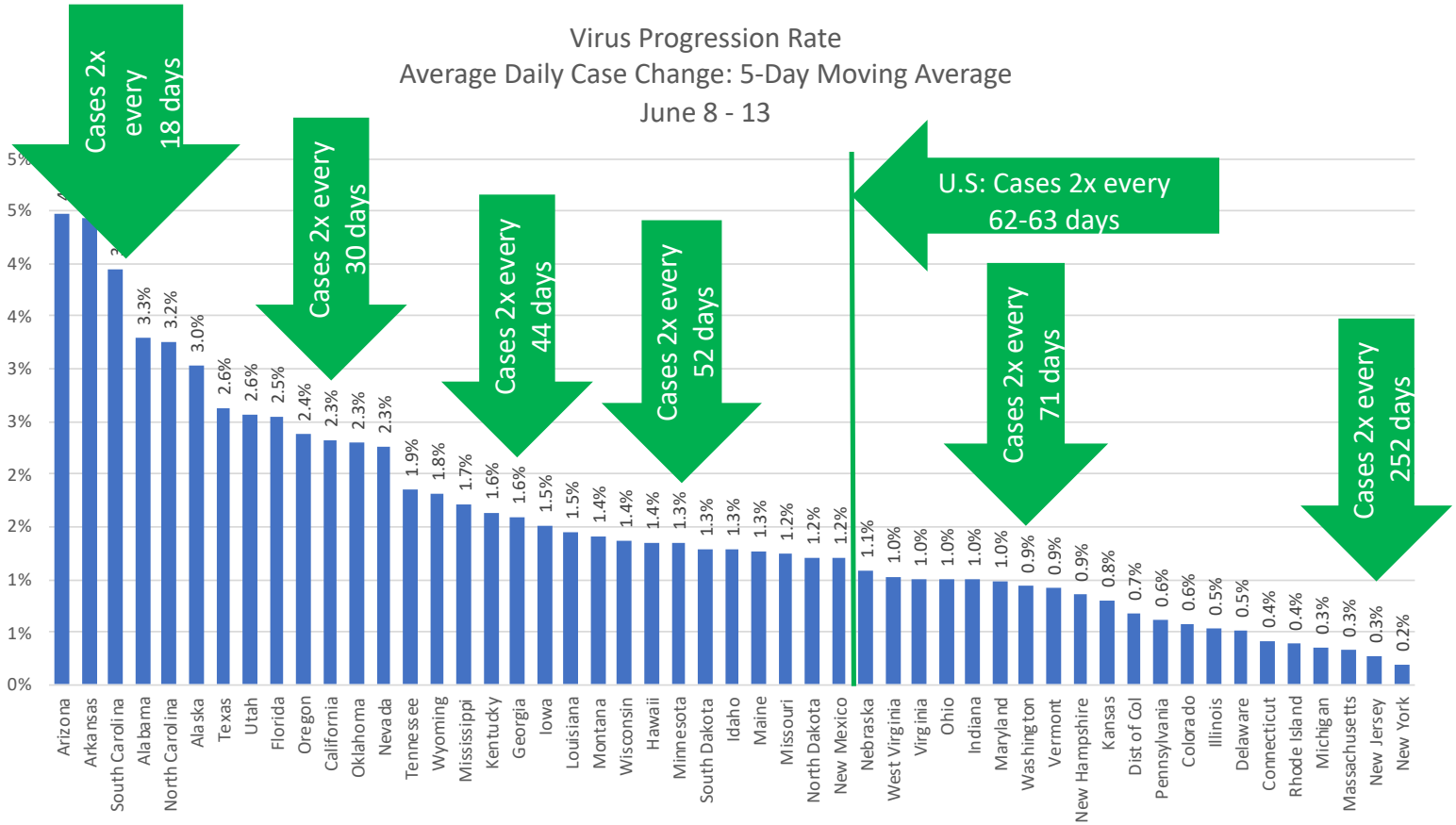
State-by-State

Average Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"

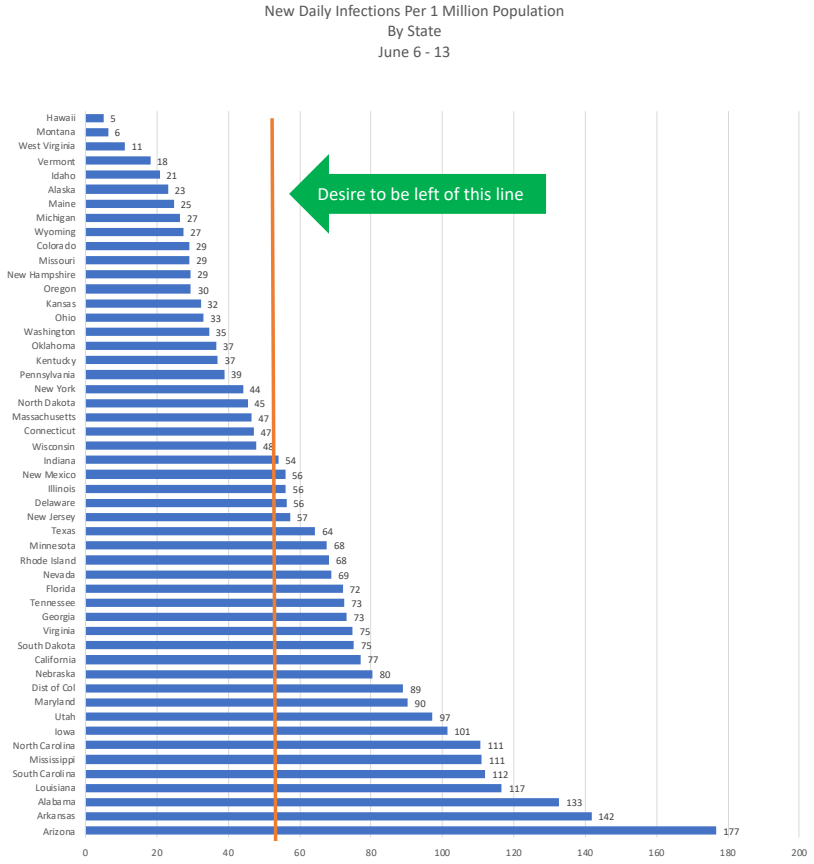
At the height of the epidemic, cases in some states were doubling every few days. Now, they would take from 16 – 355 days to double

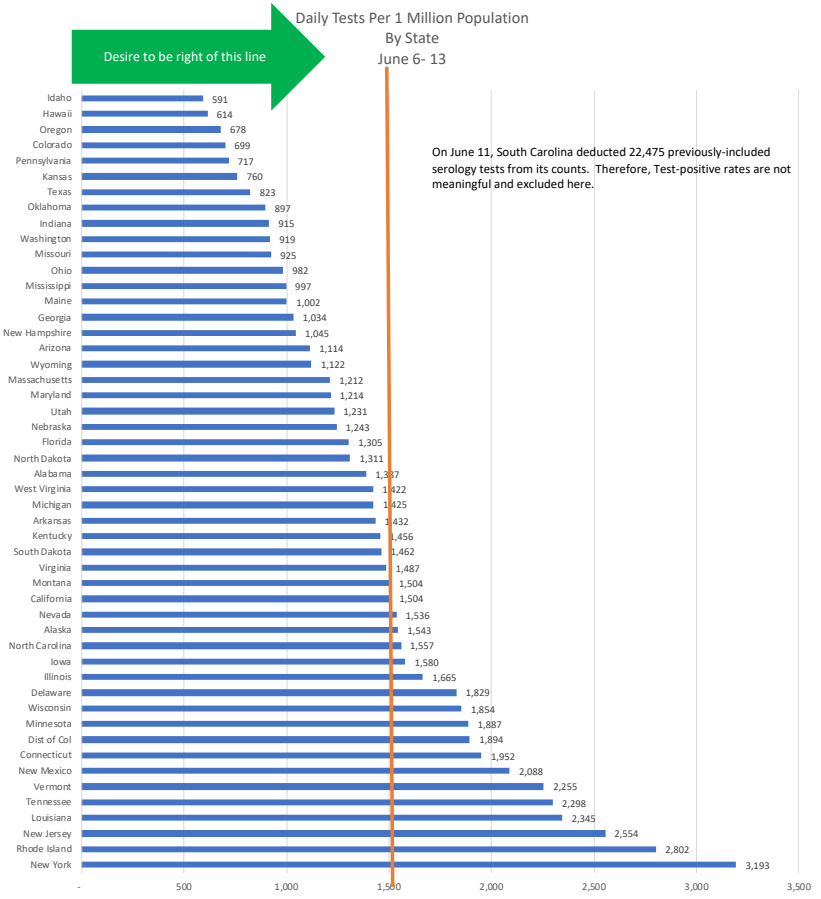


State-by-State

New Daily Infections & Tests Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

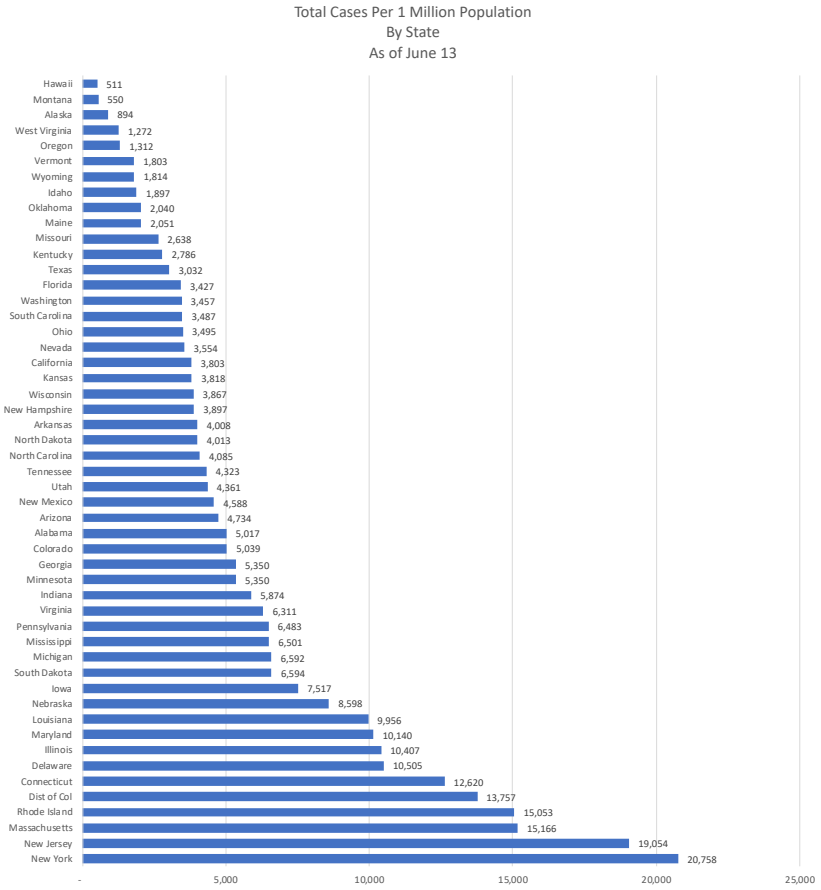


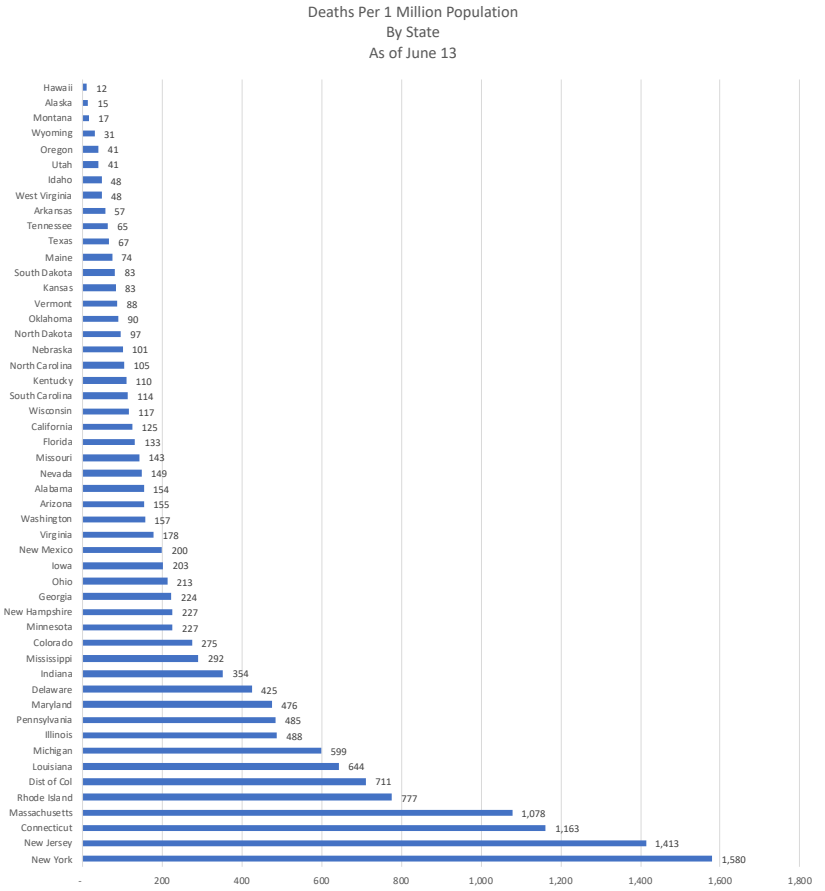


State-by-State

Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





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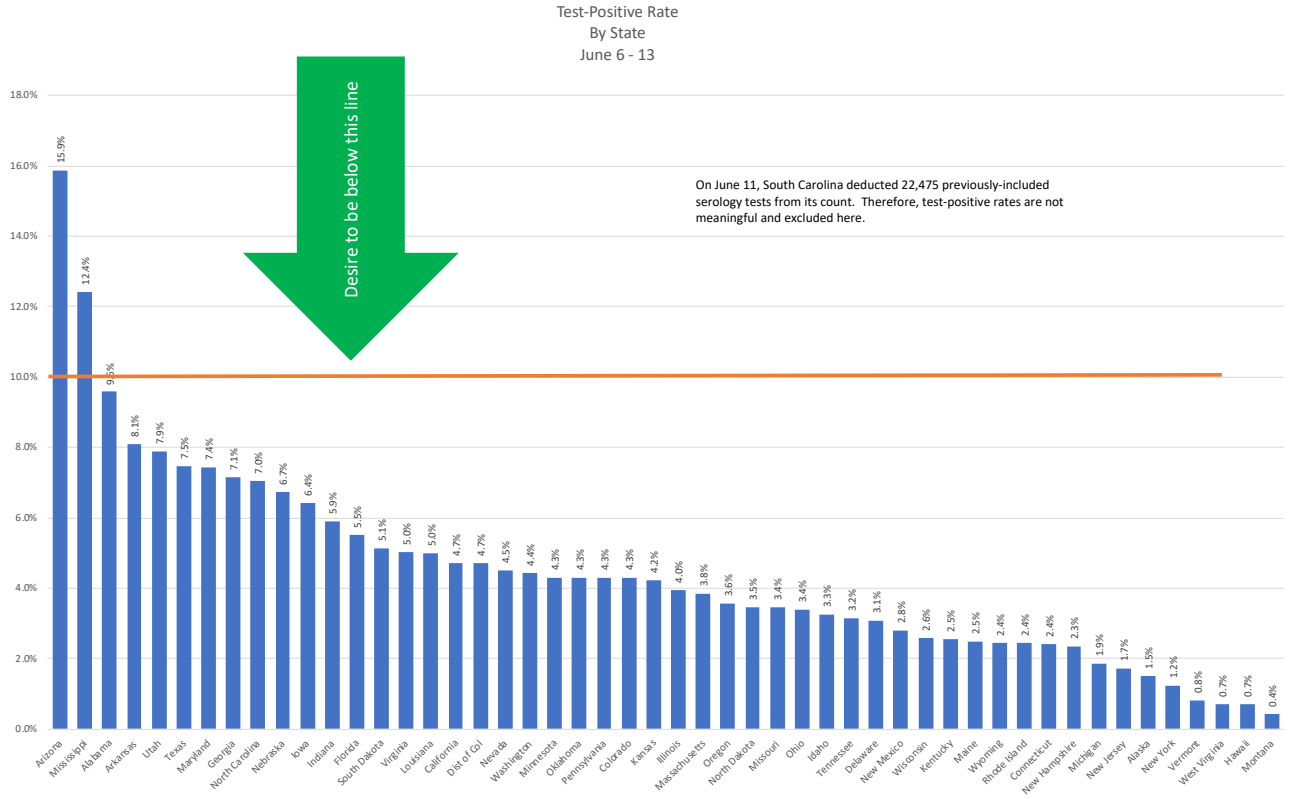
State-by-State

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.



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State-by-State

Comparative Statistics- Page 1 of 2

"Strategic Guidance in an Era of Unprecedented Change"

As of June 13

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	24,601	(23)	5,017.4	(22)	773	(25)	3.1%	(34)	157.7	(25)	3.3%	(4)	1,387	(26)	126.0	(3)
Alaska	654	(50)	894.0	(49)	12	(51)	1.8%	(45)	16.4	(50)	3.0%	(6)	1,543	(16)	19.7	(47)
Arizona	34,458	(18)	4,734.1	(23)	1,183	(20)	3.4%	(30)	162.5	(23)	4.5%	(1)	1,114	(34)	168.5	(1)
Arkansas	12,095	(33)	4,007.9	(29)	177	(39)	1.5%	(48)	58.7	(43)	4.4%	(2)	1,432	(23)	137.1	(2)
California	150,267	(3)	3,803.1	(33)	5,062	(7)	3.4%	(31)	128.1	(29)	2.3%	(11)	1,504	(18)	74.9	(16)
Colorado	29,017	(21)	5,038.8	(21)	1,598	(16)	5.5%	(11)	277.5	(15)	0.6%	(43)	699	(47)	29.9	(42)
Connecticut	44,994	(14)	12,620.0	(6)	4,186	(8)	9.3%	(1)	1,174.1	(3)	0.4%	(46)	1,952	(8)	49.2	(30)
Delaware	10,229	(36)	10,504.6	(7)	419	(34)	4.1%	(25)	430.3	(12)	0.5%	(45)	1,829	(12)	58.7	(25)
District Of Columbia	9,709	(37)	13,757.0	(5)	511	(29)	5.3%	(13)	724.1	(6)	0.7%	(41)	1,894	(9)	92.1	(9)
Florida	73,596	(8)	3,426.6	(38)	2,928	(10)	4.0%	(27)	136.3	(28)	2.5%	(9)	1,305	(28)	63.1	(21)
Georgia	56,801	(11)	5,349.8	(20)	2,446	(13)	4.3%	(23)	230.4	(18)	1.6%	(18)	1,034	(36)	69.5	(18)
Hawaii	723	(49)	510.6	(51)	17	(50)	2.4%	(42)	12.0	(51)	1.4%	(23)	614	(49)	4.2	(51)
Idaho	3,399	(43)	1,896.7	(44)	87	(44)	2.6%	(40)	48.5	(45)	1.3%	(26)	591	(50)	19.3	(48)
Illinois	131,871	(4)	10,406.6	(8)	6,289	(4)	4.8%	(17)	496.3	(9)	0.5%	(44)	1,665	(13)	59.6	(23)
Indiana	39,543	(17)	5,873.7	(18)	2,413	(14)	6.1%	(9)	358.4	(13)	1.0%	(35)	915	(42)	54.5	(27)
Iowa	23,717	(24)	7,517.1	(12)	650	(27)	2.7%	(38)	206.0	(20)	1.5%	(19)	1,580	(14)	99.2	(8)
Kansas	11,124	(34)	3,818.3	(32)	245	(37)	2.2%	(44)	84.1	(39)	0.8%	(40)	760	(45)	34.2	(36)
Kentucky	12,445	(32)	2,785.6	(40)	499	(30)	4.0%	(26)	111.7	(32)	1.6%	(17)	1,456	(22)	38.0	(34)
Louisiana	46,283	(13)	9,955.9	(10)	3,009	(9)	6.5%	(7)	647.3	(7)	1.5%	(20)	2,345	(4)	91.5	(10)
Maine	2,757	(45)	2,051.0	(42)	100	(42)	3.6%	(29)	74.4	(40)	1.3%	(27)	1,002	(37)	25.4	(44)
Maryland	61,305	(10)	10,140.3	(9)	2,926	(11)	4.8%	(16)	484.0	(11)	1.0%	(36)	1,214	(31)	90.8	(11)
Massachusetts	105,395	(5)	15,165.8	(3)	7,576	(3)	7.2%	(6)	1,090.1	(4)	0.3%	(49)	1,212	(32)	51.4	(28)
Michigan	65,836	(9)	6,592.3	(14)	6,013	(6)	9.1%	(2)	602.1	(8)	0.3%	(48)	1,425	(24)	30.5	(40)
Minnesota	30,172	(19)	5,350.0	(19)	1,314	(18)	4.4%	(22)	233.0	(17)	1.3%	(24)	1,887	(10)	71.3	(17)
Mississippi	19,348	(26)	6,501.0	(15)	889	(23)	4.6%	(19)	298.7	(14)	1.7%	(16)	997	(38)	111.5	(4)

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State-by-State

Comparative Statistics- Page 2 of 2

"Strategic Guidance in an Era of Unprecedented Change"

As of June 13

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	16,193	(29)	2,638.4	(41)	890	(22)	5.5%	(12)	145.0	(27)	1.2%	(28)	925	(40)	33.8	(37)
Montana	588	(51)	550.2	(50)	18	(49)	3.1%	(36)	16.8	(49)	1.4%	(21)	1,504	(19)	4.3	(50)
Nebraska	16,633	(28)	8,598.5	(11)	216	(38)	1.3%	(49)	111.7	(33)	1.1%	(31)	1,243	(29)	83.7	(12)
Nevada	10,946	(35)	3,553.7	(34)	463	(32)	4.2%	(24)	150.3	(26)	2.3%	(13)	1,536	(17)	65.5	(20)
New Hampshire	5,299	(42)	3,897.2	(30)	318	(36)	6.0%	(10)	233.9	(16)	0.9%	(39)	1,045	(35)	31.3	(39)
New Jersey	169,237	(2)	19,053.5	(2)	12,696	(2)	7.5%	(5)	1,429.4	(2)	0.3%	(50)	2,554	(3)	59.3	(24)
New Mexico	9,621	(38)	4,588.4	(24)	431	(33)	4.5%	(20)	205.5	(21)	1.2%	(30)	2,088	(7)	58.2	(26)
New York	403,809	(1)	20,757.6	(1)	30,874	(1)	7.6%	(3)	1,587.1	(1)	0.2%	(51)	3,193	(1)	45.6	(32)
North Carolina	42,844	(15)	4,085.0	(27)	1,127	(21)	2.6%	(39)	107.5	(34)	3.2%	(5)	1,557	(15)	110.6	(5)
North Dakota	3,058	(44)	4,012.8	(28)	74	(46)	2.4%	(41)	97.1	(35)	1.2%	(29)	1,311	(27)	50.8	(29)
Ohio	40,848	(16)	3,494.5	(35)	2,554	(12)	6.3%	(8)	218.5	(19)	1.0%	(34)	982	(39)	32.9	(38)
Oklahoma	8,073	(39)	2,040.2	(43)	359	(35)	4.4%	(21)	90.7	(36)	2.3%	(12)	897	(43)	30.5	(41)
Oregon	5,535	(41)	1,312.3	(47)	174	(40)	3.1%	(33)	41.3	(47)	2.4%	(10)	678	(48)	27.3	(43)
Pennsylvania	82,991	(7)	6,482.7	(16)	6,279	(5)	7.6%	(4)	490.5	(10)	0.6%	(42)	717	(46)	40.9	(33)
Rhode Island	15,947	(30)	15,053.4	(4)	833	(24)	5.2%	(14)	786.3	(5)	0.4%	(47)	2,802	(2)	68.2	(19)
South Carolina	17,955	(27)	3,487.3	(36)	599	(28)	3.3%	(32)	116.3	(31)	3.9%	(3)	294	(51)	103.1	(7)
South Dakota	5,833	(40)	6,593.5	(13)	75	(45)	1.3%	(50)	84.8	(38)	1.3%	(25)	1,462	(21)	75.1	(15)
Tennessee	29,541	(20)	4,323.2	(26)	472	(31)	1.6%	(47)	69.1	(41)	1.9%	(14)	2,298	(5)	75.4	(14)
Texas	87,903	(6)	3,031.6	(39)	1,989	(15)	2.3%	(43)	68.6	(42)	2.6%	(7)	823	(44)	60.9	(22)
Utah	13,981	(31)	4,360.9	(25)	139	(41)	1.0%	(51)	43.4	(46)	2.6%	(8)	1,231	(30)	103.6	(6)
Vermont	1,125	(47)	1,802.9	(46)	55	(47)	4.9%	(15)	88.1	(37)	0.9%	(38)	2,255	(6)	21.1	(46)
Virginia	53,869	(12)	6,311.2	(17)	1,541	(17)	2.9%	(37)	180.5	(22)	1.0%	(33)	1,487	(20)	78.3	(13)
Washington	26,324	(22)	3,456.9	(37)	1,217	(19)	4.6%	(18)	159.8	(24)	0.9%	(37)	919	(41)	34.3	(35)
West Virginia	2,274	(46)	1,272.4	(48)	88	(43)	3.9%	(28)	49.2	(44)	1.0%	(32)	1,422	(25)	10.4	(49)
Wisconsin	22,518	(25)	3,867.5	(31)	691	(26)	3.1%	(35)	118.7	(30)	1.4%	(22)	1,854	(11)	49.0	(31)
Wyoming	1,050	(48)	1,814.2	(45)	18	(49)	1.7%	(46)	31.1	(48)	1.8%	(15)	1,122	(33)	23.2	(45)
United States	2,142,224		6,471.9		117,527		5.5%		329.7		1.1%		1,406		67.3	

UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

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United States

Recoveries

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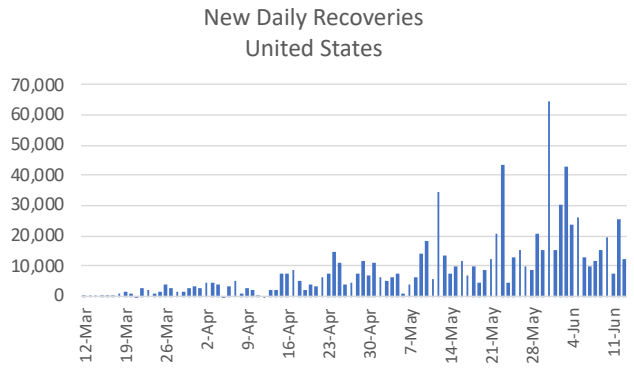

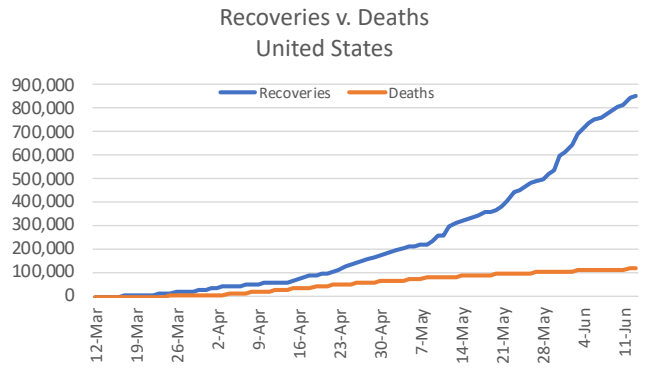

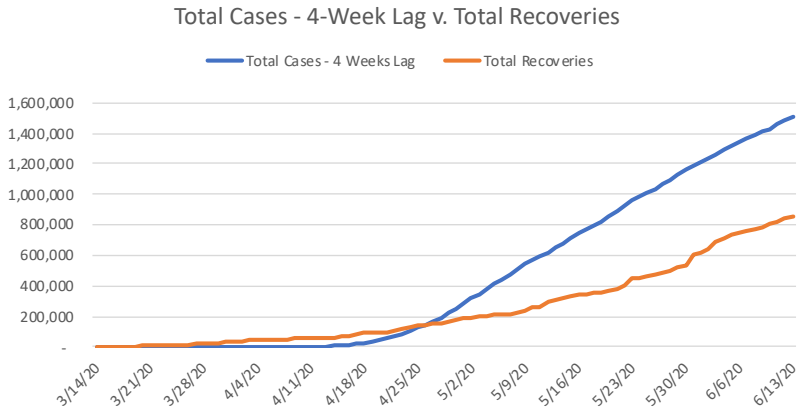

Recoveries

Reporting of Recoveries Seems to Be Lagging

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

State	Recoveries	Expected Recoveries Low	Expected Recoveries High
Alabama	13,508	9,339	10,507
Alaska	403	314	353
Arizona	174	10,905	12,268
Arkansas	7,863	3,662	4,120
California	40,273	62,948	70,817
Colorado	2,529	17,306	19,470
Connecticut	8,596	29,362	33,033
Delaware	6,116	6,038	6,792
District Of Columbia	1,143	5,634	6,338
Florida	13,787	35,849	40,330
Georgia	1,446	29,770	33,491
Hawaii	628	511	575
Idaho	2,837	1,935	2,177
Illinois	83,553	73,966	83,211
Indiana	28,233	21,824	24,552
Iowa	14,299	11,462	12,895
Kansas	6,127	6,333	7,124
Kentucky	3,409	6,150	6,919
Louisiana	33,904	27,294	30,705
Maine	2,152	1,318	1,483
Maryland	4,536	30,374	34,171
Massachusetts	84,621	67,946	76,440
Michigan	44,964	40,403	45,454
Minnesota	25,620	11,975	13,472
Mississippi	13,356	8,898	10,011
Missouri	3,645	8,666	9,749

State	Recoveries	Expected Recoveries Low	Expected Recoveries High
Montana	510	374	421
Nebraska	9,879	8,176	9,198
Nevada	8,028	5,330	5,996
New Hampshire	3,905	2,845	3,200
New Jersey	31,963	117,111	131,750
New Mexico	4,072	4,678	5,262
New York	85,757	286,479	322,289
North Carolina	23,653	14,504	16,317
North Dakota	2,630	1,478	1,663
Ohio	8,553	21,982	24,730
Oklahoma	6,495	4,190	4,713
Oregon	2,396	2,890	3,251
Pennsylvania	56,072	52,246	58,776
Rhode Island	1,435	9,947	11,191
South Carolina	8,682	6,929	7,795
South Dakota	4,828	3,167	3,563
Tennessee	19,731	13,830	15,559
Texas	56,535	38,138	42,905
Utah	8,114	5,654	6,361
Vermont	907	747	841
Virginia	7,131	23,746	26,715
Washington	8,571	15,369	17,290
West Virginia	1,571	1,166	1,311
Wisconsin	16,231	9,750	10,968
Wyoming	814	593	667
United States	854,106	1,206,218	1,356,996

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

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

Virus Progression

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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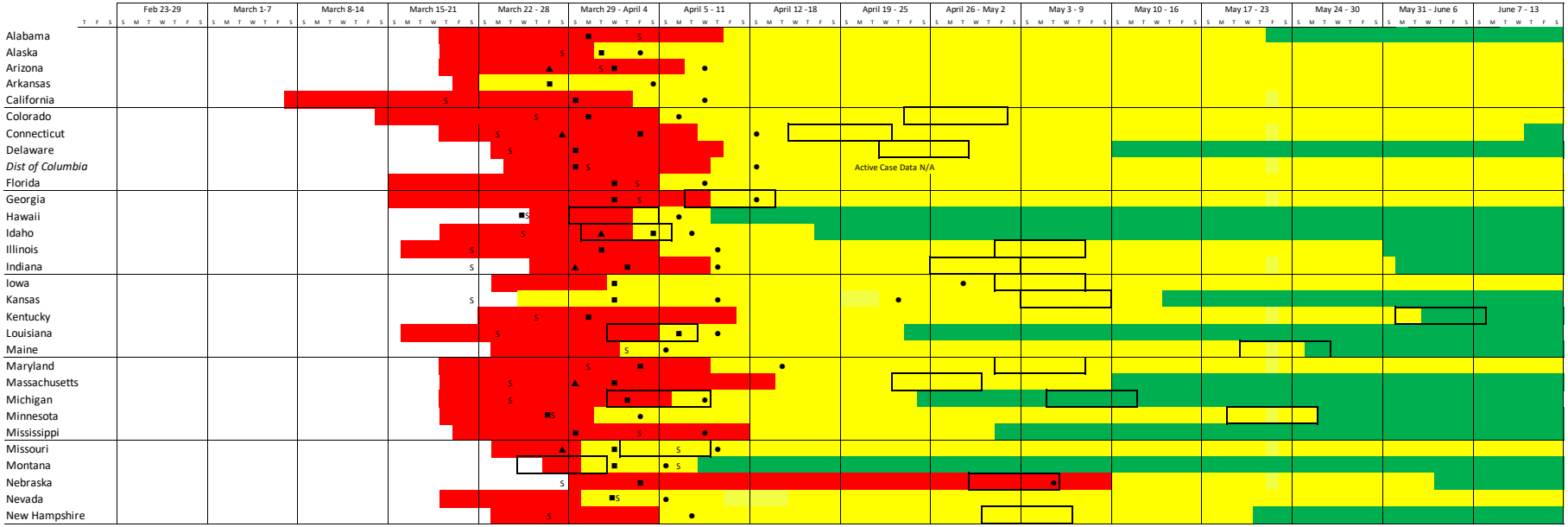

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State-by-State

Virus Progression – *2 of 2*

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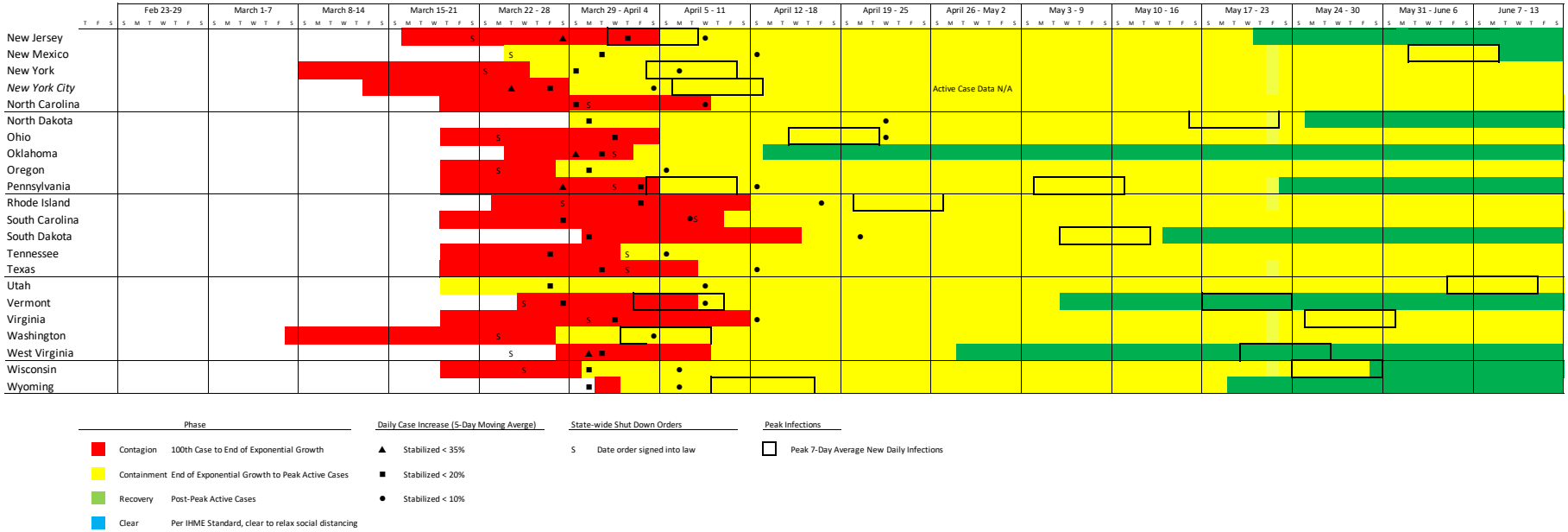

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County-By-County

Counties/Municipalities With Highest New Infection Rates

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Large Central Metro Areas