

COVID-19 Dashboard

Issue # 83
Monday, June 22, 2020

Day's Highlights

"Strategic Guidance in an Era of Unprecedented Change"

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	>518,000
Test-Positivity Rate	Decline	5.3% test-positive on Friday; 5.2% for past 7 days
Number of Cases	Plateau	Cases increased nearly 28% week-over-week – concentrated in 7 states
Deaths % of Total Cases	Decline	5.19%
Number of Deaths / 1M Population	Plateau	369.3
Recoveries : Death	Increase	8.02

- Twelve states in the United States continue to see more new cases than ever: Arizona, California, Florida, Georgia, Missouri, Nevada, Oklahoma, Oregon, South Carolina, Tennessee, Texas and Utah. Encouragingly, six states have seen a downturn from a peak in new cases during the past few weeks: Alabama, Alaska, Arkansas, Mississippi, New Mexico and North Dakota. Nine states are reporting new infection rates less than 25% of peak: Connecticut (9%), Illinois (23%), Massachusetts (11%), Michigan (15%), New Jersey (10%), New York (10%), Pennsylvania (23%), Rhode Island (14%) and Vermont (11%)
- While still high relative to the experience of the past several weeks, new cases yesterday (26,137) were lower than any of the prior three days. Four states continue to count for 50% of new daily cases: Arizona, California, Florida and Texas. Including Georgia, North Carolina and South Carolina takes this to nearly 60%
- Twelve states have seen their test-positive rates increase over the past two weeks: Alabama, Arizona, Florida, Georgia, Idaho, Kansas, Kentucky, Nevada, Oklahoma, South Carolina, Texas and Washington. South Carolina's rate is at 10.9%, up from 4.9%. Conversely, ten states have recorded material declines in test-positive rates during this time: Arkansas, Illinois, Indiana, Massachusetts, Maryland, Michigan, Mississippi, Nebraska, Pennsylvania and Virginia
- Florida is reporting that its recent surge in new cases is in younger persons than previously infected by the virus. According to Florida Department of Health data, the median age of newly infected persons was 50+ during March and April but has fallen to 35 years old for the week of June 14. At the same time, the median age of persons dying from the virus has increased from the mid-70s to 82 years old for the week of June 14. Our data shows that the death rate in Florida has trended down, from 4.4% through early June to 3.3% as of yesterday
- Hospitalizations of COVID-19 patients continues to be of concern (increasing patients week-over-week and at or near peak) in Arizona, California, Georgia, South Carolina and Texas. Conversely, hospitalizations are down by >20% week-over-week in Connecticut, New Hampshire, Michigan, Missouri, New Jersey, New York, North Dakota, Vermont and Wyoming
- Test volume was strong in the United States yesterday, with >518,000 tests and a 5.3% test-positive rate. This rate is lower than each of the past three days
- The death rate in the United States showed continued improvement yesterday, with fewer deaths reported yesterday (268) than any day since March 24. The cumulative death rate is now below 5.2% and reported recoveries outnumber deaths by 8:1
- Total cases surpassed 9 million worldwide yesterday. The shift from Europe to South America was evidenced again, with Chile surpassing Italy in total cases; Chile now has the 8th-most cases in the world. South Korea, a country hit early by the virus, dropped to 60th in total cases

UNITED STATES & STATE-BY-STATE INFORMATION

STATE-BY-STATE OVERALL ASSESSMENT SCORECARD

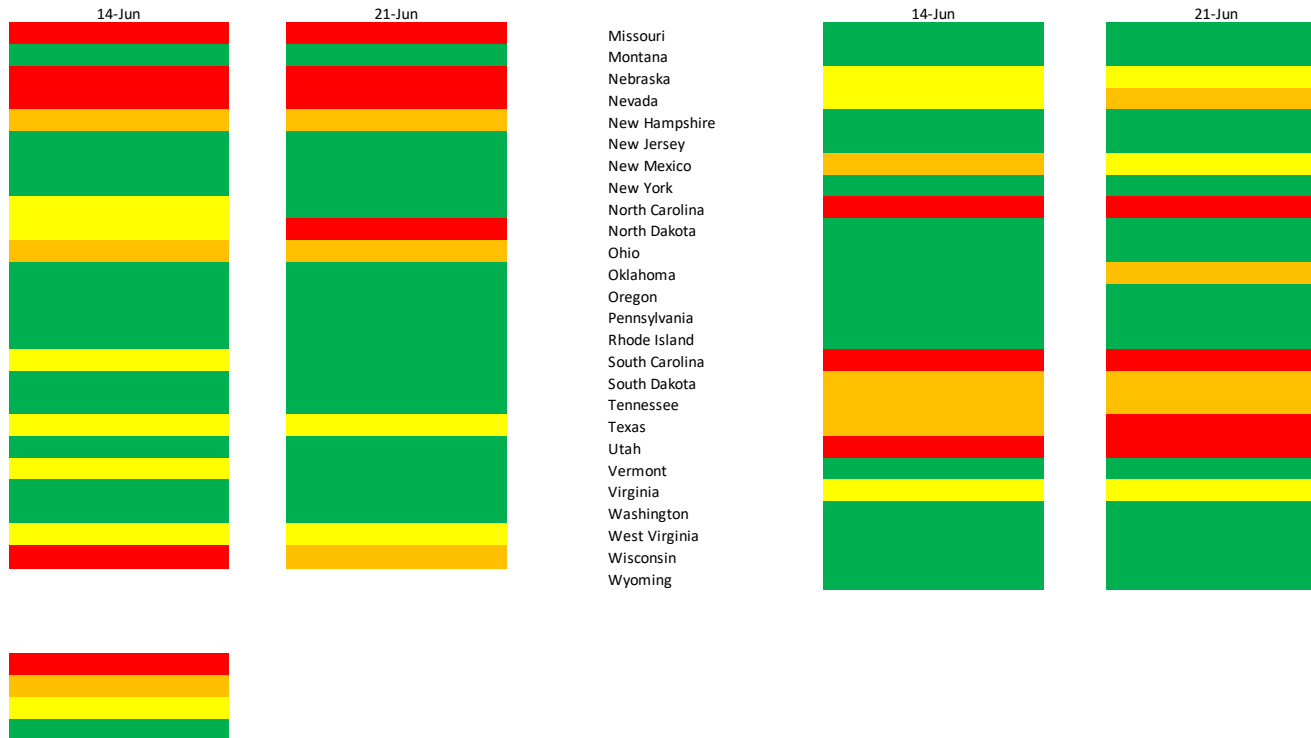
State-By-State Overall Assessment Scorecard

“Strategic Guidance in an Era of Unprecedented Change”

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

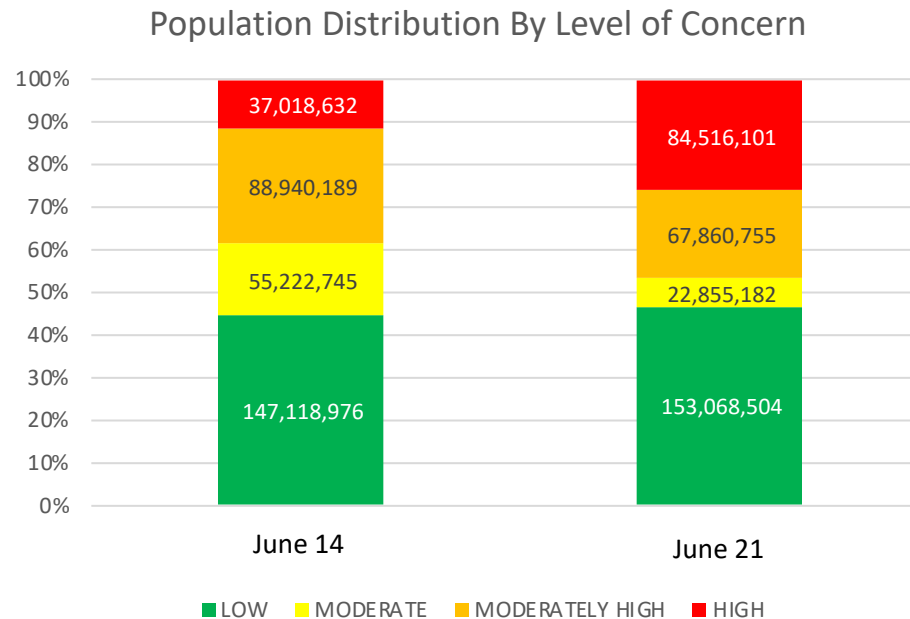
- Current rate of new infections, relative to its peak (is it declining or near its peak?)
- Test-positive rate
- Rate of change in cases
- Hospitalized patients v. its peak

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)



State-By-State Population Distribution By Level of Concern

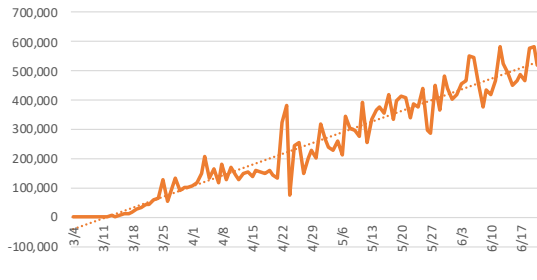
"Strategic Guidance in an Era of Unprecedented Change"



"Strategic Guidance in an Era of Unprecedented Change"

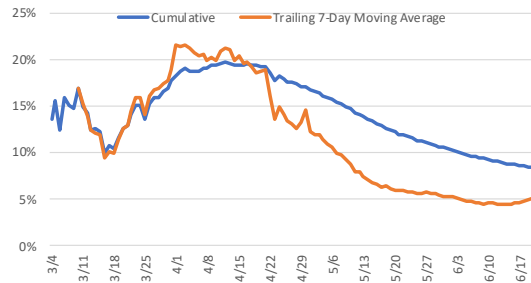
With significantly increased testing, the US is now meeting the WHO standard of <10% test-positives. This suggests that asymptomatic cases are being captured and that we have a better view of true infection rates. Further, new daily infections continue to decline; the death rate seems to have stabilized.

New Daily Tests - US



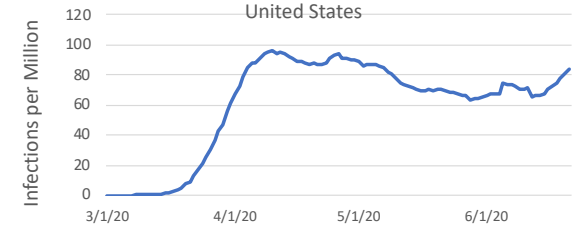
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Test-Positive Rate



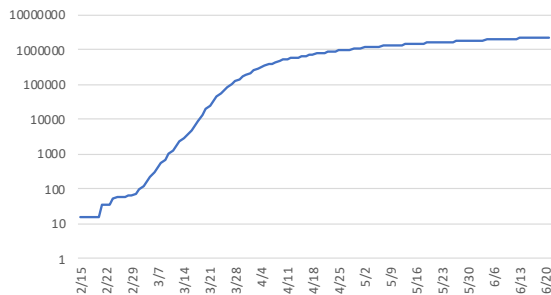
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New Daily Infections Per 1M
Trailing 7-Day Moving Average
United States



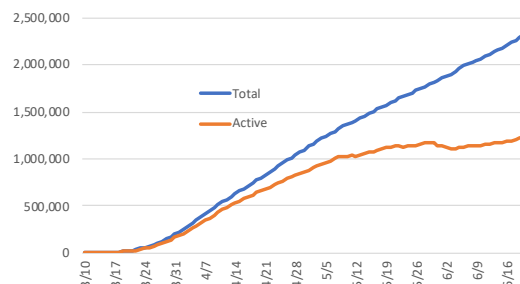
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Total Cases Log Scale - US



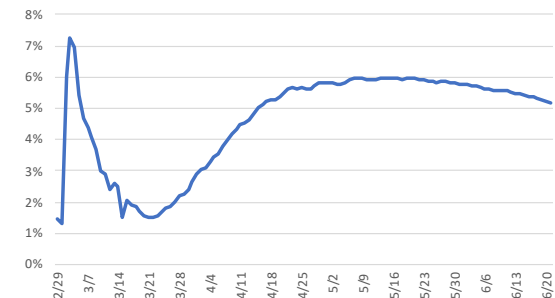
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Cases - US



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Deaths Per Case - US

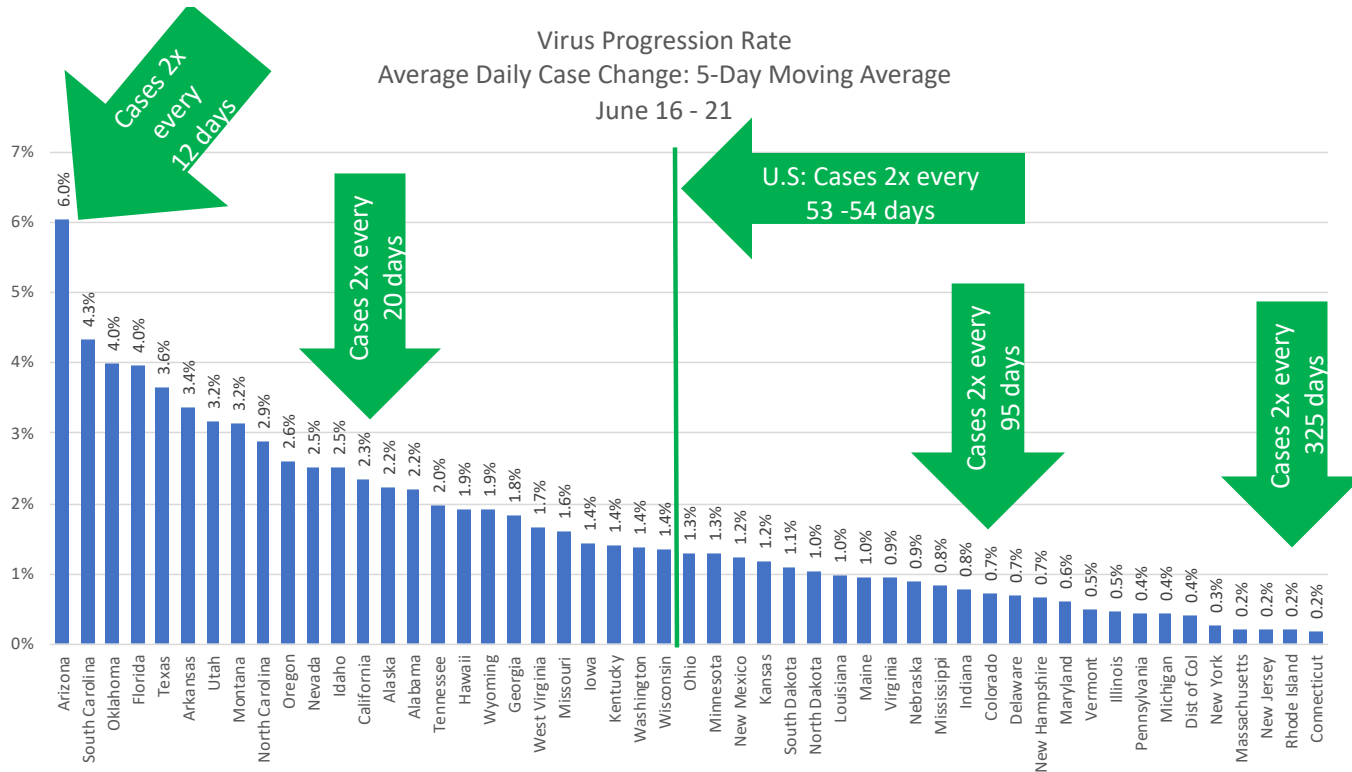


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State-by-State Average Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"

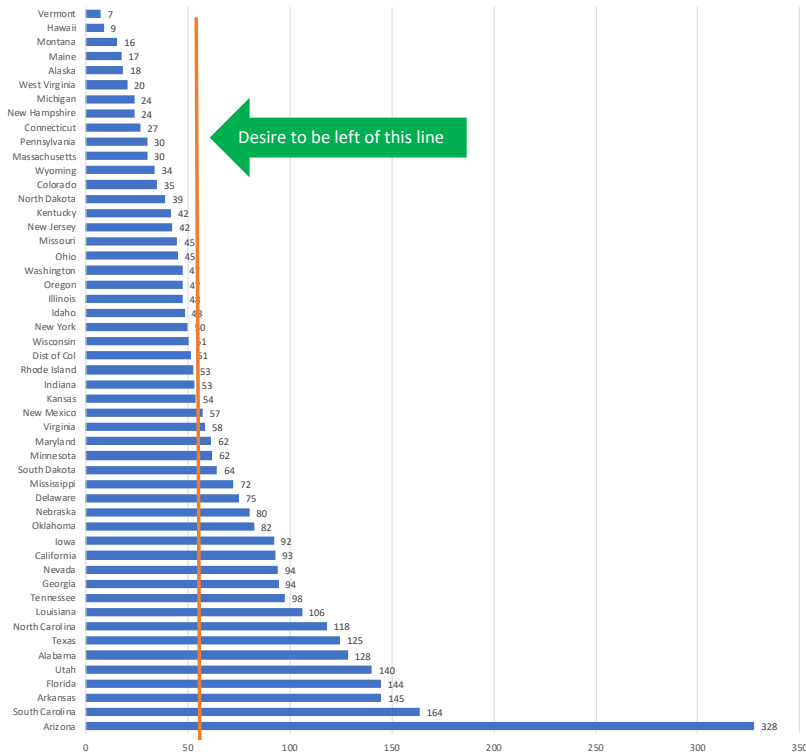
At the height of the epidemic, cases in some states were doubling every few days. Now, they would take from 12 – 390 days to double



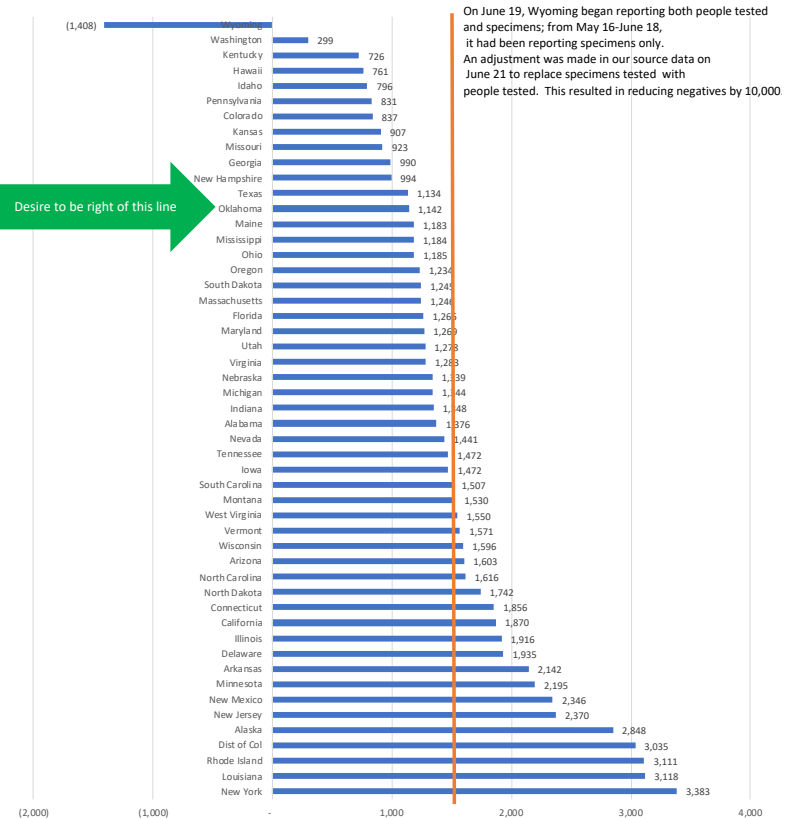
State-by-State New Daily Infections & Tests Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

New Daily Infections Per 1 Million Population
By State
June 14 - 21



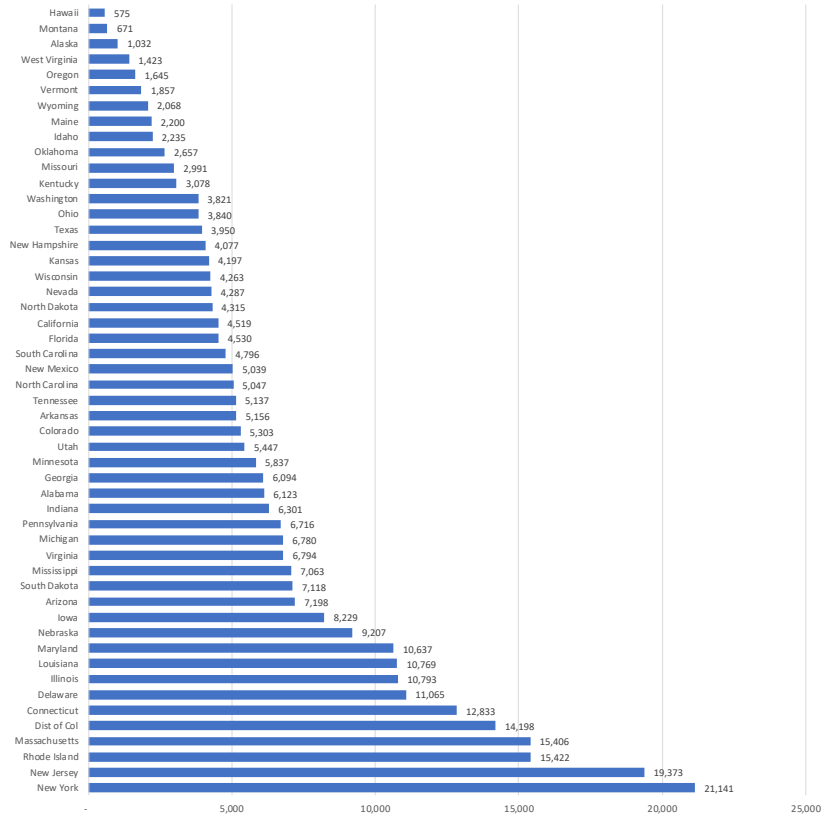
Daily Tests Per 1 Million Population
By State
June 14- 21



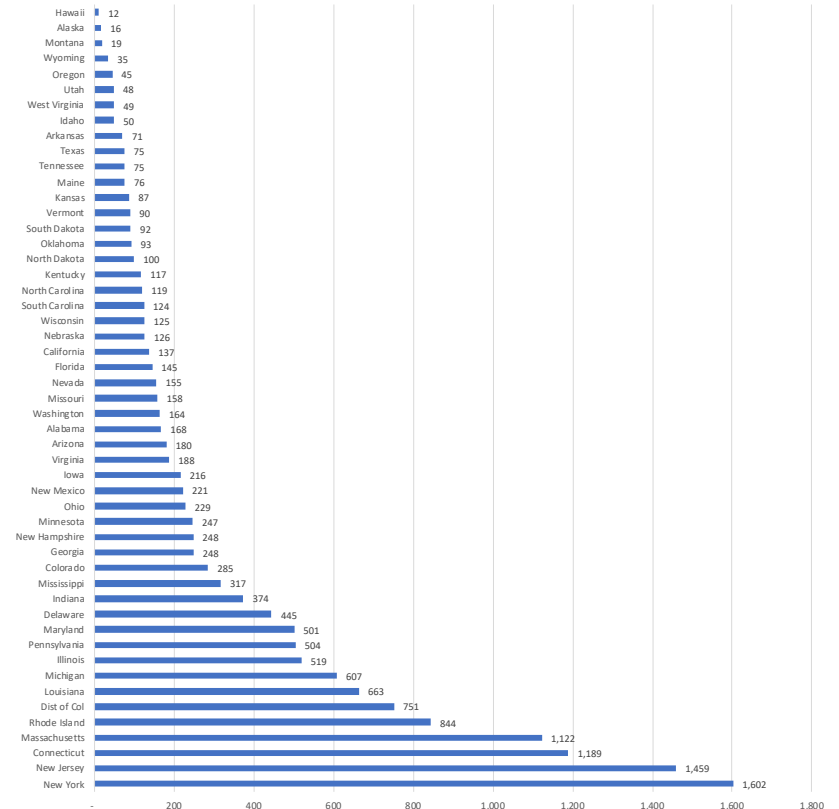
State-by-State Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

Total Cases Per 1 Million Population
By State
As of June 21



Deaths Per 1 Million Population
By State
As of June 21



Which States Are Performing Sufficient Tests?

"Strategic Guidance in an Era of Unprecedented Change"

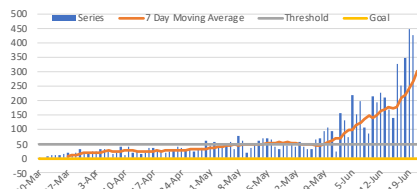
The [World Health Organization](#) suggested that the test-positive rate should be 10% or lower, for testing to be sufficient to assess the true prevalence of the virus. Several states failed to meet this guideline for the past week



Which States Are Still Experiencing Increasing New Infections?

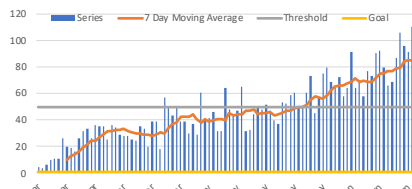
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New Infections Per 1M Population
Arizona



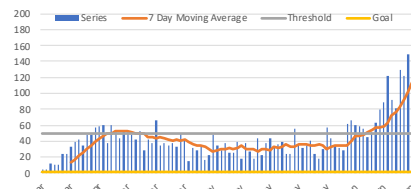
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New Infections Per 1M Population
California



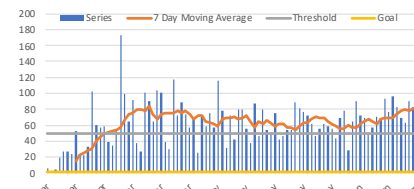
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New Infections Per 1M Population
Florida



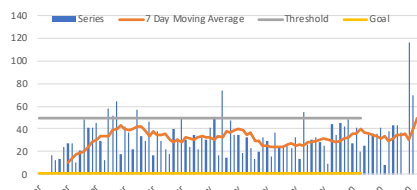
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New Infections Per 1M Population
Georgia



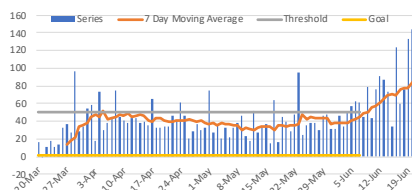
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New Infections Per 1M Population
Missouri



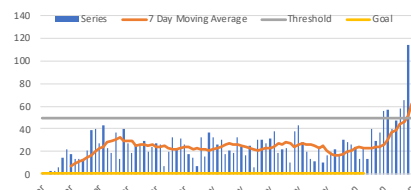
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New Infections Per 1M Population
Nevada



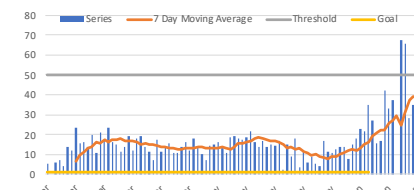
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New Infections Per 1M Population
Oklahoma



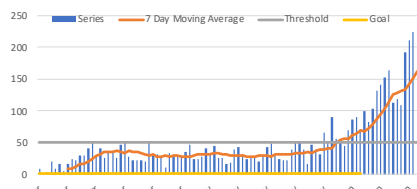
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New Infections Per 1M Population
Oregon



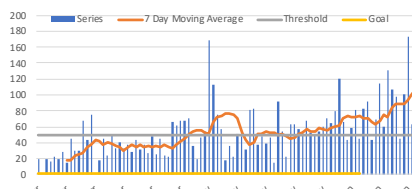
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New Infections Per 1M Population
South Carolina



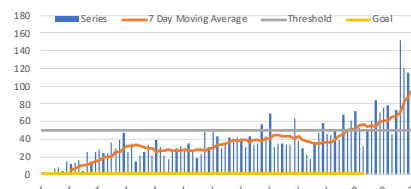
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New Infections Per 1M Population
Tennessee



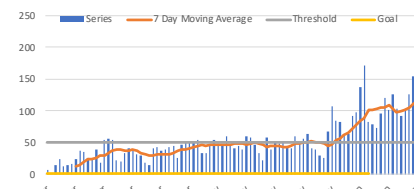
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New Infections Per 1M Population
Texas



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New Infections Per 1M Population
Utah

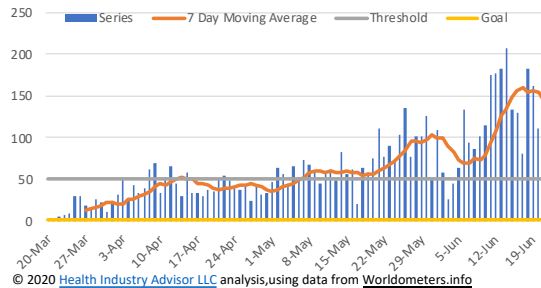


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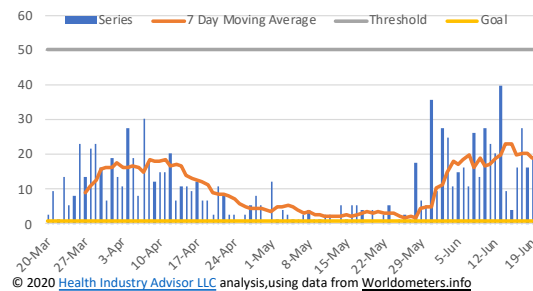
Which States Are Starting To Experience Declining New Infections?

"Strategic Guidance in an Era of Unprecedented Change"

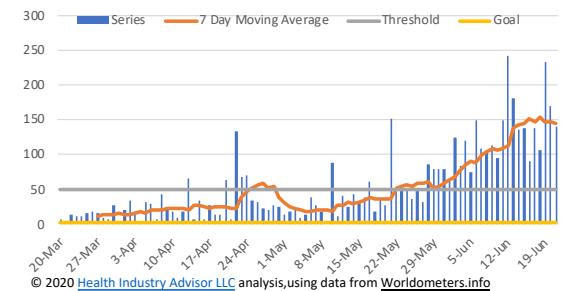
New Infections Per 1M Population
Alabama



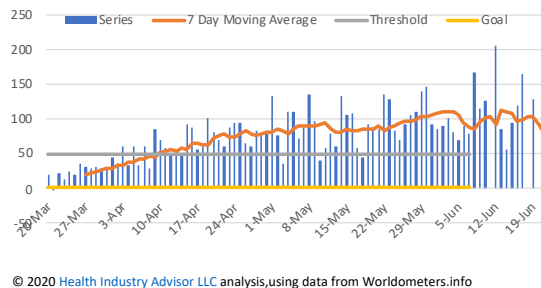
New Infections Per 1M Population
Alaska



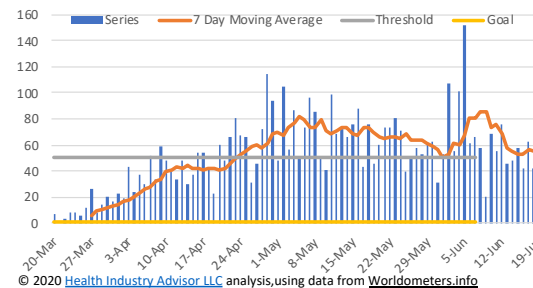
New Infections Per 1M Population
Arkansas



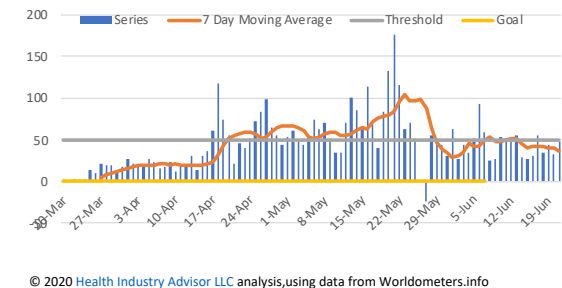
New Infections Per 1M Population
Mississippi



New Infections Per 1M Population
New Mexico



New Infections Per 1M Population
North Dakota



STATE-BY-STATE READINESS FOR RELAXING RESTRICTIONS

“Strategic Guidance in an Era of Unprecedented Change”

We recently modified the tests/capita metric in two ways: first, we changed to tests/capita past 2 weeks (v. cumulative); second, we adopted the Harvard based study of susceptible-infected-recovered model (SEIR) identification of a goal of 2.7% of population tested per week; and, a minimum of 1520 tests per 1 million population. This will serve as a more challenging standard.

- We recently introduced a scorecard to provide a snapshot of each state’s readiness for relaxing restrictions on businesses and individuals.
- To portray readiness we have incorporated the following measures into to the scorecard, (along with the rationale for the scoring within each measure):
 - Tests/Capita – last 14 days; indicates testing robustness; grading quintiles based on Harvard study using susceptible-infected-recovered model (SEIR) 2.7% of population tested per week, 1%, 0.7%, 0.35%, all others
 - Direction – whether test volume increased/stayed level, or decreased the past 2 weeks v. prior two weeks
 - Test-Positive Rate – indicates whether testing is identifying sufficient numbers of non-infected persons; grading based on comparison to best reported in the world (South Korea, Australia, New Zealand), next group of countries (Canada, Germany, Denmark), then, next 3 levels set to differentiate among states
 - Direction – whether test positive rate increased/stayed level, or past 2 weeks v. prior two weeks
 - New Infections / 1 Million – indicates how quickly the virus is spreading; grading based on: rate proposed by IHME for ending social distancing, top ten, top 20, top 25 among the countries we track, then all others
 - Direction – whether new infection per capita rate increased/stayed level, or past 2 weeks v. prior two weeks
 - Influenza-Like Illness – Using CDC-reported data, indicates whether the state’s visits for influenza the past week were above or below CDC baseline for the state’s region
 - Direction – whether the % visits for influenza the last 3 weeks increased or decreased the past 3 weeks v. the prior 3 weeks
 - Hospital Resources – using IHME projections, whether the state is pre- or post- peak projected hospital resource needs due to the virus; and the 5 of peak resources projected to be needed today. Grading based on current need at <45% of peak, 45-60%, 60-75%, 75-85%, and all others.
- On the following pages, we portray state-by-state readiness on various dates.
- **These scorecards are for informational purposes only. The measures and grading used are not based on any scientific standard and should not be considered a substitute for public health considerations or other clinical or economic judgement. States may elect to move faster or slower than the scorecard might otherwise indicate.**

Readiness For Relaxing Restrictions

"Strategic Guidance in an Era of Unprecedented Change"

Highlights:

- Progress has been made in several states, on both testing volumes and test-positive rates
 - Most states are still testing far below the minimum 152 daily tests per 1 million population cited in a recent [NY Times article](#); and the higher standard of 2.7% of the population tested weekly (386 daily per 1 million, as suggested by a recent [Kaiser Family Foundation article](#). Both articles referenced Harvard researchers as the source of these metrics
 - Test-positive rates in many states, however, are below or close to the 10% threshold suggested by Dr. Maria Van Kerkhove of the [World Health Organization](#), as indicative of sufficient testing to have reasonable visibility to true infection rates
- As we have progressed past the peak flu season in many states, that “constraint” on re-opening is diminishing
- With the relaxing of restrictions in many states, the [Institute for Health Metrics and Evaluation’s \(IHME\) projections](#) of these states’ hospital resources needs have increased significantly in the past week. Note: these metrics consider hospital resource needs, however, they do not consider capacity

June 21

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
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									

June 14

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
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									

Legend and sources provided on 2nd following page

June 21

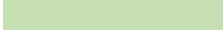
State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Co									
Florida									
Georgia									
Hawaii									
Idaho									
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New Mexico									
New York									
North Carolin									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolin									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

May 24

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Co									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
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Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampsh									
New Jersey									
New Mexico									
New York									
North Carolin									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolin									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

Legend and sources provided on following page

Legend:

Time period	Tests per Capita	Direction	Test-Positive Rate	Direction	New Daily Infection Rate	Direction	Baseline	Direction	Hospital Resources
	Average last 2 weeks	last 14 days v prior 2 weeks	last 7 days	last 14 days v prior 2 weeks	per 1M last 7 days	last 14 days v prior 2 weeks	CDC Baseline by region	last 14 days v prior 2 weeks	As of 4/26
	>3,850		<=2%		<10				<45% of Peak
	1520 - 3,850		2-10%		10-50				45-60% of Peak
	1,501 - 3,850		10-14%		50-100				60-75% of Peak
	501 - 1,500		14-18%		100-150				75-85% of peak
	<750		>18%		>150				>85% of Peak or Pre-Peak
		Up		Down		Down by 40%	Below Baseline	Down	
						Down by 10%		N/A	
		Down		Up		Down <10% or Up	Above Baseline	Up	

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Sources:

Influenza guidelines and data from Centers for Disease Control (<https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>), accessed April 30 - June 21, 2020

Test data from Covid Tracking Project (<https://covidtracking.com/>), accessed March 21-June 22, 2020

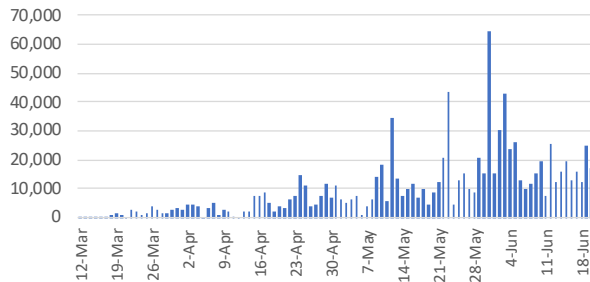
Hospital resource Need projections from Institute for Health Metrics and Evaluation (<https://www.ihme.washington.edu/>), accessed April 30-June 21, 2020

Infection rate data from [worldometer.info](https://www.worldometer.info/), accessed March 21-June 22, 2020

UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

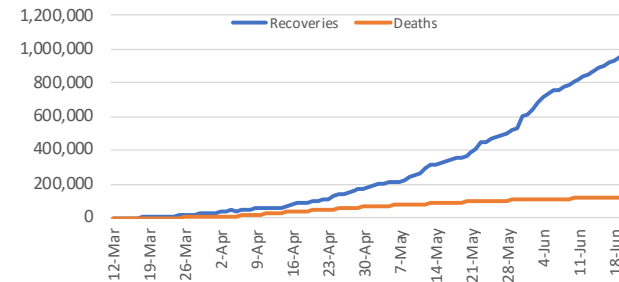
"Strategic Guidance in an Era of Unprecedented Change"

New Daily Recoveries
United States



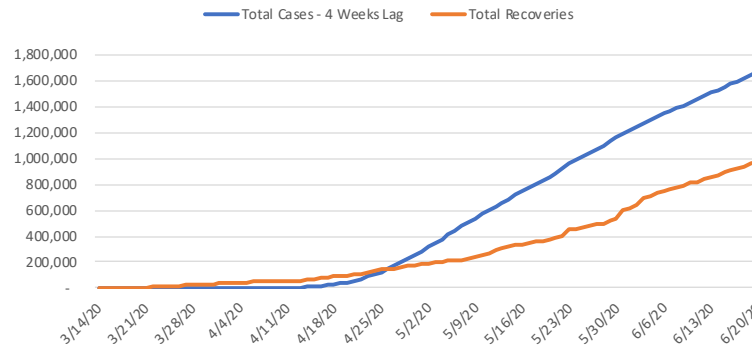
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Recoveries v. Deaths
United States



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Total Cases - 4-Week Lag v. Total Recoveries



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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 ~370-535k

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

State	Recoveries	Expected Recoveries	
		Low	High
Alabama	15,974	11,582	13,030
Alaska	475	326	367
Arizona	7,387	13,071	14,705
Arkansas	10,456	4,738	5,330
California	48,378	75,589	85,037
Colorado	4,870	19,339	21,757
Connecticut	9,091	32,374	36,421
Delaware	6,459	7,047	7,928
District Of Columbia	1,172	6,488	7,299
Florida	18,994	40,694	45,780
Georgia	4,948	34,322	38,612
Hawaii	651	514	579
Idaho	3,305	2,101	2,363
Illinois	103,806	88,243	99,274
Indiana	31,302	25,101	28,238
Iowa	16,084	13,802	15,527
Kansas	7,295	7,268	8,177
Kentucky	3,530	6,857	7,714
Louisiana	37,017	29,735	33,452
Maine	2,391	1,644	1,850
Maryland	4,773	37,050	41,682
Massachusetts	88,725	74,140	83,408
Michigan	49,290	43,743	49,211
Minnesota	28,663	16,458	18,516
Mississippi	15,323	10,602	11,927
Missouri	3,934	9,814	11,040
Montana	548	383	431
Nebraska	11,776	9,707	10,921
Nevada	9,314	6,216	6,993
New Hampshire	4,275	3,319	3,734
New Jersey	36,164	124,307	139,846
New Mexico	4,684	5,554	6,249
New York	87,131	296,954	334,074
North Carolina	29,219	18,691	21,028
North Dakota	2,910	1,934	2,176
Ohio	9,808	25,578	28,776
Oklahoma	7,531	4,830	5,433
Oregon	2,533	3,142	3,534
Pennsylvania	58,994	57,345	64,513
Rhode Island	1,515	11,252	12,659
South Carolina	10,790	8,077	9,086
South Dakota	5,335	3,650	4,107
Tennessee	23,067	16,116	18,131
Texas	68,499	44,933	50,549
Utah	9,659	6,714	7,553
Vermont	922	765	860
Virginia	7,646	28,995	32,620
Washington	9,303	16,476	18,536
West Virginia	1,676	1,417	1,594
Wisconsin	19,310	12,222	13,749
Wyoming	909	670	754
United States	980,355	1,349,149	1,517,792

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

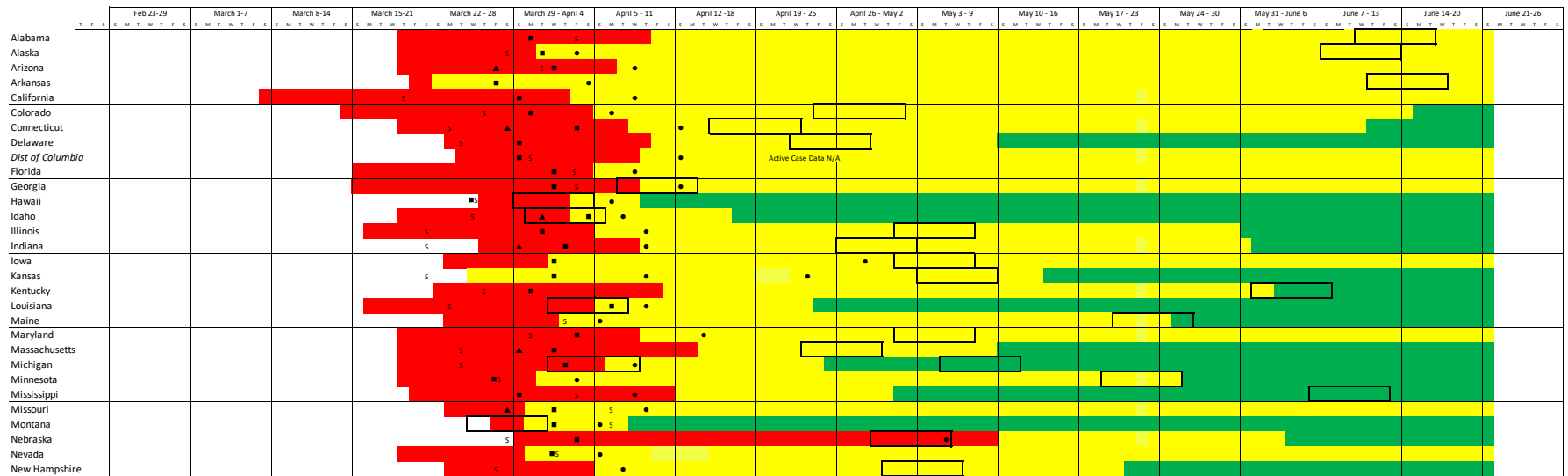
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The graphic on the following two pages illustrates when the state first recorded 100 total cases (start of the "contagion" phase); when growth stopped following an exponential pattern (start of the "containment" phase); and, when peak total cases were 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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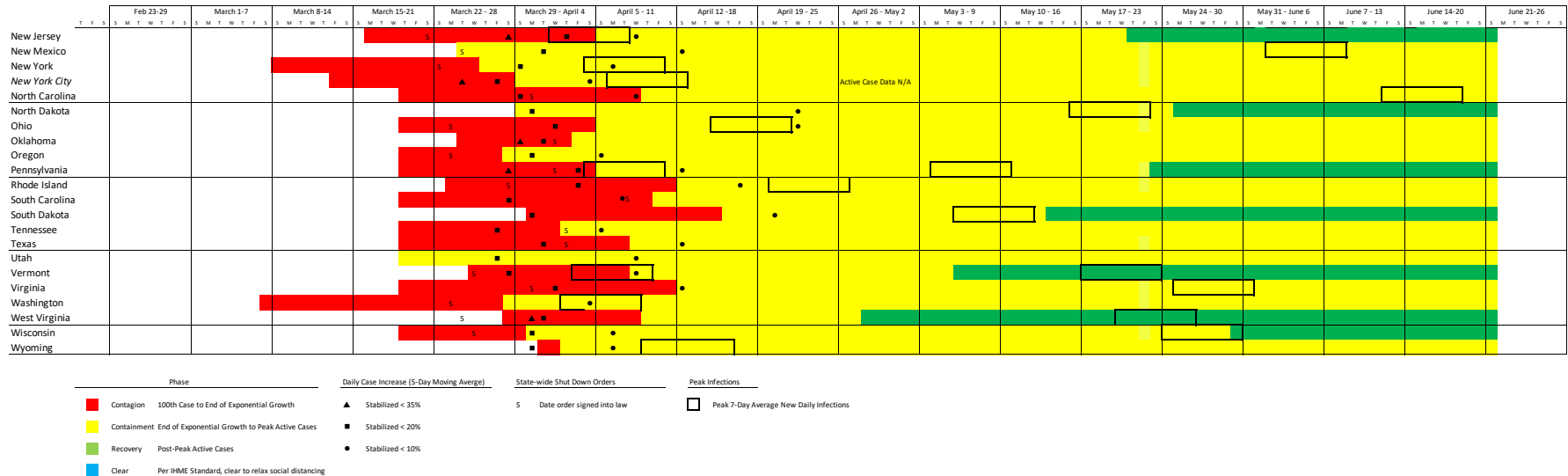
Note: Many states are in yellow because they fail to keep up-to-date in reporting recovered patients

Legend on following page

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State-by-State Virus Progression – 2 of 2

“Strategic Guidance in an Era of Unprecedented Change”



Note: Many states are in yellow because they fail to keep up-to-date in reporting recovered patients

As of June 21

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	30,021	(22)	6,122.8	(20)	839	(25)	2.8%	(32)	171.1	(24)	2.2%	(15)	1,376	(25)	144.2	(4)
Alaska	755	(50)	1,032.1	(49)	12	(51)	1.6%	(46)	16.4	(50)	2.2%	(14)	2,848	(5)	17.4	(48)
Arizona	52,390	(14)	7,197.7	(13)	1,339	(19)	2.6%	(38)	184.0	(23)	6.0%	(1)	1,603	(16)	301.1	(1)
Arkansas	15,561	(32)	5,156.4	(25)	225	(39)	1.4%	(48)	74.6	(43)	3.4%	(6)	2,142	(9)	144.2	(3)
California	178,567	(2)	4,519.3	(31)	5,518	(7)	3.1%	(30)	139.7	(29)	2.3%	(13)	1,870	(12)	89.3	(13)
Colorado	30,539	(21)	5,303.1	(24)	1,647	(16)	5.4%	(12)	286.0	(15)	0.7%	(38)	837	(45)	33.0	(39)
Connecticut	45,755	(16)	12,833.5	(6)	4,260	(8)	9.3%	(1)	1,194.9	(3)	0.2%	(51)	1,856	(13)	28.9	(43)
Delaware	10,775	(36)	11,065.3	(7)	435	(34)	4.0%	(23)	446.7	(12)	0.7%	(39)	1,935	(10)	66.3	(18)
District Of Columbia	10,020	(39)	14,197.7	(5)	533	(29)	5.3%	(14)	755.2	(6)	0.4%	(46)	3,035	(4)	55.7	(23)
Florida	97,291	(7)	4,529.9	(30)	3,164	(9)	3.3%	(29)	147.3	(28)	4.0%	(4)	1,266	(32)	134.4	(6)
Georgia	64,701	(10)	6,093.9	(21)	2,643	(13)	4.1%	(22)	248.9	(18)	1.8%	(19)	990	(42)	94.3	(11)
Hawaii	814	(49)	574.9	(51)	17	(50)	2.1%	(43)	12.0	(51)	1.9%	(17)	761	(48)	8.1	(50)
Idaho	4,006	(43)	2,235.4	(43)	89	(44)	2.2%	(41)	49.7	(45)	2.5%	(12)	796	(47)	48.4	(31)
Illinois	136,762	(4)	10,792.6	(8)	6,647	(4)	4.9%	(15)	524.5	(9)	0.5%	(43)	1,916	(11)	47.7	(32)
Indiana	42,423	(18)	6,301.5	(19)	2,540	(14)	6.0%	(10)	377.3	(13)	0.8%	(37)	1,348	(26)	53.4	(25)
Iowa	25,962	(24)	8,228.7	(12)	685	(27)	2.6%	(37)	217.1	(21)	1.4%	(22)	1,472	(22)	80.6	(14)
Kansas	12,226	(35)	4,196.6	(35)	259	(37)	2.1%	(42)	88.9	(39)	1.2%	(29)	907	(44)	50.9	(27)
Kentucky	13,750	(33)	3,077.7	(40)	526	(31)	3.8%	(24)	117.7	(34)	1.4%	(23)	726	(49)	37.9	(37)
Louisiana	50,065	(15)	10,769.5	(9)	3,110	(10)	6.2%	(7)	669.0	(7)	1.0%	(32)	3,118	(2)	106.4	(9)
Maine	2,957	(45)	2,199.8	(44)	102	(42)	3.4%	(28)	75.9	(42)	1.0%	(33)	1,183	(38)	19.2	(46)
Maryland	64,306	(11)	10,636.7	(10)	3,066	(11)	4.8%	(17)	507.1	(10)	0.6%	(41)	1,269	(31)	62.6	(20)
Massachusetts	107,061	(6)	15,405.6	(4)	7,858	(3)	7.3%	(6)	1,130.7	(4)	0.2%	(48)	1,246	(33)	31.7	(41)
Michigan	67,711	(9)	6,780.0	(17)	6,090	(6)	9.0%	(2)	609.8	(8)	0.4%	(45)	1,344	(27)	24.4	(44)
Minnesota	32,920	(20)	5,837.3	(22)	1,412	(18)	4.3%	(21)	250.4	(16)	1.3%	(27)	2,195	(8)	58.1	(22)
Mississippi	21,022	(27)	7,063.5	(15)	943	(23)	4.5%	(18)	316.9	(14)	0.8%	(36)	1,184	(37)	80.4	(15)

"Strategic Guidance in an Era of Unprecedented Change"

As of June 21

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	18,355	(28)	2,990.7	(41)	979	(22)	5.3%	(13)	159.5	(26)	1.6%	(21)	923	(43)	49.7	(28)
Montana	717	(51)	670.9	(50)	20	(49)	2.8%	(33)	18.7	(49)	3.2%	(8)	1,530	(20)	14.7	(49)
Nebraska	17,810	(29)	9,207.0	(11)	244	(38)	1.4%	(49)	126.1	(32)	0.9%	(35)	1,339	(28)	79.3	(16)
Nevada	13,205	(34)	4,287.1	(33)	487	(32)	3.7%	(25)	158.1	(27)	2.5%	(11)	1,441	(24)	92.1	(12)
New Hampshire	5,544	(42)	4,077.3	(36)	339	(36)	6.1%	(8)	249.3	(17)	0.7%	(40)	994	(41)	23.0	(45)
New Jersey	172,077	(3)	19,373.3	(2)	12,997	(2)	7.6%	(4)	1,463.3	(2)	0.2%	(49)	2,370	(6)	41.0	(36)
New Mexico	10,565	(37)	5,038.6	(28)	469	(33)	4.4%	(19)	223.7	(20)	1.2%	(28)	2,346	(7)	55.1	(24)
New York	411,264	(1)	21,140.8	(1)	31,215	(1)	7.6%	(3)	1,604.6	(1)	0.3%	(47)	3,383	(1)	48.7	(30)
North Carolina	52,934	(13)	5,047.1	(27)	1,272	(20)	2.4%	(39)	121.3	(33)	2.9%	(9)	1,616	(15)	119.4	(7)
North Dakota	3,288	(44)	4,314.6	(32)	77	(46)	2.3%	(40)	101.0	(35)	1.0%	(31)	1,742	(14)	36.2	(38)
Ohio	44,881	(17)	3,839.6	(38)	2,704	(12)	6.0%	(9)	231.3	(19)	1.3%	(26)	1,185	(36)	42.9	(34)
Oklahoma	10,515	(38)	2,657.3	(42)	369	(35)	3.5%	(26)	93.3	(36)	4.0%	(3)	1,142	(39)	70.9	(17)
Oregon	6,937	(40)	1,644.7	(47)	190	(40)	2.7%	(35)	45.0	(47)	2.6%	(10)	1,234	(35)	41.2	(35)
Pennsylvania	85,983	(8)	6,716.4	(18)	6,482	(5)	7.5%	(5)	506.3	(11)	0.4%	(44)	831	(46)	30.0	(42)
Rhode Island	16,337	(31)	15,421.6	(3)	894	(24)	5.5%	(11)	843.9	(5)	0.2%	(50)	3,111	(3)	52.6	(26)
South Carolina	24,693	(26)	4,796.0	(29)	653	(28)	2.6%	(36)	126.8	(31)	4.3%	(2)	1,507	(21)	161.8	(2)
South Dakota	6,297	(41)	7,118.0	(14)	81	(45)	1.3%	(50)	91.6	(37)	1.1%	(30)	1,245	(34)	63.3	(19)
Tennessee	35,102	(19)	5,137.0	(26)	526	(31)	1.5%	(47)	77.0	(40)	2.0%	(16)	1,472	(23)	102.5	(10)
Texas	114,533	(5)	3,950.0	(37)	2,202	(15)	1.9%	(44)	75.9	(41)	3.6%	(5)	1,134	(40)	115.8	(8)
Utah	17,462	(30)	5,446.7	(23)	158	(41)	0.9%	(51)	49.3	(46)	3.2%	(7)	1,278	(30)	137.6	(5)
Vermont	1,159	(48)	1,857.4	(46)	56	(47)	4.8%	(16)	89.7	(38)	0.5%	(42)	1,571	(18)	5.0	(51)
Virginia	57,994	(12)	6,794.4	(16)	1,611	(17)	2.8%	(34)	188.7	(22)	0.9%	(34)	1,283	(29)	59.8	(21)
Washington	29,097	(23)	3,821.1	(39)	1,269	(21)	4.4%	(20)	166.6	(25)	1.4%	(24)	299	(50)	47.4	(33)
West Virginia	2,543	(46)	1,422.9	(48)	89	(44)	3.5%	(27)	49.8	(44)	1.7%	(20)	1,550	(19)	18.1	(47)
Wisconsin	24,819	(25)	4,262.7	(34)	744	(26)	3.0%	(31)	127.8	(30)	1.4%	(25)	1,596	(17)	49.6	(29)
Wyoming	1,197	(47)	2,068.2	(45)	20	(49)	1.7%	(45)	34.6	(48)	1.9%	(18)	1,408	(51)	31.8	(40)
United States	2,356,657		7,119.9		122,247		5.2%		369.4		1.3%		1,521		84.0	

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COUNTRY-BY-COUNTRY INFORMATION

Countries Included

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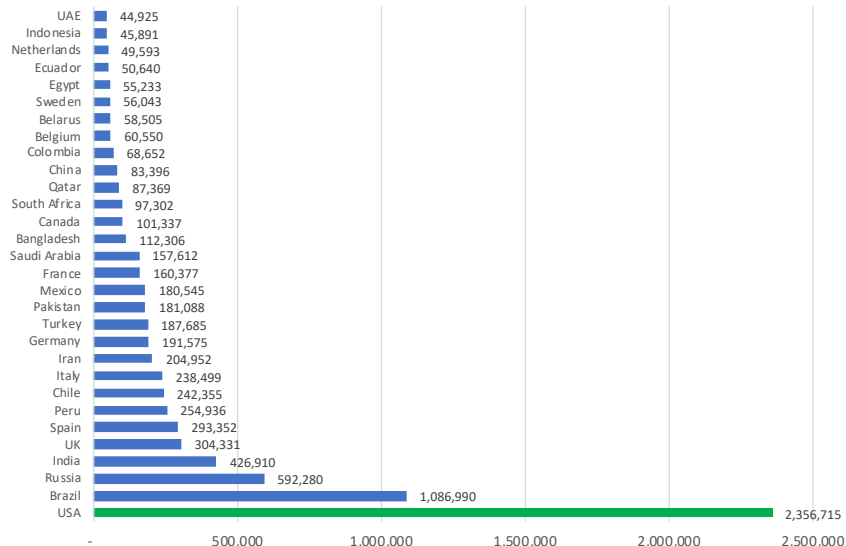
- In Mid-March, we began tracking the twenty countries with the most coronavirus cases; in mid-April, we expanded it to the thirty countries with the most cases
- We now have visibility to all 213 countries and 2 conveyances that have at least 1 coronavirus case
- Case and death information is sourced 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 Cases & Cases Per Capita

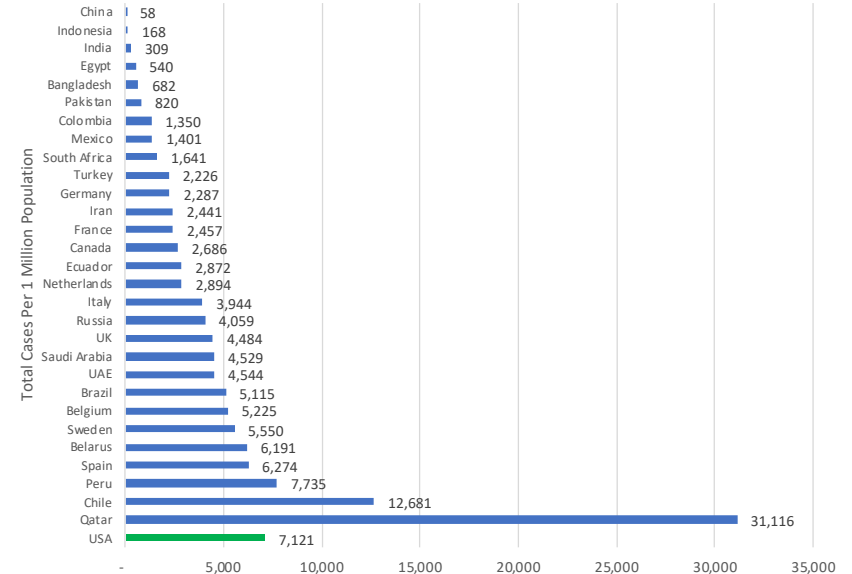
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Countries Ranked 1-30 In Total Cases

Total Cases By Country
June 21

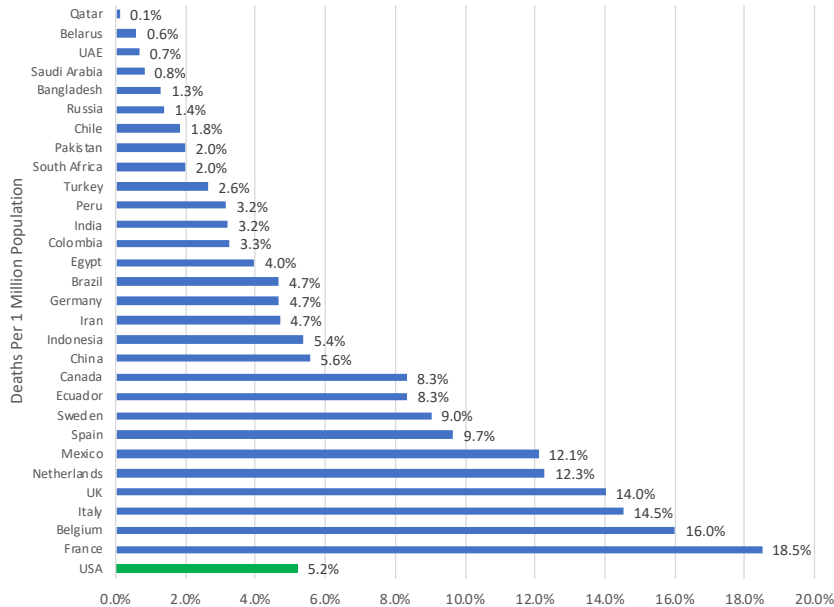


Cases Per Capita By Country
June 21

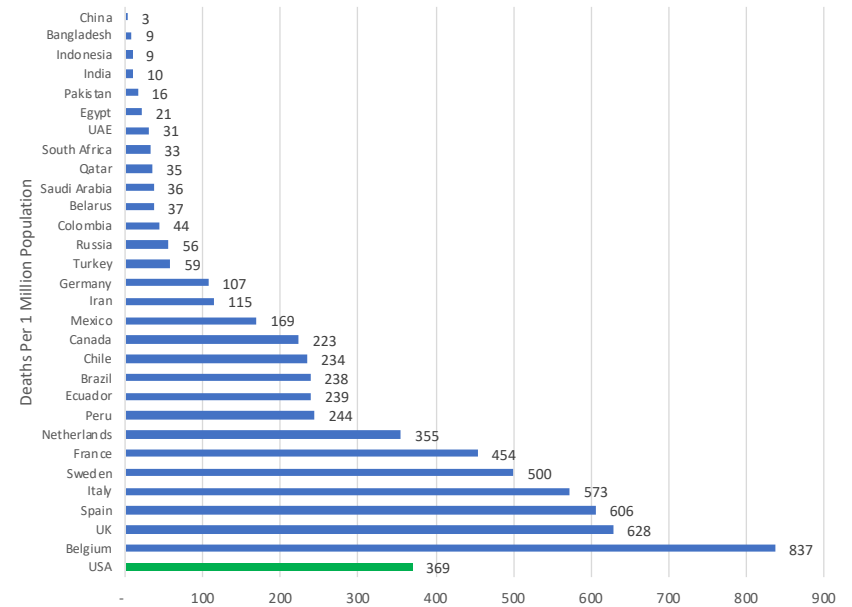


Countries Ranked 1-30 In Total Cases

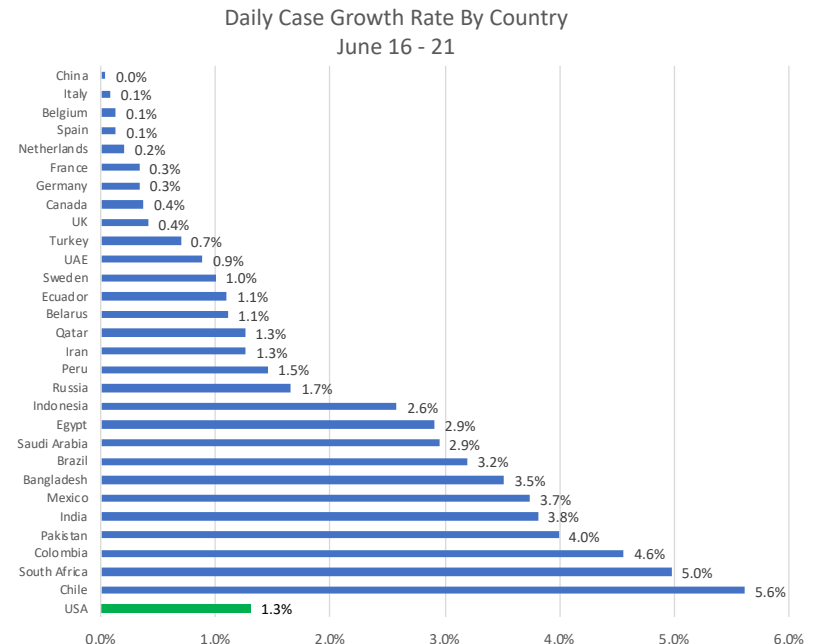
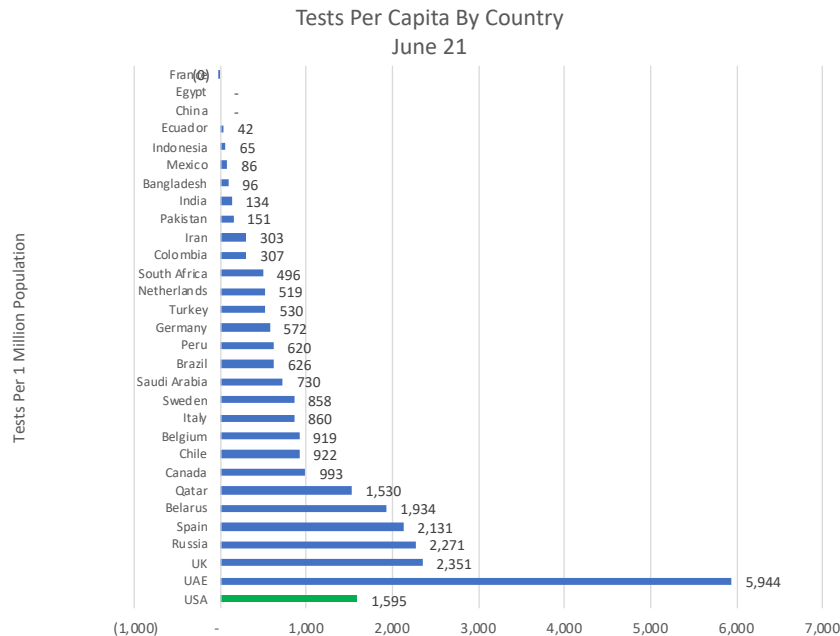
Death Rate By Country
June 21



Deaths Per Capita By Country
June 21



Countries Ranked 1-30 In Total Cases

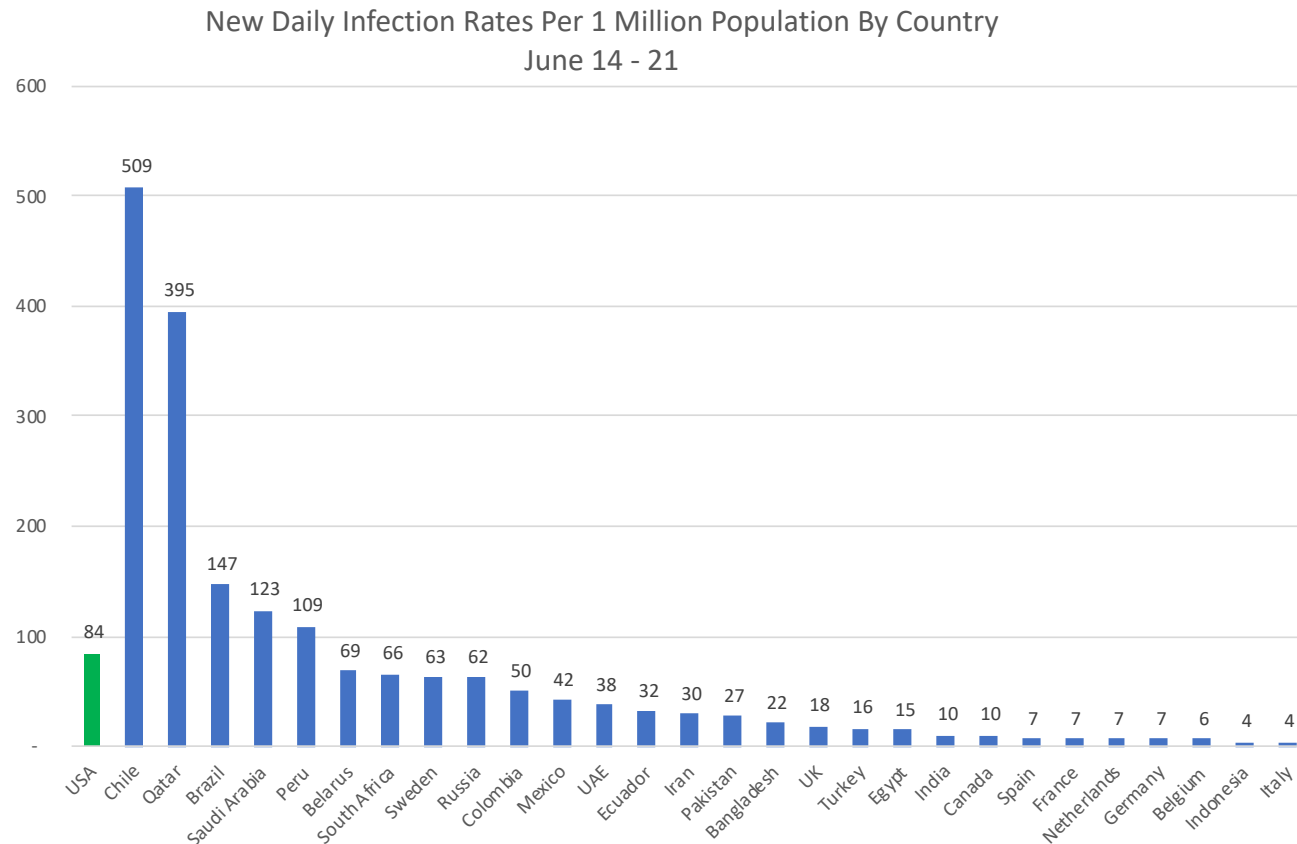


Daily Tests Per Capita For Past Week

Daily Case Growth – 5-Day Moving Average

Country-by-Country New Daily Infection Rates

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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 84.6% of all cases worldwide.

		Total Cases			
Rank	Country	21-Jun	Rank	Country	6-May
1	USA	2,356,715	1	USA	1,263,092
2	Brazil	1,086,990	2	Spain	253,682
3	Russia	592,280	3	Italy	214,457
4	India	426,910	4	UK	201,101
5	UK	304,331	5	France	174,191
6	Spain	293,352	6	Germany	168,162
7	Peru	254,936	7	Russia	165,929
8	Chile	242,355	8	Turkey	131,744
9	Italy	238,499	9	Brazil	126,611
10	Iran	204,952	10	Iran	101,650
11	Germany	191,575	11	China	82,883
12	Turkey	187,685	12	Canada	63,496
13	Pakistan	181,088	13	Peru	54,817
14	Mexico	180,545	14	India	52,987
15	France	160,377	15	Belgium	50,781
16	Saudi Arabia	157,612	16	Netherlands	41,319
18	Canada	101,337	17	Saudi Arabia	31,938
21	China	83,396	18	Switzerland	30,060
23	Belgium	60,550	19	Ecuador	29,420
25	Sweden	56,043	20	Portugal	26,182
27	Ecuador	50,640	21	Mexico	26,025
28	Netherlands	49,593	22	Sweden	23,918
32	Singapore	42,313	23	Pakistan	23,214
34	Portugal	39,133	24	Chile	23,048
37	Switzerland	31,292	25	Ireland	22,248
44	Ireland	25,379	26	Singapore	20,198
48	Israel	20,778	29	Israel	16,310
51	Japan	17,864	31	Austria	15,684
53	Austria	17,341	32	Japan	15,253
60	S. Korea	12,438	38	S. Korea	10,806
	Others	1,392,571		Others	356,176
	World	9,060,870			3,817,382

Rank	Country	27-Apr
1	USA	1,010,356
2	Spain	229,422
3	Italy	199,414
4	France	128,339
5	Germany	158,758
6	UK	157,149
7	Turkey	112,261
8	Iran	91,472
9	Russia	87,147
10	China	82,830
11	Brazil	66,501
12	Canada	48,500
13	Belgium	46,687
14	Netherlands	38,245
15	India	29,451
16	Switzerland	29,164
17	Peru	28,669
18	Portugal	24,070
19	Ecuador	23,240
20	Ireland	19,648
21	Sweden	18,926
22	Saudi Arabia	18,811
23	Israel	15,555
24	Austria	15,274
25	Mexico	14,677
26	Singapore	14,423
27	Pakistan	13,915
28	Chile	13,813
29	Japan	13,614
35	South Korea	10,738
	Others	301,446
	World	3,062,515

Country-by-Country Comparative Statistics

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Top 30 Countries By Total Cases
As of June 21

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 (7-Day M.A.)	Rank8
USA	2,356,715	(1)	7,121	(4)	122,248	(1)	5.2%	(13)	369.4	(7)	1.3%	(14)	1,595	(6)	84.0	(6)
Brazil	1,086,990	(2)	5,115	(9)	50,659	(2)	4.7%	(16)	238.4	(11)	3.2%	(8)	626	(14)	147.3	(3)
Russia	592,280	(3)	4,059	(13)	8,206	(13)	1.4%	(25)	56.2	(18)	1.7%	(12)	2,271	(3)	62.0	(10)
India	426,910	(4)	309	(28)	13,703	(8)	3.2%	(19)	9.9	(27)	3.8%	(5)	134	(23)	9.7	(21)
UK	304,331	(5)	4,484	(12)	42,632	(3)	14.0%	(4)	628.1	(2)	0.4%	(22)	2,351	(2)	17.8	(18)
Spain	293,352	(6)	6,274	(5)	28,323	(6)	9.7%	(7)	605.8	(3)	0.1%	(27)	2,131	(4)	7.2	(23)
Peru	254,936	(7)	7,735	(3)	8,045	(14)	3.2%	(20)	244.1	(9)	1.5%	(13)	620	(15)	109.2	(5)
Chile	242,355	(8)	12,681	(2)	4,479	(19)	1.8%	(24)	234.4	(12)	5.6%	(1)	922	(9)	508.7	(1)
Italy	238,499	(9)	3,944	(14)	34,634	(4)	14.5%	(3)	572.8	(4)	0.1%	(29)	860	(11)	3.6	(29)
Iran	204,952	(10)	2,441	(19)	9,623	(10)	4.7%	(14)	114.6	(15)	1.3%	(15)	303	(21)	29.8	(15)
Germany	191,575	(11)	2,287	(20)	8,962	(11)	4.7%	(15)	107.0	(16)	0.3%	(24)	572	(16)	6.7	(26)
Turkey	187,685	(12)	2,226	(21)	4,950	(17)	2.6%	(21)	58.7	(17)	0.7%	(21)	530	(17)	16.0	(19)
Pakistan	181,088	(13)	820	(25)	3,590	(21)	2.0%	(23)	16.3	(26)	4.0%	(4)	151	(22)	27.1	(16)
Mexico	180,545	(14)	1,401	(23)	21,825	(7)	12.1%	(6)	169.3	(14)	3.7%	(6)	86	(25)	42.0	(12)
France	160,377	(15)	2,457	(18)	29,640	(5)	18.5%	(1)	454.1	(6)	0.3%	(25)	0	(30)	6.9	(24)
Saudi Arabia	157,612	(16)	4,529	(11)	1,267	(27)	0.8%	(27)	36.4	(21)	2.9%	(9)	730	(13)	123.5	(4)
Bangladesh	112,306	(17)	682	(26)	1,464	(26)	1.3%	(26)	8.9	(29)	3.5%	(7)	96	(24)	21.5	(17)
Canada	101,337	(18)	2,686	(17)	8,430	(12)	8.3%	(10)	223.4	(13)	0.4%	(23)	993	(8)	9.7	(22)
South Africa	97,302	(19)	1,641	(22)	1,930	(25)	2.0%	(22)	32.6	(23)	5.0%	(2)	496	(19)	65.7	(8)
Qatar	87,369	(20)	31,116	(1)	98	(30)	0.1%	(30)	34.9	(22)	1.3%	(16)	1,530	(7)	395.2	(2)
China	83,396	(21)	58	(30)	4,634	(18)	5.6%	(11)	3.2	(30)	0.0%	(30)	0	(28)	0.0	(30)
Colombia	68,652	(22)	1,350	(24)	2,237	(23)	3.3%	(18)	44.0	(19)	4.6%	(3)	307	(20)	49.7	(11)
Belgium	60,550	(23)	5,225	(8)	9,696	(9)	16.0%	(2)	836.7	(1)	0.1%	(28)	919	(10)	6.4	(27)
Belarus	58,505	(24)	6,191	(6)	346	(28)	0.6%	(29)	36.6	(20)	1.1%	(17)	1,934	(5)	68.5	(7)
Sweden	56,043	(25)	5,550	(7)	5,053	(16)	9.0%	(8)	500.4	(5)	1.0%	(19)	858	(12)	62.7	(9)
Egypt	55,233	(26)	540	(27)	2,193	(24)	4.0%	(17)	21.4	(25)	2.9%	(10)	0	(28)	14.9	(20)
Ecuador	50,640	(27)	2,872	(16)	4,223	(20)	8.3%	(9)	239.5	(10)	1.1%	(18)	42	(27)	31.5	(14)
Netherlands	49,593	(28)	2,894	(15)	6,090	(15)	12.3%	(5)	355.4	(8)	0.2%	(26)	519	(18)	6.8	(25)
Indonesia	45,891	(29)	168	(29)	2,465	(22)	5.4%	(12)	9.0	(28)	2.6%	(11)	65	(26)	4.0	(28)
UAE	44,925	(30)	4,544	(10)	302	(29)	0.7%	(28)	30.5	(24)	0.9%	(20)	5,944	(1)	38.0	(13)

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.

