







## COVID-19 Report

Issue # 112

Wednesday, July 22, 2020



## Today's Highlights

- The United States surpassed 4 million total cases yesterday, adding 67,000 new cases on the day. California, Texas and Florida accounted for 44% of these new cases
- Total cases worldwide surpassed 15 million yesterday. United States, Brazil and India accounted for nearly two-thirds of the new cases reported yesterday
- Test-positive rates are on a 9-day downward trend for U.S. overall, following a 2x increase from early June to early-mid July
- Daily case growth, on a % basis, has followed a similar pattern: increasing from early June to early July but, now declining
- These improvements are now translating to an early and modest slowdown in new cases: these are now 5 days removed from their peak level
- The United States continues to report the highest rate of new infections per capita (trailing 7-day moving average) among the 30 countries with the most total cases. Still, this rate seems to have stabilized over the past six days, following a 5-week period of accelerated growth

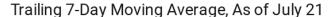
- New daily infections per capita continue to be highest in southern and western states
  - Florida has the highest rate over the past 7 days, followed in order by Louisiana, Mississippi and Arizona
  - Observing the maps of infection rates by county in these 4 states plus California and Texas (the two states with the most new cases) provides some curious perspectives:
    - In California and Texas, both states with large geographies, there
      are significant differences in infection rates across the states. In
      both cases, infection rates are concentrated in counties in the
      south, with relatively low rates in northern counties
    - In Florida and Louisiana, infection rates are high in most counties statewide
    - In Mississippi, infection rates are relatively high statewide, however, the highest concentration is to the north and west of Jackson
- Hospitalizations remain high in California, Florida and Texas, and are still increasing day-over-day in Florida; they are declining in Arizona. The rate of patients on ventilators has stabilized; the rate of patients in the ICU has increased slightly
- Deaths have increased on a 7-day moving average basis yet, remain significantly lower than during March and April. The overall death rate has declined to 3.6%. Recoveries now outnumber deaths by 13:1

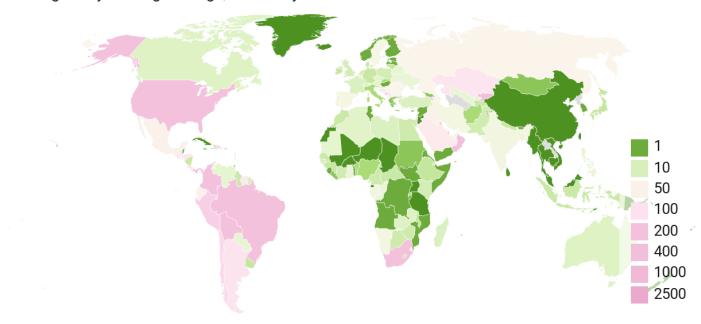


#### Worldwide

# Infection rates are highest in the United States, South Africa and South America

### **New Infections / 1 Million Population**





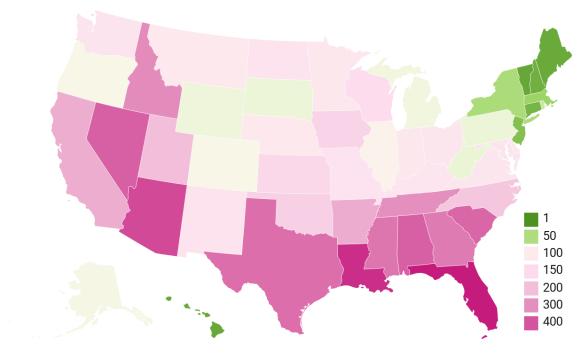
Health Industry Advisor LLC analysis



# The new daily infection rate remains high in the South and West; lowest in the Northeast

#### **New Infections Per 1 Million Population**

Trailing 7-Day Moving Average, As of July 21



Health Industry Advisor LLC analysis

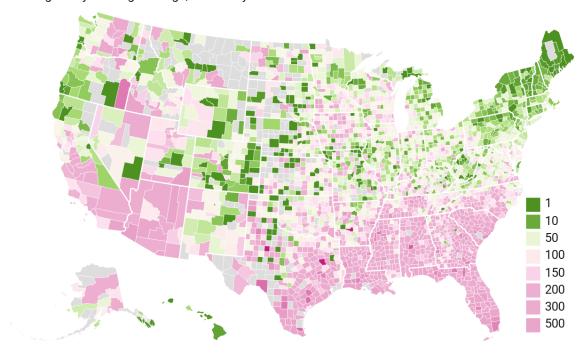


County-By-County

# New Infections rates are highest in the South and West

#### **New Daily Infections Per Million Population**

Trailing 7-Day Moving Average, As of July 20



Health Industry Advisor LLC analysis

Map: Health Industry Advisor LLC • Source: New York Times • Created with Datawrapper

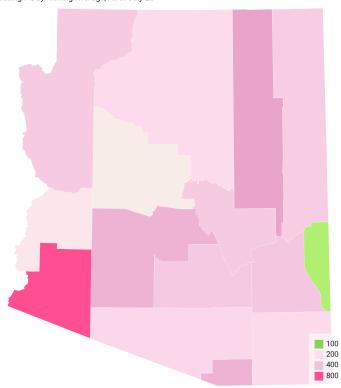


## Georgia & California

## New Daily Infections / 1 Million Population By County

#### New Daily Infections / 1 Million Population

Trailing 7-Day Moving Average, As of July 20

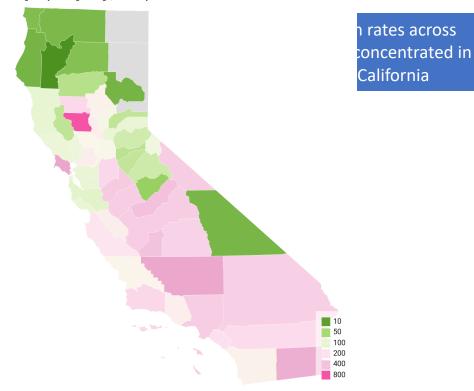


Health Industry Advisor LLC analysis

Map: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

#### New Daily Infections / 1 Million Population

Trailing 7-Day Moving average, As of July 20



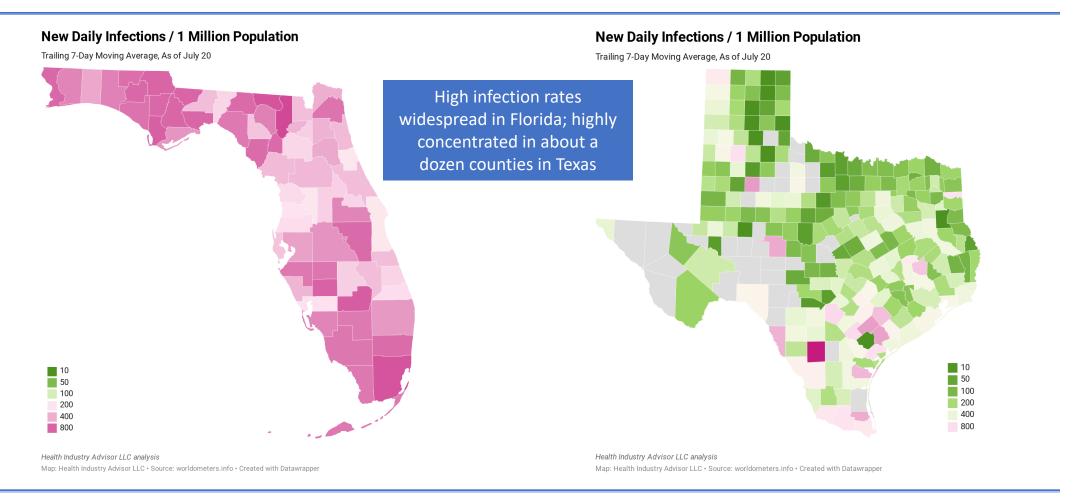
Health Industry Advisor LLC analysis

Map: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper



#### Florida & Texas

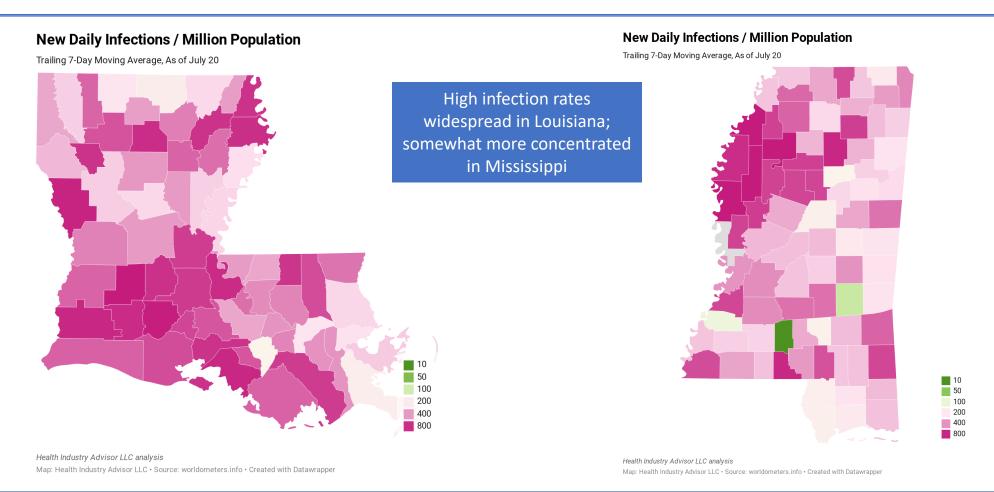
## New Daily Infections / 1 Million Population By County





### Louisiana & Mississippi

## New Daily Infections / 1 Million Population By County

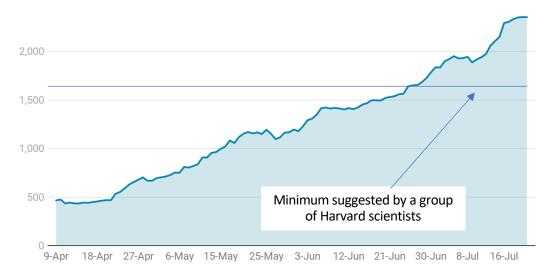




# Testing continues to ramp-up; test-positive rate is stabilizing or slightly declining

#### **Daily Tests Per 1 Million - United States**

Trailing 7-Day Moving Average, As of July 21

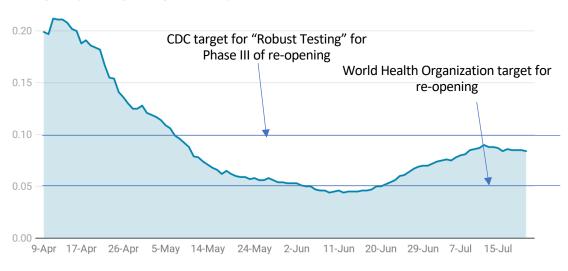


#### Health Industry Advisor LLC analysis

Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

#### **Test-Positive Rate - United States**

Trailing 7-Day Moving Average, As of July 21



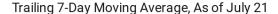
#### Health Industry Advisor LLC analysis

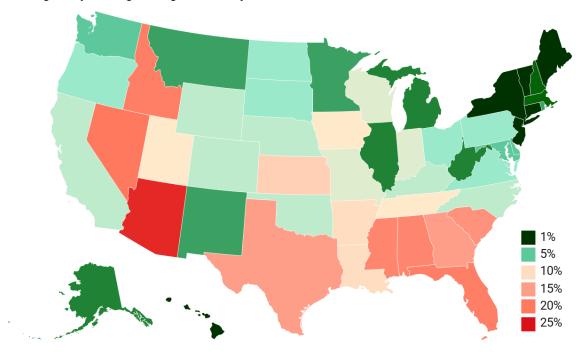
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper



Test-Positive Rates continue to be high in several Southern states; reasonably strong across the Northeast, Midwest and Pacific Northwest

#### **Test-Positive Rate**





Health Industry Advisor LLC analysis

Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper



## After rising throughout June and early July, case growth leveled and now has begun to decline again

### Daily Case Growth %

As of July 21



Health Industry Advisor LLC analysis

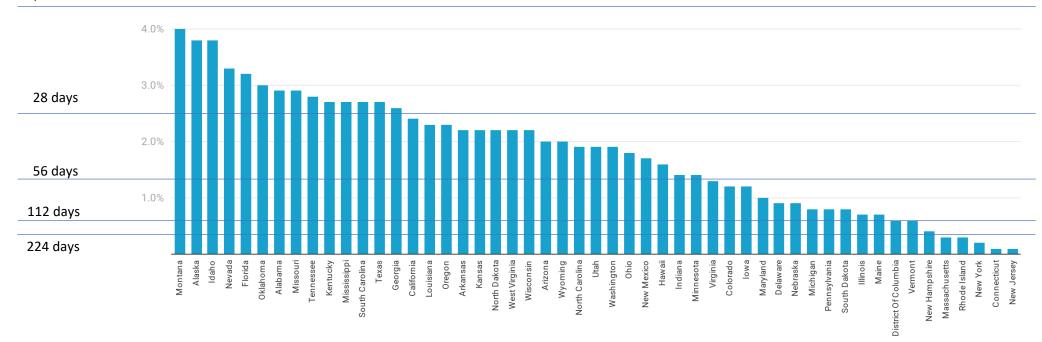


## At current rates, cases are doubling every 18 days in Montana; every 755 days in New Jersey

#### **Growth Rate in Total Cases**

14 days to double

Trailing 5-Day Moving Average, As of July 21



Health Industry Advisor LLC analysis



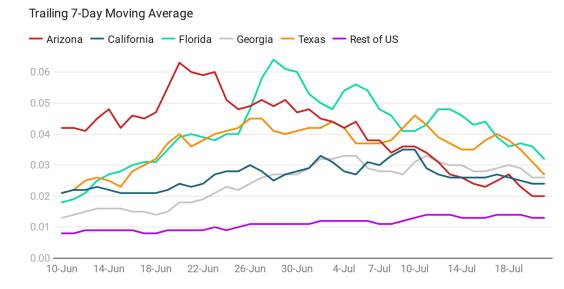
### Arizona, California, Florida, Georgia and Texas

# Sustained declines in the rate of case growth in hard-hit states - a leading indicator - is encouraging

#### Comment:

- The high transmission rate of this virus results in long periods of exponential case growth
- One key to observing this is in the rate of daily case growth on a % of total cases
- A decreasing rate often occurs prior to observing a decline in new daily cases – thus, it can serve as a "leading indicator"
- "Containment" cannot occur until after this rate of daily case growth begins to slow

#### **Daily Change % in Total Cases**



Health Industry Advisor LLC analysis

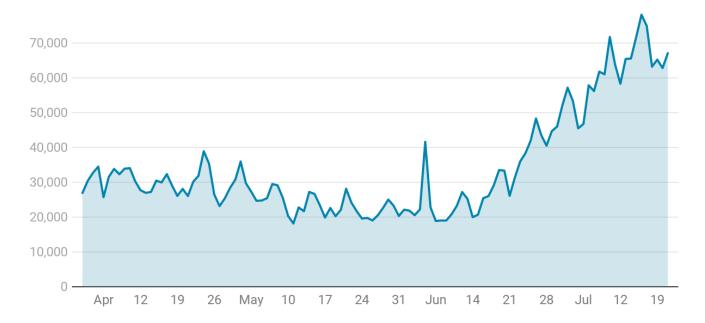
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper



## New cases have fallen off a peak of 5 days ago . . .will this trend be sustained?

### **New Daily Cases - United States**

As of July 21



Health Industry Advisor LLC analysis



# The new daily infection rate seems to be stabilizing, after 5 weeks of accelerated growth

### **New Infections Per 1 Million Population - United States**

Trailing 7-Day Moving Average, As of July 20



Health Industry Advisor LLC analysis

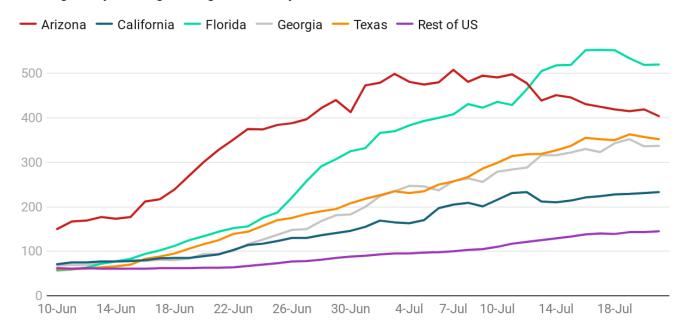


### Arizona, California, Florida, Georgia and Texas

# Progress in Arizona and Florida; early signs of progress in Texas and Georgia?

### **New Daily Infections / 1 Million Population**

Trailing 7-Day Moving Average, As of July 21



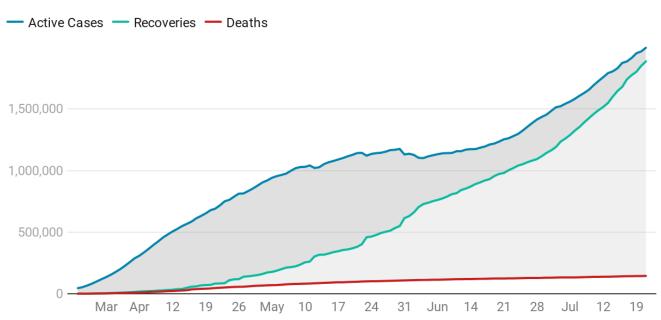
Health Industry Advisor LLC analysis



## Recoveries nearly equaling active cases; Deaths represent a far smaller share of outcomes

#### **Active Cases v. Recoveries & Deaths**

As of July 21



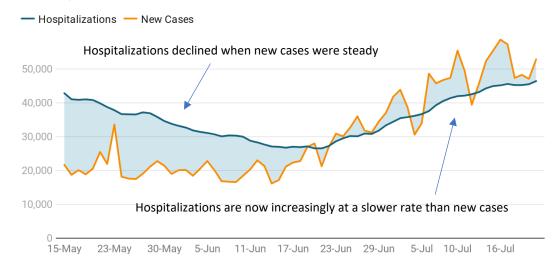
Health Industry Advisor LLC analysis



# Hospitalizations not keeping pace with new cases; case severity appears to be stabilizing or slightly increasing

#### **Hospitalizations v. New Cases**





#### Health Industry Advisor LLC analysis

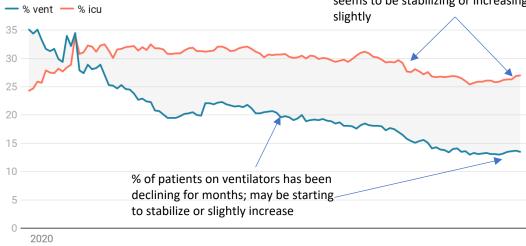
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Data excludes: Alabama, Alaska, Florida, Hawaii, Idaho, Kansas, Nebraska and Tennessee – data either not reported or not consistently reported

#### **Severity of Hospitalized Patients**

% of patients on ventilators and in the ICU, As of July 21

% of patients in the ICU declined for a period following the case surge; now seems to be stabilizing or increasing slightly



#### Health Industry Advisor LLC analysis

 $\textbf{Chart: Health Industry Advisor LLC} \cdot \textbf{Source: The Atlantic's Covid Tracking Project} \cdot \textbf{Created with Datawrapper}$ 

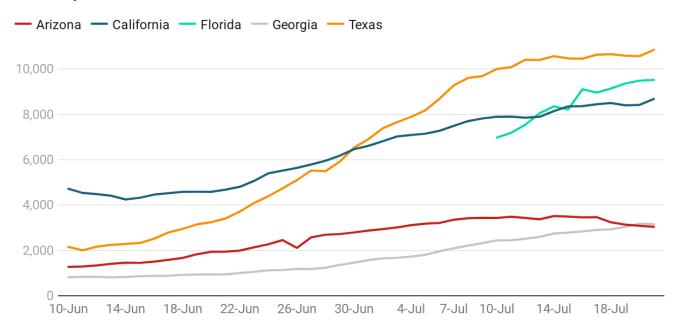


### Arizona, California, Florida, Georgia and Texas

## Hospitalizations: Still rising in Florida; Declining in Arizona

### **Hospitalized COVID-19 Patients**

As of July 21



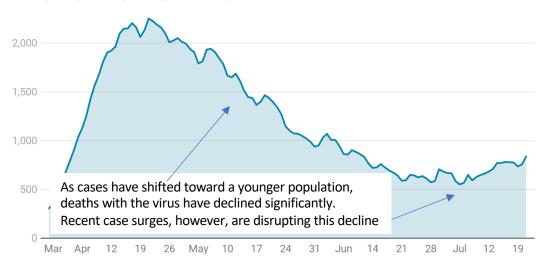
Health Industry Advisor LLC analysis,



# Deaths turning back up again?; Recoveries outnumber deaths by 13:1

#### **Deaths Recorded With Coronavirus in the U.S.**

Trailing 7-Day Moving Average, As of July 21

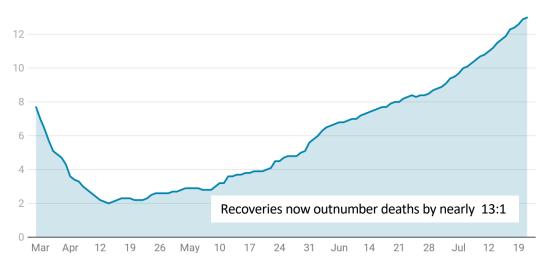


Health Industry Advisor LLC analysis

Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

#### **Recoveries: Deaths - United States**

As of July 21



Health Industry Advisor LLC analysis

 $\textbf{Chart: Health Industry Advisor LLC \cdot Source: worldometers.info \cdot Created with Datawrapper}$ 



Top 30 Countries By Total Cases As of July 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	4,028,569	(1)	12,167	(3)	144,953	(1)	3.6%	(17)	437.8	(7)	1.7%	(10)	2,536	(2)	208.6	(1)
Brazil	2,166,532	(2)	10,189	(5)	81,597	(2)	3.8%	(15)	383.7	(9)	1.5%	(11)	227	(21)	158.1	(3)
India	1,194,085	(3)	865	(27)	28,770	(7)	2.4%	(22)	20.8	(26)	3.5%	(2)	237	(20)	26.5	(18)
Russia	783,328	(4)	5,368	(10)	12,580	(11)	1.6%	(25)	86.2	(18)	0.8%	(17)	1,912	(3)	42.5	(14)
South Africa	381,798	(5)	6,433	(9)	5,368	(19)	1.4%	(26)	90.4	(17)	3.3%	(4)	731	(11)	201.0	(2)
Peru	362,087	(6)	10,974	(4)	13,579	(10)	3.8%	(16)	411.5	(8)	1.2%	(14)	627	(13)	122.2	(6)
Mexico	349,396	(7)	2,708	(20)	39,485	(4)	11.3%	(4)	306.1	(10)	1.9%	(9)	97	(25)	49.8	(13)
Chile	334,683	(8)	17,499	(2)	8,677	(14)	2.6%	(20)	453.7	(6)	0.7%	(19)	824	(10)	113.5	(7)
Spain	313,274	(9)	6,700	(8)	28,424	(8)	9.1%	(5)	607.9	(2)	0.5%	(21)	899	(7)	29.3	(16)
UK	295,817	(10)	4,356	(11)	45,422	(3)	15.4%	(2)	668.9	(1)	0.2%	(27)	2,737	(1)	9.3	(24)
Iran	278,827	(11)	3,317	(16)	14,634	(9)	5.2%	(10)	174.1	(13)	0.9%	(16)	303	(18)	28.3	(17)
Pakistan	266,096	(12)	1,203	(25)	5,639	(17)	2.1%	(23)	25.5	(25)	0.6%	(20)	98	(24)	8.1	(25)
Saudi Arabia	255,825	(13)	7,342	(7)	2,557	(26)	1.0%	(28)	73.4	(19)	1.0%	(15)	1,834	(4)	73.9	(10)
Italy	244,752	(14)	4,048	(14)	35,073	(5)	14.3%	(3)	580.1	(3)	0.1%	(29)	711	(12)	3.3	(29)
Turkey	221,500	(15)	2,625	(21)	5,526	(18)	2.5%	(21)	65.5	(20)	0.4%	(23)	497	(16)	11.0	(22)
Colombia	211,038	(16)	4,145	(13)	7,166	(15)	3.4%	(18)	140.8	(14)	4.0%	(1)	508	(15)	143.5	(5)
Bangladesh	210,510	(17)	1,278	(24)	2,709	(25)	1.3%	(27)	16.4	(28)	1.4%	(12)	76	(27)	17.7	(19)
Germany	203,890	(18)	2,433	(22)	9,180	(12)	4.5%	(13)	109.5	(15)	0.2%	(28)	866	(8)	5.3	(28)
France	177,338	(19)	2,716	(19)	30,165	(6)	17.0%	(1)	462.1	(5)	0.4%	(24)	865	(9)	10.9	(23)
Argentina	136,118	(20)	3,010	(17)	2,490	(27)	1.8%	(24)	55.1	(22)	3.5%	(3)	252	(19)	92.3	(8)
Canada	111,697	(21)	2,958	(18)	8,862	(13)	7.9%	(6)	234.7	(12)	0.4%	(22)	1,187	(6)	12.1	(21)
Qatar	107,430	(22)	38,261	(1)	160	(30)	0.1%	(30)	57.0	(21)	0.4%	(25)	1,553	(5)	147.4	(4)
Iraq	97,159	(23)	2,413	(23)	3,950	(24)	4.1%	(14)	98.1	(16)	2.4%	(6)	395	(17)	54.6	(11)
Indonesia	89,869	(24)	328	(29)	4,320	(23)	4.8%	(12)	15.8	(29)	1.9%	(8)	84	(26)	5.9	(27)
Egypt	89,078	(25)	870	(26)	4,399	(22)	4.9%	(11)	42.9	(23)	0.8%	(18)	-	(28)	7.2	(26)
China	83,693	(26)	58	(30)	4,634	(21)	5.5%	(9)	3.2	(30)	0.0%	(30)	-	(28)	0.0	(30)
Sweden	78,166	(27)	7,737	(6)	5,646	(16)	7.2%	(7)	558.9	(4)	0.3%	(26)	(1)	(30)	30.6	(15)
Ecuador	76,217	(28)	4,317	(12)	5,366	(20)	7.0%	(8)	303.9	(11)	1.3%	(13)	169	(23)	53.8	(12)
Kazakhstan	73,468	(29)	3,910	(15)	585	(29)	0.8%	(29)	31.1	(24)	2.4%	(7)	544	(14)	89.1	(9)
Philippines	70,764	(30)	645	(28)	1,837	(28)	2.6%	(19)	16.8	(27)	3.0%	(5)	225	(22)	17.2	(20)



## Statistical Summary (page 1 of 2)

#### As of July 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	70,358	(19)	14,349	(10)	1,303	(23)	1.9%	(32)	266	(22)	2.9%	(8)	2,077	(26)	381.8	(5)
Alaska	2,041	(49)	2,790	(47)	18	(51)	0.9%	(49)	25	(50)	3.8%	(2)	5,693	(1)	90.2	(35)
Arizona	148,683	(8)	20,427	(4)	2,918	(15)	2.0%	(28)	401	(15)	2.0%	(24)	1,682	(36)	404.0	(3)
Arkansas	34,655	(31)	11,483	(22)	374	(37)	1.1%	(47)	124	(38)	2.2%	(21)	2,335	(16)	233.0	(13)
California	410,176	(2)	10,381	(24)	7,889	(4)	1.9%	(31)	200	(28)	2.4%	(15)	3,116	(7)	233.5	(12)
Colorado	41,059	(26)	7,130	(36)	1,763	(18)	4.3%	(12)	306	(17)	1.2%	(35)	1,150	(48)	83.7	(36)
Connecticut	48,096	(22)	13,490	(14)	4,406	(9)	9.2%	(1)	1,236	(3)	0.1%	(50)	2,848	(9)	22.7	(47)
Delaware	13,746	(40)	14,116	(12)	525	(34)	3.8%	(16)	539	(12)	0.9%	(37)	2,457	(15)	114.0	(27)
District Of Columbia	11,427	(41)	16,191	(8)	580	(33)	5.1%	(9)	822	(6)	0.6%	(44)	4,412	(3)	97.4	(33)
Florida	369,834	(3)	17,219	(5)	5,207	(8)	1.4%	(42)	242	(24)	3.2%	(5)	2,757	(12)	520.2	(1)
Georgia	148,988	(7)	14,032	(13)	3,254	(13)	2.2%	(26)	306	(16)	2.6%	(14)	2,210	(22)	336.7	(9)
Hawaii	1,418	(50)	1,002	(51)	24	(50)	1.7%	(37)	17	(51)	1.6%	(30)	1,081	(49)	15.5	(50)
Idaho	15,822	(38)	8,829	(28)	126	(42)	0.8%	(50)	70	(45)	3.8%	(3)	1,657	(39)	327.2	(10)
Illinois	164,878	(6)	13,011	(16)	7,517	(5)	4.6%	(11)	593	(9)	0.7%	(42)	3,015	(8)	92.9	(34)
Indiana	57,916	(20)	8,603	(29)	2,846	(16)	4.9%	(10)	423	(14)	1.4%	(31)	1,409	(43)	111.0	(29)
Iowa	39,563	(27)	12,539	(17)	803	(29)	2.0%	(27)	255	(23)	1.2%	(34)	1,903	(30)	167.7	(17)
Kansas	23,570	(34)	8,090	(34)	315	(38)	1.3%	(44)	108	(41)	2.2%	(20)	1,489	(42)	163.2	(18)
Kentucky	24,060	(33)	5,385	(42)	674	(31)	2.8%	(24)	151	(33)	2.7%	(12)	1,699	(35)	122.7	(24)
Louisiana	96,590	(12)	20,777	(2)	3,611	(11)	3.7%	(17)	777	(7)	2.3%	(17)	4,502	(2)	446.8	(2)
Maine	3,723	(46)	2,770	(48)	118	(44)	3.2%	(21)	88	(43)	0.7%	(43)	1,782	(33)	16.7	(49)
Maryland	79,545	(15)	13,157	(15)	3,402	(12)	4.3%	(13)	563	(10)	1.0%	(36)	2,323	(17)	124.9	(23)
Massachusetts	114,033	(9)	16,409	(7)	8,450	(3)	7.4%	(5)	1,216	(4)	0.3%	(48)	1,664	(38)	39.1	(45)
Michigan	83,059	(13)	8,317	(33)	6,382	(7)	7.7%	(3)	639	(8)	0.8%	(41)	2,798	(10)	74.3	(38)
Minnesota	47,457	(23)	8,415	(30)	1,588	(20)	3.3%	(19)	282	(19)	1.4%	(32)	2,514	(14)	108.6	(31)
Mississippi	45,524	(24)	15,296	(9)	1,389	(22)	3.1%	(22)	467	(13)	2.7%	(11)	2,159	(24)	383.1	(4)



## Statistical Summary (page 2 of 2)

#### As of July 21

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Missouri	37,149	(29)	6,053	(41)	1,180	(25)	3.2%	(20)	192	(30)	2.9%	(7)	1,751	(34)	150.5	(20)
Montana	2,712	(47)	2,537	(49)	40	(48)	1.5%	(40)	37	(49)	4.0%	(1)	2,621	(13)	101.6	(32)
Nebraska	23,190	(35)	11,988	(21)	310	(39)	1.3%	(43)	160	(32)	0.9%	(38)	1,640	(40)	108.8	(30)
Nevada	37,528	(28)	12,184	(19)	676	(30)	1.8%	(34)	219	(27)	3.3%	(4)	1,792	(32)	366.8	(6)
New Hampshire	6,262	(43)	4,605	(43)	400	(36)	6.4%	(7)	294	(18)	0.4%	(46)	924	(51)	18.0	(48)
New Jersey	183,372	(5)	20,645	(3)	15,809	(2)	8.6%	(2)	1,780	(1)	0.1%	(51)	1,556	(41)	25.7	(46)
New Mexico	17,517	(37)	8,354	(32)	588	(32)	3.4%	(18)	280	(20)	1.7%	(29)	3,552	(4)	136.5	(21)
New York	435,753	(1)	22,400	(1)	32,602	(1)	7.5%	(4)	1,676	(2)	0.2%	(49)	3,276	(6)	47.5	(44)
North Carolina	102,920	(11)	9,813	(25)	1,699	(19)	1.7%	(39)	162	(31)	1.9%	(25)	2,781	(11)	180.8	(16)
North Dakota	5,207	(44)	6,833	(38)	94	(46)	1.8%	(33)	123	(39)	2.2%	(19)	2,298	(18)	133.8	(22)
Ohio	77,269	(17)	6,610	(39)	3,223	(14)	4.2%	(14)	276	(21)	1.8%	(28)	1,910	(29)	112.6	(28)
Oklahoma	27,147	(32)	6,861	(37)	461	(35)	1.7%	(36)	117	(40)	3.0%	(6)	2,029	(28)	195.3	(15)
Oregon	15,139	(39)	3,589	(45)	269	(40)	1.8%	(35)	64	(46)	2.3%	(16)	1,348	(45)	79.1	(37)
Pennsylvania	107,460	(10)	8,394	(31)	7,106	(6)	6.6%	(6)	555	(11)	0.8%	(40)	1,211	(47)	68.1	(41)
Rhode Island	17,986	(36)	16,978	(6)	996	(26)	5.5%	(8)	940	(5)	0.3%	(47)	1,390	(44)	53.7	(43)
South Carolina	73,337	(18)	14,244	(11)	1,221	(24)	1.7%	(38)	237	(26)	2.7%	(10)	2,253	(20)	359.3	(7)
South Dakota	8,019	(42)	9,065	(27)	118	(44)	1.5%	(41)	133	(36)	0.8%	(39)	1,240	(46)	72.2	(39)
Tennessee	81,944	(14)	11,992	(20)	871	(27)	1.1%	(48)	127	(37)	2.8%	(9)	3,478	(5)	316.9	(11)
Texas	357,127	(4)	12,316	(18)	4,299	(10)	1.2%	(45)	148	(34)	2.7%	(13)	2,192	(23)	351.6	(8)
Utah	35,012	(30)	10,921	(23)	251	(41)	0.7%	(51)	78	(44)	1.9%	(26)	2,269	(19)	202.0	(14)
Vermont	1,366	(51)	2,189	(50)	56	(47)	4.1%	(15)	90	(42)	0.6%	(45)	1,677	(37)	14.0	(51)
Virginia	79,371	(16)	9,299	(26)	2,048	(17)	2.6%	(25)	240	(25)	1.3%	(33)	1,828	(31)	116.0	(26)
Washington	50,003	(21)	6,566	(40)	1,474	(21)	2.9%	(23)	194	(29)	1.9%	(27)	2,215	(21)	120.6	(25)
West Virginia	5,199	(45)	2,909	(46)	101	(45)	1.9%	(30)	57	(47)	2.2%	(18)	2,103	(25)	63.3	(42)
Wisconsin	44,135	(25)	7,580	(35)	859	(28)	1.9%	(29)	148	(35)	2.2%	(22)	2,057	(27)	152.8	(19)
Wyoming	2,238	(48)	3,867	(44)	25	(49)	1.1%	(46)	43	(48)	2.0%	(23)	1,021	(50)	70.8	(40)
United States	4,028,569		12,171		144,953		3.6%		438		1.7%		2,353		208.6	



### **Data Sources**

The following data sources are accessed on a daily or weekly basis:

- The Atlantic's Covid Tracking Project: <a href="https://covidtracking.com">https://covidtracking.com</a>
- Worldometers.info: https://www.worldometers.info/coronavirus/
- Centers for Disease Control, National, Regional, and State Level Outpatient Illness and Viral Surveillance <a href="https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html">https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html</a>
- Centers for Disease Control, COVID-19 Laboratory-Confirmed Hospitalizations <a href="https://gis.cdc.gov/grasp/COVIDNet/COVID19">https://gis.cdc.gov/grasp/COVIDNet/COVID19</a> 5.html
- Centers for Disease Control, COVID Data Tracker <a href="https://www.cdc.gov/covid-data-tracker/index.html#mobility">https://www.cdc.gov/covid-data-tracker/index.html#mobility</a>
- Institute for Health Metrics and Evaluation, COVID-19 estimate downloads <a href="http://www.healthdata.org/covid/data-downloads">http://www.healthdata.org/covid/data-downloads</a>
- New York Times, Covid-19 data <a href="https://github.com/nytimes/covid-19-data">https://github.com/nytimes/covid-19-data</a>
- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University <a href="https://github.com/CSSEGISandData/COVID-19">https://github.com/CSSEGISandData/COVID-19</a>