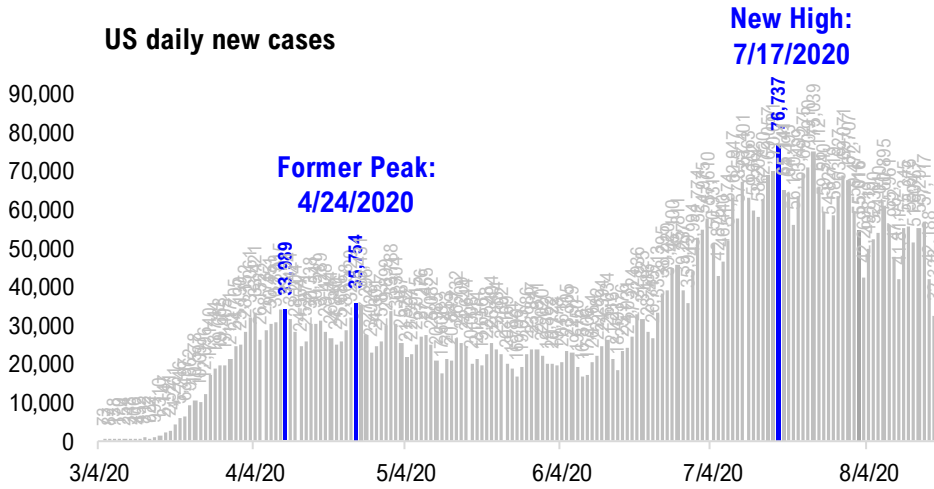


FSInsight Daily COVID-19 Chartbook

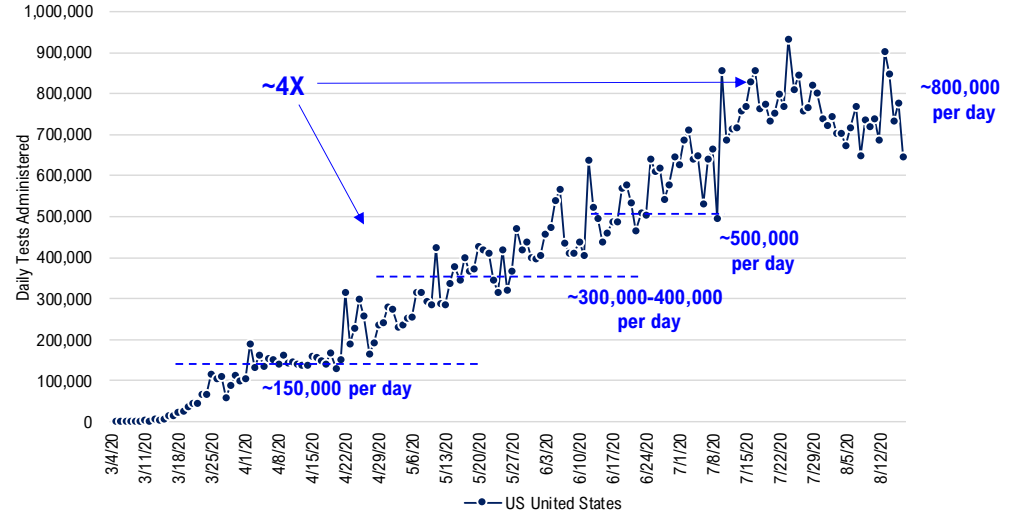


#1: USA COVID-19 Situation at a Glance...

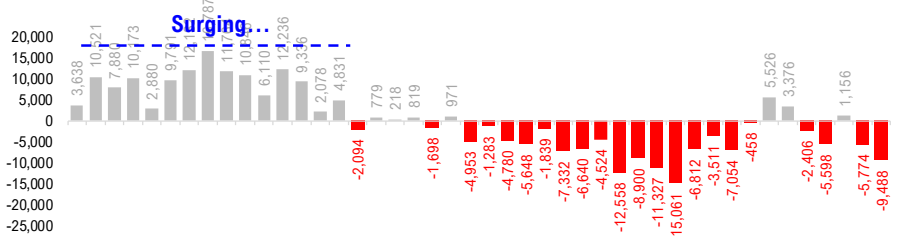
US daily new cases



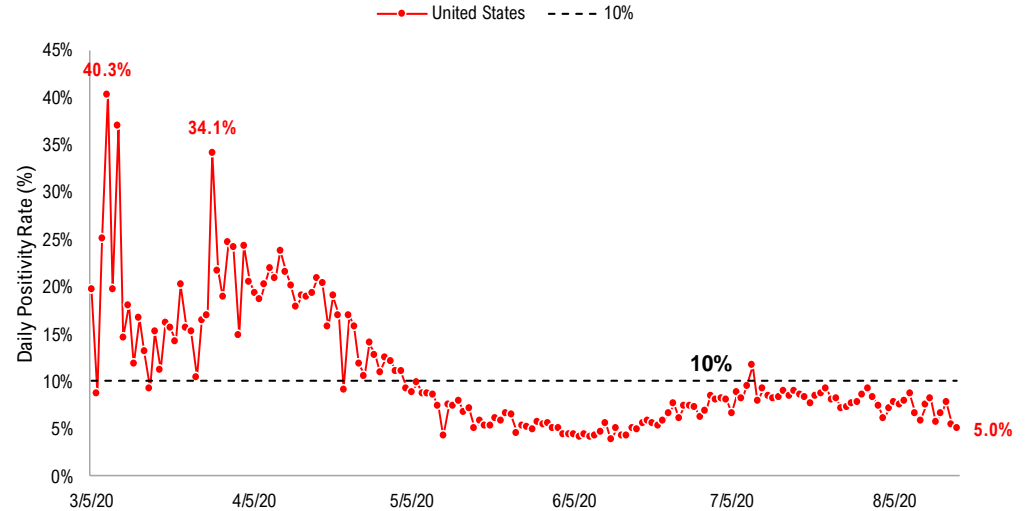
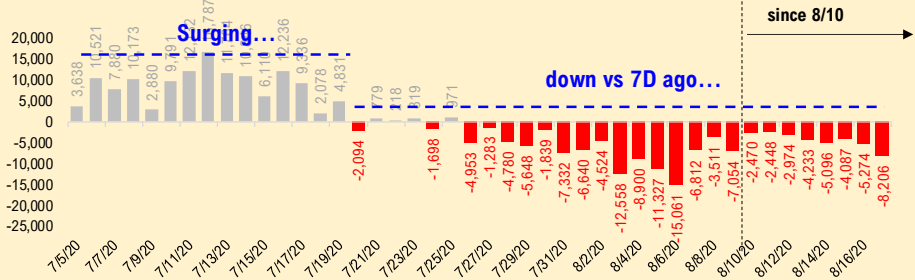
USA total COVID-19 tests administered



US daily new cases rolling 7D delta



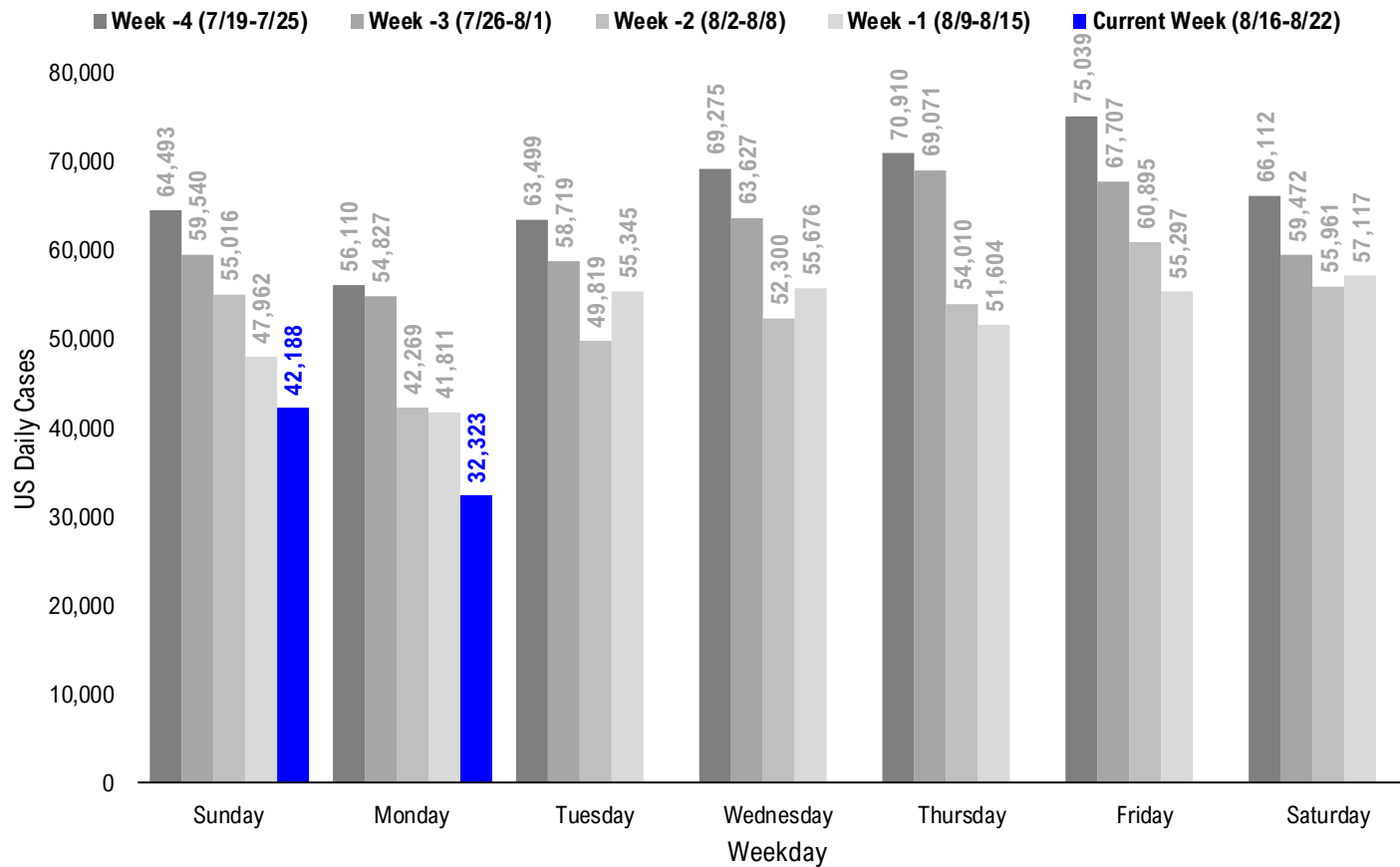
US daily new cases rolling 7D delta (Ex-California)*



* Ignored California since August 10, due to its data glitch caused 300,000-case backlog

Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

#2: USA COVID-19 Daily Cases Weekday Seasonality (Past 4 Weeks) ...



#3: USA State COVID-19 Situation at a Glance...

	Sorted Daily Cases			Daily Cases (3D avg) per 1mm residents		Since Peak		% Decline in Daily Cases
	% US Pop	8/17/20	7D Delta	8/17/20	7D Delta	# Days	Cases	
United States	100%	32,323	-9,488	134	-14	31	-39%	
United States (ex-CA)	88%	25,854	-8,206	119	-20	31	-56%	

	Sorted Daily Cases			Daily Cases (3D avg) per 1mm residents		Since Peak		% Decline in Daily Cases
	% US Pop	8/17/20	7D Delta	8/17/20	7D Delta	# Days	Cases	
United States	100%	32,323	-9,488	134	-14	31	-39%	
United States (ex-CA)	88%	25,854	-8,206	119	-20	31	-56%	

States:

1	California	11.9%	6,469	-1,282	227	+29	24	-22%
2	Florida	6.5%	2,678	-1,477	199	-94	35	-67%
3	Texas	8.7%	2,173	-2,282	191	+4	31	-54%
4	Georgia	3.2%	1,831	-598	219	-96	23	-46%
5	Illinois	3.8%	1,773	+454	136	+7	95	-42%
6	Kansas	0.9%	1,282	+190	147	+22	33	-45%
7	Missouri	1.8%	1,148	-1,427	182	+42	18	-42%
8	Tennessee	2.1%	1,036	-166	209	-41	20	-48%
9	Ohio	3.5%	775	-108	71	-16	17	-46%
10	Virginia	2.6%	734	+71	101	-11	8	-39%
11	Nevada	0.9%	662	-80	240	-24	30	-45%
12	Indiana	2.0%	591	-73	118	-18	8	-28%
13	Washington	2.3%	576	+27	93	-1	33	-31%
14	Alabama	1.5%	571	-1,115	183	-138	23	-57%
15	Louisiana	1.4%	567	+5	125	-105	27	-78%
16	North Carolina	3.2%	564	-62	106	-22	30	-50%
17	Minnesota	1.7%	564	-54	118	-20	22	-18%
18	Maryland	1.8%	503	-252	101	-34	88	-51%
19	Puerto Rico	1.0%	472	+87	104	-10	5	-20%
20	Arizona	2.2%	468	-132	105	-9	46	-82%
21	Michigan	3.0%	465	-92	68	+9	115	-44%
22	South Carolina	1.6%	456	-268	137	-54	36	-65%
23	Wisconsin	1.8%	455	-52	113	-19	23	-35%
24	Arkansas	0.9%	412	-233	214	-6	23	-29%
25	New York	5.9%	408	-68	30	+1	129	-94%
26	Pennsylvania	3.9%	384	-217	49	-7	129	-65%
27	Kentucky	1.3%	376	+104	104	-5	3	-44%
28	Connecticut	1.1%	370	+123	35	+11	117	-92%

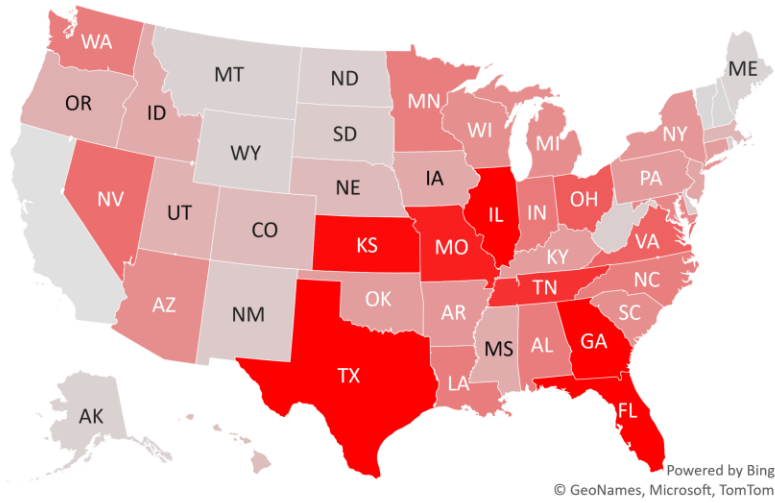
States:

29	Oklahoma	1.2%	369	-28	153	+9	20	-51%
30	New Jersey	2.7%	312	+54	23	-14	134	-95%
31	Iowa	1.0%	294	+12	189	+62	37	-16%
32	Idaho	0.5%	282	-147	143	-76	31	-62%
33	Mississippi	0.9%	276	-200	166	-82	18	-68%
34	Oregon	1.3%	252	+25	66	-1	16	-24%
35	Utah	1.0%	242	-21	95	-10	30	-62%
36	Massachusetts	2.1%	213	-62	43	-7	114	-92%
37	Colorado	1.7%	194	-185	48	-18	113	-62%
38	Nebraska	0.6%	191	-73	99	-3	107	-63%
39	Hawaii	0.4%	174	+34	159	+36	2	-22%
40	New Mexico	0.6%	92	-37	54	-22	19	-69%
41	South Dakota	0.3%	86	+28	127	+17	100	-45%
42	Delaware	0.3%	85	+26	67	+2	111	-80%
43	West Virginia	0.5%	68	+8	67	+7	38	-31%
44	North Dakota	0.2%	60	-57	142	-27	2	-31%
45	Rhode Island	0.3%	58	+30	75	+13	114	-82%
46	District of Columbia	0.2%	53	-1	73	-30	106	-78%
47	Alaska	0.2%	50	-14	108	-1	15	-41%
48	Wyoming	0.2%	45	+13	85	+38	110	-15%
49	Montana	0.3%	43	-12	78	+0	17	-49%
50	Guam	0.0%	42	+36	113	+99	3	-18%
51	Maine	0.4%	29	+22	20	+12	87	-60%
52	U.S. Virgin Islands	0.0%	19	+19	174	+97	4	-59%
53	New Hampshire	0.4%	16	+7	10	-5	107	-89%
54	Vermont	0.2%	12	+10	14	+7	134	-85%
55	Northern Mariana Islands	0.0%	3	+2	18	+6	136	-50%
56	American Samoa	0.0%	0	+0	0	+0	-	-

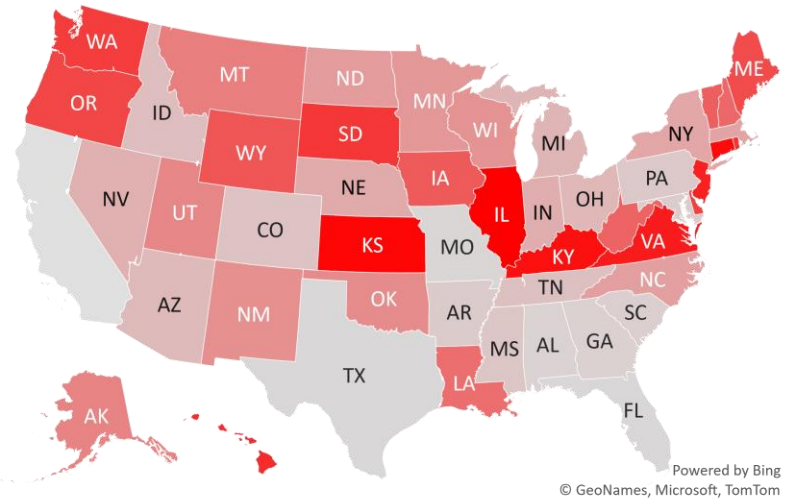
* Ignored California in the 7D Delta of Daily Cases since August 10, due to its data glitch caused 300,000-case backlog
 Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

#4: USA COVID-19 Heat Map...

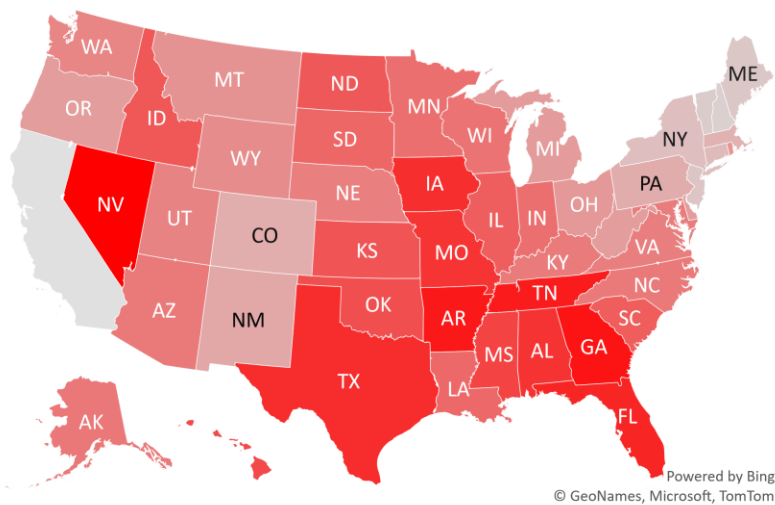
Daily Case Increases



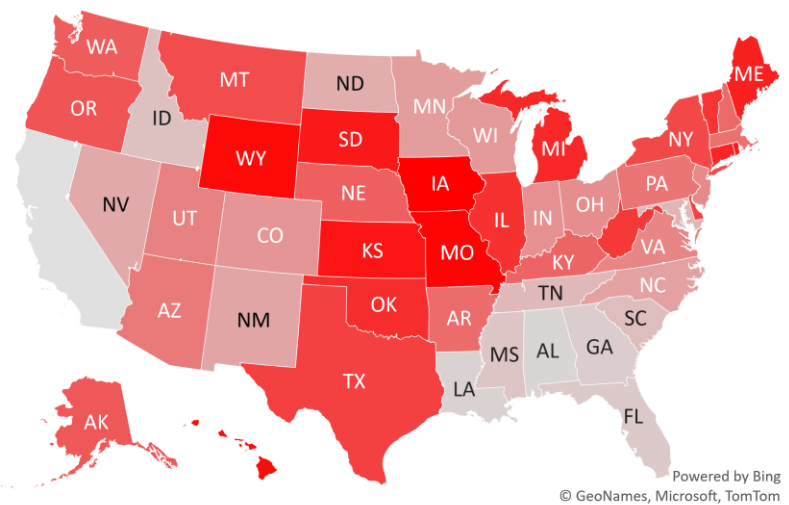
7D Delta in Daily New Cases



Daily Case Increases per 1mm Resident (3D Avg)



7D Delta in Daily New Cases per 1mm (3D Avg)



* California is ignored in the heatmaps due to its data glitch which caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

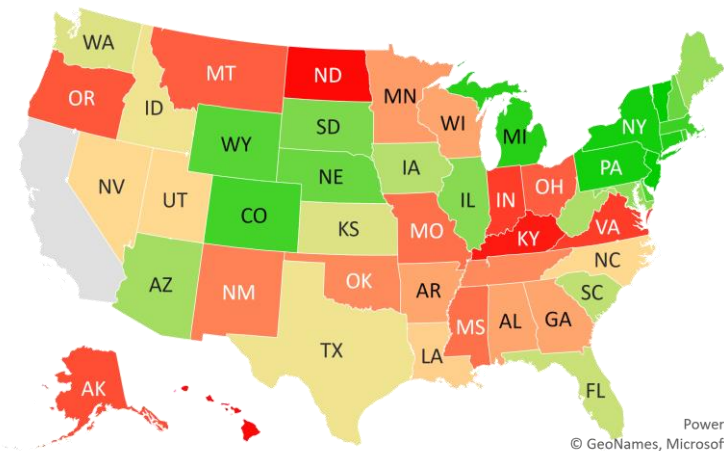
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 8/17)

	Sorted			
	Peak Date	8/17/20	% off the Peak	% US Pop
United States	7/17/20	31	-39%	100%
United States (Ex-CA)	7/17/20	31	-56%	88%
States:				
Northern Mariana Island	4/3/20	136	-50%	0.0%
Vermont	4/5/20	134	-85%	0.2%
New Jersey	4/5/20	134	-95%	2.7%
Pennsylvania	4/10/20	129	-65%	3.9%
New York	4/10/20	129	-94%	5.9%
Connecticut	4/22/20	117	-92%	1.1%
Michigan	4/24/20	115	-44%	3.0%
Rhode Island	4/25/20	114	-82%	0.3%
Massachusetts	4/25/20	114	-92%	2.1%
Colorado	4/26/20	113	-62%	1.7%
Delaware	4/28/20	111	-80%	0.3%
Wyoming	4/29/20	110	-15%	0.2%
New Hampshire	5/2/20	107	-89%	0.4%
Nebraska	5/2/20	107	-63%	0.6%
District of Columbia	5/3/20	106	-78%	0.2%
South Dakota	5/9/20	100	-45%	0.3%
Illinois	5/14/20	95	-42%	3.8%
Maryland	5/21/20	88	-51%	1.8%
Maine	5/22/20	87	-60%	0.4%
Arizona	7/2/20	46	-82%	2.2%
West Virginia	7/10/20	38	-31%	0.5%
Iowa	7/11/20	37	-16%	1.0%
South Carolina	7/12/20	36	-65%	1.6%
Florida	7/13/20	35	-67%	6.5%
Washington	7/15/20	33	-31%	2.3%
Kansas	7/15/20	33	-45%	0.9%
Texas	7/17/20	31	-54%	8.7%
Idaho	7/17/20	31	-62%	0.5%

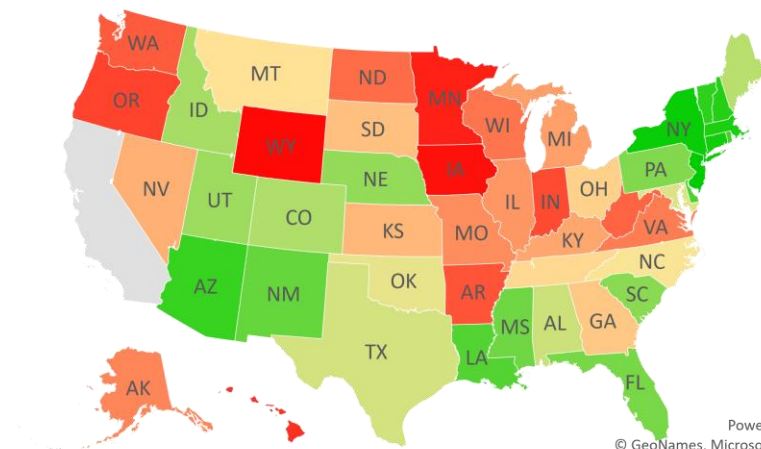
	Sorted			
	Peak Date	8/17/20	% off the Peak	% US Pop
United States	7/17/20	31	-39%	100%
United States (Ex-CA)	7/17/20	31	-56%	88%
States:				
Utah	7/18/20	30	-62%	1.0%
Nevada	7/18/20	30	-45%	0.9%
North Carolina	7/18/20	30	-50%	3.2%
Louisiana	7/21/20	27	-78%	1.4%
California	7/24/20	24	-22%	11.9%
Wisconsin	7/25/20	23	-35%	1.8%
Georgia	7/25/20	23	-46%	3.2%
Arkansas	7/25/20	23	-29%	0.9%
Alabama	7/25/20	23	-57%	1.5%
Minnesota	7/26/20	22	-18%	1.7%
Tennessee	7/28/20	20	-48%	2.1%
Oklahoma	7/28/20	20	-51%	1.2%
New Mexico	7/29/20	19	-69%	0.6%
Mississippi	7/30/20	18	-68%	0.9%
Missouri	7/30/20	18	-42%	1.8%
Ohio	7/31/20	17	-46%	3.5%
Montana	7/31/20	17	-49%	0.3%
Oregon	8/1/20	16	-24%	1.3%
Alaska	8/2/20	15	-41%	0.2%
Virginia	8/9/20	8	-39%	2.6%
Indiana	8/9/20	8	-28%	2.0%
Puerto Rico	8/12/20	5	-20%	1.0%
U.S. Virgin Islands	8/13/20	4	-59%	0.0%
Kentucky	8/14/20	3	-44%	1.3%
Guam	8/14/20	3	-18%	0.0%
North Dakota	8/15/20	2	-31%	0.2%
Hawaii	8/15/20	2	-22%	0.4%

Days since Daily Case Peak: Greener = More Days



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Daily Cases % off the Peak: Greener = Larger Decline



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* California is ignored in the heatmaps due to its data glitch which caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

#6: US New Cases by States... (sorted by today's new cases)

Sorted
Last 3-day trend growth rates

	8/15/20	8/16/20	8/17/20	
United States	57,117	42,188	32,323	-9,865
United States (ex-CA)	44,503	34,315	25,854	-8,461
States:				
1 California	12,614	7,873	6,469	
2 Florida	6,352	3,779	2,678	
3 Texas	8,245	6,204	2,173	
4 Georgia	3,273	1,862	1,831	
5 Illinois	1,828	1,562	1,773	
6 Kansas	0	0	1,282	
7 Missouri	1,127	1,078	1,148	
8 Tennessee	1,289	1,961	1,036	
9 Ohio	1,117	613	775	
10 Virginia	912	937	734	
11 Nevada	859	697	662	
12 Indiana	1,044	739	591	
13 Washington	800	746	576	
14 Alabama	1,271	853	571	
15 Louisiana	0	1,181	567	
16 North Carolina	1,536	1,246	564	
17 Minnesota	690	739	564	
18 Maryland	818	519	503	
19 Puerto Rico	339	182	472	<--higher
20 Arizona	933	883	468	
21 Michigan	1,015	565	465	
22 South Carolina	1,041	615	456	
23 Wisconsin	829	685	455	
24 Arkansas	851	673	412	
25 New York	734	607	408	
26 Pennsylvania	850	660	384	
27 Kentucky	632	385	376	
28 Connecticut	0	0	370	

Sorted
Last 3-day trend growth rates

	8/15/20	8/16/20	8/17/20	
United States	57,117	42,188	32,323	-9,865
United States (ex-CA)	44,503	34,315	25,854	-8,461
States:				
29 Oklahoma	901	544	369	
30 New Jersey	278	13	312	
31 Iowa	861	635	294	
32 Idaho	304	183	282	
33 Mississippi	825	381	276	
34 Oregon	334	252	252	
35 Utah	345	331	242	
36 Massachusetts	366	303	213	
37 Colorado	300	338	194	
38 Nebraska	253	131	191	
39 Hawaii	281	219	174	
40 New Mexico	142	106	92	
41 South Dakota	94	156	86	
42 Delaware	56	55	85	<--higher
43 West Virginia	183	107	68	
44 North Dakota	122	143	60	
45 Rhode Island	104	75	58	
46 District of Columbia	41	61	53	
47 Alaska	83	103	50	
48 Wyoming	44	59	45	
49 Montana	117	91	43	
50 Guam	0	14	42	
51 Maine	29	24	29	
52 U.S. Virgin Islands	30	7	19	
53 New Hampshire	16	8	16	
54 Vermont	9	5	12	<--higher
55 Northern Mariana Islands	0	0	3	
56 American Samoa	0	0	0	

* 5,195 backlog cases have been removed from Texas confirmed cases.

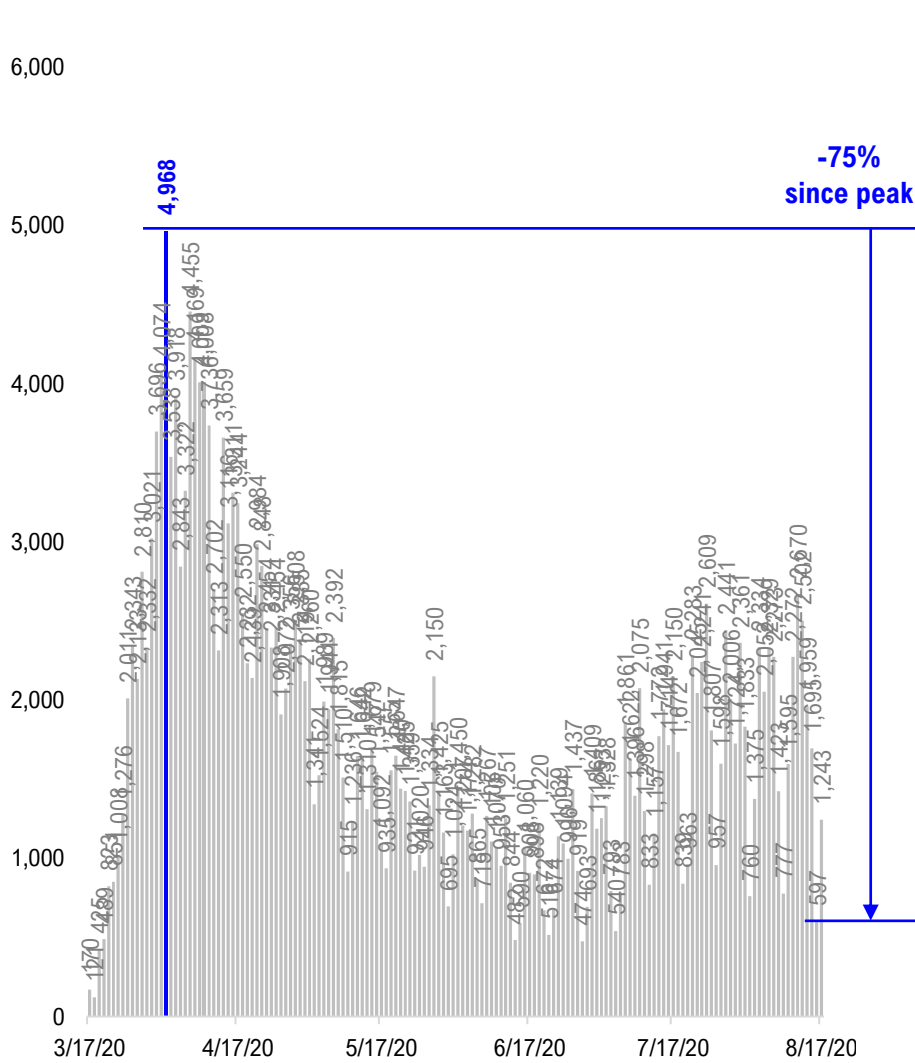
<--higher - if the state has 20% or more daily cases than prior two days...

Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

#7: US Daily Hospitalizations...(aggregated by data type)

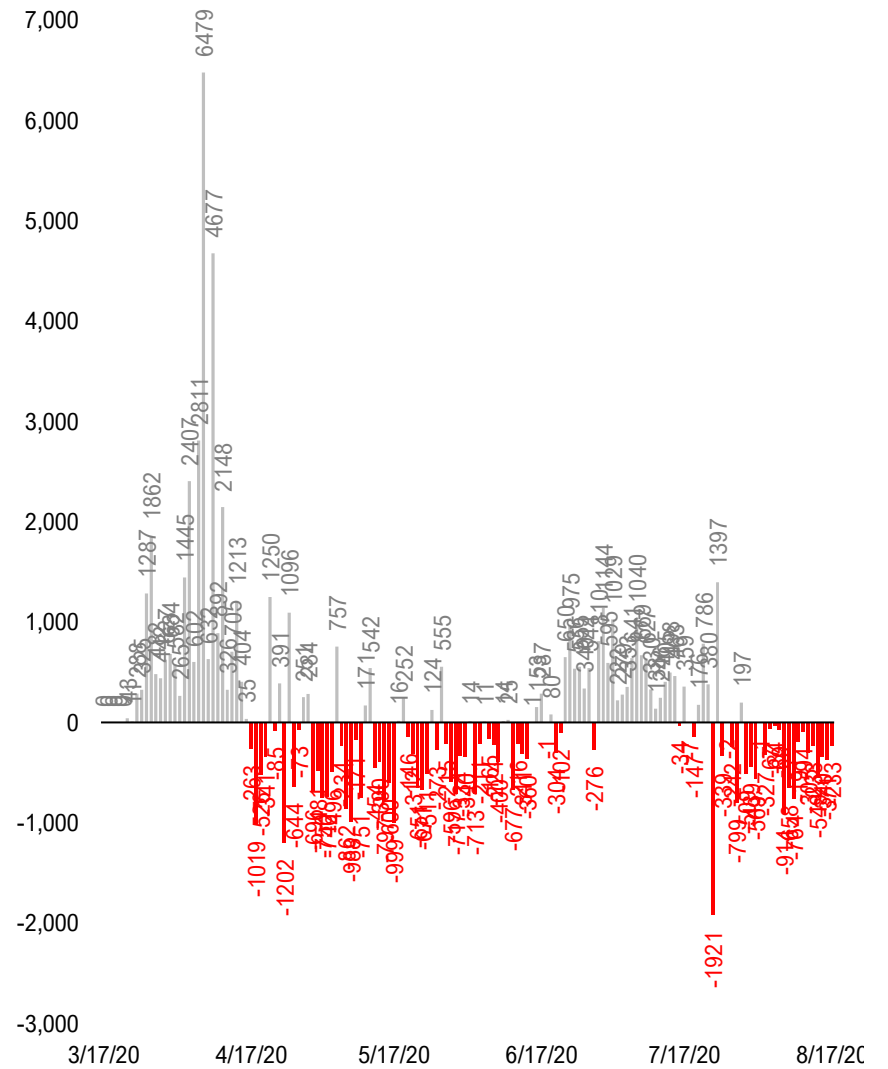
US Gross Hospitalizations

(Composite of 33 states that report "gross hospitalizations")



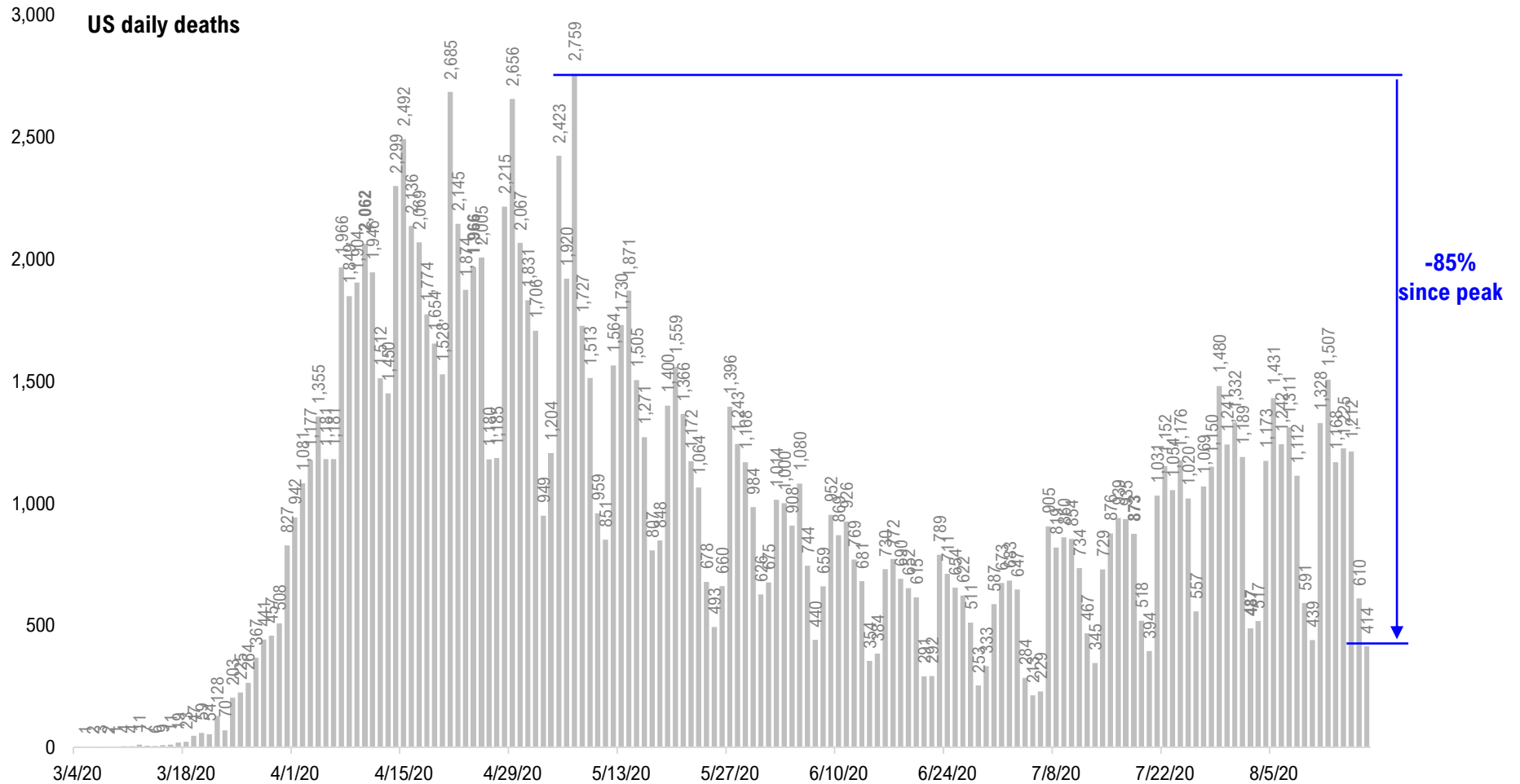
US Net Hospitalizations

(Composite of 18 states that report "net/current hospitalizations")



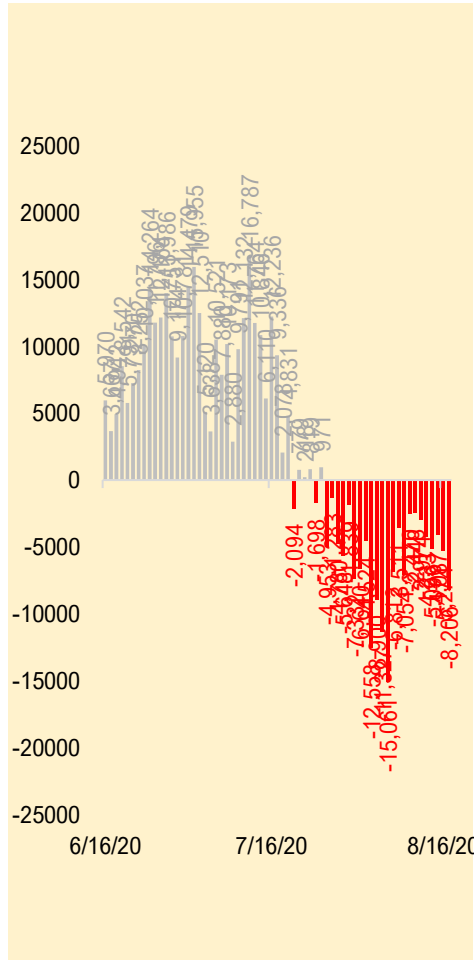
#8: US Daily New Fatalities...

US daily COVID-19 Fatalities

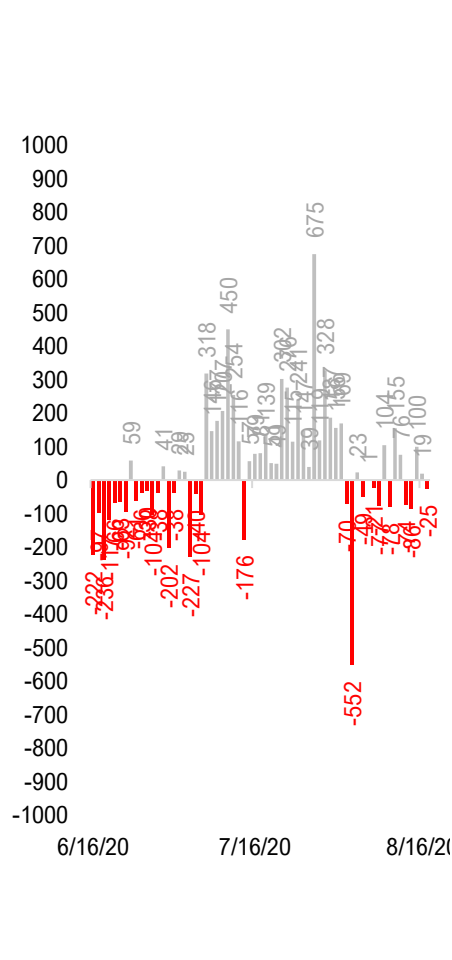


#9: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

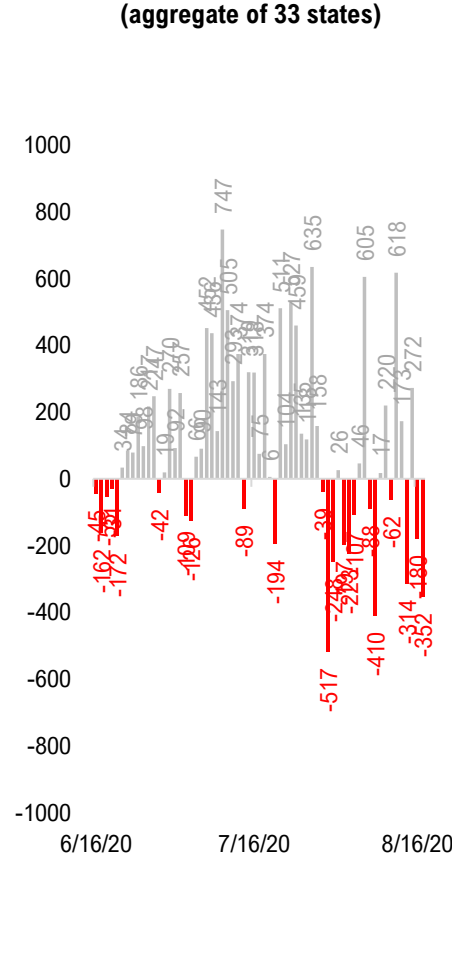
Daily New Cases (ex-CA)



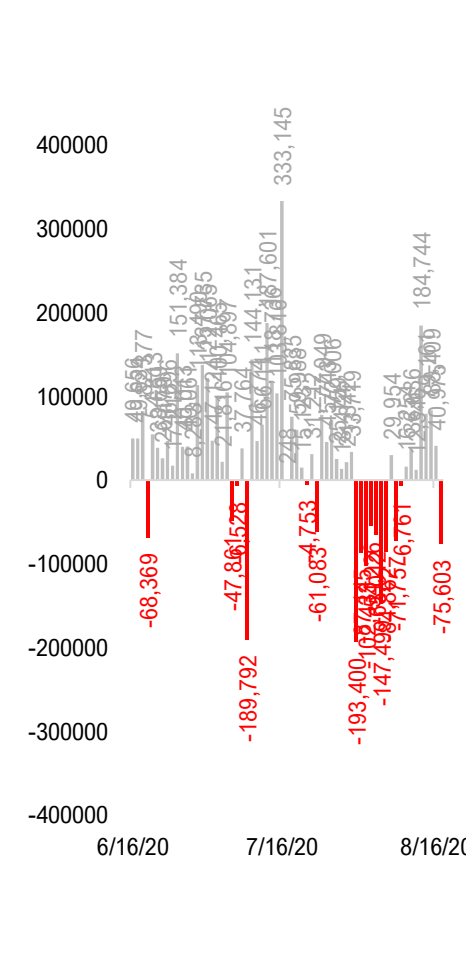
Daily Deaths



Daily New Gross hospitalization (aggregate of 33 states)

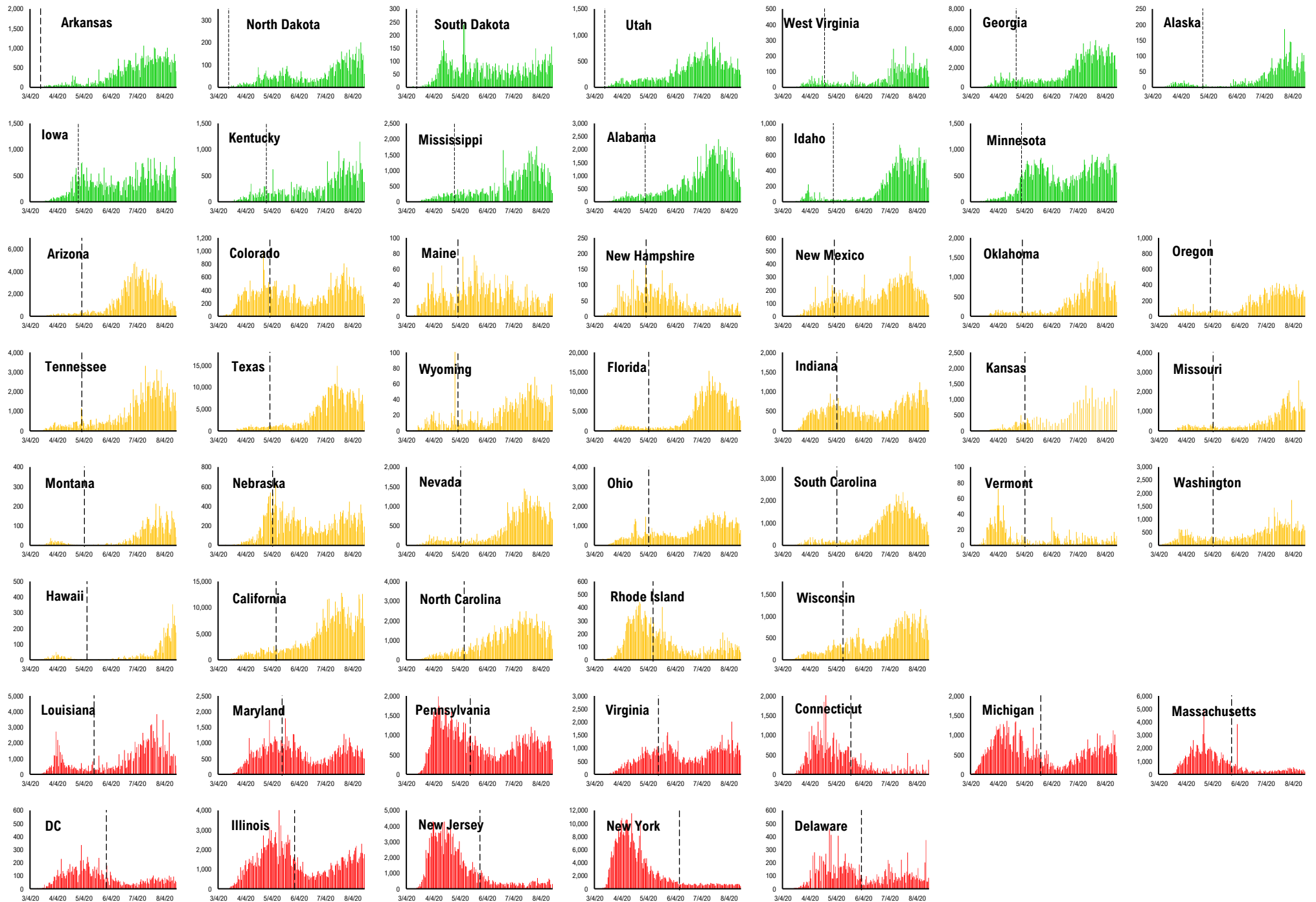


Daily Tests

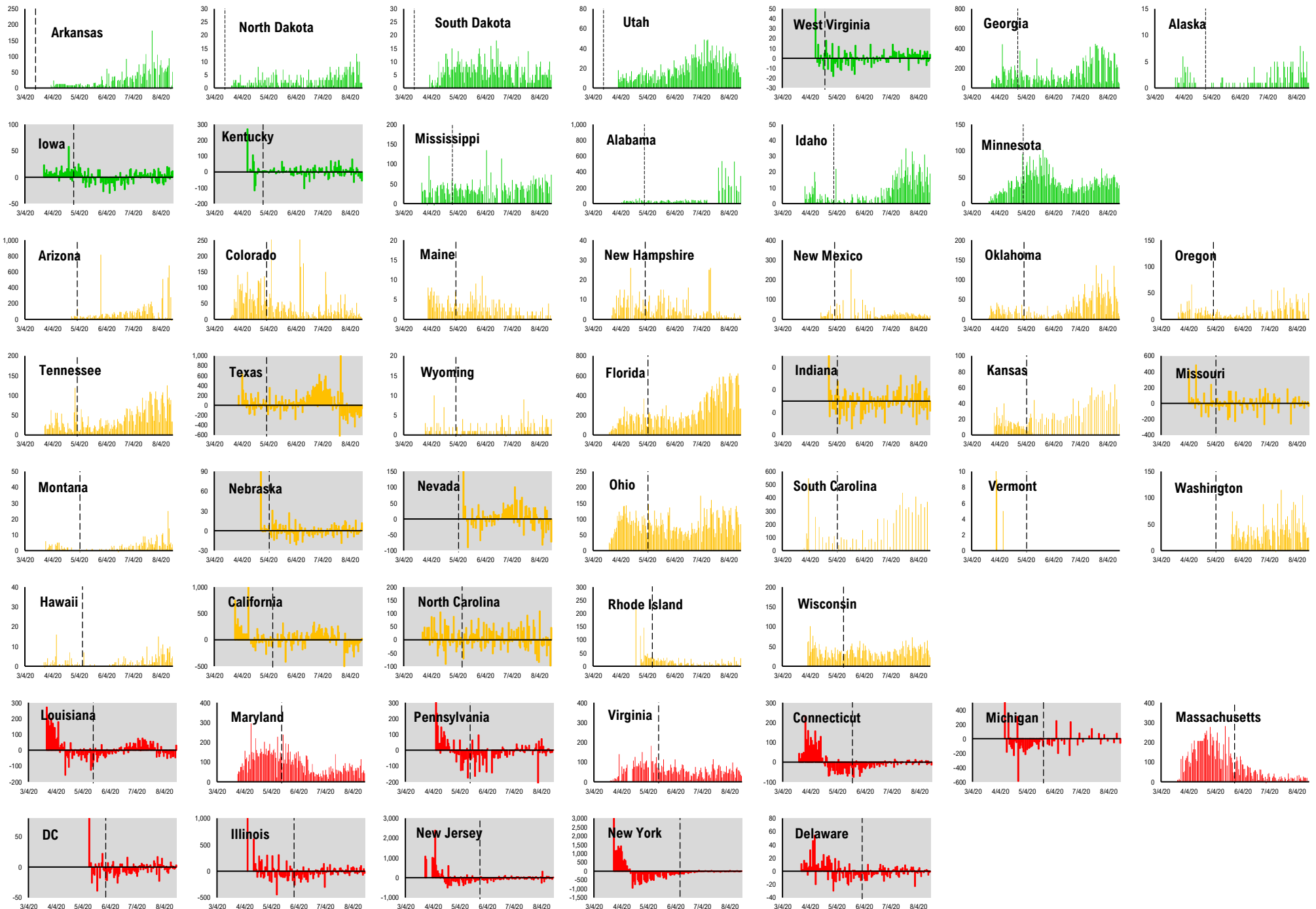


* Ignored California since August 10, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

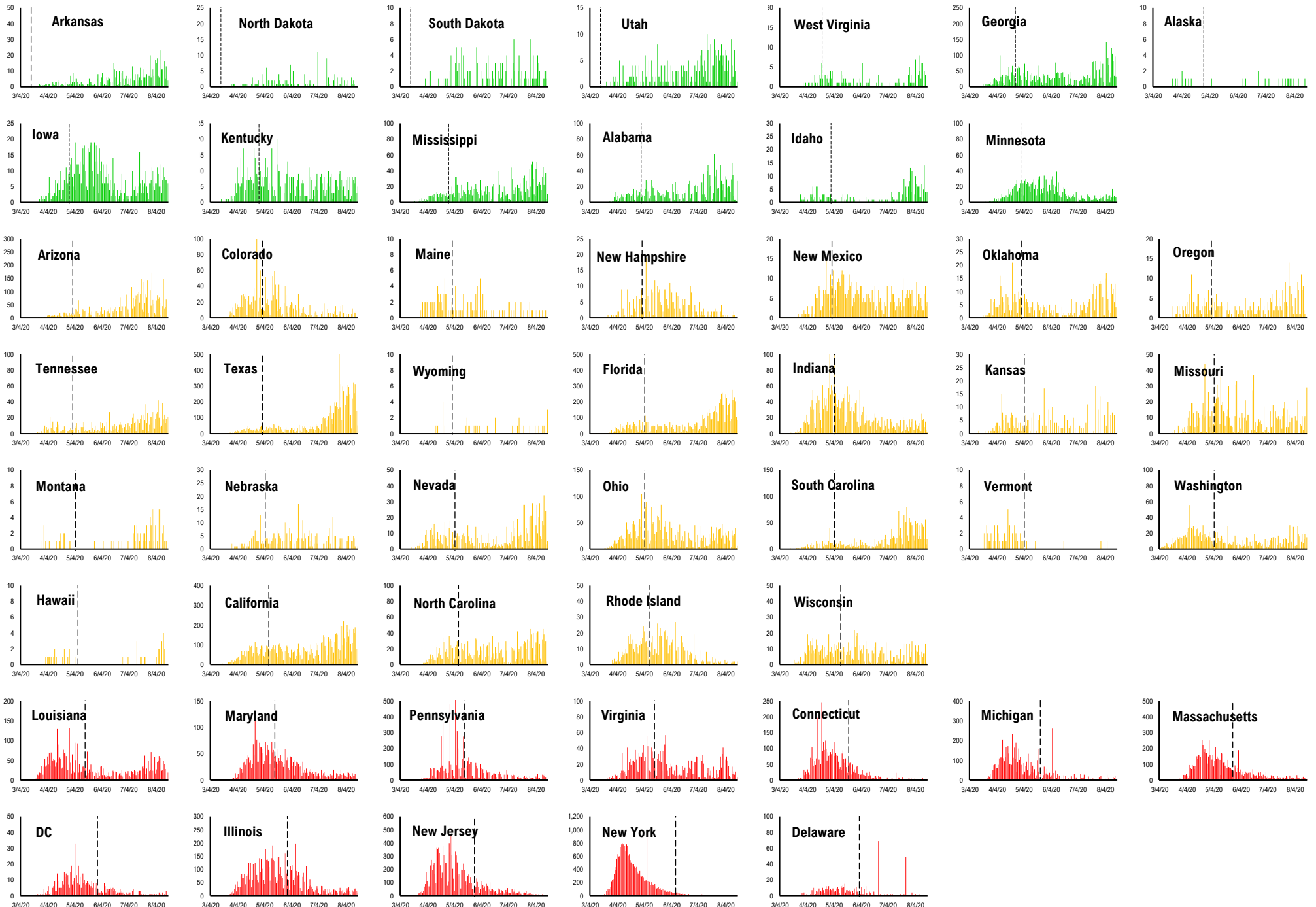
#10: Daily New Cases by States... (sorted by "open" date)



#11: Daily Hospitalizations by States... (sorted by "open" date)



#12: Daily New Deaths by States... (sorted by "open" date)



#13: State COVID-19 situation by Reopen Date...

Daily Cases

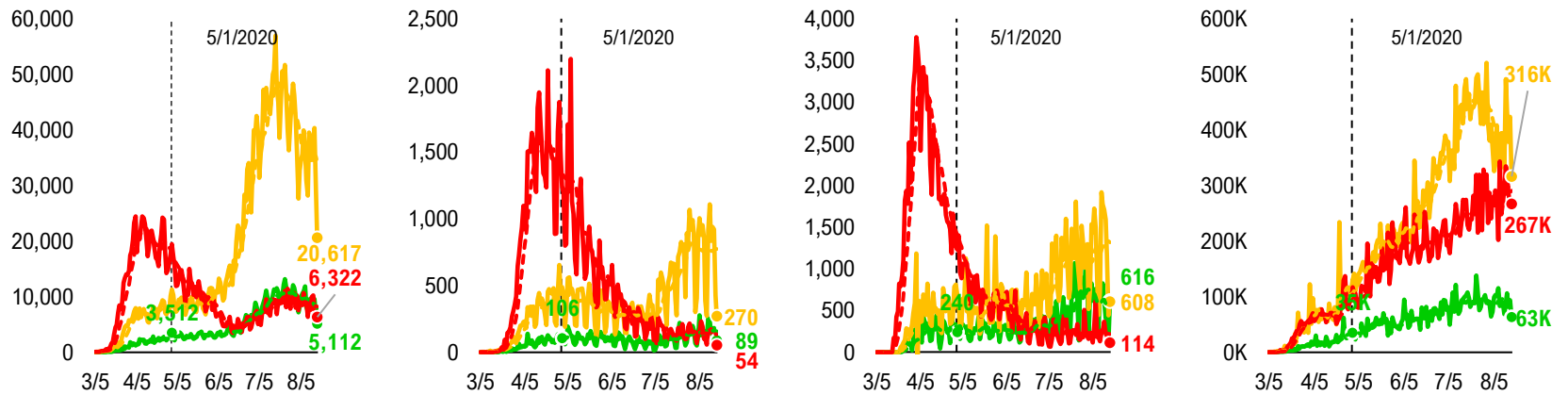
Daily Deaths

Daily Hospitalization

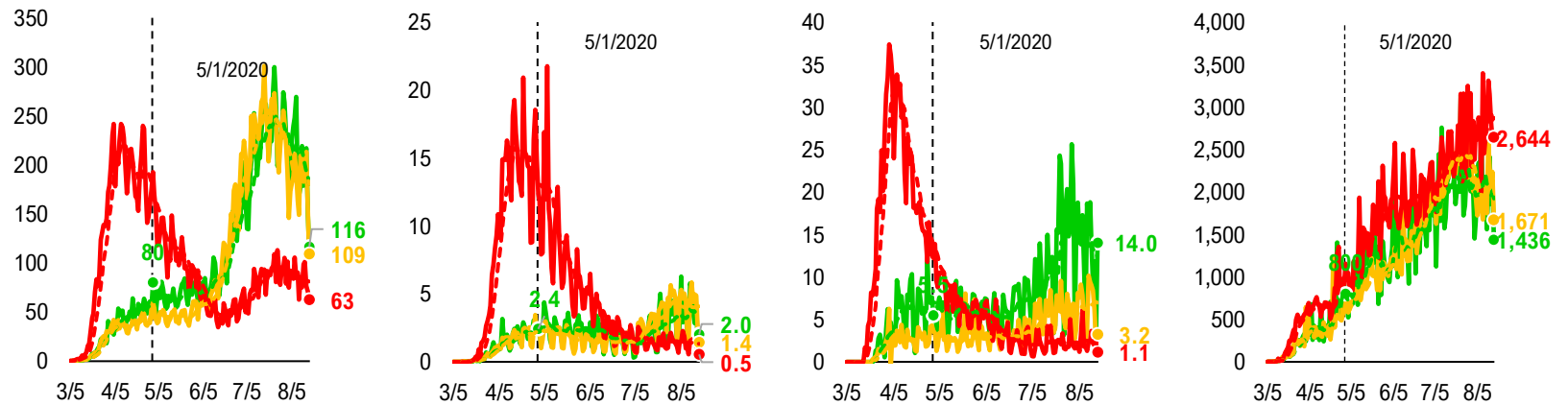
Daily Testing

— States Open Before 5/1 — States Open between 5/1 and 5/11 — States Open after 5/11

Composite Daily Aggregate

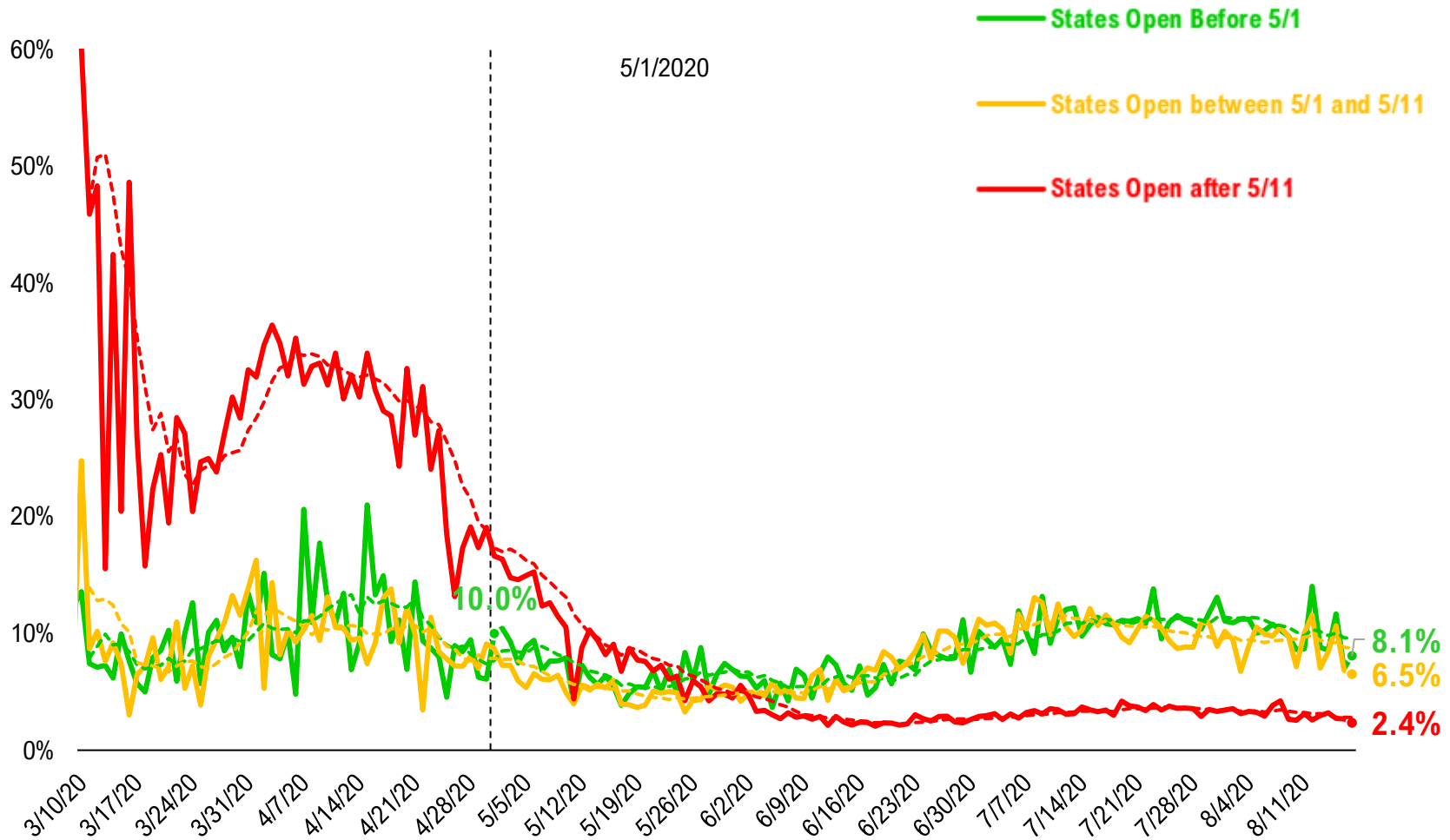


Composite Daily Aggregate Per 1mm Pop

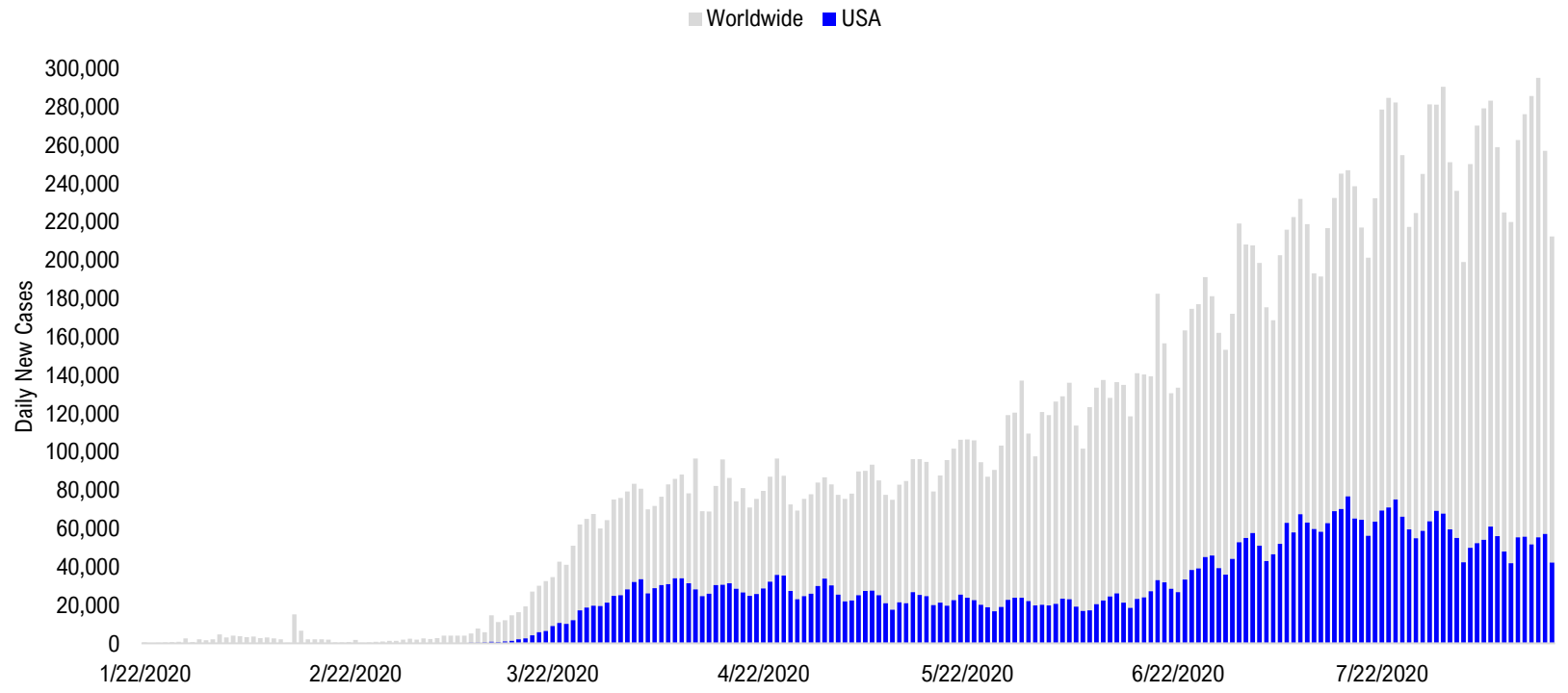


#14: State COVID-19 Daily Positivity Rate by Reopen Date...

Composite Daily Positivity Rate



#15: Global COVID-19 Situation at a Glance...



4/3/2020	4/17/2020	5/1/2020	5/15/2020	5/29/2020	6/12/2020	6/26/2020	7/10/2020	7/24/2020	8/7/2020	8/16/2020
Europe 39,667	Europe 40,604	US + Canada 31,572	US + Canada 25,443	Latin America 42,759	Latin America 51,123	Latin America 68,227	Latin America 73,176	Latin America 97,008	Latin America 97,310	Latin America 81,545
US + Canada 29,751	US + Canada 32,649	Europe 25,383	Latin America 25,394	US + Canada 22,796	US + Canada 22,798	US + Canada 41,092	US + Canada 63,055	US + Canada 72,289	Pakistan + India + Bangladesh 63,674	Pakistan + India + Bangladesh 65,483
Latin America 2,723	Latin America 6,026	Latin America 13,595	Europe 22,139	Europe 19,027	Pakistan + India + Bangladesh 18,309	Pakistan + India + Bangladesh 24,668	Pakistan + India + Bangladesh 32,386	Pakistan + India + Bangladesh 52,184	US + Canada 56,150	US + Canada 51,771
Asia ex- India+Pakistan 1,433	Asia ex- India+Pakistan 2,264	Pakistan + India + Bangladesh 3,762	Pakistan + India + Bangladesh 6,133	Pakistan + India + Bangladesh 12,032	Europe 18,047	Europe 17,928	Africa 17,127	Africa 20,063	Europe 23,865	Europe 22,735
Africa 711	Pakistan + India + Bangladesh 1,649	Asia ex- India+Pakistan 2,022	Africa 2,942	Africa 5,307	Africa 7,322	Africa 11,684	Europe 16,305	Europe 18,783	Africa 14,390	Africa 11,413
Pakistan + India + Bangladesh 627	Africa 1,176	Africa 1,926	Asia ex- India+Pakistan 2,033	Asia ex- India+Pakistan 2,762	Asia ex- India+Pakistan 3,064	Asia ex- India+Pakistan 3,866	Asia ex- India+Pakistan 7,373	Asia ex- India+Pakistan 8,636	Asia ex- India+Pakistan 10,424	Asia ex- India+Pakistan 10,501

Disclosures

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Positive (+): The analyst expects the performance of his industry/sector coverage universe over the next 6-18 months to be attractive vs. the relevant broad market benchmark, being the S&P 500 for North America.

Neutral (N): The analyst expects the performance of his or her industry/sector coverage universe over the next 6-18 months to be in line with the relevant broad market benchmark, being the S&P 500 for North America.

Negative (-): The analyst expects his or her industry coverage universe over the next 6-18 months to underperform vs. the relevant broad market benchmark, being the S&P 500 for North America.

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