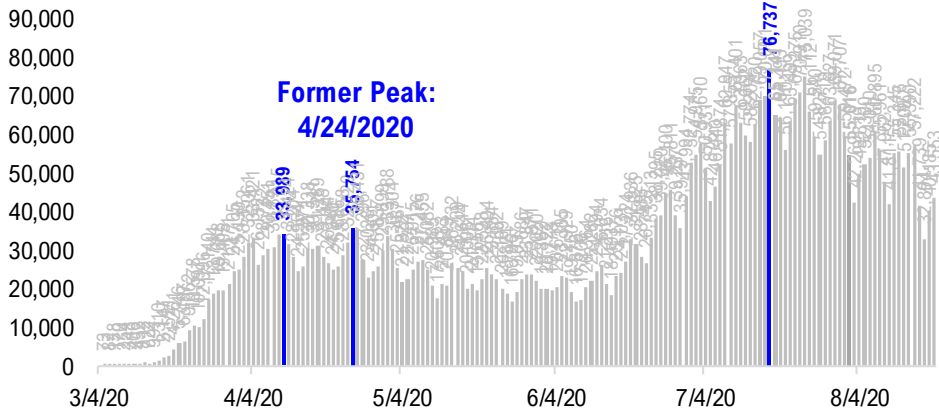


# FSInsight Daily COVID-19 Chartbook

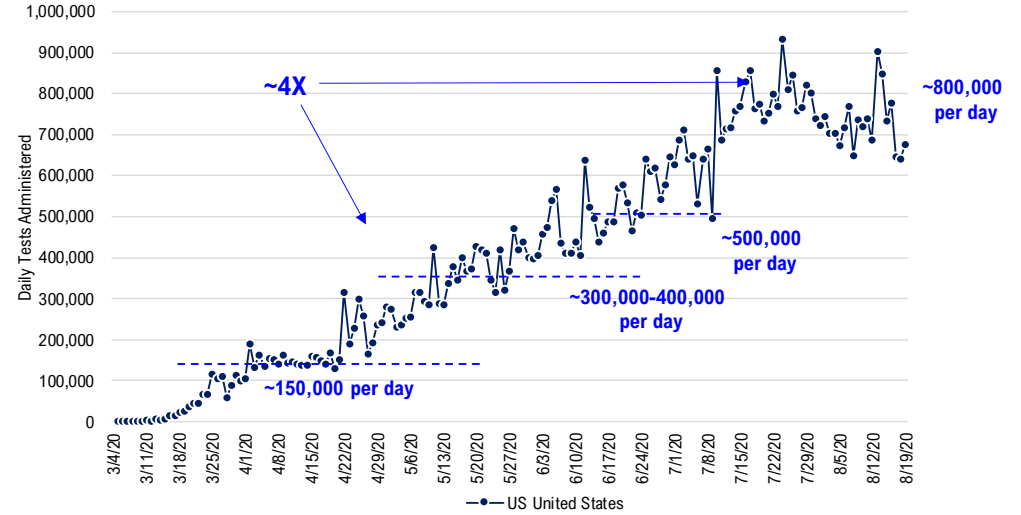


# #1: USA COVID-19 Situation at a Glance...

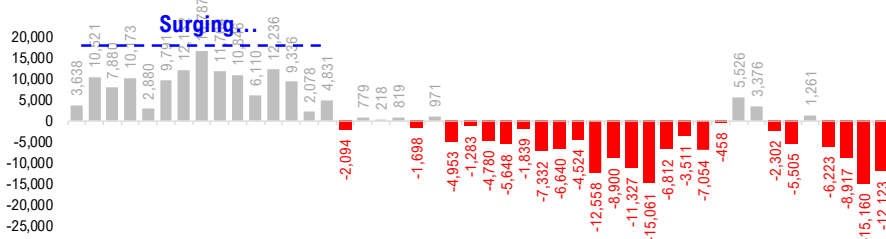
US daily new cases



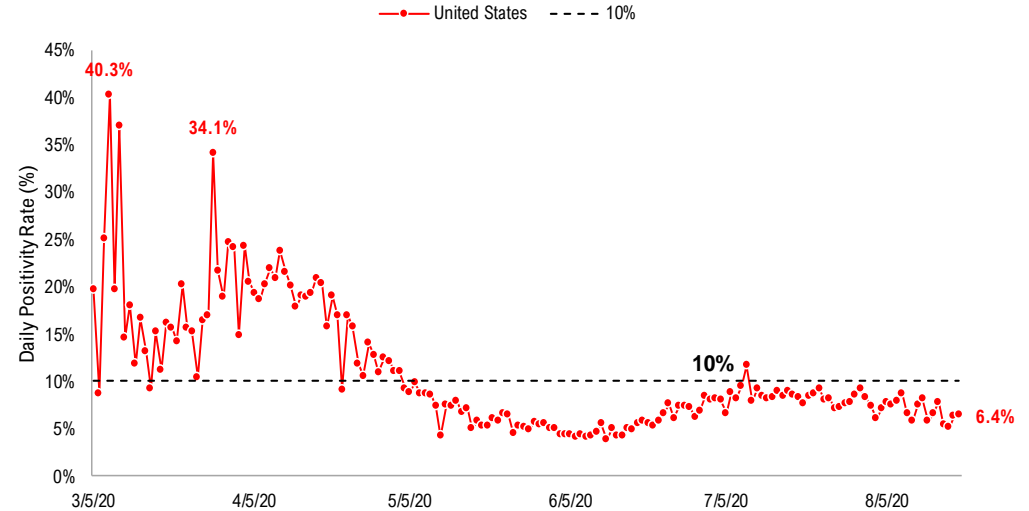
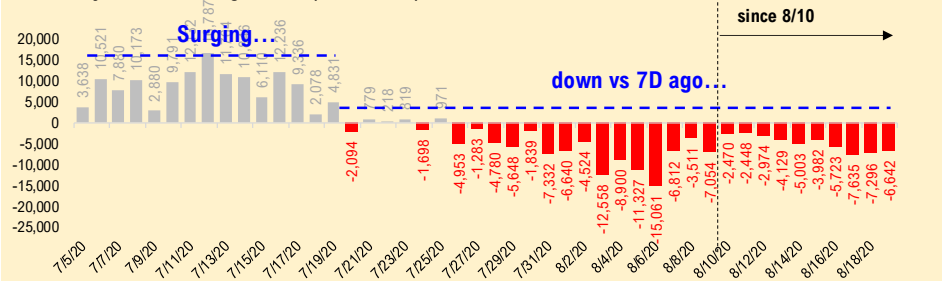
USA total COVID-19 tests administered



US daily new cases rolling 7D delta



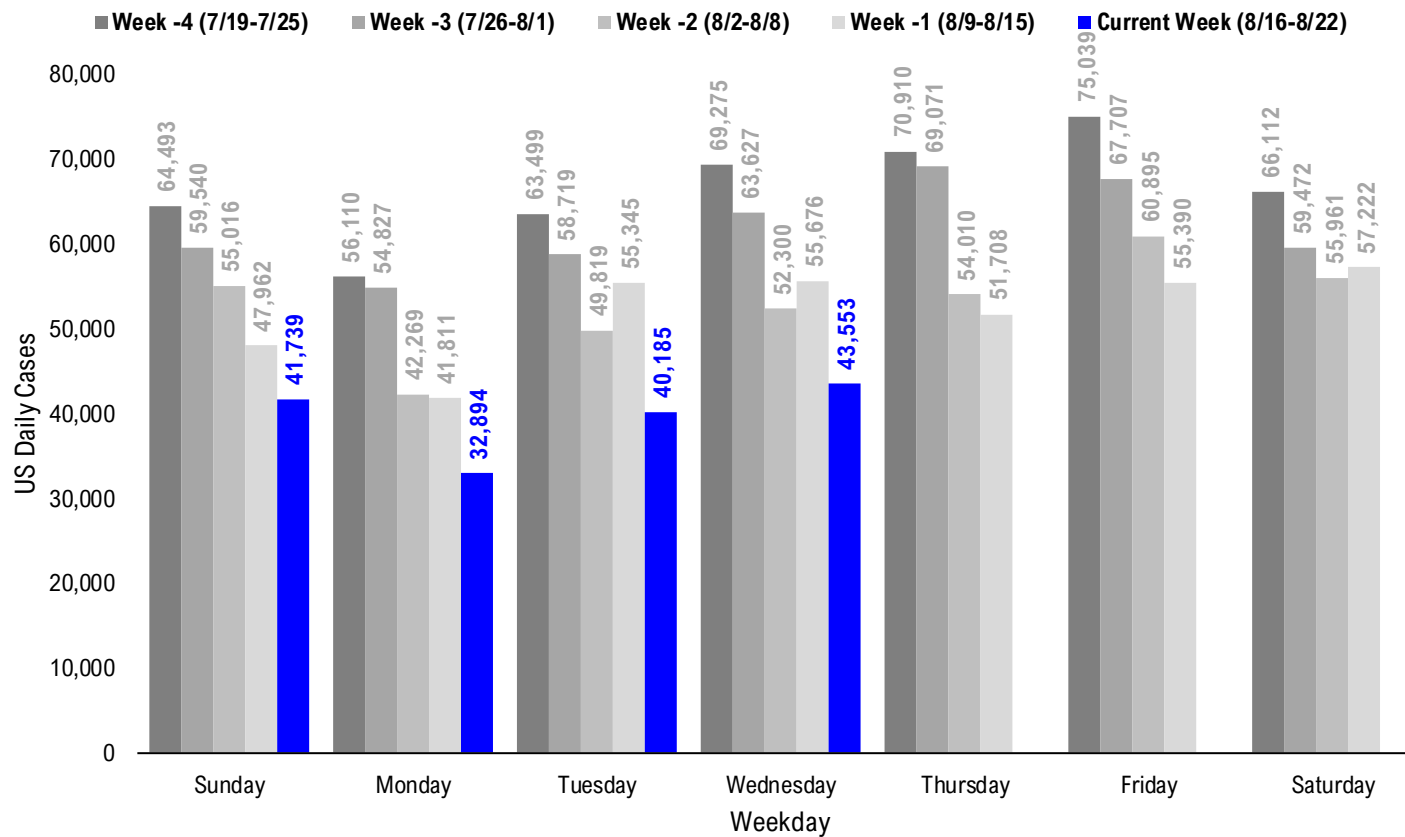
US daily new cases rolling 7D delta (Ex-California)\*



\* 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...

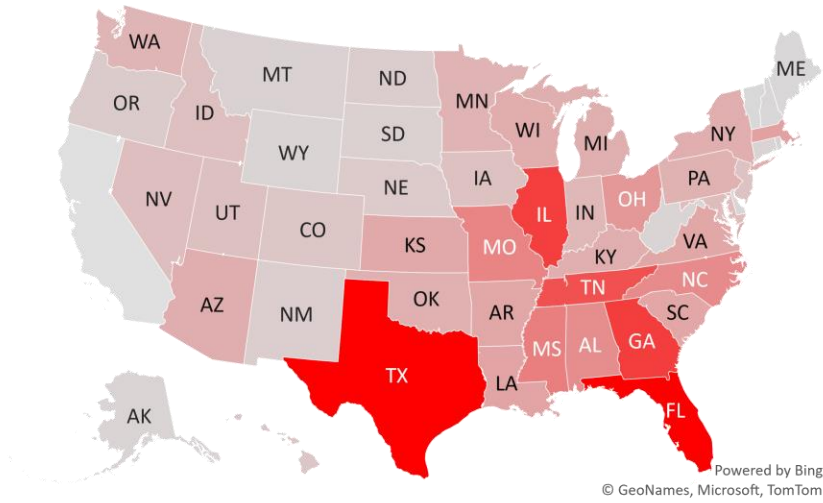
		Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents		Since Peak		% Decline in Daily Cases	
		Pop	8/19/20 7D Delta	8/19/20 7D Delta	8/19/20 7D Delta	# Days	% Decline		
United States		100%	43,553 -12,123	118 -37	33 -46%				
United States (ex-CA)		88%	37,389 -6,642	113 -25	33 -43%				
<b>States:</b>									
1	Texas	8.7%	6,474 +274	189 -46	33 -54%				
2	California	11.9%	6,164 -5,481	146 -123	26 -50%				
3	Florida	6.5%	4,115 -3,994	165 -116	37 -72%				
4	Georgia	3.2%	2,305 -1,260	218 -82	25 -46%				
5	Illinois	3.8%	2,295 +650	153 +34	97 -35%				
6	Tennessee	2.1%	2,022 +544	200 +20	22 -50%				
7	Mississippi	0.9%	1,348 +267	271 +24	20 -48%				
8	Missouri	1.8%	1,258 -337	174 -106	20 -45%				
9	North Carolina	3.2%	1,153 -13	95 +4	32 -55%				
10	Alabama	1.5%	1,117 +182	207 -28	25 -52%				
11	Ohio	3.5%	958 -464	74 -23	19 -44%				
12	Louisiana	1.4%	778 -401	142 -66	29 -75%				
13	South Carolina	1.6%	739 -105	124 -40	38 -68%				
14	Virginia	2.6%	737 -39	91 -4	10 -45%				
15	Arkansas	0.9%	729 +26	171 -20	25 -43%				
16	Kansas	0.9%	723 -94	229 +11	35 -14%				
17	Wisconsin	1.8%	663 +185	100 +2	25 -42%				
18	Arizona	2.2%	637 -69	93 -23	48 -84%				
19	New York	5.9%	631 -69	29 -3	131 -95%				
20	Kentucky	1.3%	627 -525	120 -26	5 -36%				
21	Michigan	3.0%	616 +101	52 -10	117 -58%				
22	Oklahoma	1.2%	597 -73	133 -21	22 -57%				
23	Pennsylvania	3.9%	570 -279	44 -15	131 -69%				
24	Minnesota	1.7%	557 +93	87 +4	24 -40%				
25	Washington	2.3%	543 +39	60 -11	35 -55%				
26	Indiana	2.0%	489 -171	95 -14	10 -42%				
27	Maryland	1.8%	414 -127	79 -24	90 -62%				
28	Nevada	0.9%	389 -139	186 -10	32 -57%				

		Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents		Since Peak		% Decline in Daily Cases	
		Pop	8/19/20 7D Delta	8/19/20 7D Delta	8/19/20 7D Delta	# Days	% Decline		
United States		100%	43,553 -12,123	118 -37	33 -46%				
United States (ex-CA)		88%	37,389 -6,642	113 -25	33 -43%				
<b>States:</b>									
29	Idaho	0.5%	370 -168	193 -79	33 -49%				
30	Utah	1.0%	364 +26	90 -10	32 -64%				
31	Massachusetts	2.1%	352 +59	40 -7	116 -92%				
32	Iowa	1.0%	337 -140	91 -17	39 -80%				
33	New Jersey	2.7%	329 -134	36 -7	136 -92%				
34	Colorado	1.7%	270 -45	42 -21	115 -67%				
35	Hawaii	0.4%	261 +59	134 +25	4 -34%				
36	Nebraska	0.6%	215 +1	115 -25	109 -57%				
37	Oregon	1.3%	194 -54	53 -7	18 -39%				
38	North Dakota	0.2%	186 +101	167 +3	4 -20%				
39	New Mexico	0.6%	170 -3	54 -25	21 -69%				
40	South Dakota	0.3%	123 +21	110 +31	102 -52%				
41	Montana	0.3%	111 -64	65 -33	19 -58%				
42	Rhode Island	0.3%	103 +27	88 +18	116 -78%				
43	Puerto Rico	1.0%	81 -483	125 -4	1 -8%				
44	West Virginia	0.5%	70 -63	44 -14	40 -55%				
45	Wyoming	0.2%	67 +54	83 +39	112 -17%				
46	Alaska	0.2%	67 +7	82 +4	17 -55%				
47	Connecticut	1.1%	59 +37	44 +8	119 -90%				
48	Delaware	0.3%	50 -16	66 +1	113 -81%				
49	U.S. Virgin Islands	0.0%	32 -31	271 -16	6 -36%				
50	District of Columbia	0.2%	29 -34	63 -34	108 -81%				
51	Guam	0.0%	22 +7	167 +92	0 0%				
52	Maine	0.4%	21 +1	16 +9	89 -68%				
53	New Hampshire	0.4%	19 -7	12 -2	109 -87%				
54	Vermont	0.2%	3 -2	10 -1	136 -90%				
55	Northern Mariana Islands	0.0%	0 +0	23 +18	138 -33%				
56	American Samoa	0.0%	0 +0	0 +0	- -				

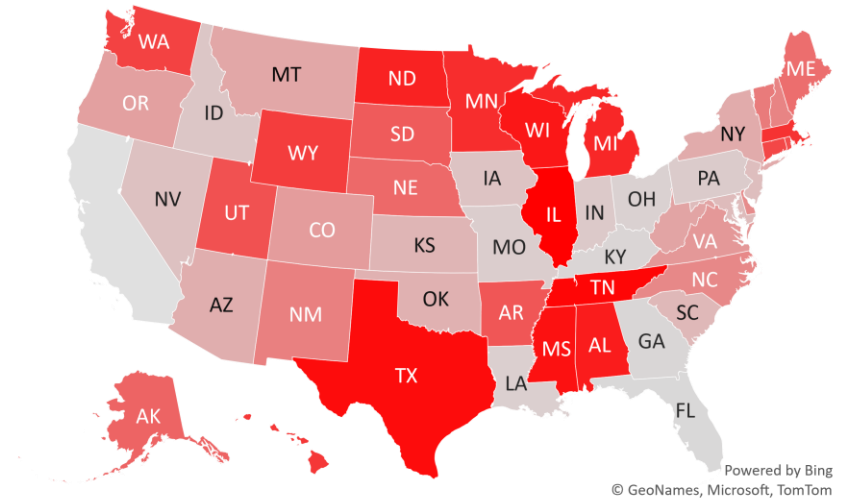
\* Ignored California in the 7D Delta of Daily Cases since August 10, due to its data glitch caused 300,000-case backlog  
 Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

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

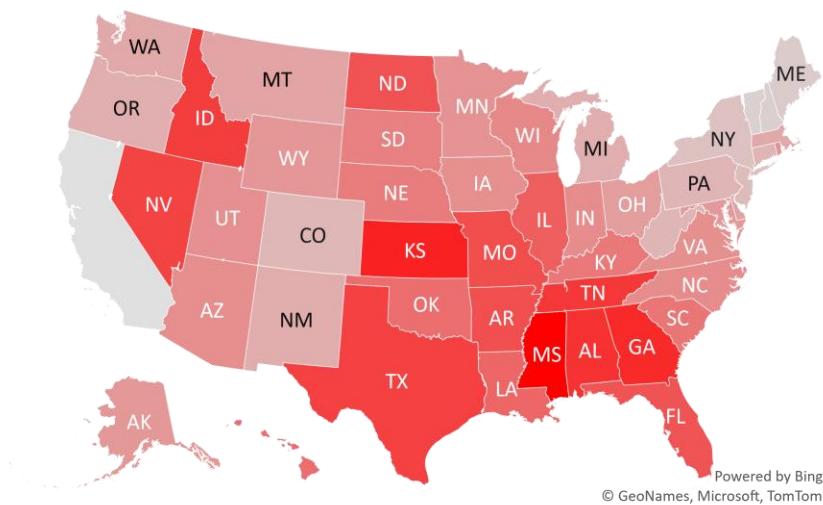
### Daily Case Increases



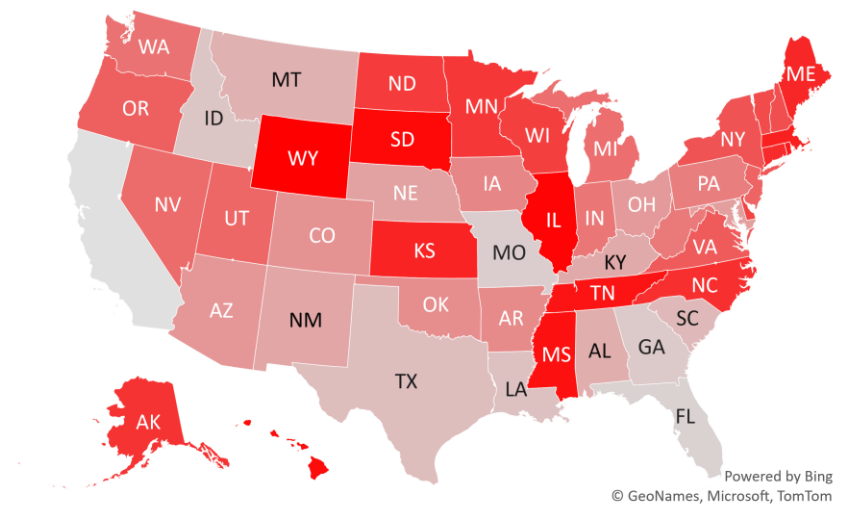
### 7D Delta in Daily New Cases



### 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

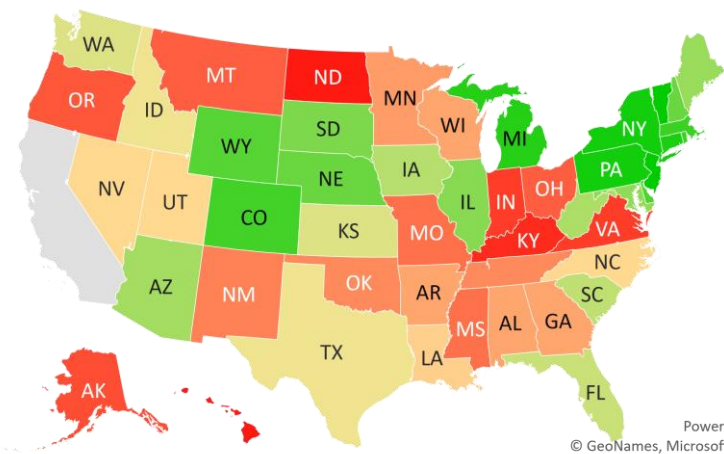
# #5: # of Days since Daily Case Peaked by States...

## # Days since Daily Cases (3D Avg) Peak (as of 8/19)

	Sorted			
	Peak Date	8/19/20	% off the Peak	% US Pop
United States	7/17/20	33	-46%	100%
United States (Ex-CA)	7/17/20	33	-43%	88%
<b>States:</b>				
Northern Mariana Island	4/3/20	138	-33%	0.0%
Vermont	4/5/20	136	-90%	0.2%
New Jersey	4/5/20	136	-92%	2.7%
Pennsylvania	4/10/20	131	-69%	3.9%
New York	4/10/20	131	-95%	5.9%
Connecticut	4/22/20	119	-90%	1.1%
Michigan	4/24/20	117	-58%	3.0%
Rhode Island	4/25/20	116	-78%	0.3%
Massachusetts	4/25/20	116	-92%	2.1%
Colorado	4/26/20	115	-67%	1.7%
Delaware	4/28/20	113	-81%	0.3%
Wyoming	4/29/20	112	-17%	0.2%
New Hampshire	5/2/20	109	-87%	0.4%
Nebraska	5/2/20	109	-57%	0.6%
District of Columbia	5/3/20	108	-81%	0.2%
South Dakota	5/9/20	102	-52%	0.3%
Illinois	5/14/20	97	-35%	3.8%
Maryland	5/21/20	90	-62%	1.8%
Maine	5/22/20	89	-68%	0.4%
Arizona	7/2/20	48	-84%	2.2%
West Virginia	7/10/20	40	-55%	0.5%
Iowa	7/11/20	39	-60%	1.0%
South Carolina	7/12/20	38	-68%	1.6%
Florida	7/13/20	37	-72%	6.5%
Washington	7/15/20	35	-55%	2.3%
Kansas	7/15/20	35	-14%	0.9%
Texas	7/17/20	33	-54%	8.7%
Idaho	7/17/20	33	-49%	0.5%

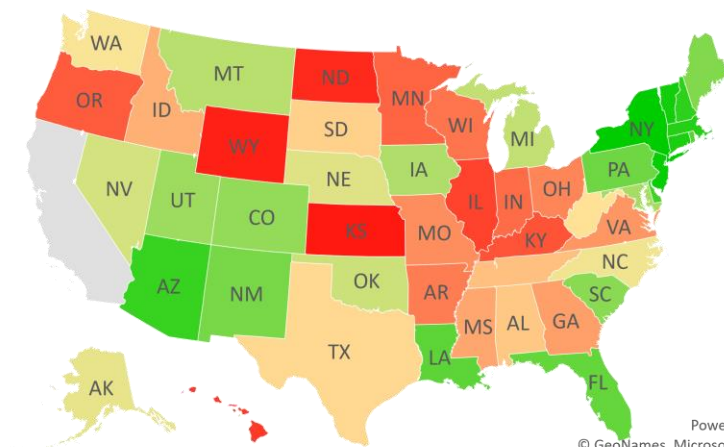
	Sorted			
	Peak Date	8/19/20	% off the Peak	% US Pop
United States	7/17/20	33	-46%	100%
United States (Ex-CA)	7/17/20	33	-43%	88%
<b>States:</b>				
Utah	7/18/20	32	-64%	1.0%
Nevada	7/18/20	32	-57%	0.9%
North Carolina	7/18/20	32	-55%	3.2%
Louisiana	7/21/20	29	-75%	1.4%
California	7/24/20	26	-50%	11.9%
Wisconsin	7/25/20	25	-42%	1.8%
Georgia	7/25/20	25	-46%	3.2%
Arkansas	7/25/20	25	-43%	0.9%
Alabama	7/25/20	25	-52%	1.5%
Minnesota	7/26/20	24	-40%	1.7%
Tennessee	7/28/20	22	-50%	2.1%
Oklahoma	7/28/20	22	-57%	1.2%
New Mexico	7/29/20	21	-69%	0.6%
Mississippi	7/30/20	20	-48%	0.9%
Missouri	7/30/20	20	-45%	1.8%
Ohio	7/31/20	19	-44%	3.5%
Montana	7/31/20	19	-58%	0.3%
Oregon	8/1/20	18	-39%	1.3%
Alaska	8/2/20	17	-55%	0.2%
Virginia	8/9/20	10	-45%	2.6%
Indiana	8/9/20	10	-42%	2.0%
U.S. Virgin Islands	8/13/20	6	-36%	0.0%
Kentucky	8/14/20	5	-36%	1.3%
North Dakota	8/15/20	4	-20%	0.2%
Hawaii	8/15/20	4	-34%	0.4%
Puerto Rico	8/18/20	1	-8%	1.0%
Guam	8/19/20	0	0%	0.0%

## # Days since Daily Case Peak: Greener = More Days



Powered by Bing  
© GeoNames, Microsoft, TomTom

## Daily Cases % off the Peak: Greener = Larger Decline



Powered by Bing  
© GeoNames, Microsoft, TomTom

\* 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

	8/17/20	8/18/20	8/19/20	
United States	32,894	40,185	43,553	+3,368
United States (ex-CA)	26,425	35,549	37,389	+1,840
<b>States:</b>				
1 Texas	2,713	7,282	6,474	
2 California	6,469	4,636	6,164	
3 Florida	2,678	3,838	4,115	
4 Georgia	1,831	2,816	2,305	
5 Illinois	1,773	1,740	2,295	<--higher
6 Tennessee	1,036	1,034	2,022	<--higher
7 Mississippi	276	795	1,348	<--higher
8 Missouri	1,148	794	1,258	
9 North Carolina	564	1,263	1,153	
10 Alabama	571	1,357	1,117	
11 Ohio	775	861	958	
12 Louisiana	567	640	778	<--higher
13 South Carolina	456	719	739	
14 Virginia	734	861	737	
15 Arkansas	412	410	729	<--higher
16 Kansas	1,282	0	723	
17 Wisconsin	455	634	663	
18 Arizona	468	915	637	
19 New York	408	655	631	
20 Kentucky	376	608	627	
21 Michigan	465	477	616	<--higher
22 Oklahoma	369	615	597	
23 Pennsylvania	384	735	570	
24 Minnesota	564	345	557	
25 Washington	576	260	543	
26 Indiana	591	841	489	
27 Maryland	503	520	414	
28 Nevada	662	672	389	

**Sorted**  
Last 3-day trend growth rates

	8/17/20	8/18/20	8/19/20	
United States	32,894	40,185	43,553	+3,368
United States (ex-CA)	26,425	35,549	37,389	+1,840
<b>States:</b>				
29 Idaho	282	384	370	
30 Utah	242	263	364	<--higher
31 Massachusetts	248	222	352	<--higher
32 Iowa	294	229	337	
33 New Jersey	312	331	329	
34 Colorado	194	261	270	
35 Hawaii	174	133	261	<--higher
36 Nebraska	191	262	215	
37 Oregon	252	225	194	
38 North Dakota	59	136	186	<--higher
39 New Mexico	92	79	170	<--higher
40 South Dakota	86	83	123	<--higher
41 Montana	40	56	111	<--higher
42 Rhode Island	58	120	103	
43 Puerto Rico	472	648	81	
44 West Virginia	68	99	70	
45 Wyoming	45	32	67	<--higher
46 Alaska	50	62	67	
47 Connecticut	370	40	59	
48 Delaware	85	57	50	
49 U.S. Virgin Islands	19	36	32	
50 District of Columbia	53	52	29	
51 Guam	42	19	22	
52 Maine	29	16	21	
53 New Hampshire	16	13	19	
54 Vermont	12	3	3	
55 Northern Mariana Islands	3	1	0	
56 American Samoa	0	0	0	

\* 550 backlog cases have been removed from Texas daily cases on 8/19/2020.

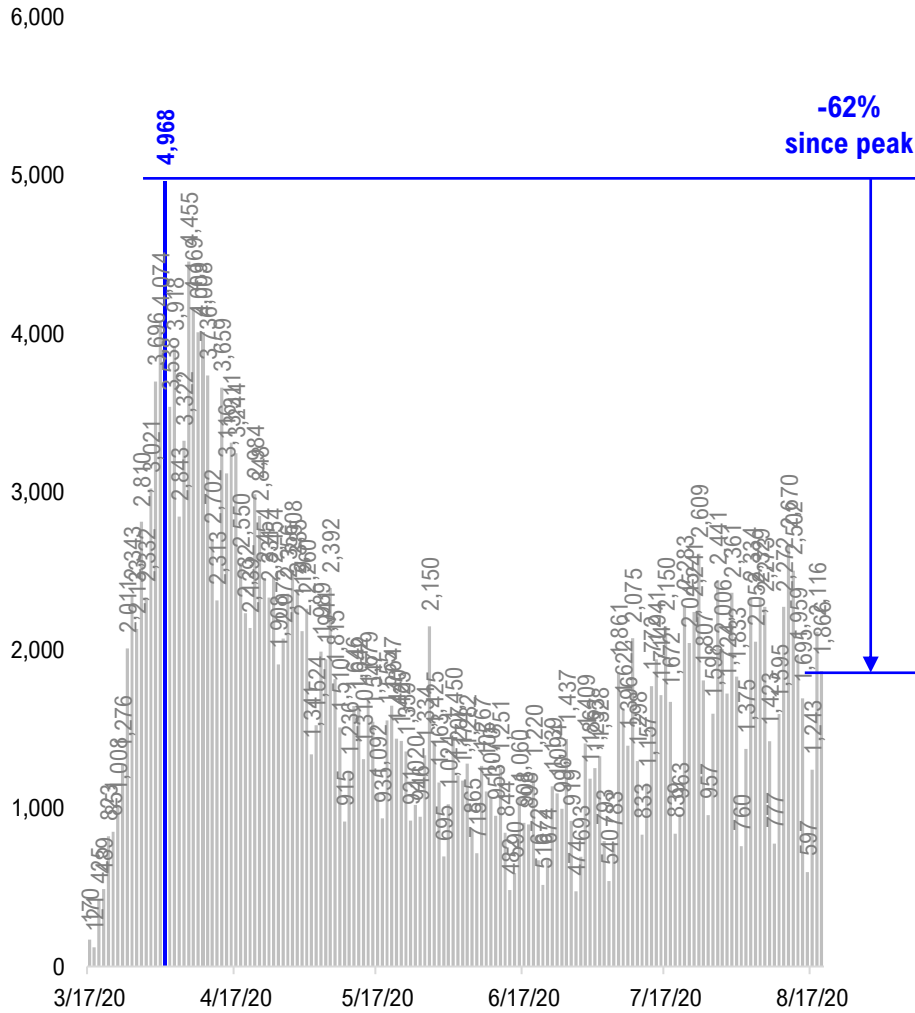
<--higher - if the state has 20% or more daily cases than prior two days...

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

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

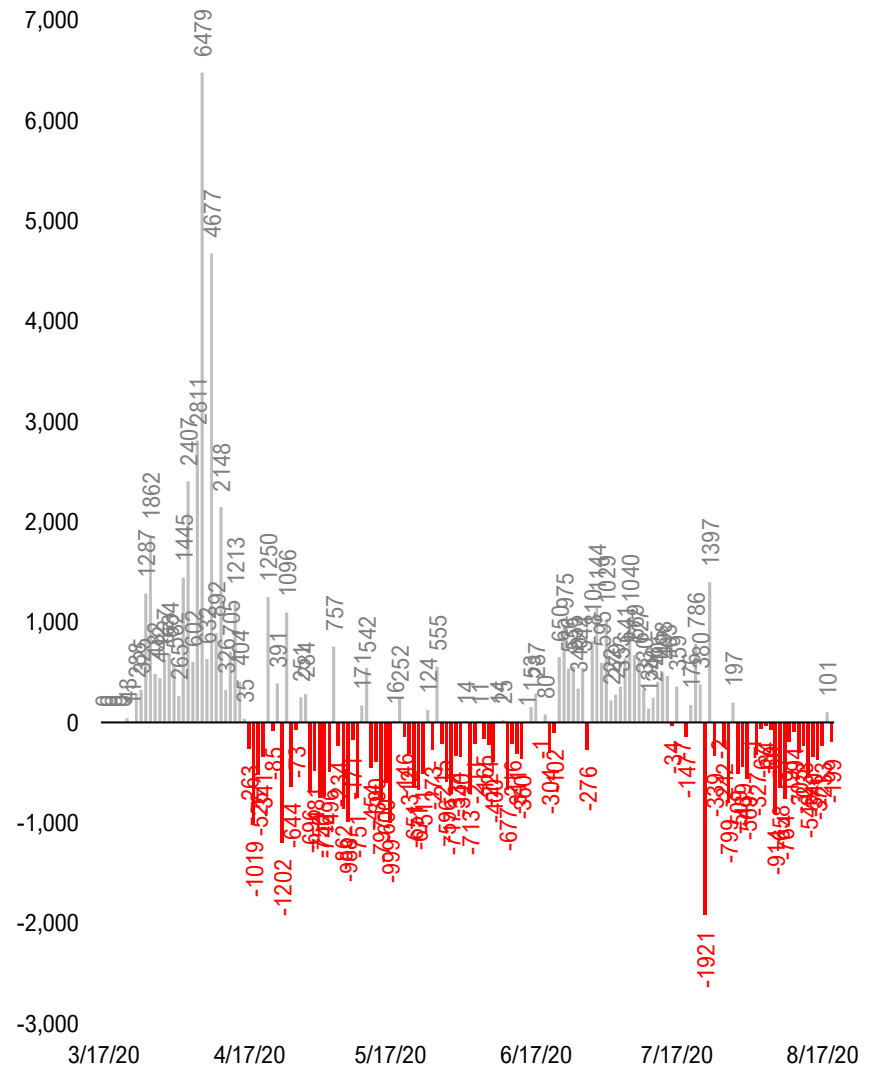
## US Gross Hospitalizations

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



## US Net Hospitalizations

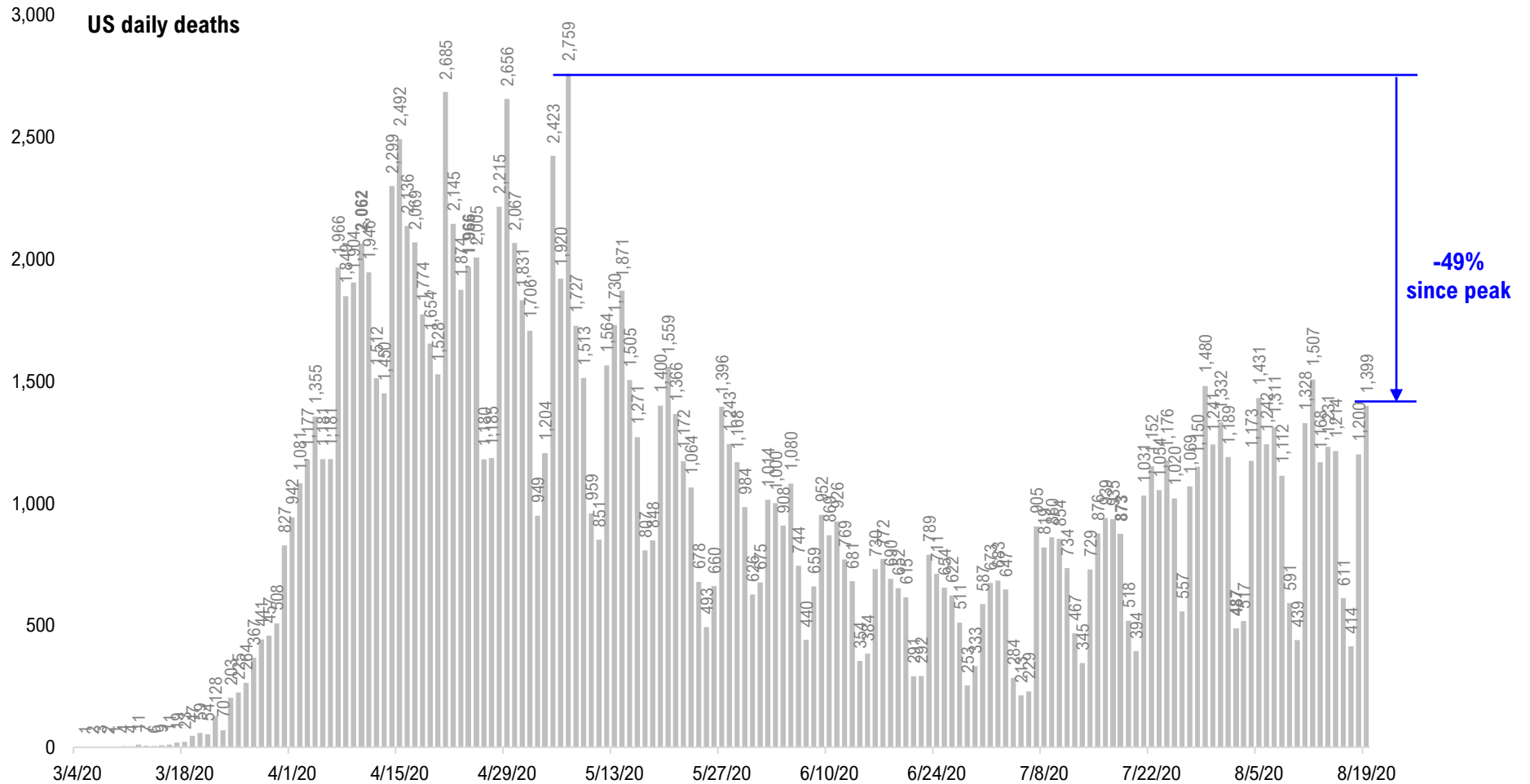
(Composite of 18 states that report "net/current hospitalizations")





# #8: US Daily New Fatalities...

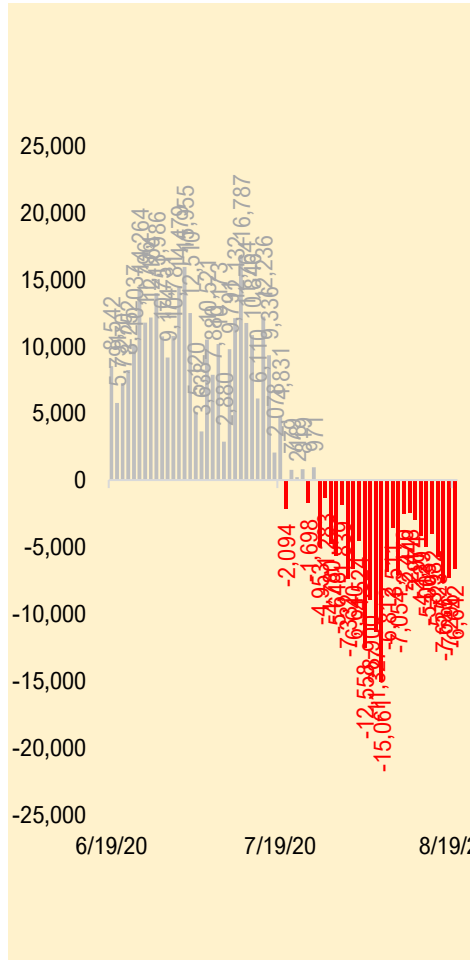
## US daily COVID-19 Fatalities



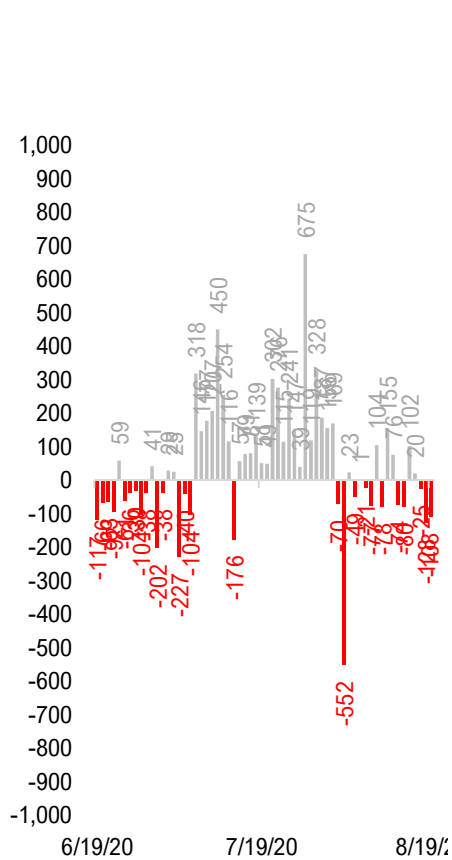
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

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

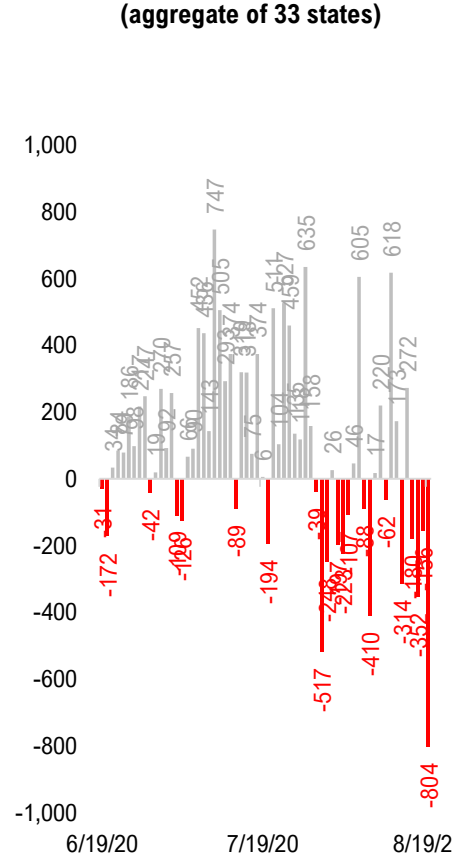
### Daily New Cases (ex-CA)



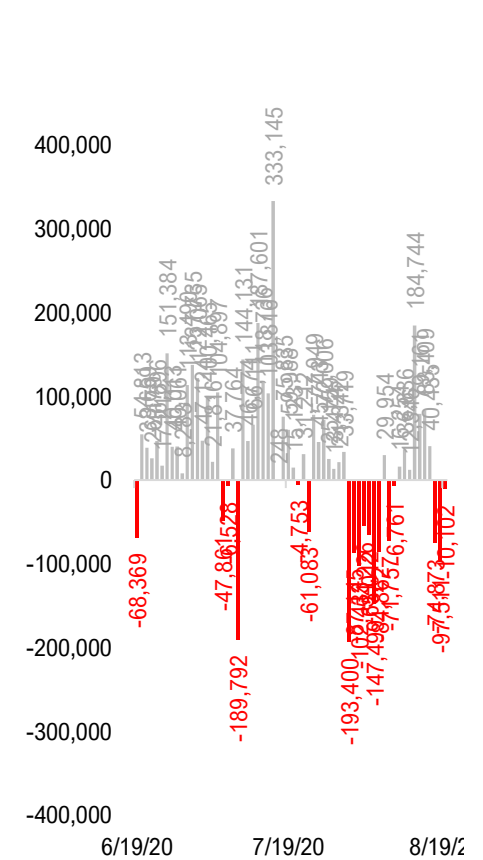
### Daily Deaths



### Daily New Gross hospitalization (aggregate of 33 states)

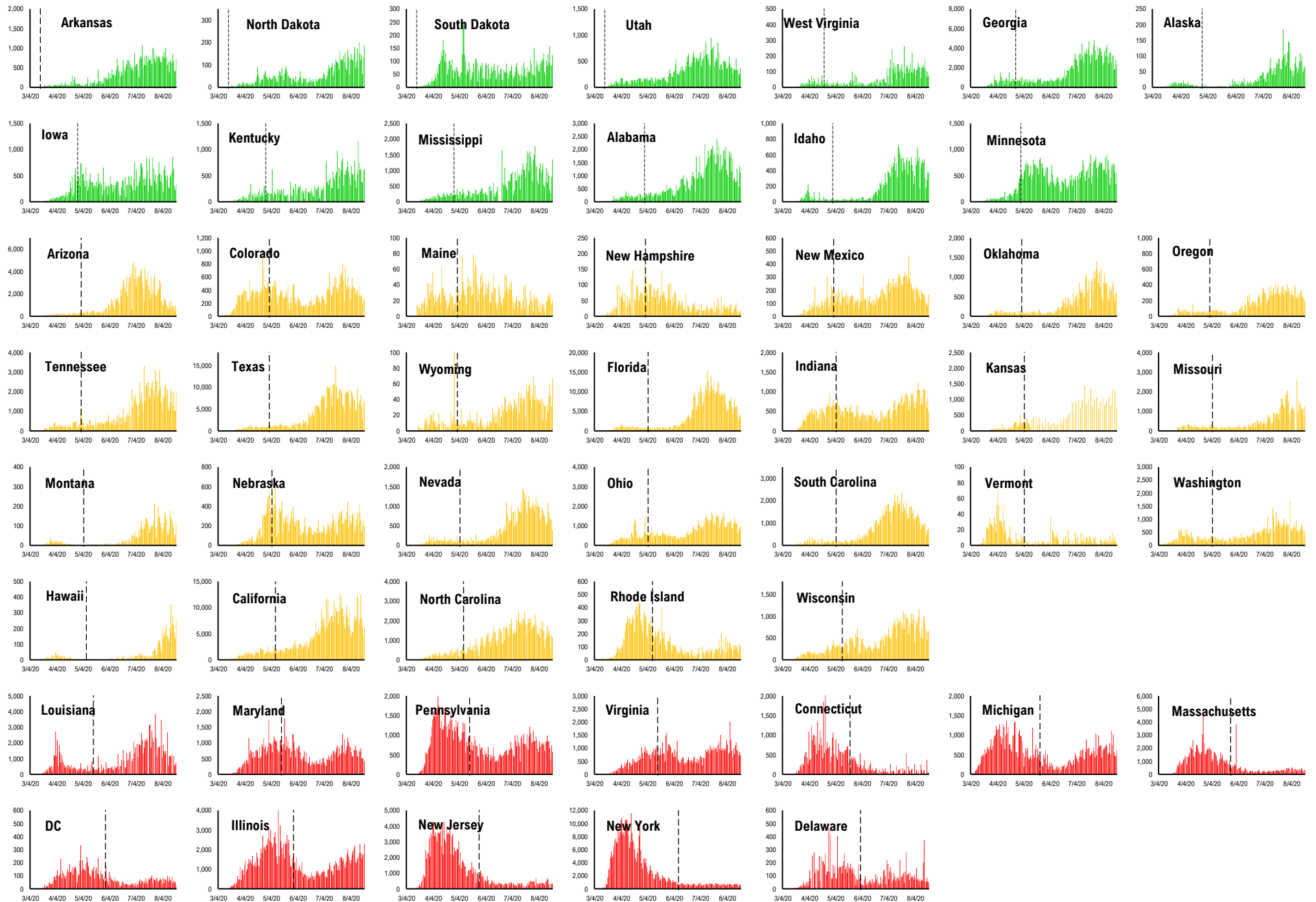


### Daily Tests

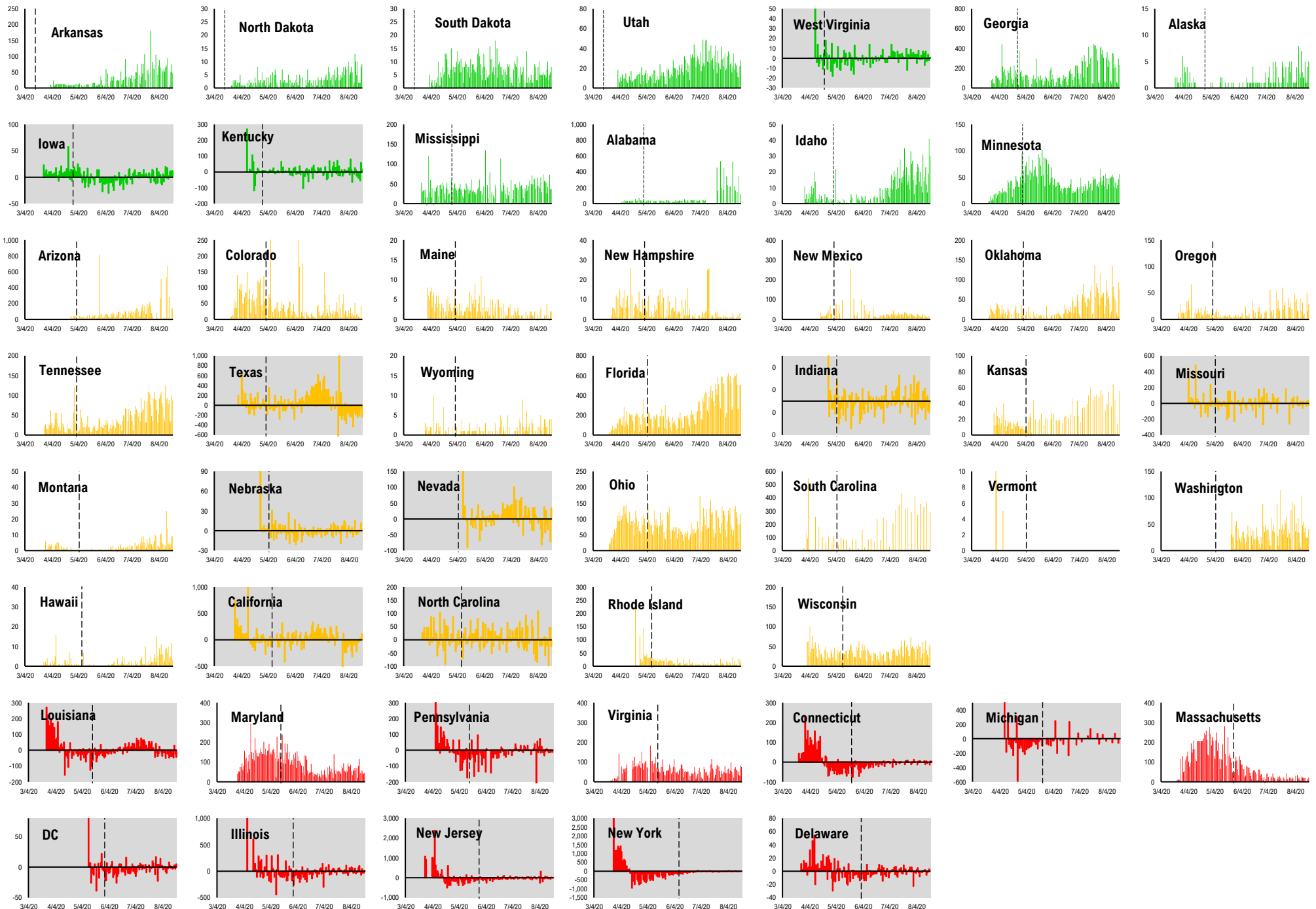


\* Ignored California since August 10, due to its data glitch caused 300,000-case backlog  
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

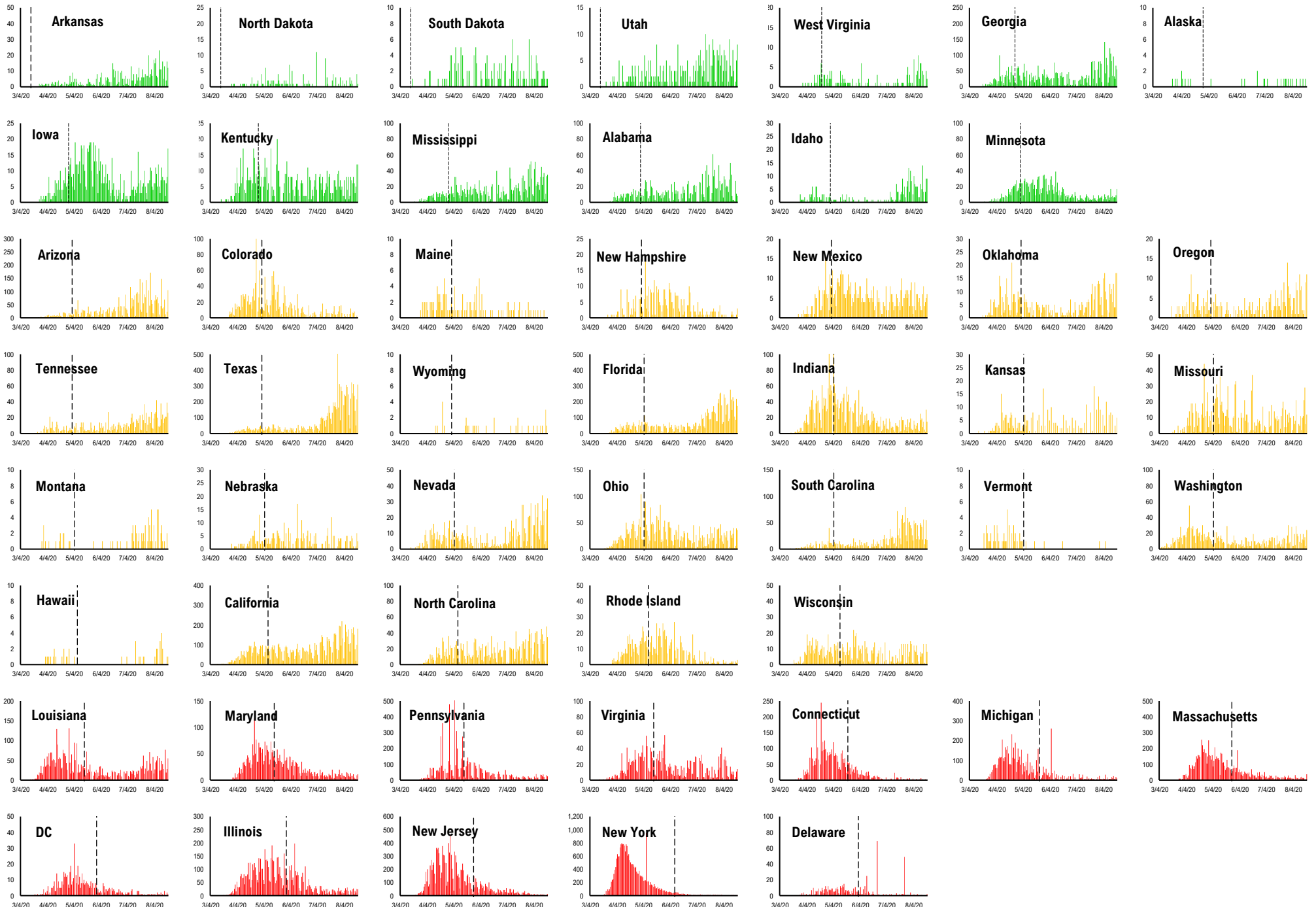
# #10: Daily New Cases by States... (sorted by "open" date)



# #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**

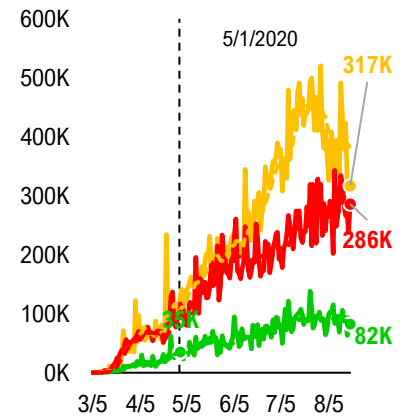
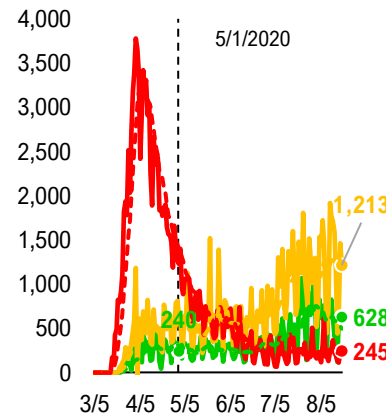
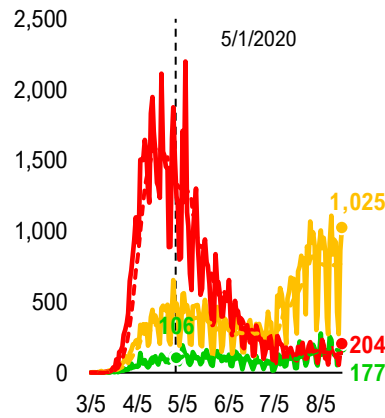
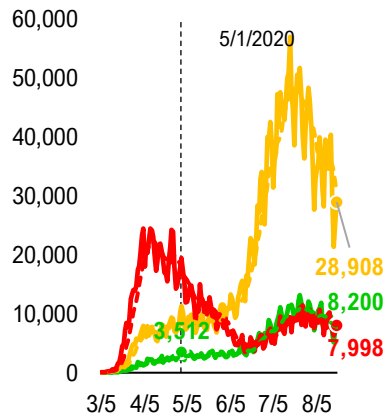
**Daily Deaths**

**Daily Hospitalization**

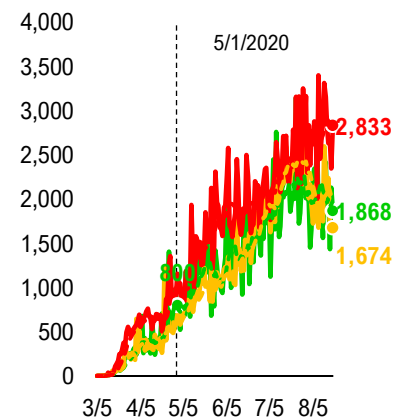
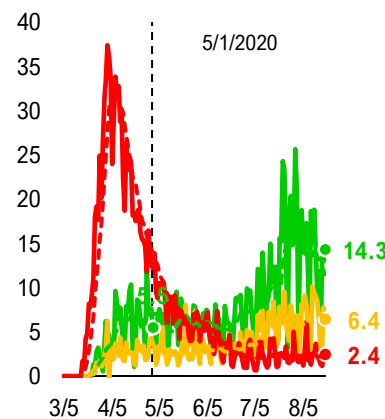
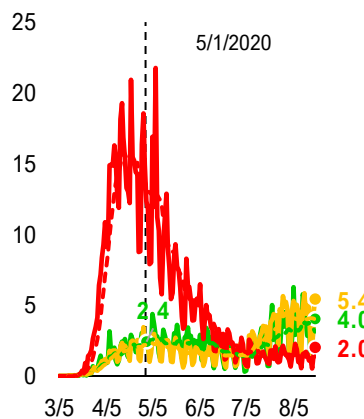
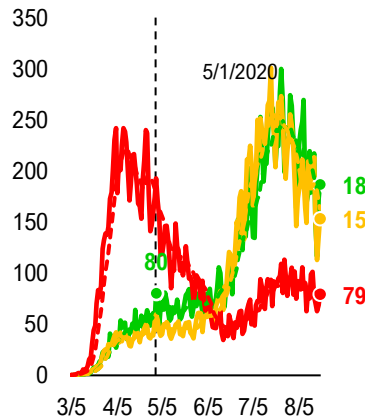
**Daily Testing**

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

**Composite Daily Aggregate**

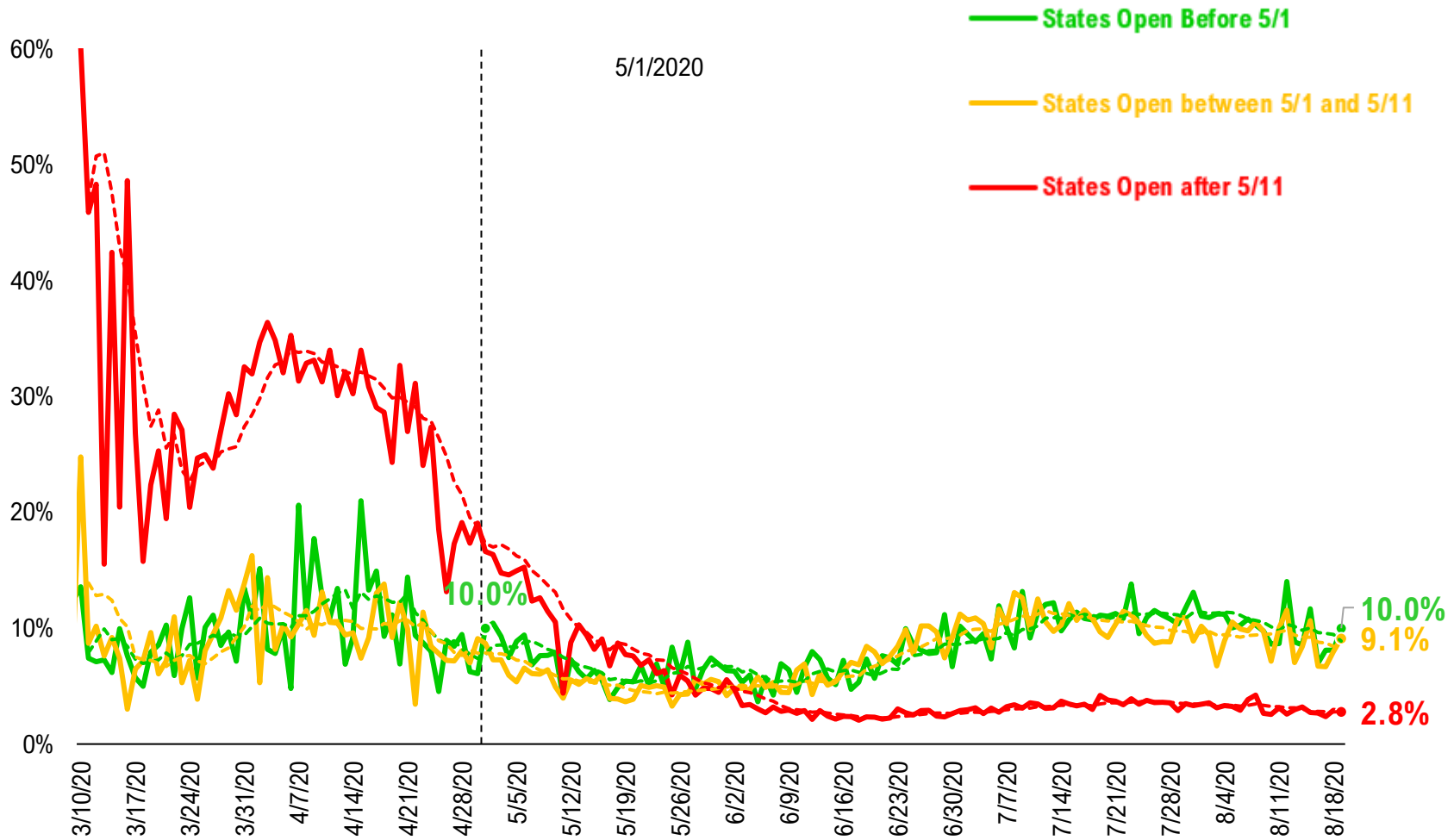


**Composite Daily Aggregate Per 1mm Pop**

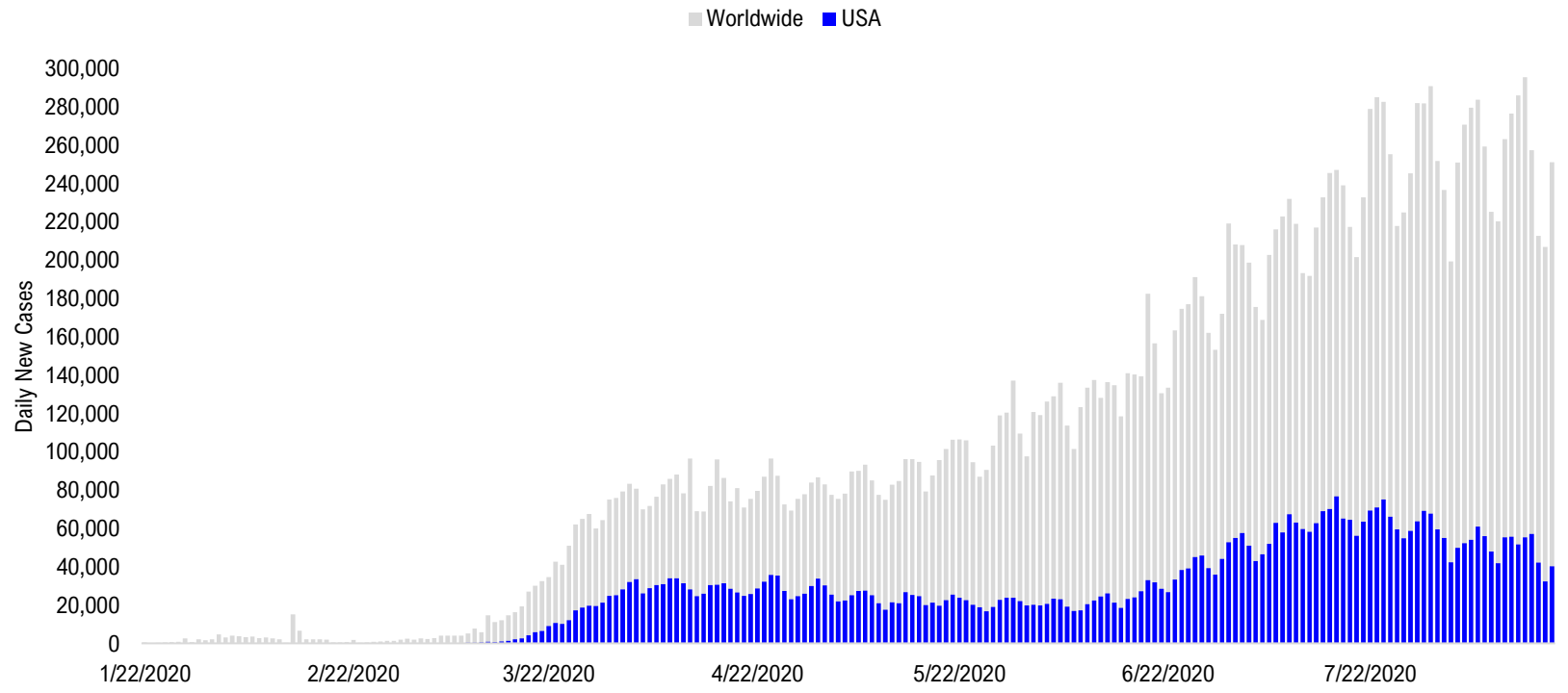


# #14: State COVID-19 Daily Positivity Rate by Reopen Date...

## 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	8/18/2020
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 68,194
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 62,302
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 38,637
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 24,399
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 9,153
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 8,933



# Disclosures

This research is for the clients of FS Insight only. For important disclosures and rating histories regarding sectors or companies that are the subject of this report, please contact your sales representative or FS Insight at 150 East 52nd Street, New York, NY, 10022 USA.

## **Analyst Certification (Reg AC)**

Thomas J. Lee, the research analyst denoted by an “AC” on the cover of this report, hereby certifies that all of the views expressed in this report accurately reflect his personal views, which have not been influenced by considerations of the firm’s business or client relationships.

Neither I, nor a member of my household is an officer, director, or advisory board member of the issuer(s) or has another significant affiliation with the issuer(s) that is/are the subject of this research report. There is a possibility that we will from time to time have long or short positions in, and buy or sell, the securities or derivatives, if any, referred to in this research

## **Conflicts of Interest**

This research contains the views, opinions and recommendations of FS Insight . As of the time of writing and publication of this presentation, FS Insight does not know of, or have reason to know of any material conflicts of interest at the time of the publication of this presentation. The Company has no contractual relationship, nor have we received any compensation from any of the companies listed in this research report.

## **Analyst Industry/Sector Views**

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.

## **General Disclosures**

FS Insight is an independent research company and is not a registered investment advisor and is not acting as a broker dealer under any federal or state securities laws. FS Insight is a member of IRC Securities’ Research Prime Services Platform. IRC Securities is a FINRA registered broker-dealer that is focused on supporting the independent research industry. Certain personnel of FS Insight (i.e. Research Analysts) are registered representatives of IRC Securities, a FINRA member firm registered as a broker-dealer with the Securities and Exchange Commission and certain state securities regulators. As registered representatives and independent contractors of IRC Securities, such personnel may receive commissions paid to or shared with IRC Securities for transactions placed by FS Insight clients directly with IRC Securities or with securities firms that may share commissions with IRC Securities in accordance with applicable SEC and FINRA requirements. IRC Securities does not distribute the research of FS Insight , which is available to select institutional clients that have engaged FS Insight .

As registered representatives of IRC Securities our analysts must follow IRC Securities’ Written Supervisory Procedures. Notable compliance policies include (1) prohibition of insider trading or the facilitation thereof, (2) maintaining client confidentiality, (3) archival of electronic communications, and (4) appropriate use of electronic communications, amongst other compliance related policies.

FS Insight does not have the same conflicts that traditional sell-side research organizations have because FS Insight (1) does not conduct any investment banking activities, (2) does not manage any investment funds, and (3) our clients are only institutional investors.

This research is for the clients of FS Insight only. Additional information is available upon request. Information has been obtained from sources believed to be reliable but FS Insight does not warrant its completeness or accuracy except with respect to any disclosures relative to FS Insight and the analyst’s involvement (if any) with any of the subject companies of the research. All pricing is as of the market close for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, risk tolerance, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies. The recipient of this report must make its own independent decision regarding any securities or financial instruments mentioned herein. Except in circumstances where FS Insight expressly agrees otherwise in writing, FS Insight is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice, including within the meaning of Section 15B of the Securities Exchange Act of 1934. All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client website, FS Insight .com. Not all research content is redistributed to our clients or made available to third-party aggregators or the media. Please contact your sales representative if you would like to receive any of our research publications.

**Copyright 2020 FS Insight LLC. All rights reserved. No part of this material may be reprinted, sold or redistributed without the prior written consent of FS Insight LLC.**