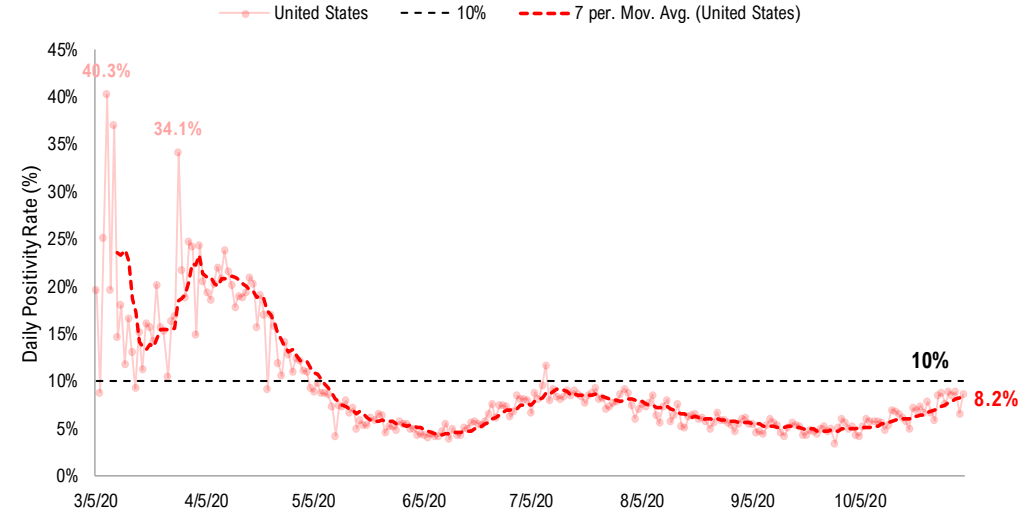
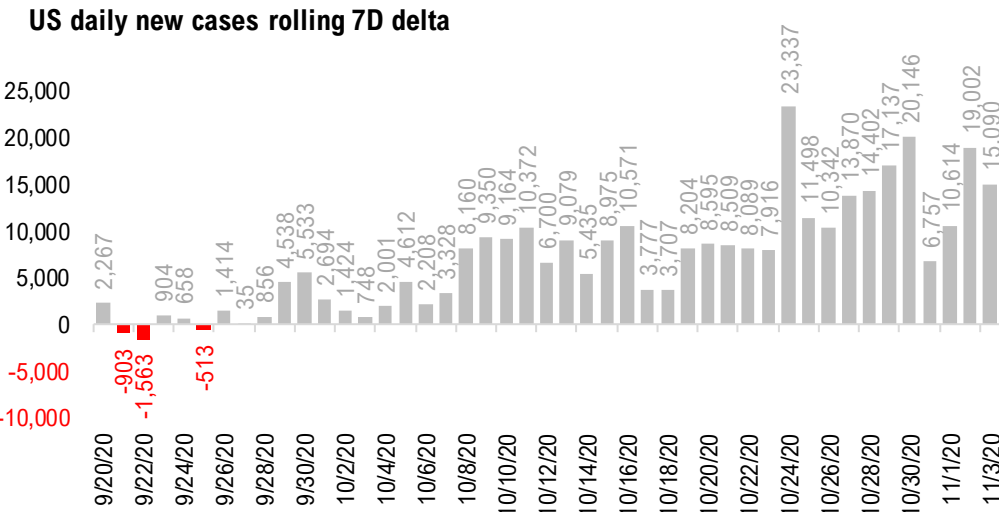
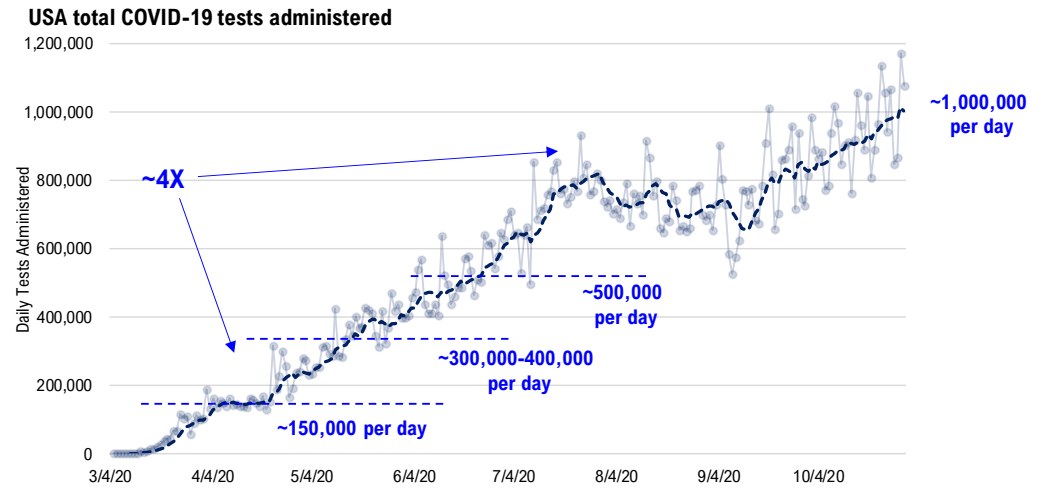
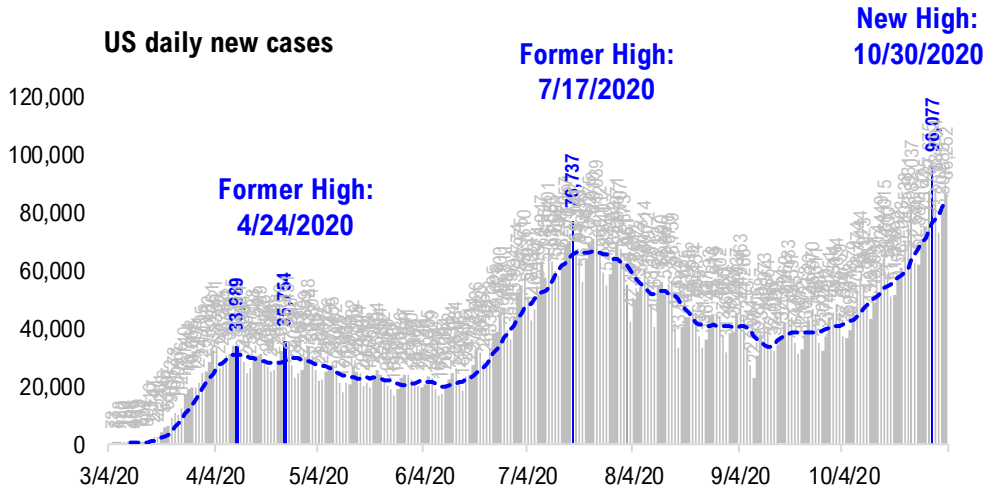


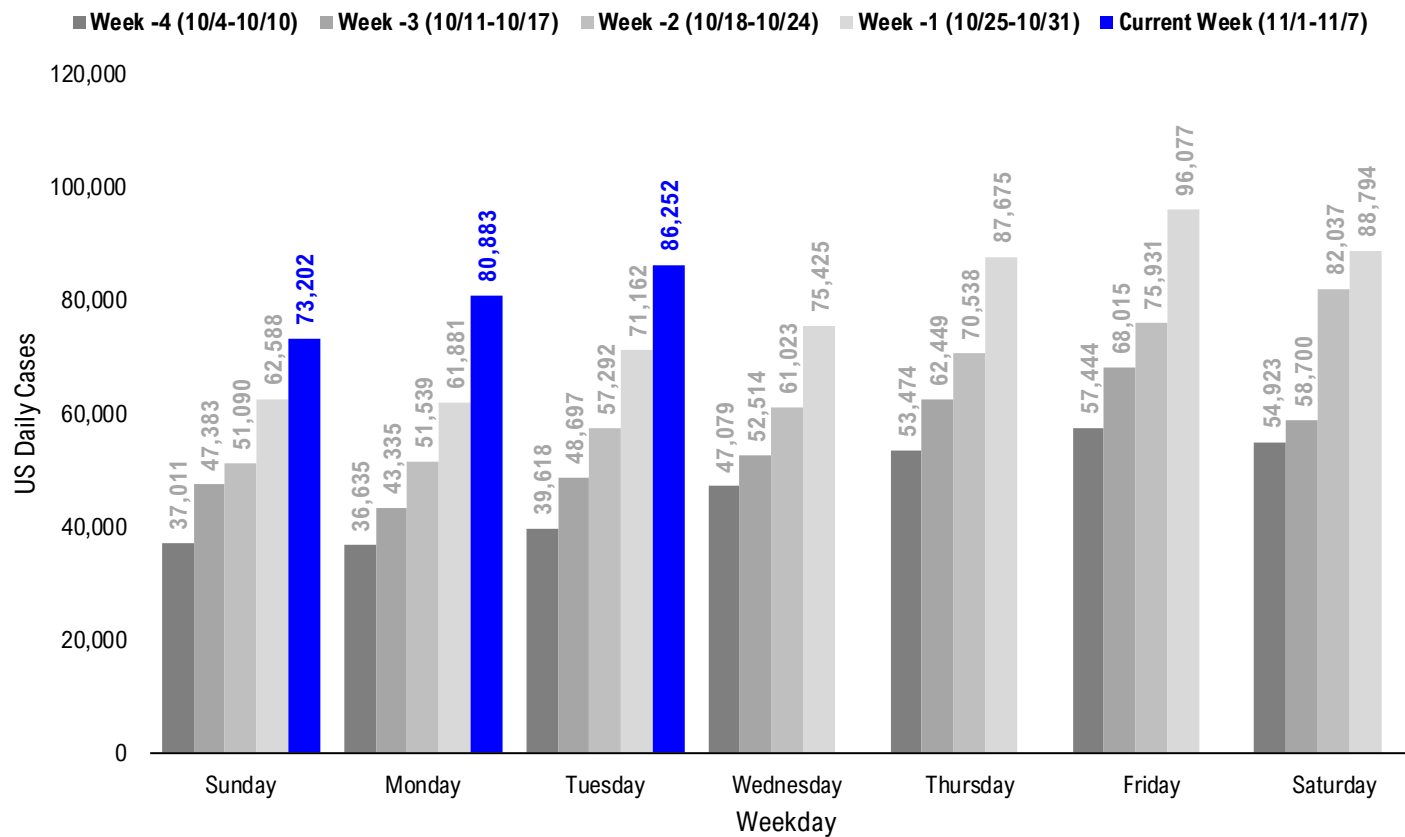
FSInsight Daily COVID-19 Chartbook



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



#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				Hospitalization			
	% US Pop	% US GDP	7D		Since Peak		Hospitalization		7D Net Hospitalization / 7D New Cases	
			11/3	Delta	11/3	Delta	# Days	% Decline in Daily Cases		

United States

100%	100%	86.252	+15.090	244	+45	3	-12%	6.102	1.0%
------	------	--------	---------	-----	-----	---	------	-------	------

States:

1 Texas	8.7%	8.8%	7,215	+160	176	+0	109	-57%	424	1.1%
2 Illinois	3.8%	4.2%	6,516	+2,516	519	+182	2	-16%	836	1.7%
3 Wisconsin	1.8%	1.6%	5,771	+509	727	+53	3	-17%	329	1.0%
4 Florida	6.5%	5.0%	4,637	+339	220	+64	113	-63%	170	0.6%
5 Ohio	3.5%	3.3%	4,229	+1,720	298	+100	0	0%	504	2.2%
6 California	11.9%	14.6%	4,044	+856	107	+11	102	-63%	270	0.9%
7 Minnesota	1.7%	1.8%	3,476	+1,312	510	+190	3	-4%	194	1.0%
8 Michigan	3.0%	2.6%	3,106	+739	328	+119	3	-8%	727	3.1%
9 Indiana	2.0%	1.8%	2,881	+898	431	+129	3	-15%	180	0.8%
10 Pennsylvania	3.9%	3.8%	2,875	+124	178	+27	3	-7%	247	1.5%
11 Colorado	1.7%	1.8%	2,562	+1,129	426	+117	2	-7%	267	1.7%
12 North Carolina	3.2%	2.7%	2,349	+208	182	+5	3	-32%	-39	(0.2%)
13 New York	5.9%	8.1%	2,321	+330	106	+24	207	-80%	144	1.0%
14 Missouri	1.8%	1.5%	2,238	+543	393	+107	3	-15%	224	1.3%
15 New Jersey	2.7%	3.0%	1,828	+181	185	+36	212	-59%	176	1.5%
16 Tennessee	2.1%	1.8%	1,770	-138	277	-98	9	-41%	235	1.6%
17 Kentucky	1.3%	1.0%	1,709	-62	310	+37	3	-27%	124	1.1%
18 Arizona	2.2%	1.7%	1,679	+521	177	+24	124	-70%	95	1.0%
19 Utah	1.0%	0.9%	1,669	+524	491	+63	2	-20%	73	0.6%
20 Georgia	3.2%	2.9%	1,668	+177	119	+1	101	-71%	-62	(0.6%)
21 Oklahoma	1.2%	1.0%	1,331	+321	317	+88	10	-22%	67	0.8%
22 Virginia	2.6%	2.6%	1,261	+127	136	+18	3	-21%	-55	(0.6%)
23 Idaho	0.5%	0.4%	1,179	+297	451	+35	10	-21%	-117	(1.9%)
24 North Dakota	0.2%	0.3%	1,172	+283	1431	+444	3	-18%	52	0.6%
25 Louisiana	1.4%	1.3%	1,150	+265	178	+29	105	-69%	19	0.5%
26 New Mexico	0.6%	0.5%	1,136	+553	437	+99	0	0%	94	1.5%
27 Iowa	1.0%	0.9%	1,092	+235	498	+207	2	-33%	166	1.3%
28 Alabama	1.5%	1.1%	1,037	-78	190	-25	101	-56%	21	0.2%

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		Since Peak		Hospitalization		7D Net Hospitalization / 7D New Cases	
			11/3	Delta	11/3	Delta	# Days	% Decline in Daily Cases		

United States

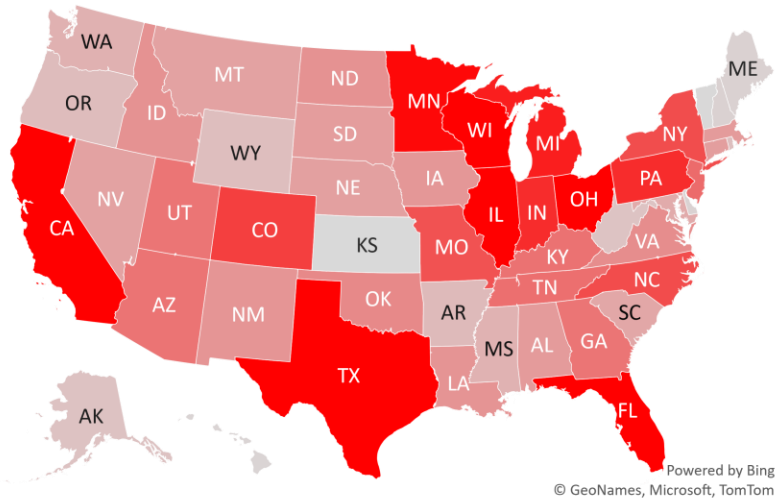
100%	100%	86.252	+15.090	244	+45	3	-12%	6.102	1.0%
------	------	--------	---------	-----	-----	---	------	-------	------

States:

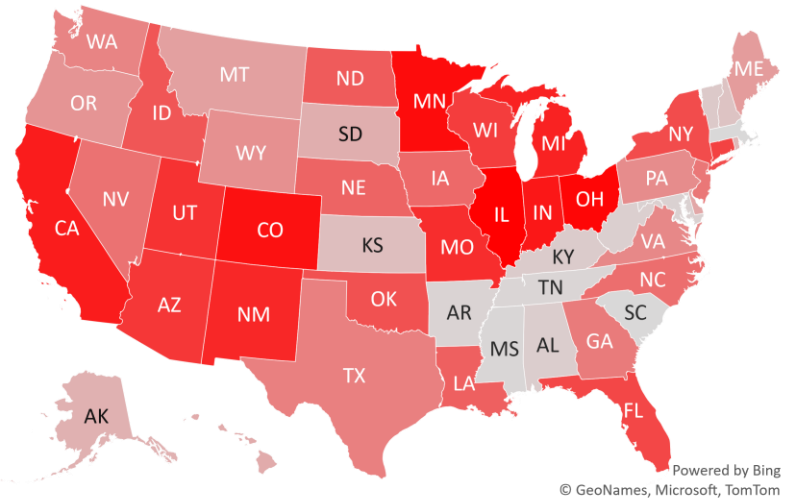
29 Massachusetts	2.1%	2.8%	1,036	-224	146	-26	192	-71%	-82	(1.0%)
30 South Dakota	0.3%	0.3%	1,004	+15	1078	+103	2	-34%	85	1.0%
31 Connecticut	1.1%	1.3%	985	+447	340	+98	195	-19%	89	1.4%
32 Nebraska	0.6%	0.6%	954	+252	513	+170	3	-30%	215	2.6%
33 Nevada	0.9%	0.8%	911	+181	245	+18	108	-44%	127	2.1%
34 Montana	0.3%	0.2%	907	+62	735	+48	3	-17%	39	0.7%
35 South Carolina	1.6%	1.1%	826	-235	200	-4	94	-62%	-9	(0.1%)
36 Maryland	1.8%	2.0%	771	-126	137	+13	166	-34%	91	1.5%
37 Washington	2.3%	2.7%	657	+130	110	+33	19	-20%	0	0.0%
38 Mississippi	0.9%	0.6%	644	-210	151	-20	96	-71%	-6	(0.1%)
39 Arkansas	0.9%	0.6%	520	-131	192	-12	11	-40%	-8	(0.2%)
40 Oregon	1.3%	1.2%	482	+110	122	+37	3	-9%	22	0.6%
41 Wyoming	0.2%	0.2%	452	+123	761	+184	0	0%	19	0.7%
42 Rhode Island	0.3%	0.3%	423	+2	357	+86	2	-28%	9	0.3%
43 Alaska	0.2%	0.3%	388	+6	495	-76	7	-13%	16	0.6%
44 West Virginia	0.5%	0.4%	358	-125	211	+26	2	-20%	50	1.7%
45 Puerto Rico	1.0%	0.5%	345	+82	168	+23	9	-17%	26	0.8%
46 New Hampshire	0.4%	0.4%	128	-6	89	+17	2	-18%	10	1.1%
47 Maine	0.4%	0.3%	127	+70	64	+21	3	-8%	19	3.1%
48 Guam	0.0%	0.0%	119	+37	263	-225	68	-60%	13	3.3%
49 Delaware	0.3%	0.4%	115	+34	163	+25	189	-52%	14	1.2%
50 Hawaii	0.4%	0.5%	87	+22	58	+6	66	-72%	1	0.2%
51 District of Columbia	0.2%	0.7%	86	-8	122	+27	184	-63%	-13	(2.1%)
52 Vermont	0.2%	0.2%	19	-11	31	-6	212	-67%	-1	(0.8%)
53 U.S. Virgin Islands	0.0%	0.0%	7	+4	28	+12	74	-93%	0	0.0%
54 Northern Mariana	0.0%	0.0%	0	+0	23	+0	16	-56%	0	0.0%
55 Kansas	0.9%	0.8%	0	+0	463	+217	4	-19%	11	0.1%
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	

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

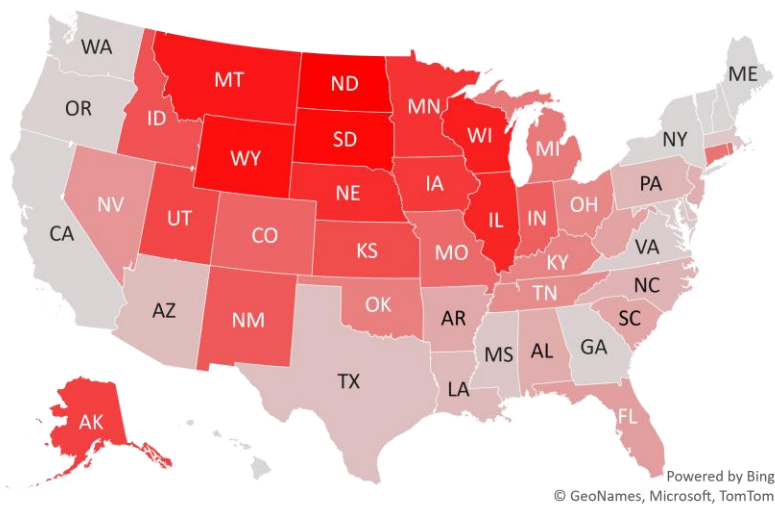
Daily Case Increases



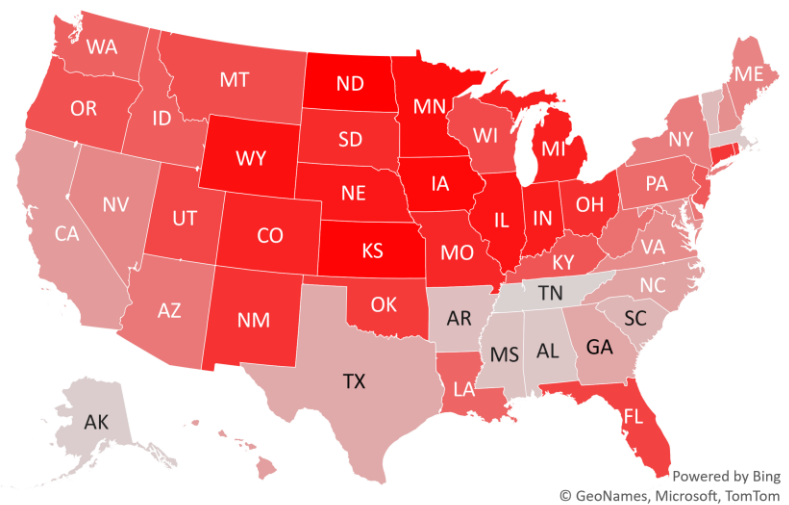
7D Delta in Daily New Cases



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



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

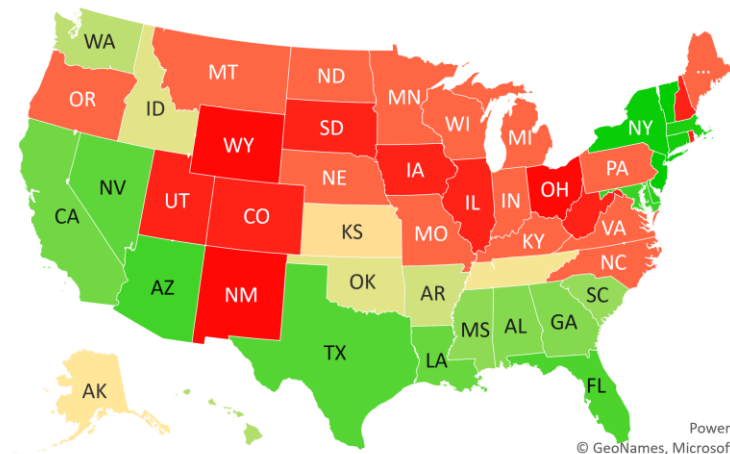


#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 11/3)

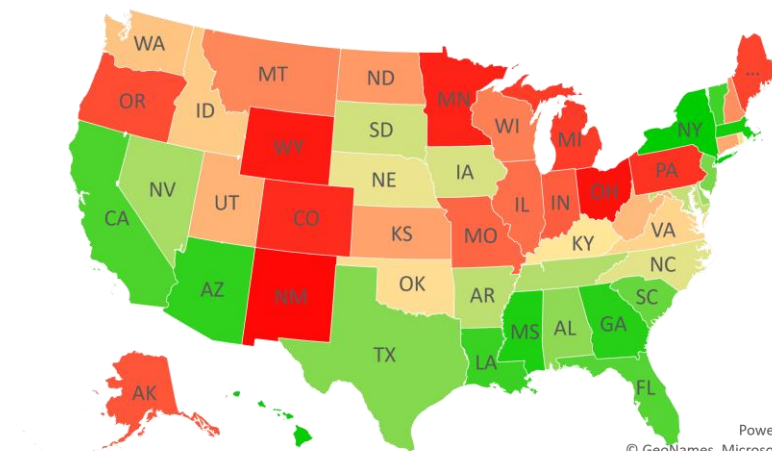
Sorted					Sorted				
	Peak Date	11/3/20	% off the Peak	% US Pop		Peak Date	11/3/20	% off the Peak	% US Pop
United States	10/31/20	3	-12%	100%	United States	10/31/20	3	-12%	100%
States:					States:				
Vermont	4/5/20	212	-67%	0.2%	Alaska	10/27/20	7	-13%	0.2%
New Jersey	4/5/20	212	-59%	2.7%	Kansas	10/30/20	4	-19%	0.9%
New York	4/10/20	207	-80%	5.9%	Wisconsin	10/31/20	3	-17%	1.8%
Connecticut	4/22/20	195	-19%	1.1%	Virginia	10/31/20	3	-21%	2.6%
Massachusetts	4/25/20	192	-71%	2.1%	Pennsylvania	10/31/20	3	-7%	3.9%
Delaware	4/28/20	189	-52%	0.3%	Oregon	10/31/20	3	-9%	1.3%
District of Columbia	5/3/20	184	-63%	0.2%	Nebraska	10/31/20	3	-30%	0.6%
Maryland	5/21/20	166	-34%	1.8%	North Dakota	10/31/20	3	-18%	0.2%
Arizona	7/2/20	124	-70%	2.2%	North Carolina	10/31/20	3	-32%	3.2%
Florida	7/13/20	113	-63%	6.5%	Montana	10/31/20	3	-17%	0.3%
Texas	7/17/20	109	-57%	8.7%	Missouri	10/31/20	3	-15%	1.8%
Nevada	7/18/20	108	-44%	0.9%	Minnesota	10/31/20	3	-4%	1.7%
Louisiana	7/21/20	105	-69%	1.4%	Michigan	10/31/20	3	-8%	3.0%
California	7/24/20	102	-63%	11.9%	Maine	10/31/20	3	-8%	0.4%
Georgia	7/25/20	101	-71%	3.2%	Kentucky	10/31/20	3	-27%	1.3%
Alabama	7/25/20	101	-56%	1.5%	Indiana	10/31/20	3	-15%	2.0%
Mississippi	7/30/20	96	-71%	0.9%	West Virginia	11/1/20	2	-20%	0.5%
South Carolina	8/1/20	94	-62%	1.6%	Utah	11/1/20	2	-20%	1.0%
U.S. Virgin Islands	8/21/20	74	-93%	0.0%	South Dakota	11/1/20	2	-34%	0.3%
Guam	8/27/20	68	-60%	0.0%	Rhode Island	11/1/20	2	-28%	0.3%
Hawaii	8/29/20	66	-72%	0.4%	New Hampshire	11/1/20	2	-18%	0.4%
Washington	10/15/20	19	-20%	2.3%	Illinois	11/1/20	2	-16%	3.8%
Northern Mariana Island	10/18/20	16	-56%	0.0%	Iowa	11/1/20	2	-33%	1.0%
Arkansas	10/23/20	11	-40%	0.9%	Colorado	11/1/20	2	-7%	1.7%
Oklahoma	10/24/20	10	-22%	1.2%	Wyoming	11/3/20	0	0%	0.2%
Idaho	10/24/20	10	-21%	0.5%	Ohio	11/3/20	0	0%	3.5%
Tennessee	10/25/20	9	-41%	2.1%	New Mexico	11/3/20	0	0%	0.6%
Puerto Rico	10/25/20	9	-17%	1.0%					

Days since Daily Case Peak: Longer = Good



Powered by Bing
© GeoNames, Microsoft, TomTom

Daily Cases % off the Peak: Larger Decline = Good



Powered by Bing
© GeoNames, Microsoft, TomTom

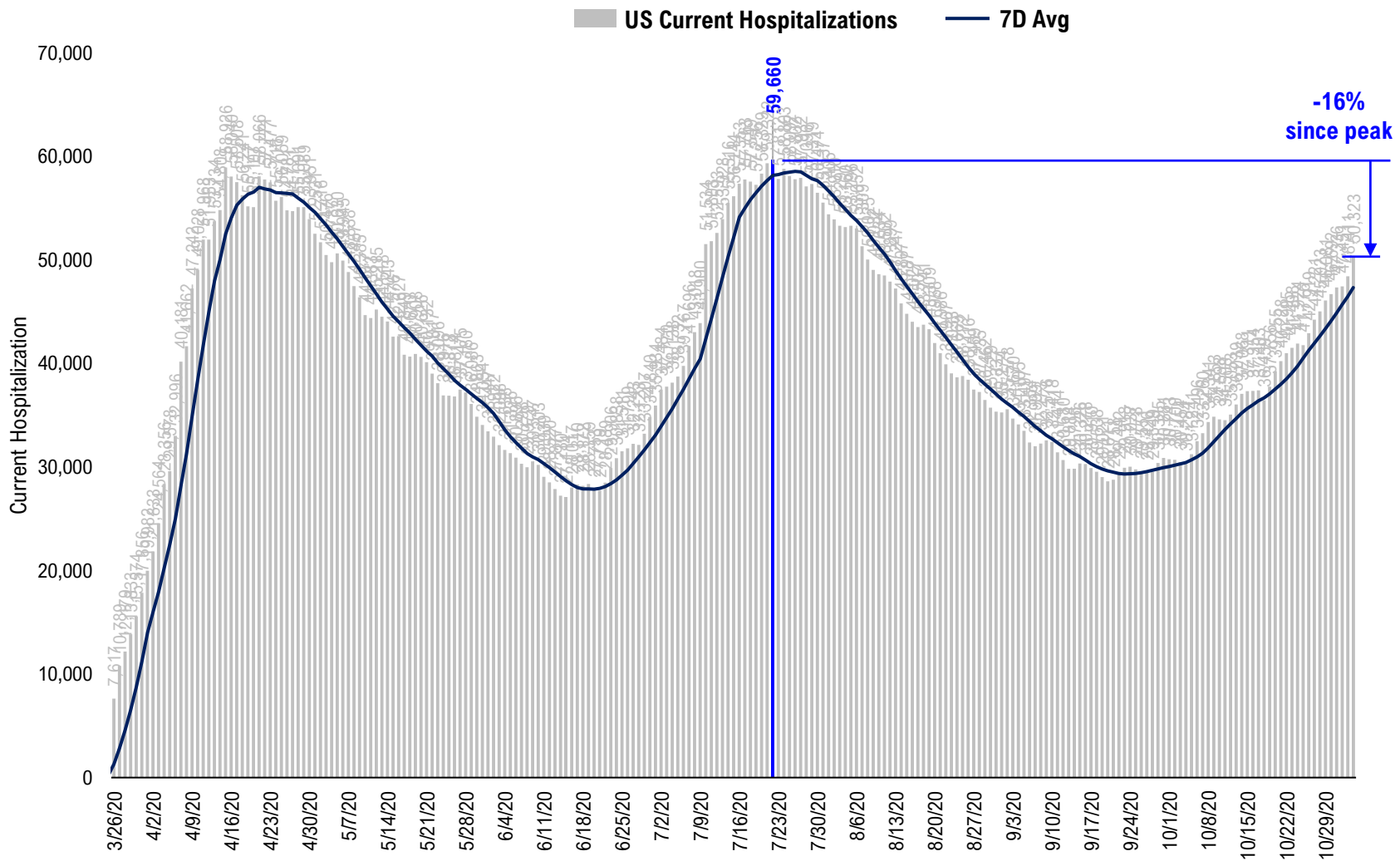
#6: US New Cases by States... (sorted by today's new cases)

	Sorted				
	7D Ago	Last 3-day Trend			
	10/27/20	11/1/20	11/2/20	11/3/20	vs 7D ago
United States	71.162	73.202	80.883	86,252	+15,090
States:					
Texas	7,055	4,111	3,982	7,215	
Illinois	4,000	6,980	6,222	6,516	<--higher
Wisconsin	5,262	3,493	3,433	5,771	
Florida	4,298	4,865	4,651	4,637	
Ohio	2,509	3,303	2,909	4,229	<--higher
California	3,188	4,529	4,094	4,044	<--higher
Minnesota	2,164	2,200	2,948	3,476	<--higher
Michigan	2,367	0	6,709	3,106	<--higher
Indiana	1,983	2,750	3,077	2,881	<--higher
Pennsylvania	2,751	1,909	2,060	2,875	
Colorado	1,433	2,560	2,237	2,562	<--higher
North Carolina	2,141	2,057	1,336	2,349	
New York	1,991	2,255	1,633	2,321	
Missouri	1,695	2,349	2,651	2,238	<--higher
New Jersey	1,647	1,743	1,368	1,828	
Tennessee	1,908	754	3,161	1,770	
Kentucky	1,771	1,423	1,028	1,709	
Arizona	1,158	1,527	666	1,679	<--higher
Utah	1,145	1,854	1,196	1,669	<--higher
Georgia	1,491	1,192	939	1,668	
Oklahoma	1,010	1,349	1,084	1,331	<--higher
Virginia	1,134	1,202	1,026	1,261	
Idaho	882	480	757	1,179	<--higher
North Dakota	889	1,127	972	1,172	<--higher
Louisiana	885	1,064	270	1,150	<--higher
New Mexico	583	742	872	1,136	<--higher
Iowa	857	2,212	1,405	1,092	<--higher
Alabama	1,115	854	907	1,037	

	Sorted				
	7D Ago	Last 3-day Trend			
	10/27/20	11/1/20	11/2/20	11/3/20	vs 7D ago
United States	71,162	73,202	80,883	86,252	+15,090
States:					
Massachusetts	1,260	1,131	842	1,036	
South Dakota	989	1,332	526	1,004	
Connecticut	538	0	2,651	985	<--higher
Nebraska	702	1,087	934	954	<--higher
Nevada	730	716	635	911	<--higher
Montana	845	694	757	907	
South Carolina	1,061	1,429	841	826	
Maryland	897	864	850	771	
Washington	527	814	1,039	657	<--higher
Mississippi	854	340	365	644	
Arkansas	651	757	464	520	
Oregon	372	508	549	482	<--higher
Wyoming	329	425	444	452	<--higher
Rhode Island	421	480	232	423	
Alaska	382	348	350	388	
West Virginia	483	423	352	358	
Puerto Rico	263	403	864	345	<--higher
New Hampshire	134	130	106	128	
Maine	57	47	84	127	<--higher
Guam	82	9	3	119	<--higher
Delaware	81	175	185	115	<--higher
Hawaii	65	82	78	87	<--higher
District of Columbia	94	103	69	86	
Vermont	30	17	22	19	
U.S. Virgin Islands	3	0	2	7	<--higher
Northern Mariana Islands	0	4	0	0	
Kansas	0	0	4,046	0	
American Samoa	0	0	0	0	

#7: US Daily Hospitalizations...

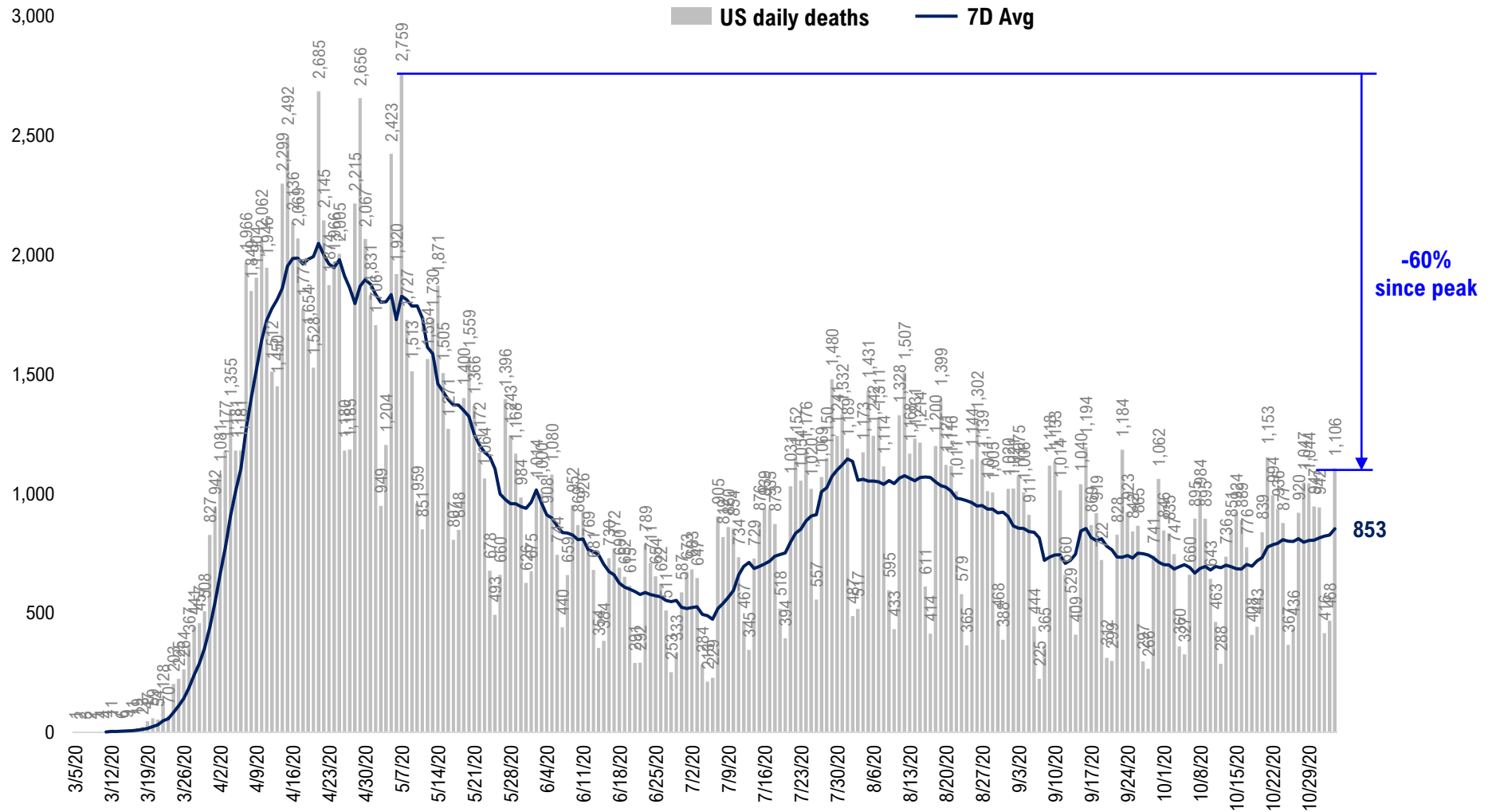
US Net Hospitalizations (aggregate of 50 states + Washington, D.C.)



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

#8: US Daily New Fatalities...

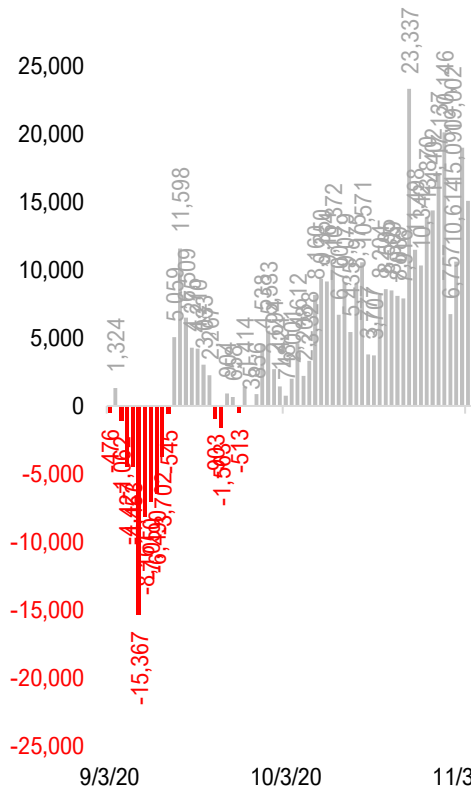
US daily COVID-19 Fatalities



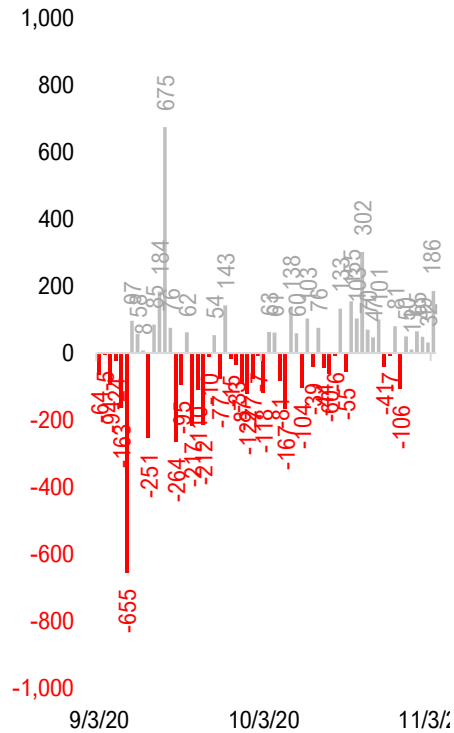
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

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

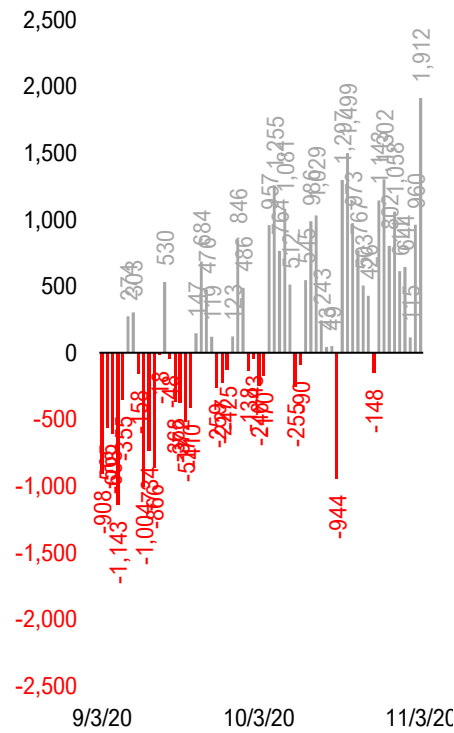
Daily New Cases
(8/10-8/23 ex-CA; 9/4-9/5 ex-IL)



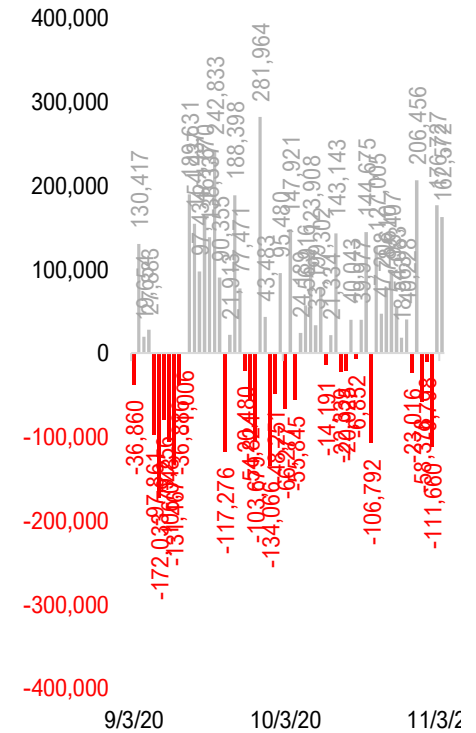
Daily Deaths



Daily Net Hospitalization
(Red = more discharge than admission)

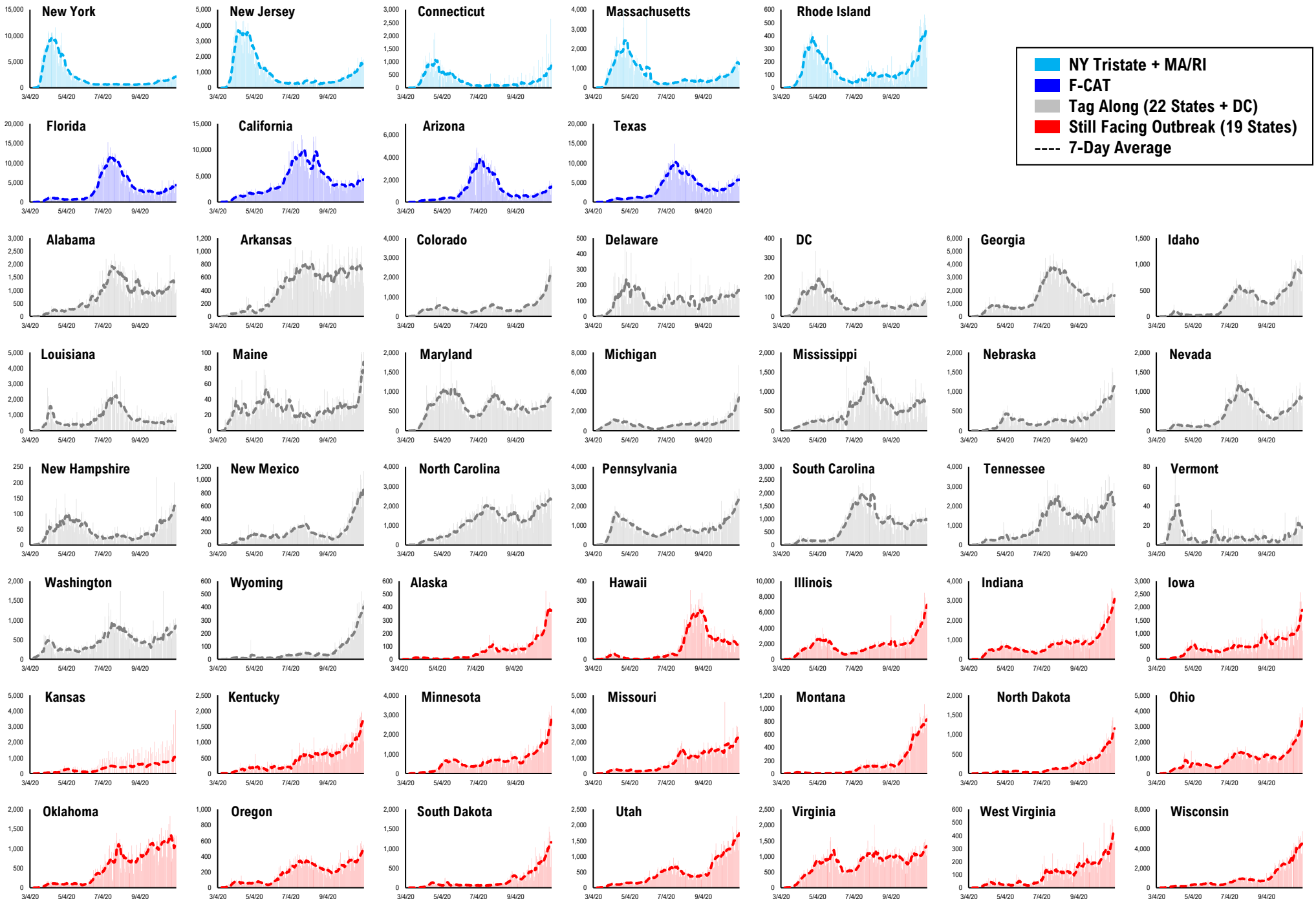


Daily Tests

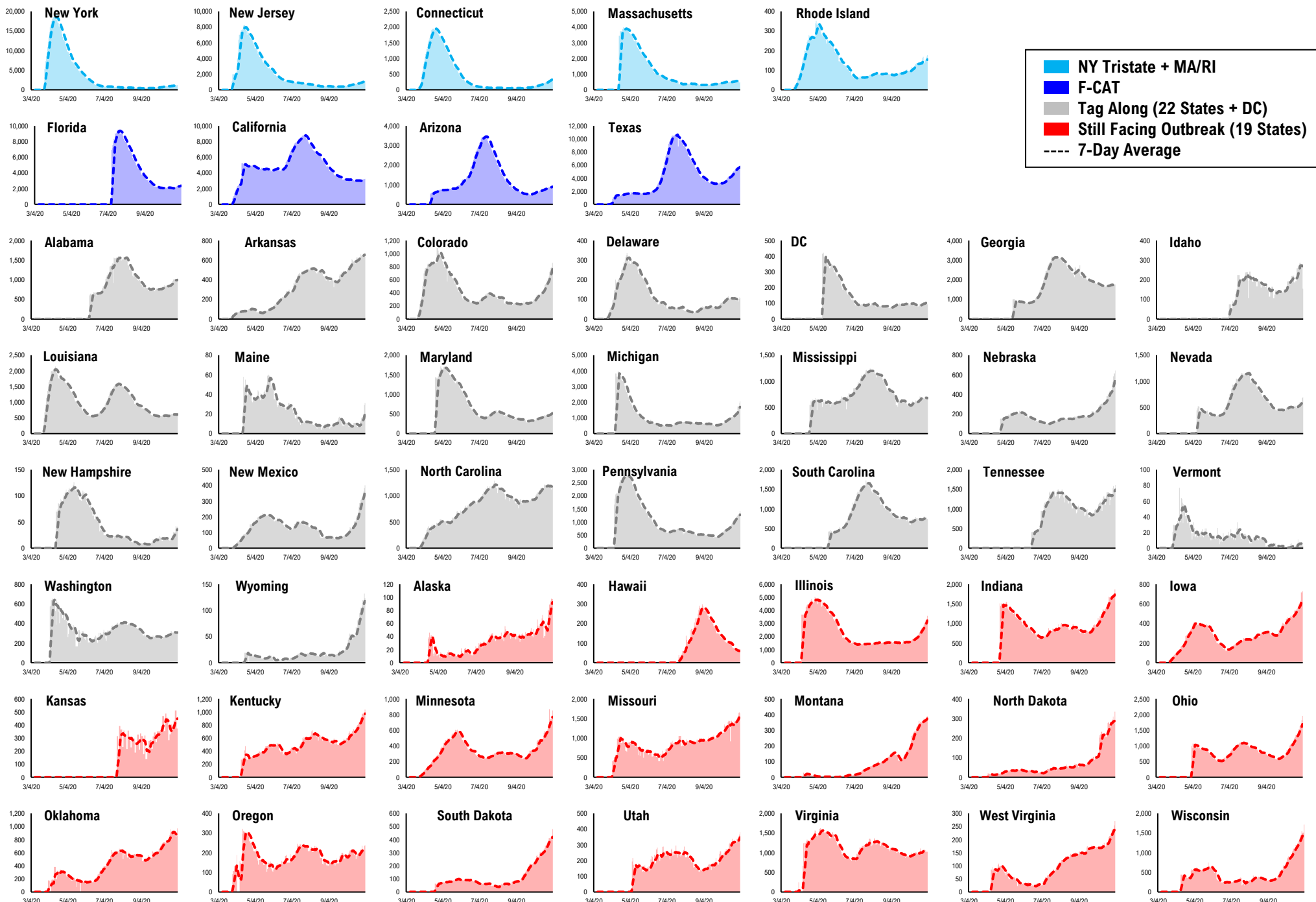


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

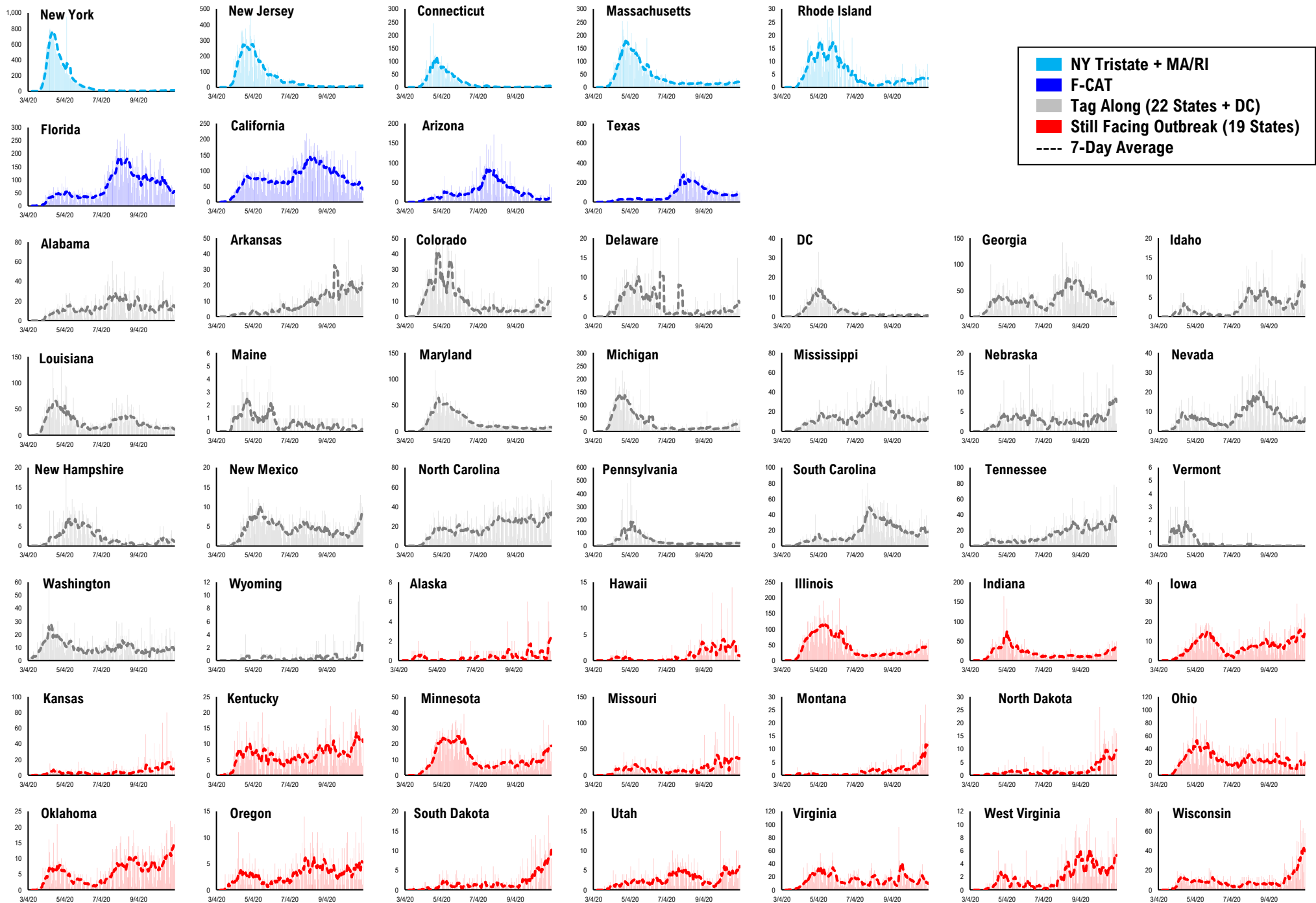
#10: Daily New Cases by States...



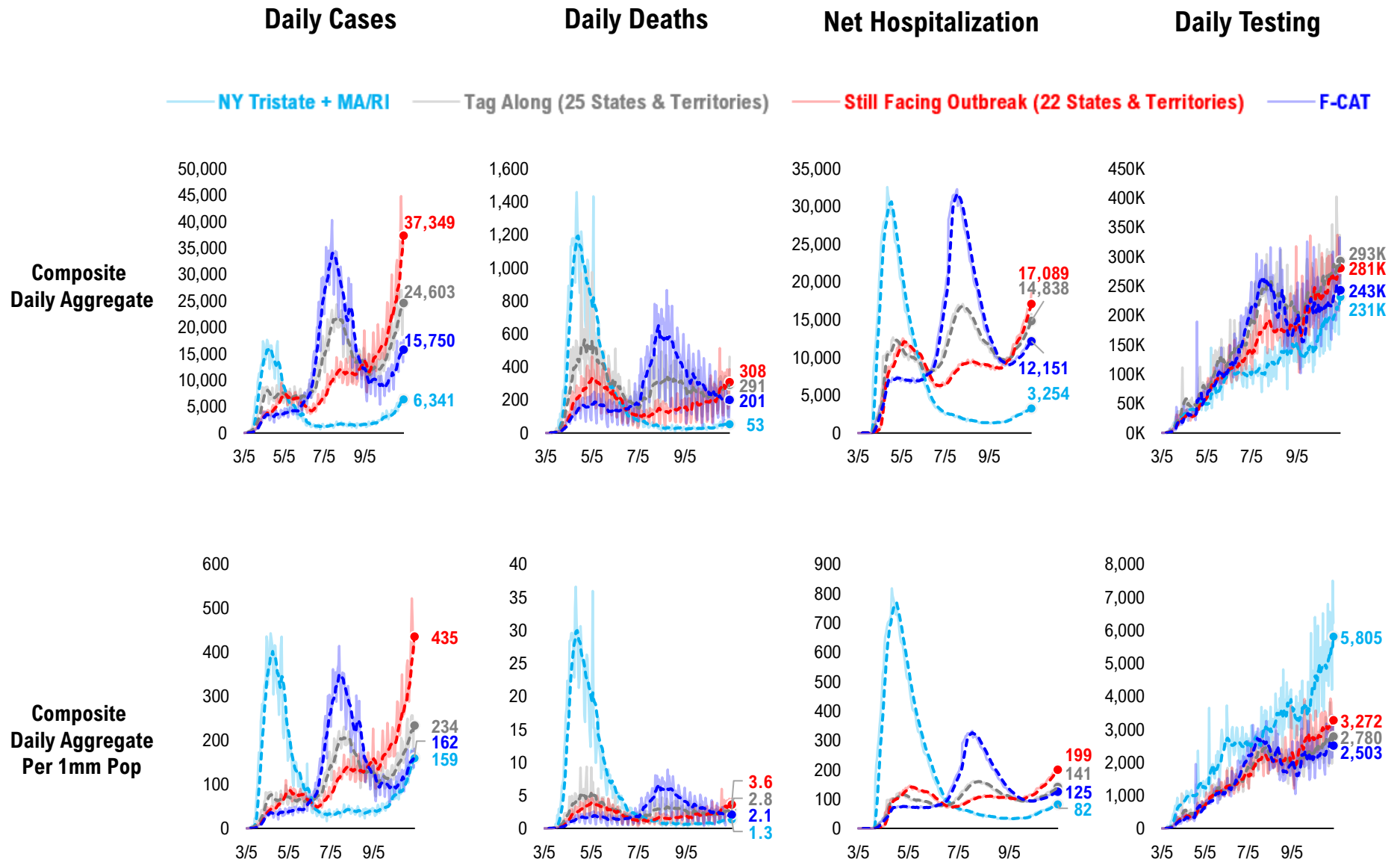
#11: Current Hospitalizations by States...



#12: Daily New Deaths by States...

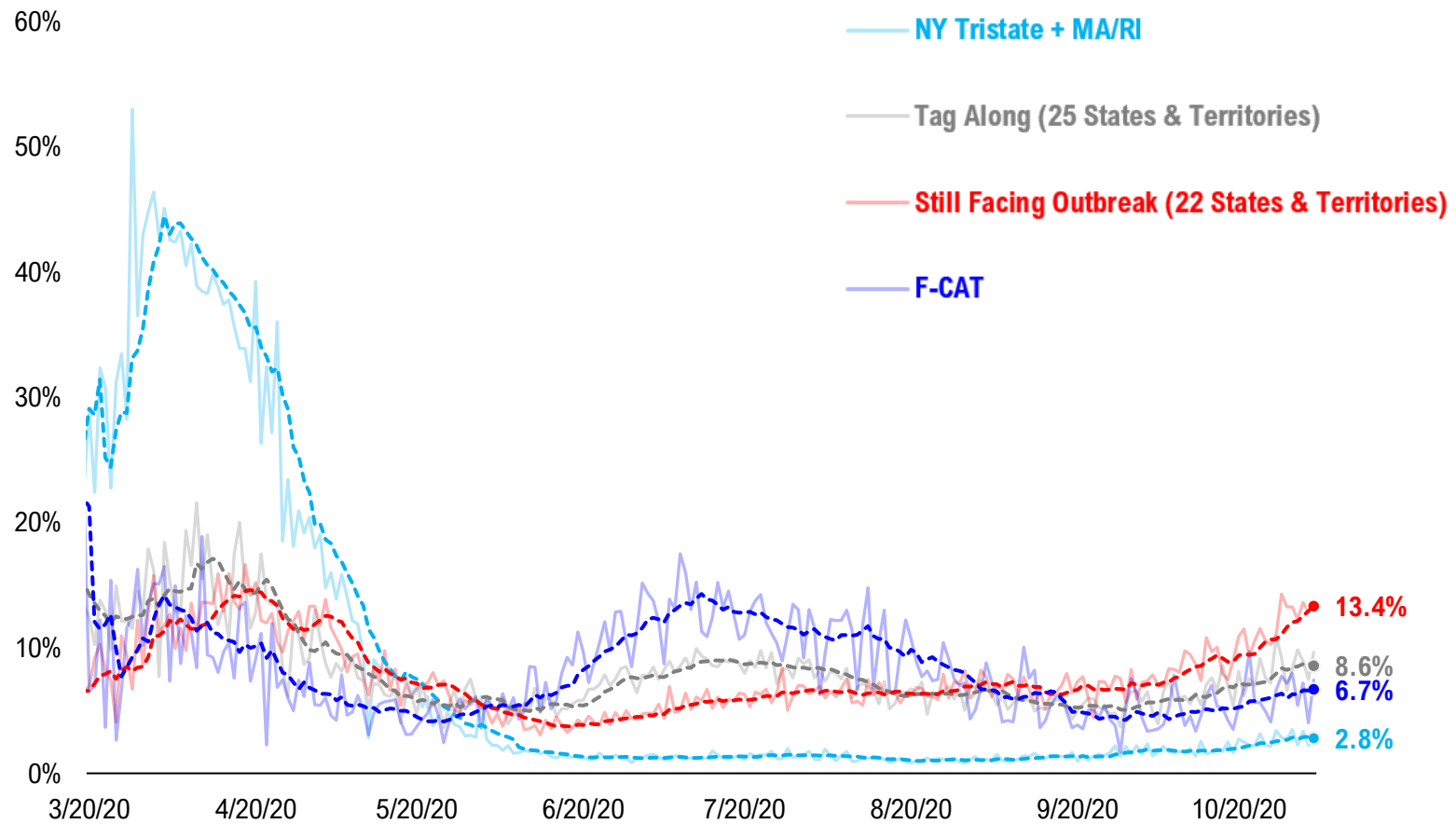


#13: State COVID-19 situation by Tier...

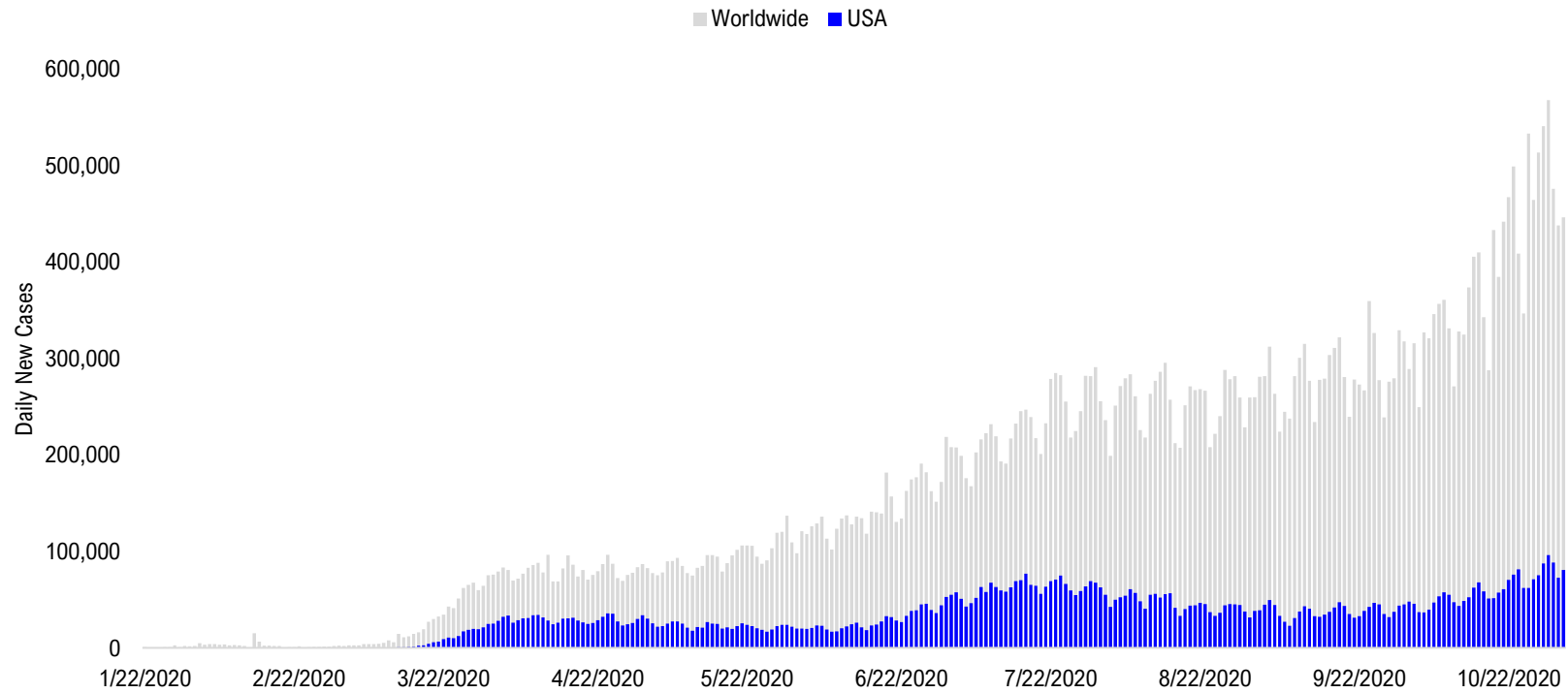


#14: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Jun 19	Jul 3	Jul 17	Jul 31	Aug 14	Aug 28	Sep 11	Sep 25	Oct 9	Oct 23	Nov 2
Latin America 58,570	Latin America 72,231	Latin America 72,602	Latin America 97,308	Latin America 100,636	Latin America 88,255	Pakistan + India + Bangladesh 98,888	Pakistan + India + Bangladesh 88,225	Europe 112,040	Europe 226,821	Europe 237,450
US + Canada 28,473	US + Canada 55,408	US + Canada 72,365	US + Canada 67,272	Pakistan + India + Bangladesh 68,924	Pakistan + India + Bangladesh 82,644	Latin America 80,841	Latin America 76,712	Pakistan + India + Bangladesh 76,149	US + Canada 71,797	US + Canada 83,372
Pakistan + India + Bangladesh 22,981	Pakistan + India + Bangladesh 27,389	Pakistan + India + Bangladesh 39,450	Pakistan + India + Bangladesh 58,625	US + Canada 54,914	US + Canada 45,255	Europe 47,433	Europe 67,915	Latin America 69,822	Latin America 69,390	Pakistan + India + Bangladesh 46,132
Europe 18,534	Europe 15,950	Africa 19,290	Europe 20,929	Europe 28,225	Europe 35,965	US + Canada 37,795	US + Canada 43,790	US + Canada 54,960	Pakistan + India + Bangladesh 56,907	Latin America 44,074
Africa 8,930	Africa 14,218	Europe 17,320	Africa 17,999	Africa 10,680	Asia ex- India+Pakistan 9,999	Asia ex- India+Pakistan 10,612	Asia ex- India+Pakistan 10,726	Asia ex- India+Pakistan 13,687	Asia ex- India+Pakistan 15,049	Asia ex- India+Pakistan 11,900
Asia ex- India+Pakistan 3,314	Asia ex- India+Pakistan 12,006	Asia ex- India+Pakistan 7,321	Asia ex- India+Pakistan 10,630	Asia ex- India+Pakistan 10,512	Africa 8,468	Africa 8,309	Africa 8,247	Africa 9,966	Africa 10,615	Africa 9,662

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.