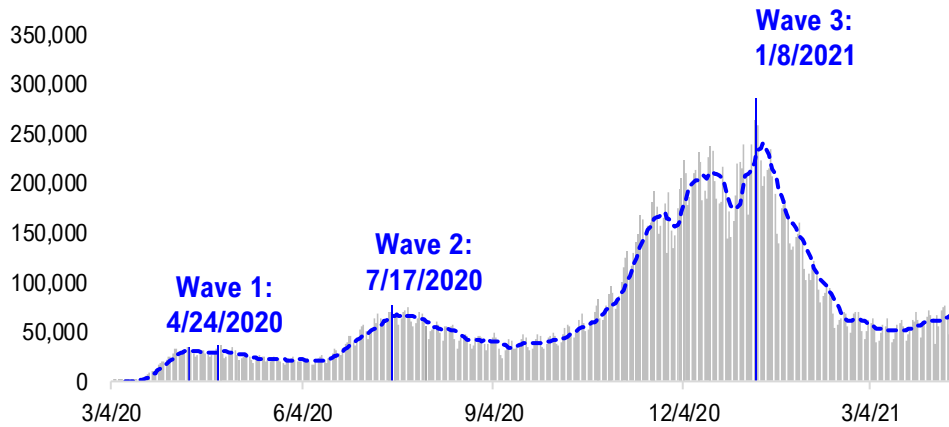


FSInsight Daily COVID-19 Chartbook

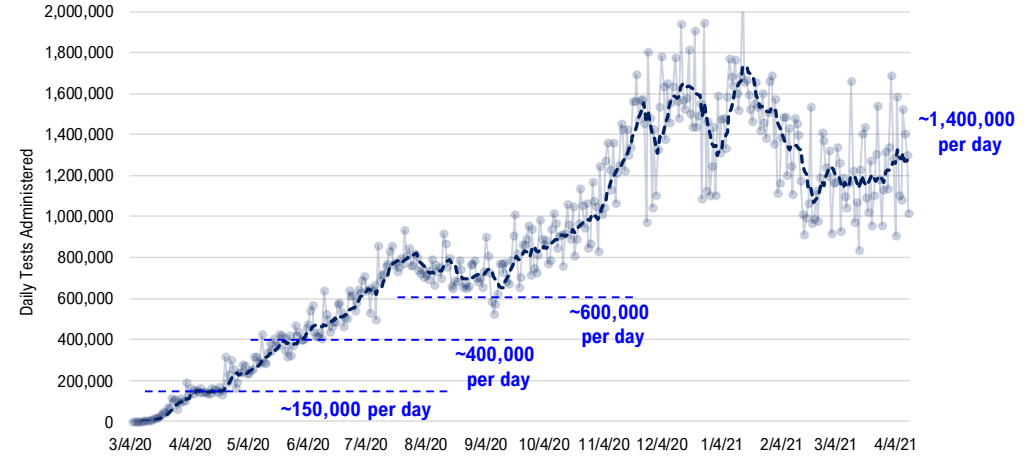


#1: USA COVID-19 Situation at a Glance...

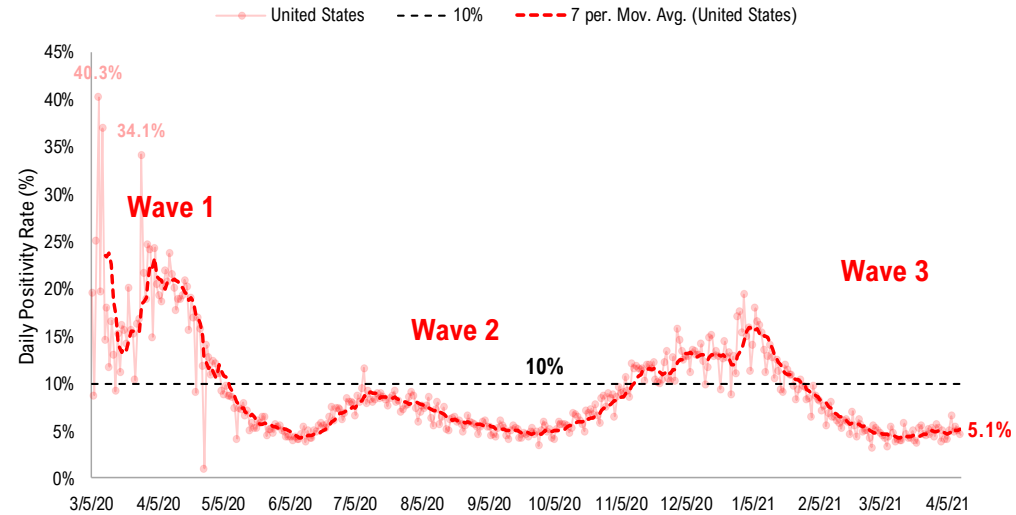
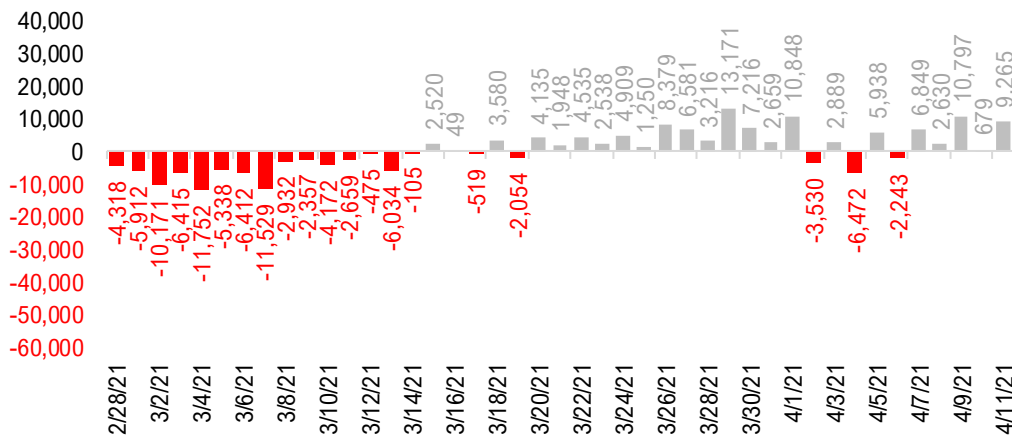
US daily new cases



USA total COVID-19 tests administered

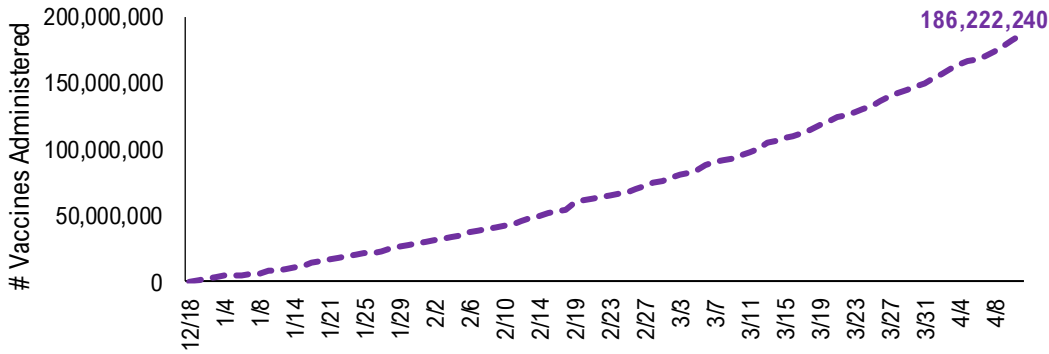


US daily new cases rolling 7D delta

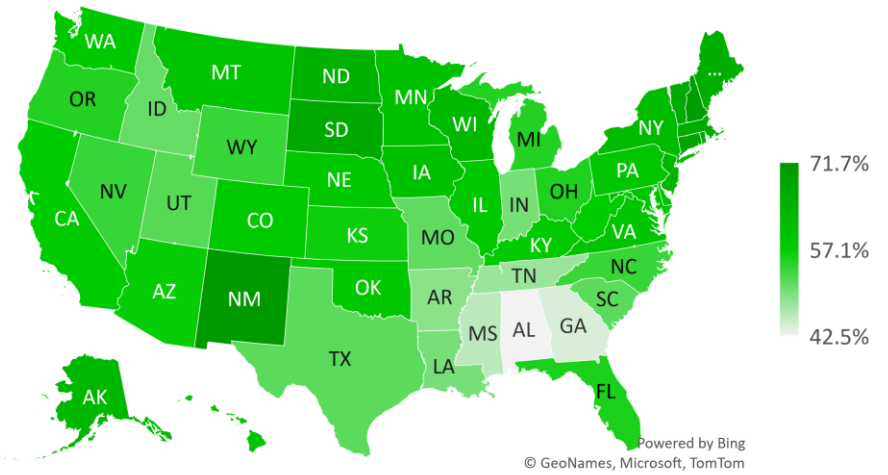


#2: USA COVID-19 Vaccination Progress at a Glance...

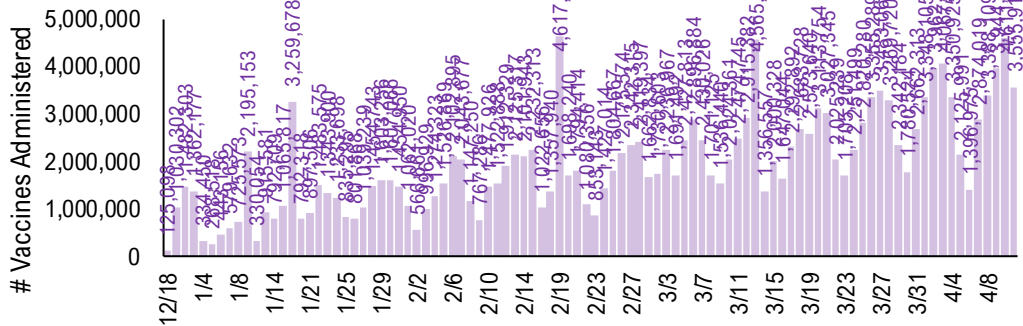
Cumulative Vaccines Administered



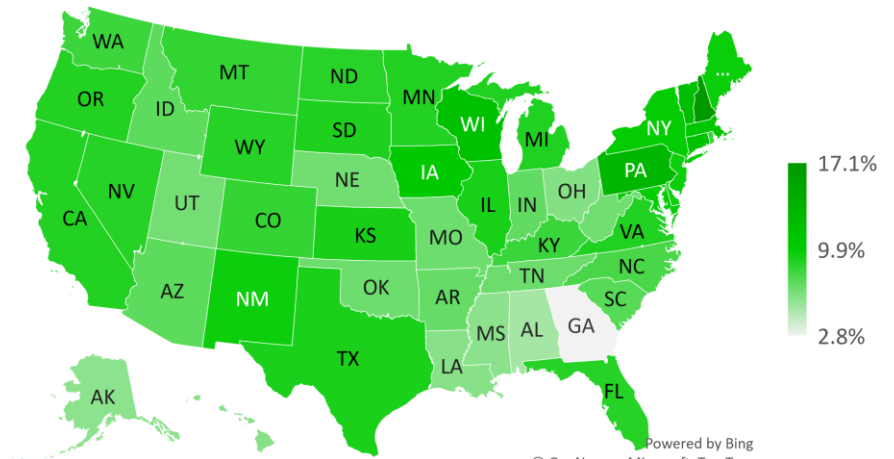
Cumulative Vaccines Administered as % State Population



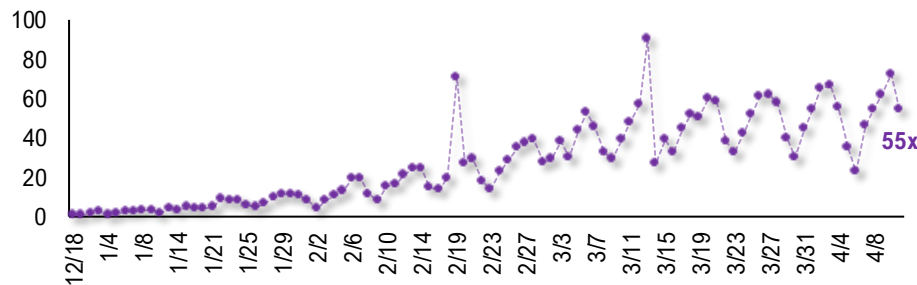
Daily Vaccines Administered



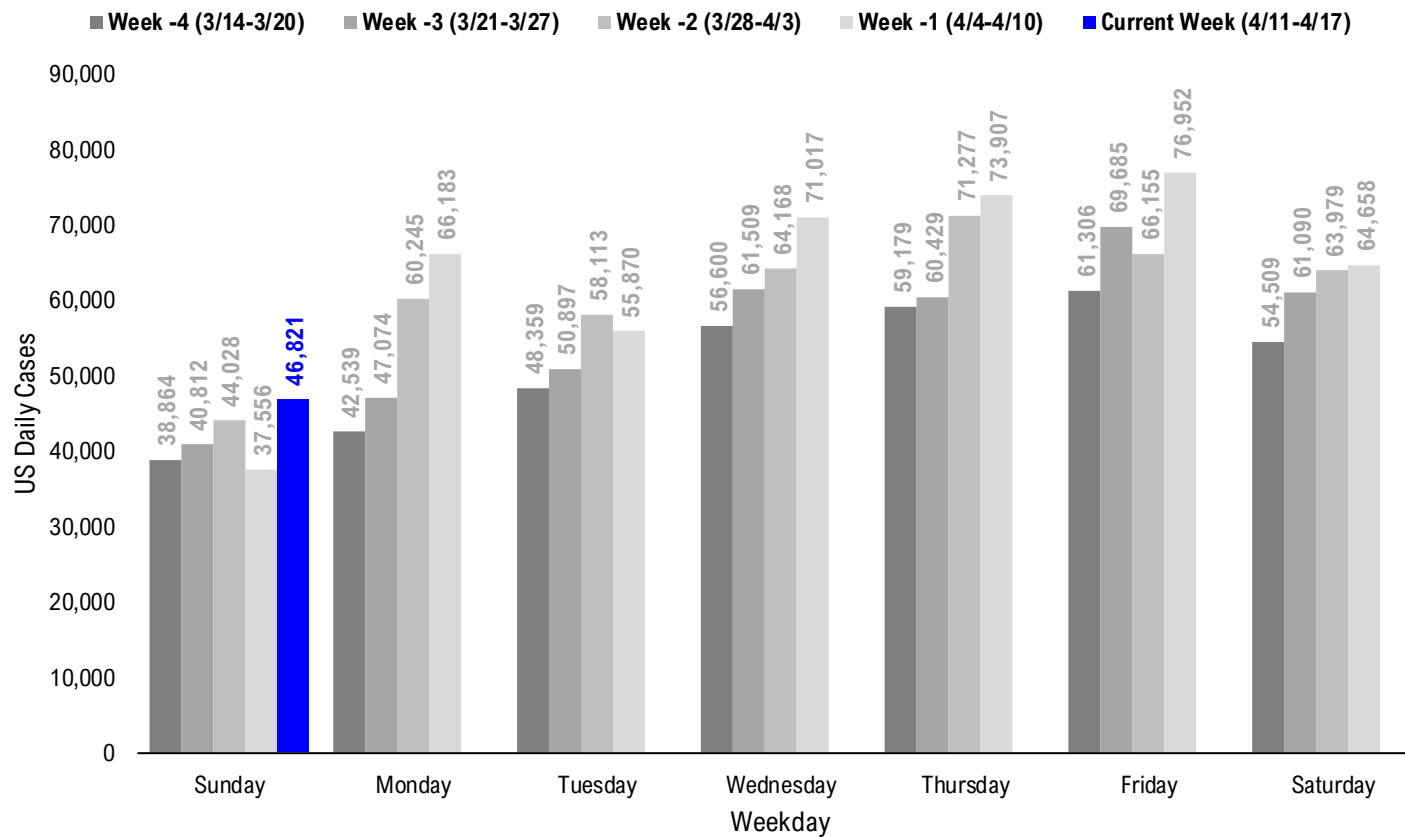
Implied Weekly Vaccines Administered as % State Population



Daily Vaccinations / Daily Cases (7D Avg)



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



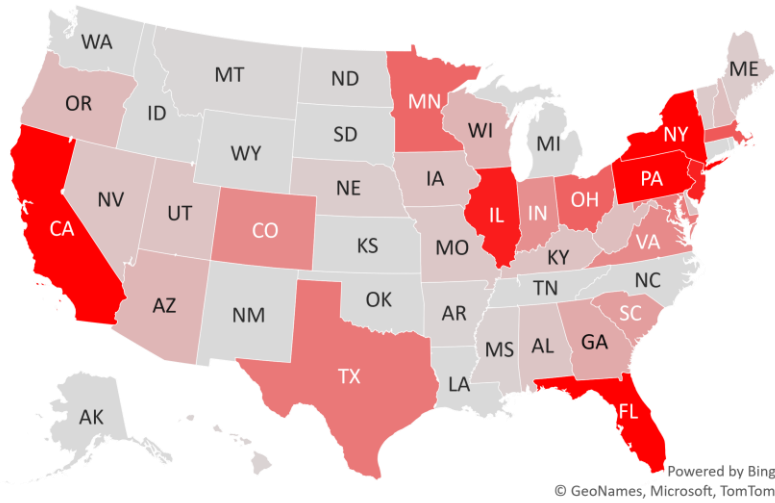
#4: USA State COVID-19 Situation at a Glance...

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Since Peak		Hospitalization		
	% US Pop	% US GDP	4/11	7D Delta	4/11	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases	
United States	100%	100%	46.821	+9.265	191	+21	92	-77%	2.359	0.5%	
States:											
1 New York	5.9%	8.1%	6,764	-703	395	-1	92	-57%	-290	(0.6%)	
2 Florida	6.5%	5.0%	5,520	+726	303	+35	93	-66%	237	0.6%	
3 California	11.9%	14.6%	4,954	+2,554	101	+20	91	-92%	-288	(1.5%)	
4 Pennsylvania	3.9%	3.8%	3,362	-571	346	-17	127	-63%	258	0.9%	
5 Illinois	3.8%	4.2%	2,942	+493	278	+54	149	-74%	343	1.5%	
6 New Jersey	2.7%	3.0%	2,870	-411	347	-64	92	-50%	73	0.3%	
7 Massachusetts	2.1%	2.8%	1,991	+1,991	319	+83	92	-71%	-9	(0.1%)	
8 Ohio	3.5%	3.3%	1,855	+1,855	167	+54	122	-83%	146	0.9%	
9 Minnesota	1.7%	1.8%	1,776	+1,776	406	+134	132	-71%	156	1.0%	
10 Texas	8.7%	8.8%	1,516	+51	65	+5	94	-91%	5	0.0%	
11 Maryland	1.8%	2.0%	1,483	-186	271	+28	91	-55%	109	1.2%	
12 Colorado	1.7%	1.8%	1,235	+15	268	+11	141	-74%	97	0.9%	
13 Virginia	2.6%	2.6%	1,227	-40	175	+5	83	-81%	24	0.2%	
14 Indiana	2.0%	1.8%	1,159	+214	191	+33	127	-84%	132	1.7%	
15 South Carolina	1.6%	1.1%	918	+918	200	+32	91	-85%	12	0.2%	
16 Georgia	3.2%	2.9%	725	+72	86	+6	91	-90%	2	0.0%	
17 Puerto Rico	1.0%	0.5%	680	+210	246	+97	113	-31%	142	4.7%	
18 Wisconsin	1.8%	1.6%	569	-15	141	+17	149	-89%	47	0.9%	
19 Arizona	2.2%	1.7%	540	+76	122	+25	98	-93%	-6	(0.1%)	
20 Oregon	1.3%	1.2%	483	+81	140	+33	126	-66%	1	0.0%	
21 West Virginia	0.5%	0.4%	415	+65	251	+23	98	-76%	12	0.4%	
22 New Hampshire	0.4%	0.4%	408	+10	346	+26	97	-57%	20	0.7%	
23 Delaware	0.3%	0.4%	367	+68	399	-8	92	-58%	-29	(1.3%)	
24 Kentucky	1.3%	1.0%	365	+365	119	+25	93	-90%	11	0.3%	
25 Iowa	1.0%	0.9%	358	+26	121	-3	149	-90%	11	0.4%	
26 Utah	1.0%	0.9%	344	+0	124	-2	93	-90%	-86	(3.1%)	
27 Nevada	0.9%	0.8%	320	+60	185	+70	92	-81%	-2	(0.1%)	
28 Alabama	1.5%	1.1%	311	+117	67	+3	94	-94%	-14	(0.7%)	

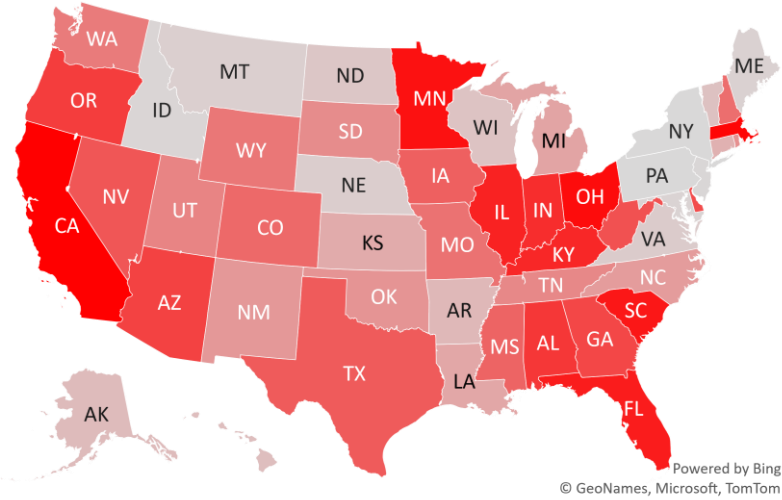
	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Since Peak		Hospitalization		
	% US Pop	% US GDP	4/11	7D Delta	4/11	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases	
United States	100%	100%	46.821	+9.265	191	+21	92	-77%	2.359	0.5%	
States:											
29 Missouri	1.8%	1.5%	281	+2	64	+2	148	-92%	82	3.2%	
30 Vermont	0.2%	0.2%	237	-7	285	-50	9	-17%	-8	(0.8%)	
31 Maine	0.4%	0.3%	215	-80	239	-3	86	-61%	3	0.1%	
32 Nebraska	0.6%	0.6%	197	-45	176	-155	143	-88%	34	1.4%	
33 Mississippi	0.9%	0.6%	117	+20	67	-8	92	-93%	0	0.0%	
34 Hawaii	0.4%	0.5%	92	-4	69	-12	225	-67%	9	1.4%	
35 Arkansas	0.9%	0.6%	72	+0	35	+1	91	-96%	18	2.5%	
36 District of Columbia	0.2%	0.7%	68	-37	157	-23	91	-68%	1	0.1%	
37 North Dakota	0.2%	0.3%	44	-17	167	+18	148	-93%	6	0.5%	
38 Montana	0.3%	0.2%	41	-66	135	+5	147	-90%	10	1.0%	
39 Wyoming	0.2%	0.2%	0	+0	41	+7	143	-98%	-3	(0.7%)	
40 Washington	2.3%	2.7%	0	+0	110	+11	137	-80%	36	0.6%	
41 U.S. Virgin Islands	0.0%	0.0%	0	+0	19	+19	14	-96%	0	0.0%	
42 Tennessee	2.1%	1.8%	0	+0	55	+55	114	-96%	0	0.0%	
43 South Dakota	0.3%	0.3%	0	+0	191	+51	148	-91%	-1	(0.1%)	
44 Rhode Island	0.3%	0.3%	0	+0	177	+49	127	-89%	9	0.3%	
45 Oklahoma	1.2%	1.0%	0	+0	35	+4	91	-97%	-6	(0.2%)	
46 New Mexico	0.6%	0.5%	0	+0	19	-14	142	-99%	12	1.0%	
47 North Carolina	3.2%	2.7%	0	+0	80	+80	92	-92%	-8	(0.1%)	
48 Northern Mariana	0.0%	0.0%	0	+0	0	+0	166	-100%	0	0.0%	
49 Michigan	3.0%	2.6%	0	+0	492	+27	144	-43%	1,014	2.2%	
50 Louisiana	1.4%	1.3%	0	+0	53	+53	94	-95%	-50	(1.5%)	
51 Kansas	0.9%	0.8%	0	+0	54	-4	137	-96%	-6	(0.4%)	
52 Idaho	0.5%	0.4%	0	-318	58	-54	122	-95%	53	3.2%	
53 Guam	0.0%	0.0%	0	+0	42	+10	152	-96%	0	0.0%	
54 Connecticut	1.1%	1.3%	0	+0	169	+30	88	-88%	32	0.4%	
55 American Samoa	0.0%	0.0%	0	+0	#N/A	+0	0	0%	0		
56 Alaska	0.2%	0.3%	0	+0	111	+22	127	-90%	8	0.6%	

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

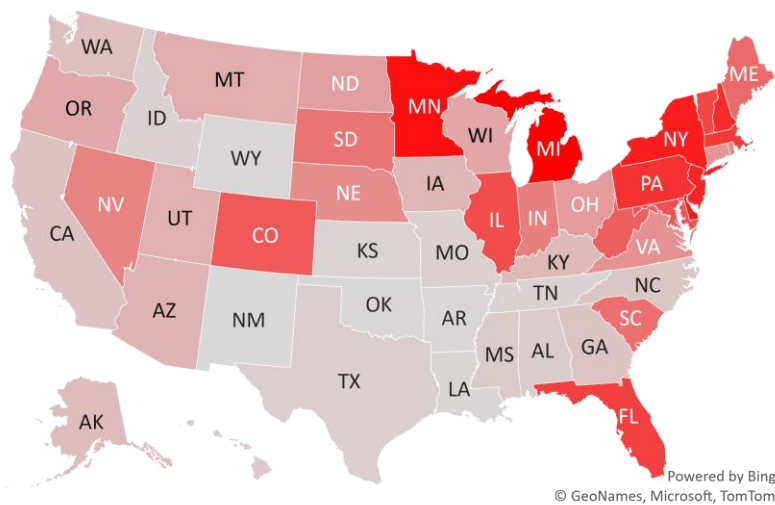
Daily Case Increases



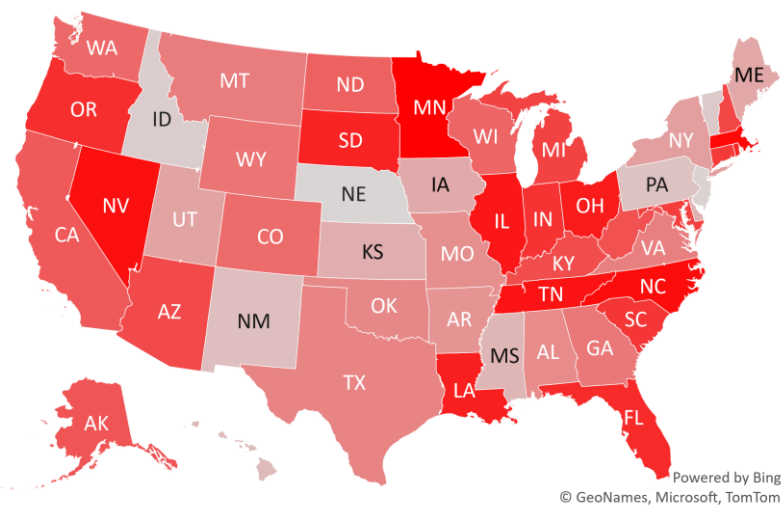
7D Delta in Daily New Cases



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



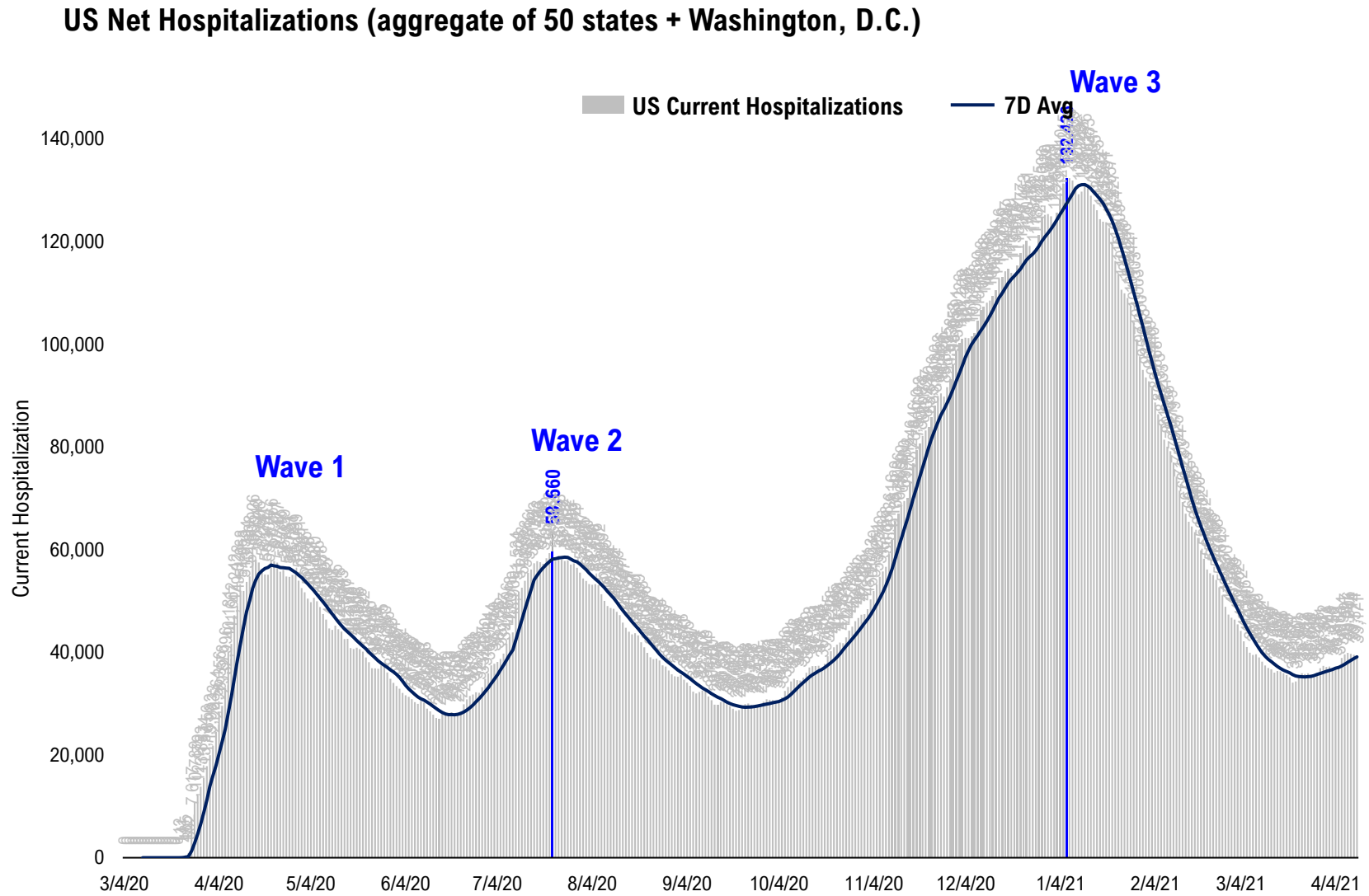
7D Delta in Daily Case Increases per 1mm Resident (3D Avg)



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

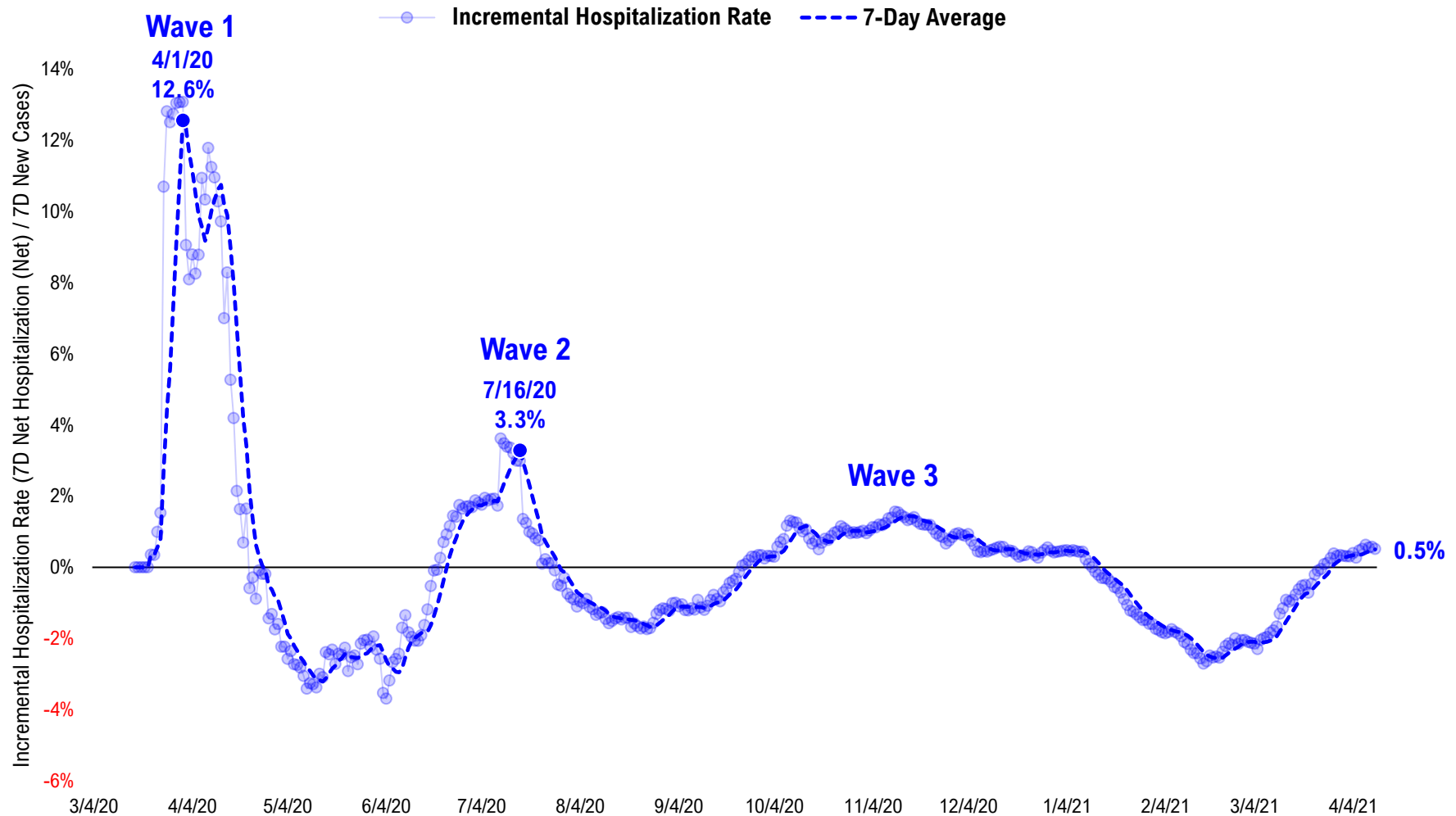
	Sorted						Sorted				
	7D Ago	Last 3-day Trend					7D Ago	Last 3-day Trend			
	4/4/21	4/9/21	4/10/21	4/11/21	vs 7D ago		4/4/21	4/9/21	4/10/21	4/11/21	vs 7D ago
United States	37,556	76,952	64,658	46,821	+9,265	United States	37,556	76,952	64,658	46,821	+9,265
States:						States:					
New York	7,467	9,014	7,283	6,764		Missouri	279	475	426	281	
Florida	4,794	7,121	6,906	5,520		Vermont	244	146	150	237	
California	2,400	2,606	4,466	4,954	<--higher	Maine	295	438	311	215	
Pennsylvania	3,933	5,048	4,882	3,362		Nebraska	242	386	436	197	
Illinois	2,449	4,004	3,630	2,942		Mississippi	97	243	238	117	<--higher
New Jersey	3,281	3,465	2,922	2,870		Hawaii	96	86	113	92	
Massachusetts	0	2,312	2,300	1,991		Arkansas	72	120	124	72	
Ohio	0	1,946	2,048	1,855		District of Columbia	105	136	128	68	
Minnesota	0	2,646	2,449	1,776		North Dakota	61	124	213	44	
Texas	1,465	2,227	1,902	1,516		Montana	107	224	168	41	
Maryland	1,669	1,840	1,584	1,483		Wyoming	0	71	0	0	
Colorado	1,220	1,935	1,455	1,235		Washington	0	1,286	1,223	0	
Virginia	1,267	1,542	1,700	1,227		U.S. Virgin Islands	0	6	0	0	
Indiana	945	1,339	1,358	1,159	<--higher	Tennessee	0	1,120	0	0	
South Carolina	0	1,165	1,011	918		South Dakota	0	270	238	0	
Georgia	653	1,005	1,019	725		Rhode Island	0	563	0	0	
Puerto Rico	470	673	1,000	680	<--higher	Oklahoma	0	416	0	0	
Wisconsin	584	1,092	804	569		New Mexico	0	121	0	0	
Arizona	464	1,302	819	540		North Carolina	0	2,509	0	0	
Oregon	402	543	747	483	<--higher	Northern Mariana Islands	0	0	0	0	
West Virginia	350	479	455	415		Michigan	0	7,834	6,892	0	
New Hampshire	398	537	468	408		Louisiana	0	739	0	0	
Delaware	299	380	419	367	<--higher	Kansas	0	469	0	0	
Kentucky	0	733	500	365		Idaho	318	312	0	0	
Iowa	332	434	358	358		Guam	0	21	0	0	
Utah	344	444	407	344		Connecticut	0	1,807	0	0	
Nevada	260	637	752	320	<--higher	American Samoa	0	0	0	0	
Alabama	194	318	354	311	<--higher	Alaska	0	243	0	0	

#8: US Daily Hospitalizations...



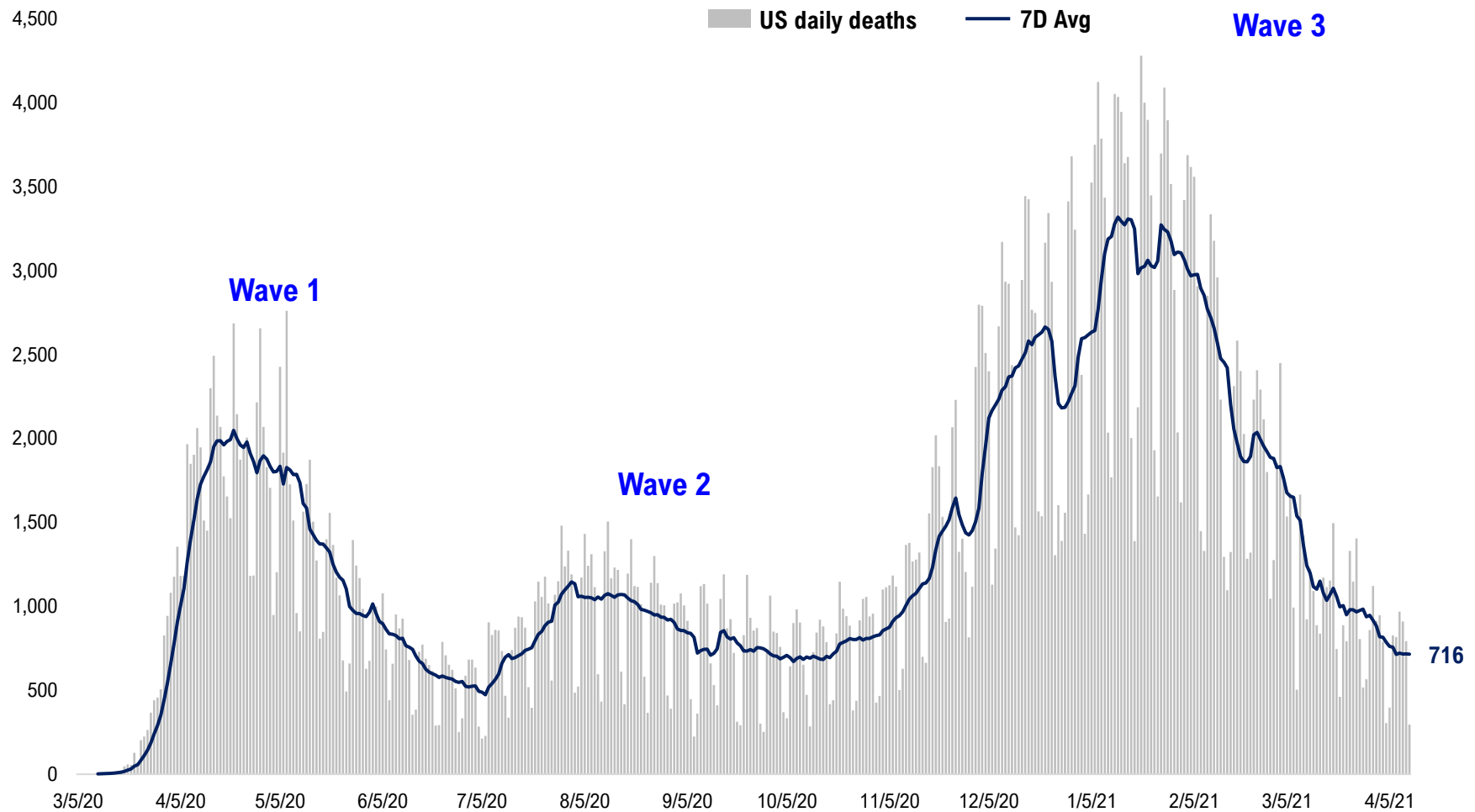
#9: Incremental Hospitalization Rate...

Incremental Hospitalization Rate: 7D Net Hospitalizations / 7D Total New Cases
(aggregate of 50 states + Washington, D.C.)

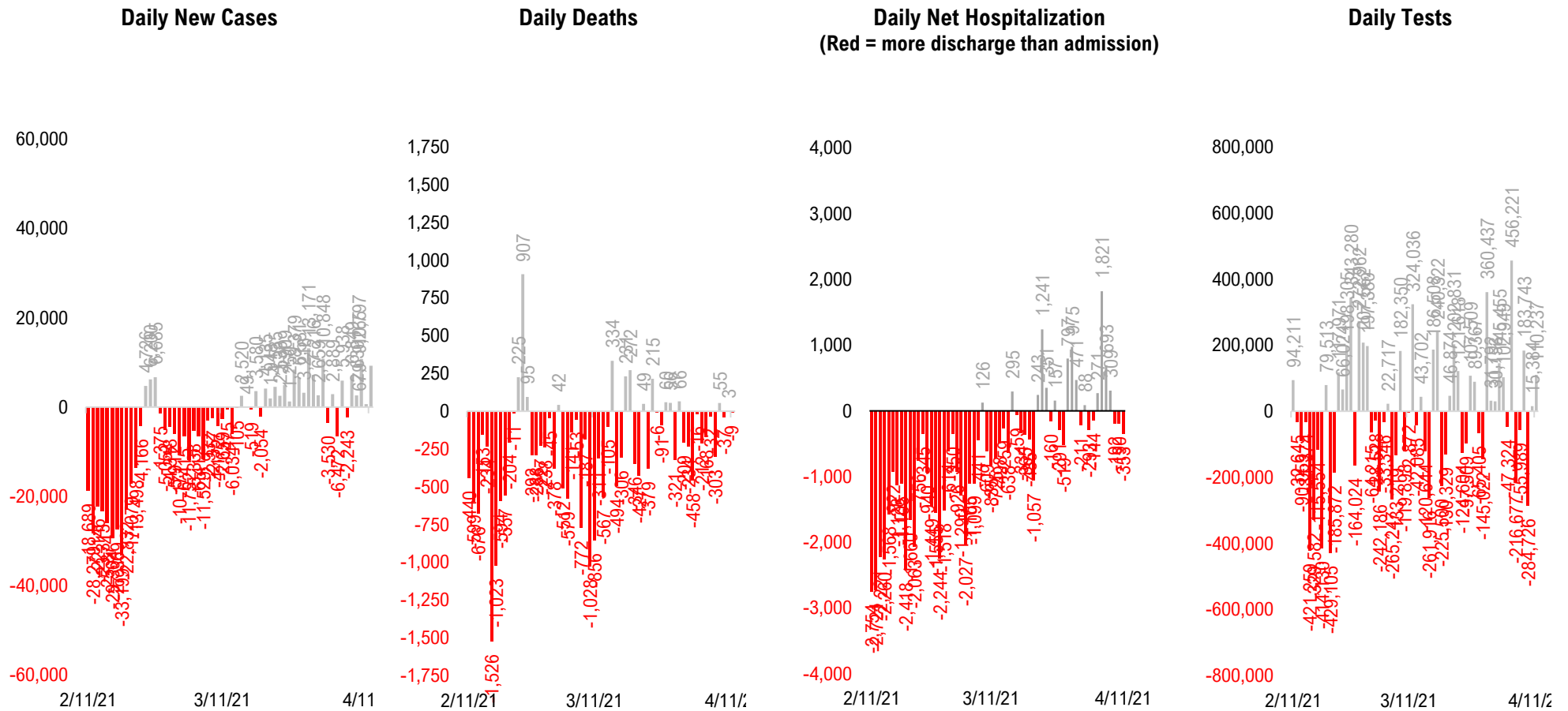


#10: US Daily New Fatalities...

US daily COVID-19 Fatalities

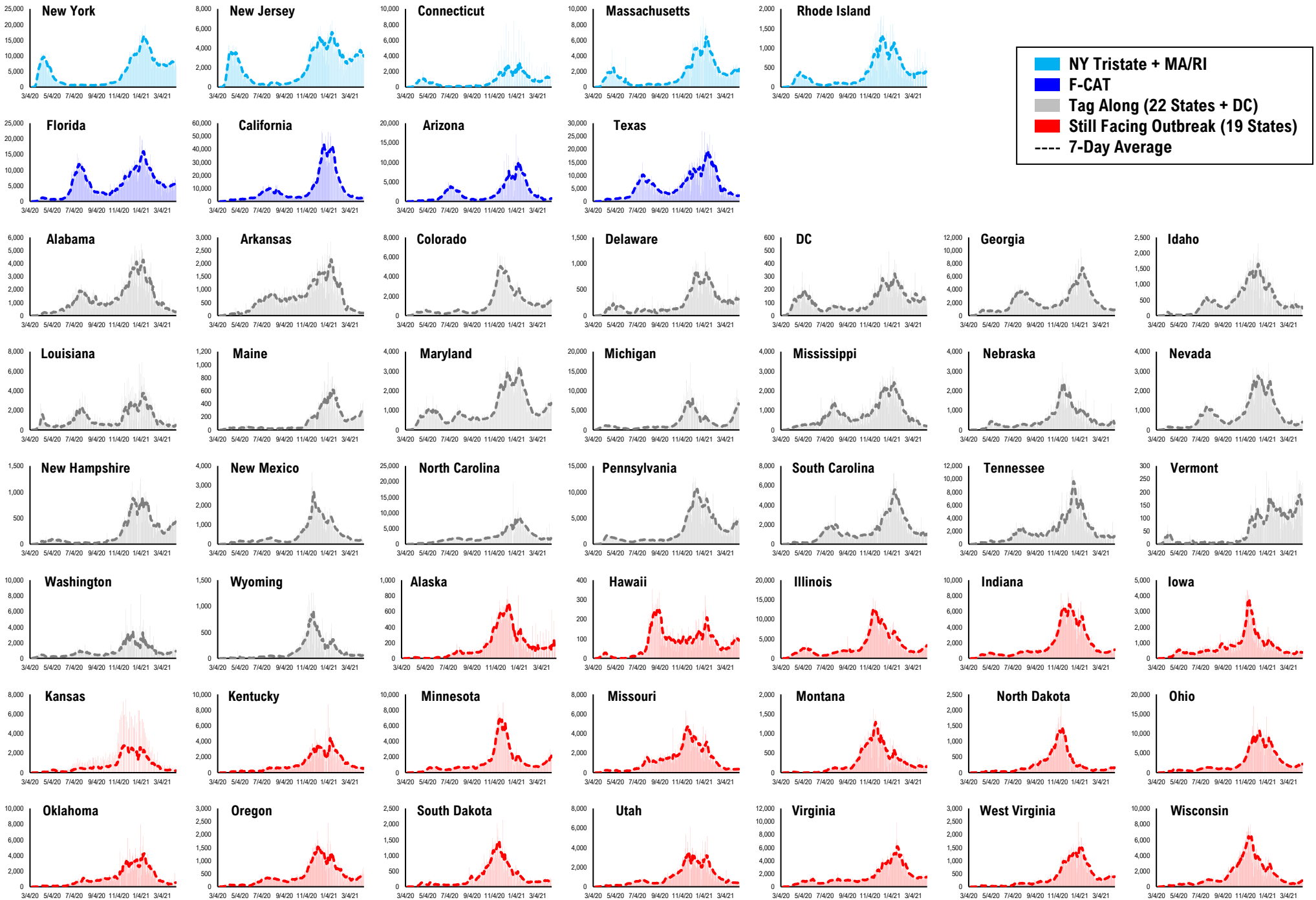


#11: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

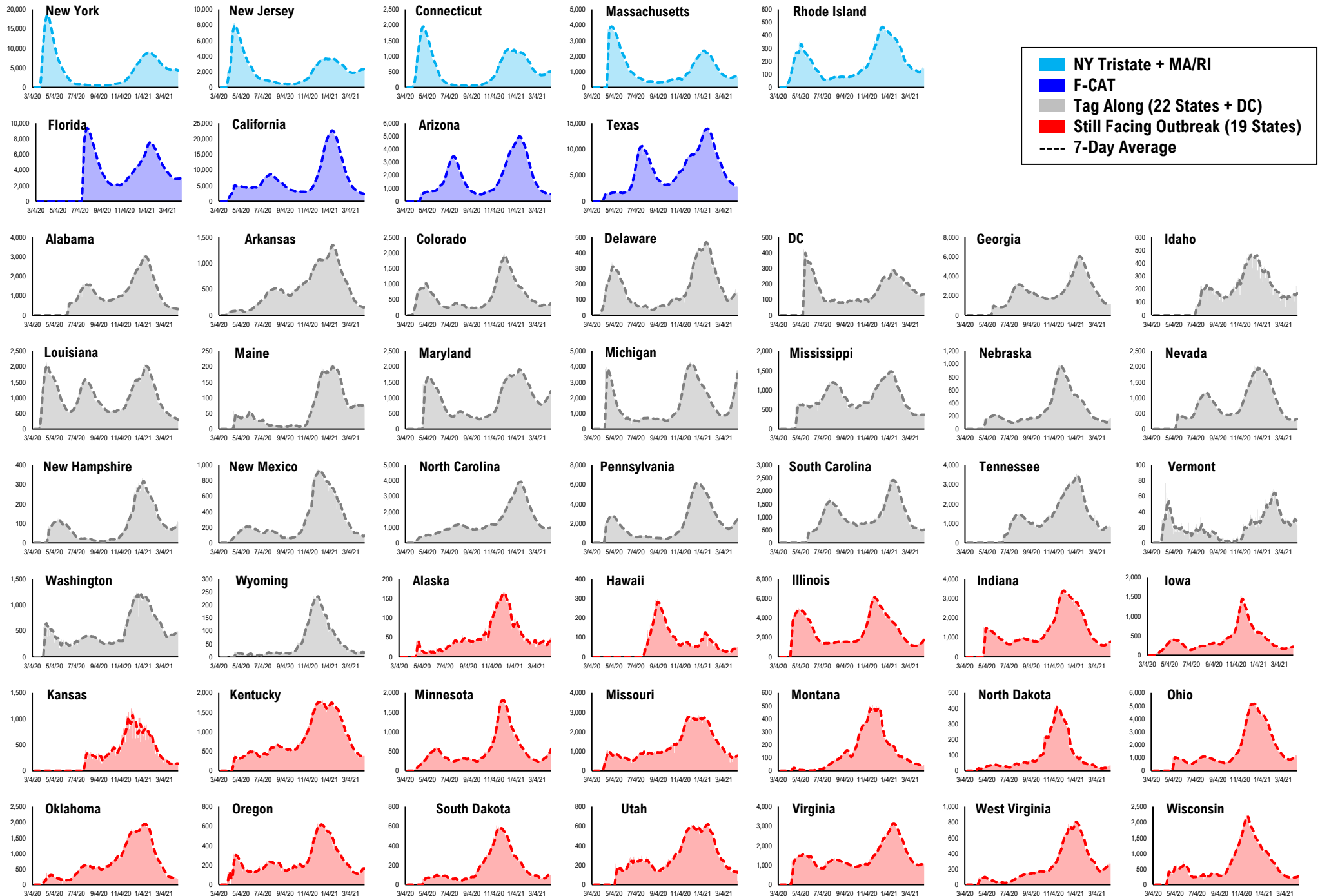


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

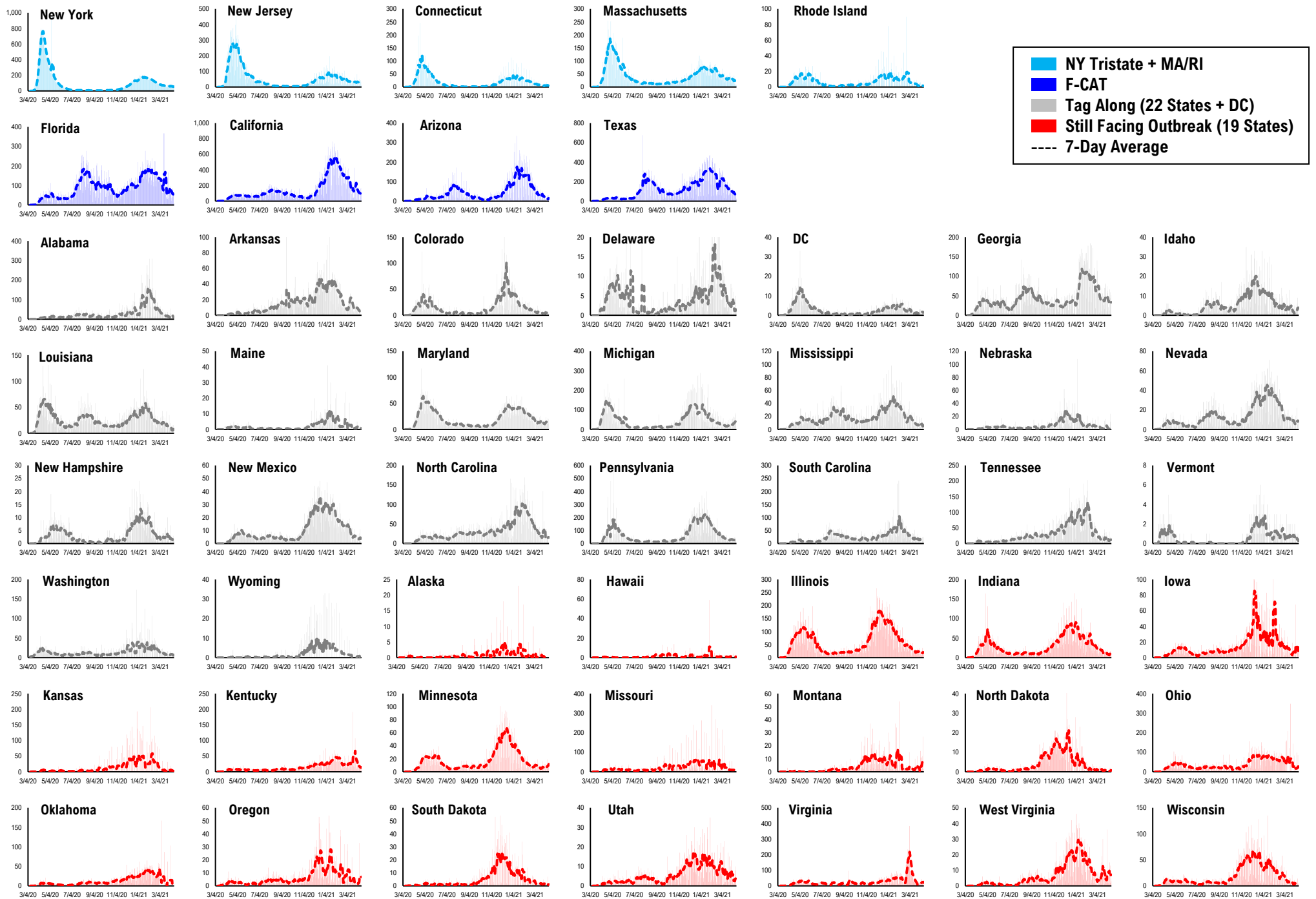
#12: Daily New Cases by States...



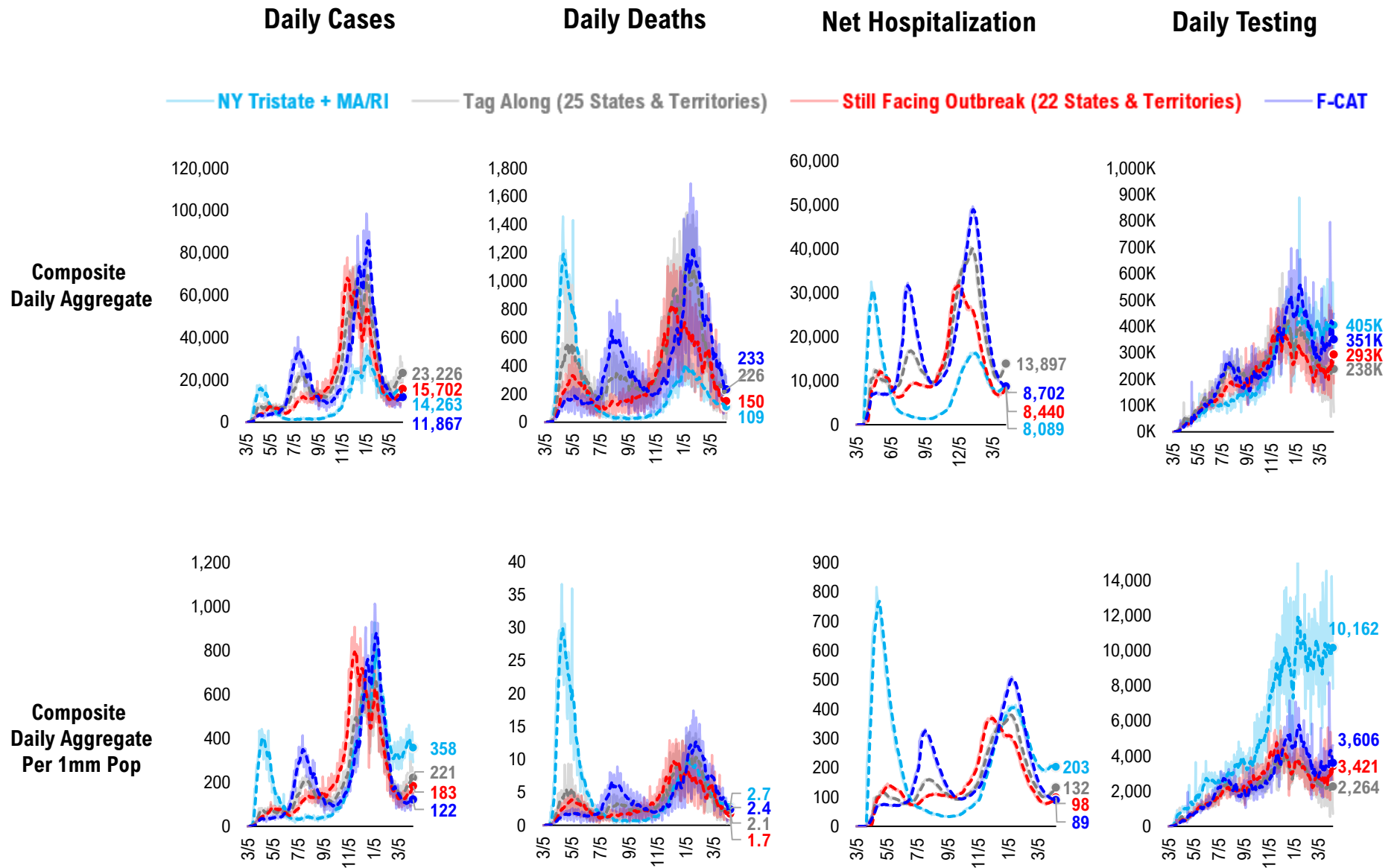
#13: Current Hospitalizations by States...



#14: Daily New Deaths by States...

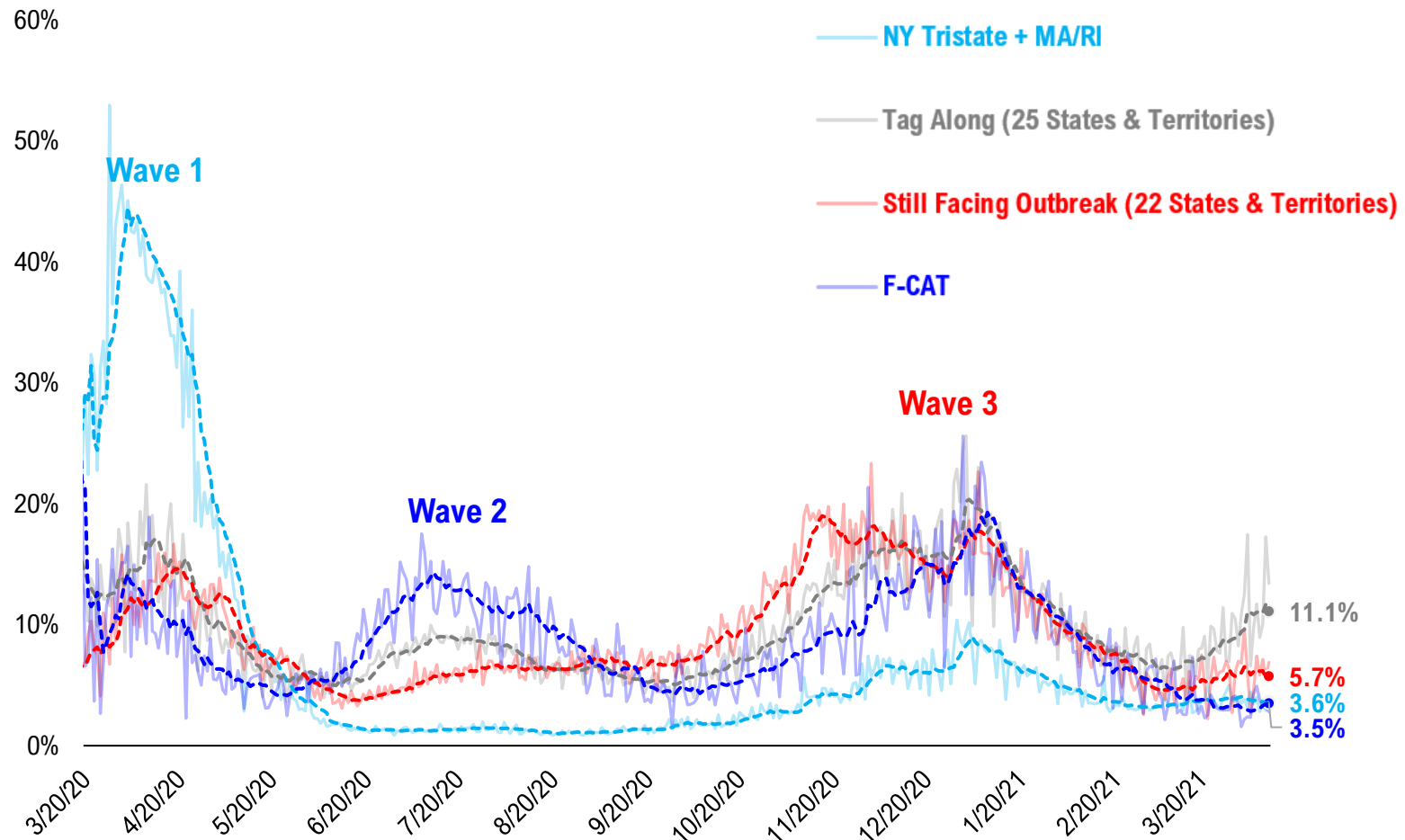


#15: State COVID-19 situation by Tier...

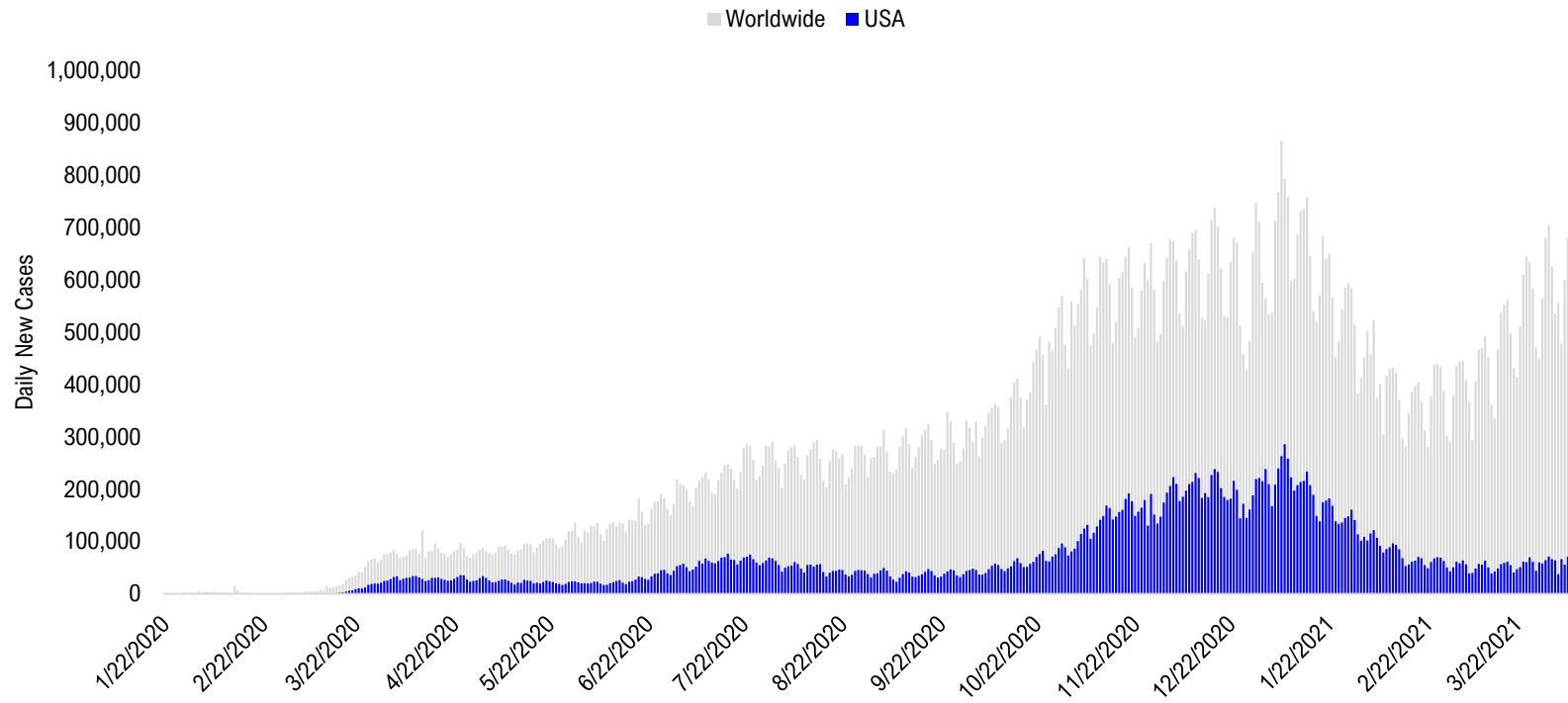


#16: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Nov 20	Dec 4	Dec 18	Jan 1	Jan 15	Jan 29	Feb 12	Feb 26	Mar 12	Mar 26	Apr 10
Europe 261,193	Europe 234,613	Europe 248,691	Europe 227,213	Europe 243,930	Europe 195,208	Europe 145,047	Europe 150,232	Europe 172,950	Europe 233,545	Europe 226,863
US + Canada 168,126	US + Canada 181,863	US + Canada 218,055	US + Canada 195,207	US + Canada 228,560	US + Canada 151,931	US + Canada 94,843	Latin America 90,697	Latin America 106,657	Latin America 121,448	Latin America 136,475
Latin America 59,427	Latin America 77,676	Latin America 85,354	Latin America 78,723	Latin America 118,406	Latin America 110,698	Latin America 87,199	US + Canada 65,753	US + Canada 54,551	US + Canada 59,138	Pakistan + India + Bangladesh 136,438
Pakistan + India + Bangladesh 44,091	Pakistan + India + Bangladesh 41,888	Pakistan + India + Bangladesh 29,698	Africa 23,274	Africa 31,292	Asia ex- India+Pakistan 26,451	Asia ex- India+Pakistan 19,467	Asia ex- India+Pakistan 16,429	Pakistan + India + Bangladesh 23,076	Pakistan + India + Bangladesh 57,373	US + Canada 71,557
Asia ex- India+Pakistan 14,176	Asia ex- India+Pakistan 16,452	Africa 17,772	Pakistan + India + Bangladesh 19,958	Asia ex- India+Pakistan 25,115	Africa 20,287	Pakistan + India + Bangladesh 12,778	Pakistan + India + Bangladesh 16,328	Asia ex- India+Pakistan 14,244	Asia ex- India+Pakistan 19,058	Asia ex- India+Pakistan 24,630
Africa 13,534	Africa 13,958	Asia ex- India+Pakistan 17,001	Asia ex- India+Pakistan 18,156	Pakistan + India + Bangladesh 21,782	Pakistan + India + Bangladesh 15,623	Africa 12,288	Africa 9,945	Africa 10,142	Africa 11,175	Africa 11,289

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 2021 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.