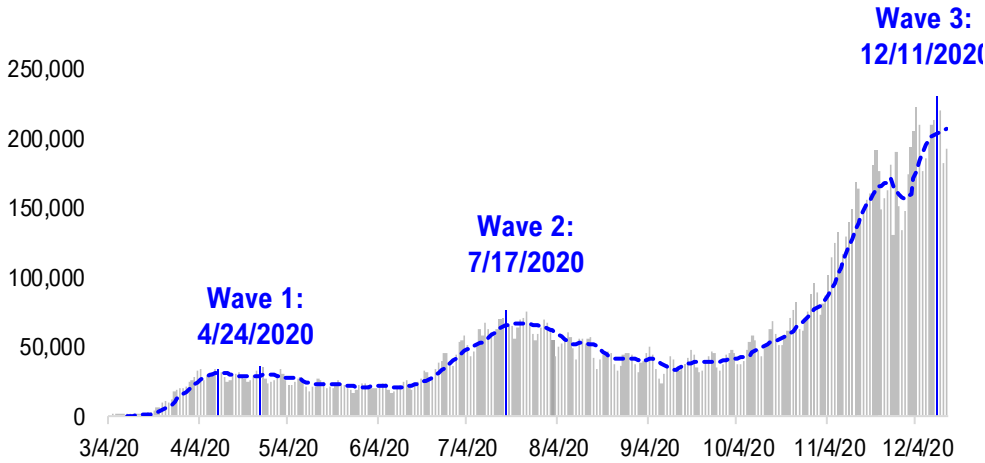


FSInsight Daily COVID-19 Chartbook

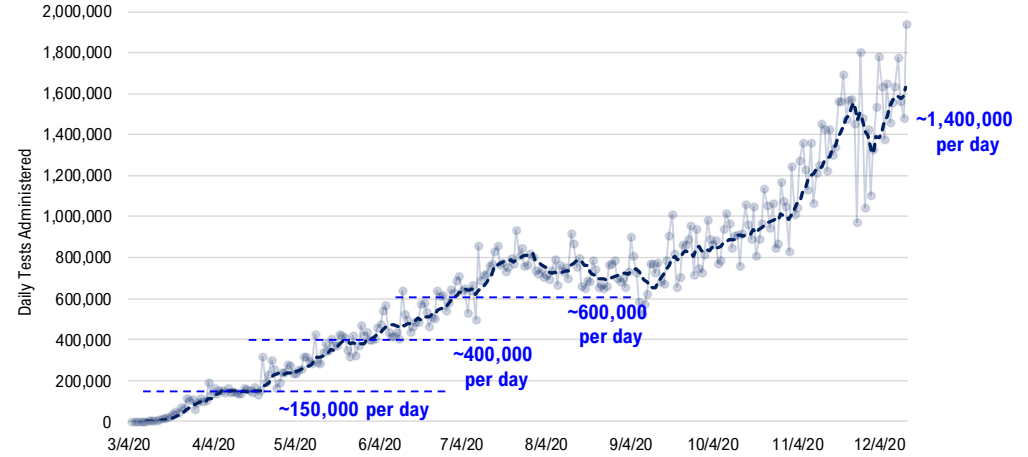


#1: USA COVID-19 Situation at a Glance...

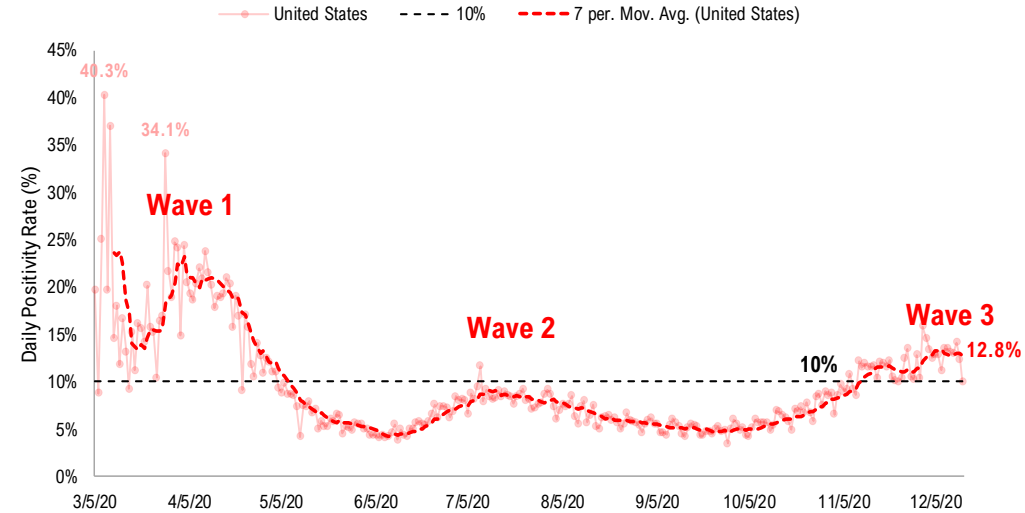
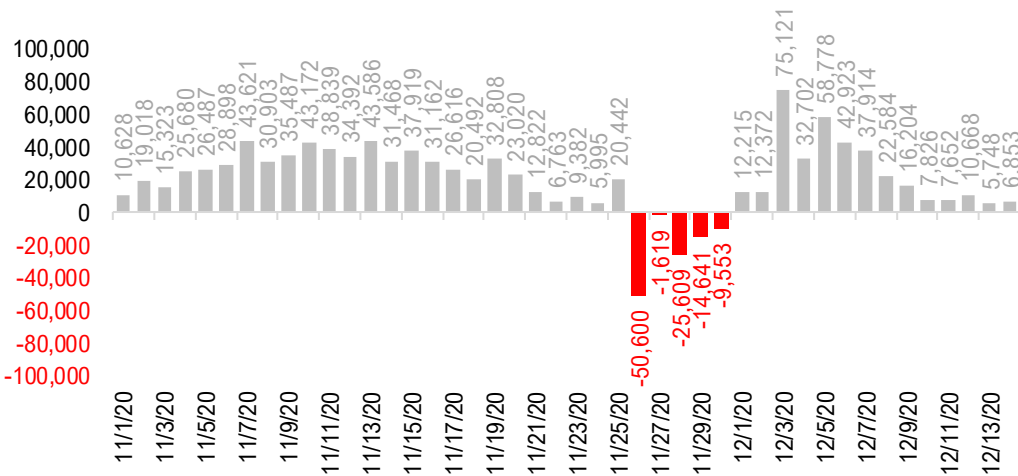
US daily new cases



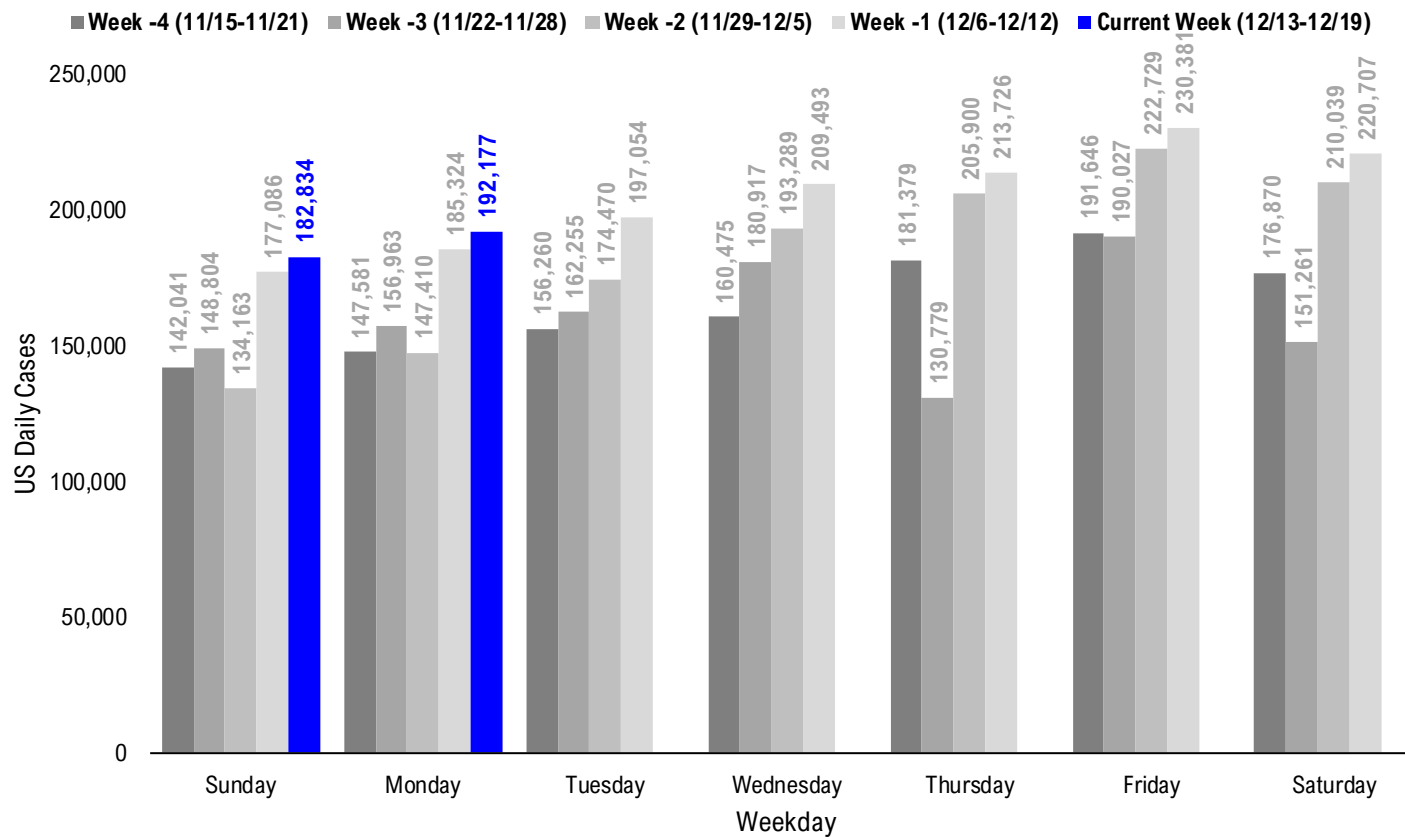
USA total COVID-19 tests administered



US daily new cases rolling 7D delta



#2: USA COVID-19 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		7D Net		Hospitalization / 7D New Cases	
			12/14	Delta	12/14	Delta	# Days	% Decline in Daily Cases		
United States	100%	100%	192.177	+6.853	605	+24	2	-10%	8.401	0.6%

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		Since Peak		7D Net		Hospitalization / 7D New Cases	
			12/14	Delta	12/14	Delta	# Days	% Decline in Daily Cases		
United States	100%	100%	192.177	+6.853	605	+24	2	-10%	8.401	0.6%

States:

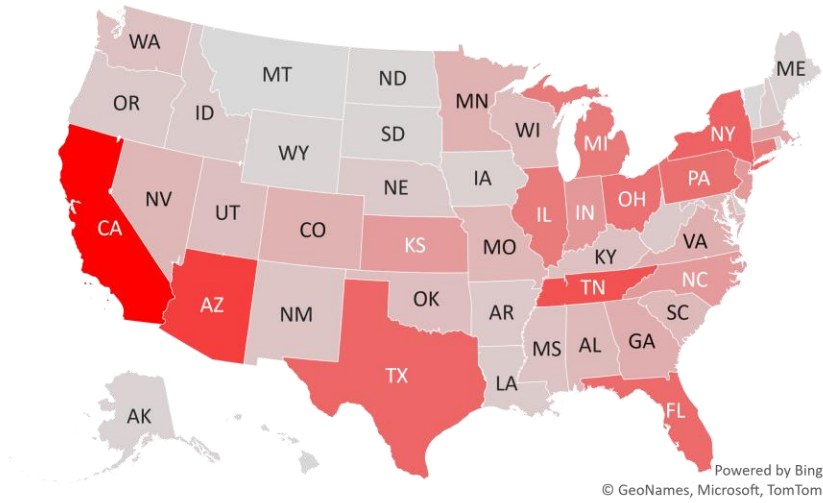
1 California	11.9%	14.6%	33,278	+8,543	838	+164	1	-2%	3,580	1.6%
2 Arizona	2.2%	1.7%	11,806	+10,239	1179	+549	0	0%	618	1.1%
3 Tennessee	2.1%	1.8%	10,319	+2,183	1384	+597	0	0%	231	0.4%
4 New York	5.9%	8.1%	9,044	+1,742	520	+45	1	-5%	1,110	1.6%
5 Texas	8.7%	8.8%	8,771	+59	328	-4	11	-35%	514	0.7%
6 Florida	6.5%	5.0%	8,452	+741	434	+22	154	-27%	437	0.6%
7 Pennsylvania	3.9%	3.8%	7,962	+1,632	774	+49	9	-18%	605	0.8%
8 Ohio	3.5%	3.3%	7,875	-1,398	810	+30	4	-18%	36	0.0%
9 Connecticut	1.1%	1.3%	7,231	-898	676	-84	5	-44%	60	0.3%
10 Illinois	3.8%	4.2%	7,214	-1,477	609	-79	31	-43%	-239	(0.4%)
11 Michigan	3.0%	2.6%	7,205	-2,145	390	-122	26	-55%	-320	(1.0%)
12 Indiana	2.0%	1.8%	4,967	-694	904	-83	9	-24%	-142	(0.3%)
13 New Jersey	2.7%	3.0%	4,798	+1,235	570	+10	8	-11%	289	0.9%
14 North Carolina	3.2%	2.7%	4,770	+398	564	+29	1	-14%	313	0.7%
15 Kansas	0.9%	0.8%	4,724	-1,006	541	-115	19	-64%	0	0.0%
16 Massachusetts	2.1%	2.8%	3,653	+1,172	667	+42	9	-19%	272	0.8%
17 Georgia	3.2%	2.9%	3,296	-1,565	390	+64	2	-20%	415	1.4%
18 Virginia	2.6%	2.6%	3,240	-577	418	-30	4	-12%	375	1.4%
19 Minnesota	1.7%	1.8%	3,018	-2,272	643	-373	14	-54%	-284	(1.1%)
20 Colorado	1.7%	1.8%	2,911	-1,126	546	-172	23	-48%	-194	(0.7%)
21 Nevada	0.9%	0.8%	2,579	+131	877	-6	9	-6%	258	1.4%
22 Missouri	1.8%	1.5%	2,562	-96	489	-138	30	-40%	74	0.3%
23 South Carolina	1.6%	1.1%	2,378	-199	559	+8	1	-10%	251	1.3%
24 Maryland	1.8%	2.0%	2,314	+12	468	+19	8	-12%	181	0.9%
25 Alabama	1.5%	1.1%	2,264	-88	620	+74	4	-28%	207	0.8%
26 Wisconsin	1.8%	1.6%	2,122	-33	512	-48	31	-60%	-95	(0.4%)
27 Oklahoma	1.2%	1.0%	2,099	+196	877	+76	8	-16%	-57	(0.3%)
28 Utah	1.0%	0.9%	1,968	-263	805	-75	23	-35%	-12	(0.1%)

States:

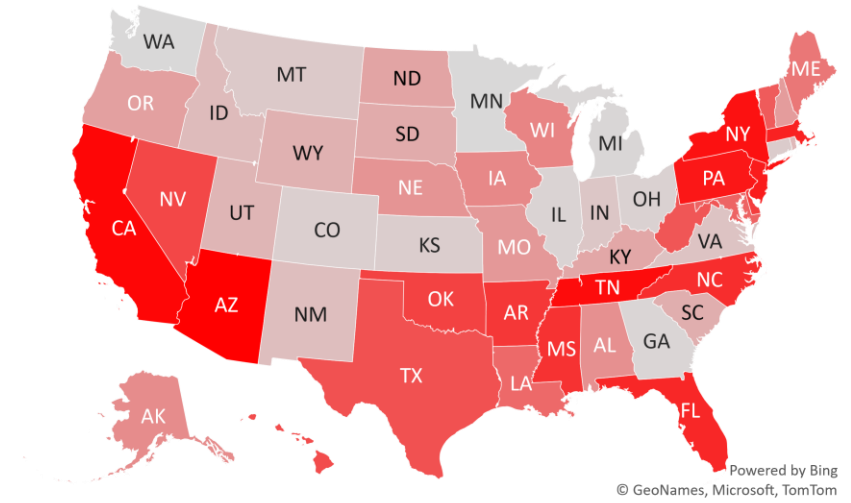
29 Kentucky	1.3%	1.0%	1,786	-174	580	-47	11	-33%	12	0.1%
30 Washington	2.3%	2.7%	1,734	-5,223	361	-82	19	-35%	41	0.2%
31 Mississippi	0.9%	0.6%	1,648	+385	651	+127	3	-21%	67	0.4%
32 New Mexico	0.6%	0.5%	1,499	-360	753	-44	24	-50%	-75	(0.7%)
33 Arkansas	0.9%	0.6%	1,233	+229	480	+9	9	-28%	-3	(0.0%)
34 West Virginia	0.5%	0.4%	1,177	+46	699	-37	8	-5%	110	1.3%
35 Nebraska	0.6%	0.6%	1,173	-93	532	-351	25	-63%	-76	(0.8%)
36 Oregon	1.3%	1.2%	1,157	-135	284	-60	8	-31%	-21	(0.2%)
37 Idaho	0.5%	0.4%	1,038	-345	486	-172	4	-58%	-33	(0.3%)
38 Louisiana	1.4%	1.3%	1,022	+6	393	+37	11	-53%	104	0.6%
39 Delaware	0.3%	0.4%	997	+198	903	+112	0	0%	51	0.9%
40 New Hampshire	0.4%	0.4%	919	-126	592	+71	3	-15%	71	1.2%
41 Iowa	1.0%	0.9%	637	-40	303	-101	31	-76%	-134	(1.5%)
42 Rhode Island	0.3%	0.3%	552	-292	1024	-135	9	-34%	11	0.1%
43 Puerto Rico	1.0%	0.5%	506	-428	179	-123	7	-41%	-9	(0.2%)
44 Maine	0.4%	0.3%	426	-1	283	+53	2	-2%	28	1.1%
45 Alaska	0.2%	0.3%	422	-54	718	-264	9	-35%	-26	(0.7%)
46 Wyoming	0.2%	0.2%	415	-253	570	-149	25	-67%	-22	(0.8%)
47 South Dakota	0.3%	0.3%	316	-193	634	-158	30	-69%	-62	(1.3%)
48 North Dakota	0.2%	0.3%	196	-165	373	-236	30	-84%	-27	(1.0%)
49 Hawaii	0.4%	0.5%	189	+108	111	+36	107	-46%	1	0.1%
50 District of Columbi	0.2%	0.7%	164	-19	322	-75	9	-34%	63	3.7%
51 Vermont	0.2%	0.2%	104	+39	169	-1	10	-40%	-3	(0.4%)
52 Guam	0.0%	0.0%	31	+16	117	-4	34	-89%	-8	(5.5%)
53 U.S. Virgin Islands	0.0%	0.0%	16	+0	231	+118	115	-46%	0	0.0%
54 Montana	0.3%	0.2%	0	-716	447	-225	29	-65%	-142	(3.0%)
55 Northern Mariana	0.0%	0.0%	0	-3	0	-18	57	-100%	0	0.0%
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	0.0%

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

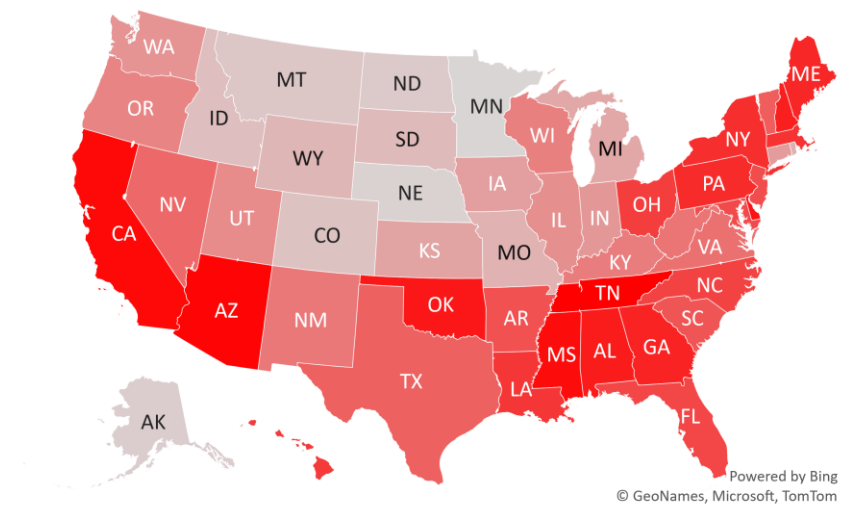
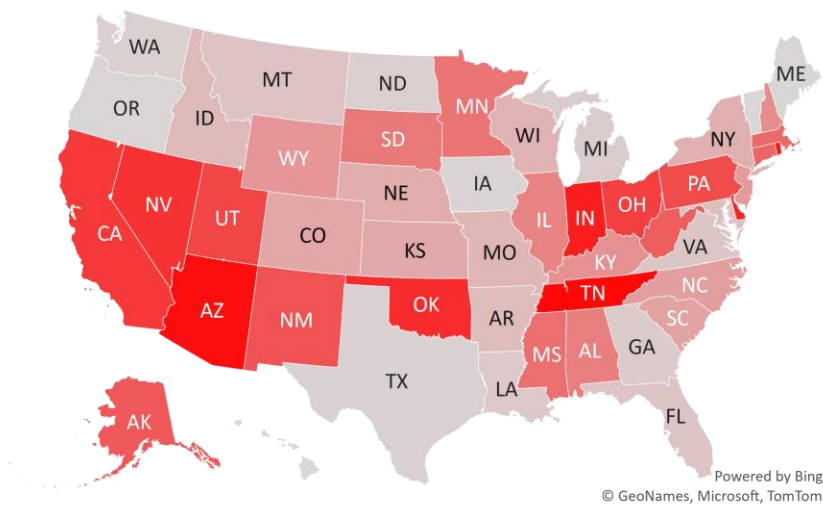
Daily Case Increases



7D Delta in Daily New Cases



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



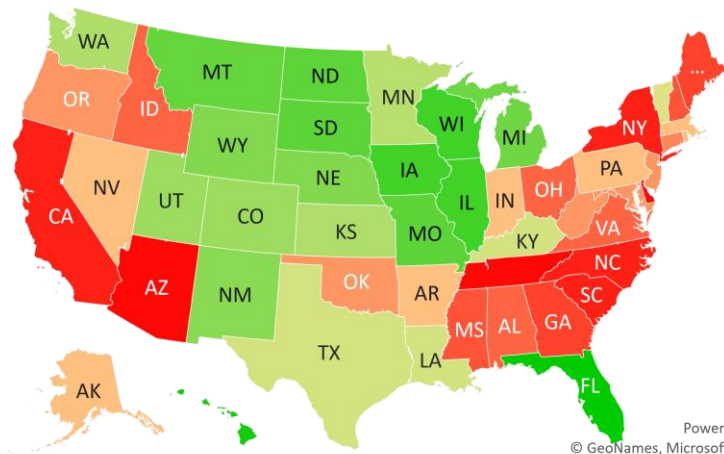
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 12/14)

	Sorted			
	Peak Date	12/14/20	% off the Peak	% US Pop
United States	12/12/20	2	-10%	100%
States:				
Florida	7/13/20	154	-27%	6.5%
U.S. Virgin Islands	8/21/20	115	-46%	0.0%
Hawaii	8/29/20	107	-46%	0.4%
Northern Mariana Island	10/18/20	57	-100%	0.0%
Guam	11/10/20	34	-89%	0.0%
Wisconsin	11/13/20	31	-60%	1.8%
Illinois	11/13/20	31	-43%	3.8%
Iowa	11/13/20	31	-76%	1.0%
South Dakota	11/14/20	30	-69%	0.3%
North Dakota	11/14/20	30	-84%	0.2%
Missouri	11/14/20	30	-40%	1.8%
Montana	11/15/20	29	-65%	0.3%
Michigan	11/18/20	26	-55%	3.0%
Wyoming	11/19/20	25	-67%	0.2%
Nebraska	11/19/20	25	-63%	0.6%
New Mexico	11/20/20	24	-50%	0.6%
Utah	11/21/20	23	-35%	1.0%
Colorado	11/21/20	23	-48%	1.7%
Washington	11/25/20	19	-35%	2.3%
Kansas	11/25/20	19	-64%	0.9%
Minnesota	11/30/20	14	-54%	1.7%
Texas	12/3/20	11	-35%	8.7%
Louisiana	12/3/20	11	-53%	1.4%
Kentucky	12/3/20	11	-33%	1.3%
Vermont	12/4/20	10	-40%	0.2%
Rhode Island	12/5/20	9	-34%	0.3%
Pennsylvania	12/5/20	9	-18%	3.9%
Nevada	12/5/20	9	-6%	0.9%

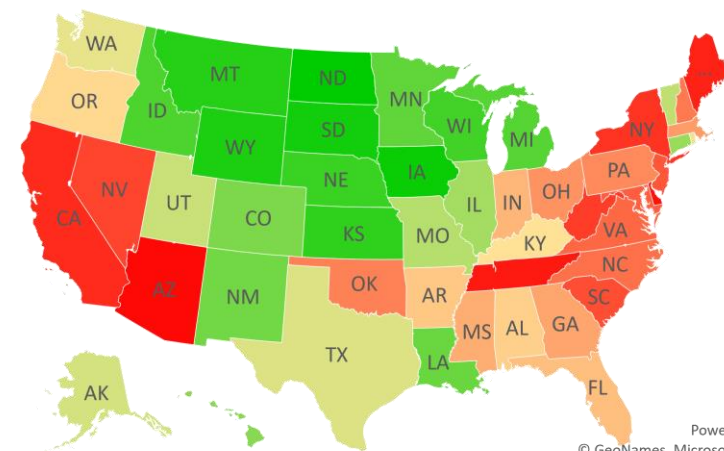
	Sorted			
	Peak Date	12/14/20	% off the Peak	% US Pop
United States	12/12/20	2	-10%	100%
States:				
Massachusetts	12/5/20	9	-19%	2.1%
Indiana	12/5/20	9	-24%	2.0%
District of Columbia	12/5/20	9	-34%	0.2%
Arkansas	12/5/20	9	-28%	0.9%
Alaska	12/5/20	9	-35%	0.2%
West Virginia	12/6/20	8	-5%	0.5%
Oregon	12/6/20	8	-31%	1.3%
Oklahoma	12/6/20	8	-16%	1.2%
New Jersey	12/6/20	8	-11%	2.7%
Maryland	12/6/20	8	-12%	1.8%
Puerto Rico	12/7/20	7	-41%	1.0%
Connecticut	12/9/20	5	-44%	1.1%
Virginia	12/10/20	4	-12%	2.6%
Ohio	12/10/20	4	-18%	3.5%
Idaho	12/10/20	4	-58%	0.5%
Alabama	12/10/20	4	-28%	1.5%
New Hampshire	12/11/20	3	-15%	0.4%
Mississippi	12/11/20	3	-21%	0.9%
Maine	12/12/20	2	-2%	0.4%
Georgia	12/12/20	2	-20%	3.2%
South Carolina	12/13/20	1	-10%	1.6%
New York	12/13/20	1	-5%	5.9%
North Carolina	12/13/20	1	-14%	3.2%
California	12/13/20	1	-2%	11.9%
Tennessee	12/14/20	0	0%	2.1%
Delaware	12/14/20	0	0%	0.3%
Arizona	12/14/20	0	0%	2.2%

Days since Daily Case Peak: Longer = Good



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Daily Cases % off the Peak: Larger Decline = Good



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

Sorted

7D Ago Last 3-day Trend

Montana did not report COVID stats on Monday due to the system upgrade...

	12/7/20	12/12/20	12/13/20	12/14/20	vs 7D ago
United States	185,324	220,707	182,834	192,177	+6,853
States:					
California	24,735	35,729	30,334	33,278	<--higher
Arizona	1,567	8,077	5,853	11,806	<--higher
Tennessee	8,136	6,691	11,352	10,319	<--higher
New York	7,302	11,129	10,194	9,044	<--higher
Texas	8,712	13,254	6,479	8,771	
Florida	7,711	10,577	8,958	8,452	
Pennsylvania	6,330	11,084	10,684	7,962	<--higher
Ohio	9,273	11,252	9,266	7,875	
Connecticut	8,129	0	0	7,231	
Illinois	8,691	8,737	7,216	7,214	
Michigan	9,350	4,486	0	7,205	
Indiana	5,661	7,401	5,898	4,967	
New Jersey	3,563	6,240	4,154	4,798	<--higher
North Carolina	4,372	6,153	6,819	4,770	
Kansas	5,730	0	0	4,724	
Massachusetts	2,481	5,289	4,853	3,653	<--higher
Georgia	4,861	4,830	4,310	3,296	
Virginia	3,817	4,177	3,294	3,240	
Minnesota	5,290	4,430	3,425	3,018	
Colorado	4,037	3,961	2,559	2,911	
Nevada	2,448	2,641	2,882	2,579	
Missouri	2,658	3,743	2,694	2,562	
South Carolina	2,577	3,231	3,026	2,378	
Maryland	2,302	3,538	2,638	2,314	
Alabama	2,352	4,066	2,790	2,264	
Wisconsin	2,155	4,059	2,757	2,122	
Oklahoma	1,903	3,983	4,332	2,099	
Utah	2,231	3,692	2,083	1,968	

Sorted

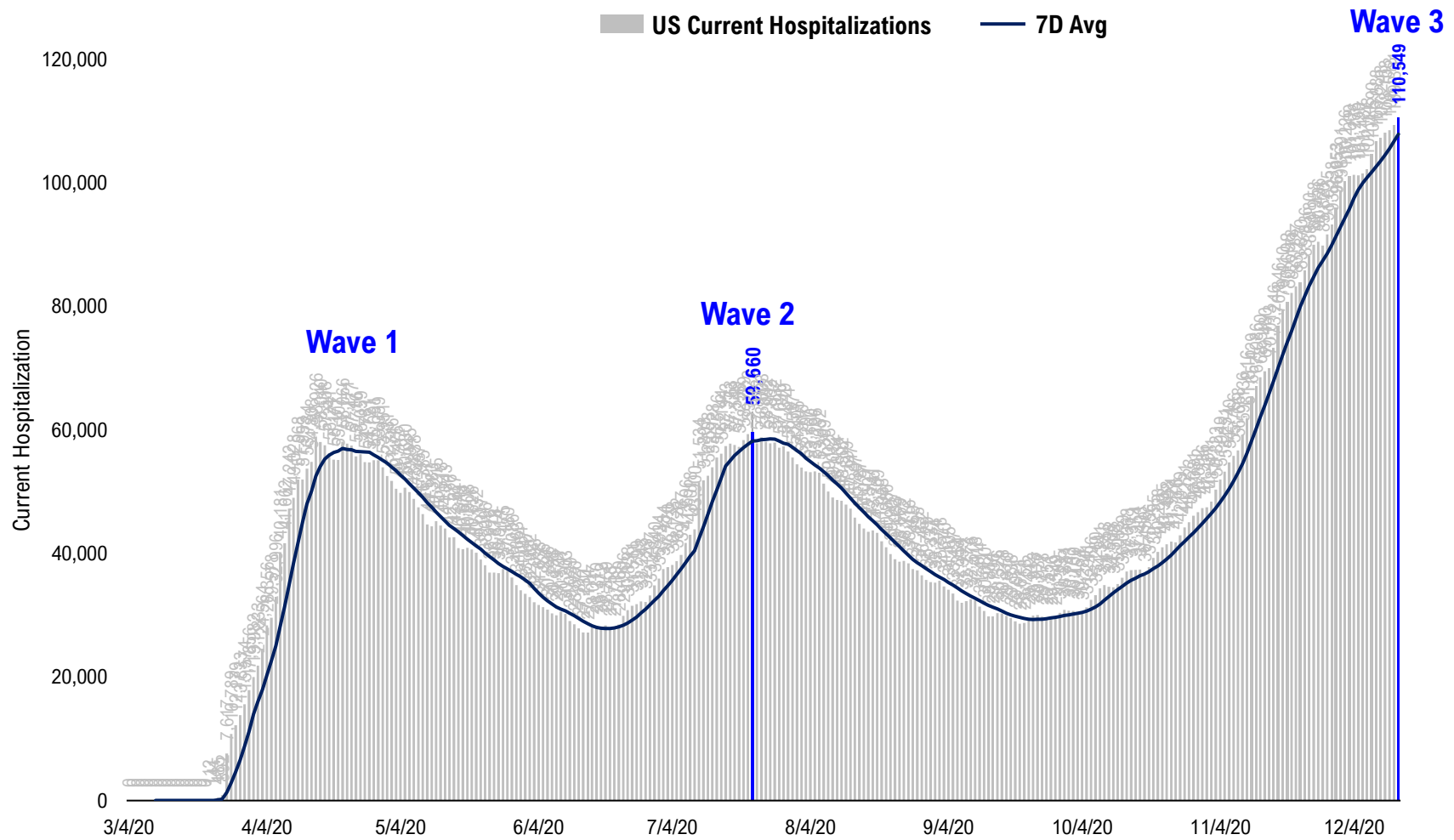
7D Ago Last 3-day Trend

Montana did not report COVID stats on Monday due to the system upgrade...

	12/7/20	12/12/20	12/13/20	12/14/20	vs 7D ago
United States	185,324	220,707	182,834	192,177	+6,853
States:					
Kentucky	1,960	3,540	2,444	1,786	
Washington	6,957	4,181	2,328	1,734	
Mississippi	1,263	2,665	1,500	1,648	<--higher
New Mexico	1,859	1,793	1,442	1,499	
Arkansas	1,004	1,864	1,248	1,233	<--higher
West Virginia	1,131	1,514	1,066	1,177	
Nebraska	1,266	1,103	811	1,173	
Oregon	1,292	1,419	1,014	1,157	
Idaho	1,383	1,022	547	1,038	
Louisiana	1,016	0	4,454	1,022	
Delaware	799	1,058	584	997	<--higher
New Hampshire	1,045	784	712	919	
Iowa	677	1,245	989	637	
Rhode Island	844	1,831	870	552	
Puerto Rico	934	663	550	506	
Maine	427	414	303	426	
Alaska	476	517	637	422	
Wyoming	668	122	453	415	
South Dakota	509	735	631	316	
North Dakota	361	376	281	196	
Hawaii	81	197	87	189	<--higher
District of Columbia	183	286	231	164	
Vermont	65	85	127	104	<--higher
Guam	15	11	16	31	<--higher
U.S. Virgin Islands	16	58	0	16	
Montana	716	774	659	0	
Northern Mariana Islands	3	0	0	0	
American Samoa	0	0	0	0	

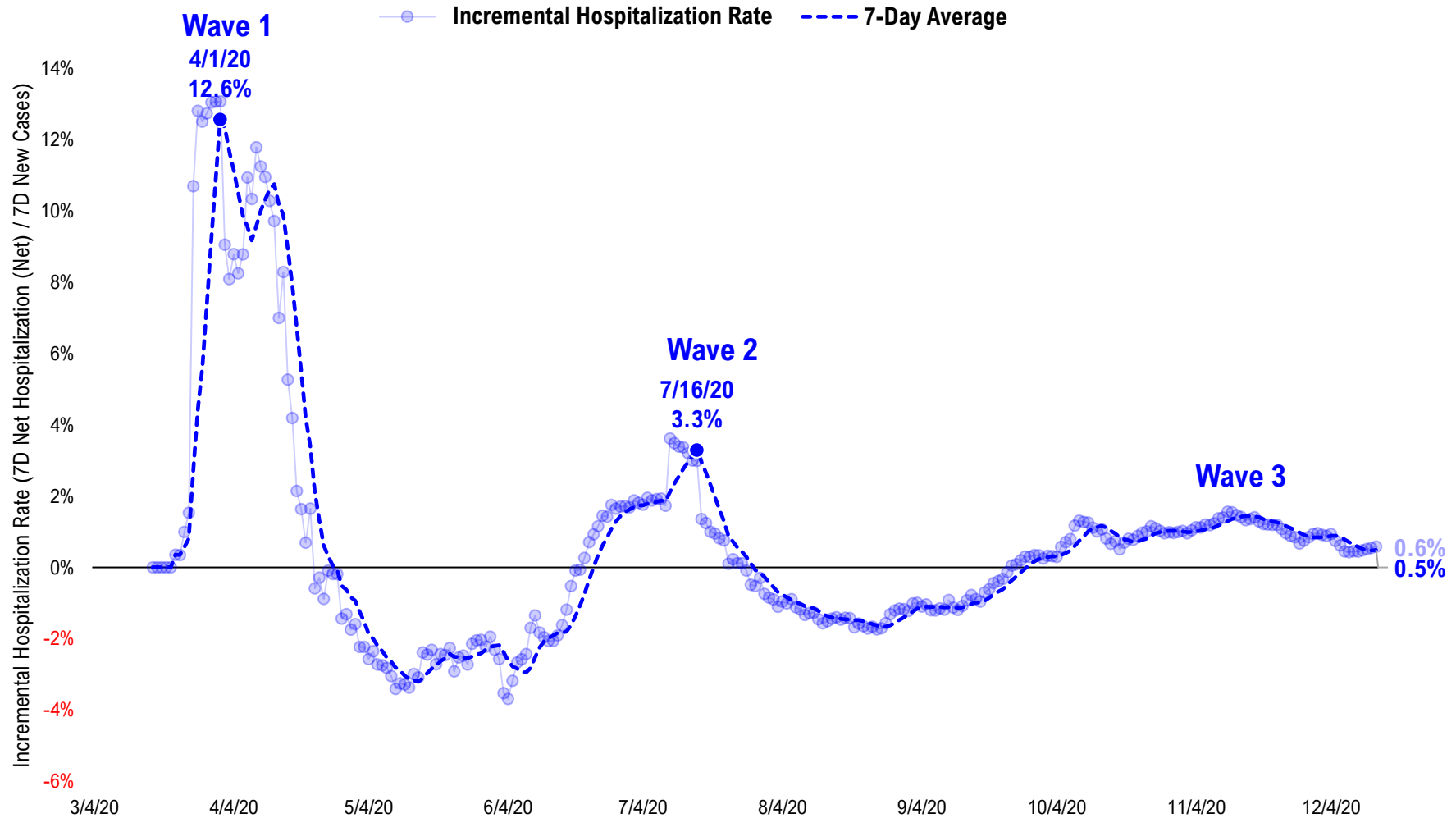
#7: US Daily Hospitalizations...

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



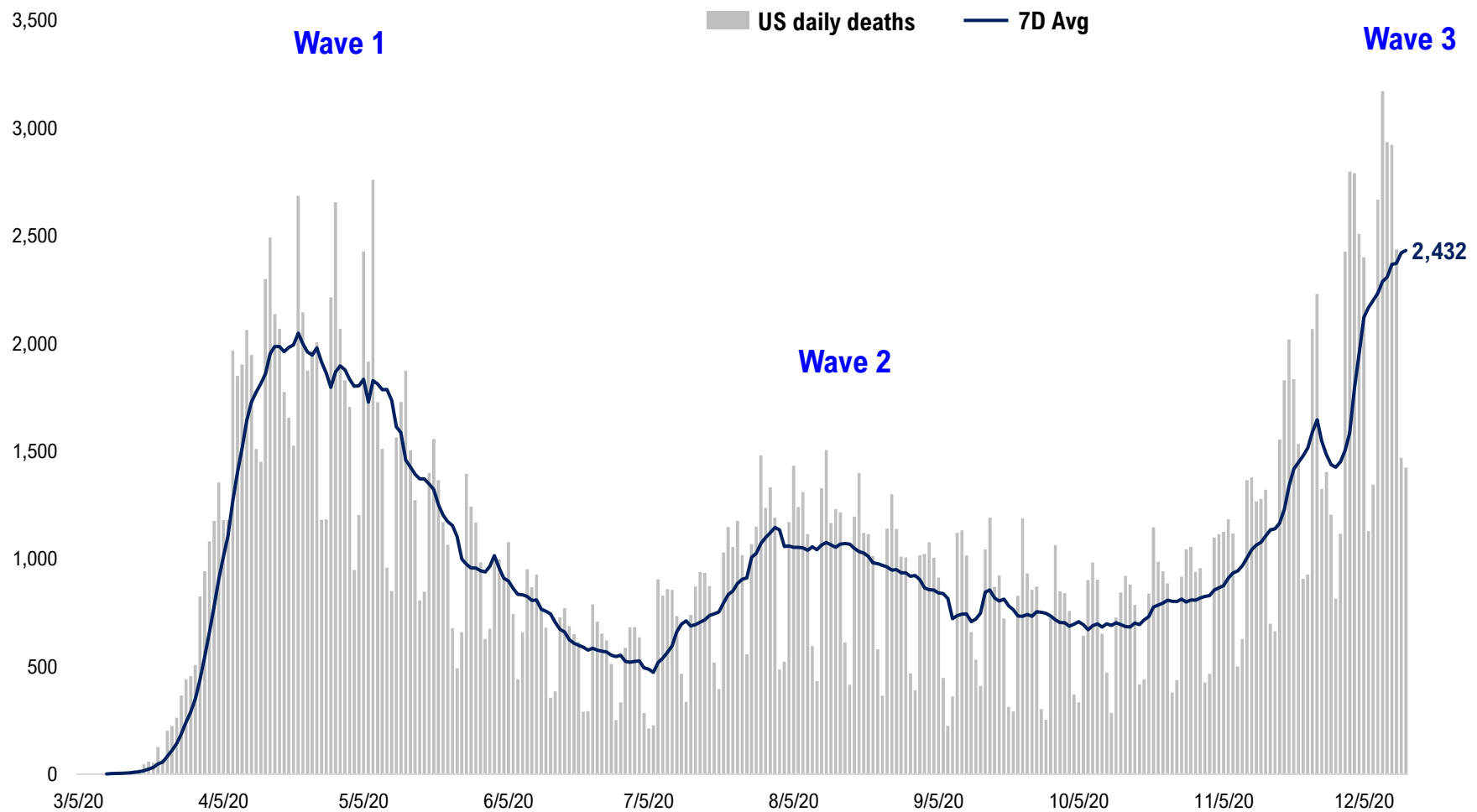
#8: Incremental Hospitalization Rate...

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



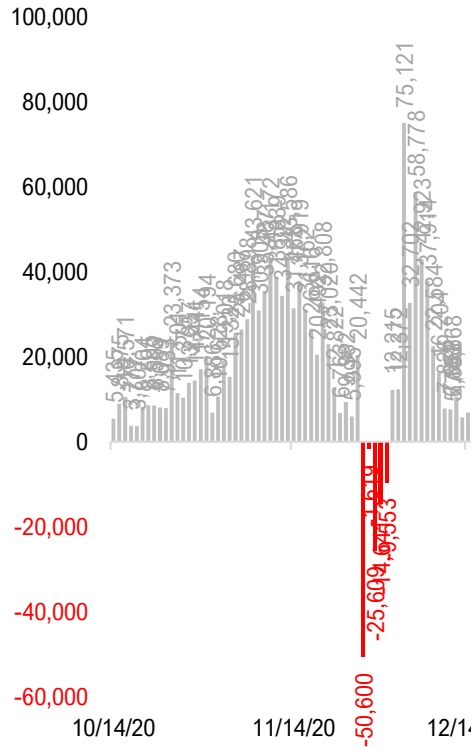
#9: US Daily New Fatalities...

US daily COVID-19 Fatalities

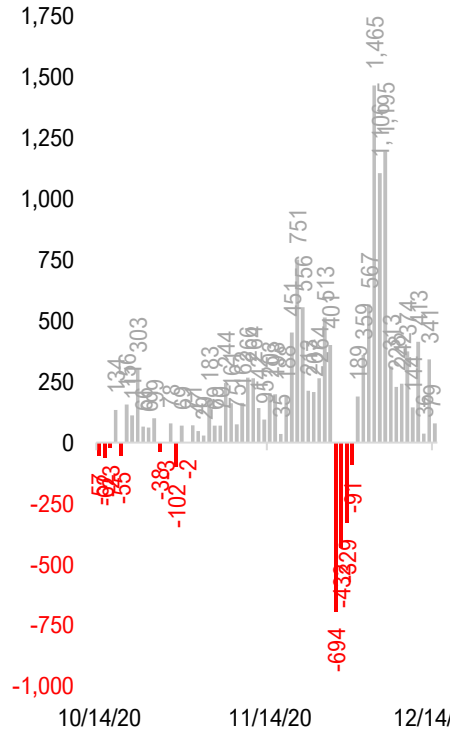


#10: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

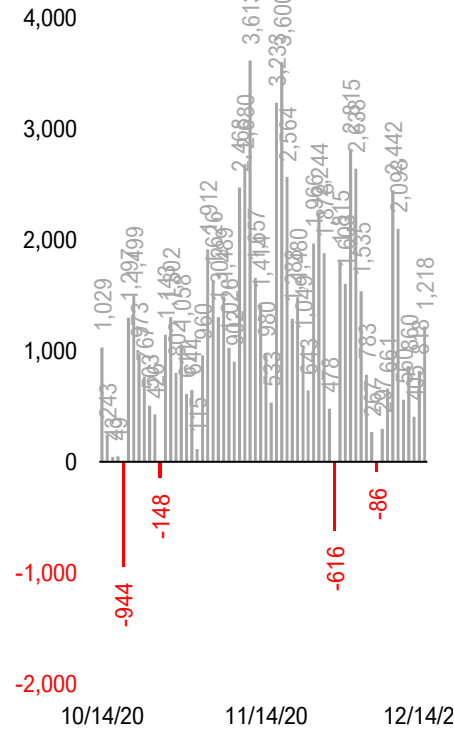
Daily New Cases
(8/10-8/23 ex-CA; 9/4-9/5 ex-IL)



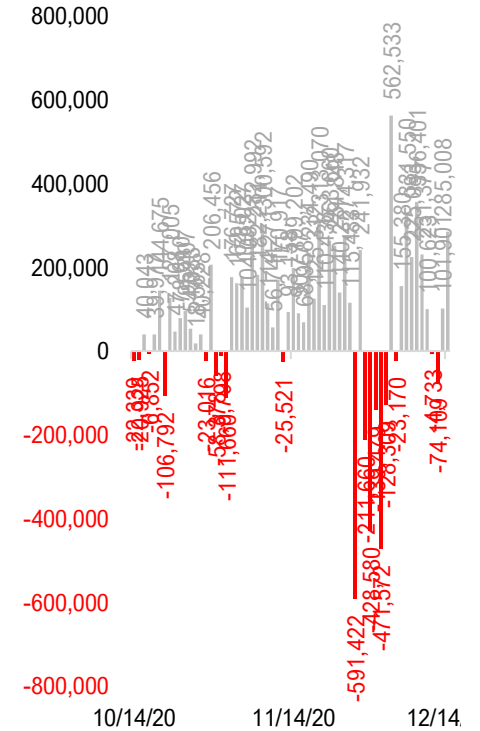
Daily Deaths



Daily Net Hospitalization
(Red = more discharge than admission)

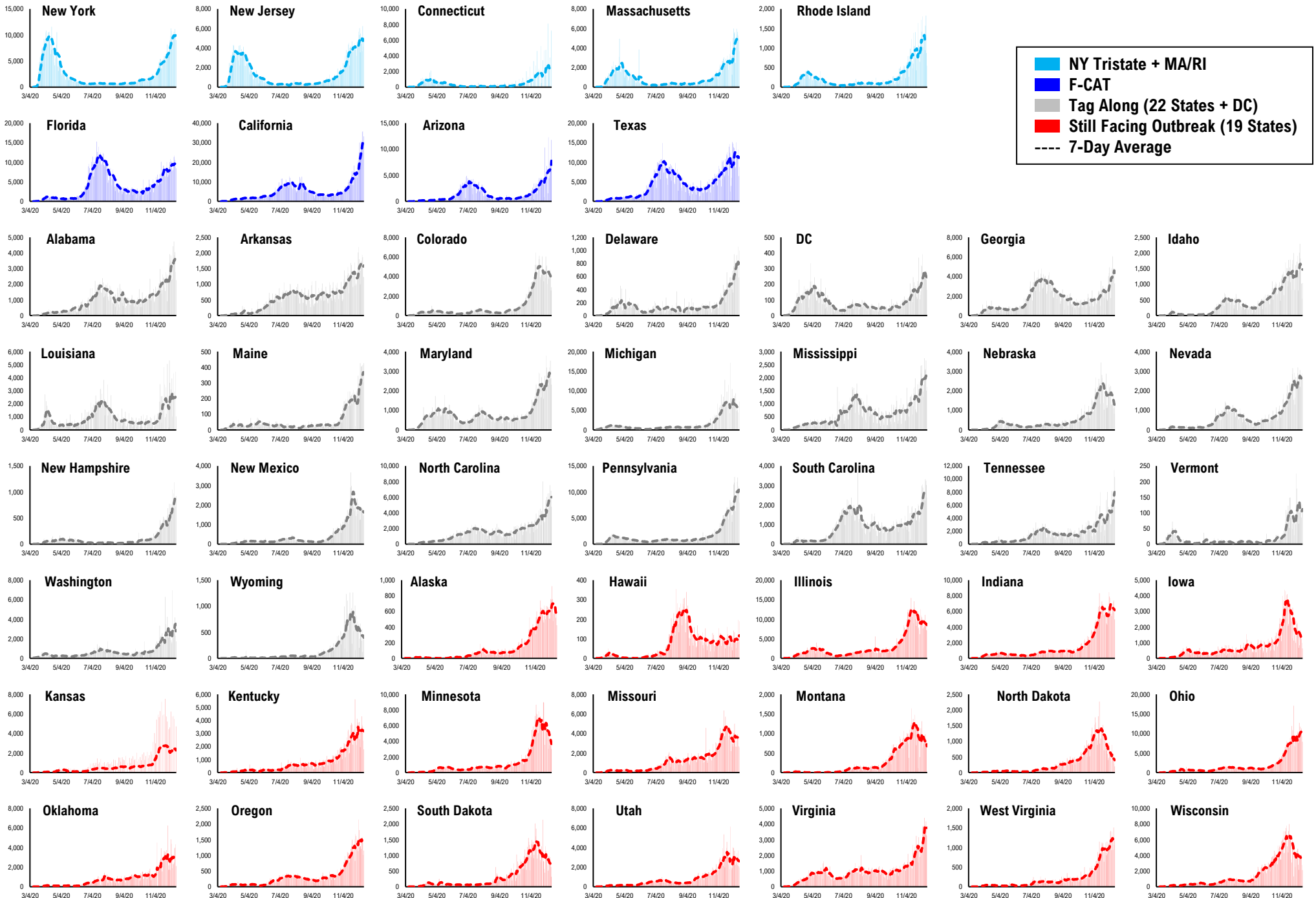


Daily Tests

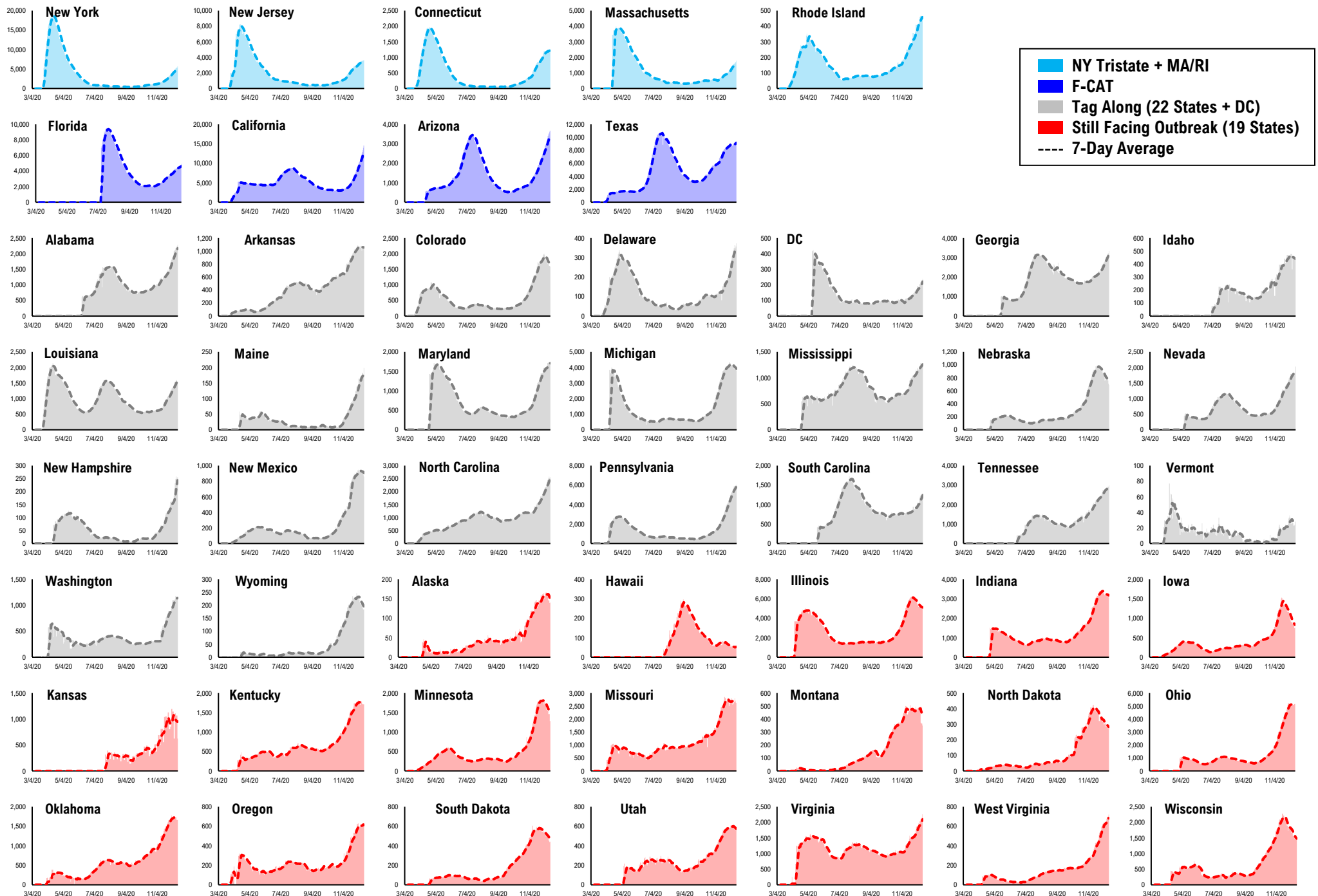


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

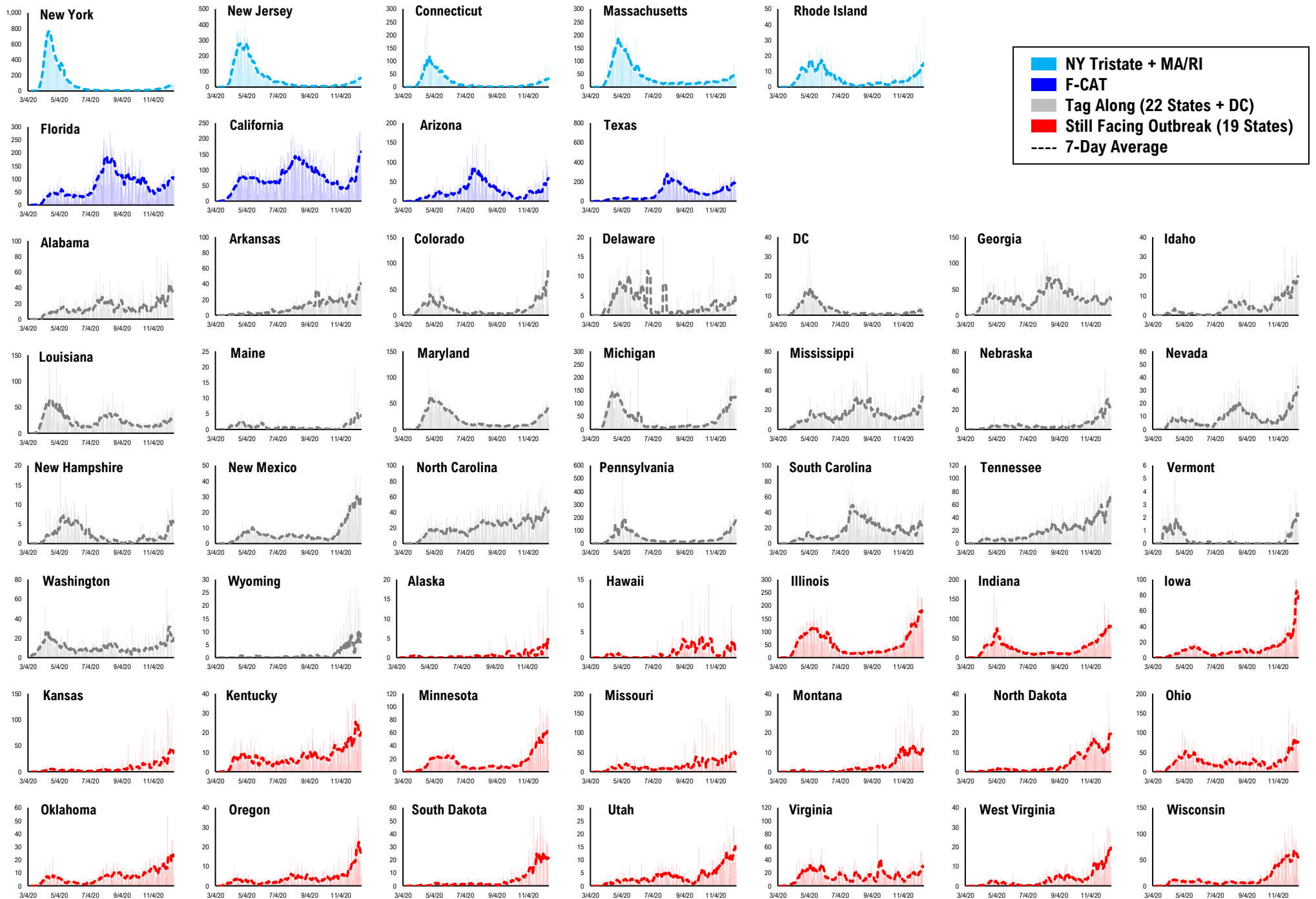
#11: Daily New Cases by States...



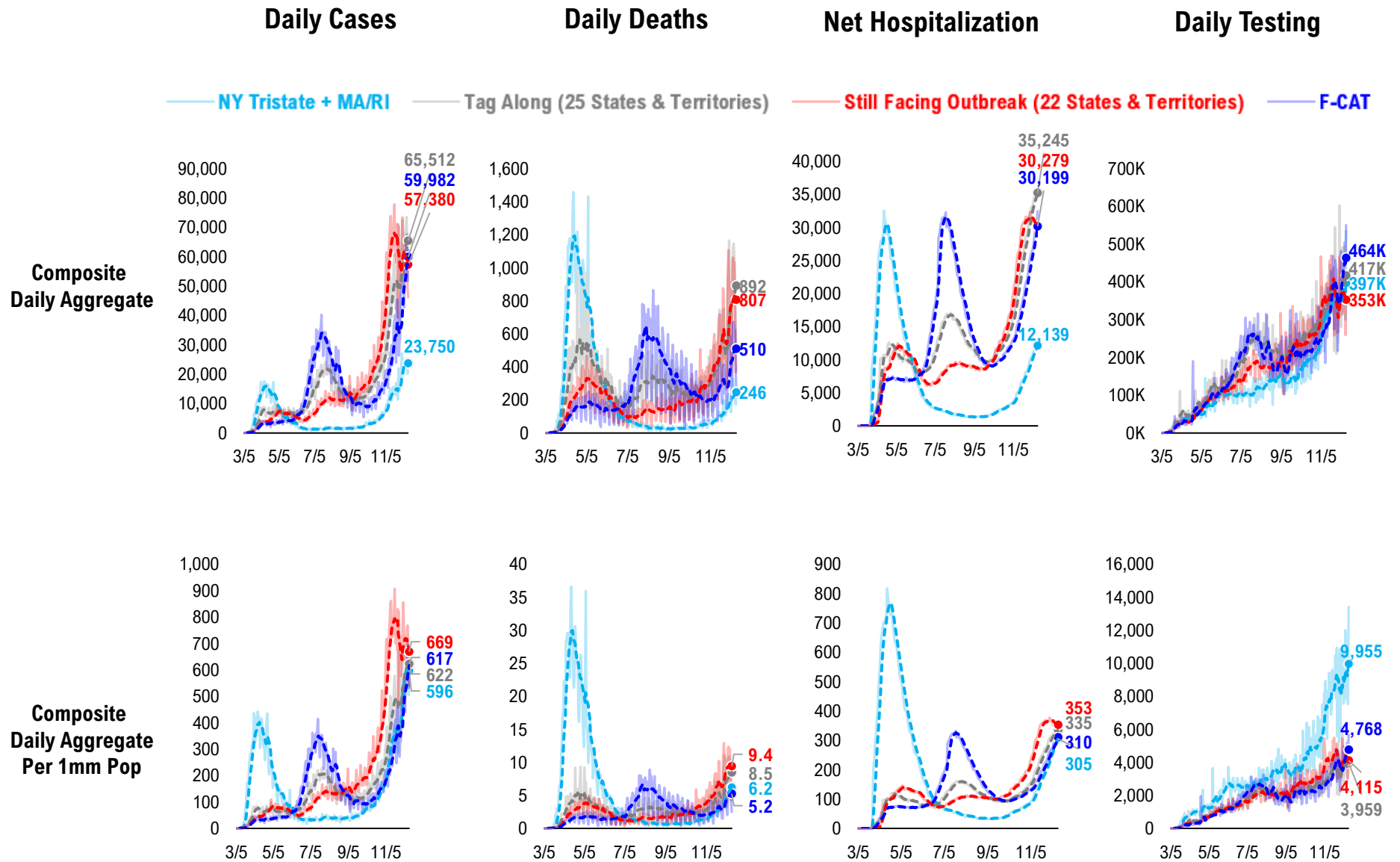
#12: Current Hospitalizations by States...



#13: Daily New Deaths by States...

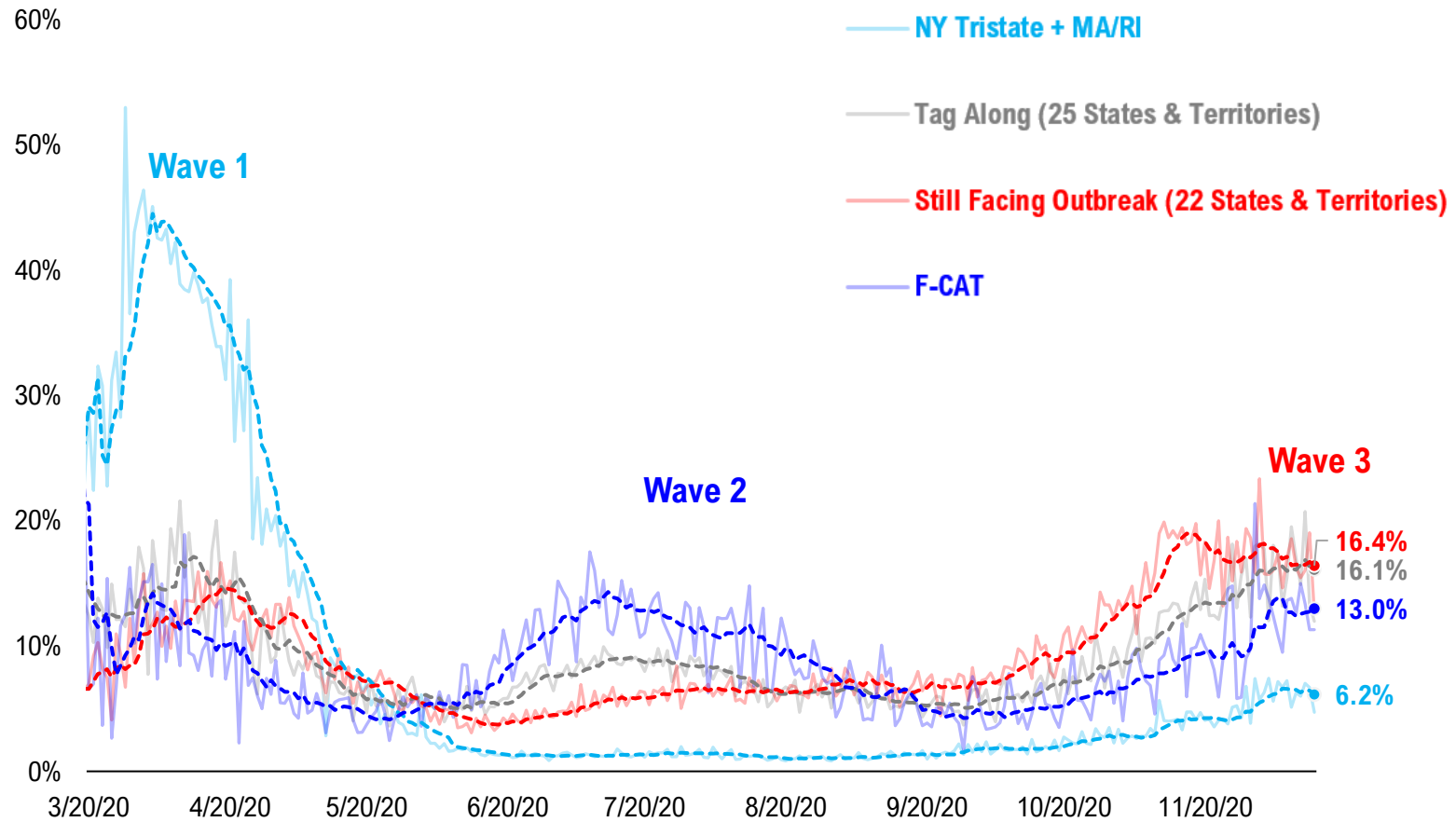


#14: State COVID-19 situation by Tier...

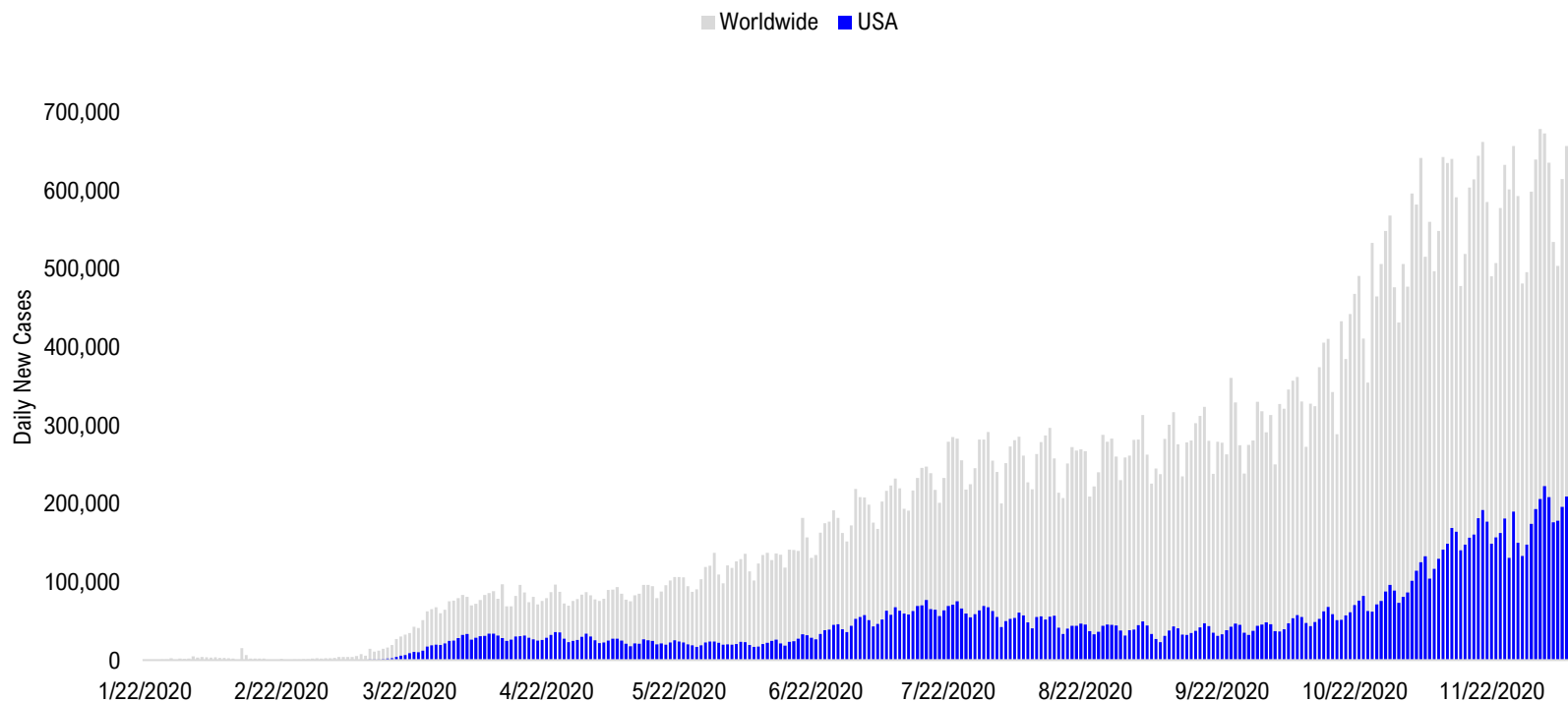


#15: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Jul 31	Aug 14	Aug 28	Sep 11	Sep 25	Oct 9	Oct 23	Nov 6	Nov 20	Dec 4	Dec 13
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 223,901	Europe 326,485	Europe 279,377	Europe 258,862	Europe 239,067
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 71,893	US + Canada 117,107	US + Canada 182,596	US + Canada 213,321	US + Canada 215,394
Pakistan + India + Bangladesh 58,625	US + Canada 54,914	US + Canada 45,273	Europe 47,433	Europe 67,915	Latin America 69,822	Latin America 69,390	Latin America 59,345	Latin America 68,233	Latin America 88,693	Latin America 75,456
Europe 20,929	Europe 28,225	Europe 35,965	US + Canada 37,795	US + Canada 43,790	US + Canada 54,955	Pakistan + India + Bangladesh 56,907	Pakistan + India + Bangladesh 52,404	Pakistan + India + Bangladesh 50,856	Pakistan + India + Bangladesh 41,815	Pakistan + India + Bangladesh 33,461
Africa 17,999	Asia ex- India+Pakistan 11,706	Asia ex- India+Pakistan 10,223	Asia ex- India+Pakistan 10,997	Asia ex- India+Pakistan 11,003	Asia ex- India+Pakistan 13,934	Asia ex- India+Pakistan 15,237	Africa 13,656	Asia ex- India+Pakistan 15,310	Asia ex- India+Pakistan 17,499	Africa 17,841
Asia ex- India+Pakistan 10,630	Africa 10,680	Africa 8,468	Africa 8,309	Africa 8,247	Africa 9,966	Africa 10,615	Asia ex- India+Pakistan 13,638	Africa 14,917	Africa 16,543	Asia ex- India+Pakistan 17,420

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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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