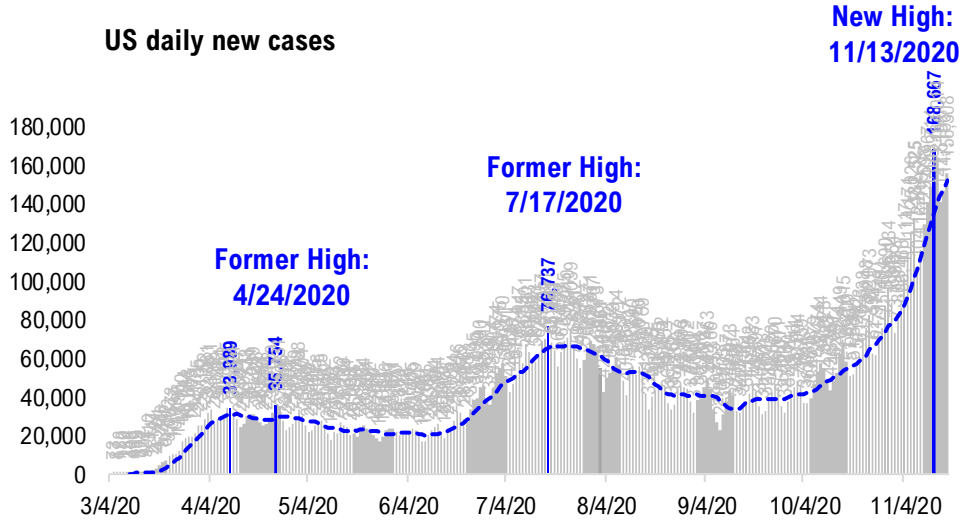


FSInsight Daily COVID-19 Chartbook

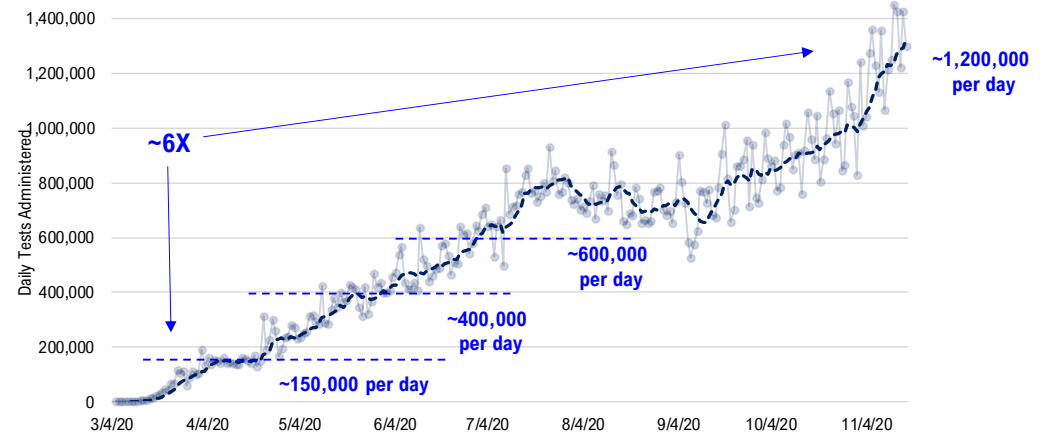


#1: USA COVID-19 Situation at a Glance...

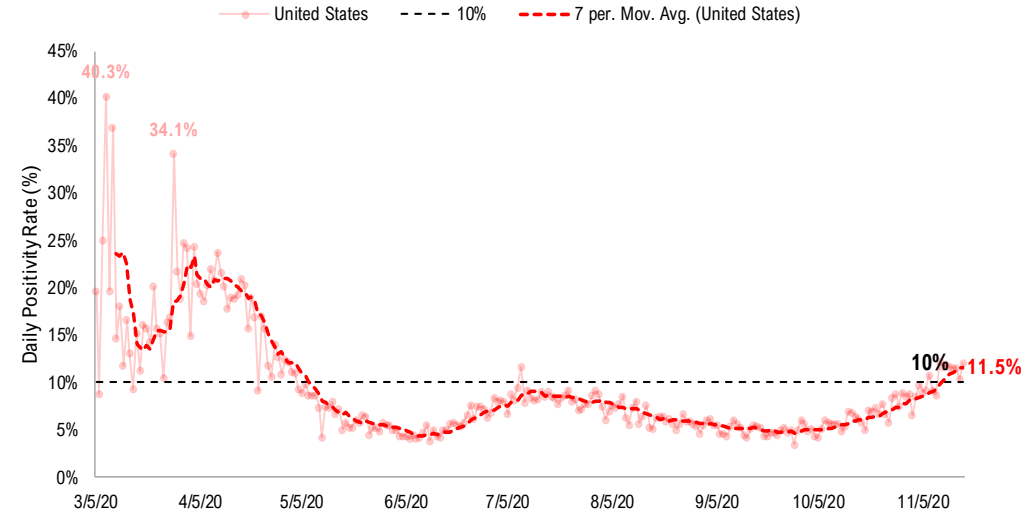
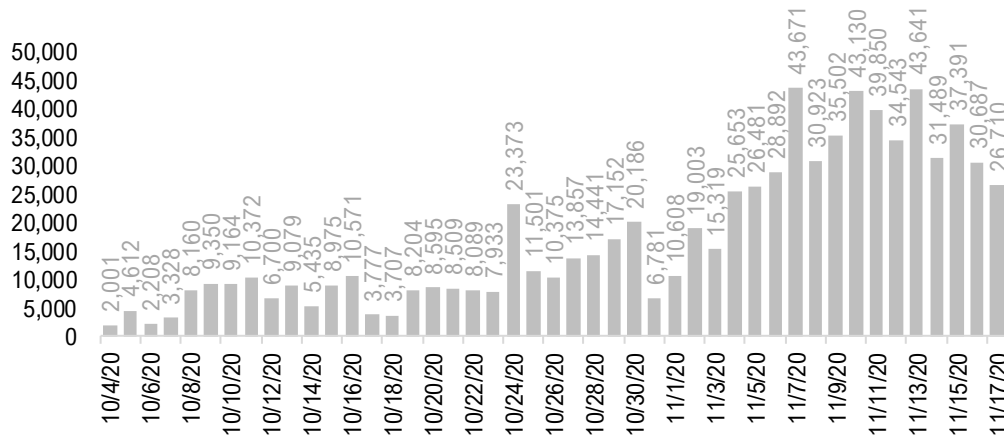
US daily new cases



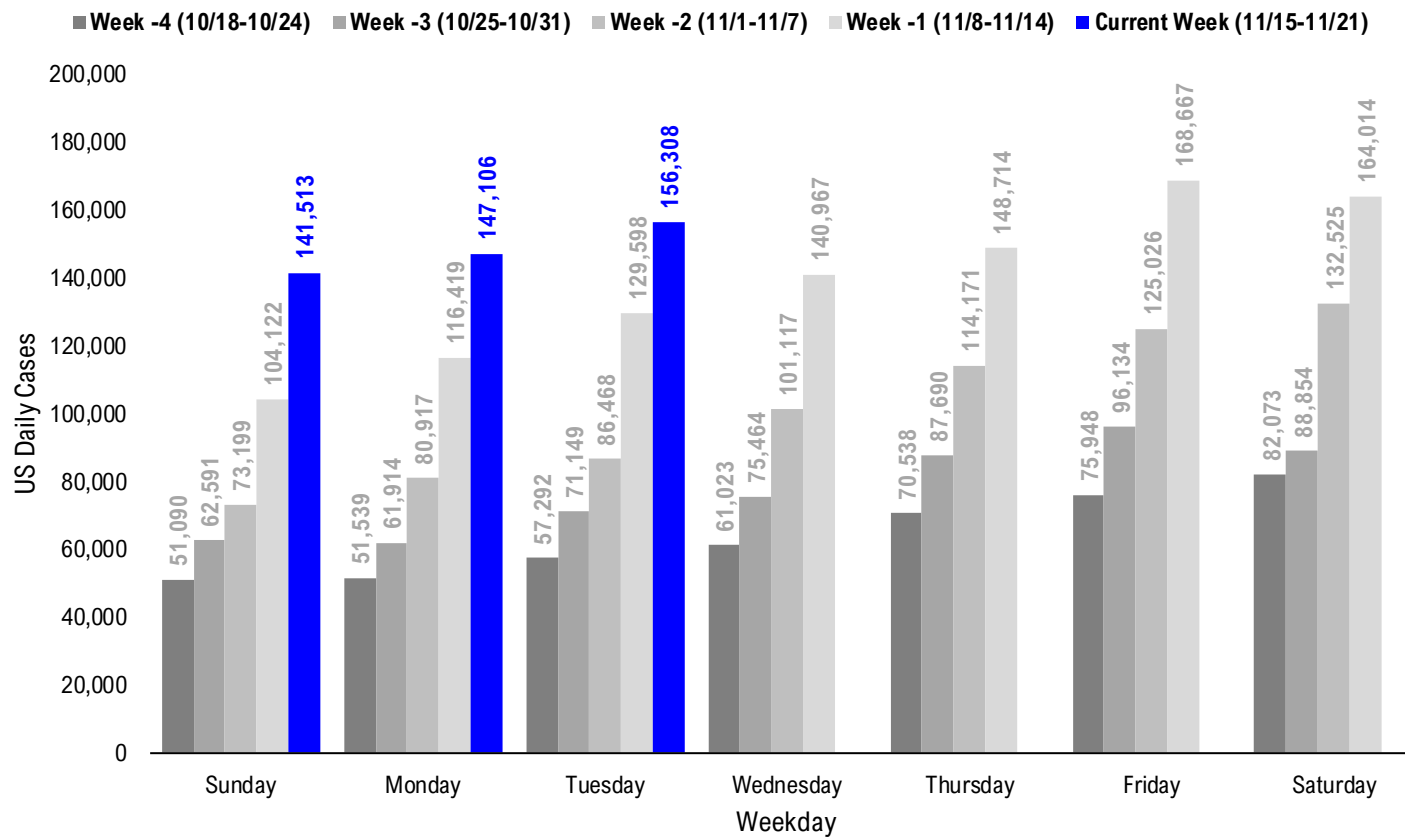
USA total COVID-19 tests administered



US daily new cases rolling 7D delta



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



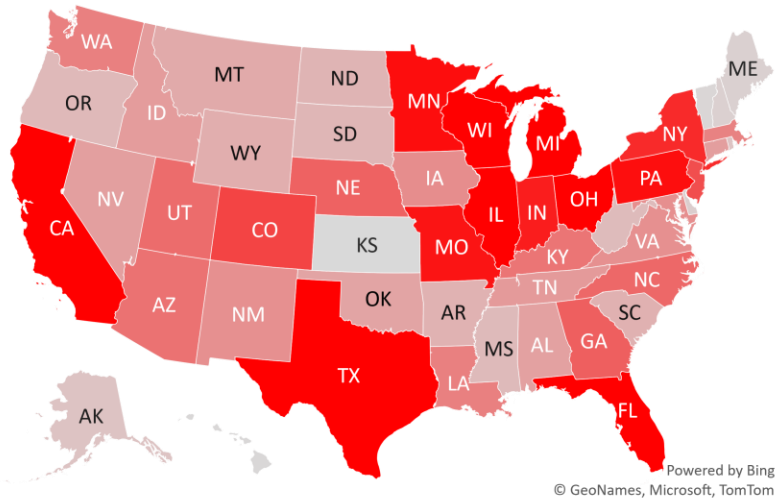
#3: USA State COVID-19 Situation at a Glance...

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		7D		# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
			11/17	Delta	11/17	Delta				
United States	100%	100%	156.308	+26.710	452	+96	3	-8%	14.939	1.4%
States:										
1 Illinois	3.8%	4.2%	12,601	-22	917	+44	4	-14%	1,145	1.3%
2 Texas	8.7%	8.8%	10,826	+221	277	+49	123	-33%	1,671	2.8%
3 California	11.9%	14.6%	8,743	+3,376	250	+79	116	-14%	1,086	1.8%
4 Florida	6.5%	5.0%	7,459	+3,106	345	+111	127	-42%	335	0.7%
5 Michigan	3.0%	2.6%	7,458	+985	675	+158	3	-10%	793	1.6%
6 Wisconsin	1.8%	1.6%	7,090	+17	1004	+104	4	-21%	208	0.5%
7 Ohio	3.5%	3.3%	7,079	+571	633	+184	2	-6%	901	1.8%
8 Minnesota	1.7%	1.8%	5,931	+1,038	1237	+366	1	-12%	445	0.9%
9 Pennsylvania	3.9%	3.8%	5,900	+1,539	406	+128	3	-6%	799	2.2%
10 Missouri	1.8%	1.5%	5,717	+1,461	715	+83	3	-12%	399	1.2%
11 Indiana	2.0%	1.8%	5,463	+634	858	+183	2	-16%	615	1.4%
12 New York	5.9%	8.1%	5,088	+1,123	210	+29	221	-61%	576	1.8%
13 Colorado	1.7%	1.8%	4,331	+441	741	+136	3	-24%	250	0.7%
14 New Jersey	2.7%	3.0%	4,026	+249	405	+110	2	-12%	675	2.7%
15 Georgia	3.2%	2.9%	3,536	+1,663	203	+70	115	-50%	164	1.1%
16 Nebraska	0.6%	0.6%	3,440	+1,858	1151	+314	3	-7%	118	0.7%
17 North Carolina	3.2%	2.7%	3,288	+706	266	+69	1	-7%	271	1.4%
18 Utah	1.0%	0.9%	3,178	+661	813	+69	3	-32%	84	0.4%
19 Arizona	2.2%	1.7%	2,984	-450	313	+50	138	-47%	335	2.0%
20 Kentucky	1.3%	1.0%	2,911	+832	438	+66	3	-33%	332	1.9%
21 Louisiana	1.4%	1.3%	2,592	+1,285	409	+198	119	-29%	190	1.7%
22 Washington	2.3%	2.7%	2,589	+1,148	280	+105	3	-17%	187	1.3%
23 Massachusetts	2.1%	2.8%	2,525	+371	330	+73	206	-34%	217	1.2%
24 Iowa	1.0%	0.9%	2,192	-542	826	-276	4	-35%	375	1.6%
25 Maryland	1.8%	2.0%	2,149	+811	315	+106	2	-5%	285	2.2%
26 Virginia	2.6%	2.6%	2,125	+690	233	+75	0	0%	218	1.8%
27 New Mexico	0.6%	0.5%	2,105	+847	698	+81	5	-2%	329	3.3%
28 Tennessee	2.1%	1.8%	1,841	-138	762	+199	1	-15%	323	1.0%

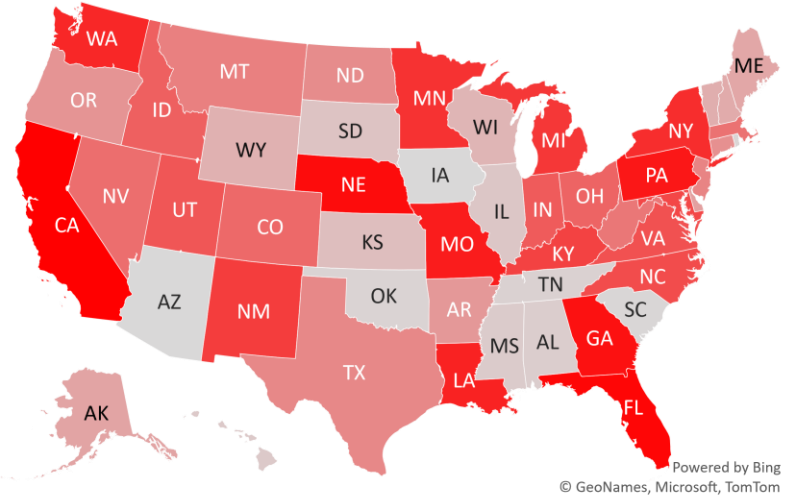
	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		7D		# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
			11/17	Delta	11/17	Delta				
United States	100%	100%	156.308	+26.710	452	+96	3	-8%	14.939	1.4%
States:										
29 Idaho	0.5%	0.4%	1,781	+580	710	+129	4	-13%	88	0.9%
30 Connecticut	1.1%	1.3%	1,702	+178	593	+138	6	-4%	229	1.9%
31 Nevada	0.9%	0.8%	1,697	+375	518	+133	3	-14%	261	2.3%
32 Alabama	1.5%	1.1%	1,616	-94	340	+63	3	-31%	83	0.6%
33 Oklahoma	1.2%	1.0%	1,551	-151	691	+363	1	-14%	279	1.5%
34 Montana	0.3%	0.2%	1,371	+273	1095	+408	2	-15%	-31	(0.4%)
35 Wyoming	0.2%	0.2%	1,260	+28	1481	-42	7	-3%	26	0.5%
36 South Carolina	1.6%	1.1%	1,146	-384	231	+35	108	-56%	16	0.2%
37 Arkansas	0.9%	0.6%	1,145	+170	333	+33	3	-28%	93	1.1%
38 North Dakota	0.2%	0.3%	1,082	+198	1354	-19	3	-44%	16	0.2%
39 South Dakota	0.3%	0.3%	1,006	-17	1169	-96	3	-43%	-25	(0.3%)
40 Oregon	1.3%	1.2%	924	+170	202	+18	3	-21%	108	1.6%
41 Mississippi	0.9%	0.6%	905	-28	276	+24	110	-47%	131	1.7%
42 West Virginia	0.5%	0.4%	864	+353	471	+178	1	-10%	120	2.0%
43 Alaska	0.2%	0.3%	634	+109	848	+158	2	-6%	23	0.6%
44 Rhode Island	0.3%	0.3%	605	-184	555	+45	3	-41%	47	0.8%
45 Puerto Rico	1.0%	0.5%	511	+304	169	+44	3	-32%	30	0.7%
46 Delaware	0.3%	0.4%	352	+148	396	+104	2	-8%	26	1.1%
47 New Hampshire	0.4%	0.4%	274	+54	243	+77	2	-17%	13	0.5%
48 Maine	0.4%	0.3%	246	+74	142	+29	3	-3%	24	1.8%
49 District of Columbi	0.2%	0.7%	245	+159	234	+101	198	-29%	3	0.3%
50 Vermont	0.2%	0.2%	95	+48	139	+78	3	-14%	2	0.3%
51 Guam	0.0%	0.0%	59	-122	541	-547	7	-50%	-8	(1.4%)
52 Hawaii	0.4%	0.5%	53	-24	35	-28	80	-83%	8	1.4%
53 U.S. Virgin Islands	0.0%	0.0%	16	+11	50	-12	88	-88%	0	0.0%
54 Northern Mariana	0.0%	0.0%	1	+1	18	+6	30	-67%	0	0.0%
55 Kansas	0.9%	0.8%	0	+0	828	+150	4	-39%	51	0.3%
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	

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

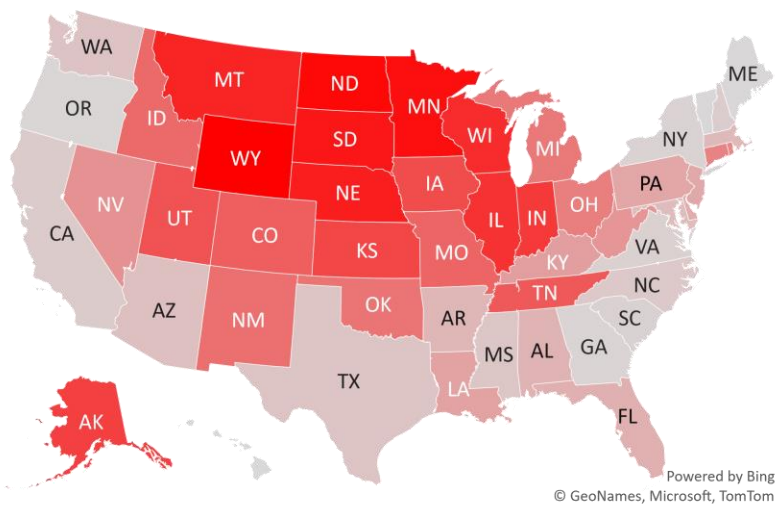
Daily Case Increases



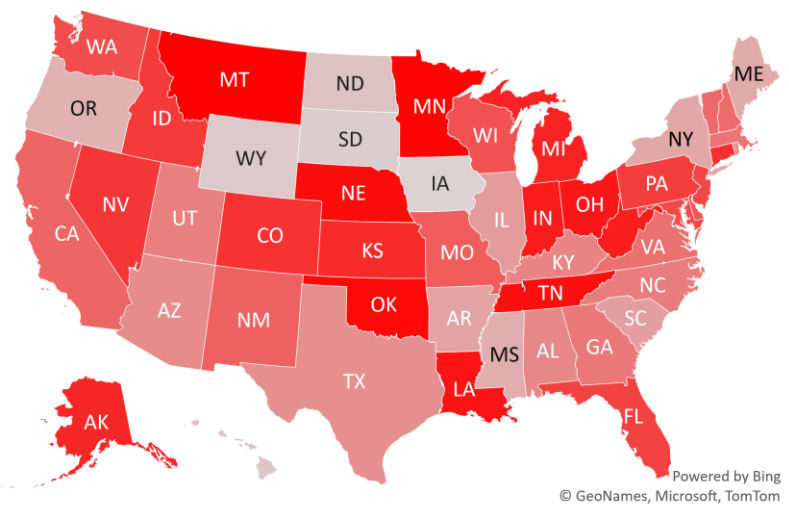
7D Delta in Daily New Cases



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



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



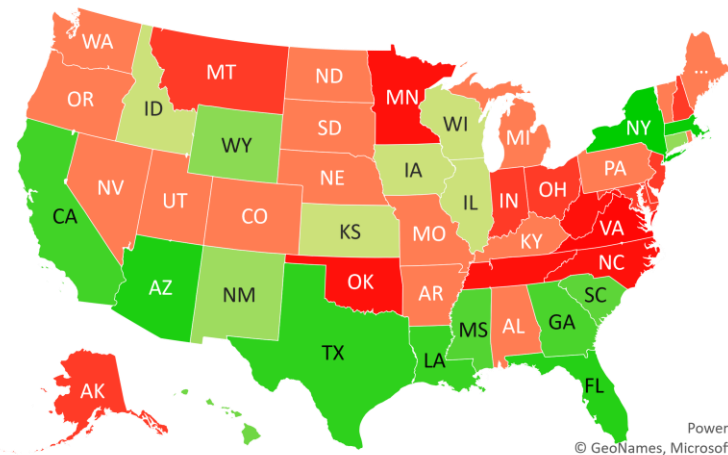
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 11/17)

	Sorted			
	Peak Date	11/17/20	% off the Peak	% US Pop
United States	11/14/20	3	-8%	100%
States:				
New York	4/10/20	221	-61%	5.9%
Massachusetts	4/25/20	206	-34%	2.1%
District of Columbia	5/3/20	198	-29%	0.2%
Arizona	7/2/20	138	-47%	2.2%
Florida	7/13/20	127	-42%	6.5%
Texas	7/17/20	123	-33%	8.7%
Louisiana	7/21/20	119	-29%	1.4%
California	7/24/20	116	-14%	11.9%
Georgia	7/25/20	115	-50%	3.2%
Mississippi	7/30/20	110	-47%	0.9%
South Carolina	8/1/20	108	-56%	1.6%
U.S. Virgin Islands	8/21/20	88	-88%	0.0%
Hawaii	8/29/20	80	-83%	0.4%
Northern Mariana Island	10/18/20	30	-67%	0.0%
Wyoming	11/10/20	7	-3%	0.2%
Guam	11/10/20	7	-50%	0.0%
Connecticut	11/11/20	6	-4%	1.1%
New Mexico	11/12/20	5	-2%	0.6%
Wisconsin	11/13/20	4	-21%	1.8%
Kansas	11/13/20	4	-39%	0.9%
Illinois	11/13/20	4	-14%	3.8%
Idaho	11/13/20	4	-13%	0.5%
Iowa	11/13/20	4	-35%	1.0%
Washington	11/14/20	3	-17%	2.3%
Vermont	11/14/20	3	-14%	0.2%
Utah	11/14/20	3	-32%	1.0%
South Dakota	11/14/20	3	-43%	0.3%
Rhode Island	11/14/20	3	-41%	0.3%

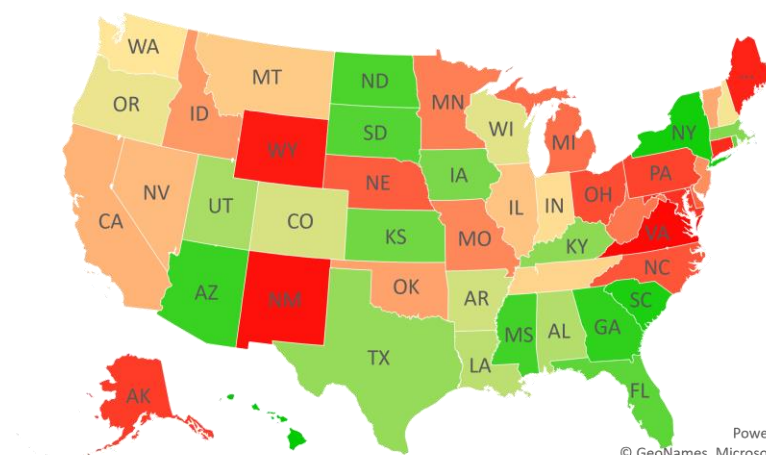
	Sorted			
	Peak Date	11/17/20	% off the Peak	% US Pop
United States	11/14/20	3	-8%	100%
States:				
Puerto Rico	11/14/20	3	-32%	1.0%
Pennsylvania	11/14/20	3	-6%	3.9%
Oregon	11/14/20	3	-21%	1.3%
Nevada	11/14/20	3	-14%	0.9%
Nebraska	11/14/20	3	-7%	0.6%
North Dakota	11/14/20	3	-44%	0.2%
Missouri	11/14/20	3	-12%	1.8%
Michigan	11/14/20	3	-10%	3.0%
Maine	11/14/20	3	-3%	0.4%
Kentucky	11/14/20	3	-33%	1.3%
Colorado	11/14/20	3	-24%	1.7%
Arkansas	11/14/20	3	-28%	0.9%
Alabama	11/14/20	3	-31%	1.5%
Ohio	11/15/20	2	-6%	3.5%
New Jersey	11/15/20	2	-12%	2.7%
New Hampshire	11/15/20	2	-17%	0.4%
Montana	11/15/20	2	-15%	0.3%
Maryland	11/15/20	2	-5%	1.8%
Indiana	11/15/20	2	-16%	2.0%
Delaware	11/15/20	2	-8%	0.3%
Alaska	11/15/20	2	-6%	0.2%
West Virginia	11/16/20	1	-10%	0.5%
Tennessee	11/16/20	1	-15%	2.1%
Oklahoma	11/16/20	1	-14%	1.2%
North Carolina	11/16/20	1	-7%	3.2%
Minnesota	11/16/20	1	-12%	1.7%
Virginia	11/17/20	0	0%	2.6%

Days since Daily Case Peak: **Longer = Good**



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Daily Cases % off the Peak: **Larger Decline = Good**



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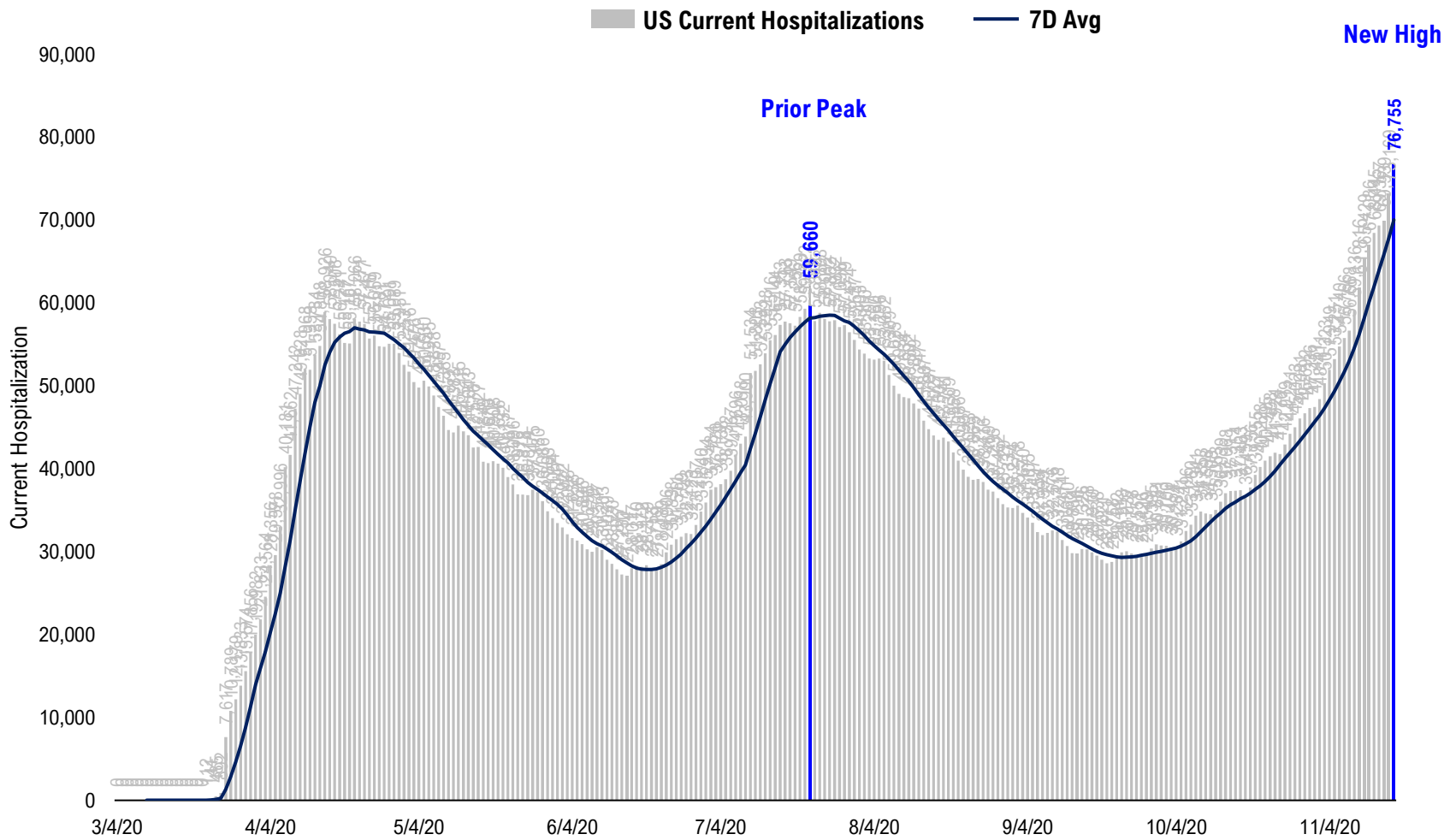
#6: US New Cases by States... (sorted by today's new cases)

	Sorted				
	7D Ago	Last 3-day Trend			
	11/10/20	11/15/20	11/16/20	11/17/20	vs 7D ago
United States	129,598	141,513	147,106	156,308	+26,710
States:					
Illinois	12,623	10,631	11,632	12,601	
Texas	10,605	6,390	6,858	10,826	
California	5,367	10,968	9,890	8,743	<--higher
Florida	4,353	10,105	4,663	7,459	<--higher
Michigan	6,473	0	12,763	7,458	
Wisconsin	7,073	6,058	4,389	7,090	
Ohio	6,508	7,853	7,268	7,079	
Minnesota	4,893	7,553	7,437	5,931	<--higher
Pennsylvania	4,361	5,199	4,476	5,900	<--higher
Missouri	4,256	3,729	3,718	5,717	<--higher
Indiana	4,829	6,710	5,147	5,463	
New York	3,965	3,649	3,490	5,088	<--higher
Colorado	3,890	4,183	4,296	4,331	
New Jersey	3,777	4,538	2,219	4,026	
Georgia	1,873	1,952	981	3,536	<--higher
Nebraska	1,582	1,912	1,327	3,440	<--higher
North Carolina	2,582	3,117	1,972	3,288	<--higher
Utah	2,517	2,667	1,971	3,178	<--higher
Arizona	3,434	2,383	1,476	2,984	
Kentucky	2,079	1,449	1,511	2,911	<--higher
Louisiana	1,307	2,565	547	2,592	<--higher
Washington	1,441	2,309	1,492	2,589	<--higher
Massachusetts	2,154	2,133	2,164	2,525	
Iowa	2,734	3,554	2,071	2,192	
Maryland	1,338	1,840	1,726	2,149	<--higher
Virginia	1,435	1,161	2,677	2,125	<--higher
New Mexico	1,258	1,030	1,253	2,105	<--higher
Tennessee	1,979	5,817	7,951	1,841	

	Sorted				
	7D Ago	Last 3-day Trend			
	11/10/20	11/15/20	11/16/20	11/17/20	vs 7D ago
United States	129,598	141,513	147,106	156,308	+26,710
States:					
Idaho	1,201	928	1,099	1,781	<--higher
Connecticut	1,524	0	4,639	1,702	
Nevada	1,322	1,177	1,914	1,697	<--higher
Alabama	1,710	1,979	1,410	1,616	
Oklahoma	1,702	3,923	2,729	1,551	
Montana	1,098	1,272	869	1,371	<--higher
Wyoming	1,232	613	699	1,260	
South Carolina	1,530	1,405	1,013	1,146	
Arkansas	975	707	1,165	1,145	
North Dakota	884	924	1,089	1,082	<--higher
South Dakota	1,023	1,199	897	1,006	
Oregon	754	862	766	924	<--higher
Mississippi	933	969	589	905	
West Virginia	511	867	801	864	<--higher
Alaska	525	648	578	634	<--higher
Rhode Island	789	679	481	605	
Puerto Rico	207	624	481	511	<--higher
Delaware	204	408	397	352	<--higher
New Hampshire	220	360	358	274	<--higher
Maine	172	153	173	246	<--higher
District of Columbia	86	163	87	245	<--higher
Vermont	47	42	123	95	<--higher
Guam	181	156	54	59	
Hawaii	77	0	94	53	
U.S. Virgin Islands	5	0	0	16	<--higher
Northern Mariana Islands	0	0	2	1	
Kansas	0	0	7,234	0	
American Samoa	0	0	0	0	

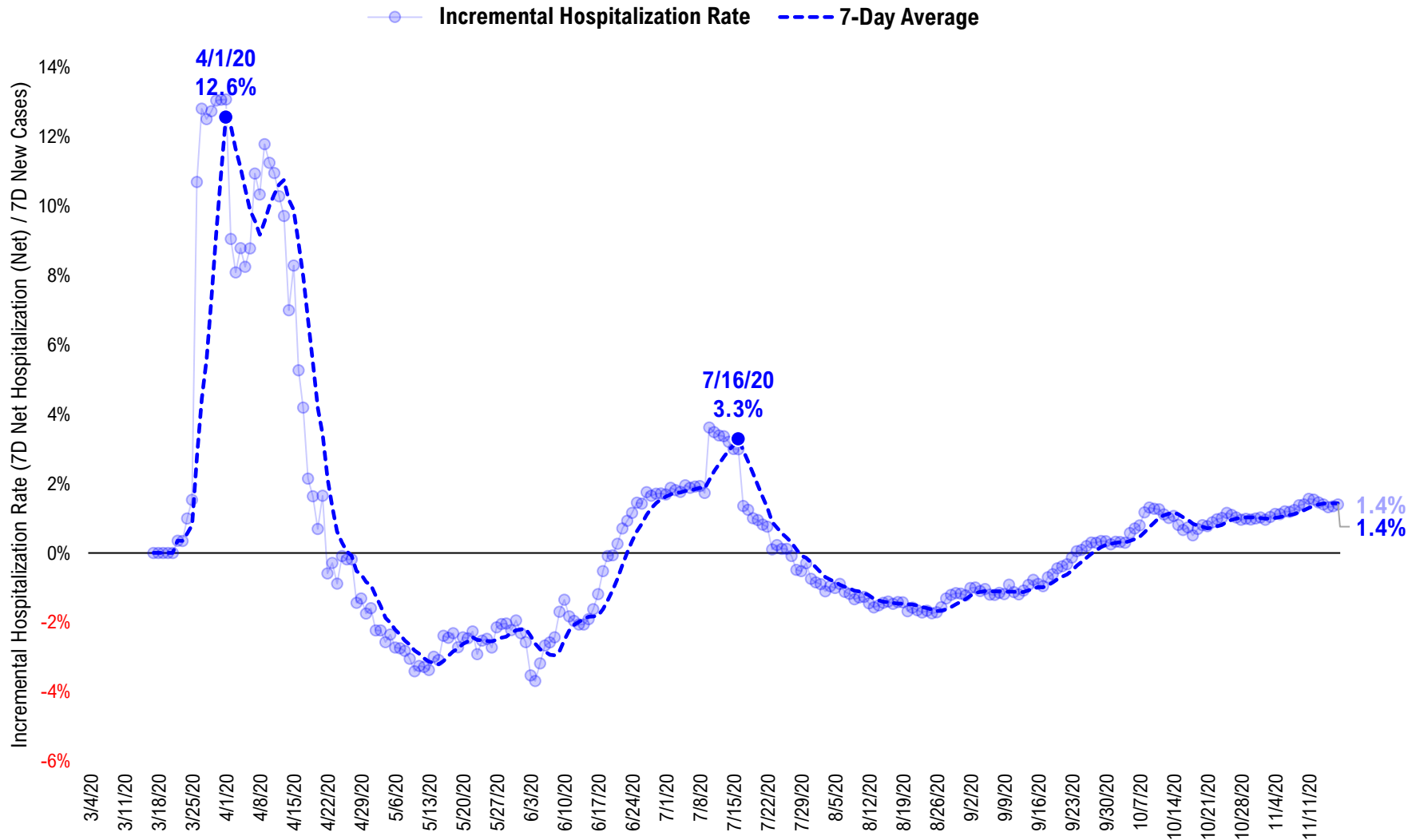
#7: US Daily Hospitalizations...

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



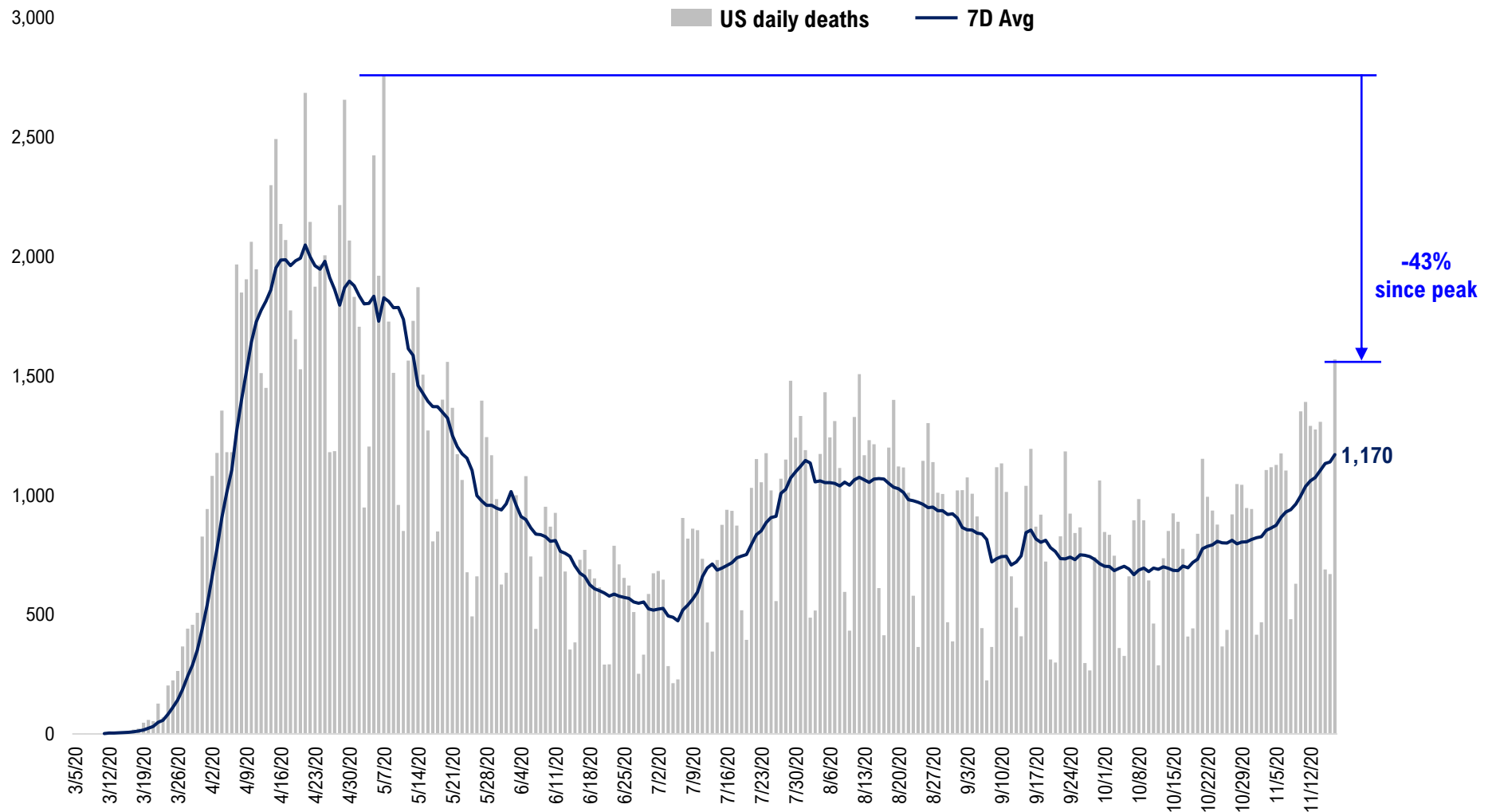
#8: Incremental Hospitalization Rate...

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



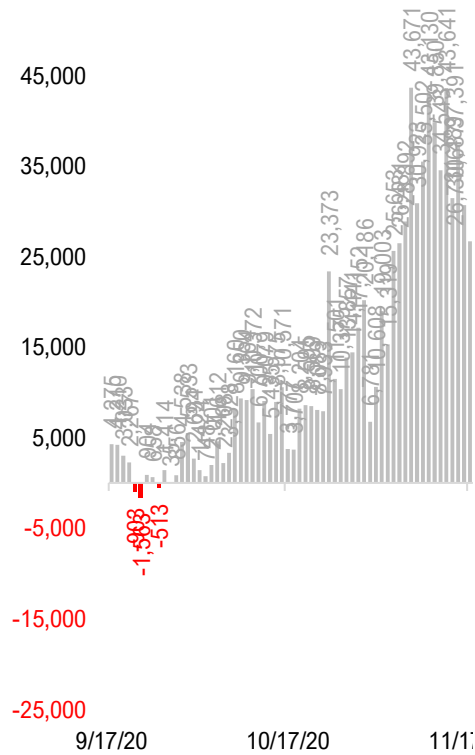
#9: US Daily New Fatalities...

US daily COVID-19 Fatalities

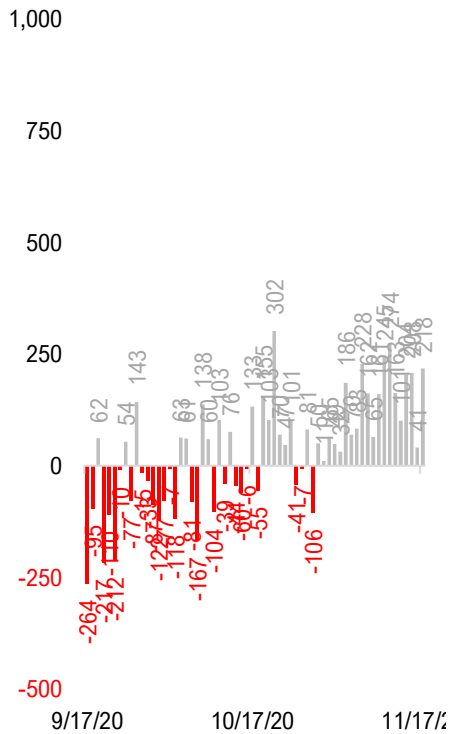


#10: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

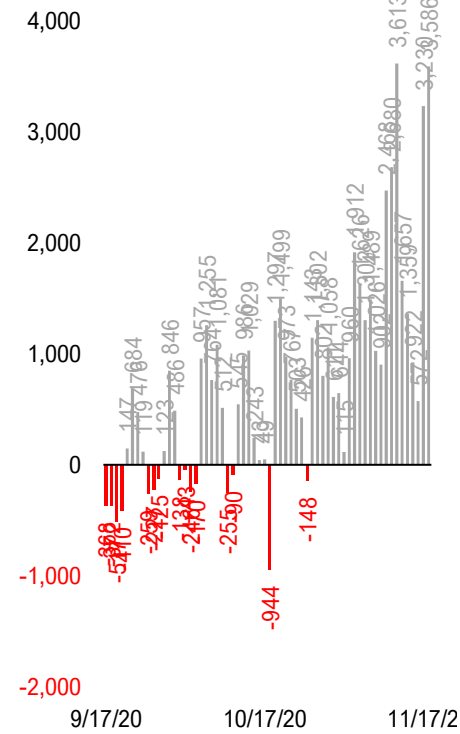
Daily New Cases
(8/10-8/23 ex-CA; 9/4-9/5 ex-IL)



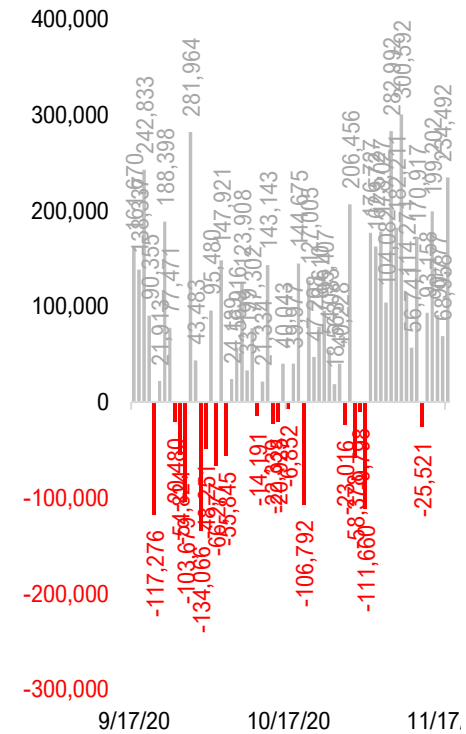
Daily Deaths



Daily Net Hospitalization
(Red = more discharge than admission)

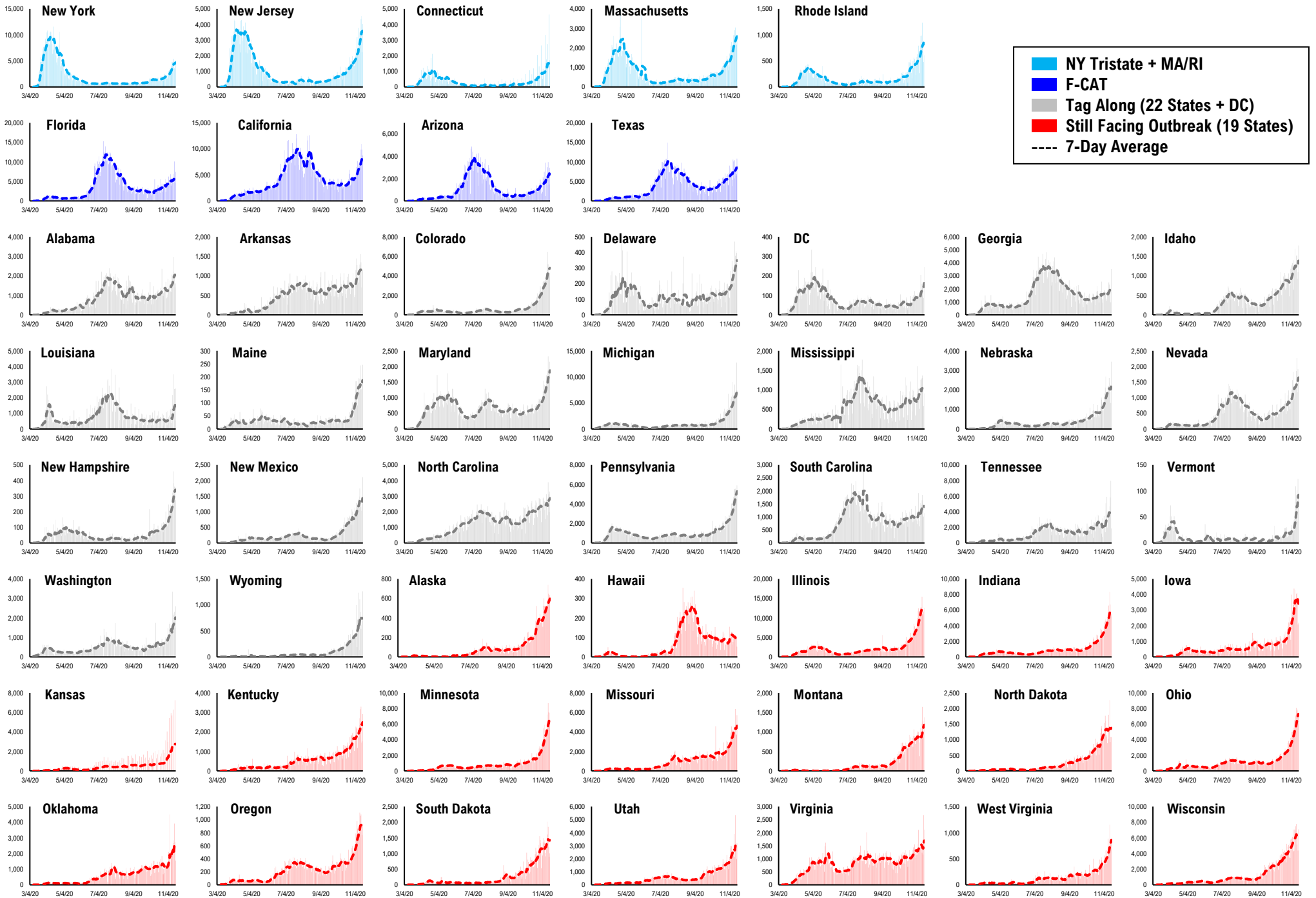


Daily Tests

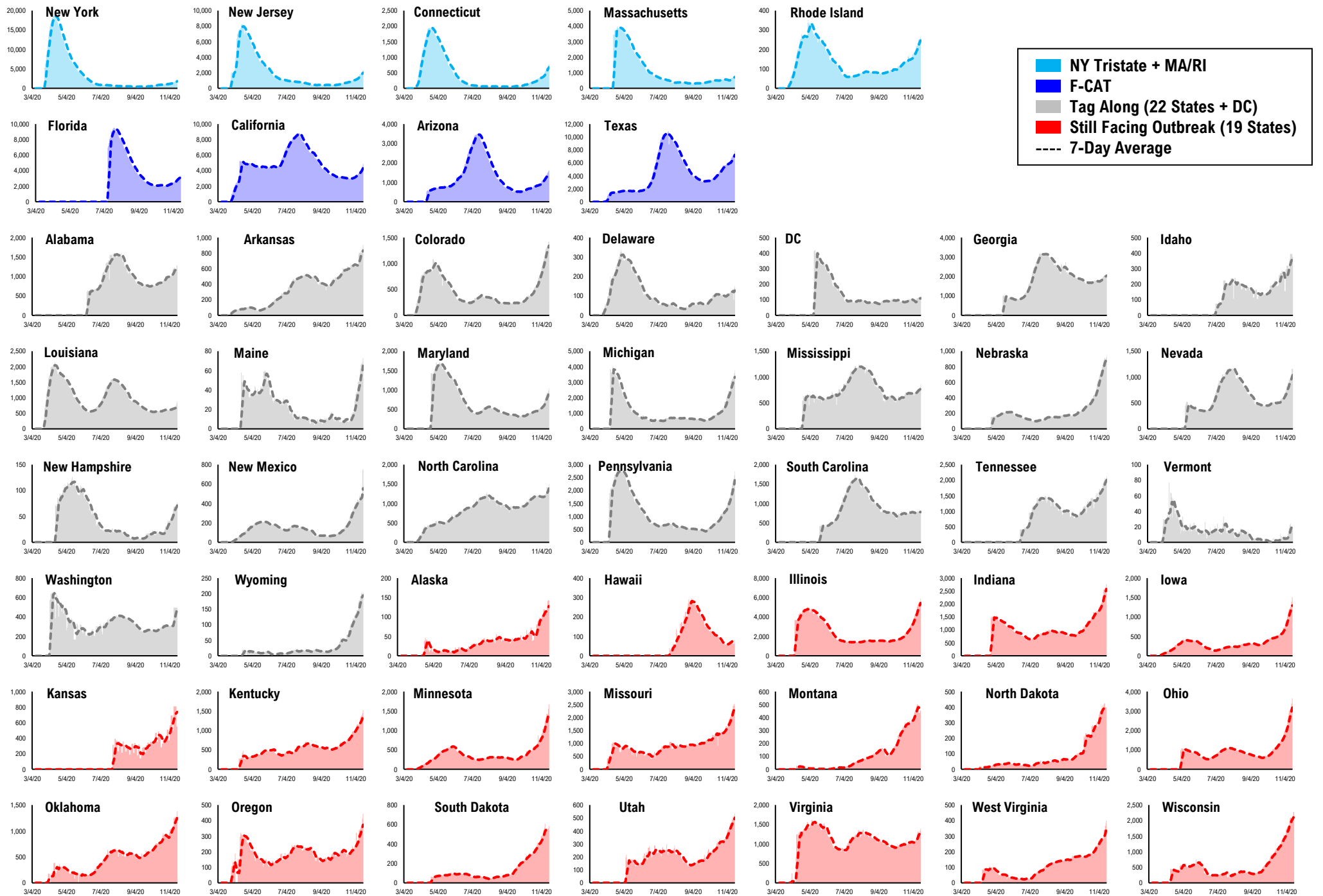


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

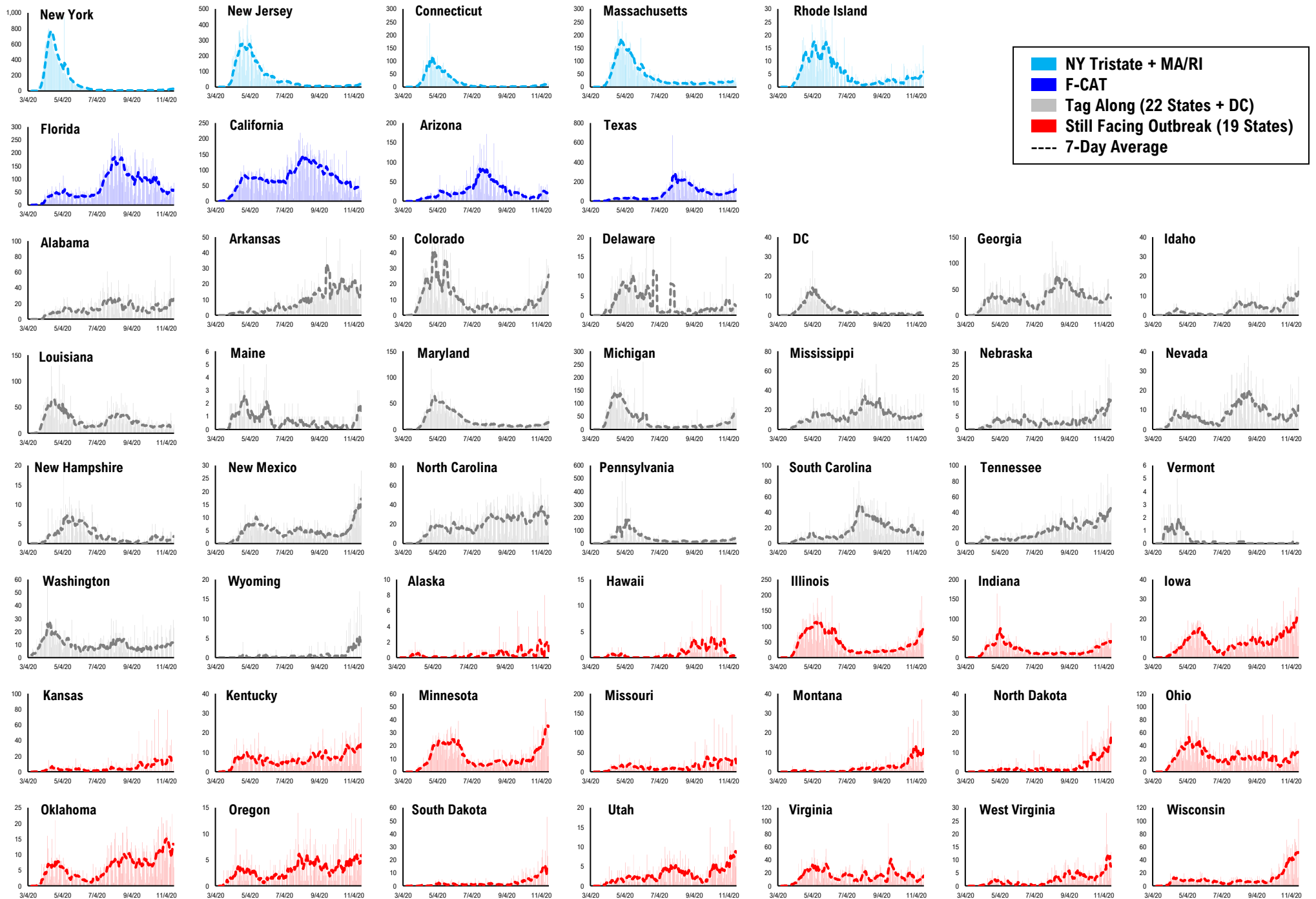
#11: Daily New Cases by States...



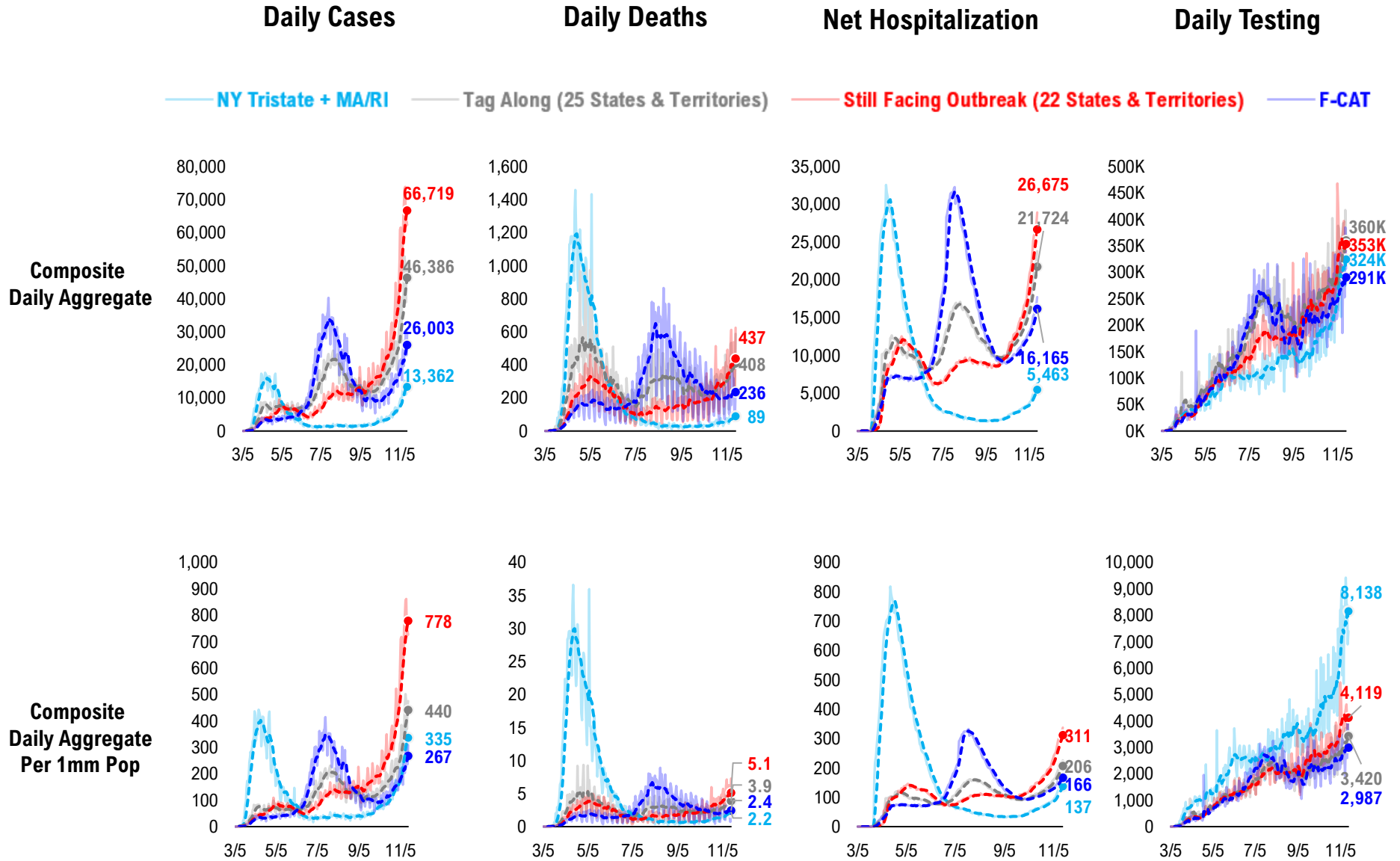
#12: Current Hospitalizations by States...



#13: Daily New Deaths by States...

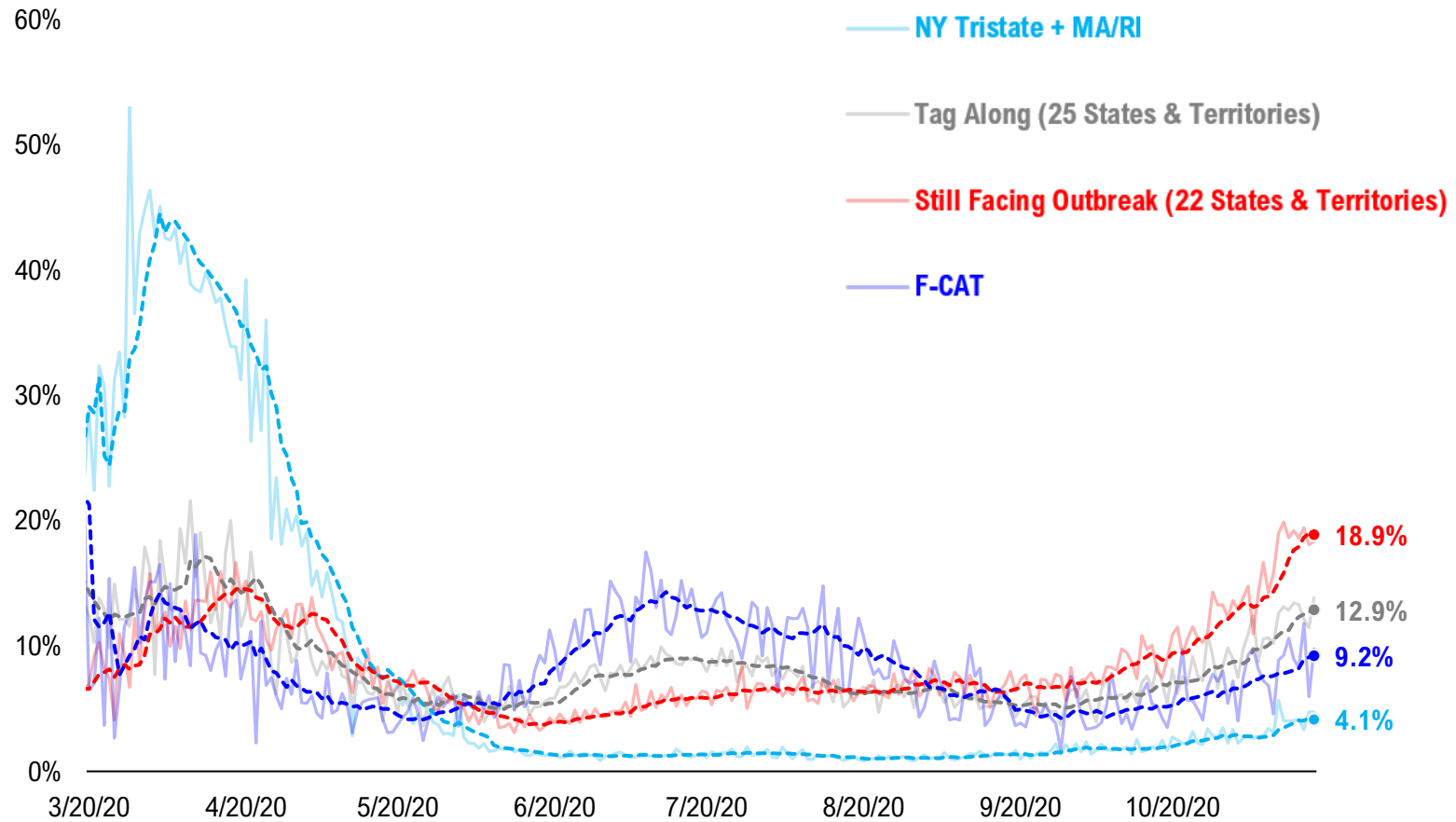


#14: State COVID-19 situation by Tier...

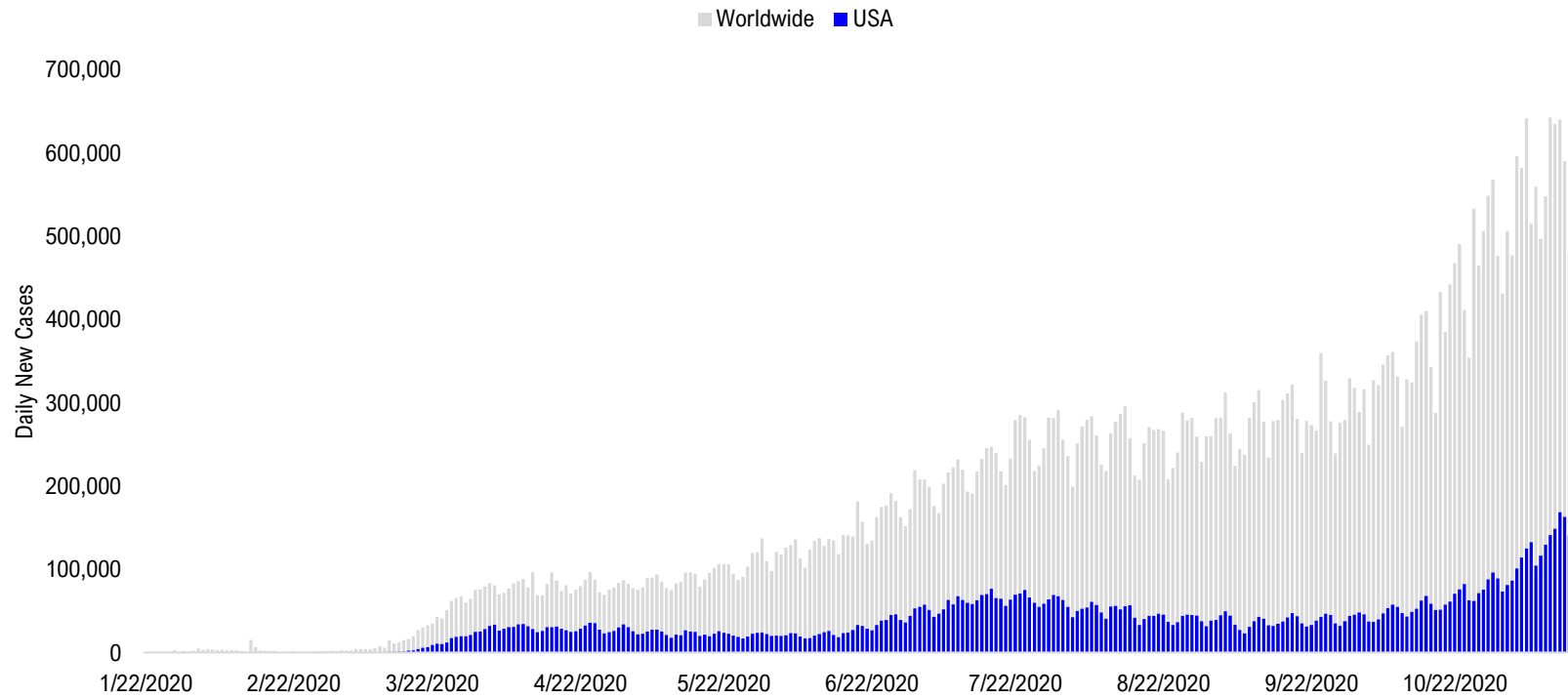


#15: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Jul 3	Jul 17	Jul 31	Aug 14	Aug 28	Sep 11	Sep 25	Oct 9	Oct 23	Nov 6	Nov 16
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 223,901	Europe 326,485	Europe 235,421
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 71,893	US + Canada 117,089	US + Canada 155,098
Pakistan + India + Bangladesh 27,389	Pakistan + India + Bangladesh 39,450	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 49,989
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 54,955	Pakistan + India + Bangladesh 56,907	Pakistan + India + Bangladesh 52,404	Pakistan + India + Bangladesh 37,397
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	Africa 13,656	Asia ex- India+Pakistan 13,314
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	Asia ex- India+Pakistan 13,462	Africa 12,239

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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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