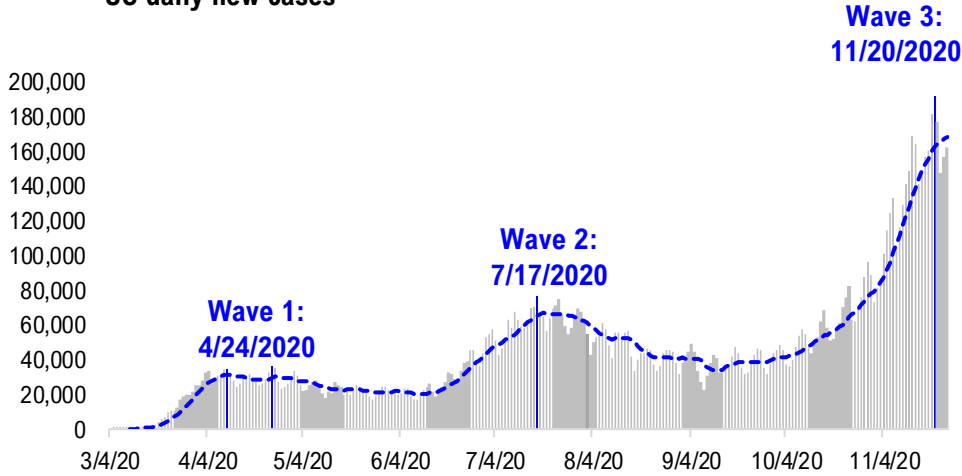


FSInsight Daily COVID-19 Chartbook

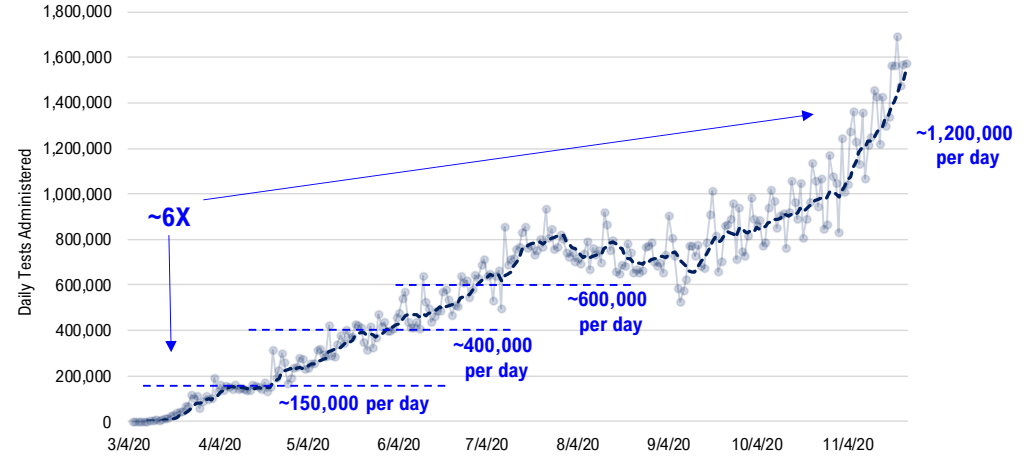


#1: USA COVID-19 Situation at a Glance...

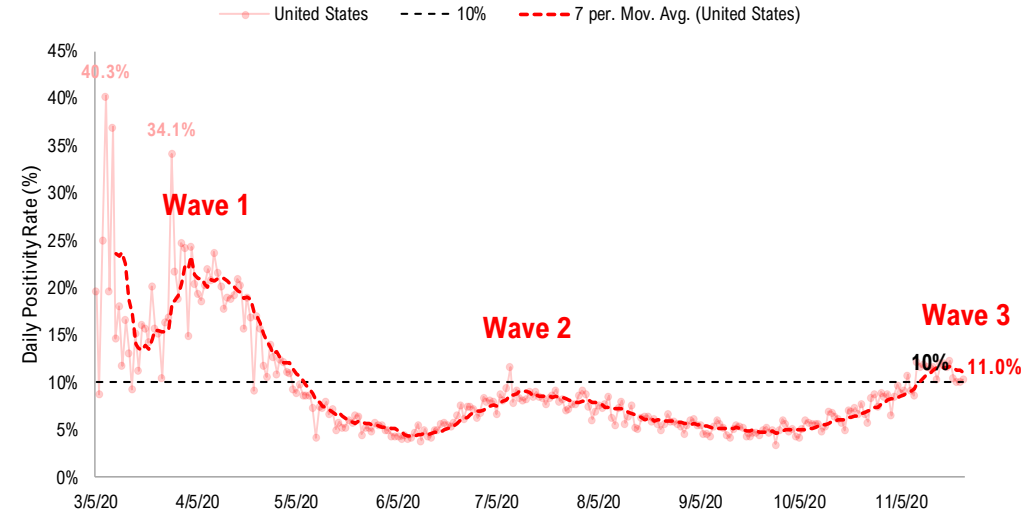
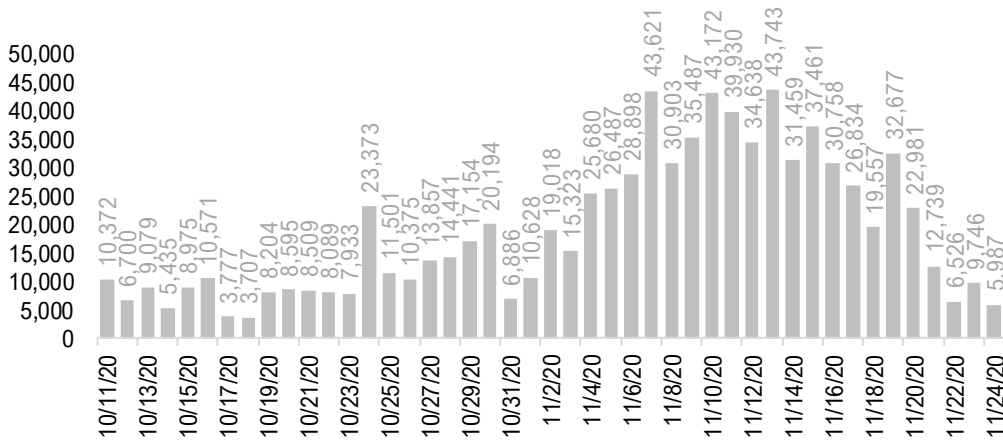
US daily new cases



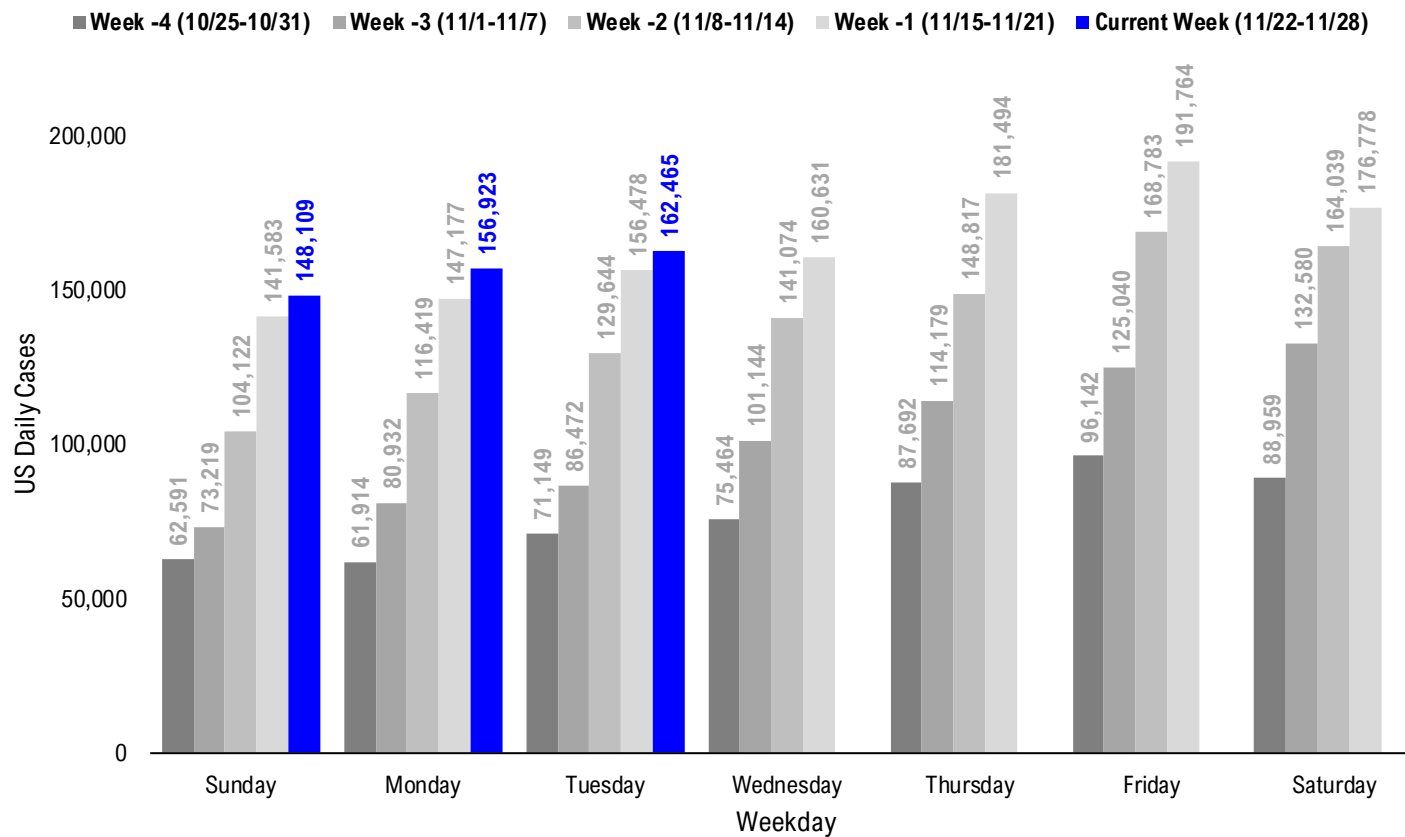
USA total COVID-19 tests administered



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				Since Peak		Hospitalization	
	% US Pop	% US GDP	11/24	7D Delta	11/24	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
	United States	100%	100%	162.465	+5.987	475	+23	3	-15%	11.020

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Since Peak		Hospitalization	
	% US Pop	% US GDP	11/24	7D Delta	11/24	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
	United States	100%	100%	162.465	+5.987	475	+23	3	-15%	11.020

States:

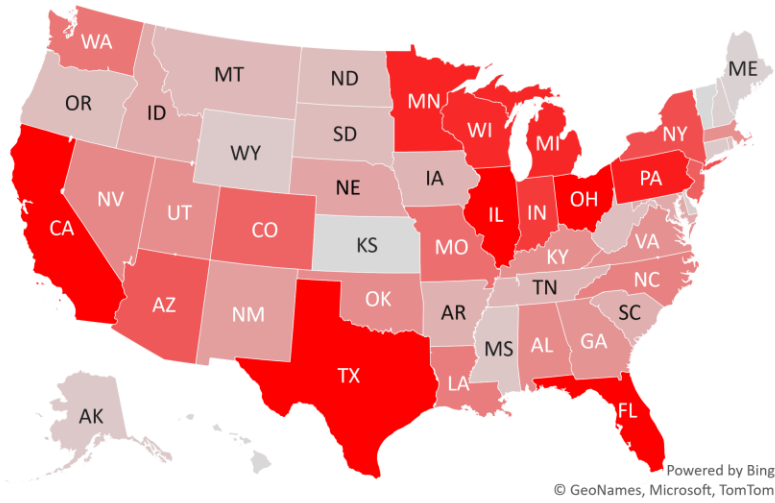
1	California	11.9%	14.6%	15,329	+6,586	320	+71	2	-11%	1,756	2.0%
2	Texas	8.7%	8.8%	13,998	+3,174	335	+58	3	-20%	654	0.9%
3	Illinois	3.8%	4.2%	9,469	-3,132	731	-186	11	-32%	247	0.3%
4	Ohio	3.5%	3.3%	8,604	+1,525	816	+183	0	0%	801	1.3%
5	Florida	6.5%	5.0%	8,555	+1,096	333	-12	134	-44%	411	0.7%
6	Pennsylvania	3.9%	3.8%	6,669	+769	482	+76	3	-11%	1,160	2.5%
7	Minnesota	1.7%	1.8%	6,416	+485	1180	-57	8	-16%	159	0.3%
8	Michigan	3.0%	2.6%	6,290	-1,168	594	-81	6	-32%	335	0.7%
9	Wisconsin	1.8%	1.6%	6,202	-888	733	-271	11	-43%	-292	(0.7%)
10	Indiana	2.0%	1.8%	5,625	+162	859	+2	3	-17%	328	0.7%
11	New York	5.9%	8.1%	4,881	-207	277	+68	228	-49%	732	1.9%
12	Arizona	2.2%	1.7%	4,544	+1,560	528	+215	145	-11%	460	1.7%
13	New Jersey	2.7%	3.0%	4,275	+249	444	+39	3	-5%	465	1.6%
14	Colorado	1.7%	1.8%	4,150	-181	681	-61	3	-35%	315	0.9%
15	Missouri	1.8%	1.5%	3,764	-1,953	616	-99	10	-24%	226	0.8%
16	Washington	2.3%	2.7%	3,482	+893	427	+147	0	0%	0	0.0%
17	Louisiana	1.4%	1.3%	3,266	+674	553	+144	4	-15%	178	1.1%
18	North Carolina	3.2%	2.7%	3,100	-188	319	+53	2	-14%	223	0.9%
19	Nevada	0.9%	0.8%	2,853	+1,156	795	+277	0	0%	240	1.6%
20	Alabama	1.5%	1.1%	2,785	+1,169	419	+78	4	-18%	139	0.9%
21	Oklahoma	1.2%	1.0%	2,736	+1,185	816	+125	1	-9%	185	0.8%
22	Utah	1.0%	0.9%	2,701	-477	847	+34	3	-32%	28	0.1%
23	Kentucky	1.3%	1.0%	2,606	-305	517	+79	3	-38%	137	0.7%
24	Massachusetts	2.1%	2.8%	2,576	+51	342	+13	213	-32%	119	0.7%
25	Virginia	2.6%	2.6%	2,544	+419	309	+76	0	0%	104	0.6%
26	Georgia	3.2%	2.9%	2,424	-1,112	195	-8	122	-52%	196	1.1%
27	New Mexico	0.6%	0.5%	2,099	-6	1082	+385	4	-29%	117	0.6%
28	Nebraska	0.6%	0.6%	1,860	-1,580	734	-417	5	-50%	33	0.2%

States:

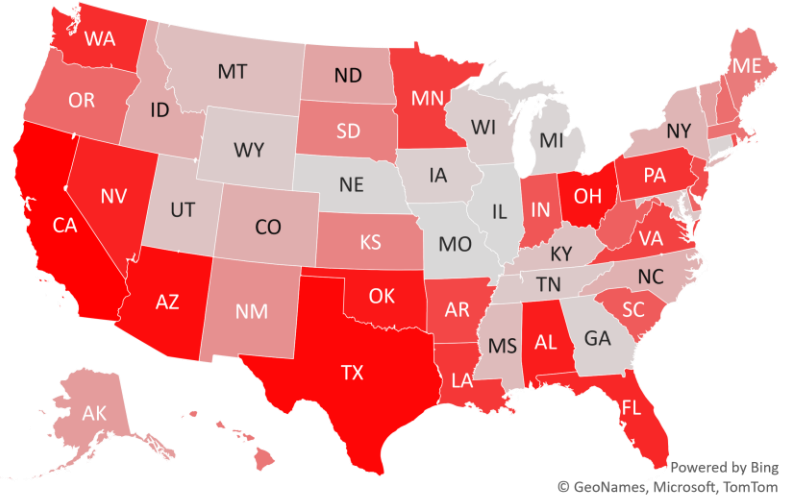
29	Maryland	1.8%	2.0%	1,667	-482	303	-12	3	-33%	295	1.9%
30	Idaho	0.5%	0.4%	1,640	-141	727	+16	4	-16%	32	0.3%
31	South Carolina	1.6%	1.1%	1,433	+119	240	-10	115	-54%	73	0.7%
32	Arkansas	0.9%	0.6%	1,421	+276	399	+66	3	-24%	86	0.9%
33	Tennessee	2.1%	1.8%	1,304	-537	486	-275	8	-46%	230	0.9%
34	Iowa	1.0%	0.9%	1,296	-896	653	-173	11	-48%	-159	(0.8%)
35	Montana	0.3%	0.2%	1,123	-248	924	-172	9	-28%	11	0.1%
36	South Dakota	0.3%	0.3%	1,011	+5	997	-172	10	-52%	-8	(0.1%)
37	North Dakota	0.2%	0.3%	1,004	-78	1251	-102	10	-48%	-22	(0.3%)
38	Oregon	1.3%	1.2%	1,000	+76	290	+88	2	-15%	89	1.0%
39	West Virginia	0.5%	0.4%	969	+105	462	-9	3	-25%	63	0.9%
40	Rhode Island	0.3%	0.3%	851	+246	635	+80	3	-42%	58	0.8%
41	Mississippi	0.9%	0.6%	665	-240	240	-36	3	-57%	173	2.0%
42	Alaska	0.2%	0.3%	584	-50	740	-107	9	-18%	1	0.0%
43	Connecticut	1.1%	1.3%	540	-1,162	543	-50	6	-31%	114	0.9%
44	Wyoming	0.2%	0.2%	528	-732	1468	-13	5	-14%	24	0.4%
45	Delaware	0.3%	0.4%	453	+101	460	+64	2	-19%	32	1.0%
46	New Hampshire	0.4%	0.4%	340	+66	270	+27	3	-28%	44	1.4%
47	Puerto Rico	1.0%	0.5%	293	-218	203	+35	2	-31%	58	1.3%
48	Maine	0.4%	0.3%	255	+9	168	+26	0	0%	32	2.2%
49	District of Columbi	0.2%	0.7%	119	-126	212	-22	205	-35%	22	2.0%
50	Hawaii	0.4%	0.5%	61	+10	70	+36	87	-66%	-14	(1.9%)
51	Guam	0.0%	0.0%	53	-6	360	-181	14	-67%	-20	(4.3%)
52	Vermont	0.2%	0.2%	49	-52	117	-25	3	-43%	5	0.8%
53	U.S. Virgin Islands	0.0%	0.0%	3	-13	50	+0	95	-88%	0	0.0%
54	Northern Mariana	0.0%	0.0%	0	-1	6	-12	37	-89%	0	0.0%
55	Kansas	0.9%	0.8%	0	+0	861	+33	6	-42%	345	1.8%
56	American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	

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

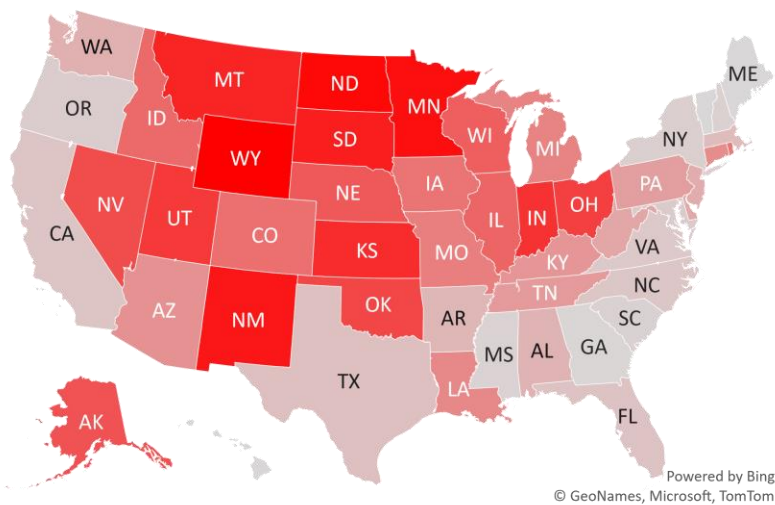
Daily Case Increases



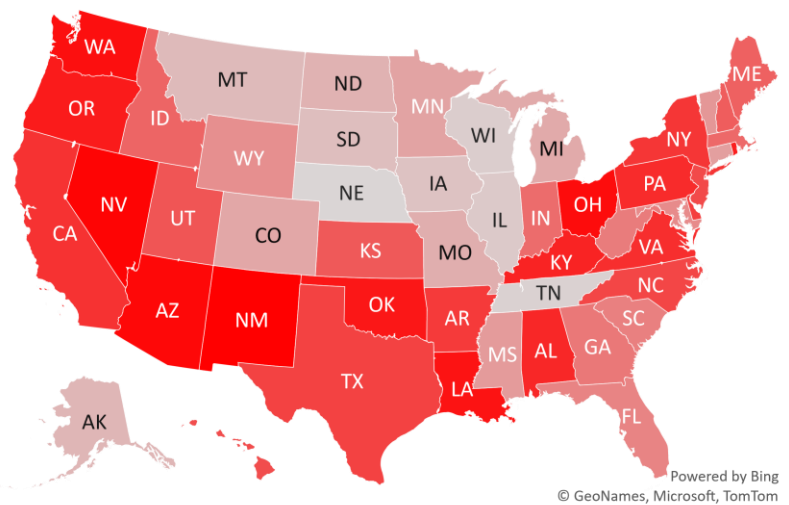
7D Delta in Daily New Cases



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



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



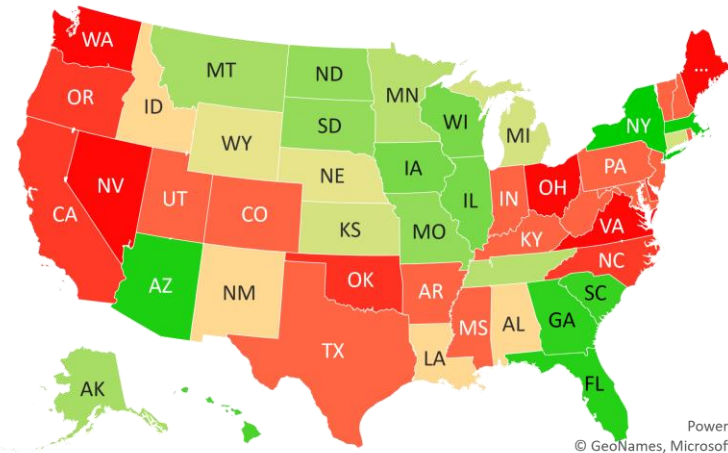
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 11/24)

	Sorted			
	Peak Date	11/24/20	% off the Peak	% US Pop
United States	11/21/20	3	-15%	100%
States:				
New York	4/10/20	228	-49%	5.9%
Massachusetts	4/25/20	213	-32%	2.1%
District of Columbia	5/3/20	205	-35%	0.2%
Arizona	7/2/20	145	-11%	2.2%
Florida	7/13/20	134	-44%	6.5%
Georgia	7/25/20	122	-52%	3.2%
South Carolina	8/1/20	115	-54%	1.6%
U.S. Virgin Islands	8/21/20	95	-88%	0.0%
Hawaii	8/29/20	87	-66%	0.4%
Northern Mariana Island	10/18/20	37	-89%	0.0%
Guam	11/10/20	14	-67%	0.0%
Wisconsin	11/13/20	11	-43%	1.8%
Illinois	11/13/20	11	-32%	3.8%
Iowa	11/13/20	11	-48%	1.0%
South Dakota	11/14/20	10	-52%	0.3%
North Dakota	11/14/20	10	-48%	0.2%
Missouri	11/14/20	10	-24%	1.8%
Montana	11/15/20	9	-28%	0.3%
Alaska	11/15/20	9	-18%	0.2%
Tennessee	11/16/20	8	-46%	2.1%
Minnesota	11/16/20	8	-16%	1.7%
Michigan	11/18/20	6	-32%	3.0%
Kansas	11/18/20	6	-42%	0.9%
Connecticut	11/18/20	6	-31%	1.1%
Wyoming	11/19/20	5	-14%	0.2%
Nebraska	11/19/20	5	-50%	0.6%
New Mexico	11/20/20	4	-29%	0.6%
Louisiana	11/20/20	4	-15%	1.4%

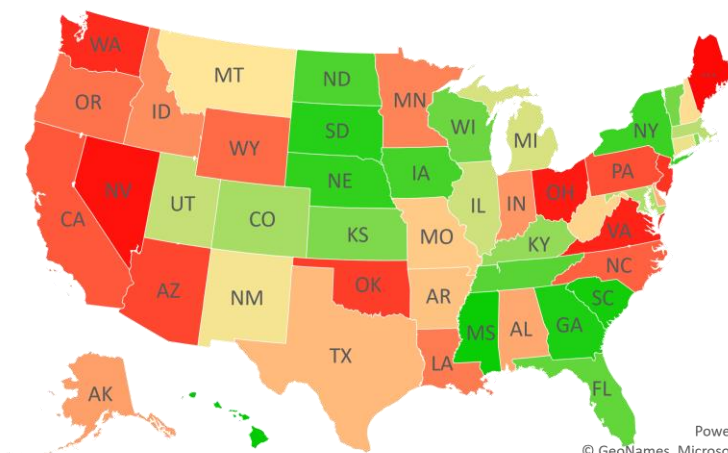
	Sorted			
	Peak Date	11/24/20	% off the Peak	% US Pop
United States	11/21/20	3	-15%	100%
States:				
Idaho	11/20/20	4	-16%	0.5%
Alabama	11/20/20	4	-18%	1.5%
West Virginia	11/21/20	3	-25%	0.5%
Vermont	11/21/20	3	-43%	0.2%
Utah	11/21/20	3	-32%	1.0%
Texas	11/21/20	3	-20%	8.7%
Rhode Island	11/21/20	3	-42%	0.3%
Pennsylvania	11/21/20	3	-11%	3.9%
New Jersey	11/21/20	3	-5%	2.7%
New Hampshire	11/21/20	3	-28%	0.4%
Mississippi	11/21/20	3	-57%	0.9%
Maryland	11/21/20	3	-33%	1.8%
Kentucky	11/21/20	3	-38%	1.3%
Indiana	11/21/20	3	-17%	2.0%
Colorado	11/21/20	3	-35%	1.7%
Arkansas	11/21/20	3	-24%	0.9%
Puerto Rico	11/22/20	2	-31%	1.0%
Oregon	11/22/20	2	-15%	1.3%
North Carolina	11/22/20	2	-14%	3.2%
Delaware	11/22/20	2	-19%	0.3%
California	11/22/20	2	-11%	11.9%
Oklahoma	11/23/20	1	-9%	1.2%
Washington	11/24/20	0	0%	2.3%
Virginia	11/24/20	0	0%	2.6%
Ohio	11/24/20	0	0%	3.5%
Nevada	11/24/20	0	0%	0.9%
Maine	11/24/20	0	0%	0.4%

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



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



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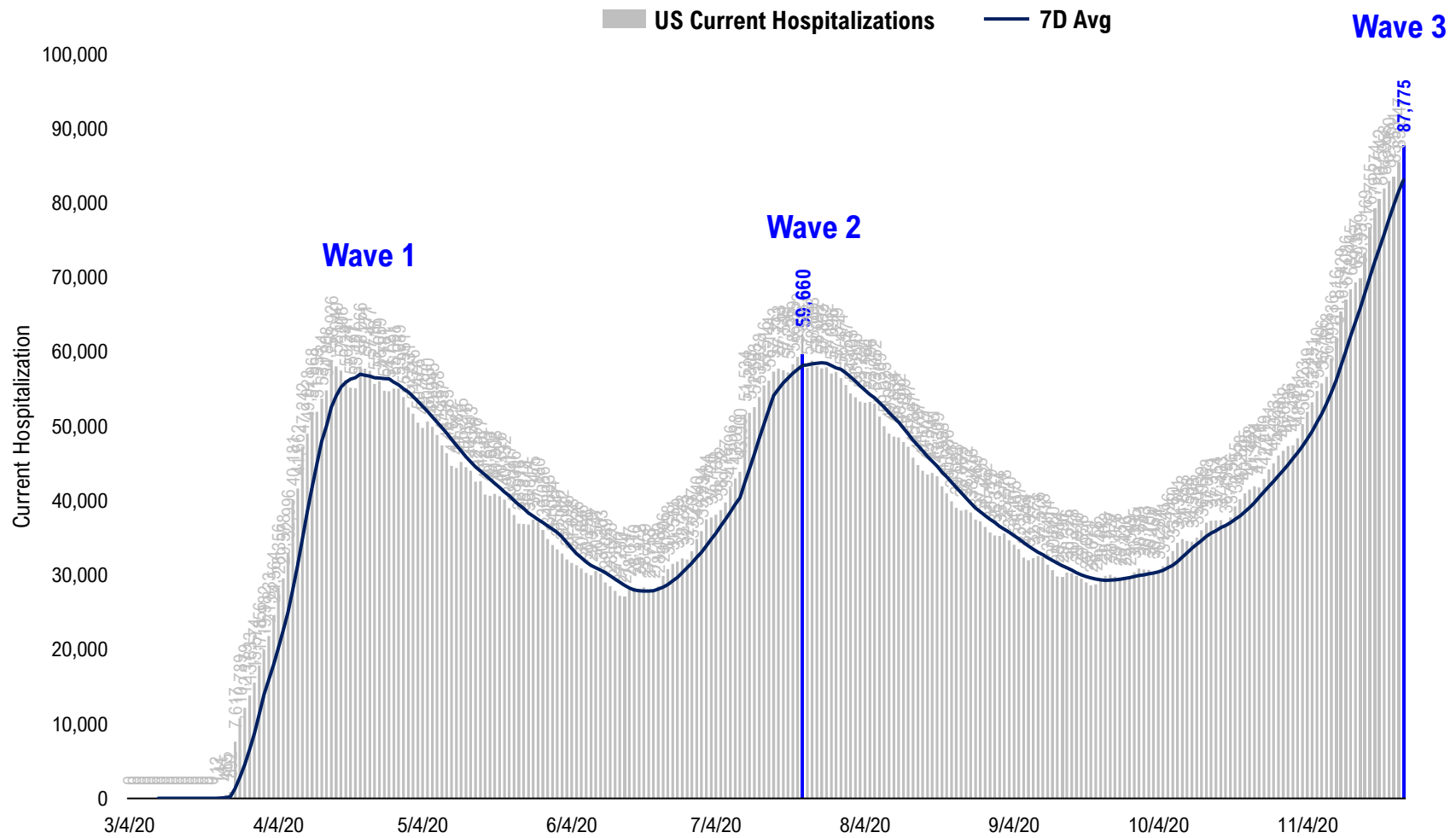
#6: US New Cases by States... (sorted by today's new cases)

	Sorted				
	7D Ago	Last 3-day Trend			
	11/17/20	11/22/20	11/23/20	11/24/20	vs 7D ago
United States	156,478	148,109	156,923	162,465	+5,987
States:					
California	8,743	14,319	8,337	15,329	<--higher
Texas	10,824	8,554	6,576	13,998	<--higher
Illinois	12,601	10,012	8,322	9,469	
Ohio	7,079	8,133	11,885	8,604	<--higher
Florida	7,459	6,587	6,331	8,555	
Pennsylvania	5,900	7,075	4,762	6,669	
Minnesota	5,931	7,205	6,343	6,416	
Michigan	7,458	0	11,511	6,290	
Wisconsin	7,090	3,507	3,095	6,202	
Indiana	5,463	6,174	5,556	5,625	
New York	5,088	5,392	5,906	4,881	
Arizona	2,984	4,331	2,659	4,544	<--higher
New Jersey	4,026	3,968	3,581	4,275	
Colorado	4,331	3,921	3,689	4,150	
Missouri	5,717	4,215	3,370	3,764	
Washington	2,589	0	6,277	3,482	<--higher
Louisiana	2,592	3,478	971	3,266	<--higher
North Carolina	3,288	4,514	2,419	3,100	
Nevada	1,697	2,155	2,339	2,853	<--higher
Alabama	1,616	1,798	1,574	2,785	<--higher
Oklahoma	1,551	3,406	3,544	2,736	<--higher
Utah	3,178	3,197	2,244	2,701	
Kentucky	2,911	2,192	2,132	2,606	
Massachusetts	2,525	2,721	1,785	2,576	
Virginia	2,125	2,117	3,242	2,544	
Georgia	3,536	1,976	1,809	2,424	
New Mexico	2,105	2,456	2,252	2,099	
Nebraska	3,440	1,368	1,032	1,860	

	Sorted				
	7D Ago	Last 3-day Trend			
	11/17/20	11/22/20	11/23/20	11/24/20	vs 7D ago
United States	156,478	148,109	156,923	162,465	+5,987
States:					
Maryland	2,149	2,168	1,658	1,667	
Idaho	1,781	819	1,437	1,640	
South Carolina	1,314	1,122	1,158	1,433	
Arkansas	1,145	1,277	912	1,421	<--higher
Tennessee	1,841	4,589	4,074	1,304	
Iowa	2,192	2,537	2,351	1,296	
Montana	1,371	1,138	701	1,123	
South Dakota	1,006	851	783	1,011	
North Dakota	1,082	1,143	714	1,004	
Oregon	924	1,502	1,163	1,000	
West Virginia	864	880	636	969	
Rhode Island	605	738	429	851	<--higher
Mississippi	905	779	699	665	
Alaska	634	543	498	584	
Connecticut	1,702	0	5,271	540	
Wyoming	1,260	759	1,262	528	
Delaware	352	487	403	453	<--higher
New Hampshire	274	317	444	340	<--higher
Puerto Rico	511	967	688	293	
Maine	246	236	185	255	
District of Columbia	245	190	139	119	
Hawaii	51	123	112	61	
Guam	59	73	53	53	
Vermont	101	86	84	49	
U.S. Virgin Islands	16	13	0	3	
Northern Mariana Islands	1	1	0	0	
Kansas	0	0	7,526	0	
American Samoa	0	0	0	0	

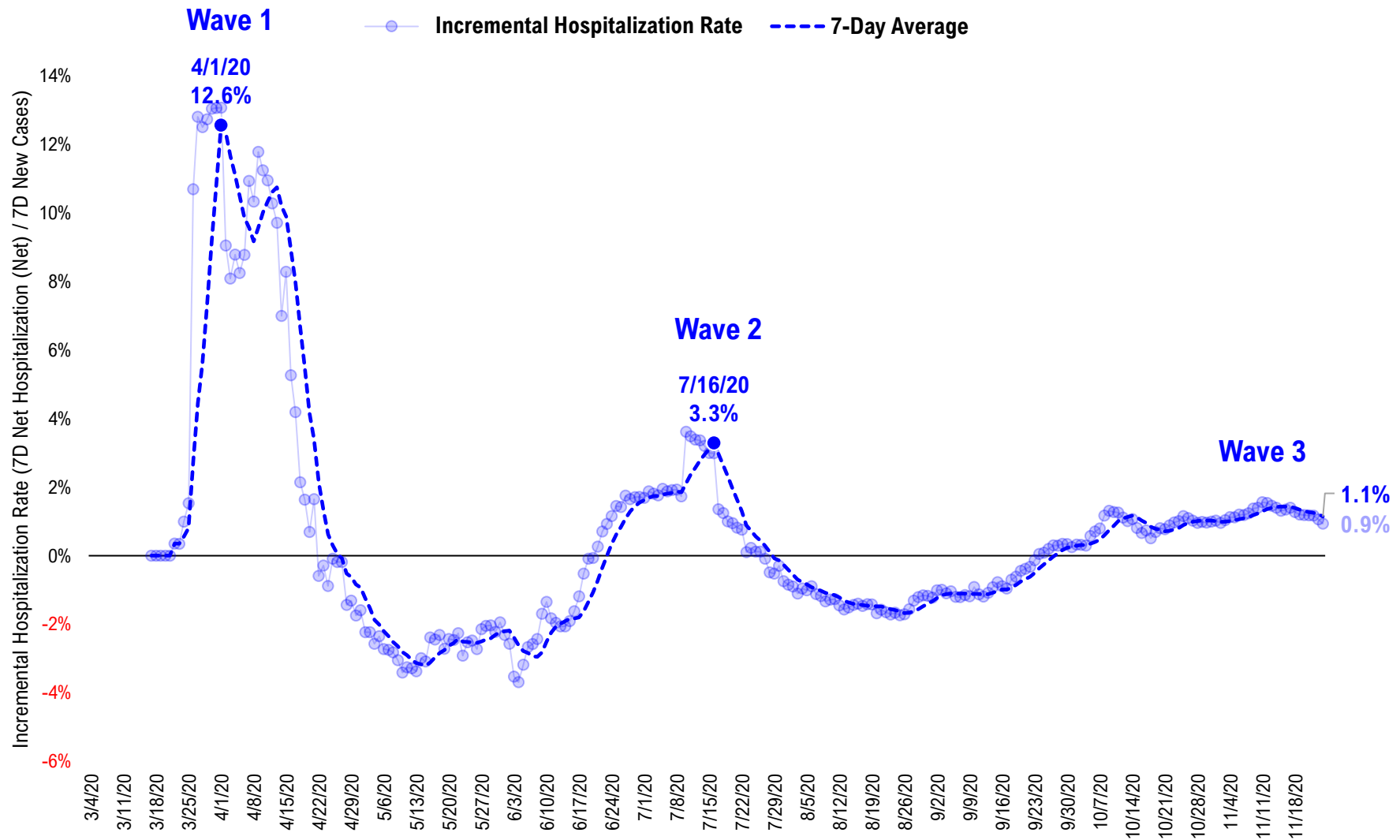
#7: US Daily Hospitalizations...

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



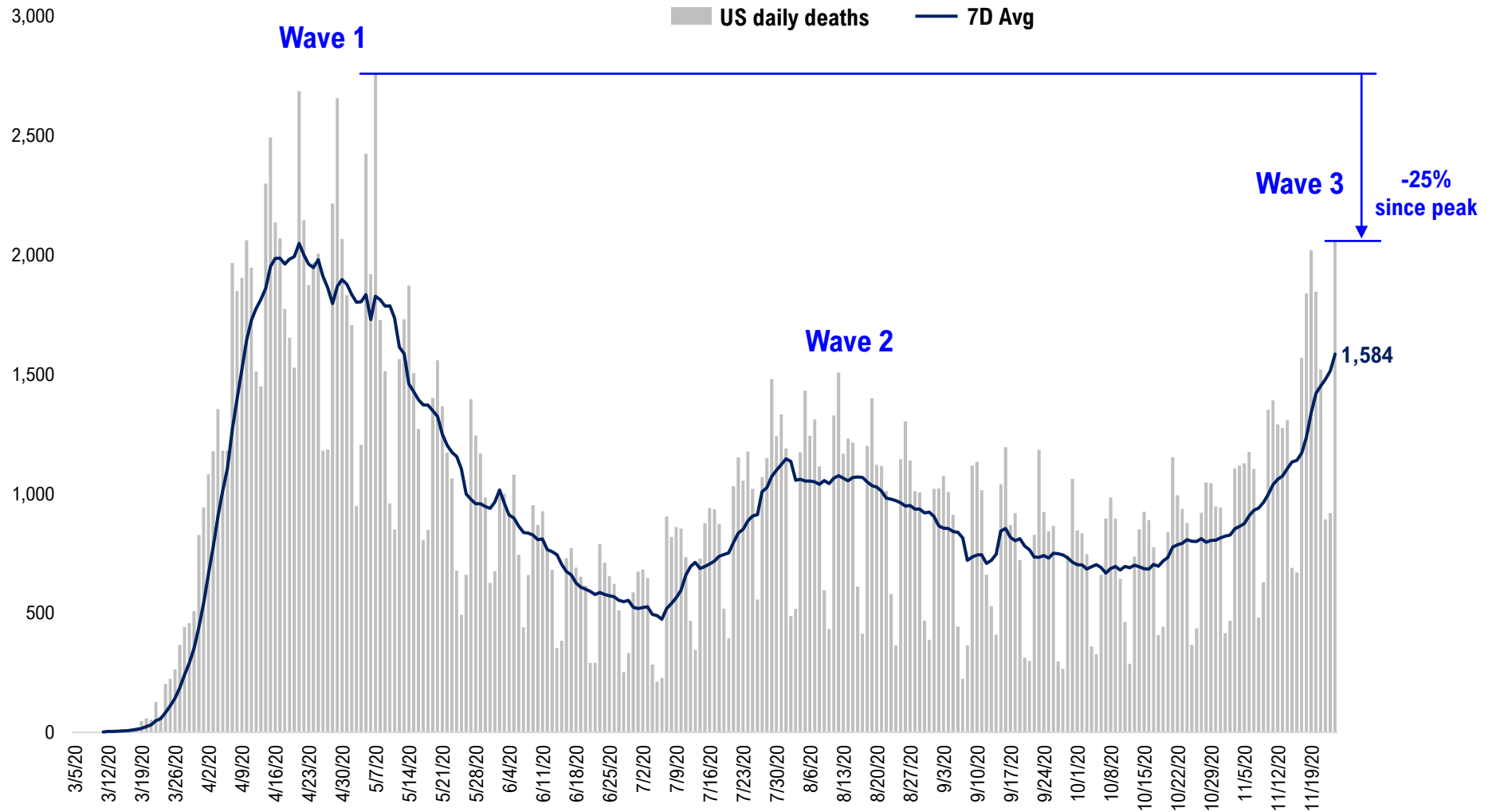
#8: Incremental Hospitalization Rate...

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



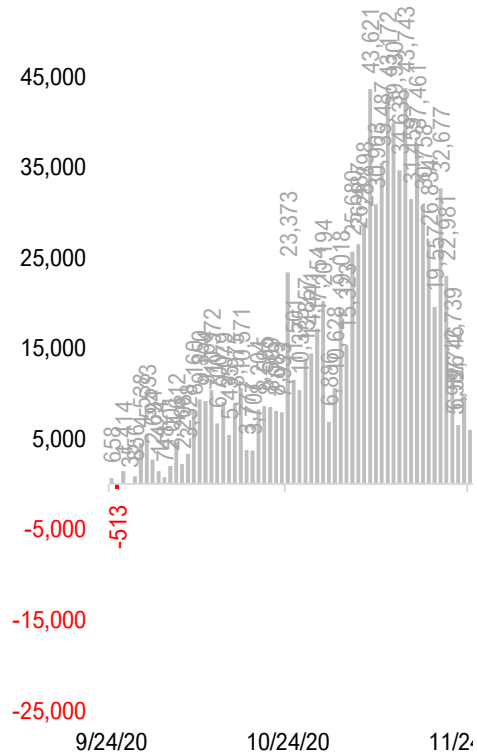
#9: US Daily New Fatalities...

US daily COVID-19 Fatalities

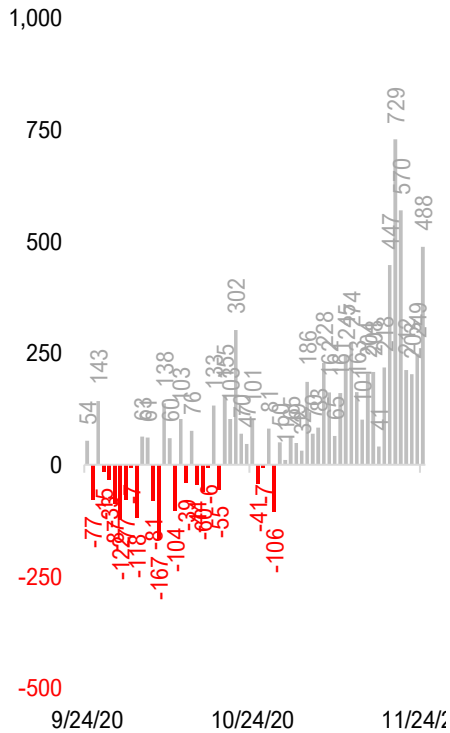


#10: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

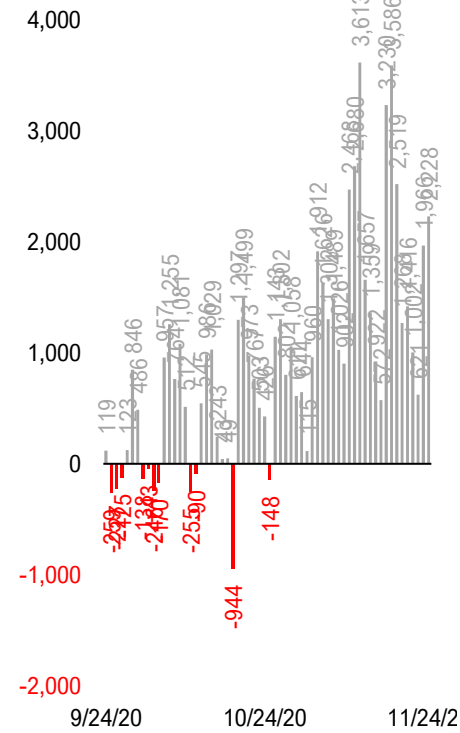
Daily New Cases
(8/10-8/23 ex-CA; 9/4-9/5 ex-IL)



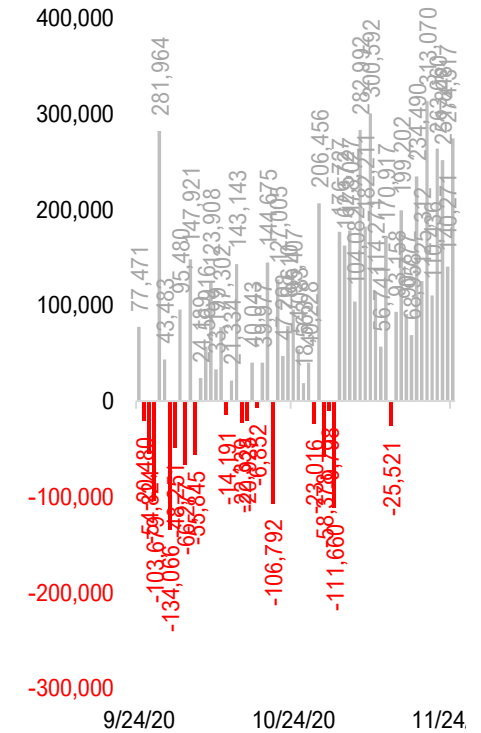
Daily Deaths



Daily Net Hospitalization
(Red = more discharge than admission)

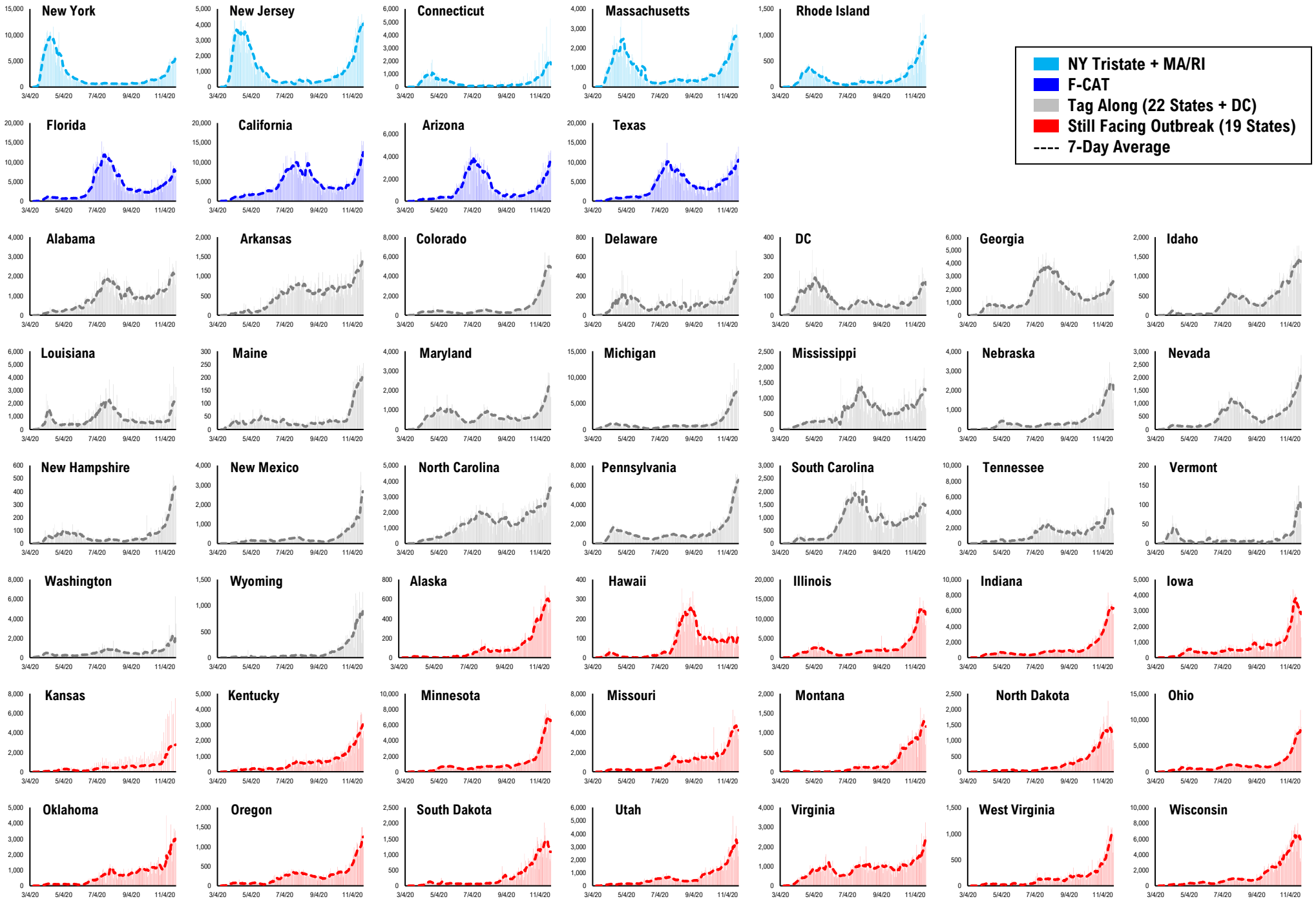


Daily Tests

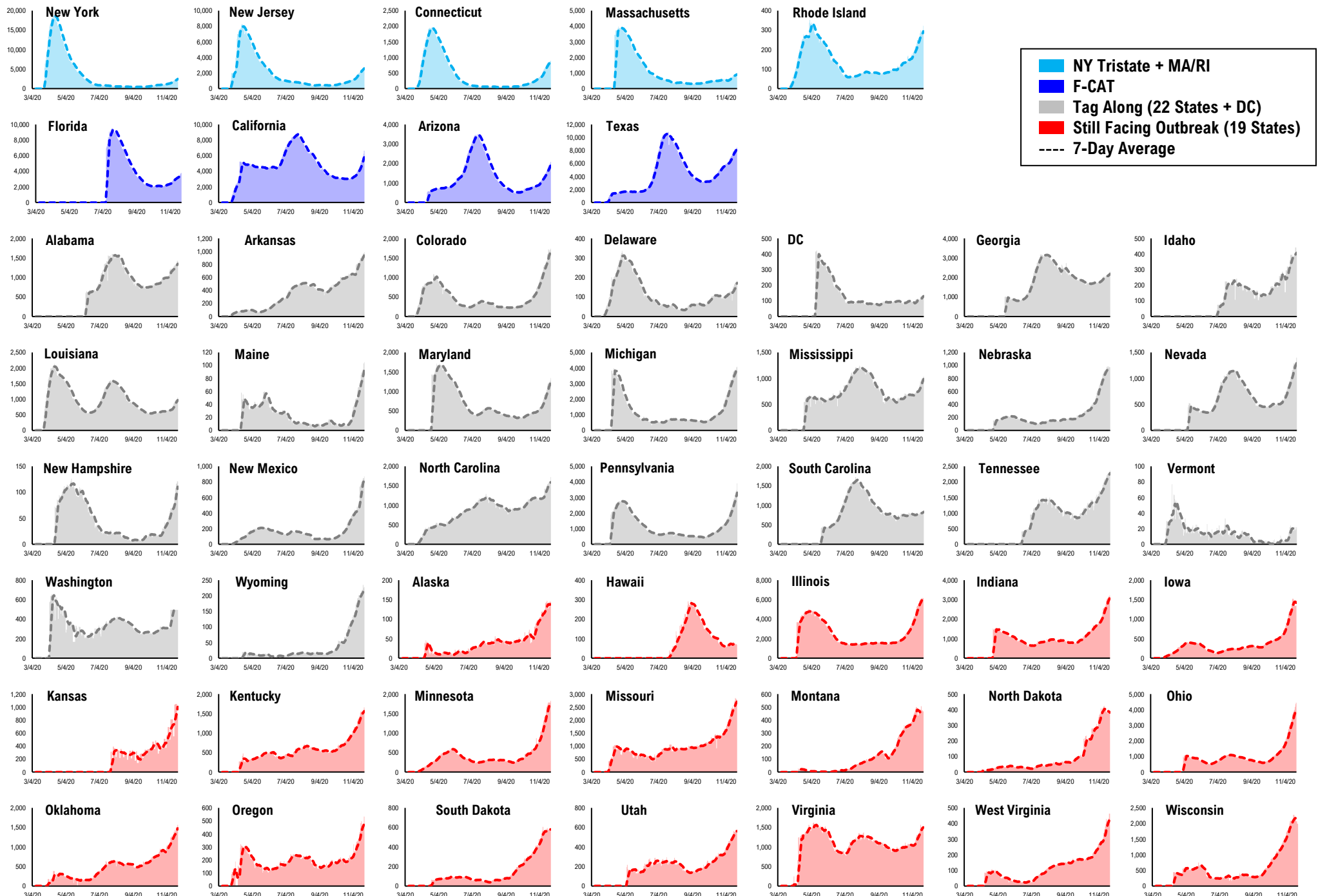


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

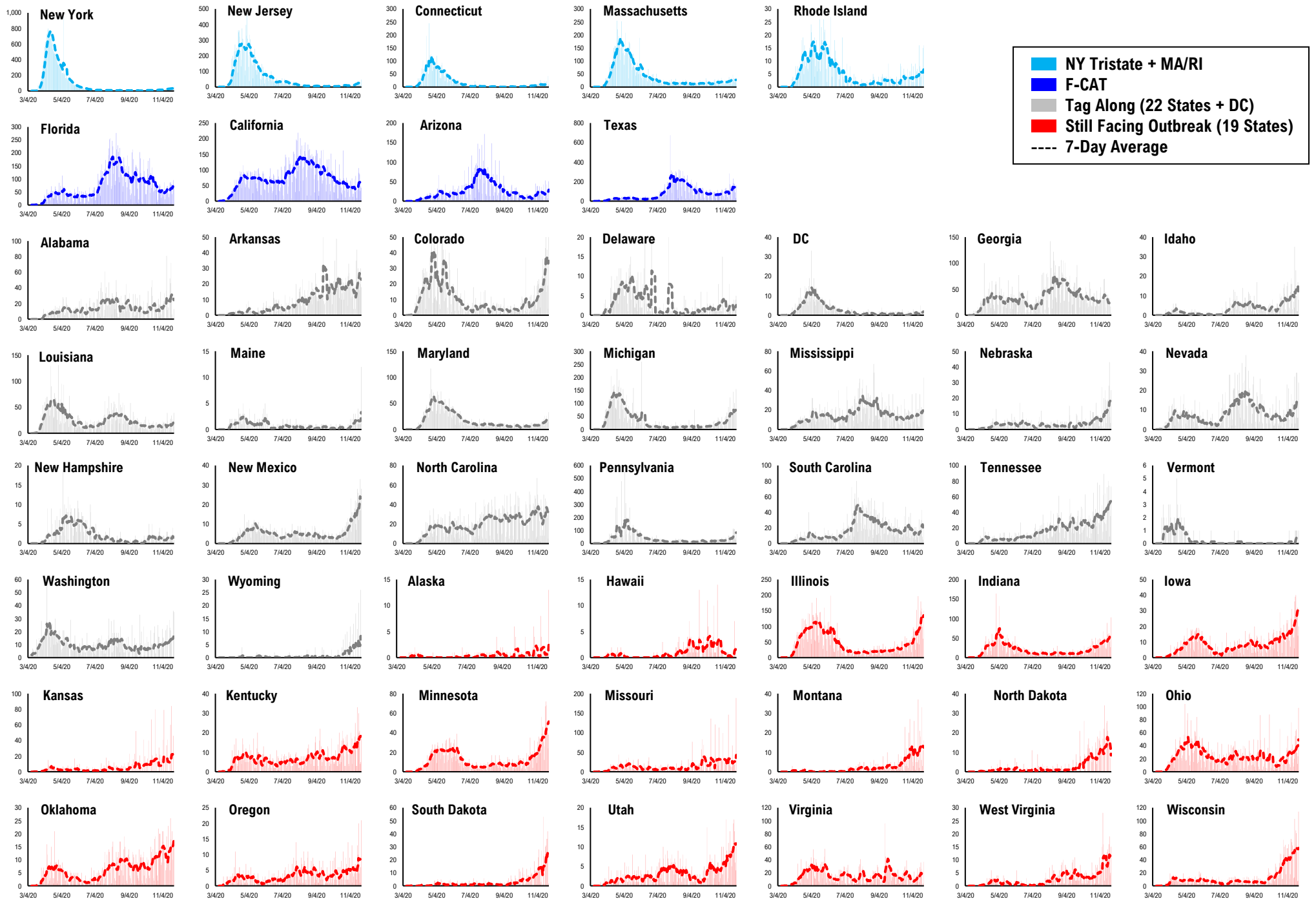
#11: Daily New Cases by States...



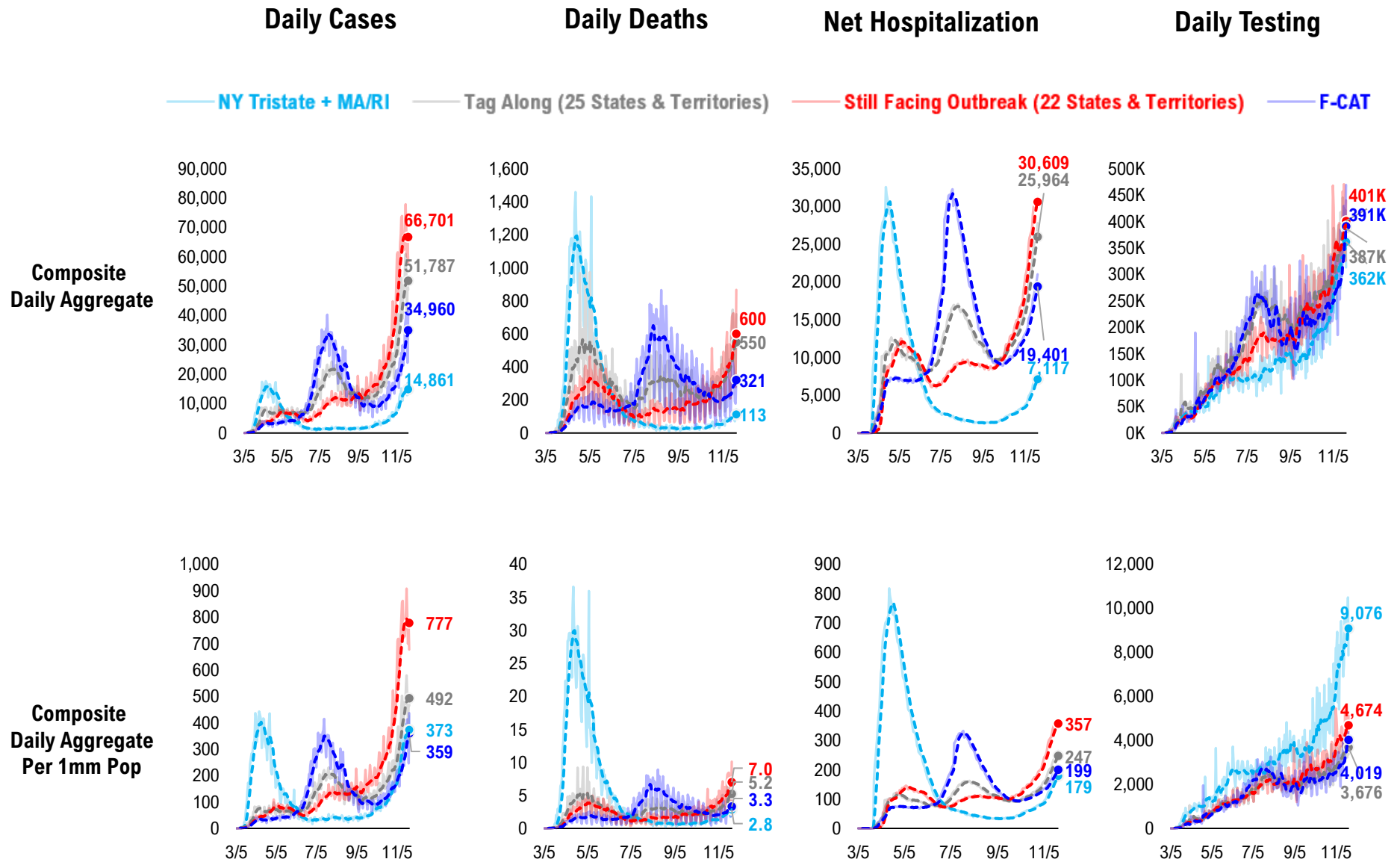
#12: Current Hospitalizations by States...



#13: Daily New Deaths by States...

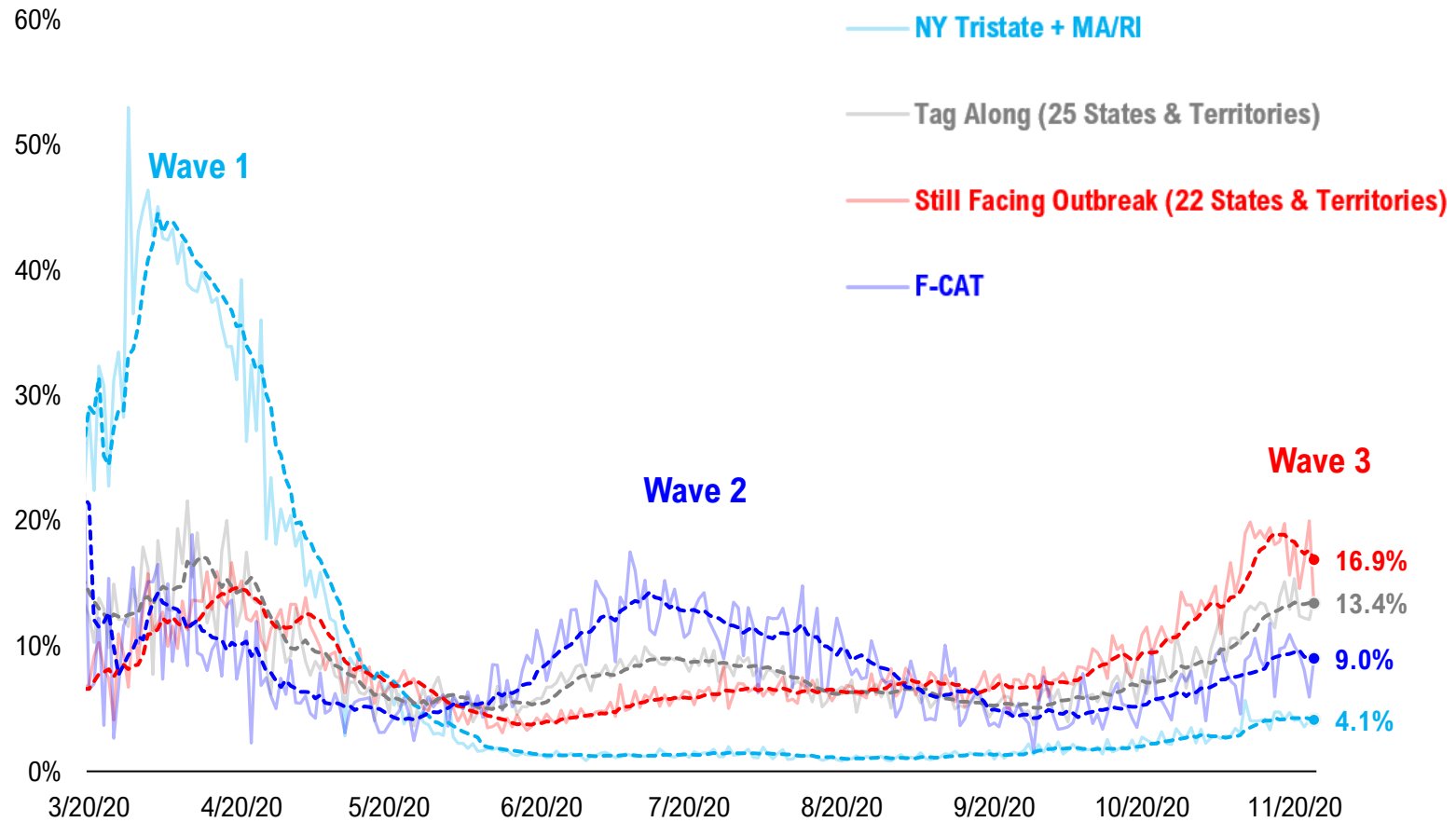


#14: State COVID-19 situation by Tier...

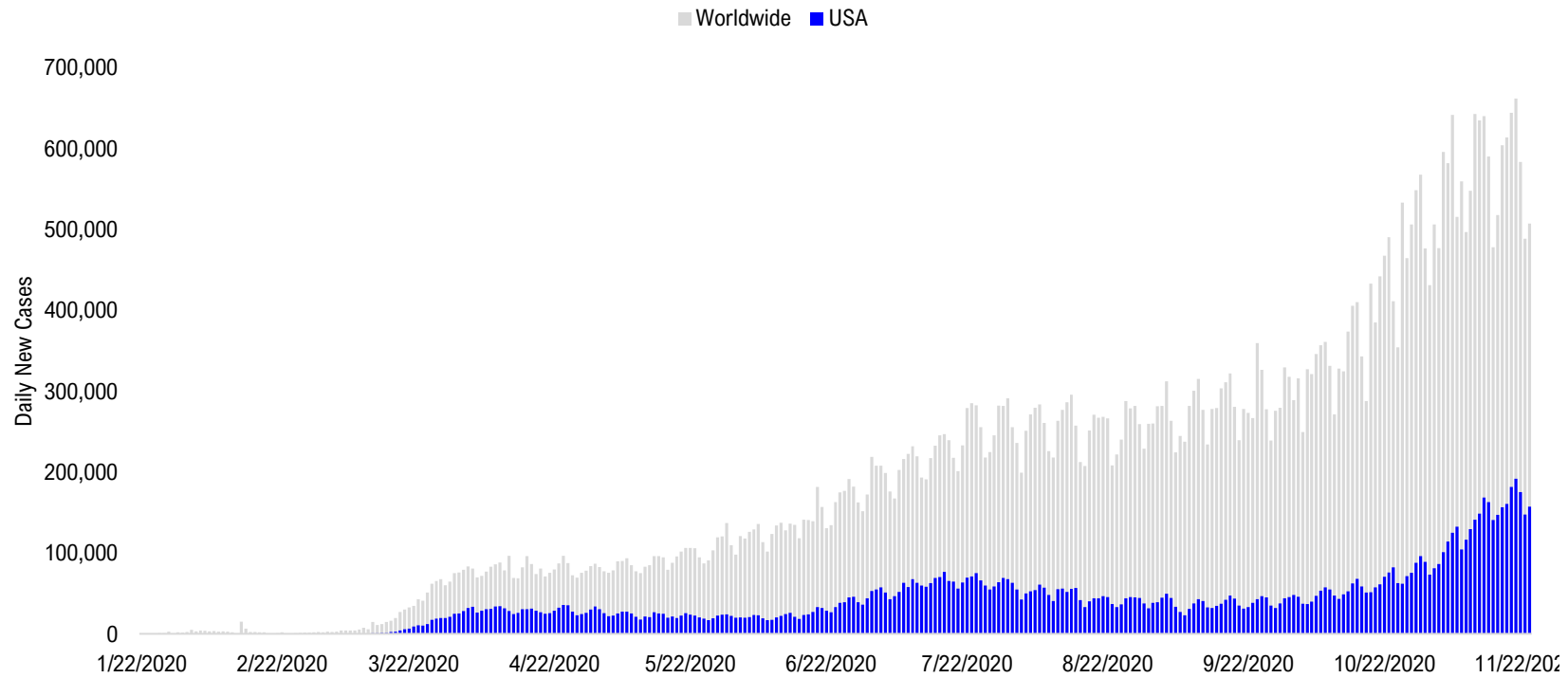


#15: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Jul 10	Jul 24	Aug 7	Aug 21	Sep 4	Sep 18	Oct 2	Oct 16	Oct 30	Nov 13	Nov 23
Latin America 73,176	Latin America 97,008	Latin America 97,310	Latin America 85,471	Latin America 88,295	Pakistan + India + Bangladesh 98,115	Pakistan + India + Bangladesh 84,614	Europe 156,633	Europe 288,054	Europe 302,160	Europe 208,941
US + Canada 63,055	US + Canada 72,289	Pakistan + India + Bangladesh 63,674	Pakistan + India + Bangladesh 72,740	Pakistan + India + Bangladesh 87,400	Latin America 76,730	Europe 77,734	Latin America 67,985	US + Canada 89,508	US + Canada 157,505	US + Canada 165,356
Pakistan + India + Bangladesh 32,386	Pakistan + India + Bangladesh 52,184	US + Canada 56,201	US + Canada 45,159	US + Canada 44,962	Europe 57,930	Latin America 61,017	Pakistan + India + Bangladesh 66,697	Latin America 65,611	Latin America 74,234	Latin America 52,043
Africa 17,127	Africa 20,063	Europe 23,878	Europe 32,466	Europe 40,116	US + Canada 43,204	US + Canada 47,741	US + Canada 63,472	Pakistan + India + Bangladesh 51,456	Pakistan + India + Bangladesh 49,697	Pakistan + India + Bangladesh 47,315
Europe 16,204	Europe 18,765	Africa 14,390	Africa 10,566	Asia ex- India+Pakistan 8,720	Asia ex- India+Pakistan 10,763	Asia ex- India+Pakistan 11,417	Asia ex- India+Pakistan 13,578	Asia ex- India+Pakistan 12,736	Africa 14,829	Asia ex- India+Pakistan 15,080
Asia ex- India+Pakistan 7,373	Asia ex- India+Pakistan 8,636	Asia ex- India+Pakistan 10,424	Asia ex- India+Pakistan 10,047	Africa 8,318	Africa 7,997	Africa 8,146	Africa 10,428	Africa 12,181	Asia ex- India+Pakistan 14,162	Africa 12,039

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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.

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