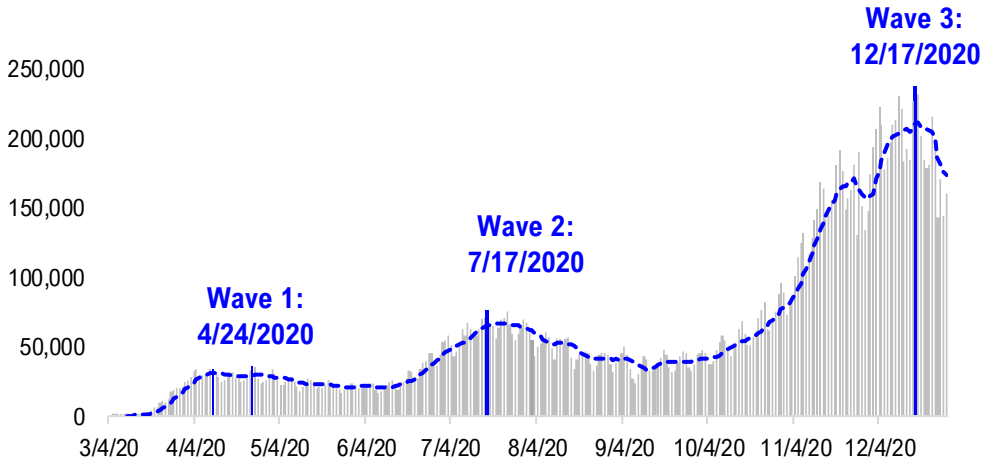


FSInsight Daily COVID-19 Chartbook

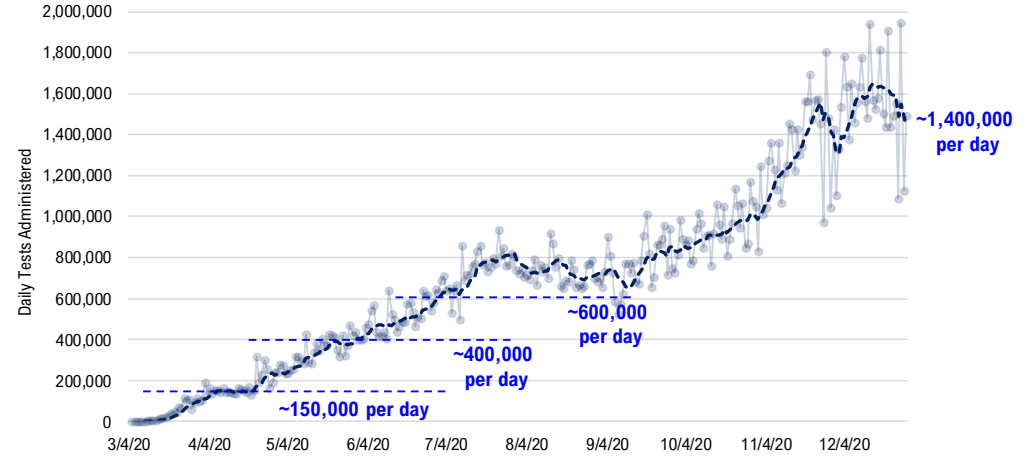


#1: USA COVID-19 Situation at a Glance...

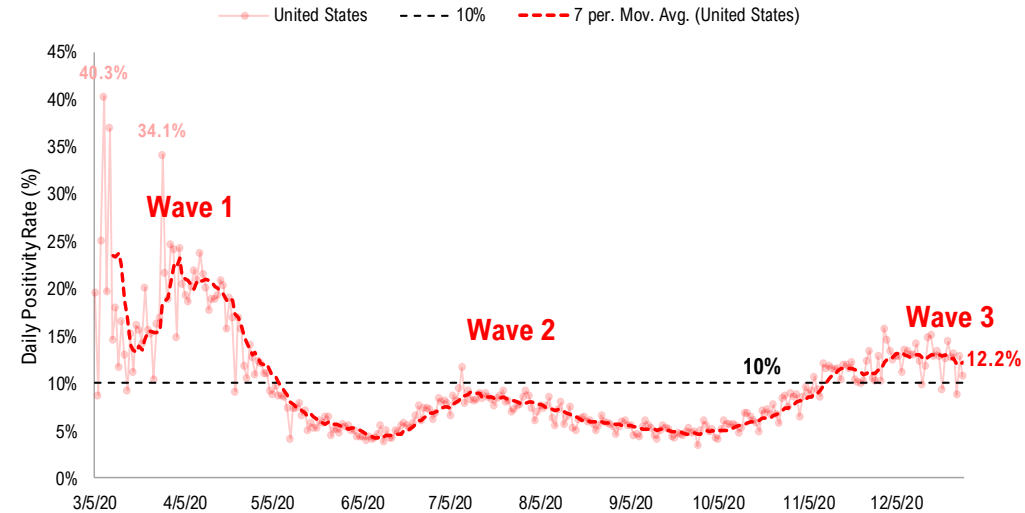
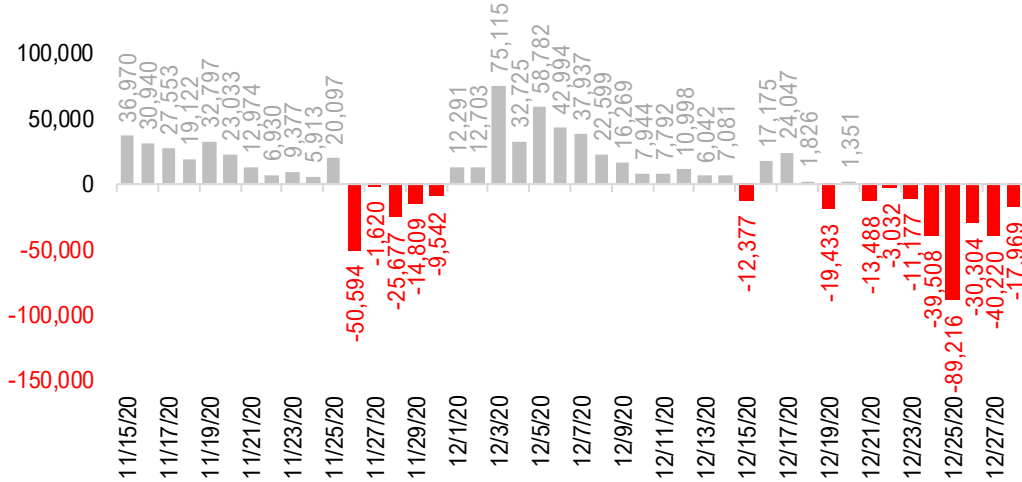
US daily new cases



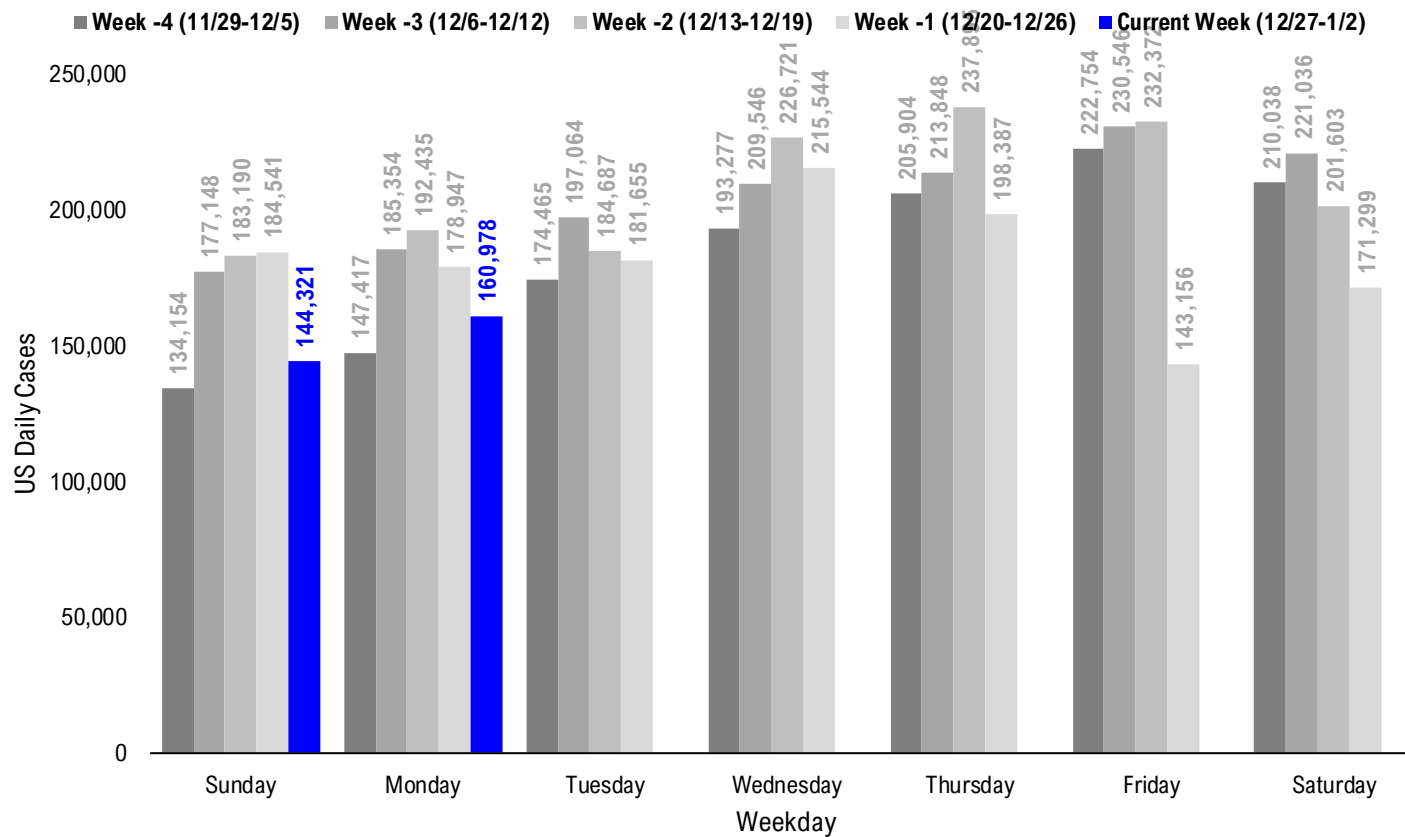
USA total COVID-19 tests administered



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		% Decline in Daily Cases		7D Net Hospitalization	
			12/28	Delta	12/28	Delta	# Days	%	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
United States	100%	100%	160,978	-17,969	484	-90	10	-32%	5,884	0.5%

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		Since Peak		% Decline in Daily Cases		7D Net Hospitalization	
			12/28	Delta	12/28	Delta	# Days	%	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
United States	100%	100%	160,978	-17,969	484	-90	10	-32%	5,884	0.5%

States:

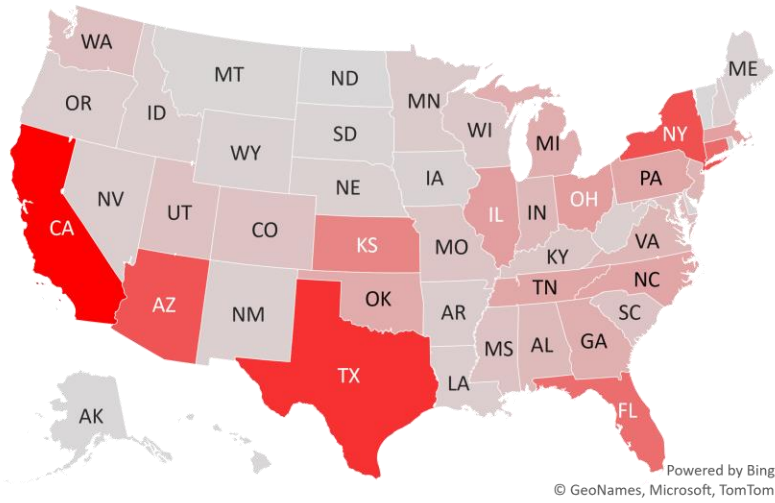
1 California	11.9%	14.6%	33,170	-4,722	959	-121	10	-23%	2,283	0.9%
2 Texas	8.7%	8.8%	12,841	+4,734	242	-71	4	-57%	1,342	1.8%
3 New York	5.9%	8.1%	10,407	+1,400	494	-1	3	-22%	1,228	1.6%
4 Arizona	2.2%	1.7%	10,086	+2,338	801	-54	14	-32%	465	1.1%
5 Connecticut	1.1%	1.3%	8,457	+3,862	791	+361	19	-34%	76	0.5%
6 Florida	6.5%	5.0%	8,198	-2,817	341	-142	168	-43%	597	0.9%
7 Kansas	0.9%	0.8%	6,373	+2,199	729	+252	33	-52%	-76	(0.7%)
8 Ohio	3.5%	3.3%	4,519	-2,029	610	-60	18	-38%	-247	(0.5%)
9 Illinois	3.8%	4.2%	4,453	-246	303	-178	45	-72%	-217	(0.6%)
10 Massachusetts	2.1%	2.8%	4,198	+355	726	+124	23	-12%	239	0.8%
11 North Carolina	3.2%	2.7%	3,888	-591	833	+275	0	0%	375	1.0%
12 Pennsylvania	3.9%	3.8%	3,779	-4,108	423	-226	23	-55%	-95	(0.2%)
13 Tennessee	2.1%	1.8%	3,712	-6,179	589	-677	10	-61%	156	0.4%
14 Oklahoma	1.2%	1.0%	3,448	+852	845	-138	8	-21%	25	0.1%
15 Michigan	3.0%	2.6%	3,239	-1,312	353	+71	40	-59%	-368	(2.2%)
16 Georgia	3.2%	2.9%	3,152	+41	307	-83	4	-49%	769	2.3%
17 New Jersey	2.7%	3.0%	2,744	-427	340	-130	22	-47%	12	0.0%
18 Virginia	2.6%	2.6%	2,599	-1,443	320	-130	3	-39%	121	0.5%
19 Indiana	2.0%	1.8%	2,465	-1,400	402	-344	23	-66%	-101	(0.4%)
20 Alabama	1.5%	1.1%	2,269	-111	372	-250	9	-62%	276	1.2%
21 Maryland	1.8%	2.0%	1,985	-280	332	-27	22	-37%	62	0.4%
22 Washington	2.3%	2.7%	1,877	-2,072	231	-38	33	-58%	25	0.2%
23 Utah	1.0%	0.9%	1,716	-103	624	-23	37	-50%	-52	(0.4%)
24 Mississippi	0.9%	0.6%	1,701	+534	438	-132	17	-47%	18	0.1%
25 Colorado	1.7%	1.8%	1,650	-496	259	-142	37	-75%	-213	(1.4%)
26 South Carolina	1.6%	1.1%	1,569	-748	554	+3	1	-18%	344	1.6%
27 Missouri	1.8%	1.5%	1,522	-1,608	257	-177	44	-68%	-300	(2.0%)
28 Kentucky	1.3%	1.0%	1,454	-522	615	+84	25	-29%	-28	(0.2%)

States:

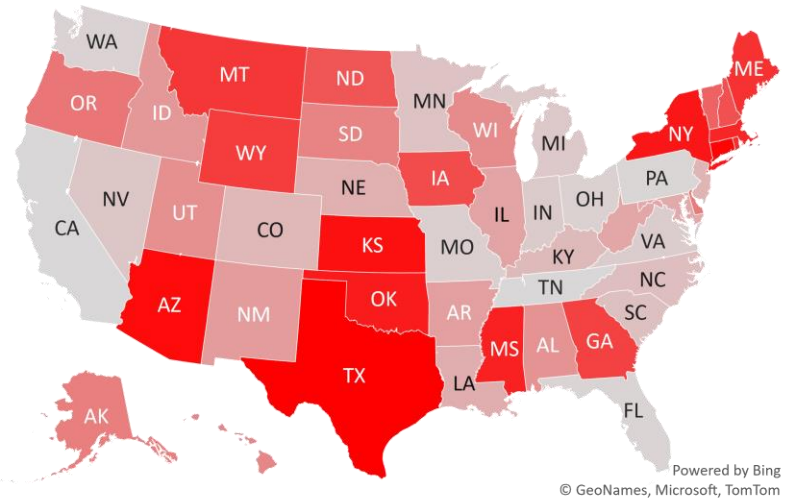
29 Wisconsin	1.8%	1.6%	1,335	-100	244	-154	45	-81%	-195	(1.4%)
30 Minnesota	1.7%	1.8%	1,077	-915	339	-100	28	-76%	-162	(1.5%)
31 Arkansas	0.9%	0.6%	889	-180	243	-225	3	-65%	77	0.8%
32 Nevada	0.9%	0.8%	868	-1,071	467	-250	23	-50%	-97	(0.8%)
33 New Hampshire	0.4%	0.4%	861	+15	679	+83	17	-2%	-9	(0.2%)
34 Louisiana	1.4%	1.3%	823	-288	290	-57	25	-65%	7	0.1%
35 Oregon	1.3%	1.2%	820	-5	223	-49	22	-46%	-32	(0.5%)
36 Idaho	0.5%	0.4%	795	-122	331	-165	18	-71%	-74	(1.2%)
37 West Virginia	0.5%	0.4%	726	-269	484	-183	9	-40%	25	0.3%
38 New Mexico	0.6%	0.5%	691	-124	324	-202	38	-79%	-8	(0.1%)
39 Rhode Island	0.3%	0.3%	661	+242	510	-251	23	-67%	-17	(0.3%)
40 Nebraska	0.6%	0.6%	637	-330	279	-235	39	-81%	-55	(1.0%)
41 Iowa	1.0%	0.9%	562	+24	143	-136	45	-89%	-58	(1.1%)
42 Wyoming	0.2%	0.2%	504	+48	599	+162	39	-65%	-47	(3.0%)
43 Maine	0.4%	0.3%	439	+100	191	-44	4	-60%	11	0.4%
44 Delaware	0.3%	0.4%	431	-9	628	-38	14	-30%	9	0.2%
45 Puerto Rico	1.0%	0.5%	396	+29	233	+26	9	-34%	-73	(1.6%)
46 South Dakota	0.3%	0.3%	267	-80	419	-72	44	-80%	-56	(2.2%)
47 Montana	0.3%	0.2%	219	+65	334	-82	43	-74%	-40	(1.5%)
48 District of Columbi	0.2%	0.7%	140	+1	299	-2	23	-39%	-6	(0.4%)
49 Alaska	0.2%	0.3%	126	-24	354	+54	23	-68%	-45	(2.4%)
50 North Dakota	0.2%	0.3%	93	+11	267	+21	44	-89%	-50	(3.5%)
51 Vermont	0.2%	0.2%	91	+0	181	+26	24	-35%	-7	(1.2%)
52 Hawaii	0.4%	0.5%	45	-89	61	-55	121	-71%	76	11.2%
53 Guam	0.0%	0.0%	11	+2	26	-10	48	-98%	-6	(3.5%)
54 U.S. Virgin Islands	0.0%	0.0%	0	+0	0	-65	129	-100%	0	0.0%
55 Northern Mariana	0.0%	0.0%	0	-1	23	+18	62	-67%	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...

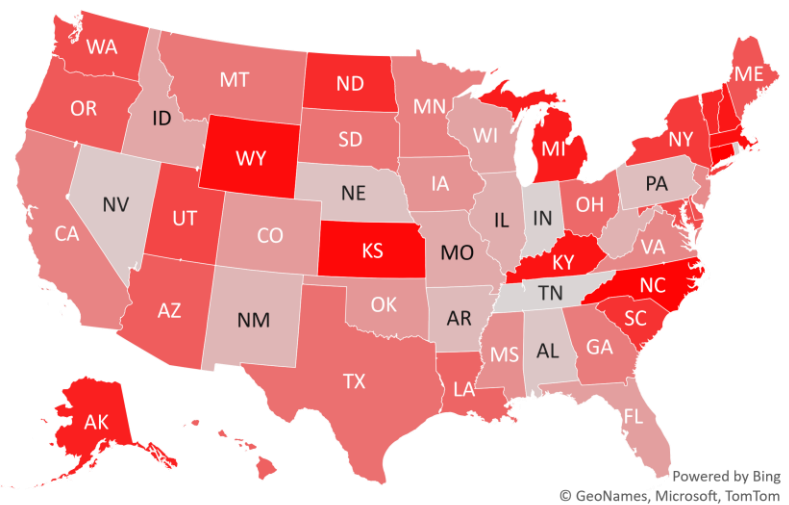
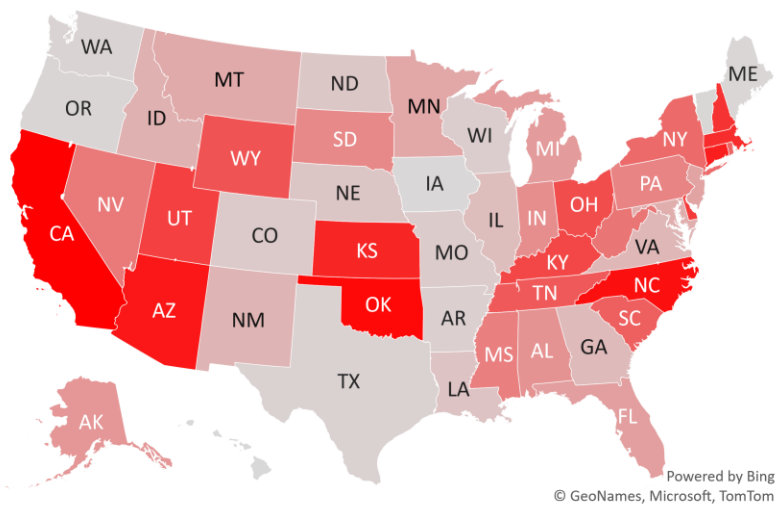
Daily Case Increases



7D Delta in Daily New Cases



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



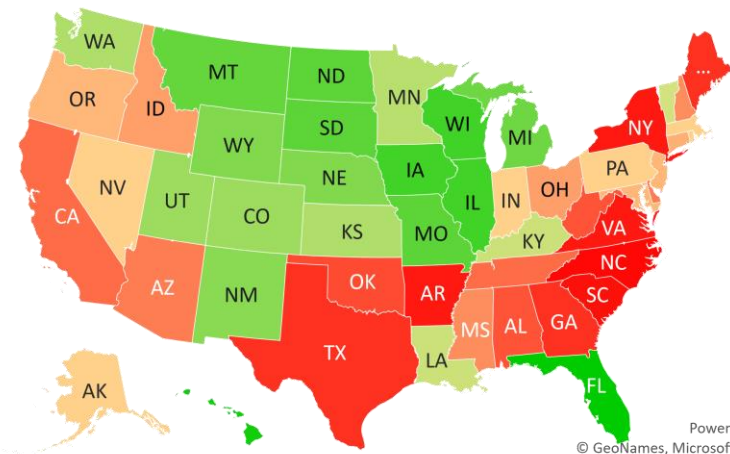
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 12/28)

	Sorted			
	Peak Date	12/28/20	% off the Peak	% US Pop
United States	12/18/20	10	-32%	100%
States:				
Florida	7/13/20	168	-43%	6.5%
U.S. Virgin Islands	8/21/20	129	-100%	0.0%
Hawaii	8/29/20	121	-71%	0.4%
Northern Mariana Island	10/27/20	62	-67%	0.0%
Guam	11/10/20	48	-98%	0.0%
Wisconsin	11/13/20	45	-81%	1.8%
Illinois	11/13/20	45	-72%	3.8%
Iowa	11/13/20	45	-89%	1.0%
South Dakota	11/14/20	44	-80%	0.3%
North Dakota	11/14/20	44	-89%	0.2%
Missouri	11/14/20	44	-68%	1.8%
Montana	11/15/20	43	-74%	0.3%
Michigan	11/18/20	40	-59%	3.0%
Wyoming	11/19/20	39	-65%	0.2%
Nebraska	11/19/20	39	-81%	0.6%
New Mexico	11/20/20	38	-79%	0.6%
Utah	11/21/20	37	-50%	1.0%
Colorado	11/21/20	37	-75%	1.7%
Washington	11/25/20	33	-58%	2.3%
Kansas	11/25/20	33	-52%	0.9%
Minnesota	11/30/20	28	-76%	1.7%
Louisiana	12/3/20	25	-65%	1.4%
Kentucky	12/3/20	25	-29%	1.3%
Vermont	12/4/20	24	-35%	0.2%
Rhode Island	12/5/20	23	-67%	0.3%
Pennsylvania	12/5/20	23	-55%	3.9%
Nevada	12/5/20	23	-50%	0.9%
Massachusetts	12/5/20	23	-12%	2.1%

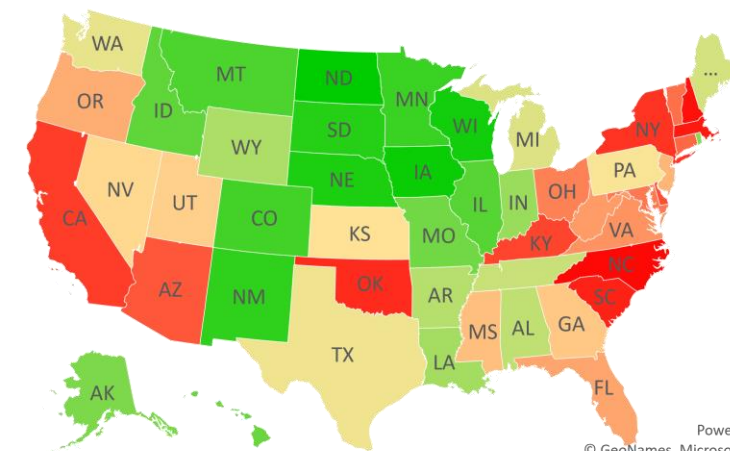
	Sorted			
	Peak Date	12/28/20	% off the Peak	% US Pop
United States	12/18/20	10	-32%	100%
States:				
Indiana	12/5/20	23	-66%	2.0%
District of Columbia	12/5/20	23	-39%	0.2%
Alaska	12/5/20	23	-68%	0.2%
Oregon	12/6/20	22	-46%	1.3%
New Jersey	12/6/20	22	-47%	2.7%
Maryland	12/6/20	22	-37%	1.8%
Connecticut	12/9/20	19	-34%	1.1%
Ohio	12/10/20	18	-38%	3.5%
Idaho	12/10/20	18	-71%	0.5%
New Hampshire	12/11/20	17	-2%	0.4%
Mississippi	12/11/20	17	-47%	0.9%
Delaware	12/14/20	14	-30%	0.3%
Arizona	12/14/20	14	-32%	2.2%
Tennessee	12/18/20	10	-61%	2.1%
California	12/18/20	10	-23%	11.9%
West Virginia	12/19/20	9	-40%	0.5%
Puerto Rico	12/19/20	9	-34%	1.0%
Alabama	12/19/20	9	-62%	1.5%
Oklahoma	12/20/20	8	-21%	1.2%
Texas	12/24/20	4	-57%	8.7%
Maine	12/24/20	4	-60%	0.4%
Georgia	12/24/20	4	-49%	3.2%
Virginia	12/25/20	3	-39%	2.6%
New York	12/25/20	3	-22%	5.9%
Arkansas	12/25/20	3	-65%	0.9%
South Carolina	12/27/20	1	-18%	1.6%
North Carolina	12/28/20	0	0%	3.2%

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



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



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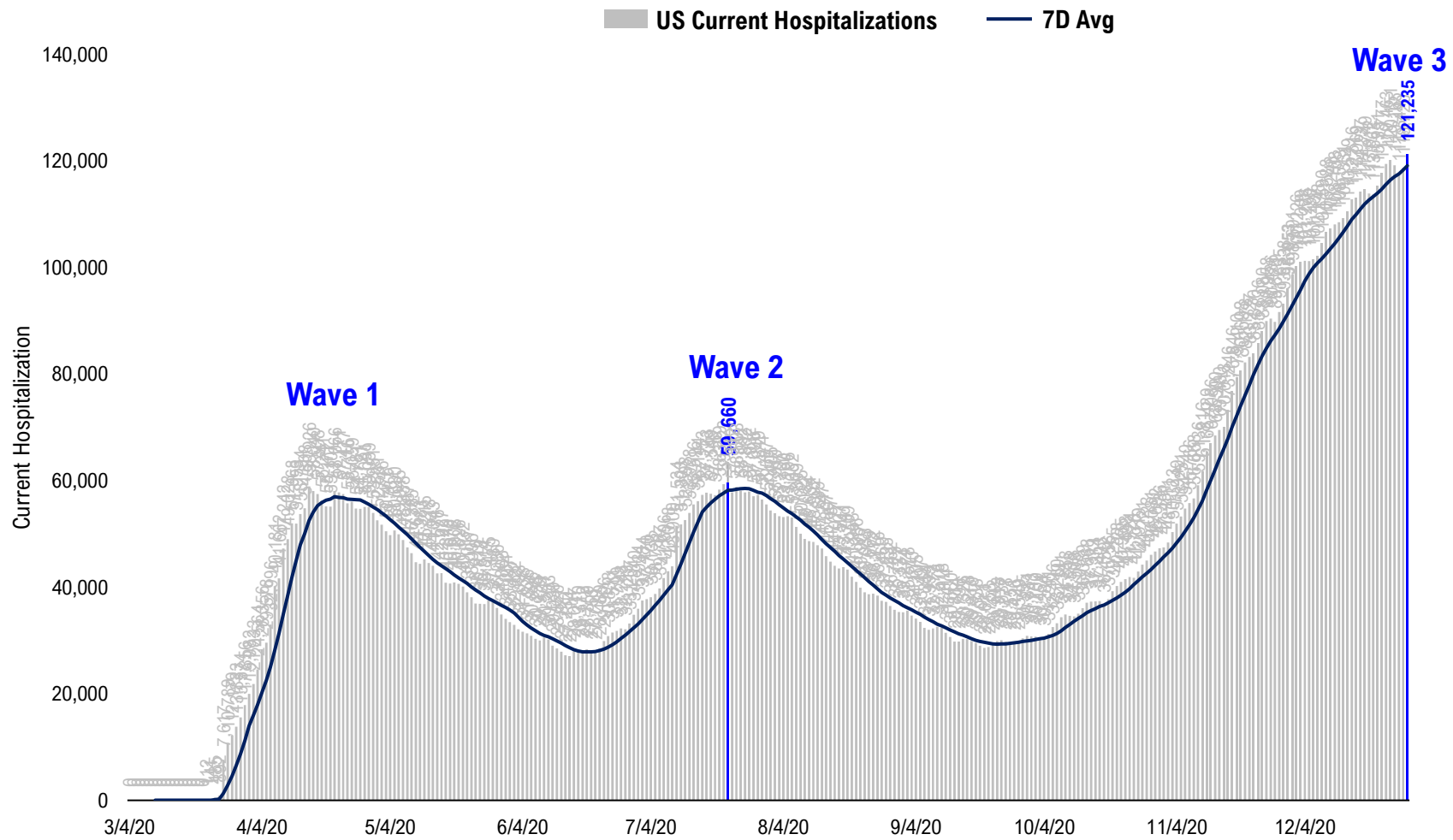
#6: US New Cases by States... (sorted by today's new cases)

	Sorted				
	7D Ago	Last 3-day Trend			
	12/21/20	12/26/20	12/27/20	12/28/20	vs 7D ago
United States	178,947	171,299	144,321	160,978	-17,969
States:					
California	37,892	30,375	50,141	33,170	
Texas	8,107	2,127	6,105	12,841	<--higher
New York	9,007	10,806	7,623	10,407	
Arizona	7,748	6,106	1,296	10,086	<--higher
Connecticut	4,595	0	0	8,457	<--higher
Florida	11,015	6,371	7,391	8,198	
Kansas	4,174	0	0	6,373	<--higher
Ohio	6,548	11,018	5,857	4,519	
Illinois	4,699	3,293	3,767	4,453	
Massachusetts	3,843	7,677	3,134	4,198	
North Carolina	4,479	19,419	2,898	3,888	
Pennsylvania	7,887	7,581	4,884	3,779	
Tennessee	9,891	5,165	3,188	3,712	
Oklahoma	2,596	3,955	2,631	3,448	<--higher
Michigan	4,551	7,341	0	3,239	
Georgia	3,111	3,679	2,949	3,152	
New Jersey	3,171	3,999	2,320	2,744	
Virginia	4,042	1,584	3,999	2,599	
Indiana	3,865	3,841	1,820	2,465	
Alabama	2,380	1,032	2,170	2,269	
Maryland	2,265	2,280	1,758	1,985	
Washington	3,949	3,396	0	1,877	
Utah	1,819	3,489	796	1,716	
Mississippi	1,167	845	1,365	1,701	<--higher
Colorado	2,146	1,430	1,399	1,650	
South Carolina	2,317	2,614	4,379	1,569	
Missouri	3,130	1,756	1,451	1,522	
Kentucky	1,976	5,283	1,500	1,454	

	Sorted				
	7D Ago	Last 3-day Trend			
	12/21/20	12/26/20	12/27/20	12/28/20	vs 7D ago
United States	178,947	171,299	144,321	160,978	-17,969
States:					
Wisconsin	1,435	632	2,287	1,335	
Minnesota	1,992	2,142	2,516	1,077	
Arkansas	1,069	660	649	889	
Nevada	1,939	1,589	1,856	868	
New Hampshire	846	1,031	876	861	
Louisiana	1,111	0	3,227	823	
Oregon	825	608	1,399	820	
Idaho	917	554	428	795	
West Virginia	995	1,341	533	726	
New Mexico	815	604	742	691	
Rhode Island	419	226	733	661	<--higher
Nebraska	967	805	175	637	
Iowa	538	310	478	562	
Wyoming	456	482	54	504	
Maine	339	0	333	439	<--higher
Delaware	440	820	584	431	
Puerto Rico	367	1,035	804	396	
South Dakota	347	417	427	267	
Montana	154	504	347	219	<--higher
District of Columbia	139	0	492	140	
Alaska	150	361	290	126	
North Dakota	82	407	111	93	
Vermont	91	185	63	91	
Hawaii	134	119	95	45	
Guam	9	1	1	11	<--higher
U.S. Virgin Islands	0	0	0	0	
Northern Mariana Islands	1	4	0	0	
American Samoa	0	0	0	0	

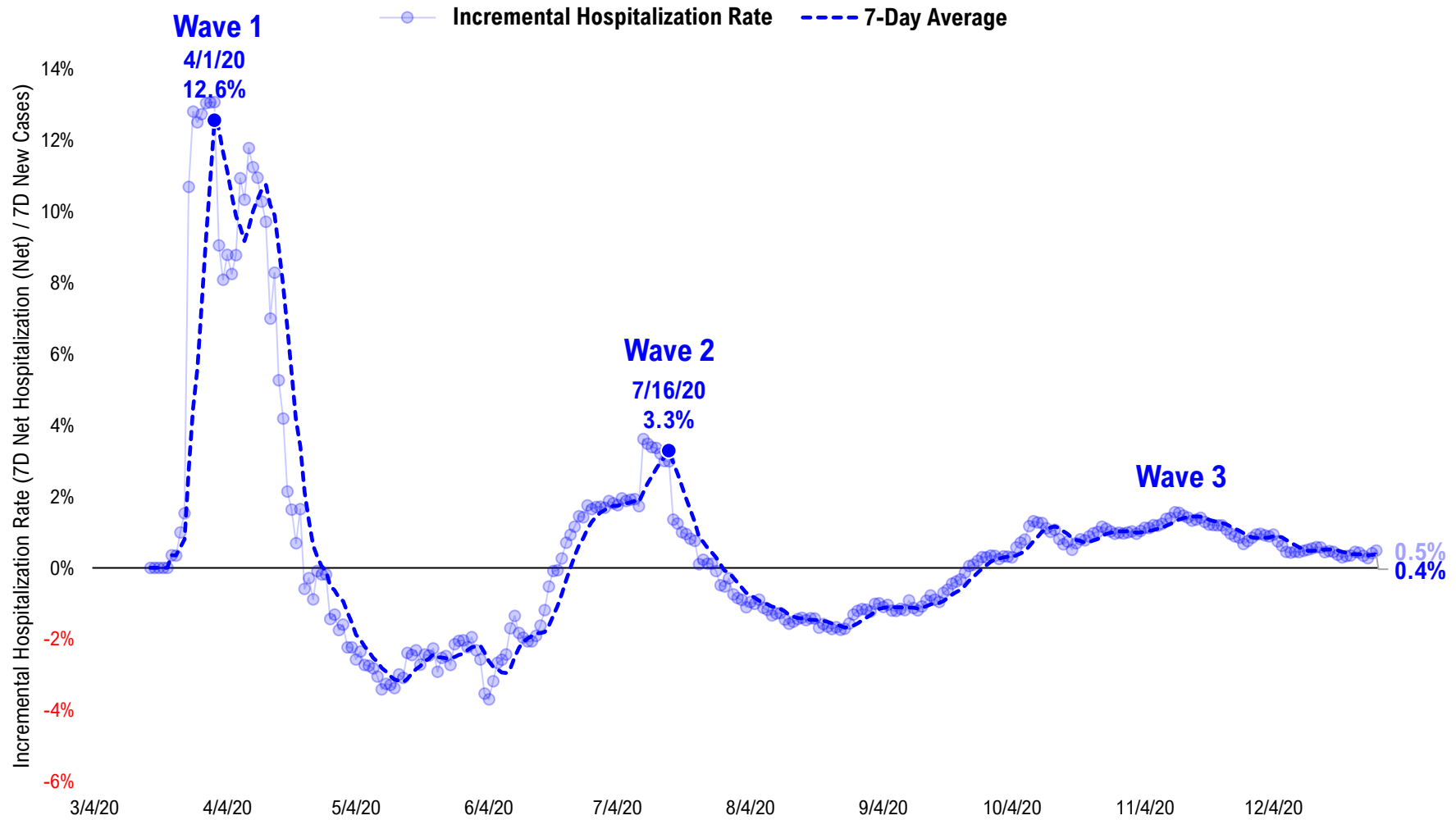
#7: US Daily Hospitalizations...

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



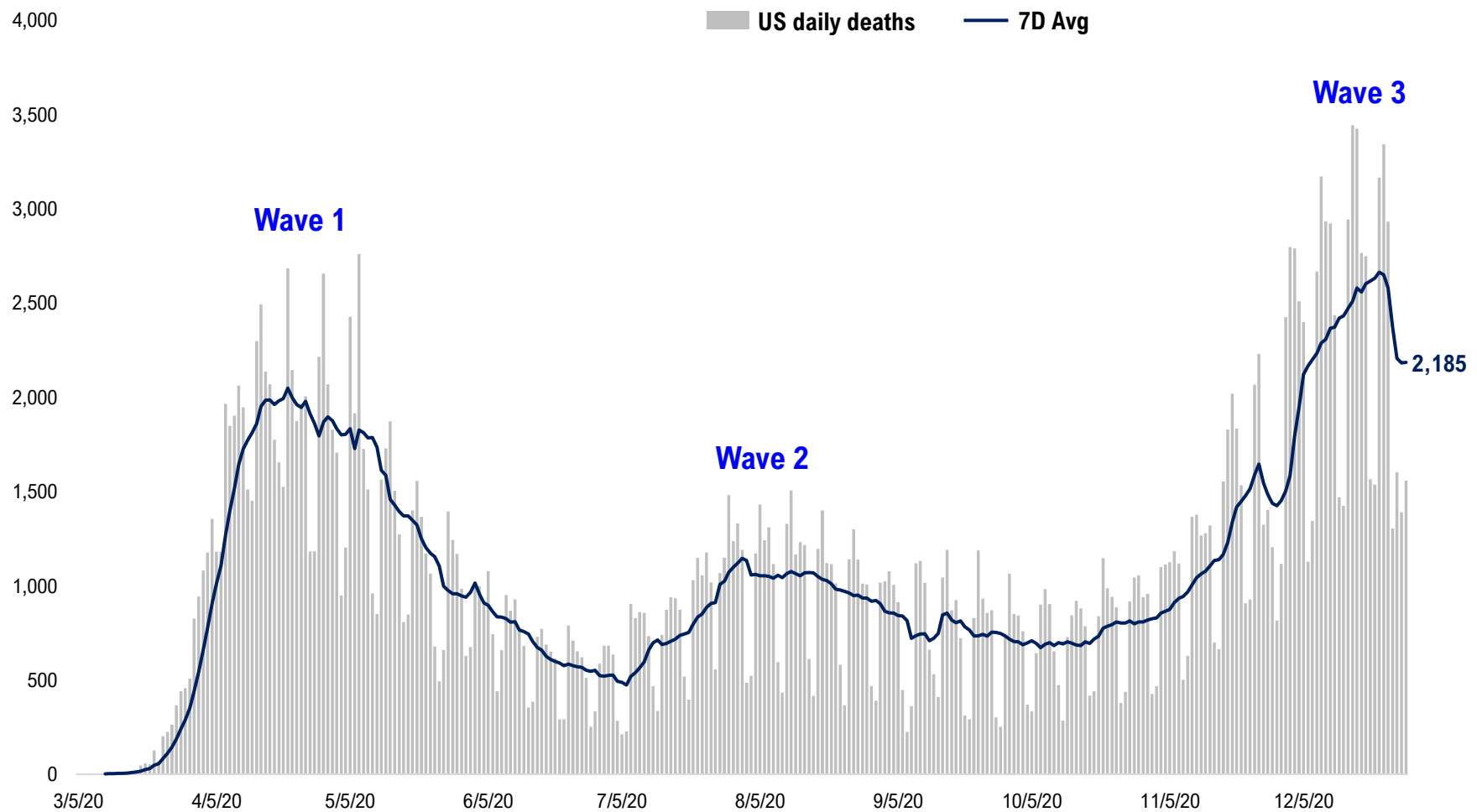
#8: Incremental Hospitalization Rate...

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



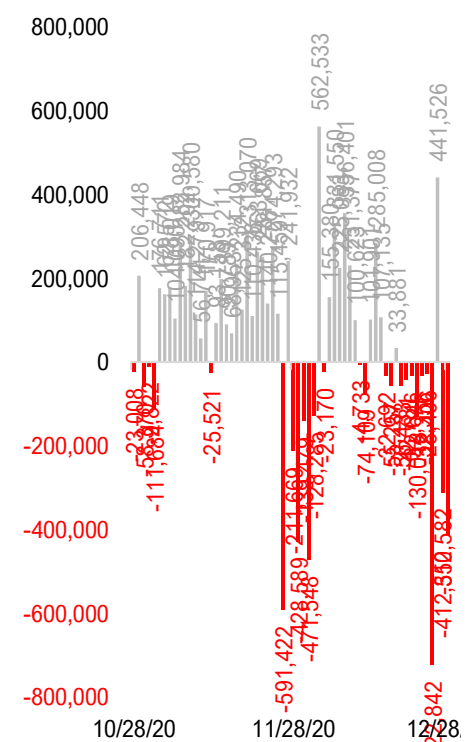
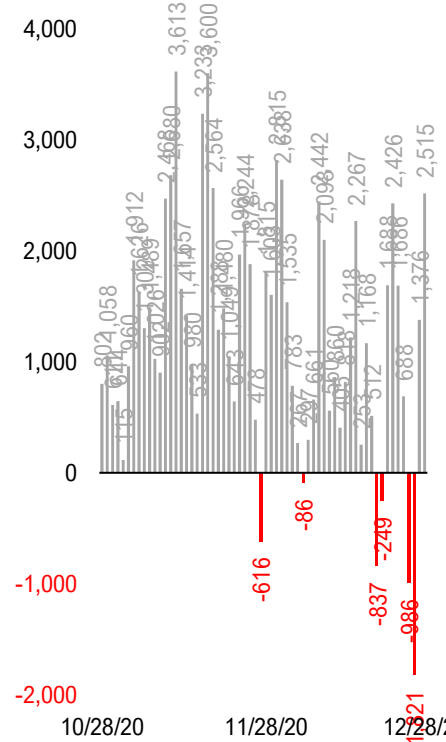
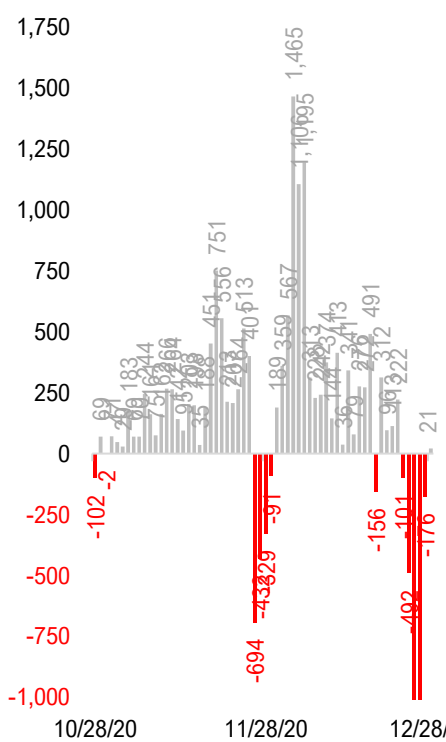
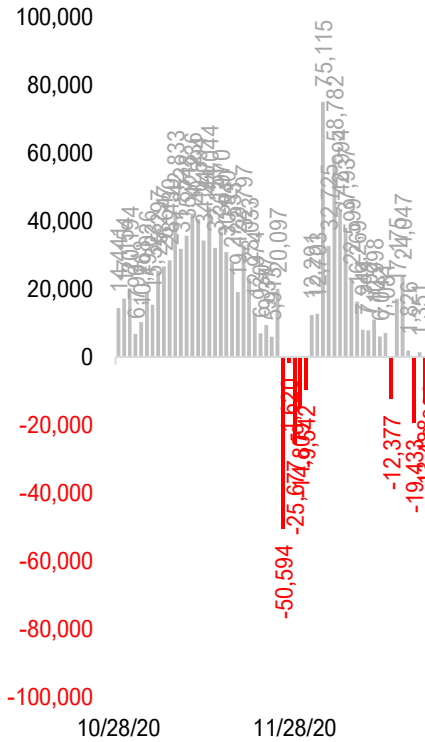
#10: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

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

Daily Deaths

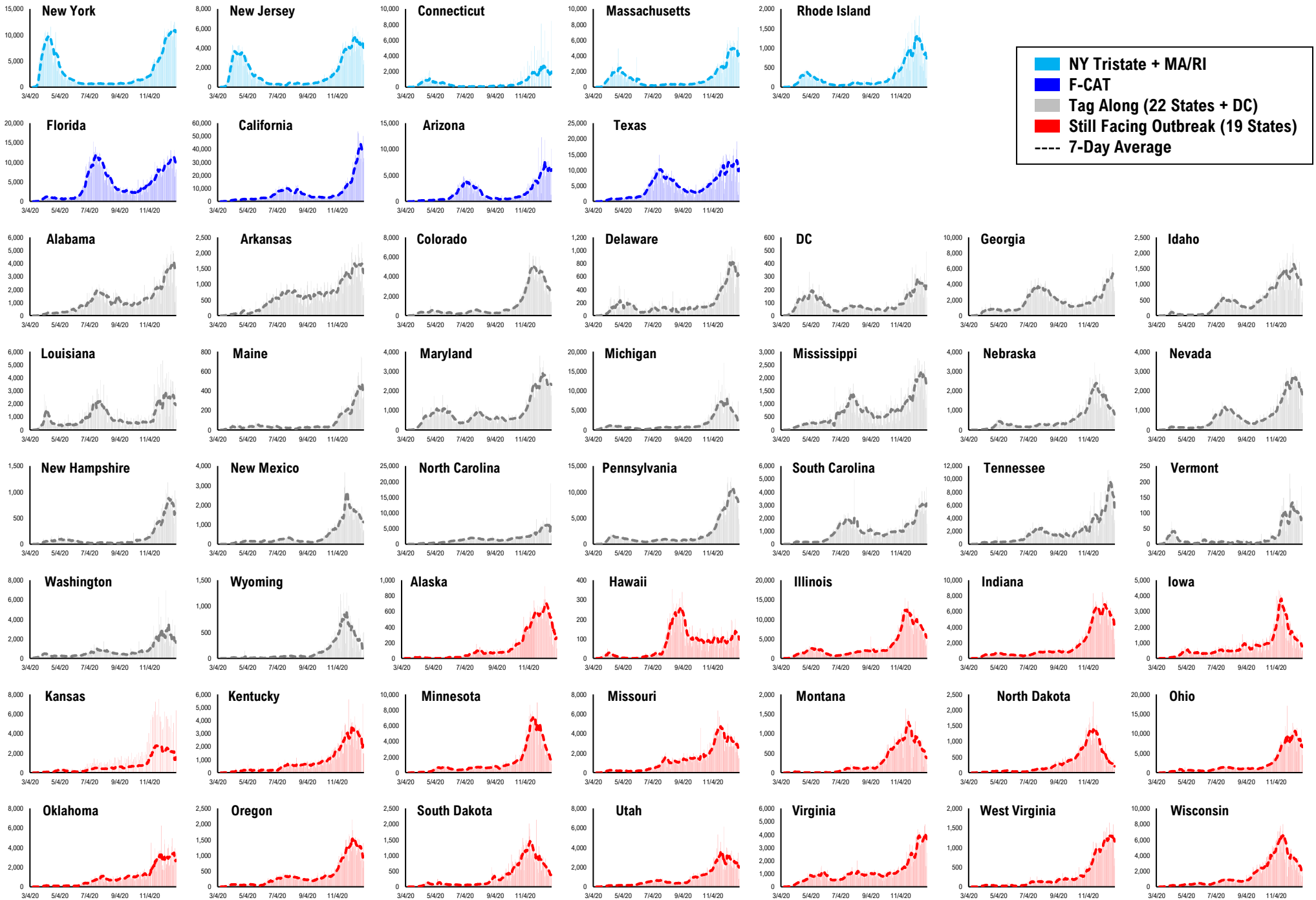
Daily Net Hospitalization
(Red = more discharge than admission)

Daily Tests

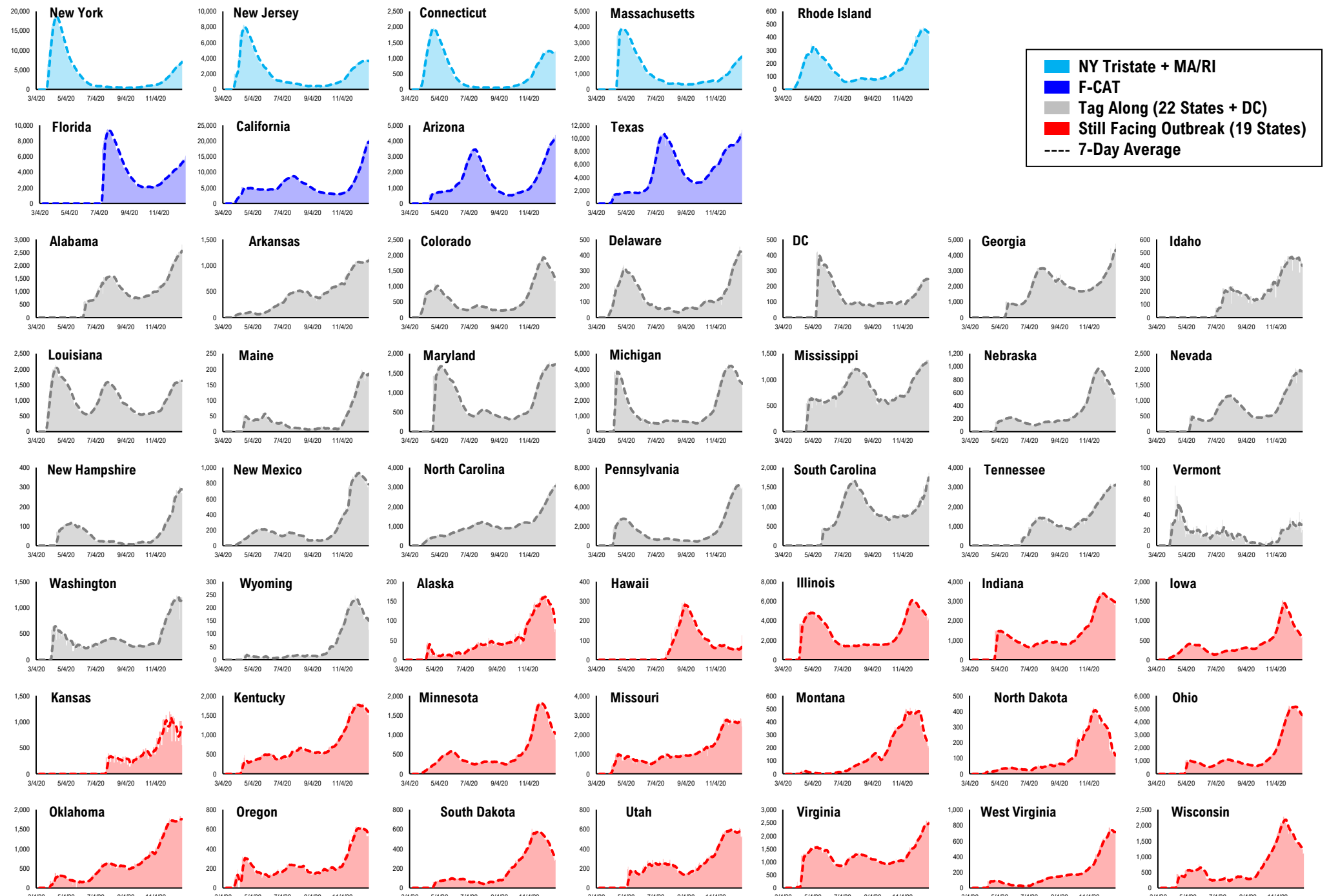


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

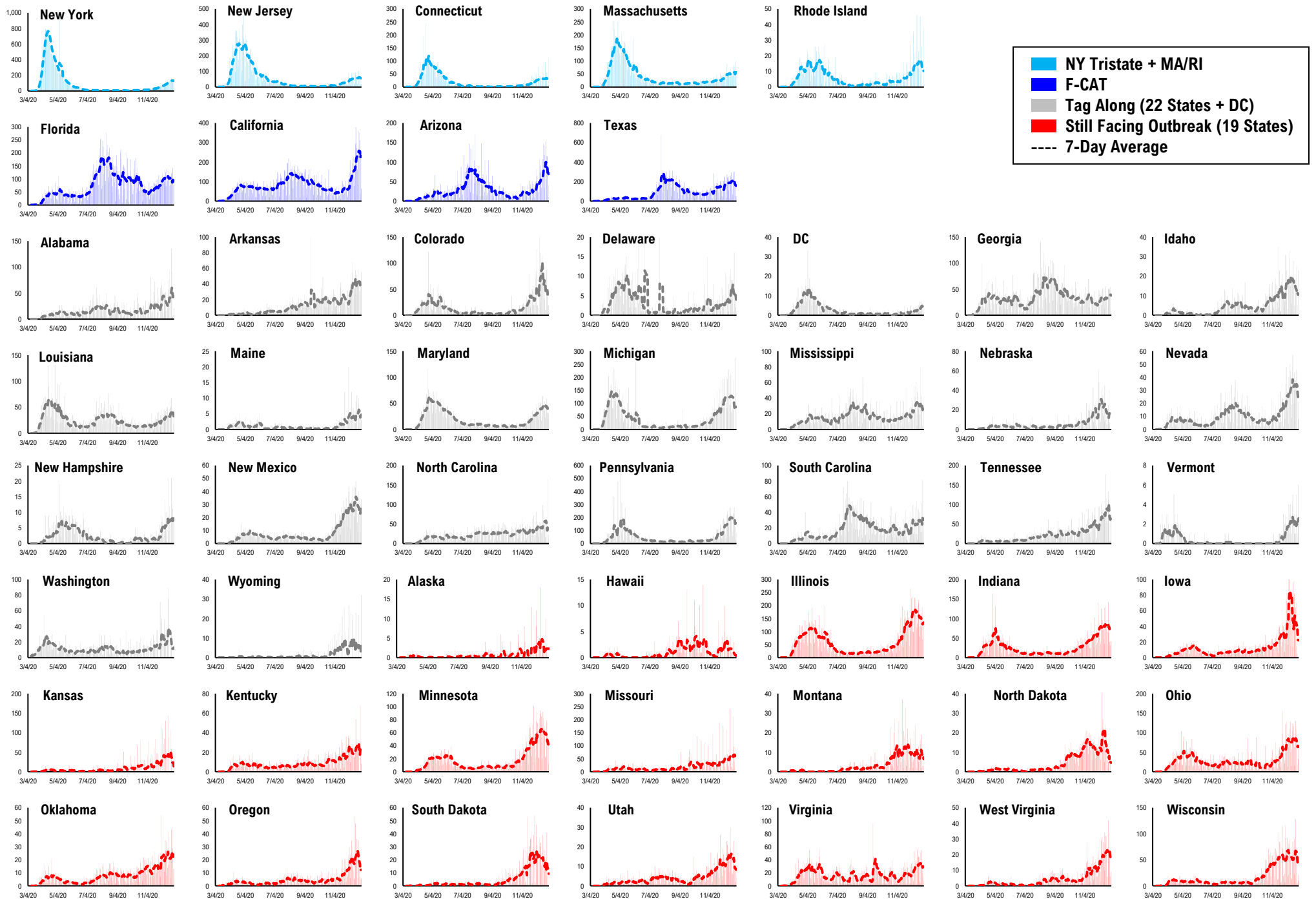
#11: Daily New Cases by States...



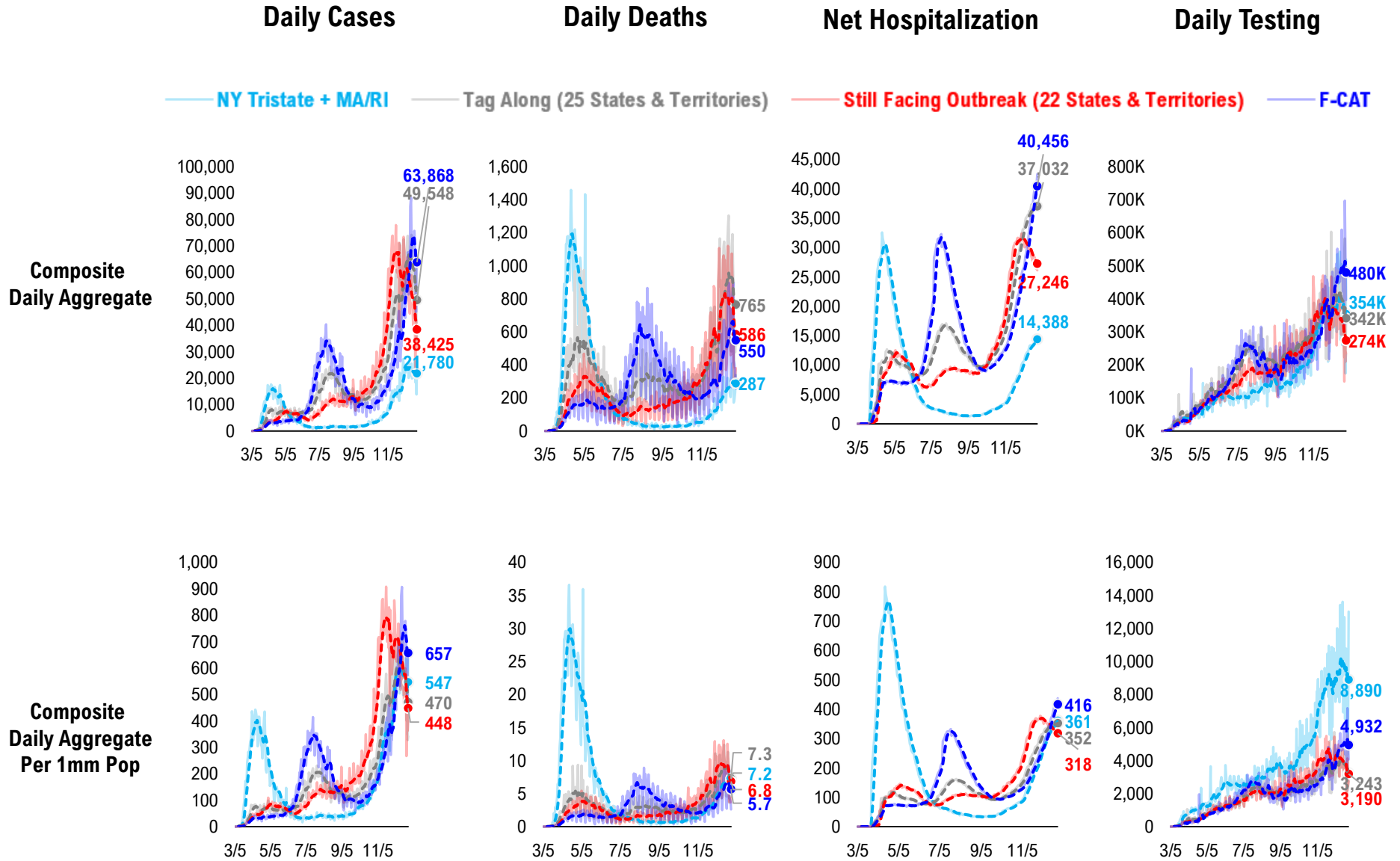
#12: Current Hospitalizations by States...



#13: Daily New Deaths by States...

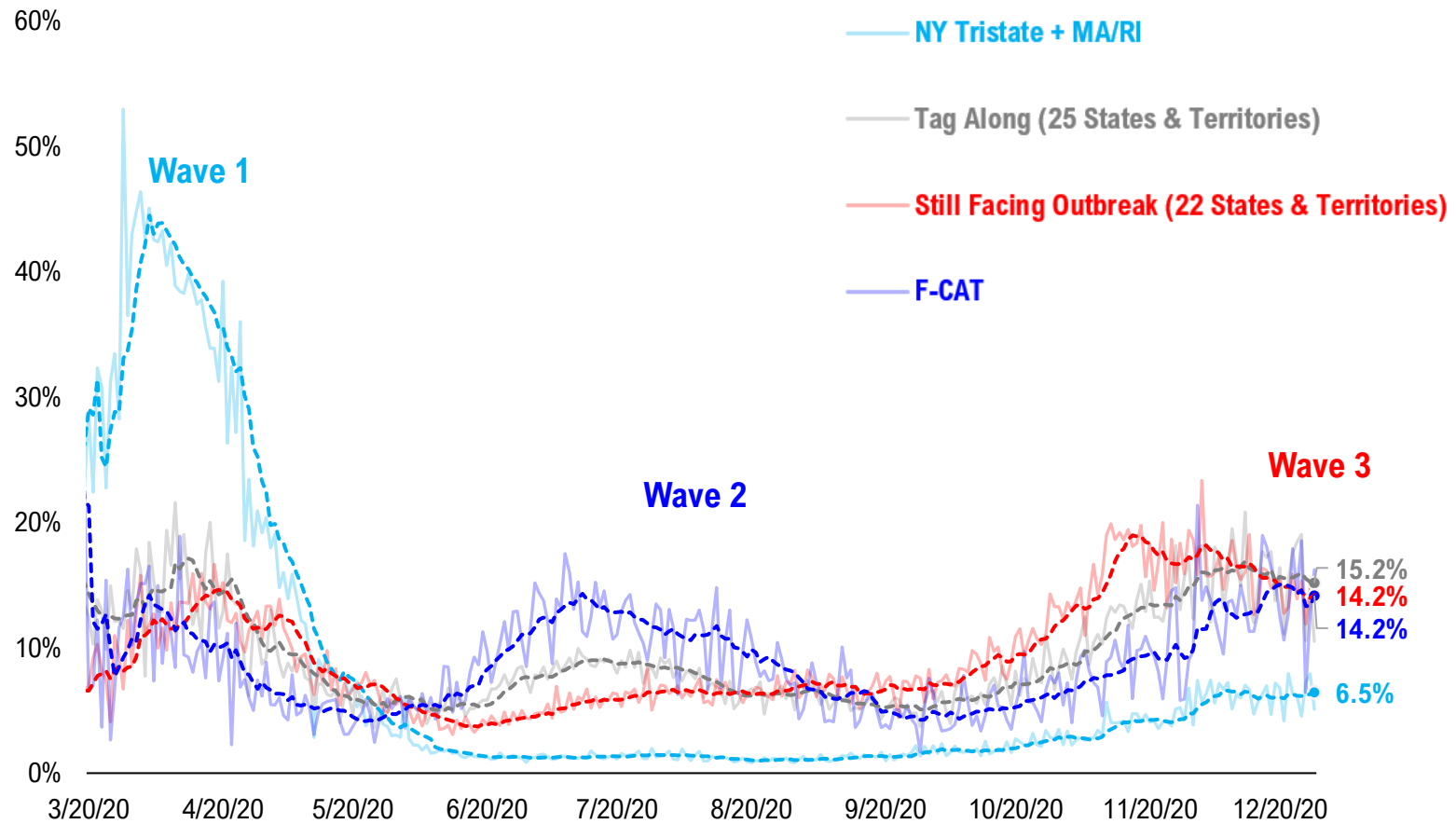


#14: State COVID-19 situation by Tier...

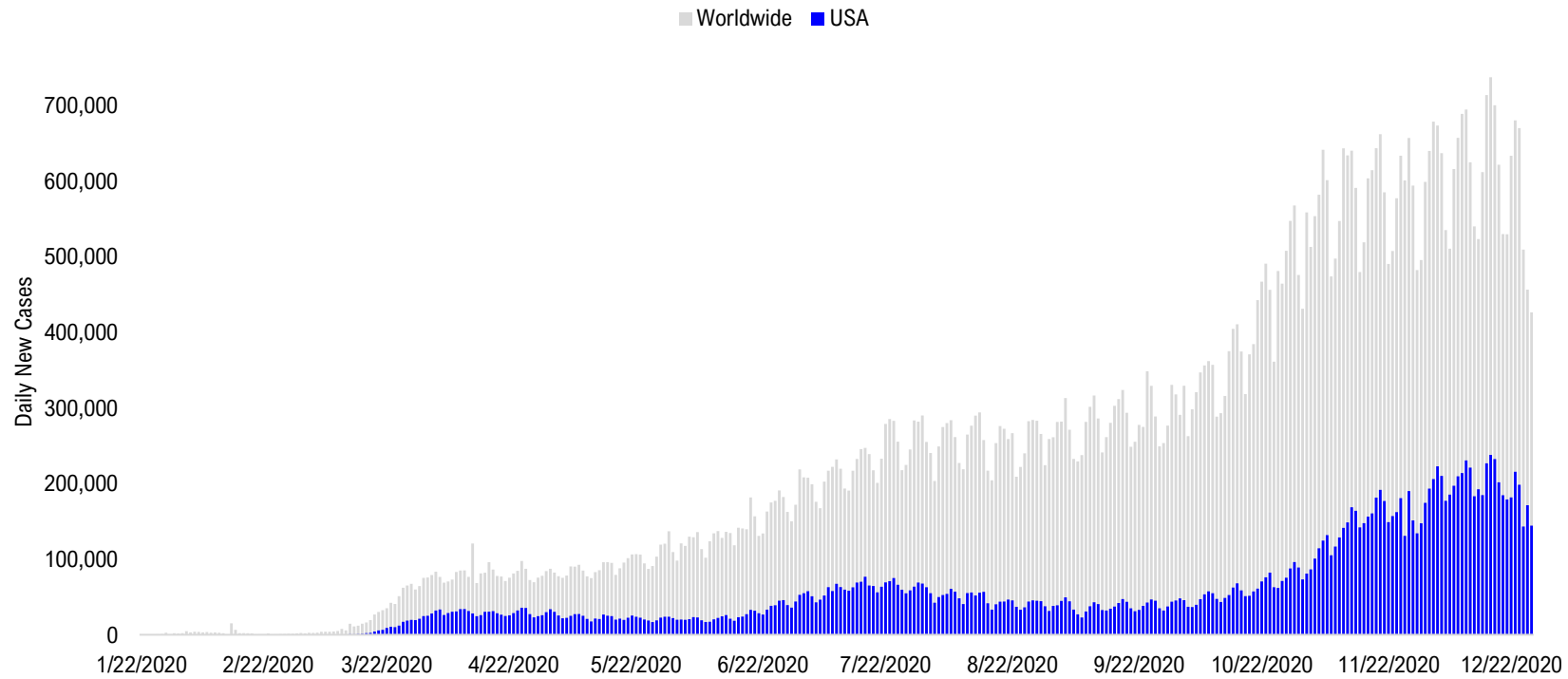


#15: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Aug 14	Aug 28	Sep 11	Sep 25	Oct 9	Oct 23	Nov 6	Nov 20	Dec 4	Dec 18	Dec 27
Latin America 100,636	Latin America 88,255	Pakistan + India + Bangladesh 98,888	Pakistan + India + Bangladesh 88,225	Europe 112,289	Europe 223,797	Europe 312,557	Europe 279,289	Europe 258,860	Europe 282,804	Europe 171,204
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 116,877	US + Canada 182,603	US + Canada 213,691	US + Canada 239,069	US + Canada 157,058
US + Canada 54,914	US + Canada 45,273	Europe 47,339	Europe 67,906	Latin America 69,822	Latin America 69,390	Latin America 59,345	Latin America 68,233	Latin America 88,693	Latin America 108,000	Latin America 55,560
Europe 27,525	Europe 35,993	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 28,277	Pakistan + India + Bangladesh 23,386
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 20,166	Africa 21,735
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 17,898	Asia ex- India+Pakistan 17,743

Disclosures

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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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