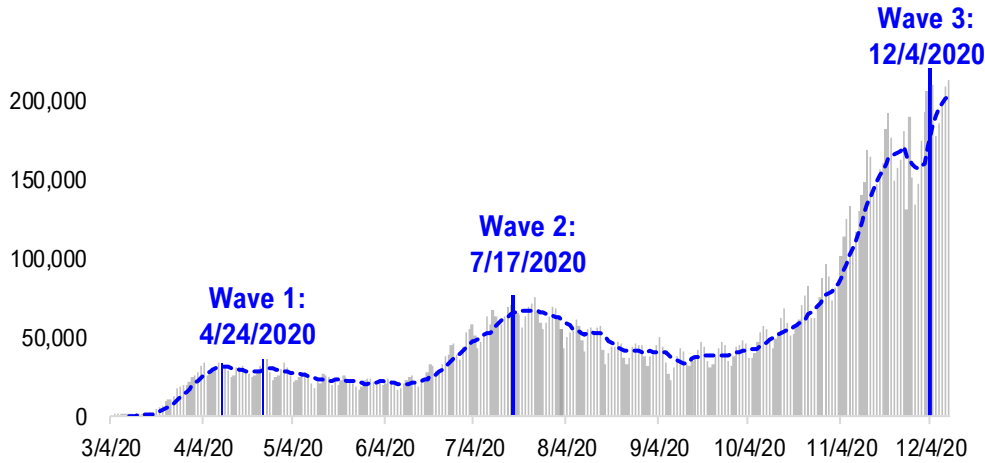


FSInsight Daily COVID-19 Chartbook

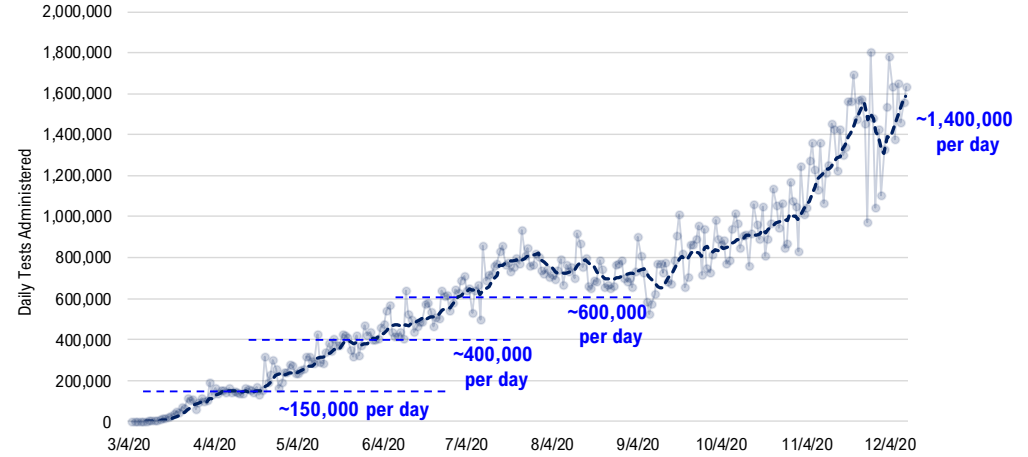


#1: USA COVID-19 Situation at a Glance...

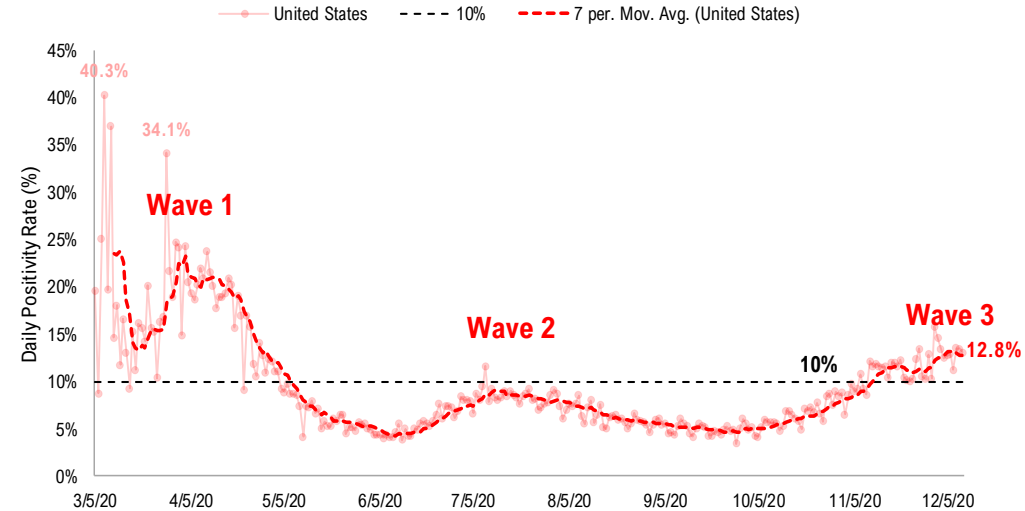
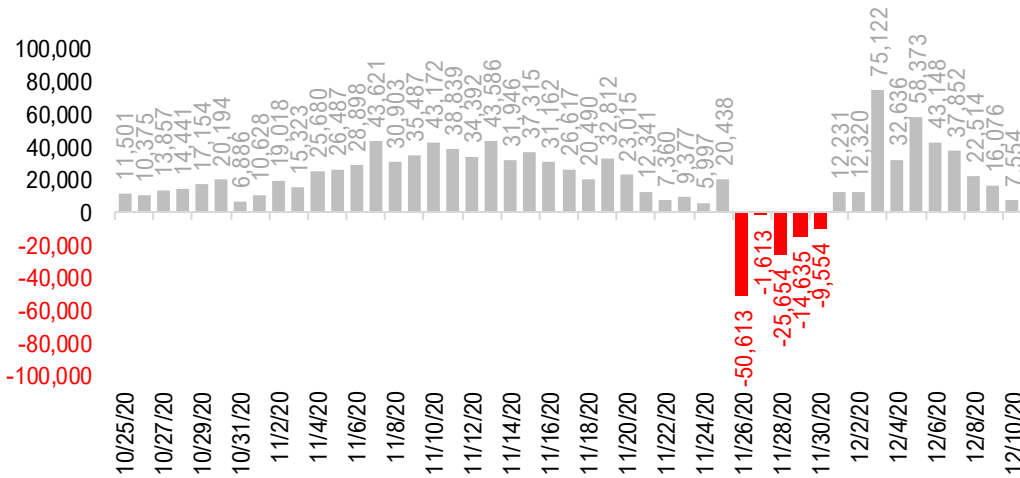
US daily new cases



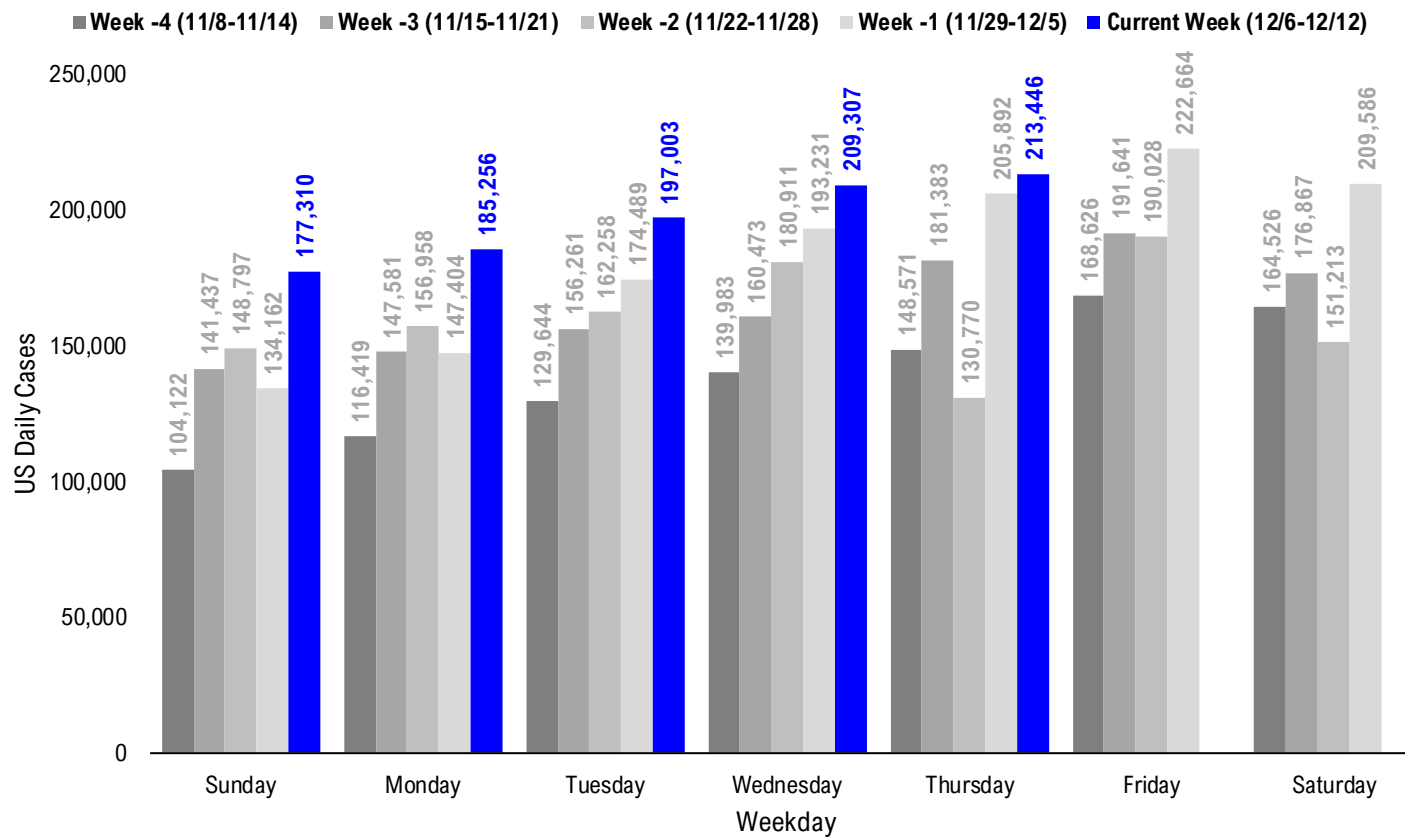
USA total COVID-19 tests administered



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	
			12/10	Delta	12/10	Delta	# Days	%	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
United States	100%	100%	213,446	+7,554	629	+47	5	-3%	6,239	0.4%

	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	
			12/10	Delta	12/10	Delta	# Days	%	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
United States	100%	100%	213,446	+7,554	629	+47	5	-3%	6,239	0.4%

States:

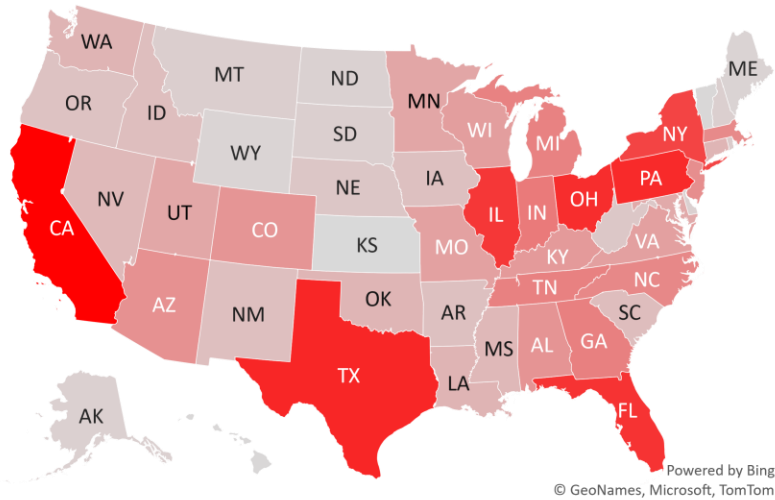
1 California	11.9%	14.6%	29,677	+11,086	707	+272	0	0%	2,775	1.5%
2 Texas	8.7%	8.8%	12,211	-1,646	440	-64	7	-13%	-106	(0.1%)
3 Pennsylvania	3.9%	3.8%	11,972	+566	803	+142	5	-14%	806	1.1%
4 Ohio	3.5%	3.3%	11,738	+2,817	985	+250	0	0%	-32	(0.0%)
5 Florida	6.5%	5.0%	11,335	+465	449	-12	150	-24%	267	0.4%
6 Illinois	3.8%	4.2%	11,101	+142	717	-158	27	-33%	-515	(0.8%)
7 New York	5.9%	8.1%	10,178	+323	516	+69	5	-6%	1,101	1.6%
8 Indiana	2.0%	1.8%	6,518	-1,942	874	-138	5	-27%	-141	(0.3%)
9 Georgia	3.2%	2.9%	6,062	+1,689	424	+71	0	0%	397	1.4%
10 Tennessee	2.1%	1.8%	6,011	+2,044	988	+316	1	-10%	150	0.4%
11 Michigan	3.0%	2.6%	5,937	-1,209	559	-105	22	-36%	-282	(0.7%)
12 North Carolina	3.2%	2.7%	5,556	-81	531	+127	4	-6%	343	0.9%
13 Massachusetts	2.1%	2.8%	5,369	-626	747	+57	5	-10%	283	0.8%
14 New Jersey	2.7%	3.0%	5,120	+327	564	+50	4	-12%	253	0.7%
15 Arizona	2.2%	1.7%	4,928	-514	993	+95	0	0%	665	1.6%
16 Alabama	1.5%	1.1%	4,735	+1,204	863	+126	0	0%	343	1.4%
17 Colorado	1.7%	1.8%	4,649	-1,388	716	-112	19	-31%	-297	(1.0%)
18 Kentucky	1.3%	1.0%	4,314	+478	810	-52	7	-6%	-54	(0.2%)
19 Wisconsin	1.8%	1.6%	4,034	-584	674	-40	27	-47%	-270	(1.0%)
20 Virginia	2.6%	2.6%	3,915	+1,892	475	+215	0	0%	198	0.7%
21 Missouri	1.8%	1.5%	3,858	-140	529	+8	26	-35%	-117	(0.5%)
22 Minnesota	1.7%	1.8%	3,499	-2,650	654	-224	10	-53%	-228	(0.7%)
23 Utah	1.0%	0.9%	3,401	-544	864	-224	19	-30%	-41	(0.2%)
24 Maryland	1.8%	2.0%	3,252	+1,158	470	+83	4	-11%	147	0.7%
25 Washington	2.3%	2.7%	2,550	+455	351	+26	15	-37%	192	1.0%
26 Louisiana	1.4%	1.3%	2,542	-232	668	-172	7	-20%	204	1.2%
27 Oklahoma	1.2%	1.0%	2,460	+753	595	+64	4	-43%	-25	(0.1%)
28 Connecticut	1.1%	1.3%	2,431	-2,320	667	-163	1	-44%	23	0.1%

States:

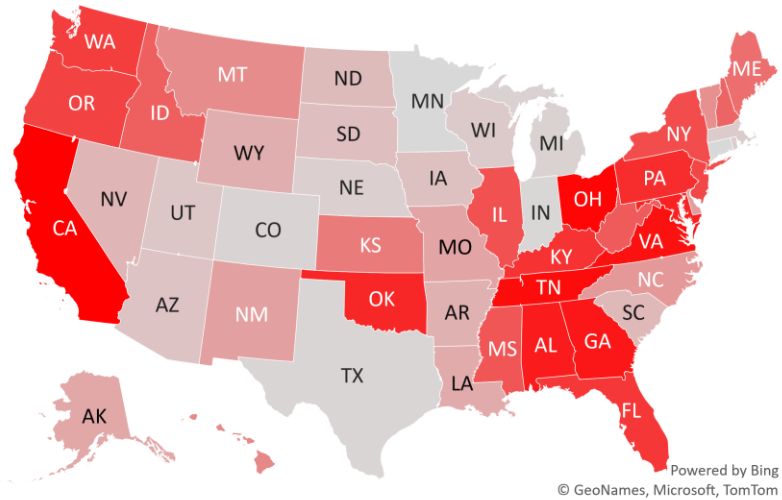
29 Mississippi	0.9%	0.6%	2,283	+115	757	+111	6	-5%	126	0.9%
30 Nevada	0.9%	0.8%	2,193	-343	859	+62	5	-8%	179	0.9%
31 South Carolina	1.6%	1.1%	1,946	-368	419	+36	4	-25%	186	1.1%
32 Idaho	0.5%	0.4%	1,825	+104	1144	+257	0	0%	-11	(0.1%)
33 New Mexico	0.6%	0.5%	1,781	-118	761	-156	20	-50%	-31	(0.3%)
34 Arkansas	0.9%	0.6%	1,704	-313	541	+26	5	-18%	-67	(0.6%)
35 Iowa	1.0%	0.9%	1,683	-513	455	-132	27	-64%	-261	(2.5%)
36 Oregon	1.3%	1.2%	1,551	+418	320	+15	4	-22%	-21	(0.2%)
37 Nebraska	0.6%	0.6%	1,321	-1,015	705	-340	21	-52%	-72	(0.6%)
38 West Virginia	0.5%	0.4%	1,233	+113	663	+71	4	-10%	54	0.6%
39 Rhode Island	0.3%	0.3%	948	-769	1079	-179	5	-31%	57	0.7%
40 Montana	0.3%	0.2%	759	-23	718	-194	25	-44%	14	0.2%
41 South Dakota	0.3%	0.3%	704	-441	839	-248	26	-59%	-47	(0.9%)
42 New Hampshire	0.4%	0.4%	681	+88	602	+129	1	-13%	92	1.7%
43 Delaware	0.3%	0.4%	643	-115	796	+179	1	-6%	72	1.3%
44 Alaska	0.2%	0.3%	620	-140	805	-92	5	-27%	7	0.1%
45 North Dakota	0.2%	0.3%	558	-412	631	-179	26	-74%	-32	(0.9%)
46 Puerto Rico	1.0%	0.5%	422	+82	148	+6	3	-51%	29	0.6%
47 Maine	0.4%	0.3%	407	+61	269	+72	1	-2%	34	1.5%
48 Wyoming	0.2%	0.2%	338	-233	713	-308	21	-58%	-28	(0.9%)
49 District of Columbi	0.2%	0.7%	244	-78	368	+79	5	-24%	32	1.7%
50 Vermont	0.2%	0.2%	128	-50	178	-71	6	-36%	-13	(1.7%)
51 Hawaii	0.4%	0.5%	123	-19	60	-1	103	-71%	-6	(0.9%)
52 U.S. Virgin Islands	0.0%	0.0%	35	+9	262	+122	111	-38%	0	0.0%
53 Guam	0.0%	0.0%	13	-9	66	-115	30	-94%	-6	(3.3%)
54 Northern Mariana	0.0%	0.0%	0	+0	23	+23	53	-56%	0	0.0%
55 Kansas	0.9%	0.8%	0	+0	661	+133	15	-56%	-87	(0.5%)
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	0.0%

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

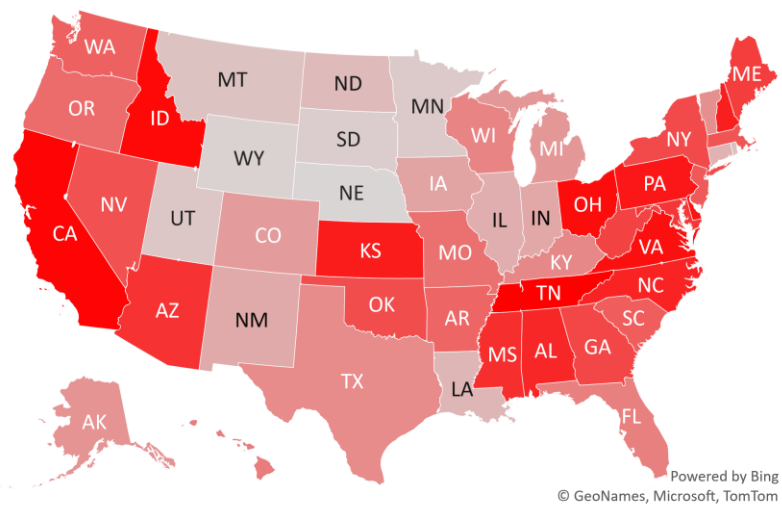
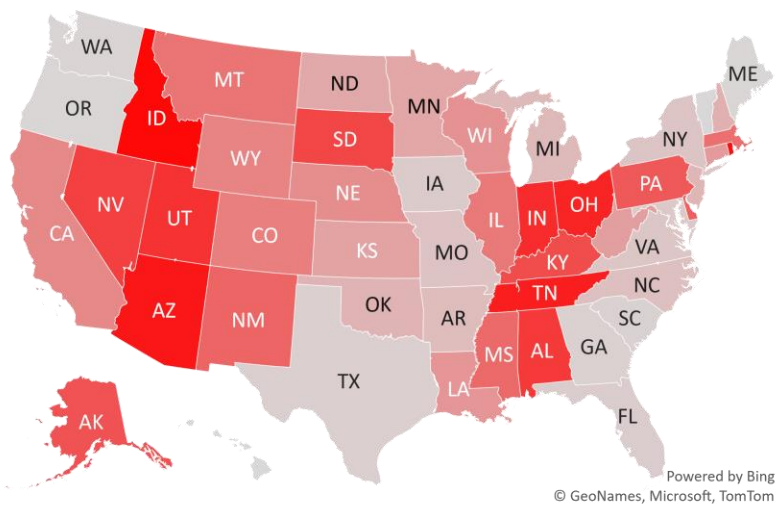
Daily Case Increases



7D Delta in Daily New Cases



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



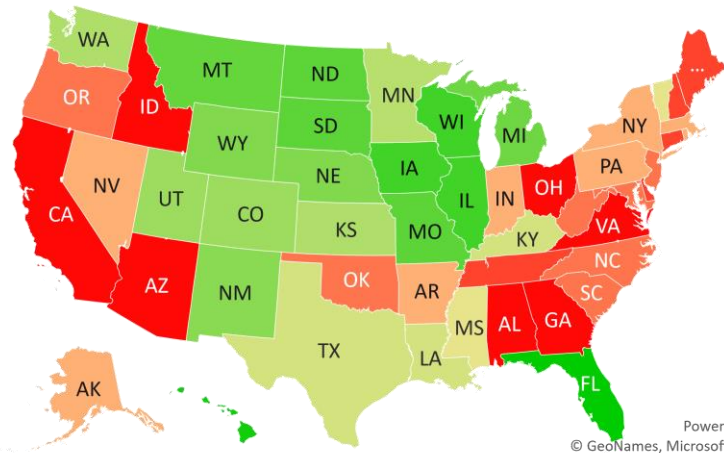
#5: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 12/10)

	Sorted			
	Peak Date	12/10/20	% off the Peak	% US Pop
United States	12/5/20	5	-3%	100%
States:				
Florida	7/13/20	150	-24%	6.5%
U.S. Virgin Islands	8/21/20	111	-38%	0.0%
Hawaii	8/29/20	103	-71%	0.4%
Northern Mariana Island	10/18/20	53	-56%	0.0%
Guam	11/10/20	30	-94%	0.0%
Wisconsin	11/13/20	27	-47%	1.8%
Illinois	11/13/20	27	-33%	3.8%
Iowa	11/13/20	27	-64%	1.0%
South Dakota	11/14/20	26	-59%	0.3%
North Dakota	11/14/20	26	-74%	0.2%
Missouri	11/14/20	26	-35%	1.8%
Montana	11/15/20	25	-44%	0.3%
Michigan	11/18/20	22	-36%	3.0%
Wyoming	11/19/20	21	-58%	0.2%
Nebraska	11/19/20	21	-52%	0.6%
New Mexico	11/20/20	20	-50%	0.6%
Utah	11/21/20	19	-30%	1.0%
Colorado	11/21/20	19	-31%	1.7%
Washington	11/25/20	15	-37%	2.3%
Kansas	11/25/20	15	-56%	0.9%
Minnesota	11/30/20	10	-53%	1.7%
Texas	12/3/20	7	-13%	8.7%
Louisiana	12/3/20	7	-20%	1.4%
Kentucky	12/3/20	7	-6%	1.3%
Vermont	12/4/20	6	-36%	0.2%
Mississippi	12/4/20	6	-5%	0.9%
Rhode Island	12/5/20	5	-31%	0.3%
Pennsylvania	12/5/20	5	-14%	3.9%

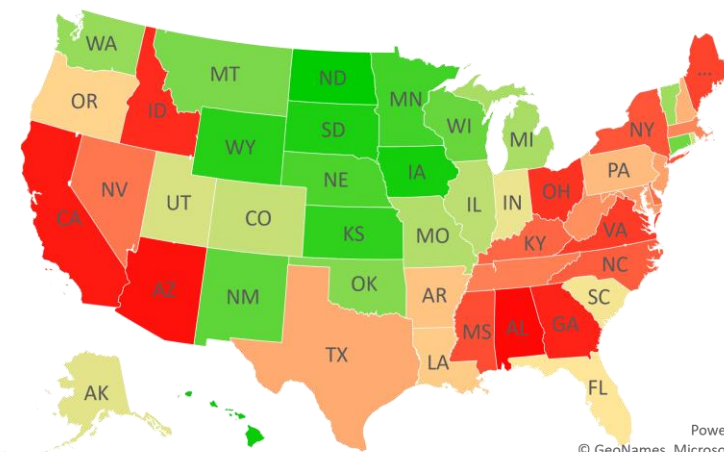
	Sorted			
	Peak Date	12/10/20	% off the Peak	% US Pop
United States	12/5/20	5	-3%	100%
States:				
New York	12/5/20	5	-6%	5.9%
Nevada	12/5/20	5	-8%	0.9%
Massachusetts	12/5/20	5	-10%	2.1%
Indiana	12/5/20	5	-27%	2.0%
District of Columbia	12/5/20	5	-24%	0.2%
Arkansas	12/5/20	5	-18%	0.9%
Alaska	12/5/20	5	-27%	0.2%
West Virginia	12/6/20	4	-10%	0.5%
South Carolina	12/6/20	4	-25%	1.6%
Oregon	12/6/20	4	-22%	1.3%
Oklahoma	12/6/20	4	-43%	1.2%
New Jersey	12/6/20	4	-12%	2.7%
North Carolina	12/6/20	4	-6%	3.2%
Maryland	12/6/20	4	-11%	1.8%
Puerto Rico	12/7/20	3	-51%	1.0%
Tennessee	12/9/20	1	-10%	2.1%
New Hampshire	12/9/20	1	-13%	0.4%
Maine	12/9/20	1	-2%	0.4%
Delaware	12/9/20	1	-6%	0.3%
Connecticut	12/9/20	1	-44%	1.1%
Virginia	12/10/20	0	0%	2.6%
Ohio	12/10/20	0	0%	3.5%
Idaho	12/10/20	0	0%	0.5%
Georgia	12/10/20	0	0%	3.2%
California	12/10/20	0	0%	11.9%
Arizona	12/10/20	0	0%	2.2%
Alabama	12/10/20	0	0%	1.5%

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)

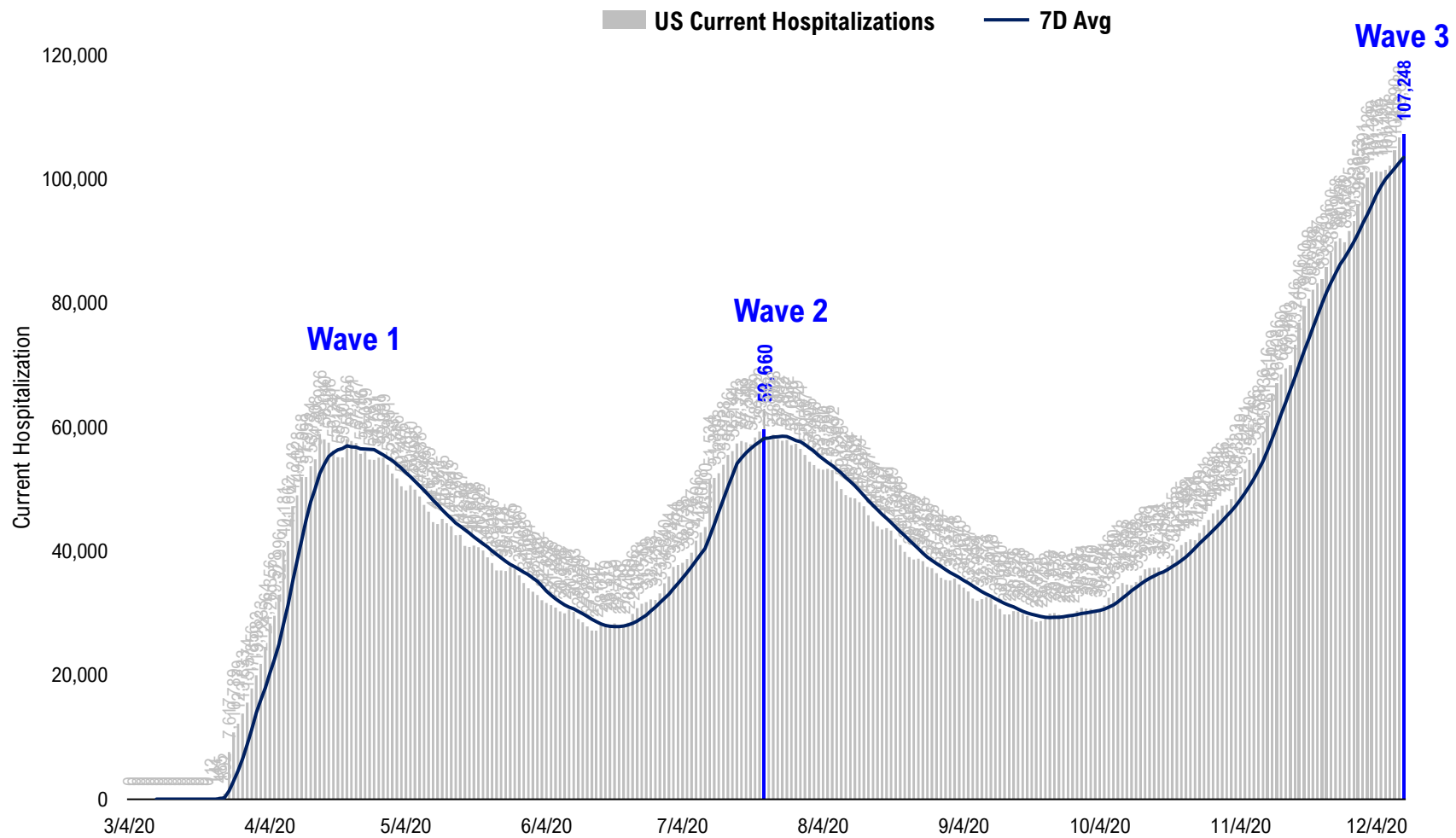
	Sorted				
	7D Ago	Last 3-day Trend			
	12/3/20	12/8/20	12/9/20	12/10/20	vs 7D ago
United States	205,892	197,003	209,307	213,446	+7,554
States:					
California	18,591	23,272	30,851	29,677	<--higher
Texas	13,857	15,095	10,930	12,211	
Pennsylvania	11,406	10,170	8,703	11,972	
Ohio	8,921	12,721	10,094	11,738	<--higher
Florida	10,870	7,985	9,592	11,335	
Illinois	10,959	7,910	8,256	11,101	
New York	9,855	9,335	10,600	10,178	
Indiana	8,460	5,385	5,754	6,518	
Georgia	4,373	3,686	3,744	6,062	<--higher
Tennessee	3,967	6,019	8,213	6,011	<--higher
Michigan	7,146	5,909	4,905	5,937	
North Carolina	5,637	4,670	6,495	5,556	
Massachusetts	5,995	4,122	5,965	5,369	
New Jersey	4,793	5,476	4,431	5,120	
Arizona	5,442	12,314	4,444	4,928	
Alabama	3,531	4,436	3,522	4,735	<--higher
Colorado	6,037	3,971	3,757	4,649	
Kentucky	3,836	3,076	3,468	4,314	
Wisconsin	4,618	4,114	3,619	4,034	
Virginia	2,023	3,860	4,398	3,915	<--higher
Missouri	3,998	3,250	2,640	3,858	
Minnesota	6,149	3,051	4,516	3,499	
Utah	3,945	2,333	2,574	3,401	
Maryland	2,044	2,632	2,692	3,202	<--higher
Washington	2,095	2,923	2,536	2,550	<--higher
Louisiana	2,774	2,429	4,339	2,542	
Oklahoma	1,707	2,297	2,307	2,460	<--higher
Connecticut	4,751	2,414	2,290	2,431	

	Sorted				
	7D Ago	Last 3-day Trend			
	12/3/20	12/8/20	12/9/20	12/10/20	vs 7D ago
United States	205,892	197,003	209,307	213,446	+7,554
States:					
Mississippi	2,168	1,732	2,746	2,283	
Nevada	2,536	2,694	3,053	2,193	
South Carolina	2,314	2,216	2,311	1,946	
Idaho	1,721	2,012	2,298	1,825	
New Mexico	1,899	1,255	1,748	1,781	
Arkansas	2,017	1,437	1,757	1,704	
Iowa	2,196	830	1,797	1,683	
Oregon	1,133	1,294	1,205	1,551	<--higher
Nebraska	2,336	1,293	1,476	1,321	
West Virginia	1,120	932	1,402	1,233	
Rhode Island	1,717	1,249	1,232	948	
Montana	782	755	787	759	
South Dakota	1,145	538	985	704	
New Hampshire	593	807	969	681	
Delaware	758	753	929	643	
Alaska	760	562	584	620	
North Dakota	970	0	885	558	
Puerto Rico	340	562	432	422	<--higher
Maine	346	274	405	407	
Wyoming	571	490	410	338	
District of Columbia	322	270	265	244	
Vermont	178	100	105	128	
Hawaii	142	53	80	123	
U.S. Virgin Islands	26	31	18	35	<--higher
Guam	22	7	13	13	
Northern Mariana Islands	0	2	2	0	
Kansas	0	0	5,778	0	
American Samoa	0	0	0	0	

<--higher - if the state has 20% more daily cases than 7D ago...
 Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

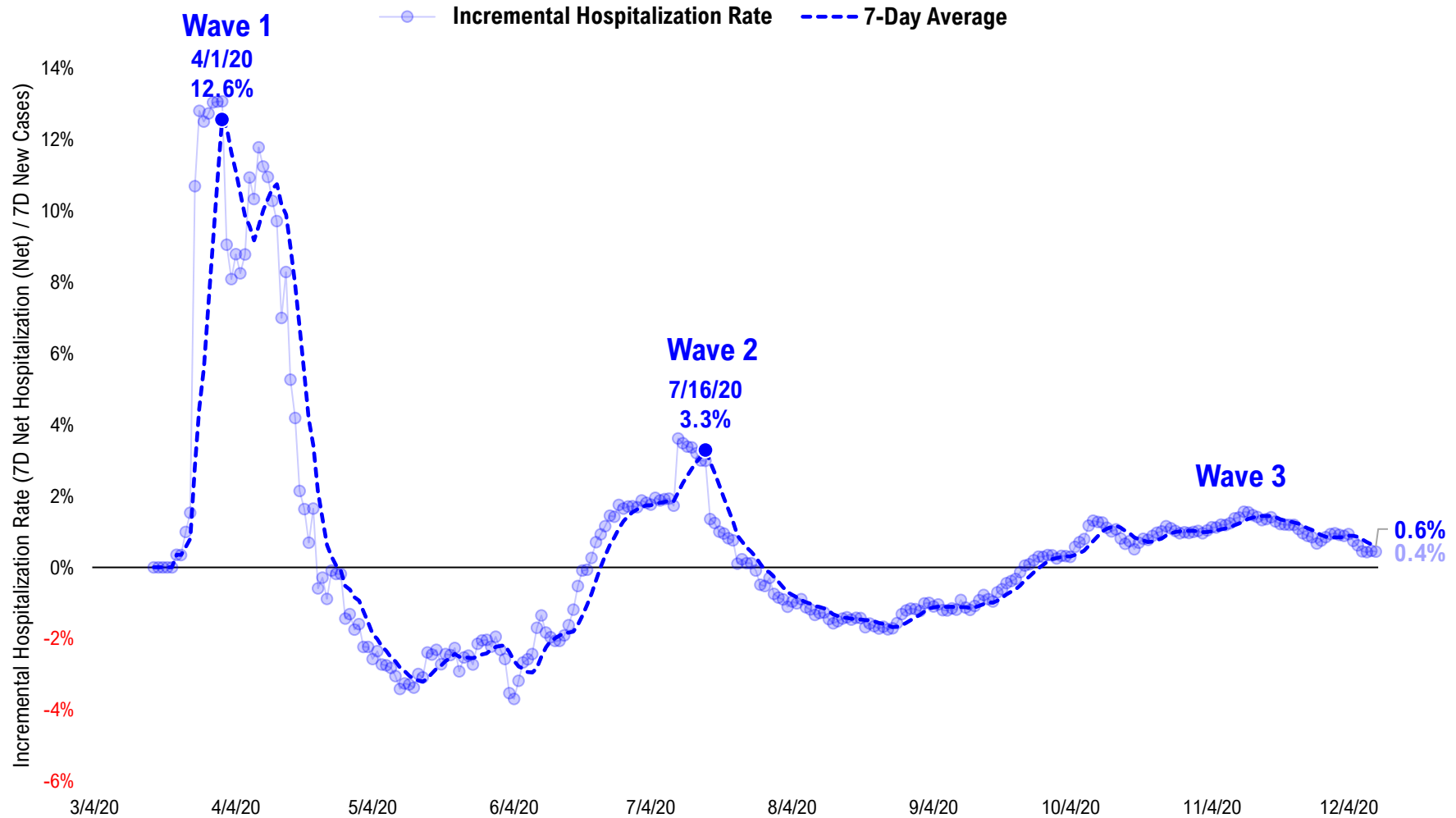
#7: US Daily Hospitalizations...

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



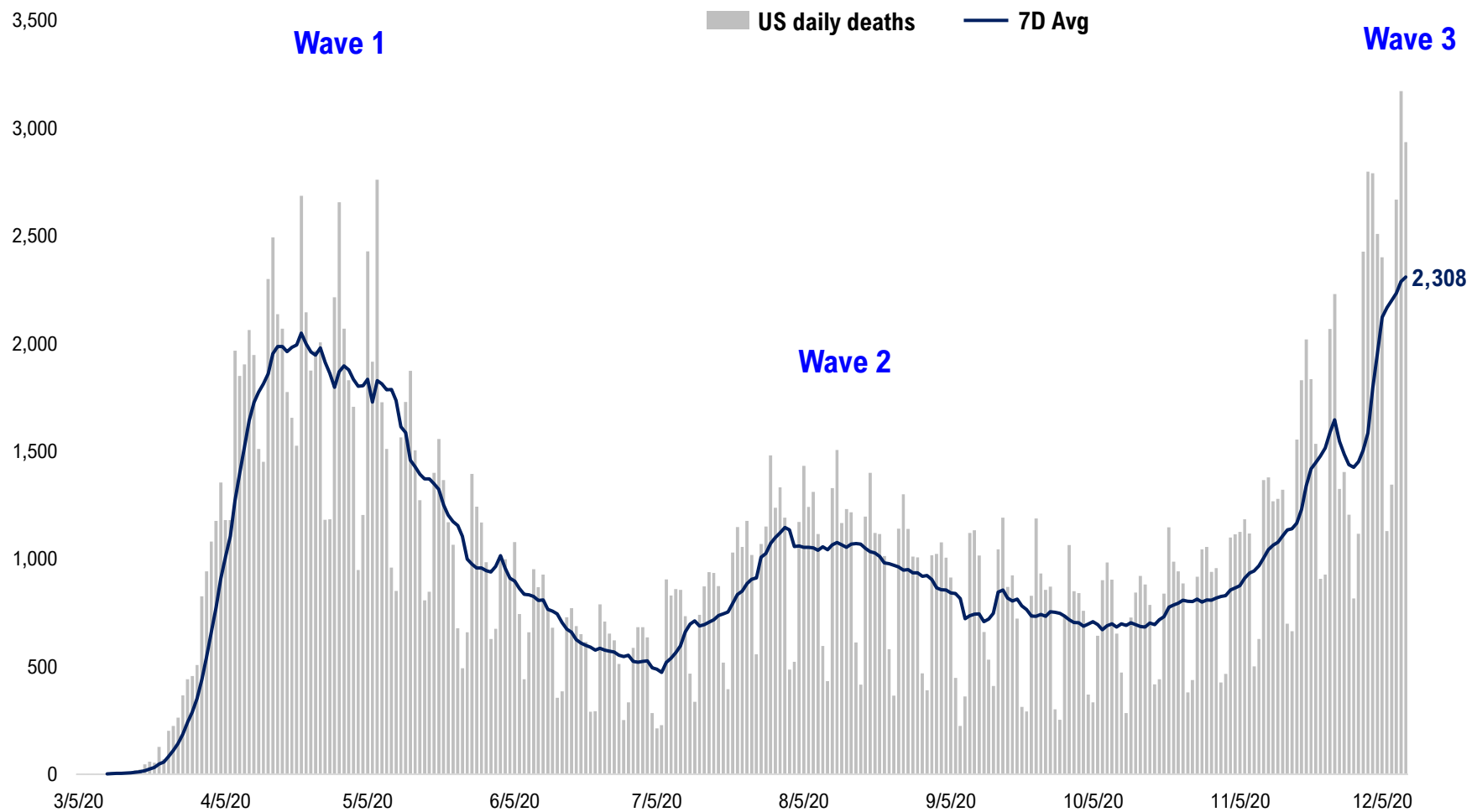
#8: Incremental Hospitalization Rate...

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

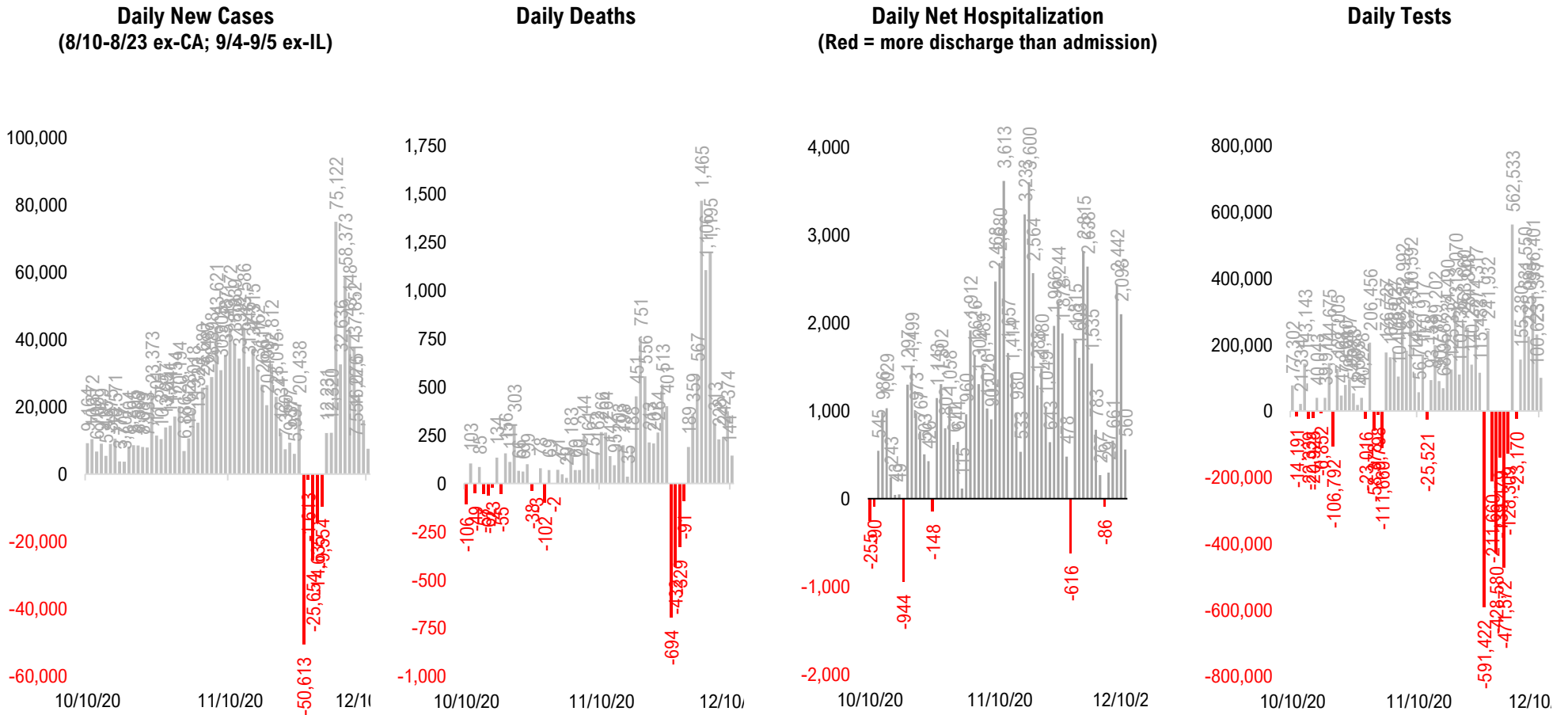


#9: US Daily New Fatalities...

US daily COVID-19 Fatalities

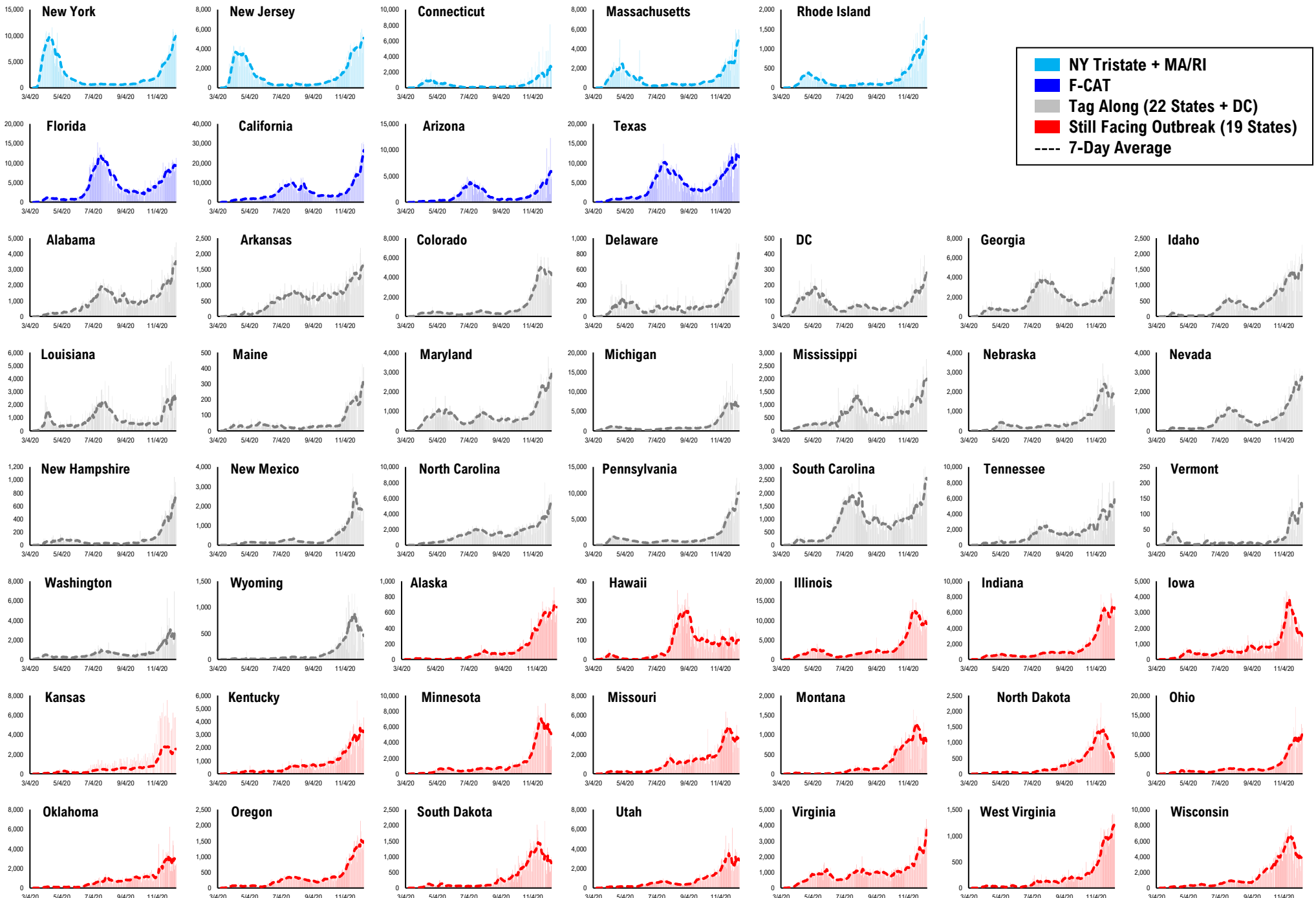


#10: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

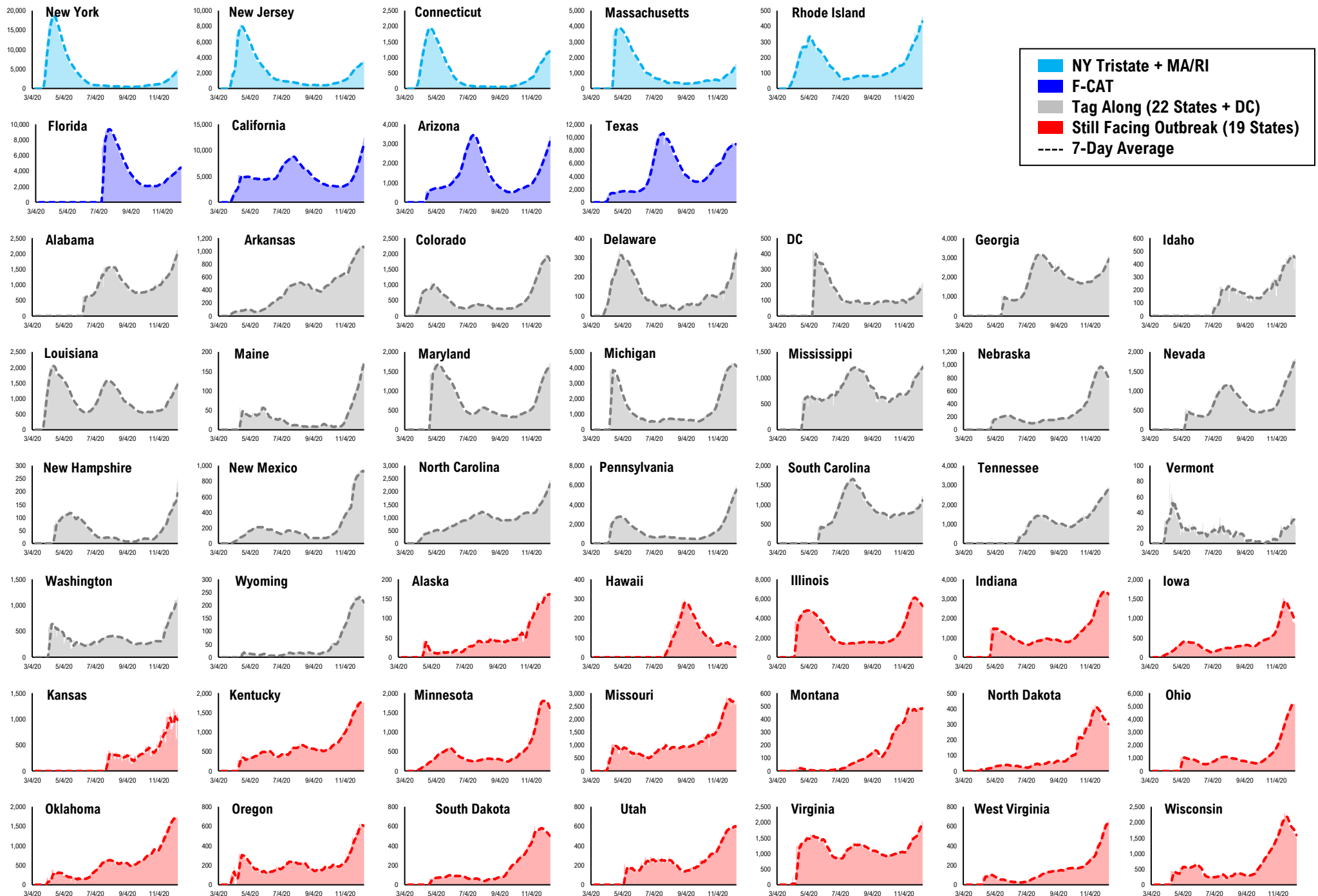


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

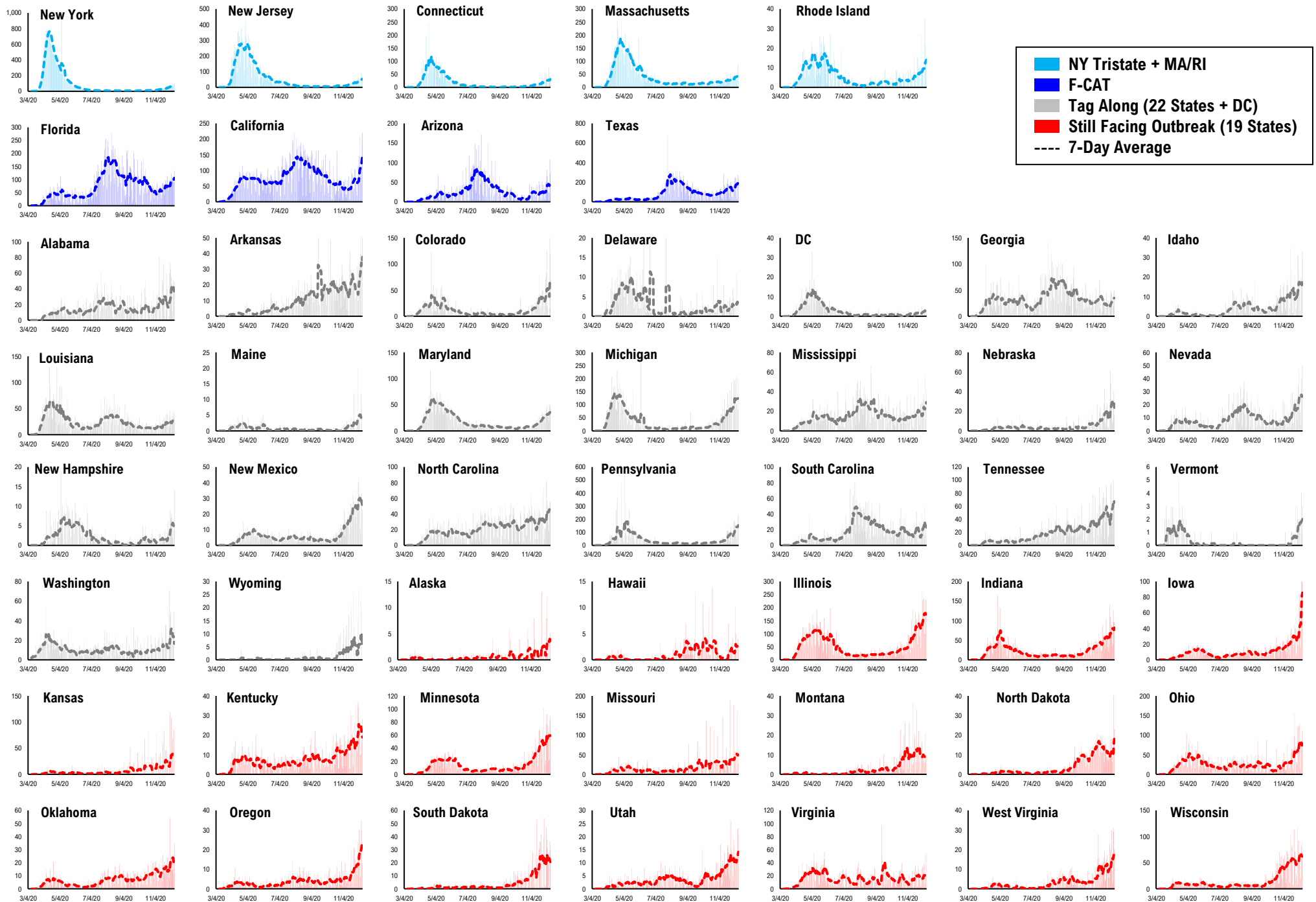
#11: Daily New Cases by States...



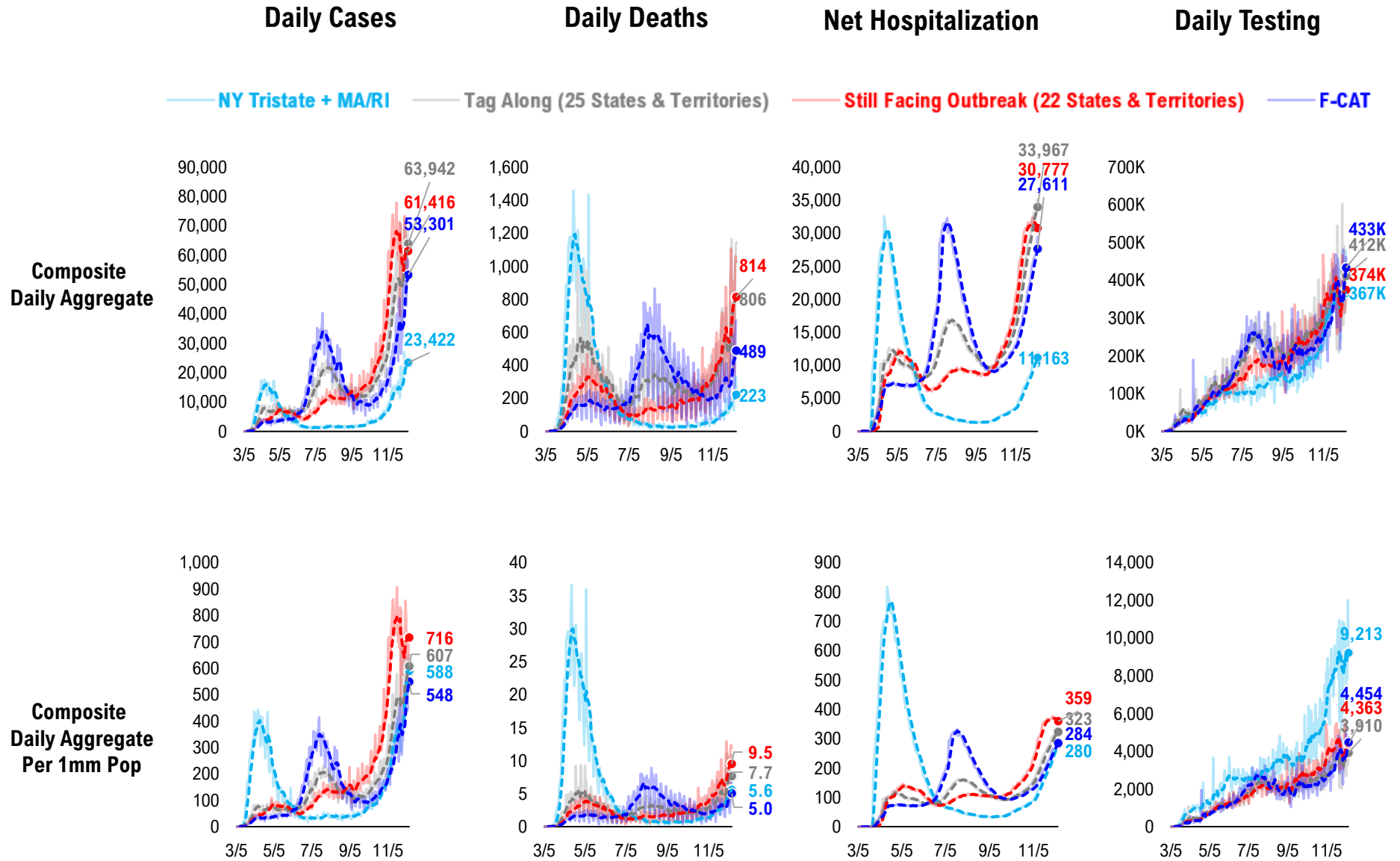
#12: Current Hospitalizations by States...



#13: Daily New Deaths by States...

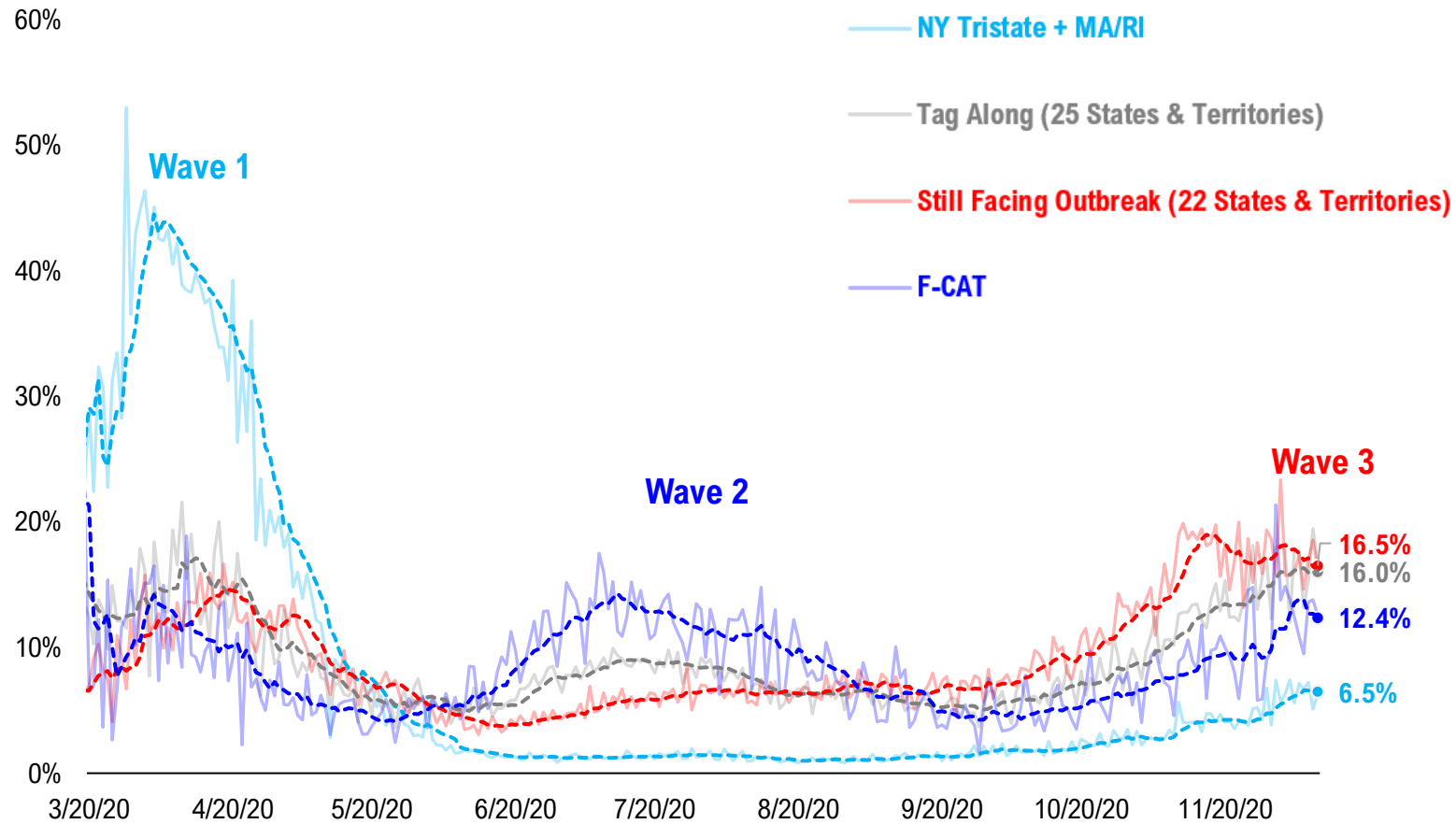


#14: State COVID-19 situation by Tier...

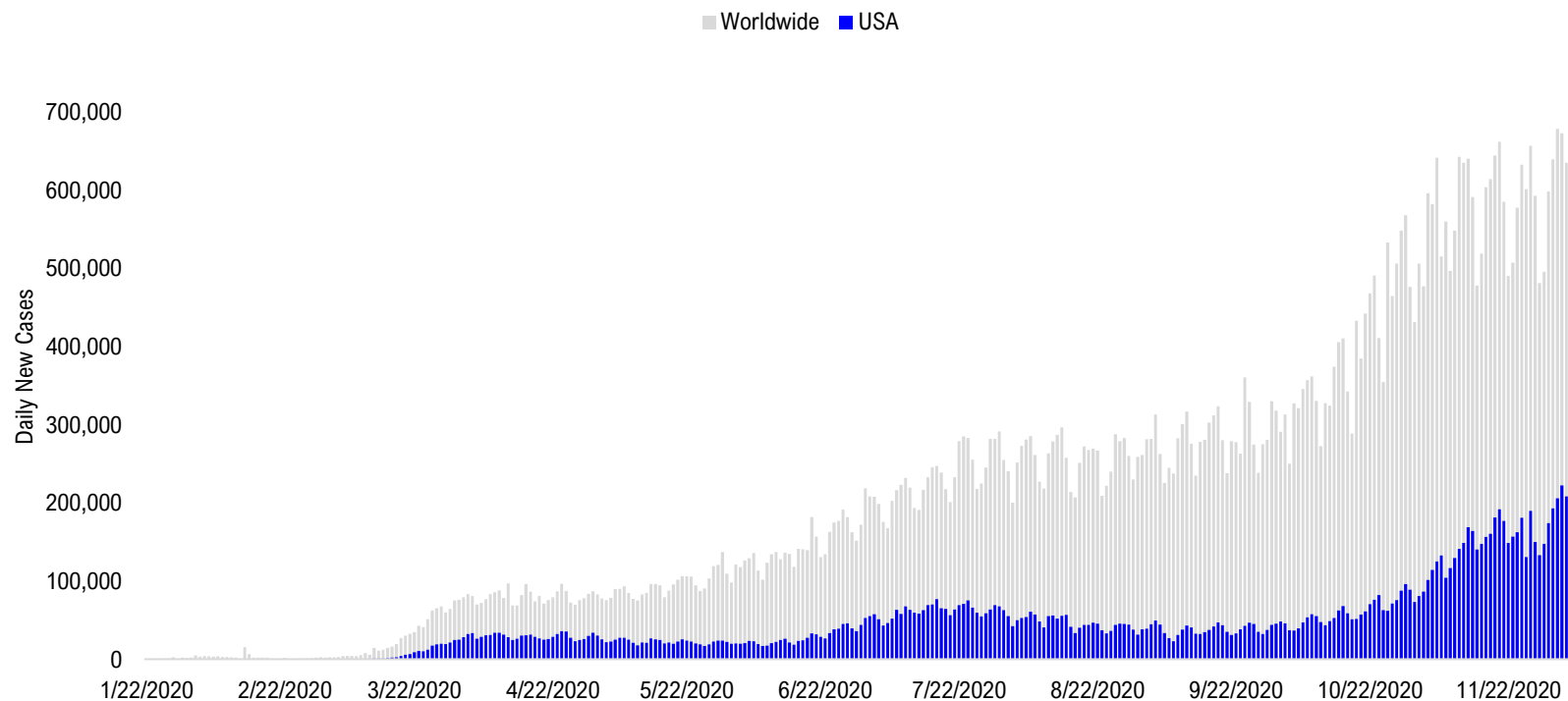


#15: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Jul 24	Aug 7	Aug 21	Sep 4	Sep 18	Oct 2	Oct 16	Oct 30	Nov 13	Nov 27	Dec 9
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 274,422	Europe 228,882
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 89,511	US + Canada 157,634	US + Canada 172,661	US + Canada 201,139
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 75,171	Latin America 73,146
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 48,359	Pakistan + India + Bangladesh 35,238
Europe 18,765	Africa 14,390	Asia ex- India+Pakistan 10,921	Asia ex- India+Pakistan 9,069	Asia ex- India+Pakistan 11,067	Asia ex- India+Pakistan 11,658	Asia ex- India+Pakistan 13,788	Asia ex- India+Pakistan 12,846	Africa 14,829	Asia ex- India+Pakistan 16,287	Asia ex- India+Pakistan 15,804
Asia ex- India+Pakistan 8,636	Asia ex- India+Pakistan 12,060	Africa 10,566	Africa 8,318	Africa 7,997	Africa 8,146	Africa 10,428	Africa 12,181	Asia ex- India+Pakistan 14,319	Africa 14,762	Africa 14,387

Disclosures

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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.

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