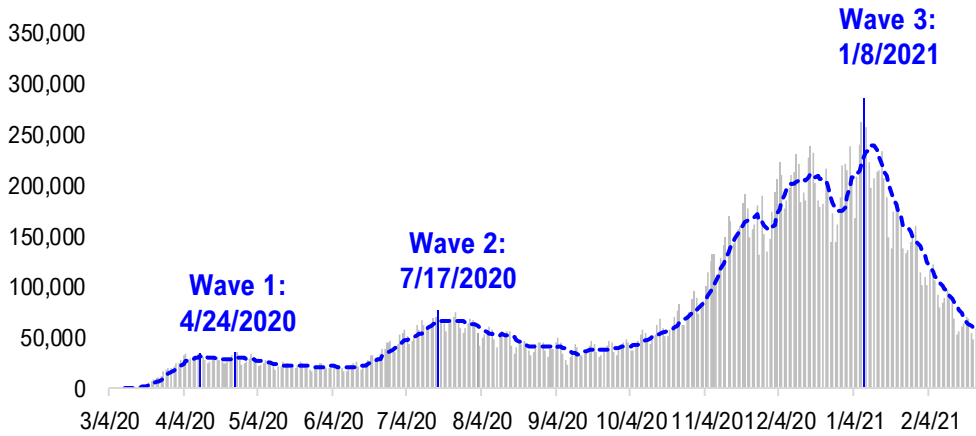


FSInsight Daily COVID-19 Chartbook

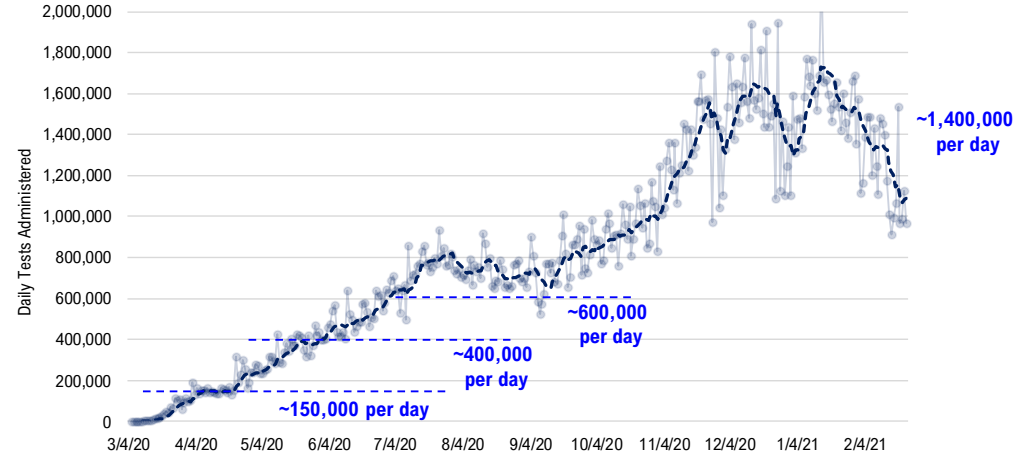


#1: USA COVID-19 Situation at a Glance...

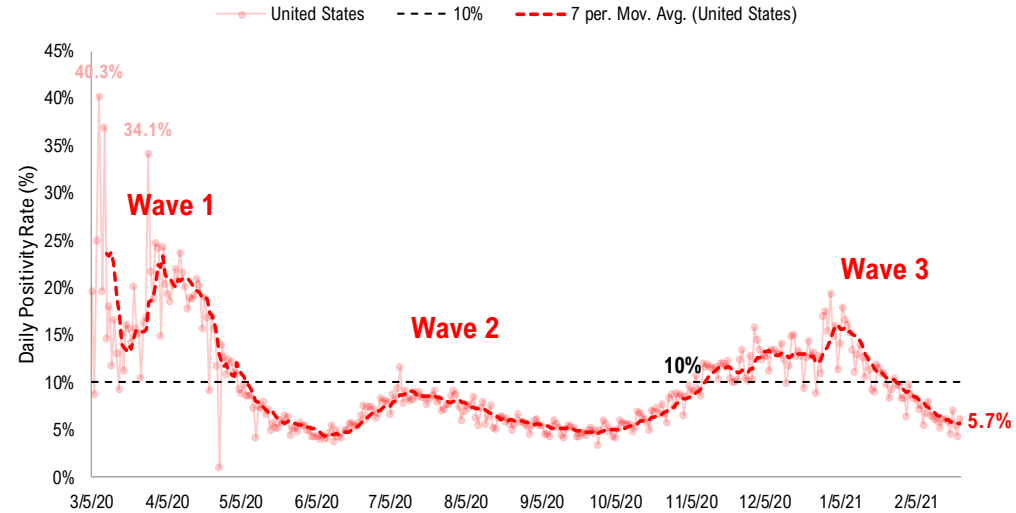
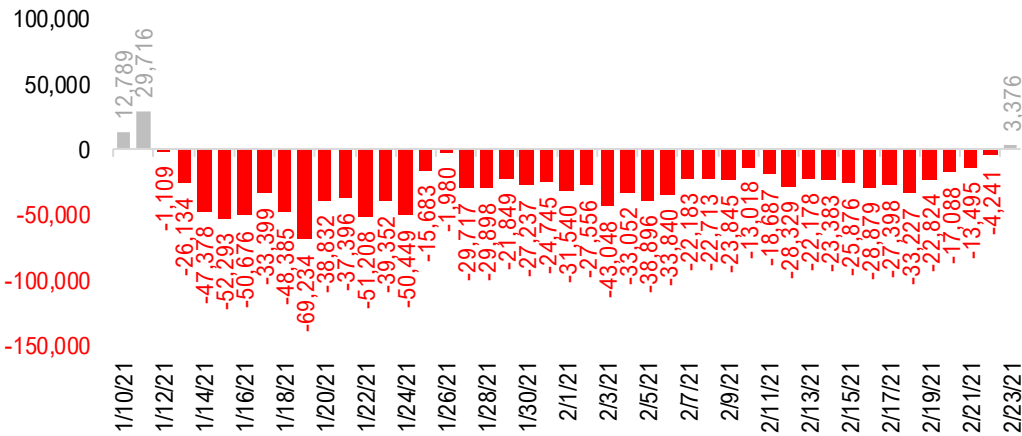
US daily new cases



USA total COVID-19 tests administered

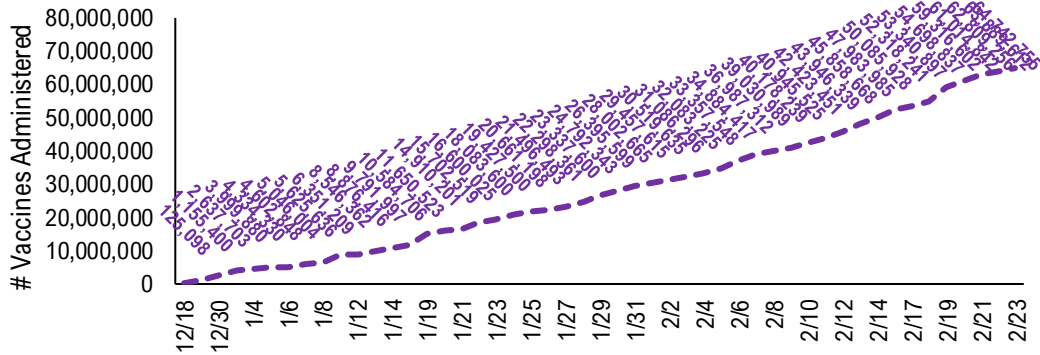


US daily new cases rolling 7D delta

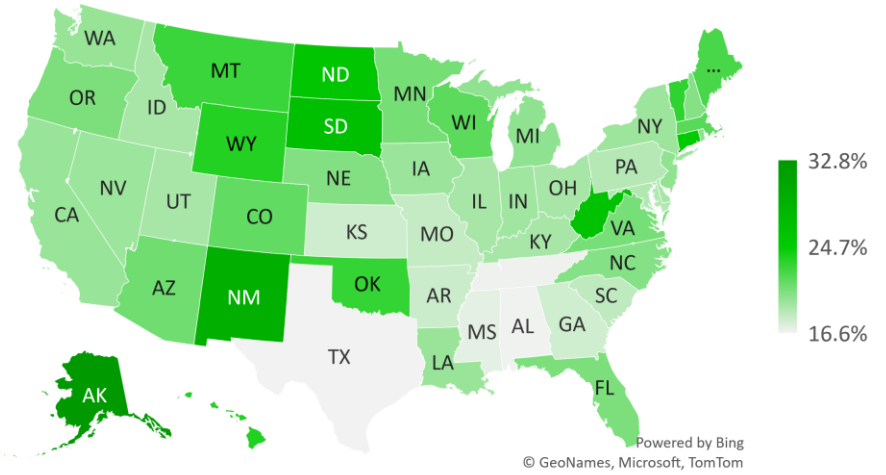


#2: USA COVID-19 Vaccination Progress at a Glance...

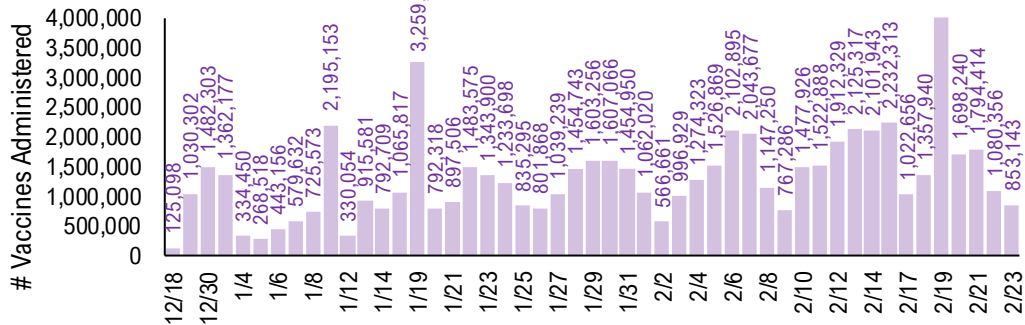
Cumulative Vaccines Administered



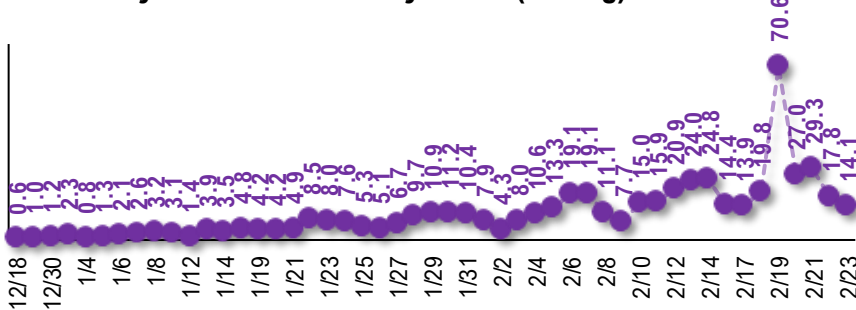
Cumulative Vaccines Administered as % State Population



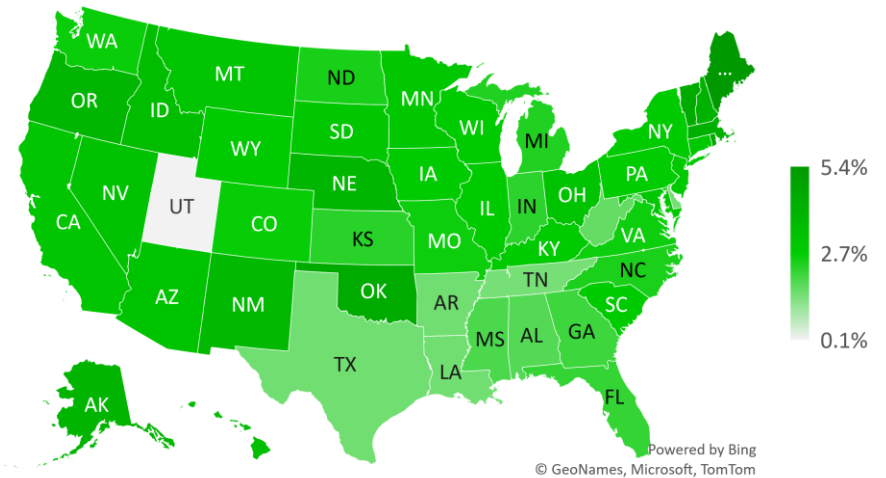
Daily Vaccines Administered



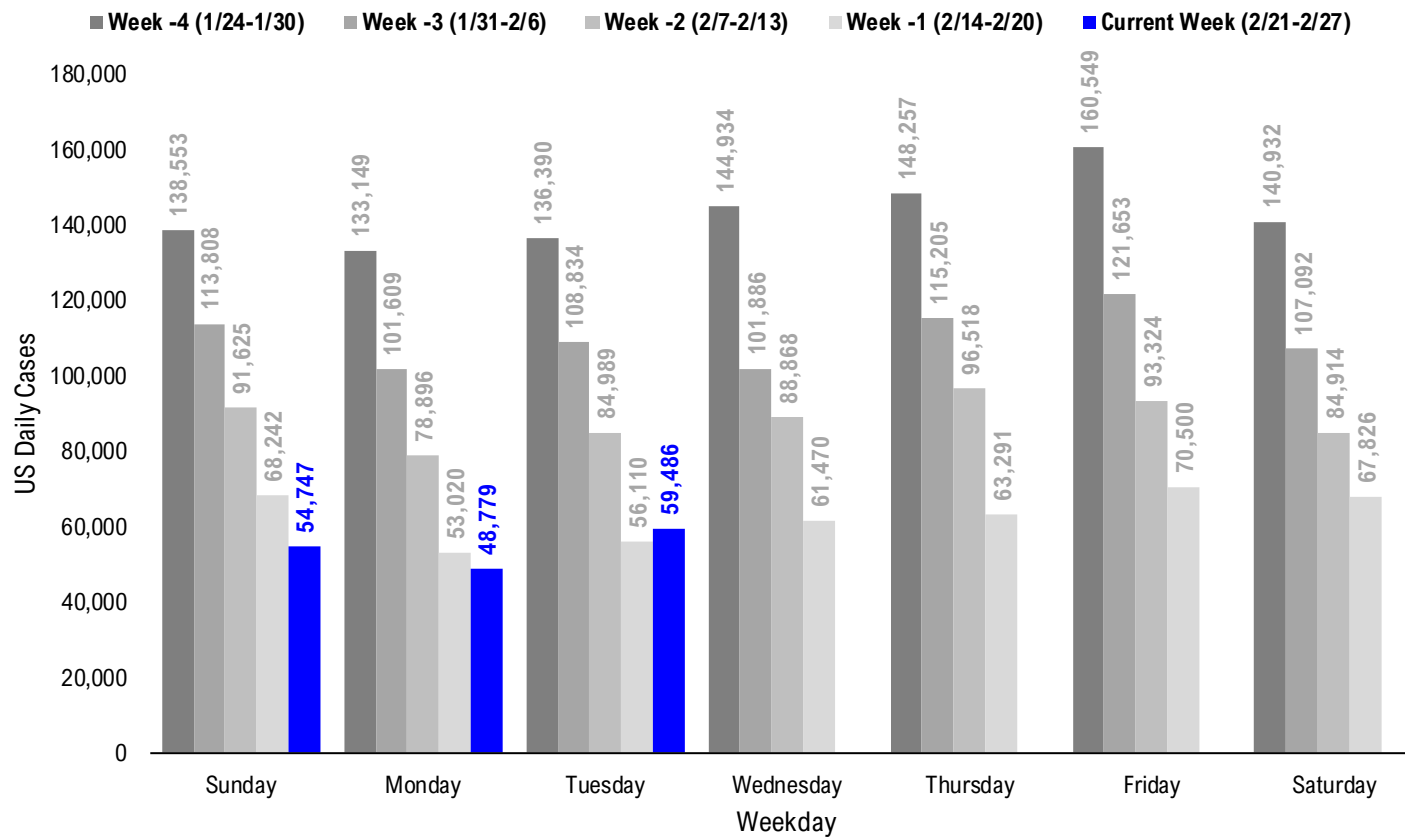
Daily Vaccinations / Daily Cases (7D Avg)



Implied Weekly Vaccines Administered as % State Population



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



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

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases		
			2/23	Delta				2/23	Delta	7D Net Hospitalization
United States	100%	100%	59.486	+3.376	166	-15	45	-80%	-9.475	-2.2%

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Hospitalization			
	% US Pop	% US GDP	7D		# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases		
			2/23	Delta				2/23	Delta	7D Net Hospitalization
United States	100%	100%	59.486	+3.376	166	-15	45	-80%	-9.475	-2.2%

States:

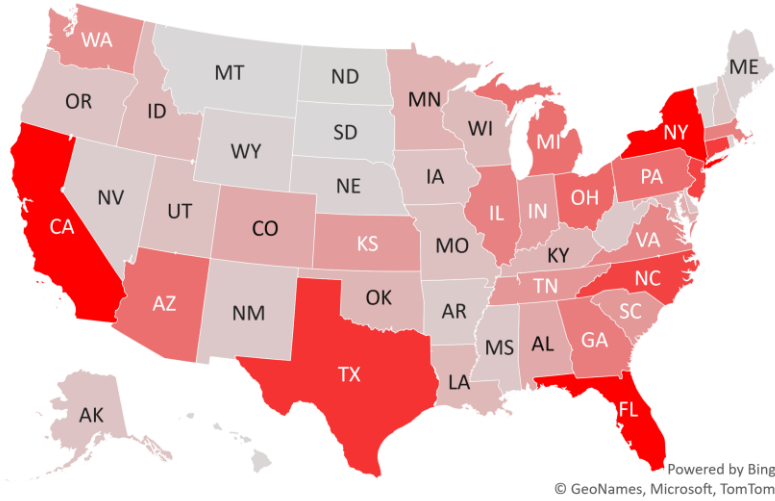
1 Texas	8.7%	8.8%	7,556	+4,248	156	+17	47	-79%	-647	(2.5%)
2 New York	5.9%	8.1%	6,654	-99	333	-35	45	-64%	-643	(1.3%)
3 Florida	6.5%	5.0%	5,610	-687	230	-8	46	-74%	-448	(1.1%)
4 California	11.9%	14.6%	3,447	-2,245	125	-52	44	-90%	-2,167	(5.7%)
5 Pennsylvania	3.9%	3.8%	2,830	+453	163	-17	80	-83%	-393	(2.1%)
6 Ohio	3.5%	3.3%	2,775	+749	167	+3	75	-83%	-207	(1.4%)
7 New Jersey	2.7%	3.0%	2,484	-598	242	+14	45	-65%	-364	(2.0%)
8 Georgia	3.2%	2.9%	2,297	+457	159	-7	44	-81%	-423	(3.0%)
9 Virginia	2.6%	2.6%	1,769	-1	204	-26	36	-78%	-228	(1.7%)
10 Illinois	3.8%	4.2%	1,665	+317	118	+3	102	-89%	-238	(1.9%)
11 North Carolina	3.2%	2.7%	1,514	-474	197	-45	45	-81%	-395	(2.0%)
12 Kentucky	1.3%	1.0%	1,487	+246	223	-51	46	-80%	-41	(0.5%)
13 Alabama	1.5%	1.1%	1,453	+570	203	+24	47	-80%	-342	(5.3%)
14 Louisiana	1.4%	1.3%	1,393	+1,393	270	+140	47	-76%	-134	(2.4%)
15 Connecticut	1.1%	1.3%	1,357	+777	336	+10	41	-75%	-95	(1.6%)
16 Michigan	3.0%	2.6%	1,316	+541	93	+25	97	-89%	-48	(0.7%)
17 Massachusetts	2.1%	2.8%	1,237	+11	194	-32	45	-83%	-217	(1.9%)
18 Arizona	2.2%	1.7%	1,184	+52	206	+4	51	-88%	-532	(4.9%)
19 Colorado	1.7%	1.8%	1,096	+428	149	+30	94	-86%	6	0.1%
20 South Carolina	1.6%	1.1%	874	-258	241	-147	44	-82%	-253	(2.2%)
21 Utah	1.0%	0.9%	716	+125	182	-1	46	-86%	-26	(0.5%)
22 Indiana	2.0%	1.8%	679	-199	118	-25	80	-90%	-145	(2.2%)
23 Maryland	1.8%	2.0%	662	+146	104	-11	44	-82%	-132	(2.4%)
24 Washington	2.3%	2.7%	582	-958	71	+3	90	-87%	-139	(2.8%)
25 Wisconsin	1.8%	1.6%	566	-58	80	-8	102	-94%	-64	(1.5%)
26 Oregon	1.3%	1.2%	511	+100	74	+7	79	-82%	-35	(1.3%)
27 Minnesota	1.7%	1.8%	500	+48	114	+6	85	-92%	-46	(0.8%)
28 Missouri	1.8%	1.5%	443	-38	65	-10	101	-92%	-182	(5.0%)

States:

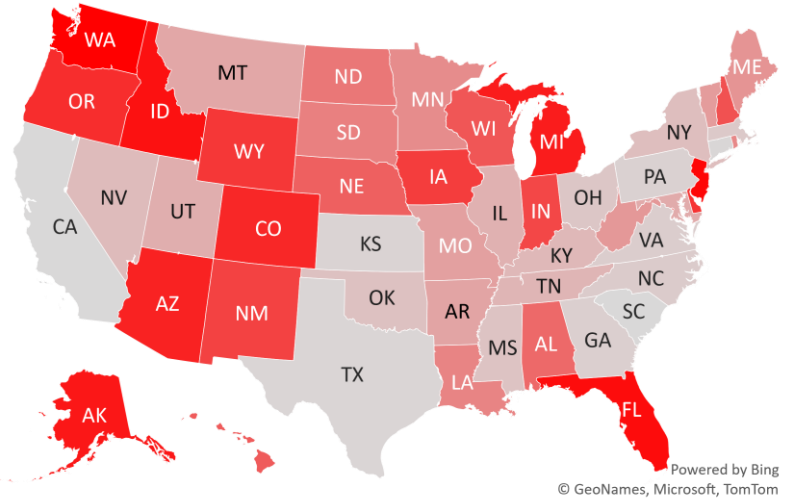
29 Arkansas	0.9%	0.6%	419	+325	85	-3	44	-89%	-93	(5.1%)
30 Nevada	0.9%	0.8%	398	+108	94	-35	45	-90%	-192	(7.8%)
31 Oklahoma	1.2%	1.0%	359	-149	160	-51	44	-88%	-153	(2.8%)
32 Nebraska	0.6%	0.6%	357	+238	112	+40	96	-92%	-11	(0.6%)
33 Mississippi	0.9%	0.6%	348	-386	110	-156	45	-89%	-31	(1.2%)
34 New Mexico	0.6%	0.5%	312	+13	137	+14	95	-91%	-29	(1.3%)
35 West Virginia	0.5%	0.4%	285	+57	144	-11	51	-86%	-25	(1.2%)
36 Rhode Island	0.3%	0.3%	282	-3	225	-30	80	-86%	-27	(1.2%)
37 Idaho	0.5%	0.4%	282	-180	134	+47	75	-88%	-70	(3.6%)
38 New Hampshire	0.4%	0.4%	258	+60	187	+13	50	-77%	-7	(0.3%)
39 Iowa	1.0%	0.9%	241	-51	90	-1	102	-93%	-28	(1.1%)
40 Montana	0.3%	0.2%	230	+103	124	+9	100	-90%	-11	(0.8%)
41 South Dakota	0.3%	0.3%	212	-5	144	-3	101	-93%	-6	(0.6%)
42 Maine	0.4%	0.3%	142	+51	92	+5	39	-85%	-25	(2.6%)
43 Delaware	0.3%	0.4%	138	+8	239	+0	45	-75%	-5	(0.3%)
44 Puerto Rico	1.0%	0.5%	136	-316	51	-45	66	-85%	5	0.5%
45 North Dakota	0.2%	0.3%	104	-34	82	-18	101	-97%	-15	(2.4%)
46 District of Columbi	0.2%	0.7%	89	-41	137	-21	44	-72%	7	1.0%
47 Vermont	0.2%	0.2%	83	+28	177	-13	45	-47%	-5	(0.6%)
48 Alaska	0.2%	0.3%	53	-401	165	-42	80	-85%	-5	(0.6%)
49 Hawaii	0.4%	0.5%	47	+30	38	+16	178	-81%	-1	(0.3%)
50 Wyoming	0.2%	0.2%	44	-171	150	-2	96	-91%	-13	(2.2%)
51 U.S. Virgin Islands	0.0%	0.0%	10	+10	44	-12	186	-90%	0	0.0%
52 Tennessee	2.1%	1.8%	0	-962	102	-67	67	-93%	-90	(1.4%)
53 Northern Mariana	0.0%	0.0%	0	+0	47	+47	119	-33%	0	0.0%
54 Kansas	0.9%	0.8%	0	+0	101	-53	90	-93%	-65	(1.5%)
55 Guam	0.0%	0.0%	0	-2	22	+4	105	-98%	-2	(7.7%)
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	

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

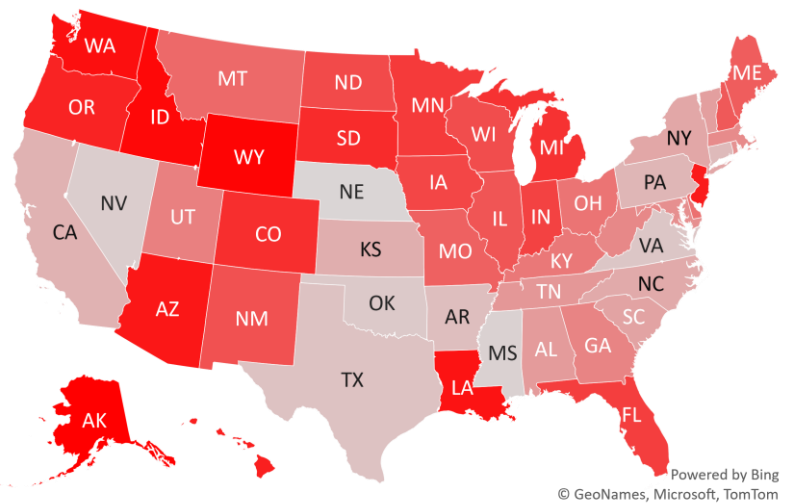
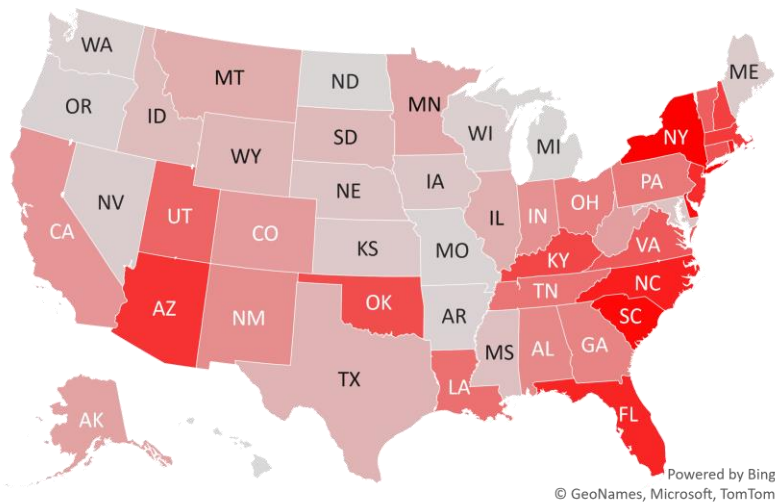
Daily Case Increases



7D Delta in Daily New Cases



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



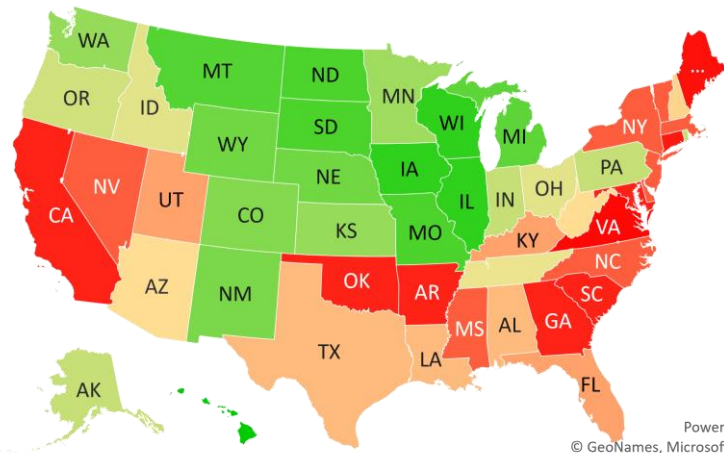
#6: # of Days since Daily Case Peaked by States...

Days since Daily Cases (3D Avg) Peak (as of 2/23)

Sorted				
	Peak Date	2/23/21	% off the Peak	% US Pop
United States	1/9/21	44	-79%	100%
States:				
U.S. Virgin Islands	8/21/20	185	-90%	0.0%
Hawaii	8/29/20	177	-80%	0.4%
Northern Mariana Island	10/27/20	118	-33%	0.0%
Guam	11/10/20	104	-98%	0.0%
Wisconsin	11/13/20	101	-93%	1.8%
Illinois	11/13/20	101	-88%	3.8%
Iowa	11/13/20	101	-92%	1.0%
South Dakota	11/14/20	100	-94%	0.3%
North Dakota	11/14/20	100	-97%	0.2%
Missouri	11/14/20	100	-91%	1.8%
Montana	11/15/20	99	-90%	0.3%
Michigan	11/18/20	96	-92%	3.0%
Wyoming	11/19/20	95	-93%	0.2%
Nebraska	11/19/20	95	-93%	0.6%
New Mexico	11/20/20	94	-90%	0.6%
Colorado	11/21/20	93	-86%	1.7%
Washington	11/25/20	89	-86%	2.3%
Kansas	11/25/20	89	-93%	0.9%
Minnesota	11/30/20	84	-90%	1.7%
Rhode Island	12/5/20	79	-83%	0.3%
Pennsylvania	12/5/20	79	-83%	3.9%
Indiana	12/5/20	79	-87%	2.0%
Alaska	12/5/20	79	-87%	0.2%
Oregon	12/6/20	78	-82%	1.3%
Ohio	12/10/20	74	-84%	3.5%
Idaho	12/10/20	74	-90%	0.5%
Tennessee	12/18/20	66	-89%	2.1%
Puerto Rico	12/19/20	65	-84%	1.0%

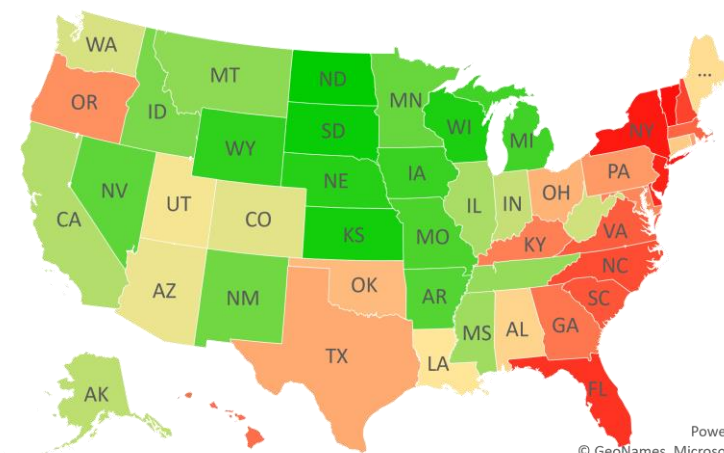
Sorted				
	Peak Date	2/23/21	% off the Peak	% US Pop
United States	1/9/21	44	-79%	100%
States:				
West Virginia	1/3/21	50	-86%	0.5%
Arizona	1/3/21	50	-85%	2.2%
New Hampshire	1/4/21	49	-73%	0.4%
Texas	1/7/21	46	-83%	8.7%
Louisiana	1/7/21	46	-85%	1.4%
Alabama	1/7/21	46	-85%	1.5%
Utah	1/8/21	45	-85%	1.0%
Kentucky	1/8/21	45	-81%	1.3%
Florida	1/8/21	45	-71%	6.5%
Vermont	1/9/21	44	-44%	0.2%
New York	1/9/21	44	-62%	5.9%
Nevada	1/9/21	44	-91%	0.9%
New Jersey	1/9/21	44	-64%	2.7%
North Carolina	1/9/21	44	-75%	3.2%
Mississippi	1/9/21	44	-89%	0.9%
Massachusetts	1/9/21	44	-79%	2.1%
Delaware	1/9/21	44	-67%	0.3%
South Carolina	1/10/21	43	-76%	1.6%
Oklahoma	1/10/21	43	-84%	1.2%
Maryland	1/10/21	43	-82%	1.8%
Georgia	1/10/21	43	-81%	3.2%
District of Columbia	1/10/21	43	-72%	0.2%
California	1/10/21	43	-88%	11.9%
Arkansas	1/10/21	43	-91%	0.9%
Connecticut	1/13/21	40	-85%	1.1%
Maine	1/15/21	38	-85%	0.4%
Virginia	1/18/21	35	-78%	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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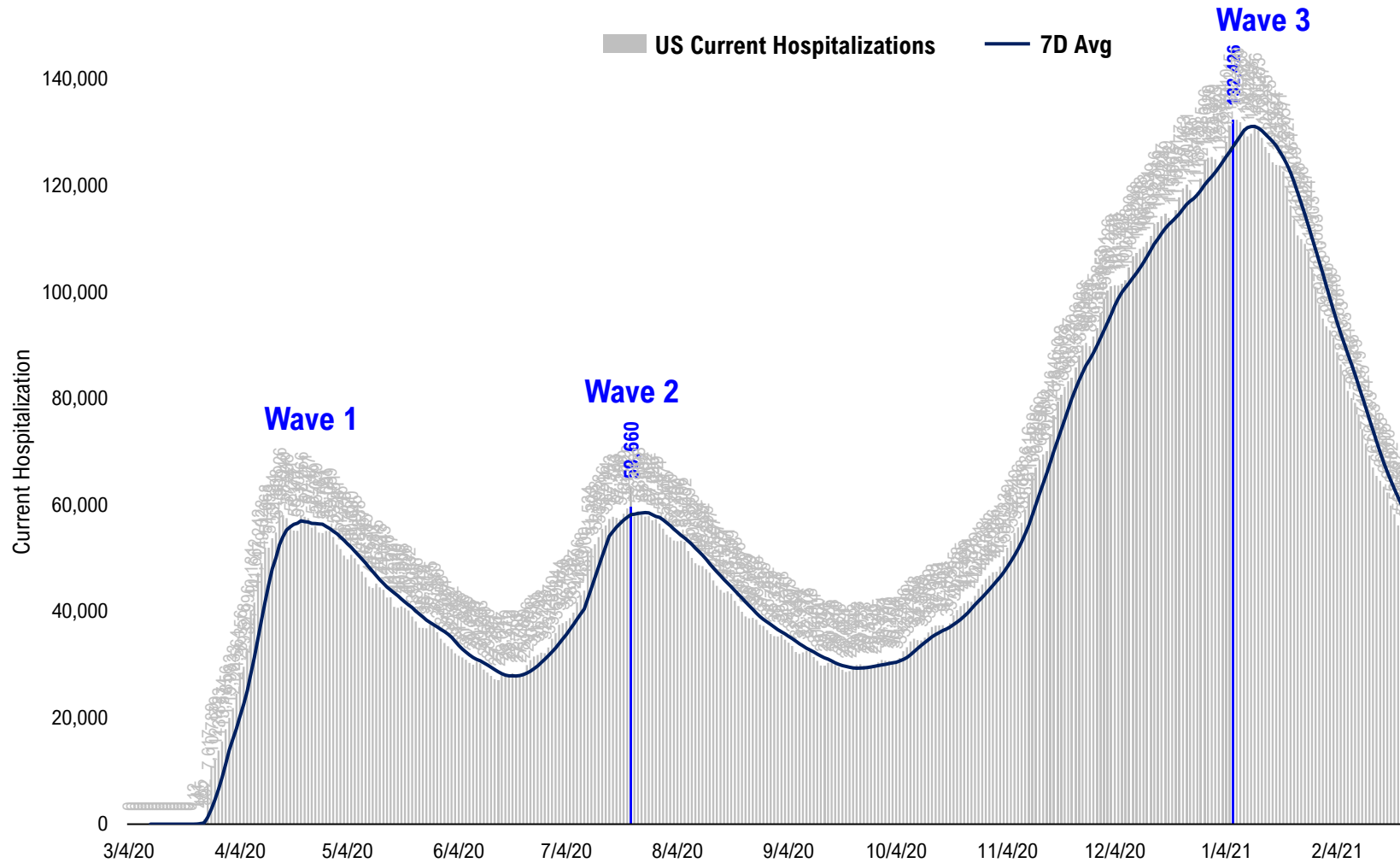
#7: US New Cases by States... (sorted by today's new cases)

	Sorted				
	7D Ago	Last 3-day Trend			
	2/16/21	2/21/21	2/22/21	2/23/21	vs 7D ago
United States	56,110	54,747	48,779	59,486	+3,376
States:					
Texas	3,308	3,617	2,355	7,556	<--higher
New York	6,753	6,610	6,146	6,654	
Florida	6,297	5,065	4,151	5,610	
California	5,692	6,760	4,665	3,447	
Pennsylvania	2,377	1,906	1,521	2,830	
Ohio	2,026	1,461	1,611	2,775	<--higher
New Jersey	3,082	1,809	2,156	2,484	
Georgia	1,840	1,463	1,307	2,297	<--higher
Virginia	1,770	2,303	1,155	1,769	
Illinois	1,348	1,585	1,246	1,665	<--higher
North Carolina	1,988	2,541	2,133	1,514	
Kentucky	1,241	979	529	1,487	
Alabama	883	857	677	1,453	<--higher
Louisiana	0	1,909	468	1,393	
Connecticut	580	0	2,233	1,357	<--higher
Michigan	775	0	1,484	1,316	<--higher
Massachusetts	1,226	1,520	1,262	1,237	
Arizona	1,132	1,804	1,507	1,184	
Colorado	668	802	680	1,096	<--higher
South Carolina	1,132	1,870	976	874	
Utah	591	701	338	716	<--higher
Indiana	878	881	817	679	
Maryland	516	618	611	662	<--higher
Washington	1,540	0	1,037	582	
Wisconsin	624	403	423	566	
Oregon	411	107	316	511	<--higher
Minnesota	452	879	555	500	
Missouri	481	410	351	443	

	Sorted				
	7D Ago	Last 3-day Trend			
	2/16/21	2/21/21	2/22/21	2/23/21	vs 7D ago
United States	56,110	54,747	48,779	59,486	+3,376
States:					
Arkansas	94	160	195	419	<--higher
Nevada	290	301	173	398	<--higher
Oklahoma	508	1,036	499	359	
Nebraska	119	198	96	357	<--higher
Mississippi	734	390	242	348	
New Mexico	299	314	234	312	
West Virginia	228	252	238	285	<--higher
Rhode Island	285	273	159	282	
Idaho	462	0	434	282	
New Hampshire	198	252	252	258	<--higher
Iowa	292	302	312	241	
Montana	127	138	31	230	<--higher
South Dakota	217	139	30	212	
Maine	91	130	97	142	<--higher
Delaware	130	201	358	138	
Puerto Rico	452	203	153	136	
North Dakota	138	49	35	104	
District of Columbia	130	95	107	89	
Vermont	55	134	115	83	<--higher
Alaska	454	0	309	53	
Hawaii	17	67	49	47	<--higher
Wyoming	215	112	105	44	
U.S. Virgin Islands	0	0	4	10	
Tennessee	962	1,129	952	0	
Northern Mariana Islands	0	8	0	0	
Kansas	0	0	883	0	
Guam	2	4	7	0	
American Samoa	0	0	0	0	

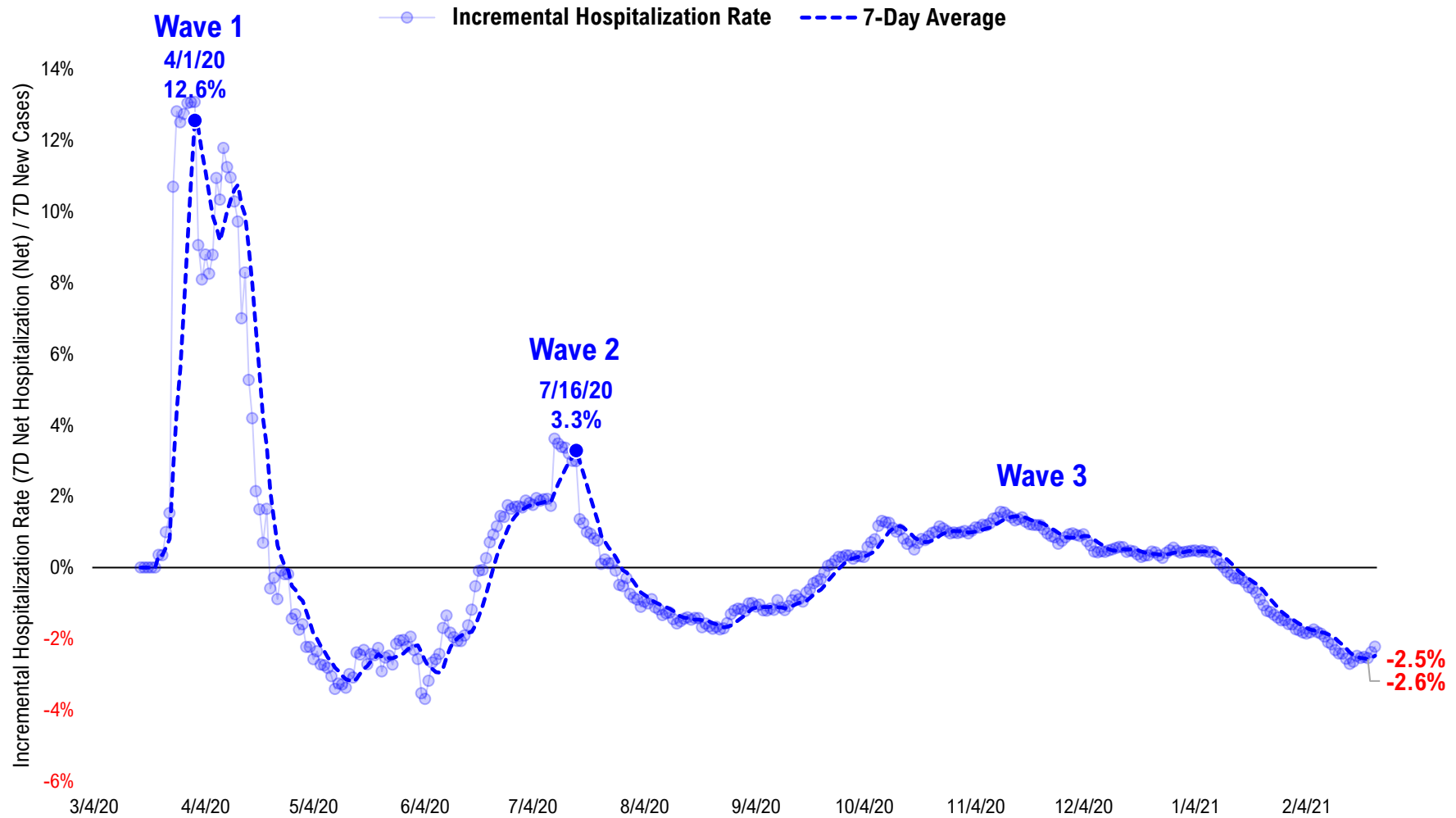
#8: US Daily Hospitalizations...

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



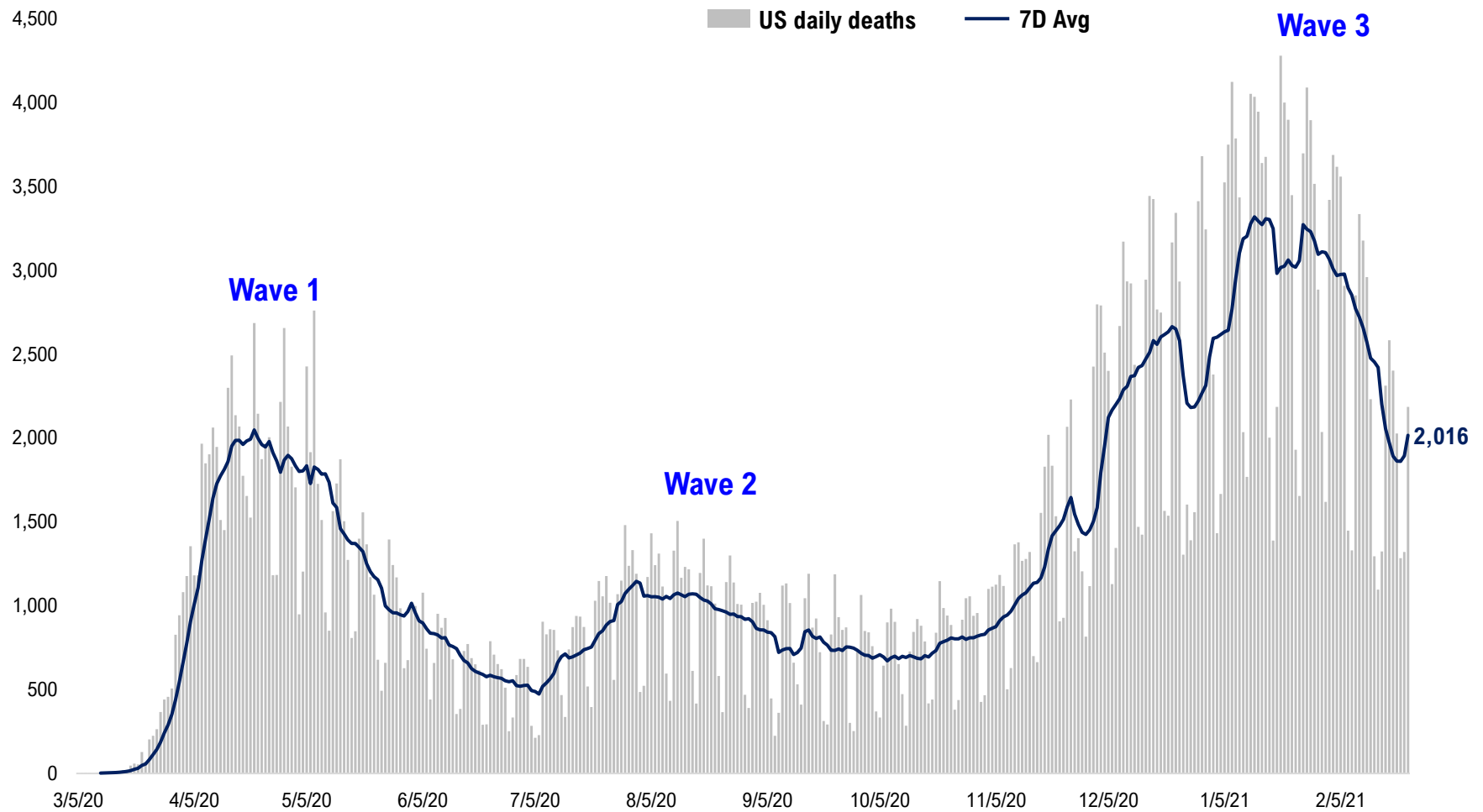
#9: Incremental Hospitalization Rate...

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



#10: US Daily New Fatalities...

US daily COVID-19 Fatalities



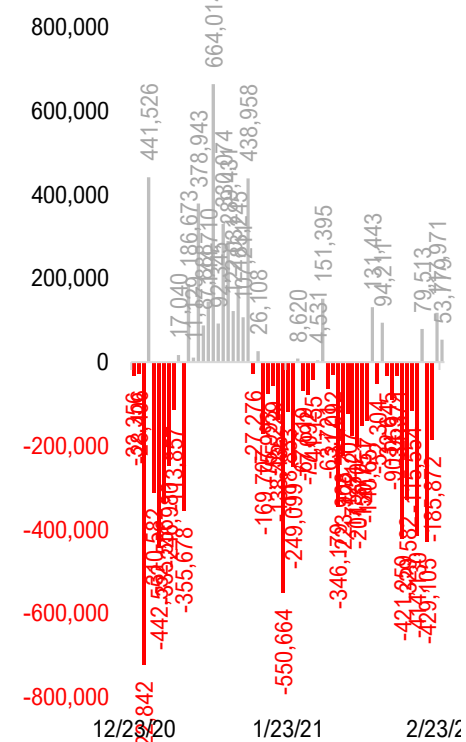
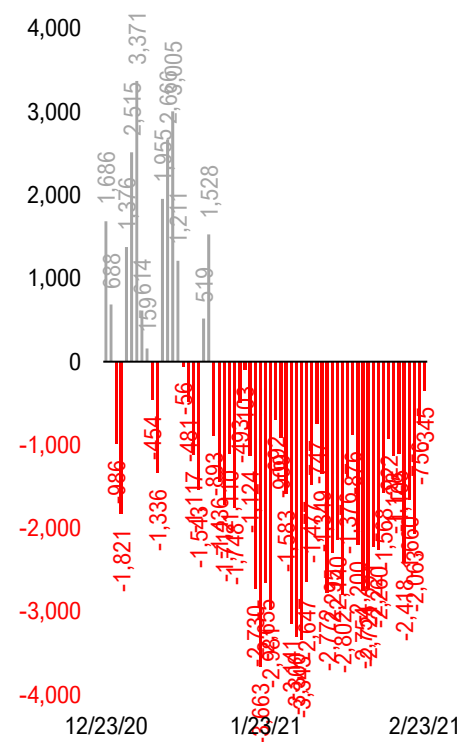
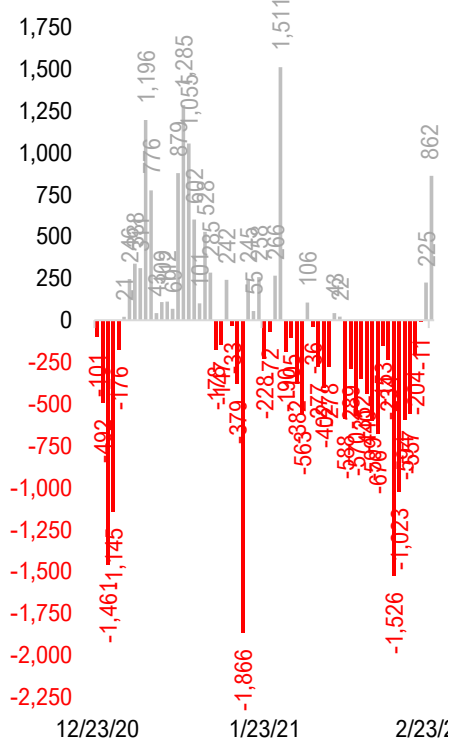
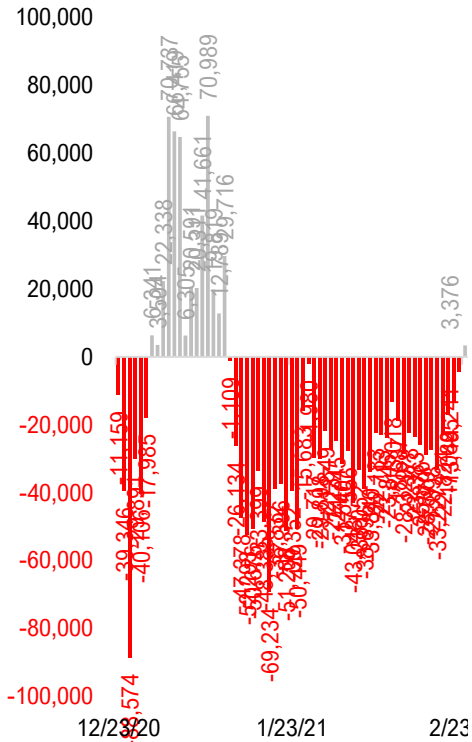
#11: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

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

Daily Deaths

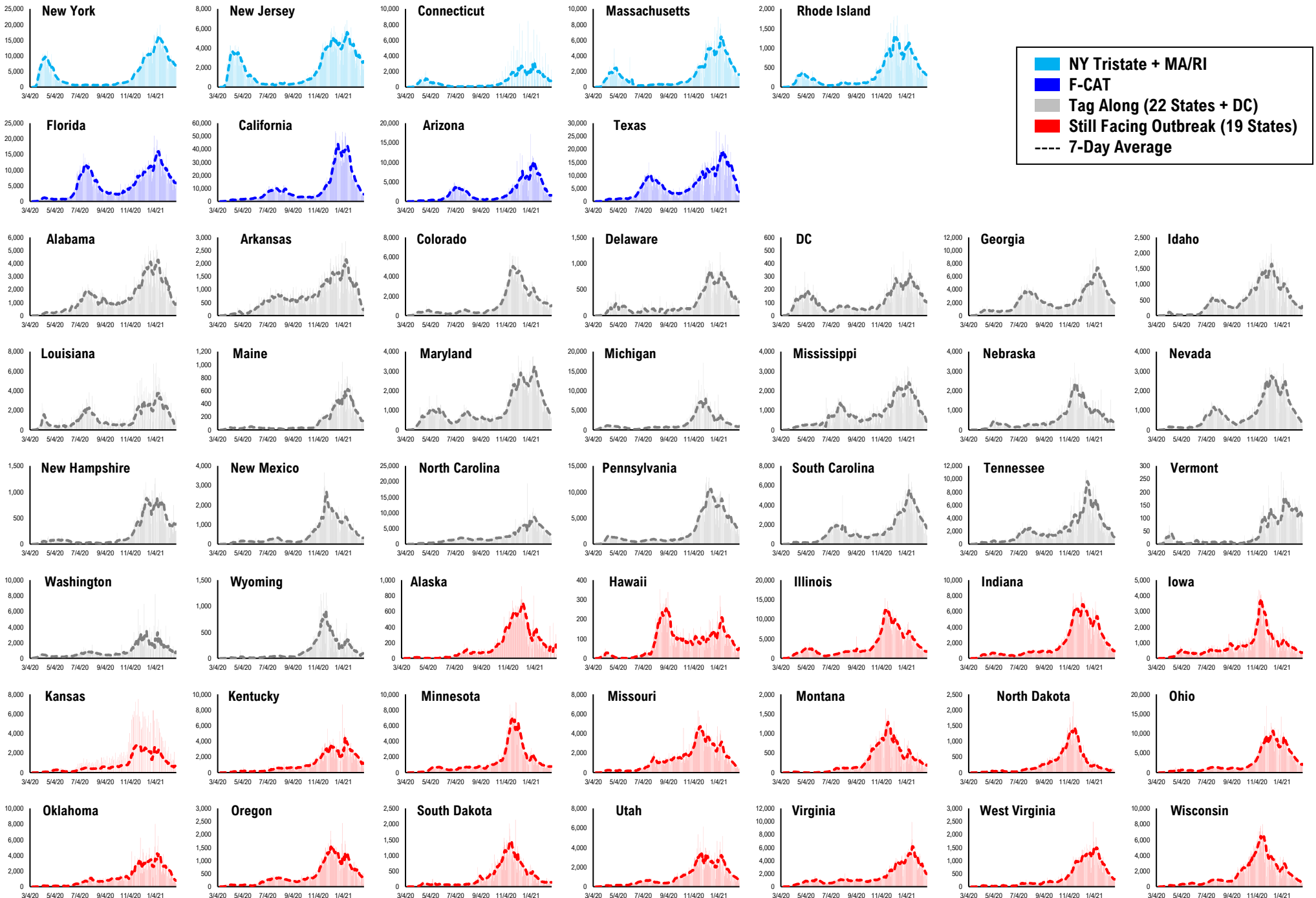
Daily Net Hospitalization
(Red = more discharge than admission)

Daily Tests

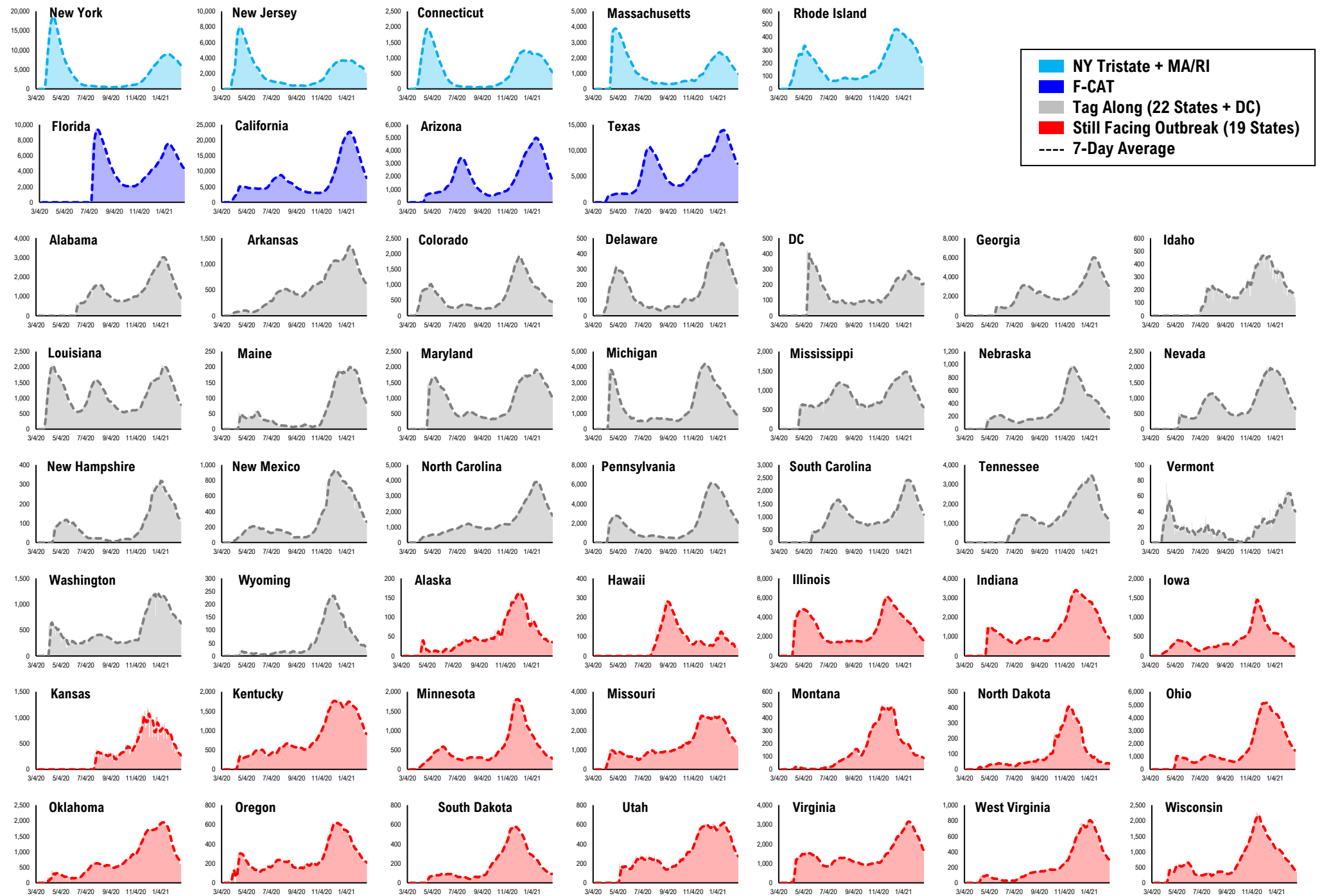


* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

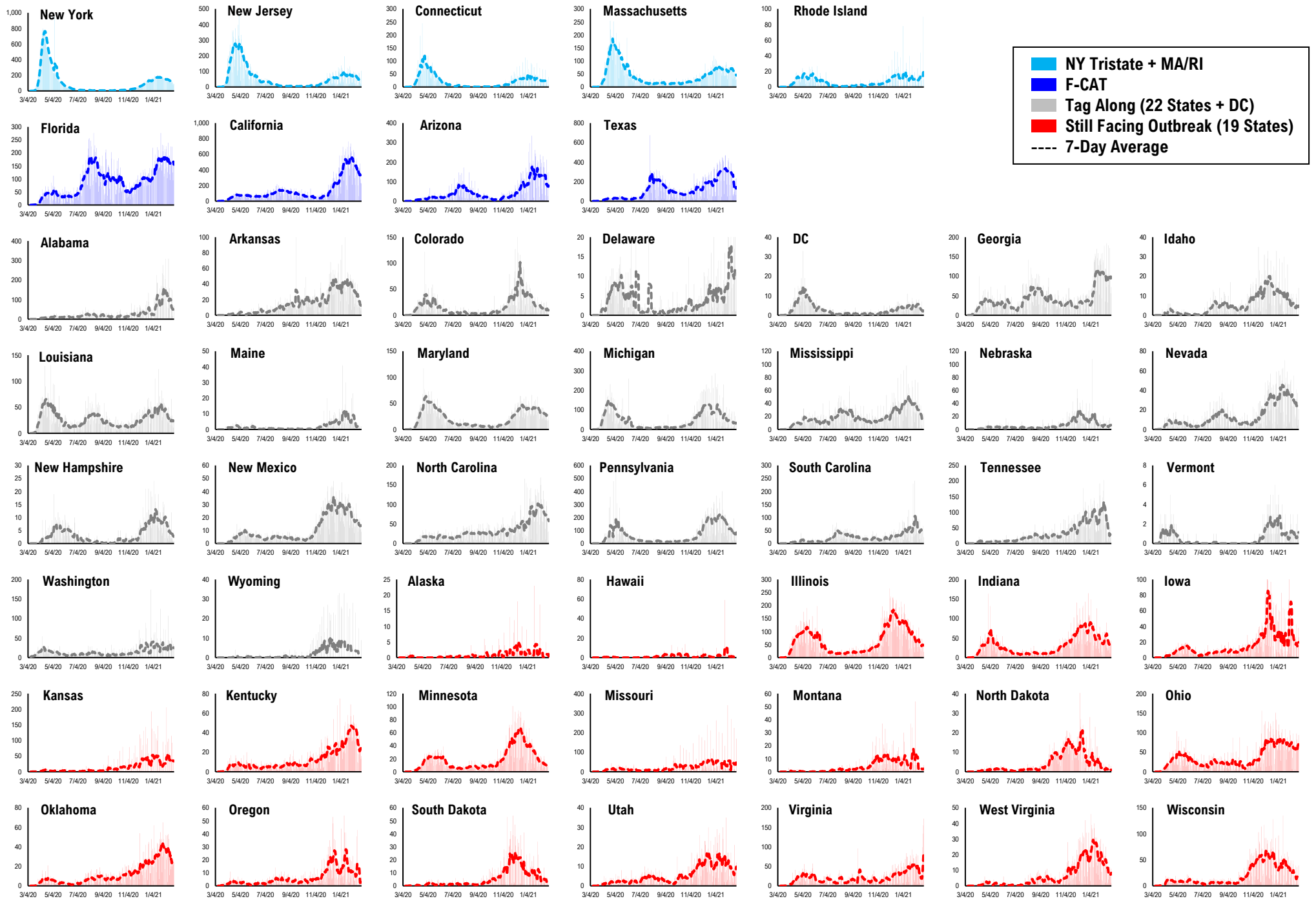
#12: Daily New Cases by States...



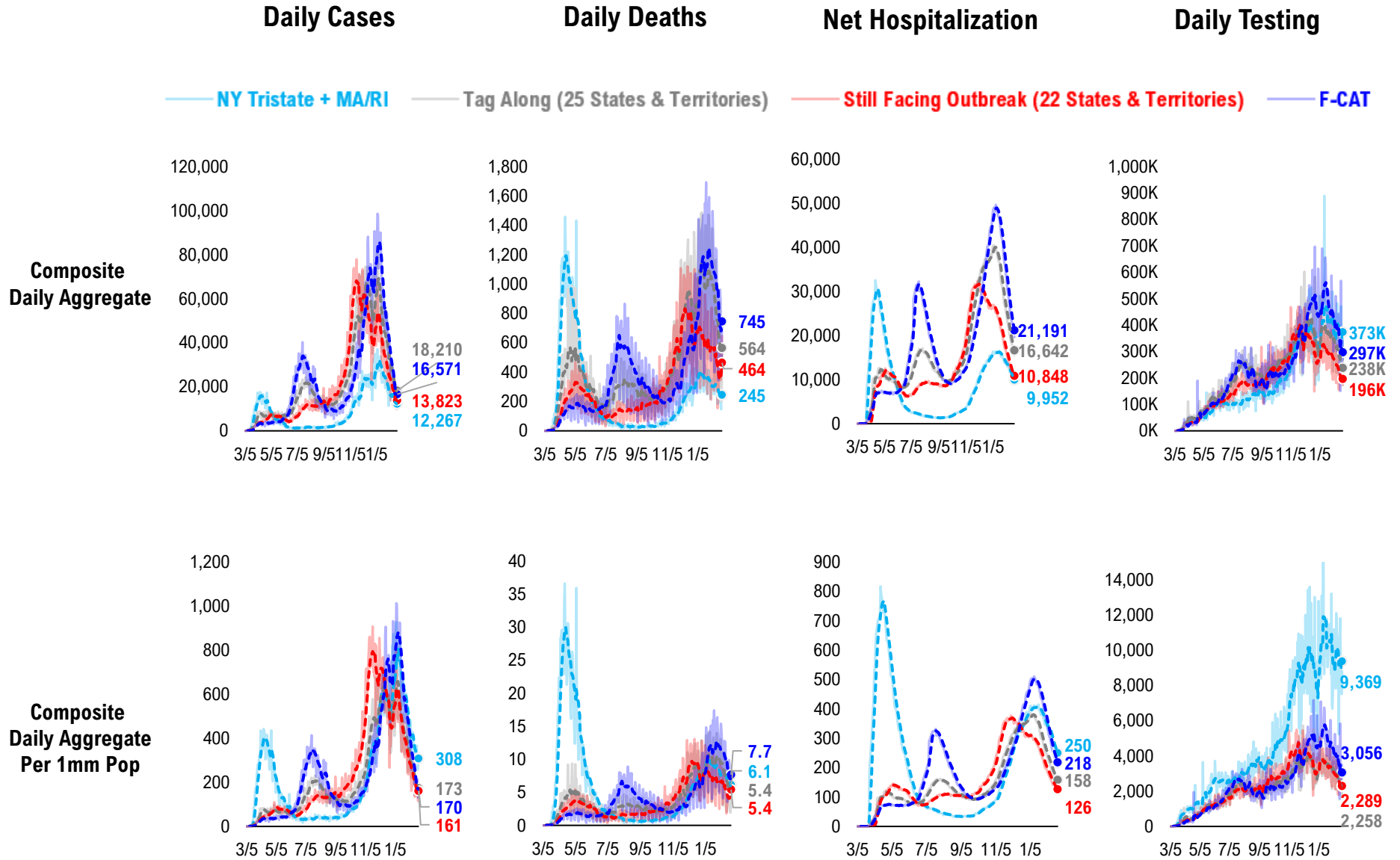
#13: Current Hospitalizations by States...



#14: Daily New Deaths by States...

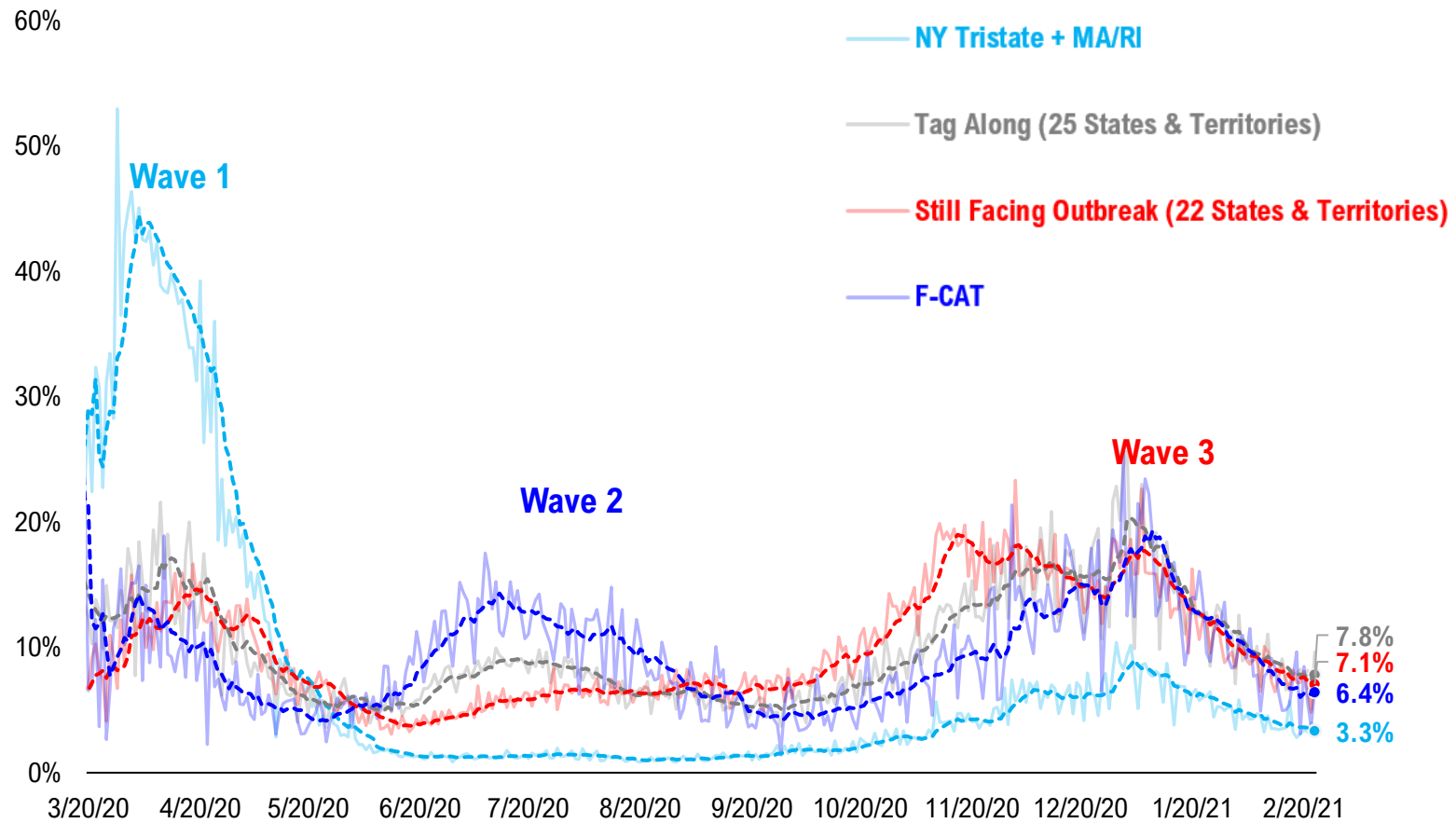


#15: State COVID-19 situation by Tier...

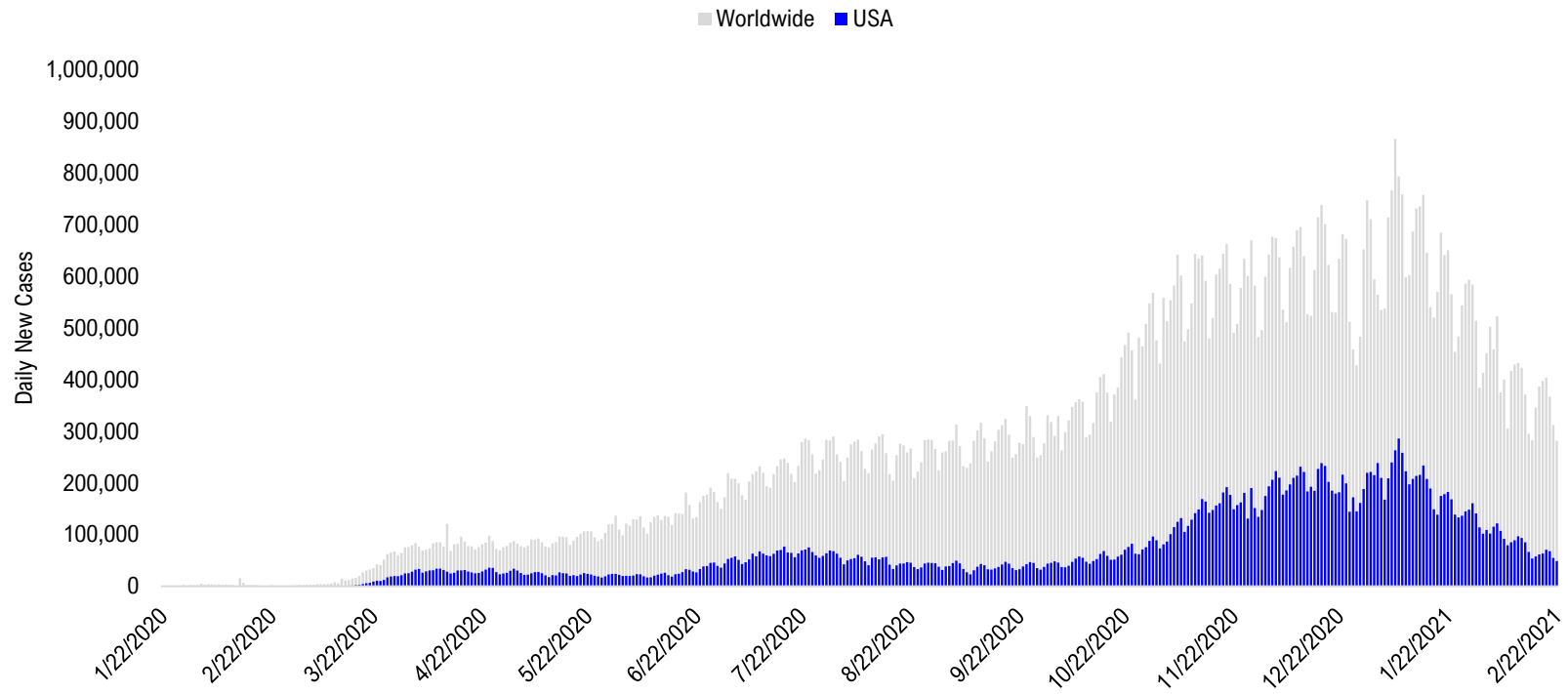


#16: State COVID-19 Daily Positivity Rate by Tier...

Composite Daily Positivity Rate



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



Oct 9	Oct 23	Nov 6	Nov 20	Dec 4	Dec 18	Jan 1	Jan 15	Jan 29	Feb 12	Feb 22
Europe 112,288	Europe 223,800	Europe 312,557	Europe 279,289	Europe 258,867	Europe 282,868	Europe 275,313	Europe 266,474	Europe 218,592	Europe 162,010	Europe 122,819
Pakistan + India + Bangladesh 76,149	US + Canada 71,893	US + Canada 116,878	US + Canada 182,604	US + Canada 213,729	US + Canada 239,400	US + Canada 224,000	US + Canada 228,032	US + Canada 155,817	Latin America 98,399	Latin America 70,079
Latin America 69,828	Latin America 69,395	Latin America 59,340	Latin America 68,233	Latin America 88,682	Latin America 108,004	Latin America 96,926	Latin America 139,455	Latin America 122,769	US + Canada 95,943	US + Canada 59,927
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	Africa 29,285	Africa 33,021	Asia ex- India+Pakistan 28,260	Asia ex- India+Pakistan 18,796	Asia ex- India+Pakistan 16,488
Asia ex- India+Pakistan 13,934	Asia ex- India+Pakistan 15,237	Africa 13,699	Asia ex- India+Pakistan 15,309	Asia ex- India+Pakistan 17,499	Africa 20,279	Asia ex- India+Pakistan 19,749	Asia ex- India+Pakistan 27,255	Africa 20,015	Pakistan + India + Bangladesh 13,206	Pakistan + India + Bangladesh 14,543
Africa 9,962	Africa 10,618	Asia ex- India+Pakistan 13,638	Africa 14,984	Africa 16,694	Asia ex- India+Pakistan 17,898	Pakistan + India + Bangladesh 17,406	Pakistan + India + Bangladesh 19,368	Pakistan + India + Bangladesh 16,944	Africa 12,888	Africa 9,347

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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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