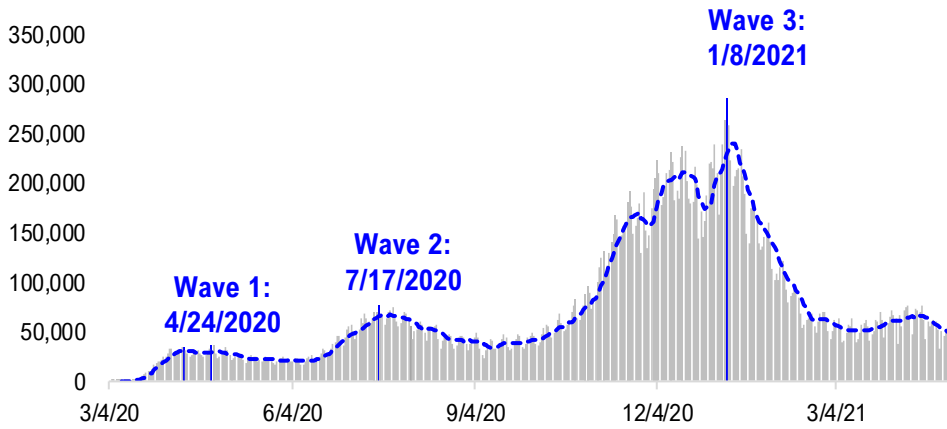


# FSInsight Daily COVID-19 Chartbook

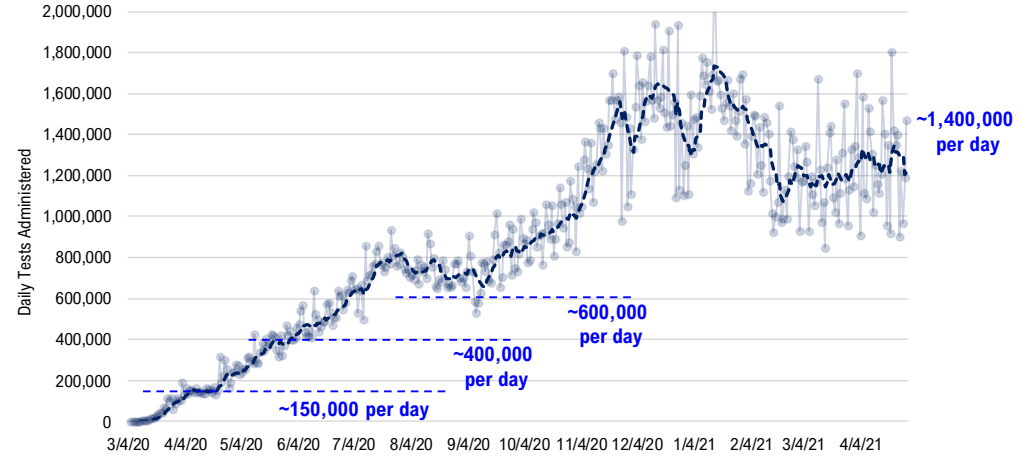


# #1: USA COVID-19 Situation at a Glance...

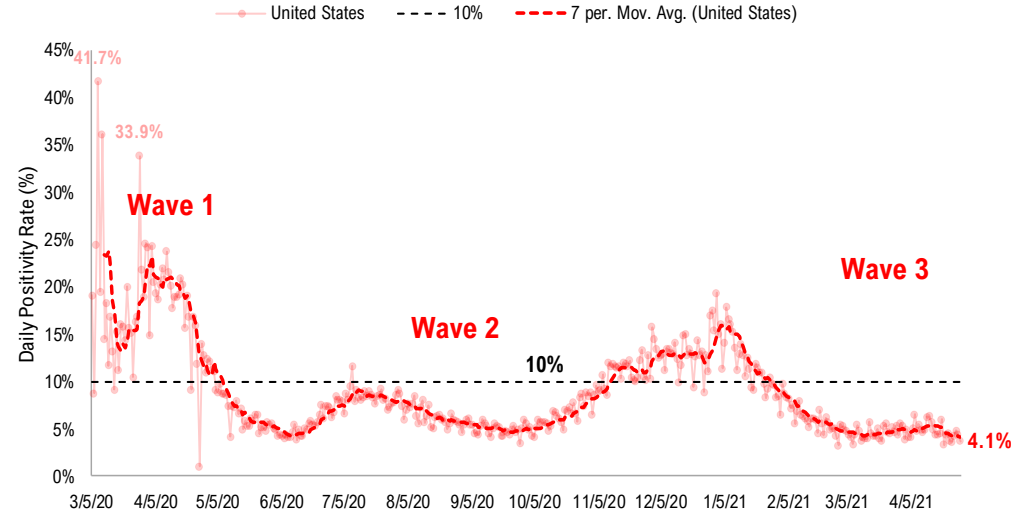
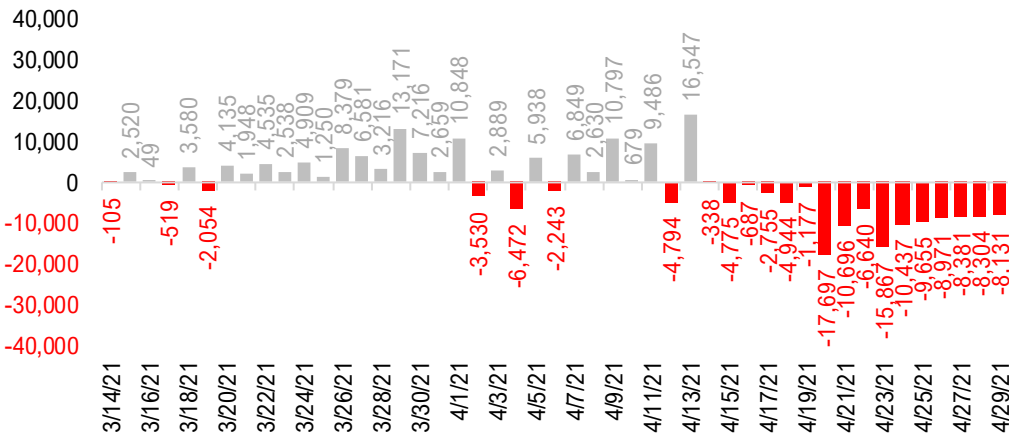
**US daily new cases**



**USA total COVID-19 tests administered**

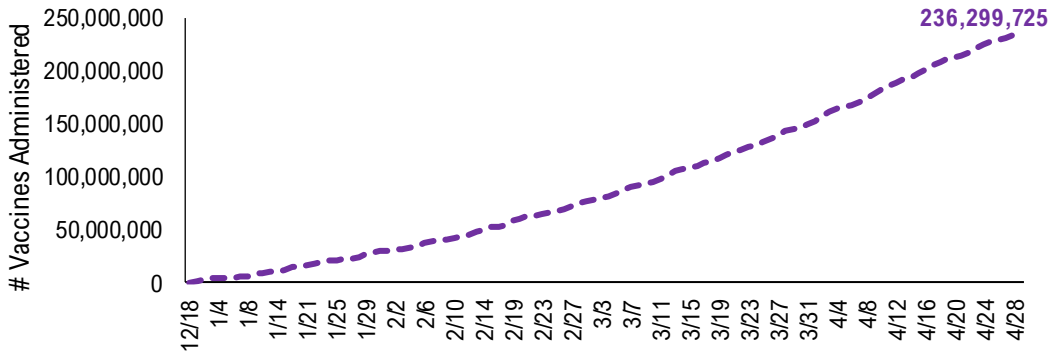


**US daily new cases rolling 7D delta**

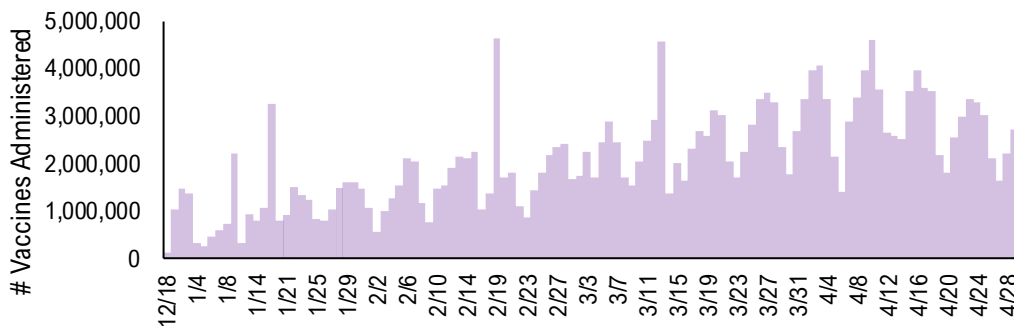


# #2: USA COVID-19 Vaccination Progress at a Glance...

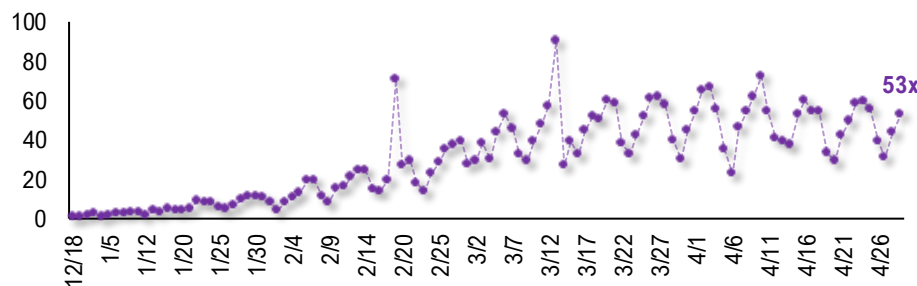
### Cumulative Vaccines Administered



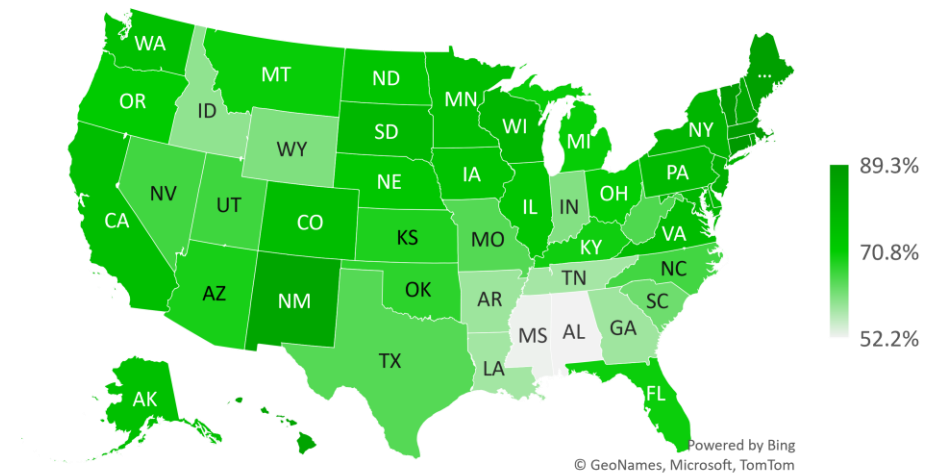
### Daily Vaccines Administered



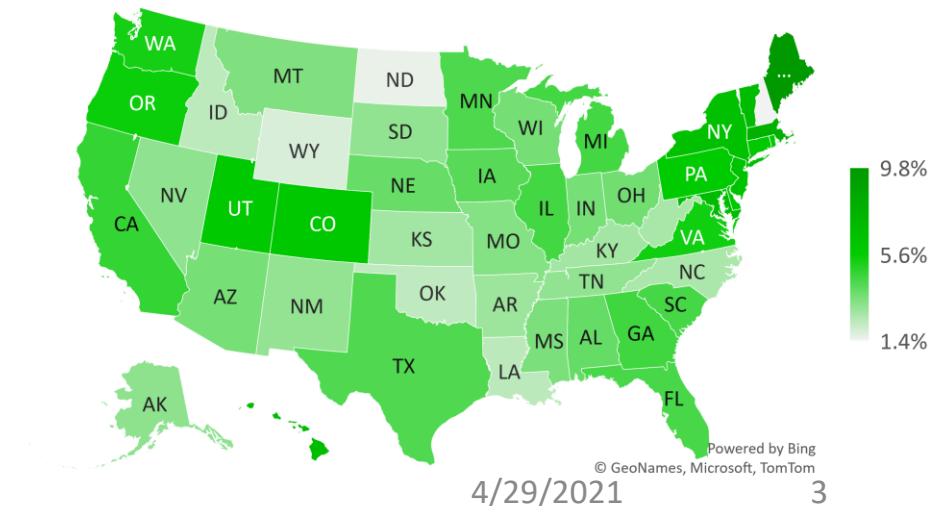
### Daily Vaccinations / Daily Cases (7D Avg)



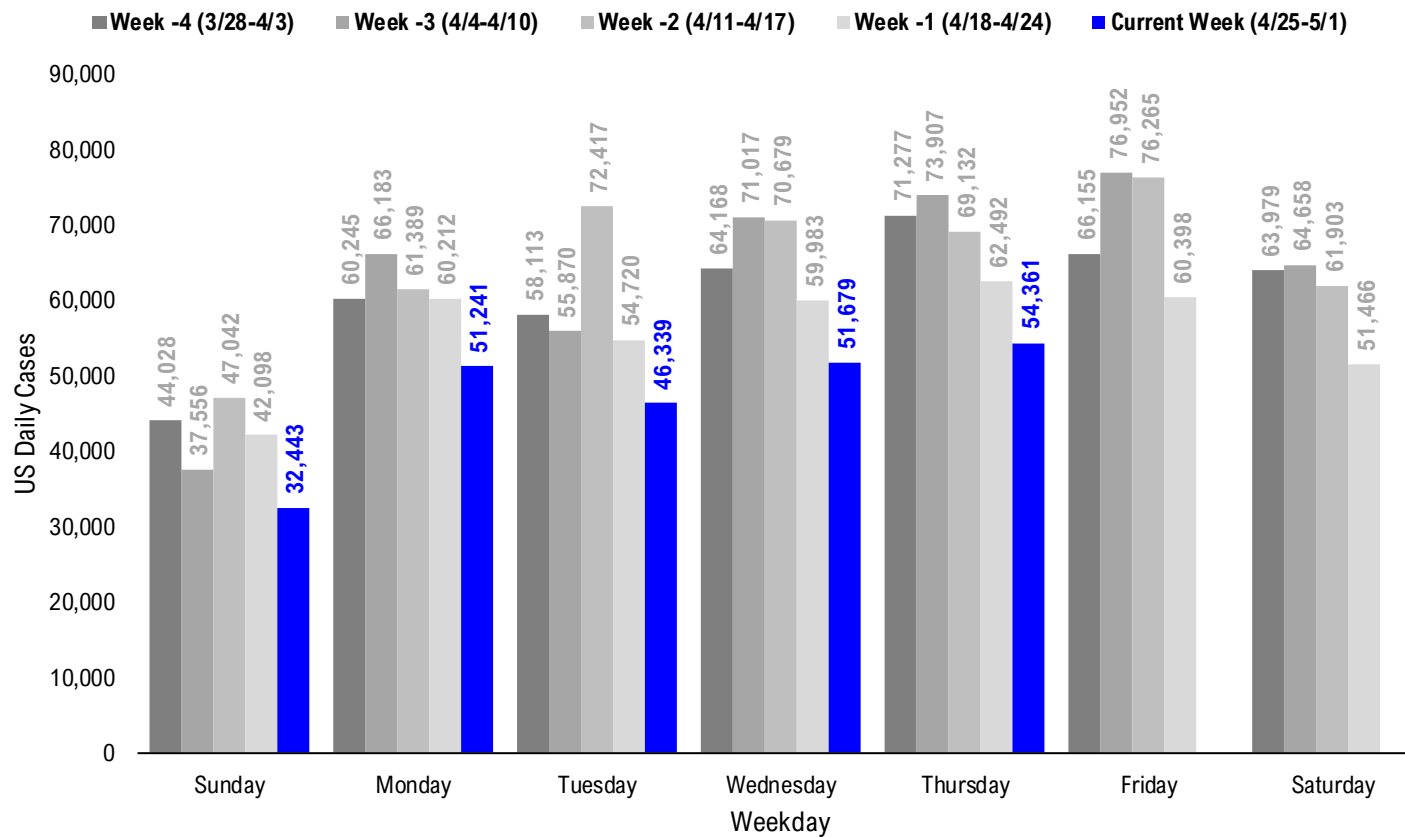
### Cumulative Vaccines Administered as % State Population



### 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				Since Peak		Hospitalization	
	% US Pop	% US GDP	4/29	7D Delta	4/29	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
	United States	100%	100%	54.361	-8.131	155	-25	110	-81%	-3.318

	Sorted Daily Cases		Daily Cases (3D avg) per 1mm residents				Since Peak		Hospitalization	
	% US Pop	% US GDP	4/29	7D Delta	4/29	7D Delta	# Days	% Decline in Daily Cases	7D Net Hospitalization	7D Net Hospitalization / 7D New Cases
	United States	100%	100%	54.361	-8.131	155	-25	110	-81%	-3.318

**States:**

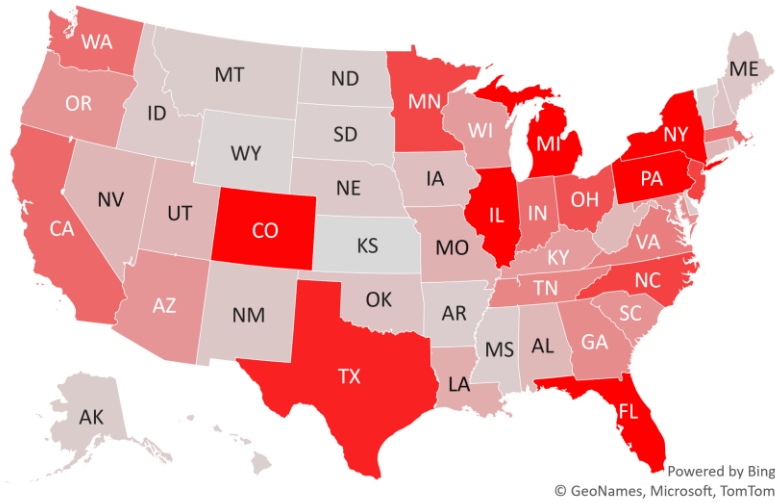
1 Florida	6.5%	5.0%	5,666	-1,018	250	-28	111	-72%	-181	(0.5%)
2 New York	5.9%	8.1%	4,073	-923	170	-57	110	-81%	-633	(2.4%)
3 Michigan	3.0%	2.6%	3,623	-1,244	390	-135	15	-56%	-681	(2.4%)
4 Illinois	3.8%	4.2%	3,394	+224	228	+4	167	-79%	-32	(0.2%)
5 Pennsylvania	3.9%	3.8%	3,322	-870	269	-79	145	-71%	-490	(2.1%)
6 Colorado	1.7%	1.8%	2,789	+428	344	+7	159	-67%	77	0.6%
7 Texas	8.7%	8.8%	2,404	+209	98	-8	112	-87%	-190	(1.2%)
8 New Jersey	2.7%	3.0%	1,989	-819	211	-92	110	-69%	-306	(2.3%)
9 North Carolina	3.2%	2.7%	1,985	-251	156	-16	110	-85%	-12	(0.1%)
10 Minnesota	1.7%	1.8%	1,913	-57	266	-15	150	-81%	-39	(0.3%)
11 Ohio	3.5%	3.3%	1,786	+62	145	-7	140	-85%	-45	(0.4%)
12 California	11.9%	14.6%	1,457	-954	38	-14	109	-97%	-30	(0.3%)
13 Washington	2.3%	2.7%	1,401	-163	162	-14	155	-71%	83	1.0%
14 Massachusetts	2.1%	2.8%	1,395	-233	192	-21	110	-83%	-55	(0.6%)
15 Indiana	2.0%	1.8%	1,384	+204	172	+23	145	-86%	42	0.6%
16 Virginia	2.6%	2.6%	1,187	-186	133	-18	101	-86%	-144	(2.0%)
17 Tennessee	2.1%	1.8%	1,092	-916	167	-29	132	-89%	-38	(0.6%)
18 Georgia	3.2%	2.9%	1,011	+75	84	-4	109	-90%	-85	(1.3%)
19 Maryland	1.8%	2.0%	966	-237	146	-38	109	-76%	-155	(2.4%)
20 Oregon	1.3%	1.2%	914	-62	198	-1	144	-52%	43	0.8%
21 South Carolina	1.6%	1.1%	911	+32	132	-12	109	-90%	-41	(0.8%)
22 Arizona	2.2%	1.7%	881	+234	99	+8	116	-94%	58	1.1%
23 Wisconsin	1.8%	1.6%	806	+74	132	+8	167	-90%	-5	(0.1%)
24 Kentucky	1.3%	1.0%	790	+166	167	+17	111	-85%	-18	(0.5%)
25 Louisiana	1.4%	1.3%	574	-41	103	-14	112	-91%	-26	(0.9%)
26 Missouri	1.8%	1.5%	521	-164	74	-15	166	-91%	16	0.6%
27 Connecticut	1.1%	1.3%	486	-251	142	-76	106	-90%	-112	(2.4%)
28 Utah	1.0%	0.9%	463	-9	136	-7	111	-89%	5	0.2%

**States:**

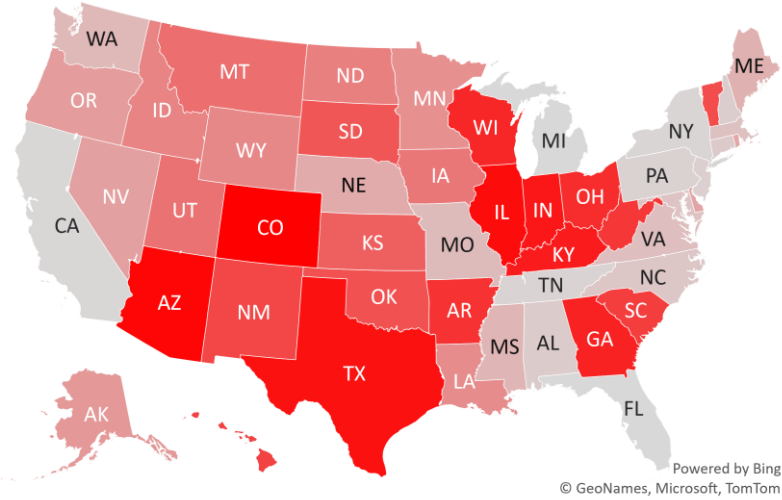
29 Nevada	0.9%	0.8%	453	-75	135	-10	110	-86%	-21	(0.8%)
30 West Virginia	0.5%	0.4%	432	+32	198	-15	116	-81%	-1	0.0%
31 Alabama	1.5%	1.1%	430	-252	79	-93	112	-92%	63	(2.6%)
32 Iowa	1.0%	0.9%	351	-9	106	-16	167	-92%	-51	(2.6%)
33 Rhode Island	0.3%	0.3%	296	-85	295	-39	145	-81%	10	0.5%
34 Oklahoma	1.2%	1.0%	289	+6	55	+5	109	-96%	-19	(1.1%)
35 New Hampshire	0.4%	0.4%	271	-329	182	-114	115	-78%	-25	(1.5%)
36 Maine	0.4%	0.3%	254	-149	233	-95	104	-62%	6	0.3%
37 Puerto Rico	1.0%	0.5%	242	-145	129	-42	131	-64%	-34	(0.7%)
38 New Mexico	0.6%	0.5%	229	+22	96	+14	160	-94%	14	1.0%
39 Nebraska	0.6%	0.6%	218	-91	125	-97	161	-91%	-22	(1.3%)
40 Idaho	0.5%	0.4%	210	-24	141	-2	140	-88%	-36	(2.4%)
41 Delaware	0.3%	0.4%	194	-80	198	-48	110	-79%	-24	(1.4%)
42 Montana	0.3%	0.2%	174	-7	172	+11	165	-87%	-8	(0.8%)
43 Alaska	0.2%	0.3%	166	-59	219	-21	145	-80%	7	0.7%
44 Mississippi	0.9%	0.6%	161	-158	75	-28	110	-92%	-15	(1.0%)
45 Arkansas	0.9%	0.6%	156	+48	52	+4	109	-93%	-9	(1.1%)
46 North Dakota	0.2%	0.3%	144	-23	214	-40	166	-91%	-7	(0.8%)
47 South Dakota	0.3%	0.3%	134	+0	170	-4	166	-92%	8	0.9%
48 Hawaii	0.4%	0.5%	122	+25	57	+7	243	-73%	4	0.7%
49 Vermont	0.2%	0.2%	101	+14	111	-3	27	-68%	-7	(1.4%)
50 District of Columbi	0.2%	0.7%	81	-18	111	-30	109	-77%	-36	(3.7%)
51 Wyoming	0.2%	0.2%	70	-25	145	+9	161	-92%	6	1.3%
52 U.S. Virgin Islands	0.0%	0.0%	0	-59	90	-93	32	-79%	0	0.0%
53 Northern Mariana	0.0%	0.0%	0	+0	0	+0	184	-100%	0	0.0%
54 Kansas	0.9%	0.8%	0	+0	74	+6	155	-95%	-5	(0.3%)
55 Guam	0.0%	0.0%	0	+0	0	+0	170	-100%	2	3.8%
56 American Samoa	0.0%	0.0%	0	+0	0	+0	0	0%	0	

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

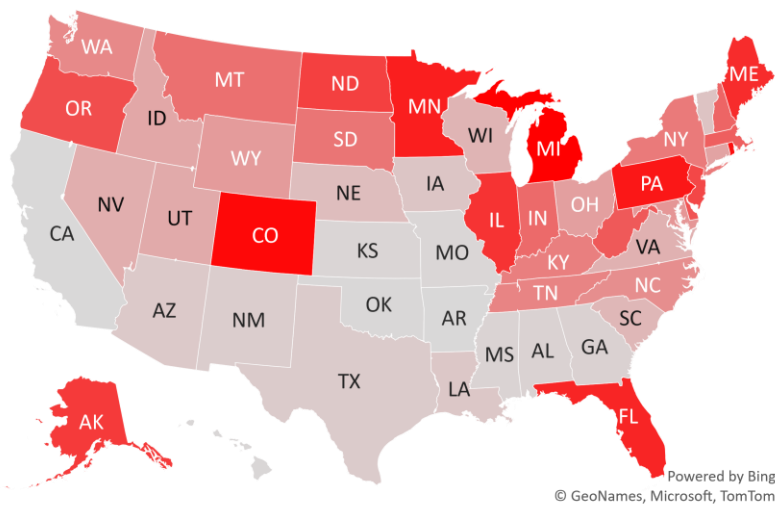
### Daily Case Increases



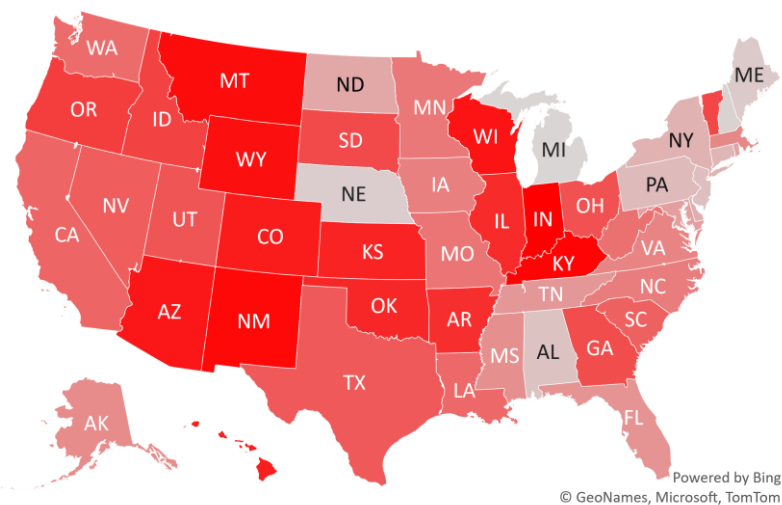
### 7D Delta in Daily New Cases



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



### 7D Delta in Daily Case Increases per 1mm Resident (3D Avg)



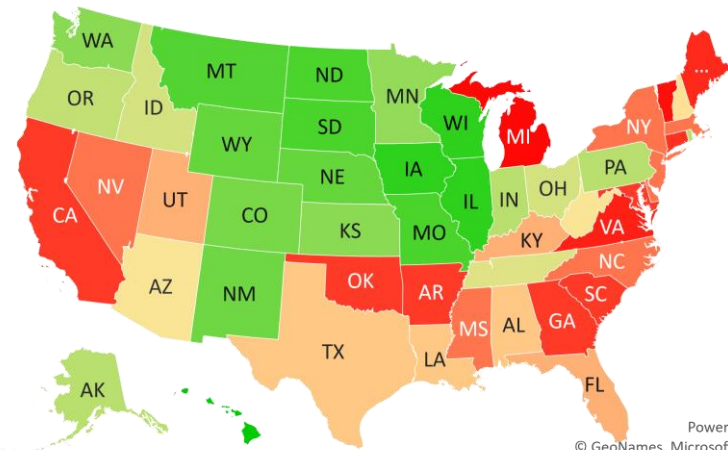
# #6: # of Days since Daily Case Peaked by States...

## # Days since Daily Cases (3D Avg) Peak (as of 4/29)

	Peak Date	4/29/21	% off the Peak	% US Pop
United States	1/9/21	110	-81%	100%
<b>Sorted</b>				
<b>States:</b>				
Hawaii	8/29/20	243	-73%	0.4%
Northern Mariana Island	10/27/20	184	-100%	0.0%
Guam	11/10/20	170	-100%	0.0%
Wisconsin	11/13/20	167	-90%	1.8%
Illinois	11/13/20	167	-79%	3.8%
Iowa	11/13/20	167	-92%	1.0%
South Dakota	11/14/20	166	-92%	0.3%
North Dakota	11/14/20	166	-91%	0.2%
Missouri	11/14/20	166	-91%	1.8%
Montana	11/15/20	165	-87%	0.3%
Wyoming	11/19/20	161	-92%	0.2%
Nebraska	11/19/20	161	-91%	0.6%
New Mexico	11/20/20	160	-94%	0.6%
Colorado	11/21/20	159	-67%	1.7%
Washington	11/25/20	155	-71%	2.3%
Kansas	11/25/20	155	-95%	0.9%
Minnesota	11/30/20	150	-81%	1.7%
Rhode Island	12/5/20	145	-81%	0.3%
Pennsylvania	12/5/20	145	-71%	3.9%
Indiana	12/5/20	145	-86%	2.0%
Alaska	12/5/20	145	-80%	0.2%
Oregon	12/6/20	144	-52%	1.3%
Ohio	12/10/20	140	-85%	3.5%
Idaho	12/10/20	140	-88%	0.5%
Tennessee	12/18/20	132	-89%	2.1%
Puerto Rico	12/19/20	131	-64%	1.0%
West Virginia	1/3/21	116	-81%	0.5%
Arizona	1/3/21	116	-94%	2.2%

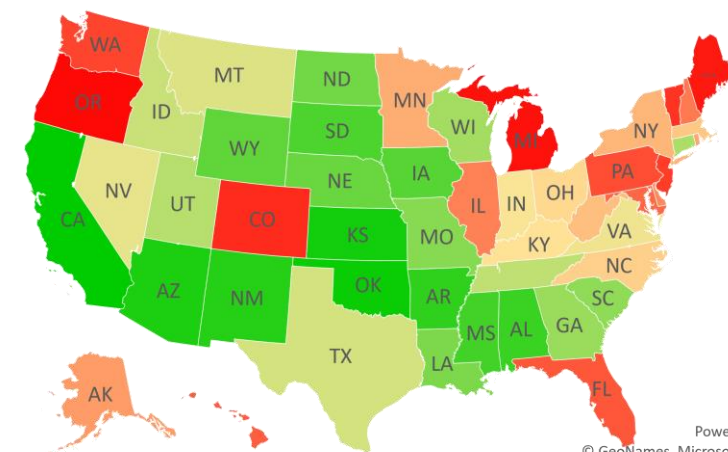
	Peak Date	4/29/21	% off the Peak	% US Pop
United States	1/9/21	110	-81%	100%
<b>Sorted</b>				
<b>States:</b>				
New Hampshire	1/4/21	115	-78%	0.4%
Texas	1/7/21	112	-87%	8.7%
Louisiana	1/7/21	112	-91%	1.4%
Alabama	1/7/21	112	-92%	1.5%
Utah	1/8/21	111	-89%	1.0%
Kentucky	1/8/21	111	-85%	1.3%
Florida	1/8/21	111	-72%	6.5%
New York	1/9/21	110	-81%	5.9%
Nevada	1/9/21	110	-86%	0.9%
New Jersey	1/9/21	110	-69%	2.7%
North Carolina	1/9/21	110	-85%	3.2%
Mississippi	1/9/21	110	-92%	0.9%
Massachusetts	1/9/21	110	-83%	2.1%
Delaware	1/9/21	110	-79%	0.3%
South Carolina	1/10/21	109	-90%	1.6%
Oklahoma	1/10/21	109	-96%	1.2%
Maryland	1/10/21	109	-76%	1.8%
Georgia	1/10/21	109	-90%	3.2%
District of Columbia	1/10/21	109	-77%	0.2%
California	1/10/21	109	-97%	11.9%
Arkansas	1/10/21	109	-93%	0.9%
Connecticut	1/13/21	106	-90%	1.1%
Maine	1/15/21	104	-62%	0.4%
Virginia	1/18/21	101	-86%	2.6%
U.S. Virgin Islands	3/28/21	32	-79%	0.0%
Vermont	4/2/21	27	-68%	0.2%
Michigan	4/14/21	15	-56%	3.0%

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



Powered by Bing  
© GeoNames, Microsoft, TomTom

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



Powered by Bing  
© GeoNames, Microsoft, TomTom

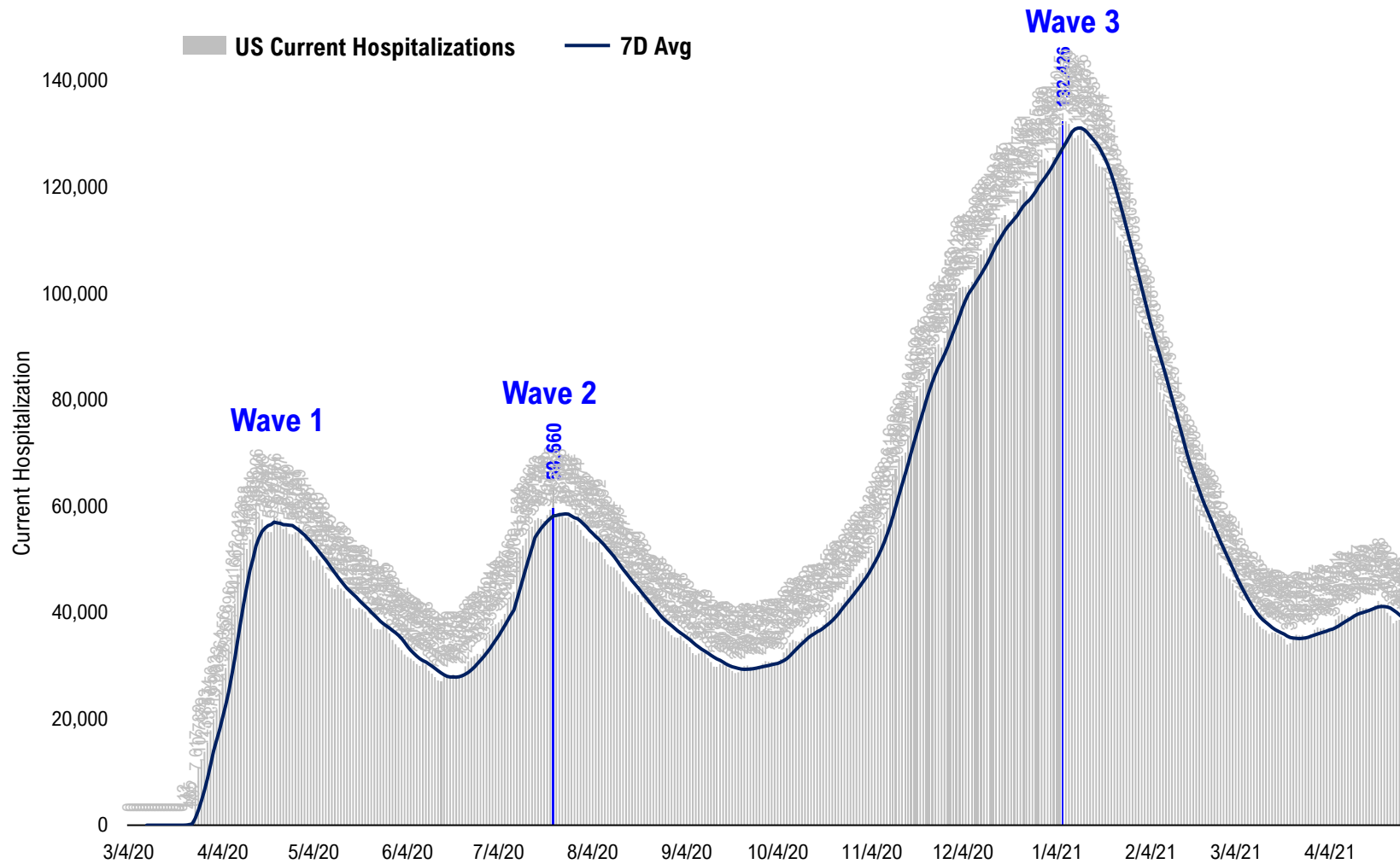
# #7: US New Cases by States... (sorted by today's new cases)

	Sorted						Sorted				
	7D Ago	Last 3-day Trend					7D Ago	Last 3-day Trend			
	4/22/21	4/27/21	4/28/21	4/29/21	vs 7D ago		4/22/21	4/27/21	4/28/21	4/29/21	vs 7D ago
United States	62,492	46,339	51,679	54,361	-8,131	United States	62,492	46,339	51,679	54,361	-8,131
<b>States:</b>						<b>States:</b>					
Florida	6,684	5,271	5,178	5,666		Nevada	528	405	390	453	
New York	4,996	2,704	3,146	4,073		West Virginia	400	177	453	432	
Michigan	4,867	3,676	4,371	3,623		Alabama	682	359	376	430	
Illinois	3,170	2,556	2,728	3,394		Iowa	360	258	394	351	
Pennsylvania	4,192	3,333	3,686	3,322		Rhode Island	381	260	381	296	
Colorado	2,361	2,015	1,137	2,789		Oklahoma	283	115	249	289	
Texas	2,195	3,293	2,871	2,404		New Hampshire	600	268	202	271	
New Jersey	2,808	1,874	1,770	1,989		Maine	403	425	261	254	
North Carolina	2,236	1,148	1,765	1,985		Puerto Rico	387	716	275	242	
Minnesota	1,970	1,078	1,507	1,913		New Mexico	207	153	221	229	
Ohio	1,724	1,560	1,723	1,786		Nebraska	309	258	251	218	
California	2,411	1,445	1,593	1,457		Idaho	234	289	255	210	
Washington	1,564	924	1,380	1,401		Delaware	274	144	241	194	
Massachusetts	1,628	965	1,613	1,395		Montana	181	176	202	174	
Indiana	1,180	838	1,258	1,384		Alaska	225	130	184	166	
Virginia	1,373	1,105	1,120	1,187		Mississippi	319	172	334	161	
Tennessee	2,008	1,187	1,134	1,092		Arkansas	108	135	179	156	<--higher
Georgia	936	787	883	1,011		North Dakota	167	189	156	144	
Maryland	1,203	677	1,002	966		South Dakota	134	148	170	134	
Oregon	976	719	876	914		Hawaii	97	50	69	122	<--higher
South Carolina	879	441	683	911		Vermont	87	58	48	101	
Arizona	647	682	603	881	<--higher	District of Columbia	99	93	62	81	
Wisconsin	732	815	688	806		Wyoming	95	65	116	70	
Kentucky	624	714	738	790	<--higher	U.S. Virgin Islands	59	0	29	0	
Louisiana	615	433	430	574		Northern Mariana Islands	0	0	0	0	
Missouri	685	322	514	521		Kansas	0	0	645	0	
Connecticut	737	407	621	486		Guam	0	0	0	0	
Utah	472	327	518	463		American Samoa	0	0	0	0	



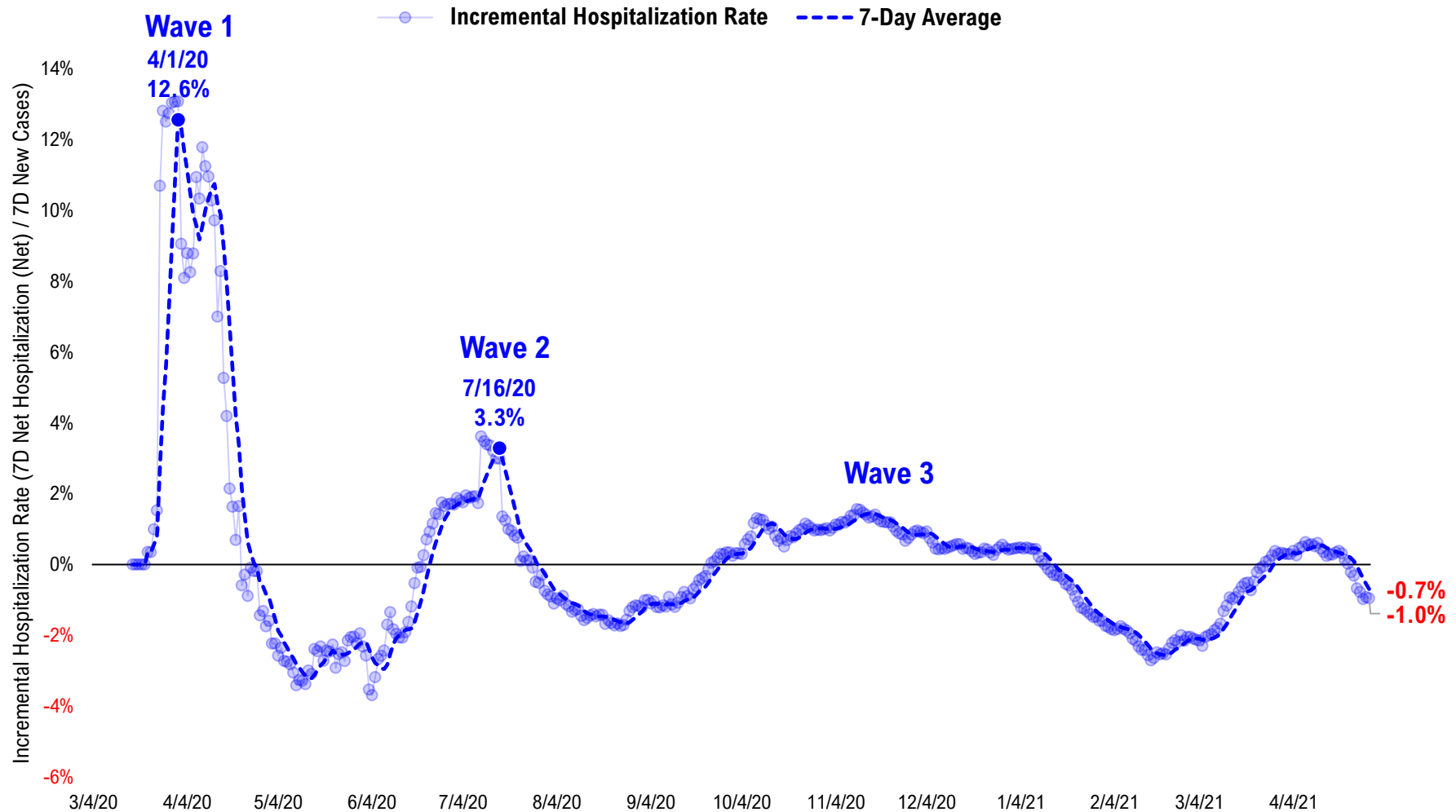
# #8: US Daily Hospitalizations...

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



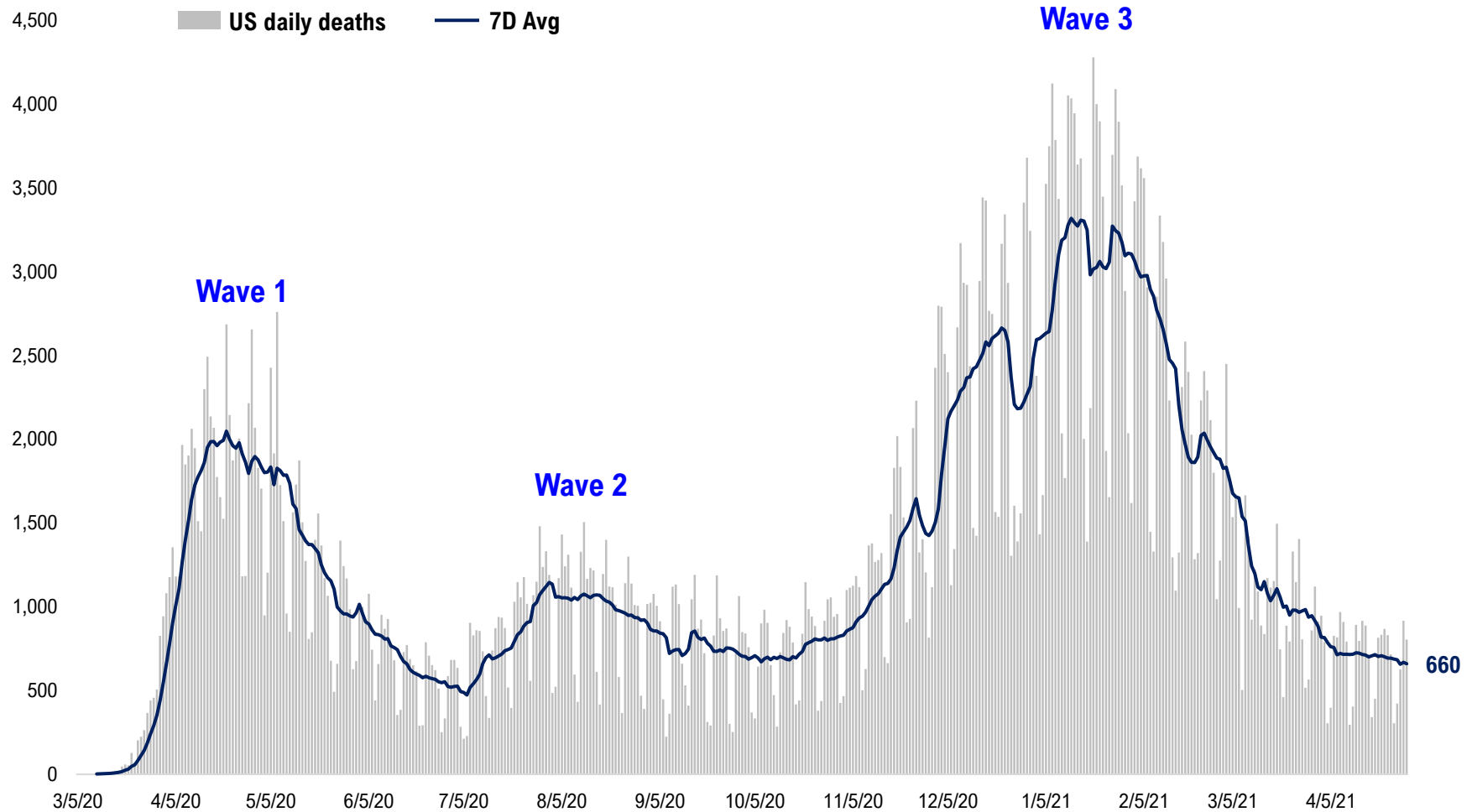
# #9: Incremental Hospitalization Rate...

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

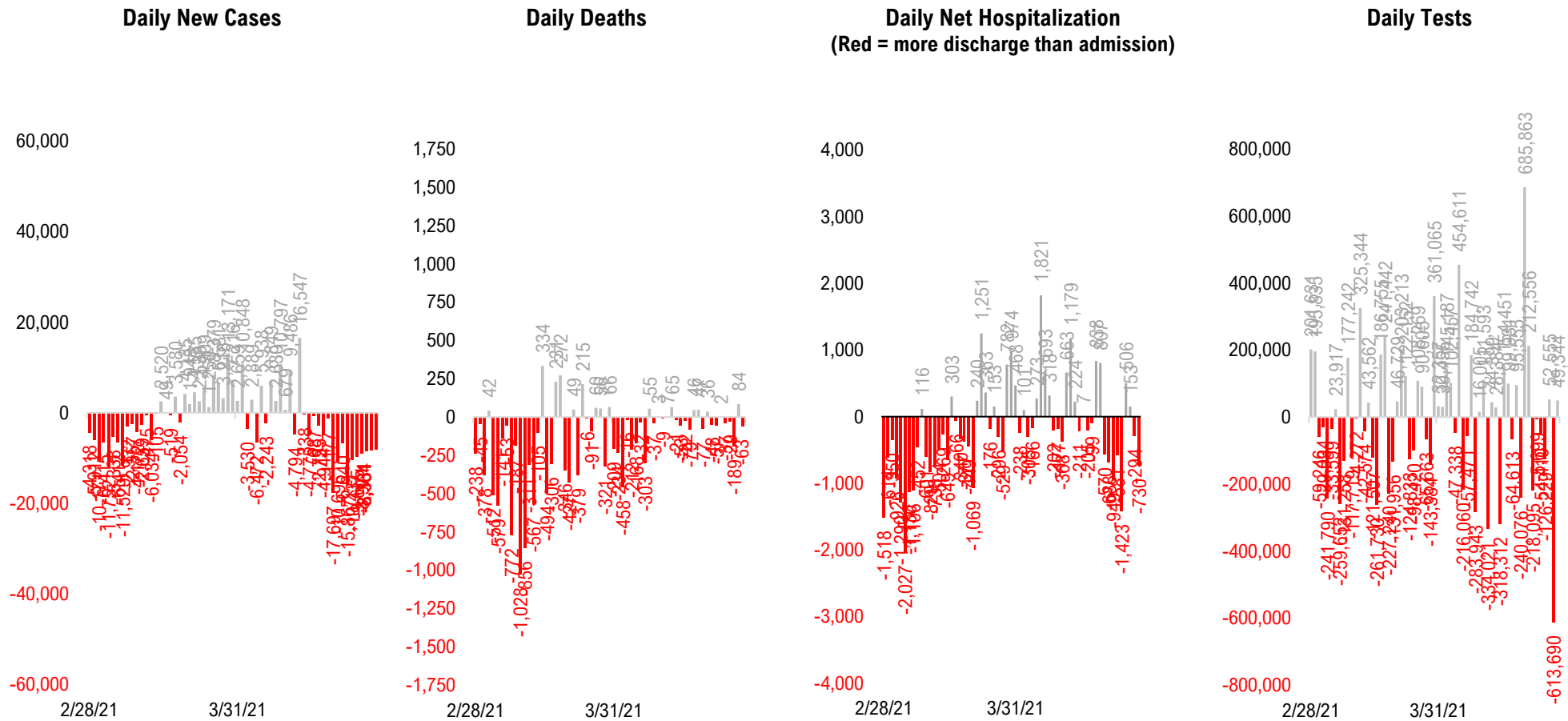


# #10: US Daily New Fatalities...

## US daily COVID-19 Fatalities

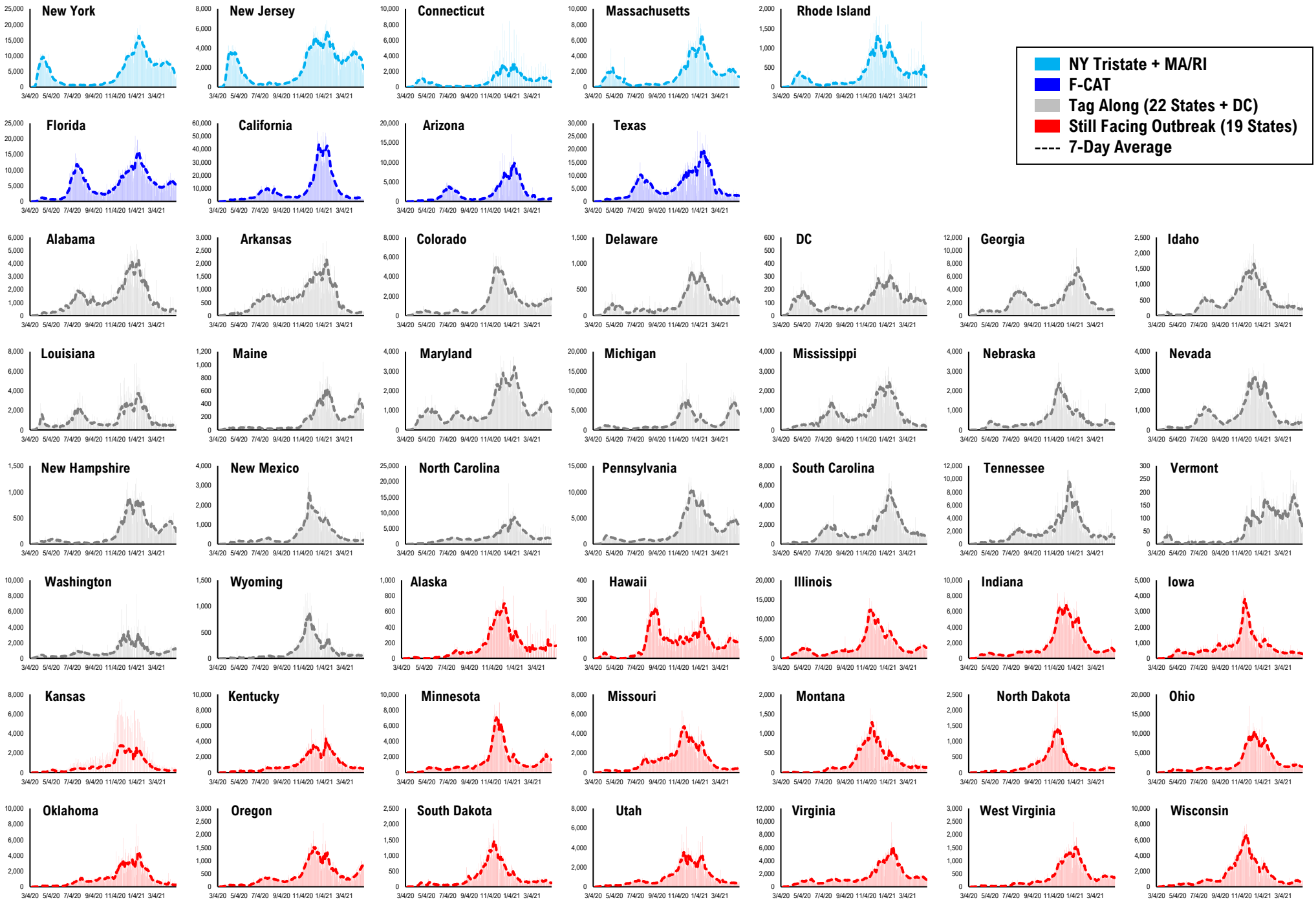


# #11: Rolling 7-Day Change in the Key Metrics... (Past 8 Weeks)

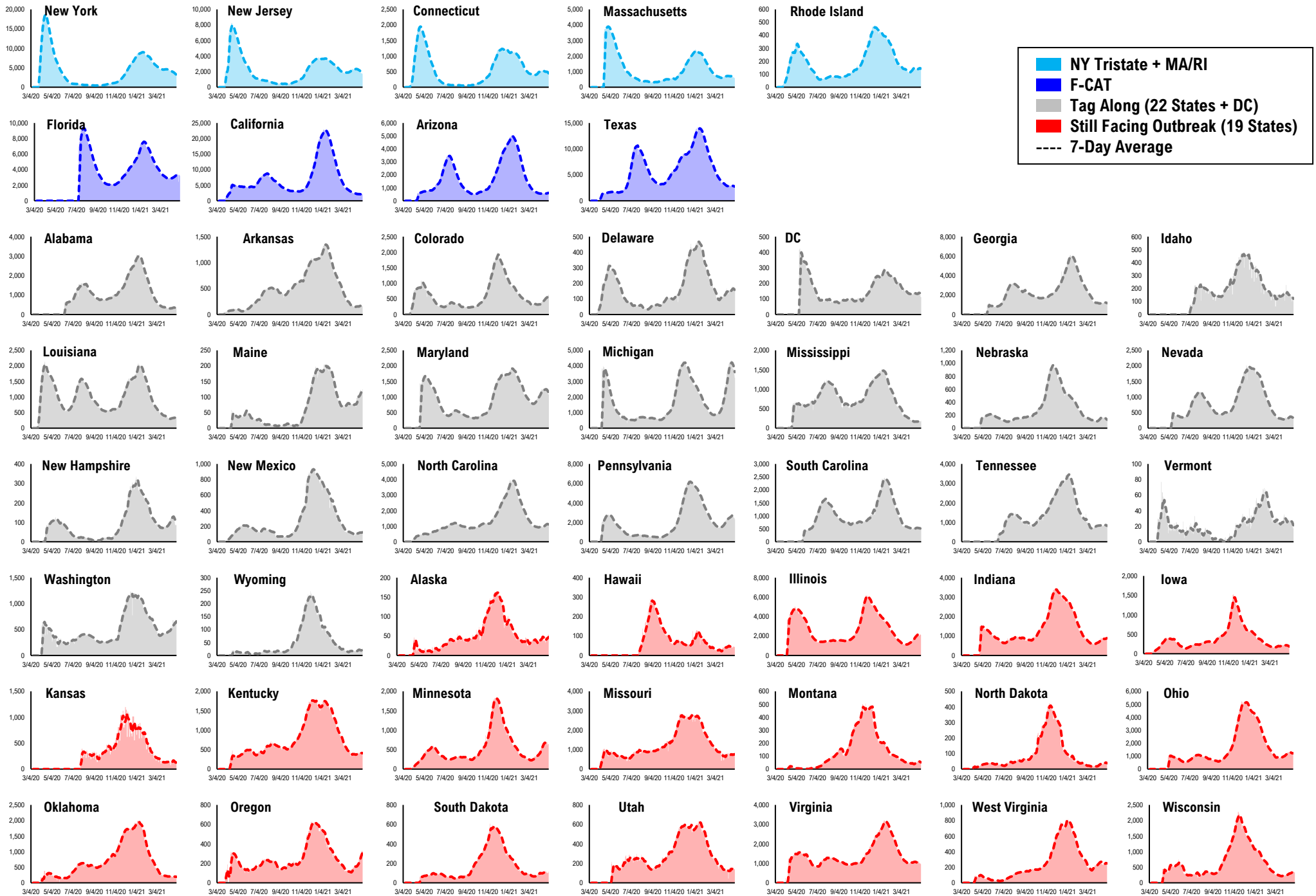


\* Ignored California between 8/10 and 8/23, due to its data glitch caused 300,000-case backlog  
Source: Fundstrat, COVID-19 Tracking Project, State Department of Health

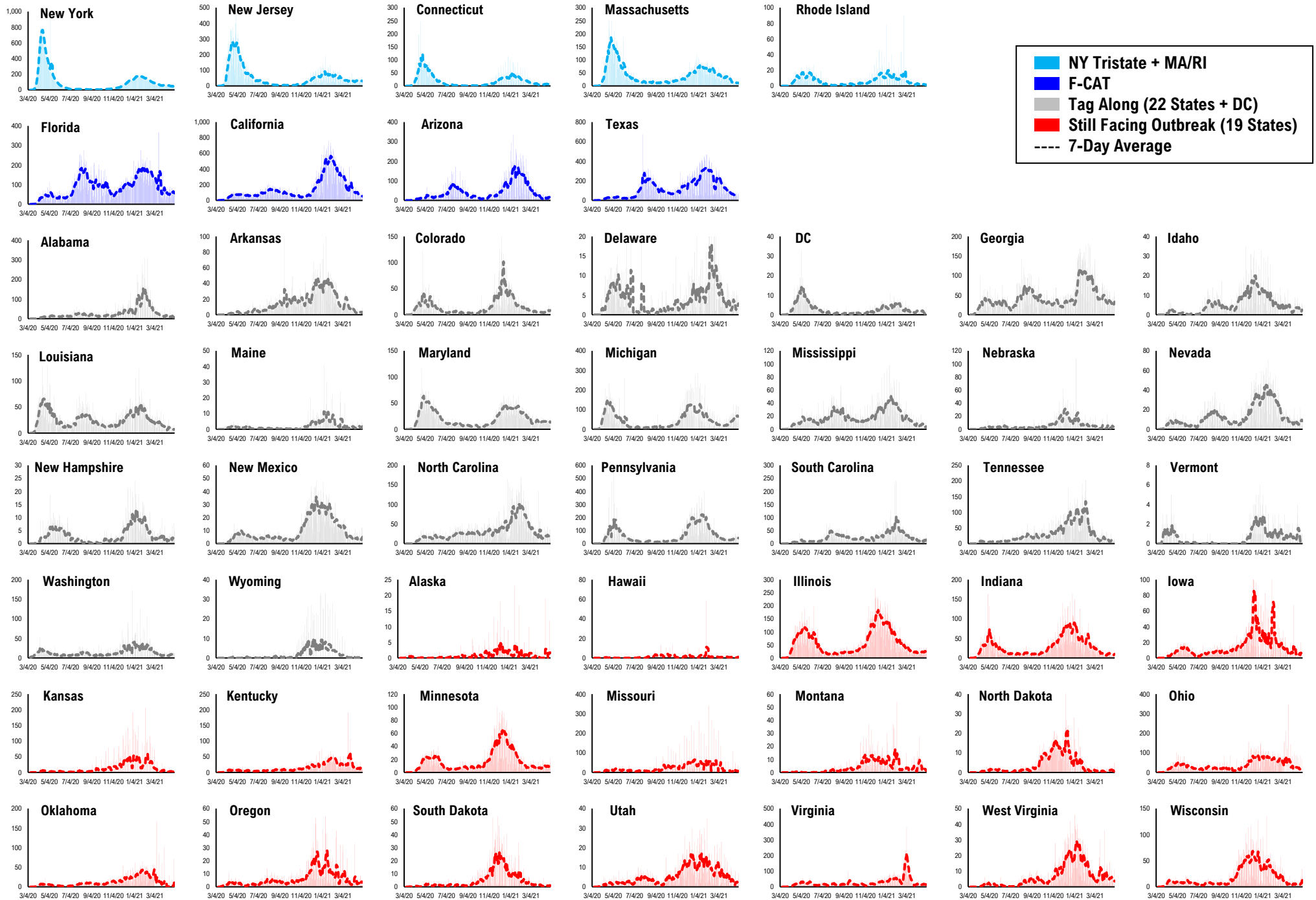
# #12: Daily New Cases by States...



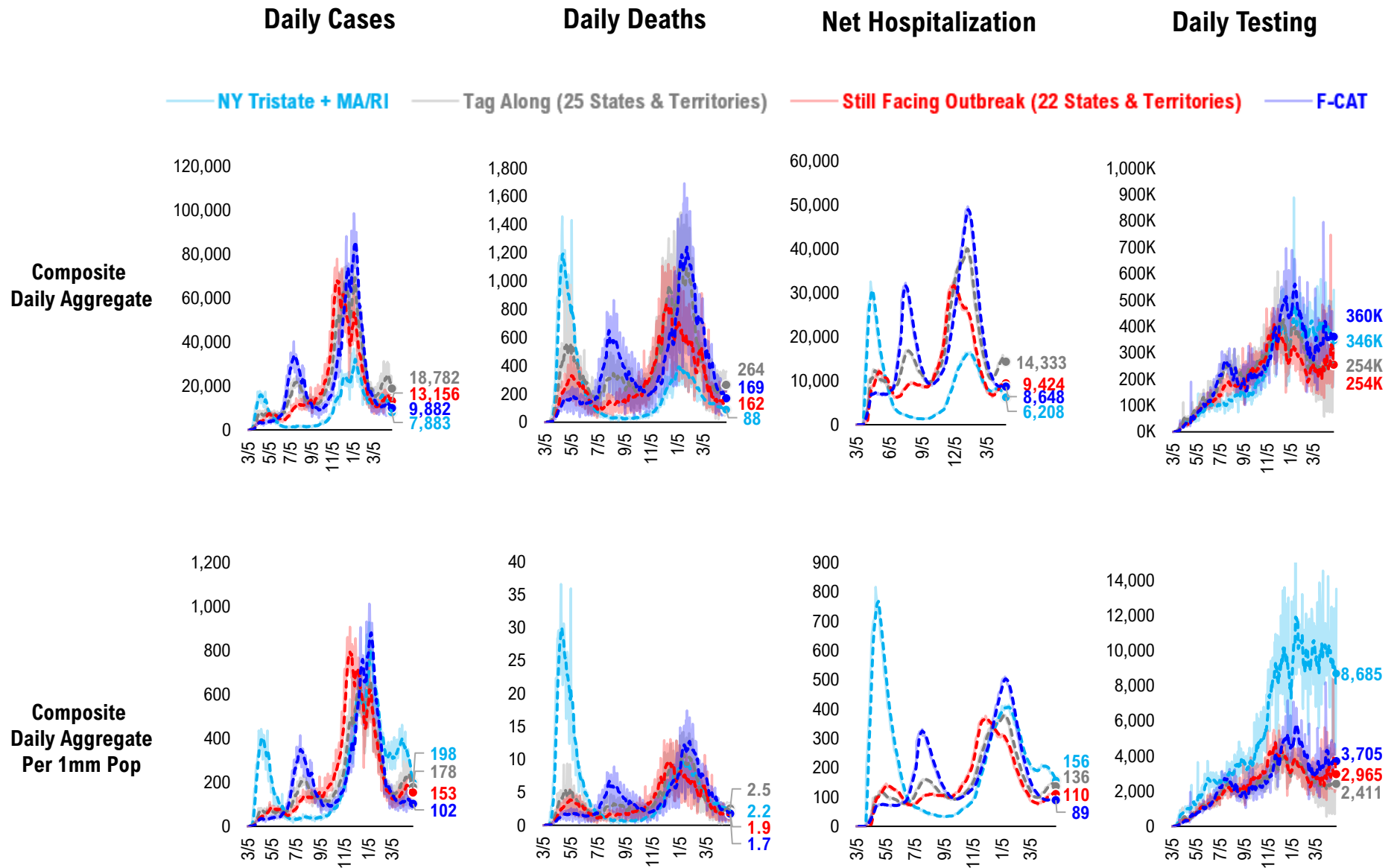
# #13: Current Hospitalizations by States...



# #14: Daily New Deaths by States...



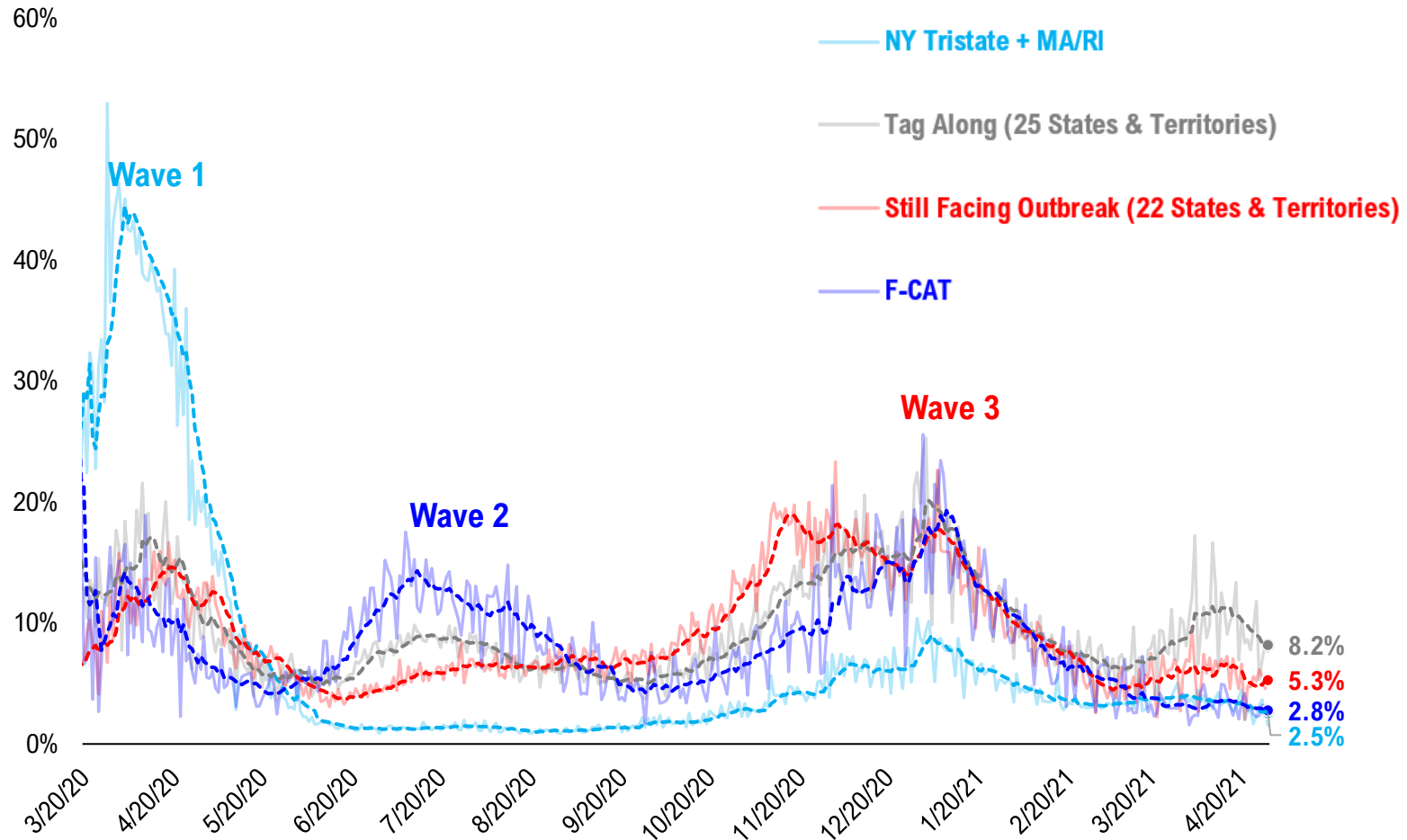
# #15: State COVID-19 situation by Tier...



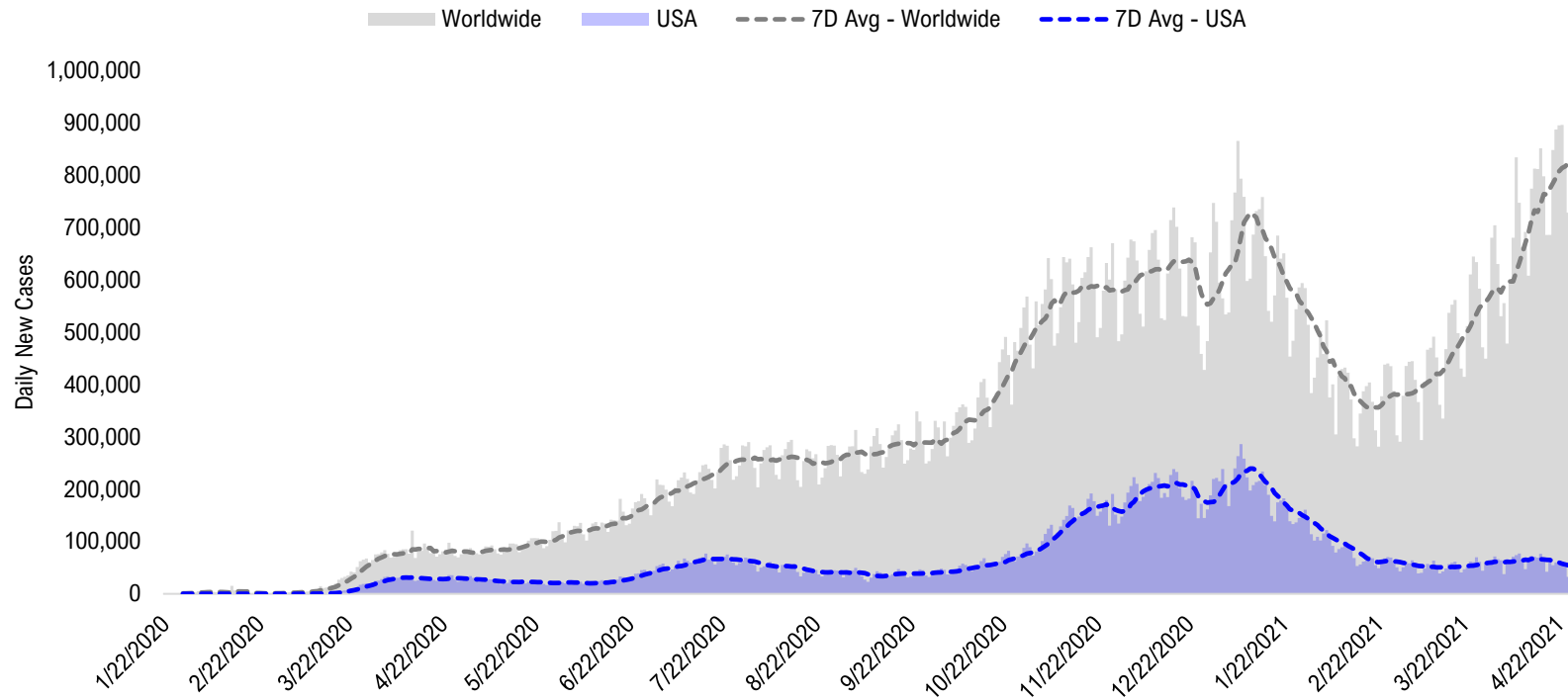


# #16: State COVID-19 Daily Positivity Rate by Tier...

## Composite Daily Positivity Rate



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



Dec 11	Dec 25	Jan 8	Jan 22	Feb 5	Feb 19	Mar 5	Mar 19	Apr 2	Apr 16	Apr 28
Europe 240,597	Europe 235,134	Europe 253,225	Europe 215,947	Europe 171,879	Europe 136,398	Europe 159,160	Europe 203,932	Europe 246,319	Europe 246,699	Pakistan + India + Bangladesh 357,953
US + Canada 210,059	US + Canada 192,649	US + Canada 239,474	US + Canada 180,145	US + Canada 118,696	Latin America 81,995	Latin America 92,112	Latin America 112,156	Latin America 123,113	Pakistan + India + Bangladesh 199,008	Europe 190,694
Latin America 77,815	Latin America 83,594	Latin America 95,501	Latin America 116,888	Latin America 95,150	US + Canada 68,407	US + Canada 58,634	US + Canada 54,412	Pakistan + India + Bangladesh 78,982	Latin America 137,880	Latin America 131,819
Pakistan + India + Bangladesh 36,327	Pakistan + India + Bangladesh 26,900	Africa 28,432	Asia ex- India+Pakistan 26,862	Asia ex- India+Pakistan 24,436	Asia ex- India+Pakistan 17,226	Pakistan + India + Bangladesh 17,965	Pakistan + India + Bangladesh 36,253	US + Canada 65,960	US + Canada 74,694	US + Canada 58,820
Asia ex- India+Pakistan 16,852	Africa 22,109	Pakistan + India + Bangladesh 21,150	Africa 25,790	Africa 15,433	Pakistan + India + Bangladesh 13,652	Asia ex- India+Pakistan 13,961	Asia ex- India+Pakistan 16,169	Asia ex- India+Pakistan 22,160	Asia ex- India+Pakistan 28,291	Asia ex- India+Pakistan 33,884
Africa 15,657	Asia ex- India+Pakistan 18,034	Asia ex- India+Pakistan 20,638	Pakistan + India + Bangladesh 16,471	Pakistan + India + Bangladesh 13,449	Africa 11,086	Africa 9,369	Africa 10,204	Africa 12,282	Africa 11,157	Africa 10,027

# Disclosures

This research is for the clients of FS Insight only. For important disclosures and rating histories regarding sectors or companies that are the subject of this report, please contact your sales representative or FS Insight at 150 East 52nd Street, New York, NY, 10022 USA.

## **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.

Neither I, nor a member of my household is an officer, director, or advisory board member of the issuer(s) or has another significant affiliation with the issuer(s) that is/are the subject of this research report. There is a possibility that we will from time to time have long or short positions in, and buy or sell, the securities or derivatives, if any, referred to in this research

## **Conflicts of Interest**

This research contains the views, opinions and recommendations of FS Insight . As of the time of writing and publication of this presentation, FS Insight does not know of, or have reason to know of any material conflicts of interest at the time of the publication of this presentation. The Company has no contractual relationship, nor have we received any compensation from any of the companies listed in this research report.

## **Analyst Industry/Sector Views**

Positive (+): The analyst expects the performance of his industry/sector coverage universe over the next 6-18 months to be attractive vs. the relevant broad market benchmark, being the S&P 500 for North America.

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.

## **General Disclosures**

FS Insight is an independent research company and is not a registered investment advisor and is not acting as a broker dealer under any federal or state securities laws. FS Insight is a member of IRC Securities’ Research Prime Services Platform. IRC Securities is a FINRA registered broker-dealer that is focused on supporting the independent research industry. Certain personnel of FS Insight (i.e. Research Analysts) are registered representatives of IRC Securities, a FINRA member firm registered as a broker-dealer with the Securities and Exchange Commission and certain state securities regulators. As registered representatives and independent contractors of IRC Securities, such personnel may receive commissions paid to or shared with IRC Securities for transactions placed by FS Insight clients directly with IRC Securities or with securities firms that may share commissions with IRC Securities in accordance with applicable SEC and FINRA requirements. IRC Securities does not distribute the research of FS Insight , which is available to select institutional clients that have engaged FS Insight .

As registered representatives of IRC Securities our analysts must follow IRC Securities’ Written Supervisory Procedures. Notable compliance policies include (1) prohibition of insider trading or the facilitation thereof, (2) maintaining client confidentiality, (3) archival of electronic communications, and (4) appropriate use of electronic communications, amongst other compliance related policies.

FS Insight does not have the same conflicts that traditional sell-side research organizations have because FS Insight (1) does not conduct any investment banking activities, (2) does not manage any investment funds, and (3) our clients are only institutional investors.

This research is for the clients of FS Insight only. Additional information is available upon request. Information has been obtained from sources believed to be reliable but FS Insight does not warrant its completeness or accuracy except with respect to any disclosures relative to FS Insight and the analyst’s involvement (if any) with any of the subject companies of the research. All pricing is as of the market close for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, risk tolerance, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies. The recipient of this report must make its own independent decision regarding any securities or financial instruments mentioned herein. Except in circumstances where FS Insight expressly agrees otherwise in writing, FS Insight is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice, including within the meaning of Section 15B of the Securities Exchange Act of 1934. All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client website, FS Insight .com. Not all research content is redistributed to our clients or made available to third-party aggregators or the media. Please contact your sales representative if you would like to receive any of our research publications.

**Copyright 2021 FS Insight LLC. All rights reserved. No part of this material may be reprinted, sold or redistributed without the prior written consent of FS Insight LLC.**