Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COVID-19 Dashboard

Issue # 43

Monday, May 4, 2020

Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

Day's Highlights

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	500,000 tests past two day
Test-Positivity Rate	Decline	11.2% past 2 days
Number of Cases	Plateau	New Cases trended down past 2 days
Deaths % of Total Cases	Decline	Stable @ 5.8%
Number of Deaths / 1M Population	Plateau	Up to 207.2
Recoveries : Death	Increase	Up to 2.6

- The U.S. reported more than 500,000 new tests over the weekend; the test-positive rate was 11.2%. Still, this rate of 759 per 1 million per day ½ of what Harvard researchers suggest is needed to reopen the country (and significantly less than ¼ of the rate suggested in a recent Kaiser Family Foundation article (KFF)).
- Based on these articles, and the rising concern about inadequate testing, we have revised our metrics used in our state-by-state readiness charts. The impact is to show that most states remain woefully short on testing; only Massachusetts, North Dakota and Rhode Island exceeded the KFF target during the past 2 weeks.
- Recoveries, which totaled 17,000 over the weekend, are not yet where they should be; with the expected 4-week lag from infection-onset to recovery, we should be seeing recoveries nearing 300,000 (there were 366,000 total cases in the U.S. 4 weeks ago). Reported recoveries are just under 180,000.
- The death rate continues to be stable at 5.8% of cases. Deaths per capita in the U.S are comparable to Switzerland but, significantly lower than many European countries.
- Montana's new daily infection rate the past 7 days fell below 1.0 – the benchmark proposed by the Institute for Health Metrics and Evaluation (IHME) for relaxing social distancing. Only China and South Korea, among the hardest-hit countries in the world, have reached this benchmark.
- Russia seems to have finally broken from exponential case growth.
- Several states now seem to have recently moved past peak new daily infection rates – Colorado, Kansas, North Carolina and Utah. The District of Columbia, Illinois, Iowa and Nebraska have yet to find the peak and have relatively high numbers of new daily infections; Indiana may have found its peak however, its rate remains high.
- Worldwide virus spread can be seen by which countries moved up in the past 4 weeks in listings of the most cases:
  - Russia to 7th from 20th
  - Brazil to 9th from 15th
  - Peru to 28th to 14th
  - India to 23rd from 15th

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COUNTRY-BY-COUNTRY INFORMATION

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Country-by-Country

Comparative Statistics

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As of May 3

Country	Total Cases	Rank	Cases per 1M Population	Rank	Deaths	Rank	Death Rate	Rank	Deaths per 1 Million Population	Rank	5-day Moving Average Case Growth Rate	Rank	Tests per 1M Population	Rank	New Daily Infections Per 1M Population (5-Day M.A.)	Rank
USA	1,188,122	(1)	3,589	(4)	68,598	(1)	5.8%	(14)	207.2	(9)	2.8%	(13)	21,742	(12)	86.7	(2)
Austria	15,597	(28)	1,732	(15)	598	(23)	3.8%	(19)	66.4	(16)	0.3%	(28)	30,462	(7)	5.9	(25)
Belgium	49,906	(13)	4,306	(3)	7,844	(6)	15.7%	(1)	676.8	(1)	1.1%	(20)	21,614	(13)	46.5	(12)
Brazil	101,147	(9)	476	(24)	7,025	(7)	6.9%	(9)	33.0	(19)	6.8%	(7)	1,597	(25)	25.7	(16)
Canada	59,474	(12)	1,576	(17)	3,682	(12)	6.2%	(11)	97.6	(12)	3.5%	(11)	23,778	(11)	47.6	(10)
Chile	19,663	(25)	1,029	(21)	260	(26)	1.3%	(27)	13.6	(22)	7.1%	(4)	10,788	(21)	47.3	(11)
China	82,877	(11)	58	(29)	4,633	(11)	5.6%	(15)	3.2	(27)	0.0%	(30)	0	(30)	0.0	(30)
Ecuador	29,538	(18)	1,674	(16)	1,564	(17)	5.3%	(16)	88.6	(13)	5.8%	(9)	4,458	(24)	55.2	(7)
France	168,693	(5)	2,584	(9)	24,895	(5)	14.8%	(3)	381.4	(5)	0.3%	(27)	16,856	(15)	14.4	(19)
Germany	165,664	(6)	1,977	(13)	6,866	(8)	4.1%	(17)	81.9	(14)	0.7%	(24)	30,400	(8)	13.5	(21)
India	42,505	(15)	31	(30)	1,391	(18)	3.3%	(21)	1.0	(30)	6.8%	(6)	758	(28)	1.5	(28)
Iran	97,424	(10)	1,160	(20)	6,203	(9)	6.4%	(10)	73.9	(15)	1.0%	(21)	5,909	(23)	11.8	(23)
Ireland	21,506	(23)	4,355	(2)	1,303	(19)	6.1%	(12)	263.9	(8)	1.4%	(17)	34,302	(5)	64.9	(5)
Israel	16,208	(27)	1,873	(14)	232	(28)	1.4%	(26)	26.8	(20)	0.6%	(25)	45,872	(1)	12.6	(22)
Italy	210,717	(3)	3,485	(6)	28,884	(2)	13.7%	(4)	477.7	(3)	0.9%	(22)	35,622	(4)	30.8	(14)
Japan	14,877	(29)	118	(27)	487	(24)	3.3%	(20)	3.9	(26)	1.8%	(16)	1,449	(26)	1.6	(27)
Mexico	22,088	(22)	171	(26)	2,061	(15)	9.3%	(8)	16.0	(21)	7.5%	(3)	727	(29)	9.1	(24)
Netherlands	40,571	(16)	2,368	(11)	5,056	(10)	12.5%	(5)	295.1	(6)	1.1%	(19)	13,184	(17)	22.7	(17)
Pakistan	20,084	(24)	91	(28)	457	(25)	2.3%	(25)	2.1	(29)	6.8%	(5)	919	(27)	4.4	(26)
Peru	45,928	(14)	1,393	(19)	1,286	(20)	2.8%	(22)	39.0	(18)	7.5%	(2)	11,376	(20)	79.8	(3)
Portugal	25,282	(20)	2,479	(10)	1,043	(22)	4.1%	(18)	102.3	(11)	0.9%	(23)	41,860	(2)	20.4	(18)
Russia	134,687	(7)	898	(22)	1,280	(21)	1.0%	(28)	8.5	(23)	7.6%	(1)	28,095	(9)	51.2	(9)
Saudi Arabia	27,011	(19)	776	(23)	184	(29)	0.7%	(29)	5.3	(24)	5.9%	(8)	10,127	(22)	38.9	(13)
Singapore	18,205	(26)	3,112	(7)	18	(30)	0.1%	(30)	3.1	(28)	4.0%	(10)	24,600	(10)	111.9	(1)
South Korea	10,793	(30)	211	(25)	250	(27)	2.3%	(24)	4.9	(25)	0.1%	(29)	12,307	(18)	0.2	(29)
Spain	247,122	(2)	5,285	(1)	25,264	(4)	10.2%	(7)	540.4	(2)	1.3%	(18)	41,332	(3)	62.6	(6)
Sweden	22,317	(21)	2,210	(12)	2,679	(14)	12.0%	(6)	265.3	(7)	2.6%	(14)	11,833	(19)	52.0	(8)
Switzerland	29,905	(17)	3,492	(5)	1,762	(16)	5.9%	(13)	205.7	(10)	0.4%	(26)	32,378	(6)	14.1	(20)
Turkey	126,045	(8)	1,495	(18)	3,397	(13)	2.7%	(23)	40.3	(17)	1.9%	(15)	13,462	(16)	27.0	(15)
UK	186,599	(4)	2,749	(8)	28,446	(3)	15.2%	(2)	419.0	(4)	3.0%	(12)	17,771	(14)	71.0	(4)

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Country-by-Country

Virus Progression

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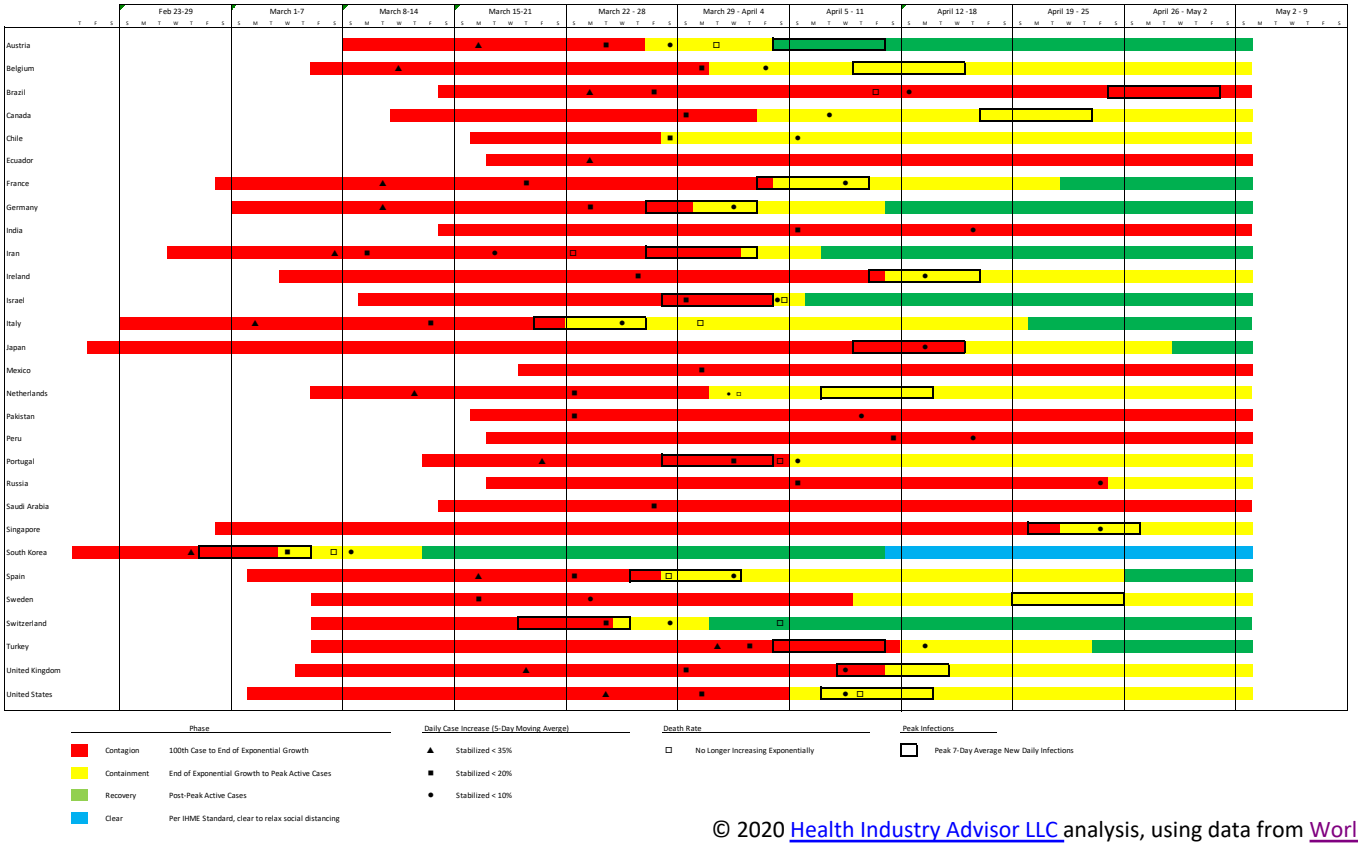
This graphic illustrates when the country first recorded 100 total cases (start of the "contagion" phase); when growth stopped following an exponential pattern (start of the "containment" phase); and, when peak total cases were recorded (start of the "recovery" phase). It uses symbols to indicate when average daily case growth rates fell (and were sustained) below certain benchmarks, as well as when deaths stopped growing exponentially.



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Country-By-Country

Listing of Countries By Total Cases

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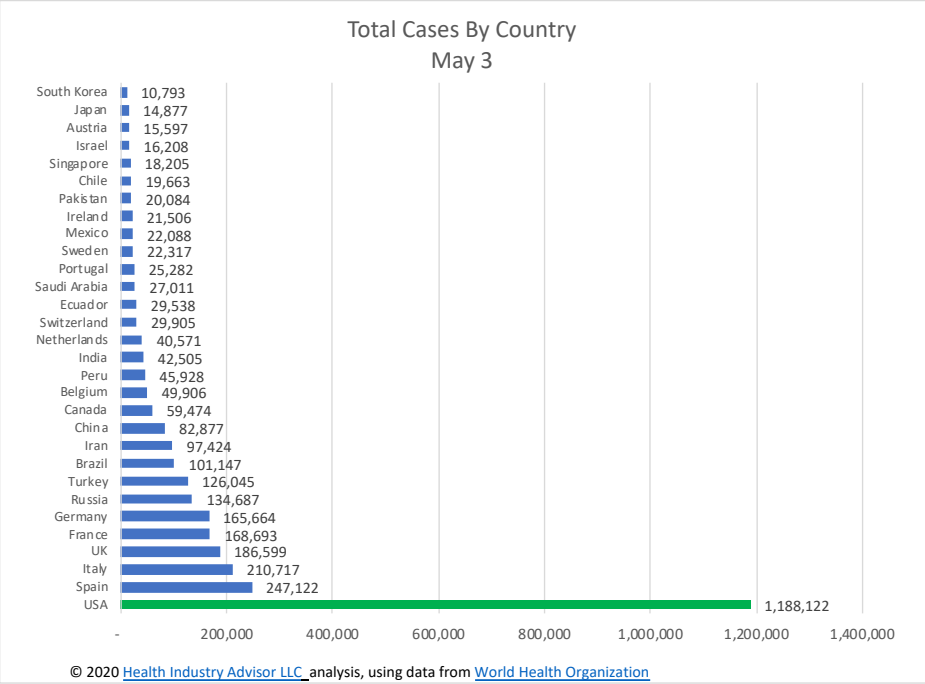
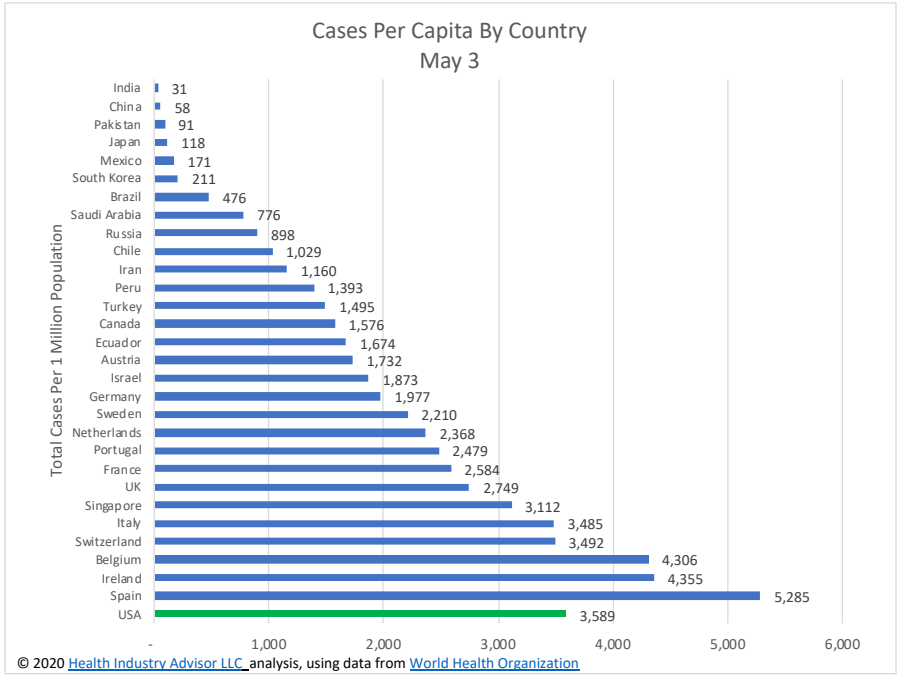
		Total Cases		
		3-May		5-Apr
1	USA	1,188,122	USA	367,004
2	Spain	247,122	Spain	136,675
3	Italy	210,717	Italy	132,547
4	UK	186,599	Germany	103,375
5	France	168,693	France	90,452
6	Germany	165,664	China	81,740
7	Russia	134,687	Iran	60,500
8	Turkey	126,045	UK	51,608
9	Brazil	101,147	Turkey	30,217
10	Iran	97,424	Switzerland	21,657
11	China	82,877	Belgium	20,814
12	Canada	59,474	Netherlands	18,803
13	Belgium	49,906	Canada	16,667
14	Peru	45,928	Austria	12,297
15	India	42,505	Brazil	12,183
16	Netherlands	40,571	Portugal	11,730
17	Switzerland	29,905	South Korea	10,284
18	Ecuador	29,538	Israel	8,904
19	Saudi Arabia	27,011	Sweden	7,206
20	Portugal	25,282	Russia	6,343
21	Sweden	22,317	Ireland	5,364
22	Mexico	22,088	Chile	4,816
23	Ireland	21,506	India	4,778
24	Pakistan	20,084	Japan	3,906
25	Chile	19,663	Pakistan	3,766
26	Singapore	18,205	Ecuador	3,747
27	Israel	16,208	Saudi Arabia	2,605
28	Austria	15,597	Peru	2,561
29	Japan	14,877	Mexico	2,143
30	South Korea	10,793	Singapore	1,375

Cases & Cases Per Capita





Country-by-Country

Deaths Per Cases & Per Capita

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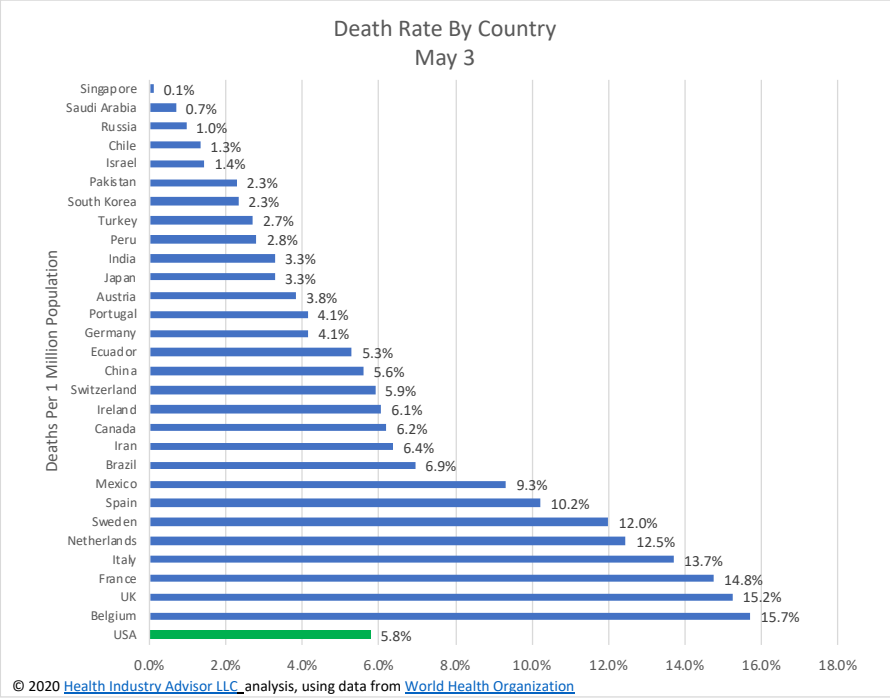

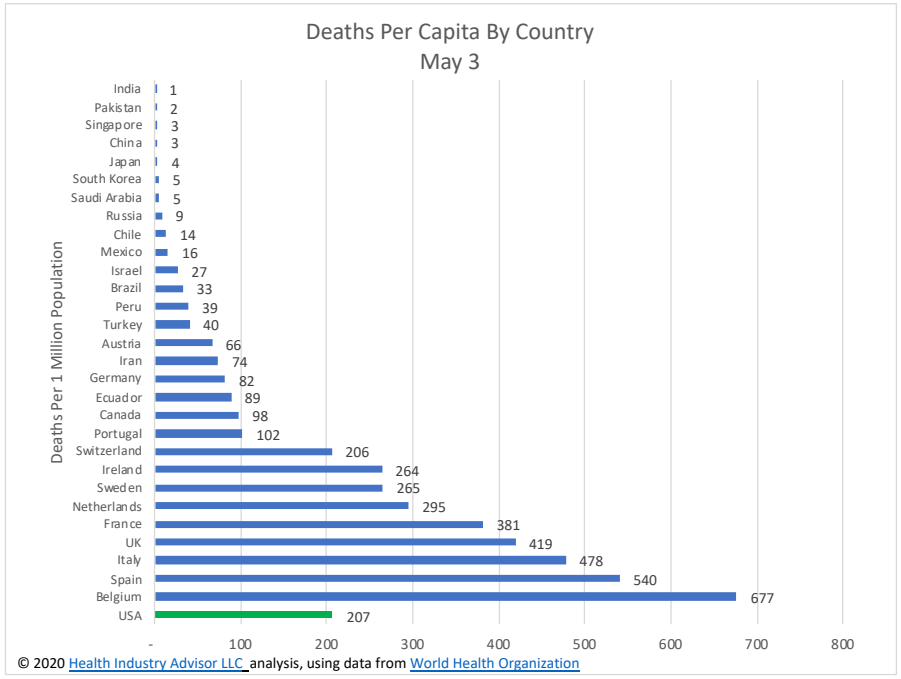

Country-by-Country

Tests Per Capita & Case Growth Rate

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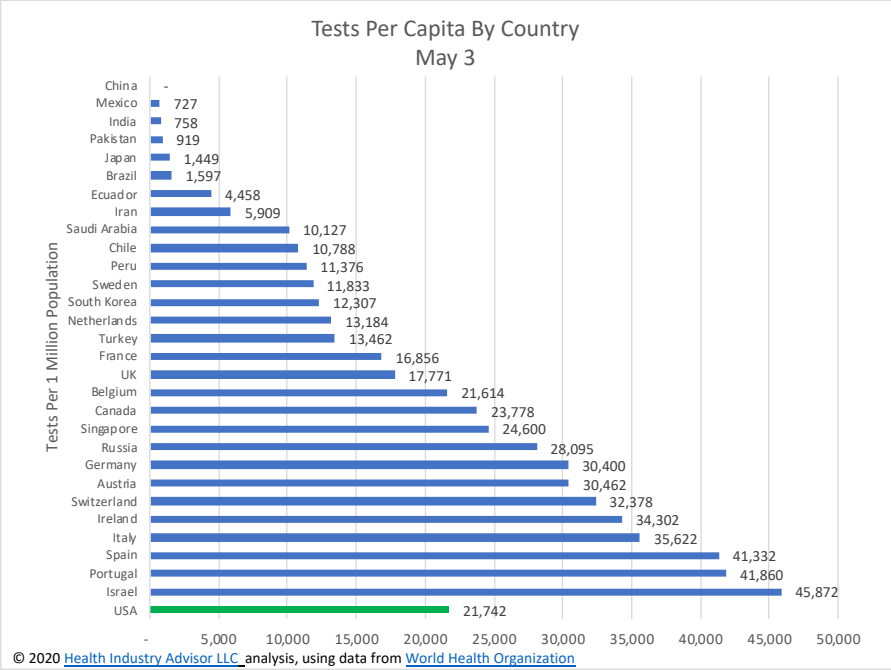

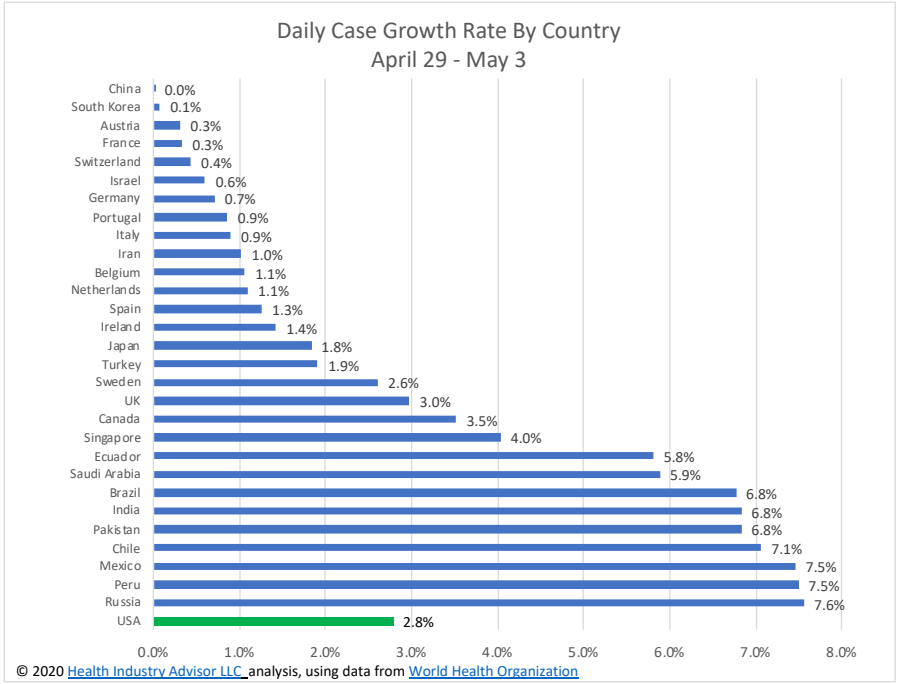

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Country-by-Country

New Daily Infection Rate

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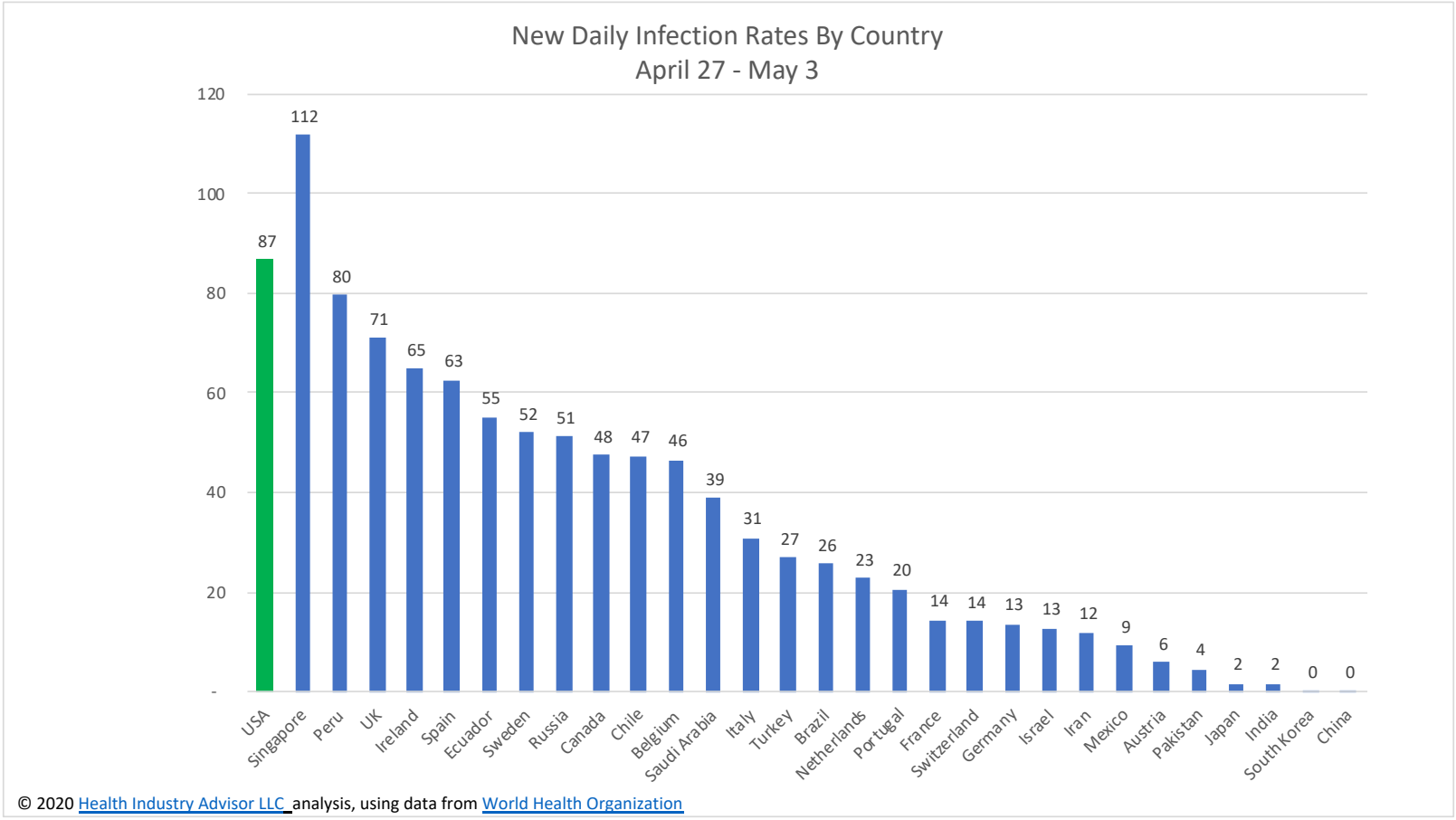

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Country-by-Country

New Daily Infection Rate Time Series

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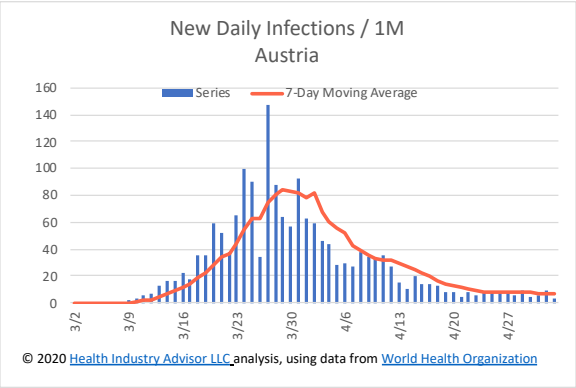

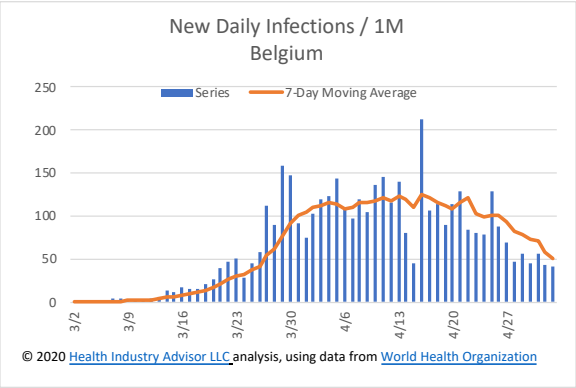

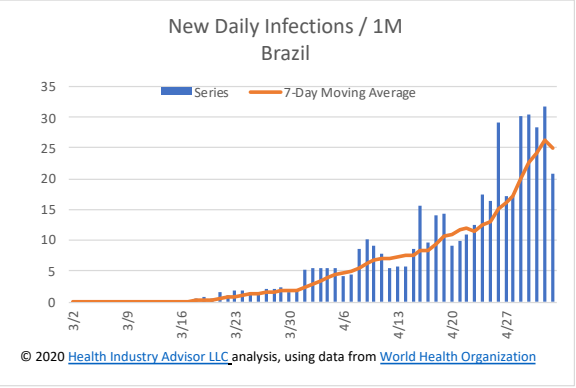

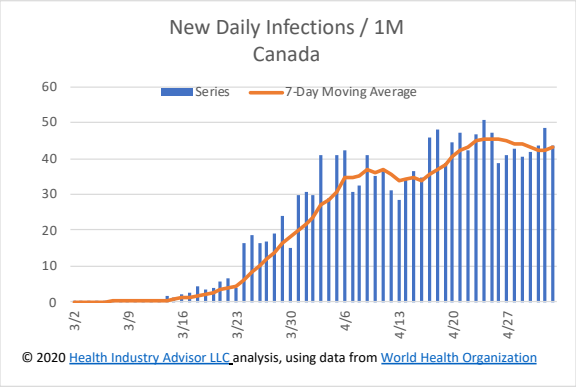

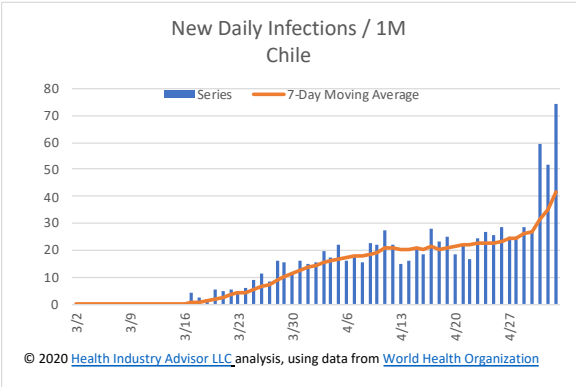

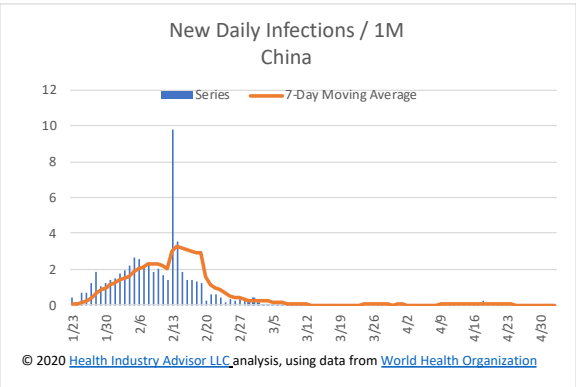

Country-by-Country

New Daily Infection Rate Time Series

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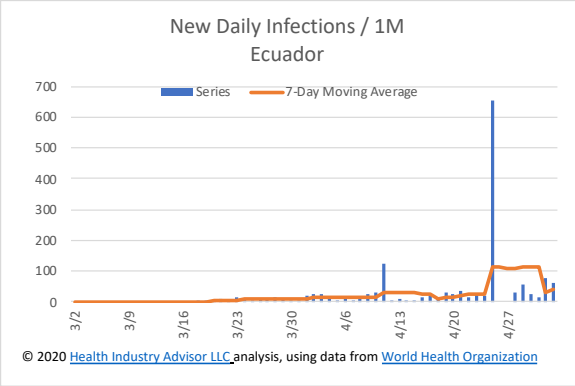

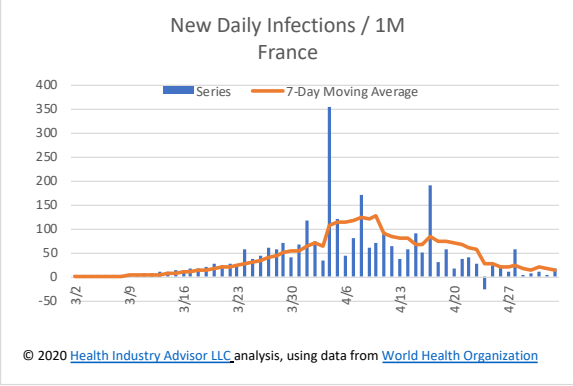

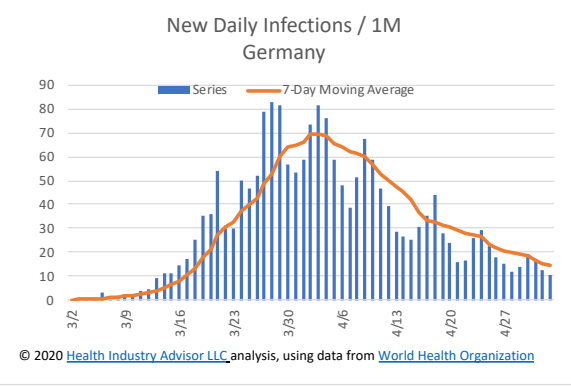

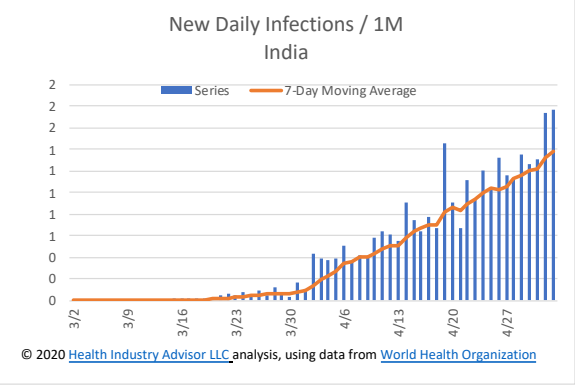

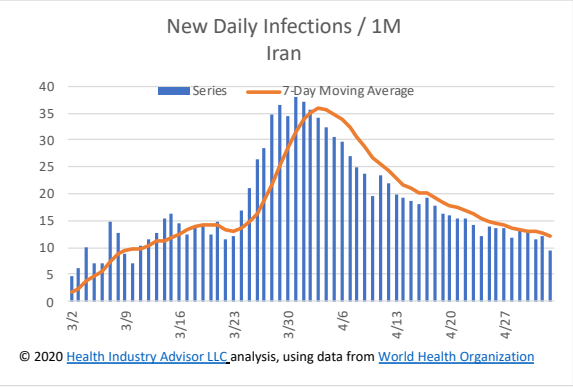

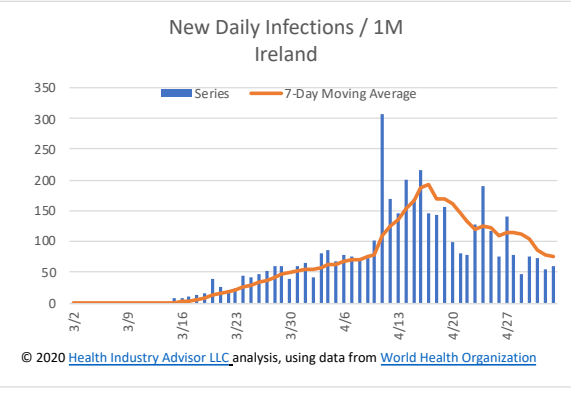

Country-by-Country

New Daily Infection Rate Time Series

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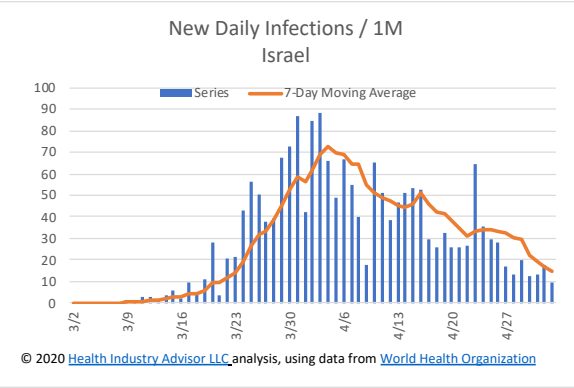

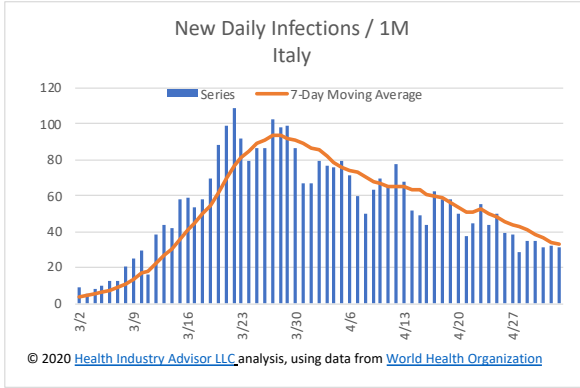

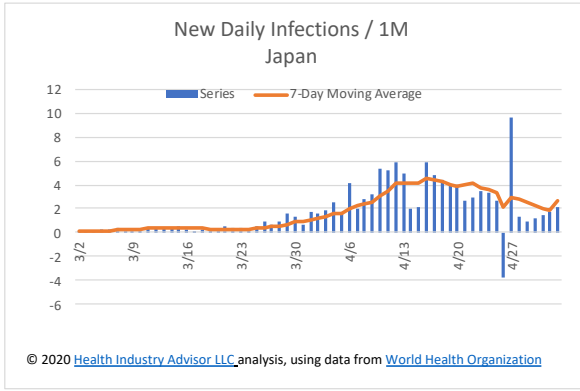

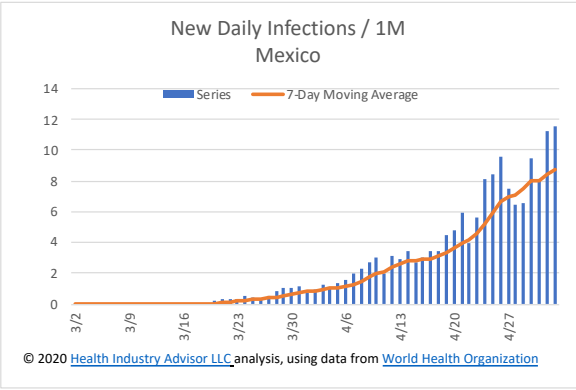

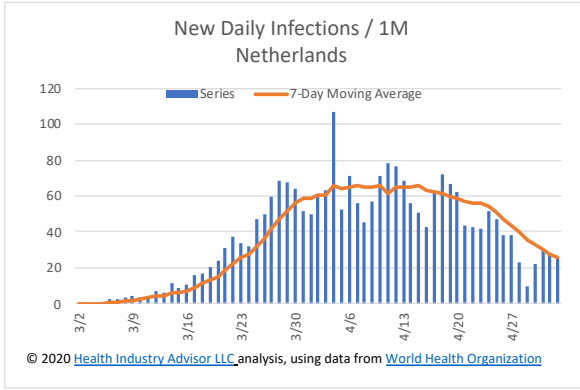

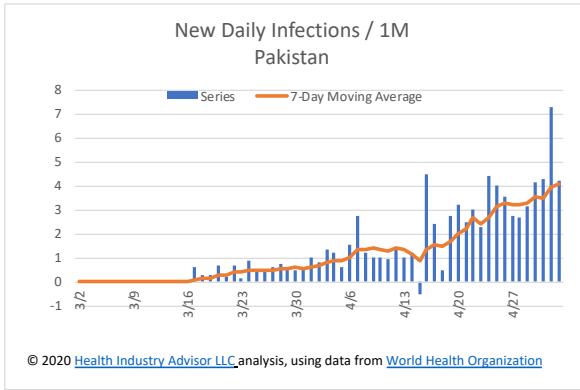

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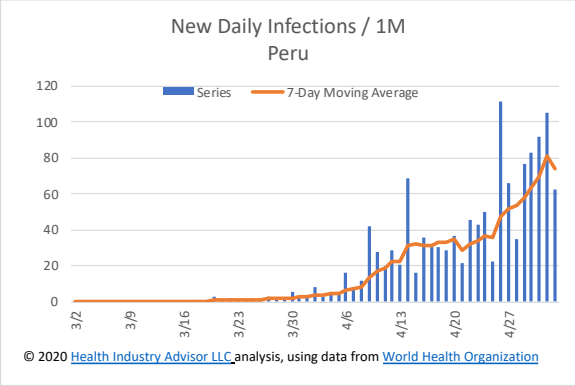

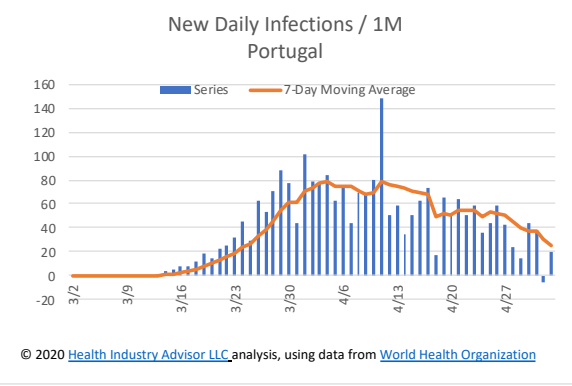

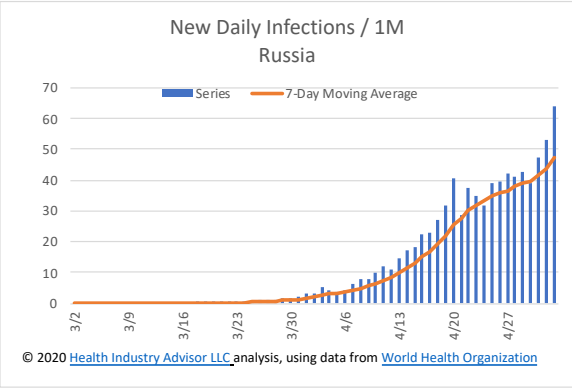

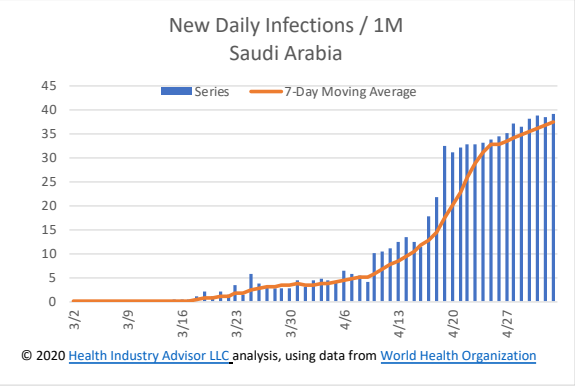

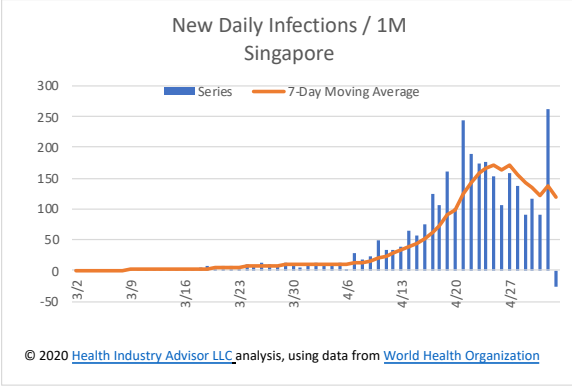

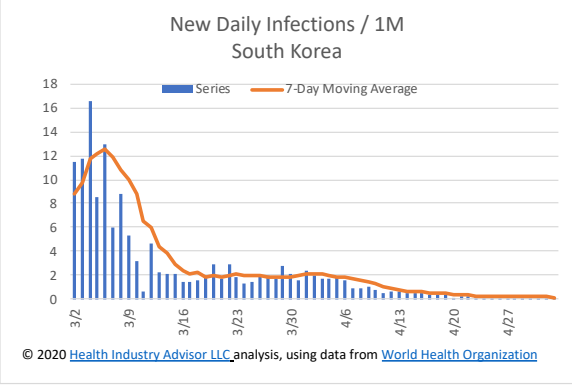

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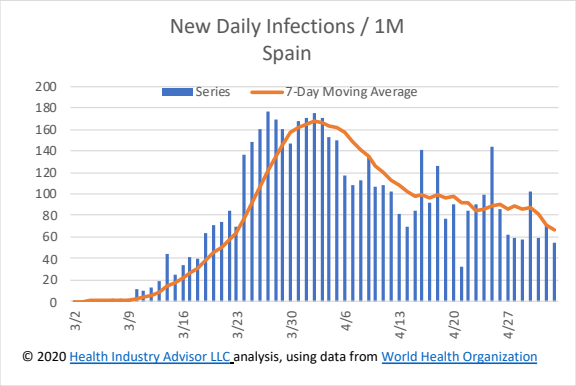
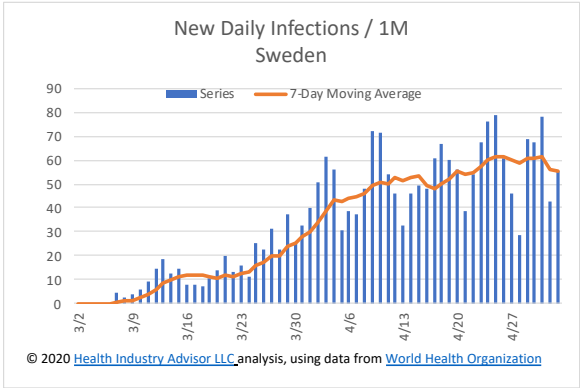
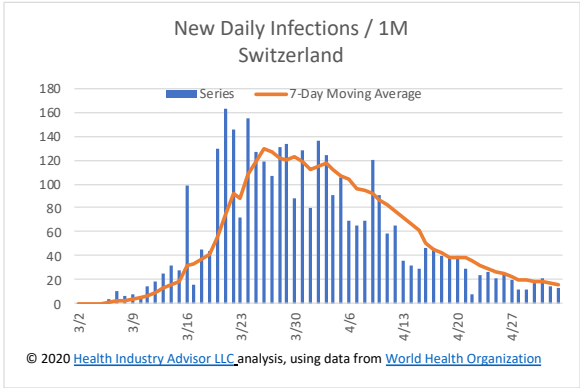
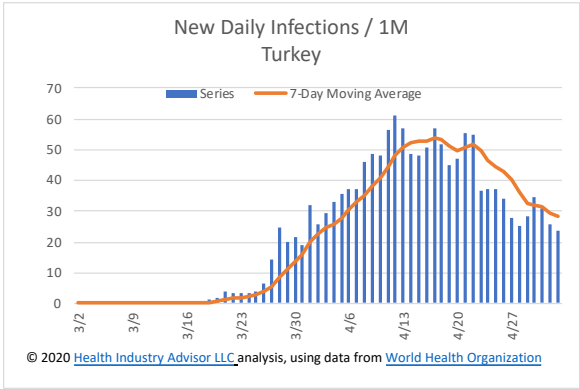
New Daily Infection Rate Time Series

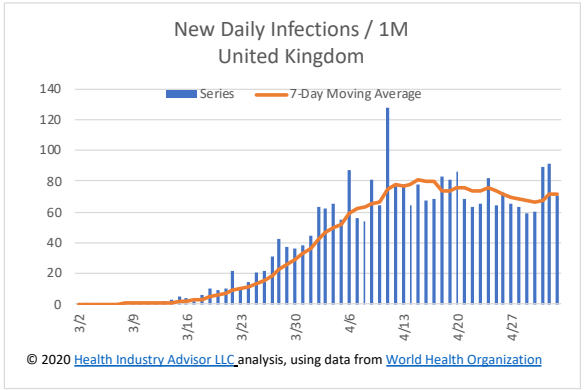
"Strategic Guidance in an Era of Unprecedented Change"

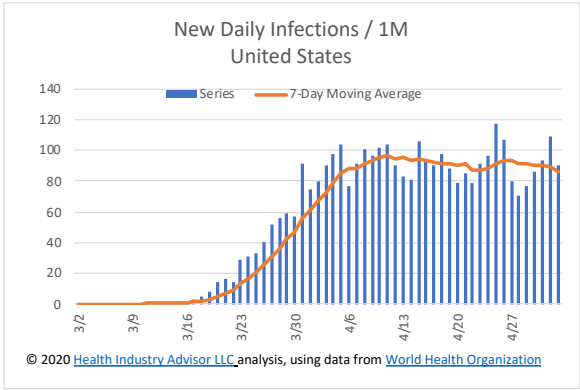












UNITED STATES & STATE-BY-STATE INFORMATION

State-by-State

Readiness For Relaxing Restrictions

We modified the tests/capita metric in two ways: first, we changed to tests/capita past 2 weeks (v. cumulative); second, we adopted the Harvard based study of susceptible-infected-recovered model (SEIR) identification of a goal of 2.7% of population tested per week; and, a minimum of 1520 tests per 1 million population. This will serve as a more challenging standard.

- We recently introduced a scorecard to provide a snapshot of each state's readiness for relaxing restrictions on businesses and individuals.
- To portray readiness we have incorporated the following measures into to the scorecard, (along with the rationale for the scoring within each measure):
  - Tests/Capita – last 14 days; indicates testing robustness; grading quintiles based on Harvard study using susceptible-infected-recovered model (SEIR) 2.7% of population tested per week, 1%, 0.7%, 0.35%, all others
    - Direction – whether test volume increased/stayed level, or decreased the past 2 weeks v. prior two weeks
  - Test-Positive Rate – indicates whether testing is identifying sufficient numbers of non-infected persons; grading based on comparison to best reported in the world (South Korea, Australia, New Zealand), next group of countries (Canada, Germany, Denmark), then, next 3 levels set to differentiate among states
    - Direction – whether test positive rate increased/stayed level, or past 2 weeks v. prior two weeks
  - New Infections / 1 Million – indicates how quickly the virus is spreading; grading based on: rate proposed by IHME for ending social distancing, top ten, top 20, top 25 among the countries we track, then all others
    - Direction – whether new infection per capita rate increased/stayed level, or past 2 weeks v. prior two weeks
  - Influenza-Like Illness – Using CDC-reported data, indicates whether the state's visits for influenza the past week were above or below CDC baseline for the state's region
    - Direction – whether the % visits for influenza the last 3 weeks increased or decreased the past 3 weeks v. the prior 3 weeks
  - Hospital Resources – using IHME projections, whether the state is pre- or post- peak projected hospital resource needs due to the virus; and the 5 of peak resources projected to be needed today. Grading based on current need at <45% of peak, 45-60%, 60-75%, 75-85%, and all others.
- On the following pages, we portray state-by-state readiness on various dates.
- **These scorecards are for informational purposes only. The measures and grading used are not based on any scientific standard and should not be considered a substitute for public health considerations or other clinical or economic judgement. States may elect to move faster or slower than the scorecard might otherwise indicate.**

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State-By-State

Relative "Readiness" For Relaxing Restrictions

"Strategic Guidance in an Era of Unprecedented Change"

May 3

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Columbia									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire									
New Jersey									
New Mexico									
New York									
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

April 30

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Columbia									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire									
New Jersey									
New Mexico									
New York									
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

Legend and sources provided on 2nd following page

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State-By-State

Relative "Readiness" For Relaxing Restrictions

"Strategic Guidance in an Era of Unprecedented Change"

April 26

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Columbia									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire									
New Jersey									
New Mexico									
New York									
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

April 15

State	Tests / Capita		Test-Positive Rate		New Infections / 1 Million		Influenza-Like Illness		Hospital Resources
	#	Direction	#	Direction	#	Direction	Baseline	Direction	
Alabama									
Alaska									
Arizona									
Arkansas									
California									
Colorado									
Connecticut									
Delaware									
District Of Columbia									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachusetts									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampshire									
New Jersey									
New Mexico									
New York									
North Carolina									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolina									
South Dakota									
Tennessee									
Texas									
Utah									
Vermont									
Virginia									
Washington									
West Virginia									
Wisconsin									
Wyoming									

Legend and sources provided on following page

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State-By-State

Relative "Readiness" For Relaxing Restrictions

"Strategic Guidance in an Era of Unprecedented Change"

Legend:

	Tests per Capita	Direction	Test-Positive Rate	Direction	New Daliy Infection Rate	Direction	Baseline	Direction	Hospital Resources
	per 1M				per 1M				
Time period	Average last 2 weeks	last 14 days v prior 2 weeks	last 7 days	last 14 days v prior 2 weeks	last 7 days	last 14 days v prior 2 weeks	CDC Baseline by region	last 14 days v prior 2 weeks	As of 4/26
	>3,850		<=2%		<10				<45% of Peak
	1520 - 3,850		2-10%		10-50				45-60% of Peak
	1,501 - 3,850		10-14%		50-100				60-75% of Peak
	501 - 1,500		14-18%		100-150				75-85% of peak
	<750		>18%		>150				>85% of Peak or Pre-Peak
✓		Up		Down		Down by 40%	Below Baseline	Down	
!						Down by 10%		N/A	
✗		Down		Up		Down <10% or Up	Above Baseline	Up	

Sources:

Influenza guidelines and data from Centers fo Disease Control (https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html), accessed April 30, 2020

Test data from Covid Tracking Project (https://covidtracking.com/), accessed March 21-May 2, 2020

Hospital resource Need projections from Institure for Health Metrics and Evaluation (), accessed April 30, 2020

Infection rate data from World Health Organization (worldometer.info), accessed March 21-May 2, 2020

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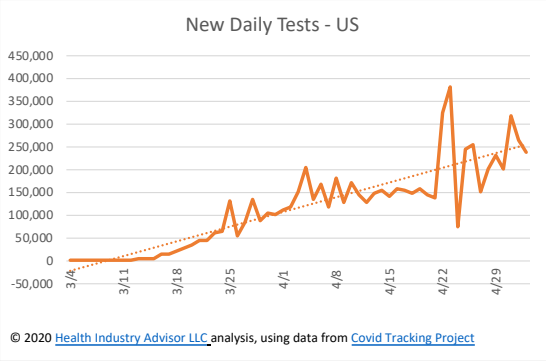
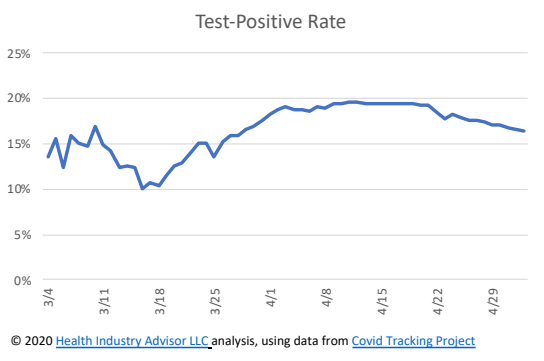
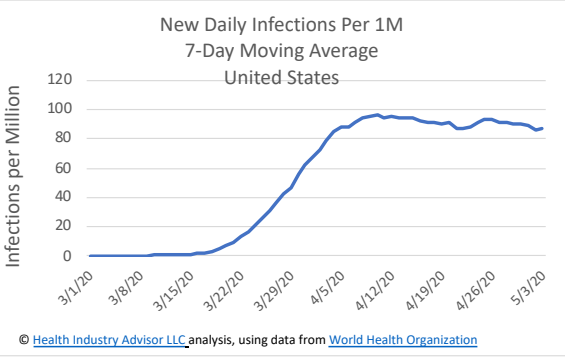
United States

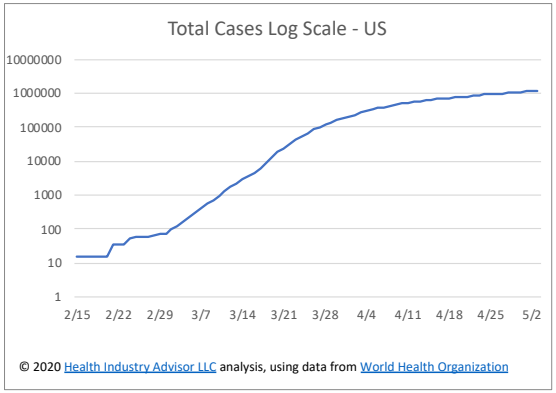
Overall Statistics

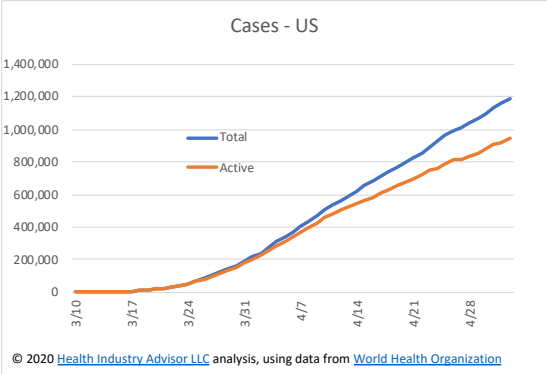
"Strategic Guidance in an Era of Unprecedented Change"

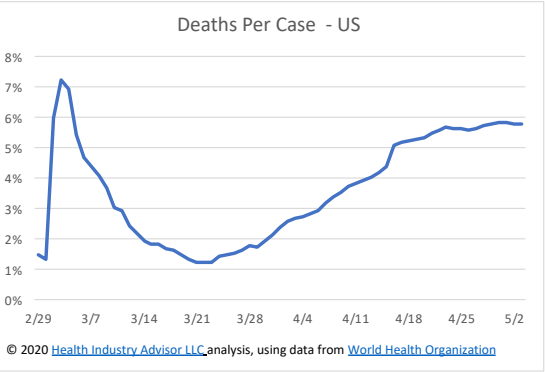












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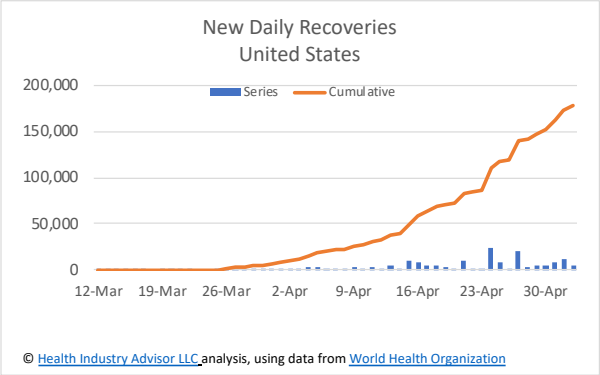
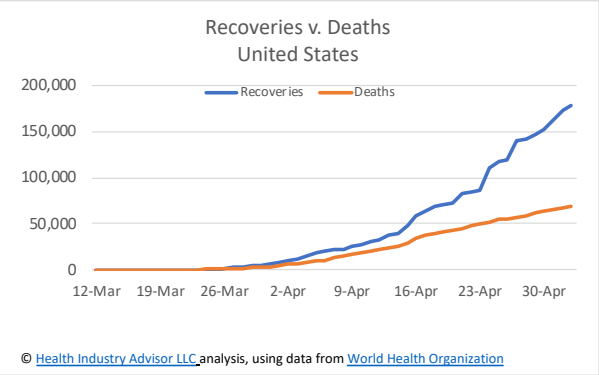
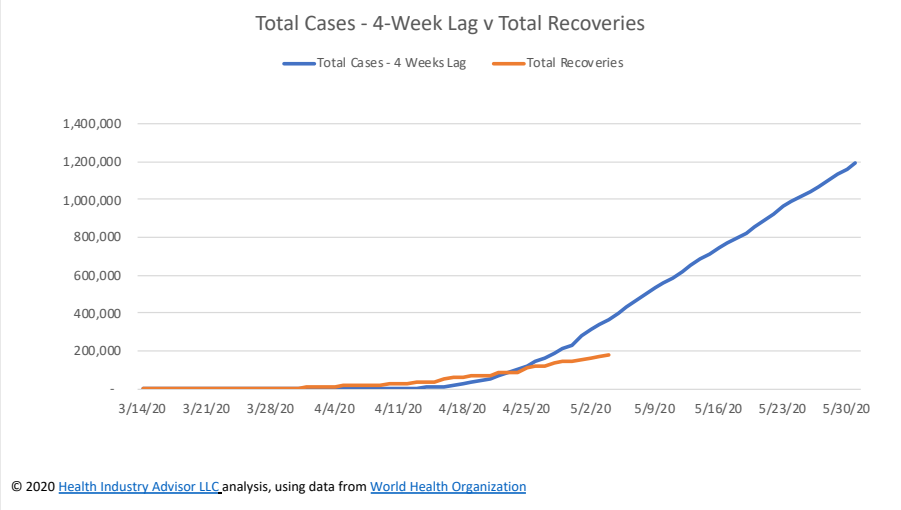
United States

Recoveries

"Strategic Guidance in an Era of Unprecedented Change"







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State-by-State

Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

As of May 3

State	Total Cases	Rank	Cases per 1M Population	Rank	Deaths	Rank	Death Rate	Rank	Deaths per 1 Million Population	Rank	5-day Moving Average Case Growth Rate	Rank	Tests per 1M Population	Rank	New Daily Cases Per 1M Population (5-Day M.A.)	Rank
Alabama	7,888	(26)	1,608.8	(30)	290	(26)	3.7%	(33)	59.1	(28)	3.2%	(24)	19,911	(25)	42.8	(30)
Alaska	368	(51)	503.0	(49)	9	(50)	2.4%	(43)	12.3	(49)	1.0%	(48)	29,218	(11)	5.3	(49)
Arizona	8,640	(23)	1,187.0	(37)	362	(22)	4.2%	(23)	49.7	(34)	4.5%	(13)	11,677	(50)	41.5	(32)
Arkansas	3,431	(39)	1,136.9	(41)	76	(40)	2.2%	(44)	25.2	(45)	1.9%	(42)	17,685	(30)	20.4	(43)
California	54,859	(5)	1,388.4	(33)	2,212	(8)	4.0%	(28)	56.0	(32)	3.5%	(21)	18,283	(28)	40.9	(33)
Colorado	16,635	(17)	2,888.7	(17)	842	(16)	5.1%	(14)	146.2	(14)	3.0%	(27)	14,708	(41)	79.2	(17)
Connecticut	29,287	(11)	8,214.5	(5)	2,495	(7)	8.5%	(2)	699.8	(3)	2.2%	(40)	28,617	(12)	161.0	(11)
Delaware	5,208	(32)	5,348.3	(8)	177	(34)	3.4%	(37)	181.8	(13)	2.6%	(34)	25,000	(17)	172.2	(8)
District Of Columbia	5,016	(35)	7,107.3	(6)	251	(30)	5.0%	(16)	355.7	(7)	4.7%	(11)	33,750	(8)	237.8	(4)
Florida	36,078	(8)	1,679.8	(28)	1,379	(10)	3.8%	(31)	64.2	(24)	1.9%	(41)	20,874	(24)	30.3	(40)
Georgia	28,671	(12)	2,700.4	(18)	1,179	(13)	4.1%	(26)	111.0	(15)	2.9%	(30)	17,772	(29)	69.8	(23)
Hawaii	620	(48)	437.9	(50)	17	(48)	2.7%	(42)	12.0	(51)	0.4%	(50)	22,807	(20)	1.4	(50)
Idaho	2,061	(43)	1,150.1	(39)	64	(41)	3.1%	(39)	35.7	(39)	1.1%	(47)	17,381	(31)	13.1	(45)
Illinois	61,499	(4)	4,853.2	(9)	2,618	(6)	4.3%	(21)	206.6	(11)	5.0%	(8)	24,905	(18)	198.4	(6)
Indiana	19,933	(14)	2,960.8	(14)	1,246	(12)	6.3%	(6)	185.1	(12)	3.7%	(17)	16,401	(34)	104.4	(12)
Iowa	9,169	(22)	2,906.1	(16)	184	(33)	2.0%	(46)	58.3	(29)	7.5%	(3)	16,979	(33)	167.2	(9)
Kansas	4,896	(36)	1,680.6	(27)	143	(36)	2.9%	(40)	49.1	(35)	6.5%	(4)	11,357	(51)	84.4	(16)
Kentucky	5,130	(34)	1,148.2	(40)	253	(29)	4.9%	(17)	56.6	(31)	3.2%	(23)	13,154	(47)	33.8	(37)
Louisiana	29,340	(10)	6,311.3	(7)	2,012	(9)	6.9%	(4)	432.8	(5)	1.5%	(45)	37,777	(6)	78.9	(18)
Maine	1,185	(46)	881.6	(46)	57	(42)	4.8%	(19)	42.4	(36)	2.6%	(33)	15,487	(37)	18.1	(44)
Maryland	25,462	(13)	4,211.6	(11)	1,281	(11)	5.0%	(15)	211.9	(10)	4.8%	(10)	22,120	(21)	162.6	(10)
Massachusetts	68,087	(3)	9,797.4	(3)	4,004	(4)	5.9%	(9)	576.2	(4)	3.2%	(25)	46,067	(3)	270.3	(3)
Michigan	43,754	(7)	4,381.2	(10)	4,049	(3)	9.3%	(1)	405.4	(6)	2.2%	(39)	21,952	(22)	85.5	(15)
Minnesota	6,663	(28)	1,181.5	(38)	419	(20)	6.3%	(5)	74.3	(22)	9.8%	(2)	14,950	(39)	77.5	(20)
Mississippi	7,550	(27)	2,536.8	(19)	303	(25)	4.0%	(29)	101.8	(17)	3.5%	(20)	25,962	(16)	78.7	(19)
Missouri	8,434	(24)	1,374.2	(34)	377	(21)	4.5%	(20)	61.4	(26)	2.7%	(31)	13,490	(46)	32.7	(38)
Montana	455	(50)	425.7	(51)	16	(49)	3.5%	(35)	15.0	(48)	0.2%	(51)	14,406	(42)	0.9	(51)
Nebraska	5,659	(30)	2,925.4	(15)	78	(39)	1.4%	(48)	40.3	(38)	10.9%	(1)	17,219	(32)	194.3	(7)
Nevada	5,426	(31)	1,761.6	(25)	262	(28)	4.8%	(18)	85.1	(19)	2.5%	(36)	19,229	(26)	38.2	(34)
New Hampshire	2,518	(42)	1,851.9	(23)	86	(38)	3.4%	(36)	63.2	(25)	4.6%	(12)	22,950	(19)	68.7	(24)
New Jersey	127,438	(2)	14,347.6	(2)	7,886	(2)	6.2%	(7)	887.8	(2)	2.3%	(38)	30,826	(9)	295.9	(1)
New Mexico	3,850	(38)	1,836.1	(24)	151	(35)	3.9%	(30)	72.0	(23)	5.3%	(7)	35,817	(7)	76.6	(21)
New York	323,883	(1)	16,649.0	(1)	24,648	(1)	7.6%	(3)	1,267.0	(1)	1.4%	(46)	50,254	(2)	219.5	(5)
North Carolina	11,743	(20)	1,119.7	(42)	432	(19)	3.7%	(32)	41.2	(37)	3.8%	(15)	14,163	(43)	37.4	(35)
North Dakota	1,191	(45)	1,562.9	(31)	25	(46)	2.1%	(45)	32.8	(40)	3.7%	(16)	44,341	(4)	60.7	(26)
Ohio	19,916	(15)	1,703.8	(26)	1,040	(14)	5.2%	(13)	89.0	(18)	3.5%	(22)	12,828	(49)	48.3	(28)
Oklahoma	3,972	(37)	1,003.8	(45)	238	(31)	6.0%	(8)	60.1	(27)	3.1%	(26)	16,220	(35)	26.0	(41)
Oregon	2,680	(40)	635.4	(48)	109	(37)	4.1%	(27)	25.8	(44)	2.4%	(37)	15,202	(38)	12.5	(46)
Pennsylvania	52,048	(6)	4,065.6	(12)	2,832	(5)	5.4%	(11)	221.2	(9)	2.9%	(28)	18,813	(27)	104.2	(13)
Rhode Island	9,477	(21)	8,946.0	(4)	320	(24)	3.4%	(38)	302.1	(8)	3.6%	(18)	68,073	(1)	274.8	(2)
South Carolina	6,626	(29)	1,286.9	(36)	275	(27)	4.2%	(25)	53.4	(33)	2.9%	(29)	12,952	(48)	31.5	(39)
South Dakota	2,631	(41)	2,974.0	(13)	21	(47)	0.8%	(51)	23.7	(46)	2.6%	(35)	20,932	(23)	67.7	(25)
Tennessee	13,177	(19)	1,928.4	(22)	210	(32)	1.6%	(47)	30.7	(41)	5.6%	(5)	30,763	(10)	73.4	(22)
Texas	31,993	(9)	1,103.4	(43)	888	(15)	2.8%	(41)	30.6	(42)	4.1%	(14)	14,006	(45)	34.5	(36)
Utah	5,175	(33)	1,614.2	(29)	50	(45)	1.0%	(50)	15.6	(47)	3.6%	(19)	40,095	(5)	46.9	(29)
Vermont	897	(47)	1,437.5	(32)	52	(43)	5.8%	(10)	83.3	(20)	0.8%	(49)	27,127	(14)	10.5	(48)
Virginia	18,671	(16)	2,187.4	(20)	660	(18)	3.5%	(34)	77.3	(21)	5.4%	(6)	14,151	(44)	95.4	(14)
Washington	15,776	(18)	2,071.7	(21)	837	(17)	5.3%	(12)	109.9	(16)	2.7%	(32)	26,593	(15)	42.3	(31)
West Virginia	1,195	(44)	668.7	(47)	50	(45)	4.2%	(24)	28.0	(43)	1.8%	(44)	28,311	(13)	12.1	(47)
Wisconsin	7,964	(25)	1,367.8	(35)	339	(23)	4.3%	(22)	58.2	(30)	4.8%	(9)	14,876	(40)	50.4	(27)
Wyoming	586	(49)	1,012.5	(44)	7	(51)	1.2%	(49)	12.1	(50)	1.8%	(43)	15,994	(36)	20.7	(42)
United States	1,131,030		3,417.0		65,753		5.8%		207.2		2.8%		21,742		86.7	

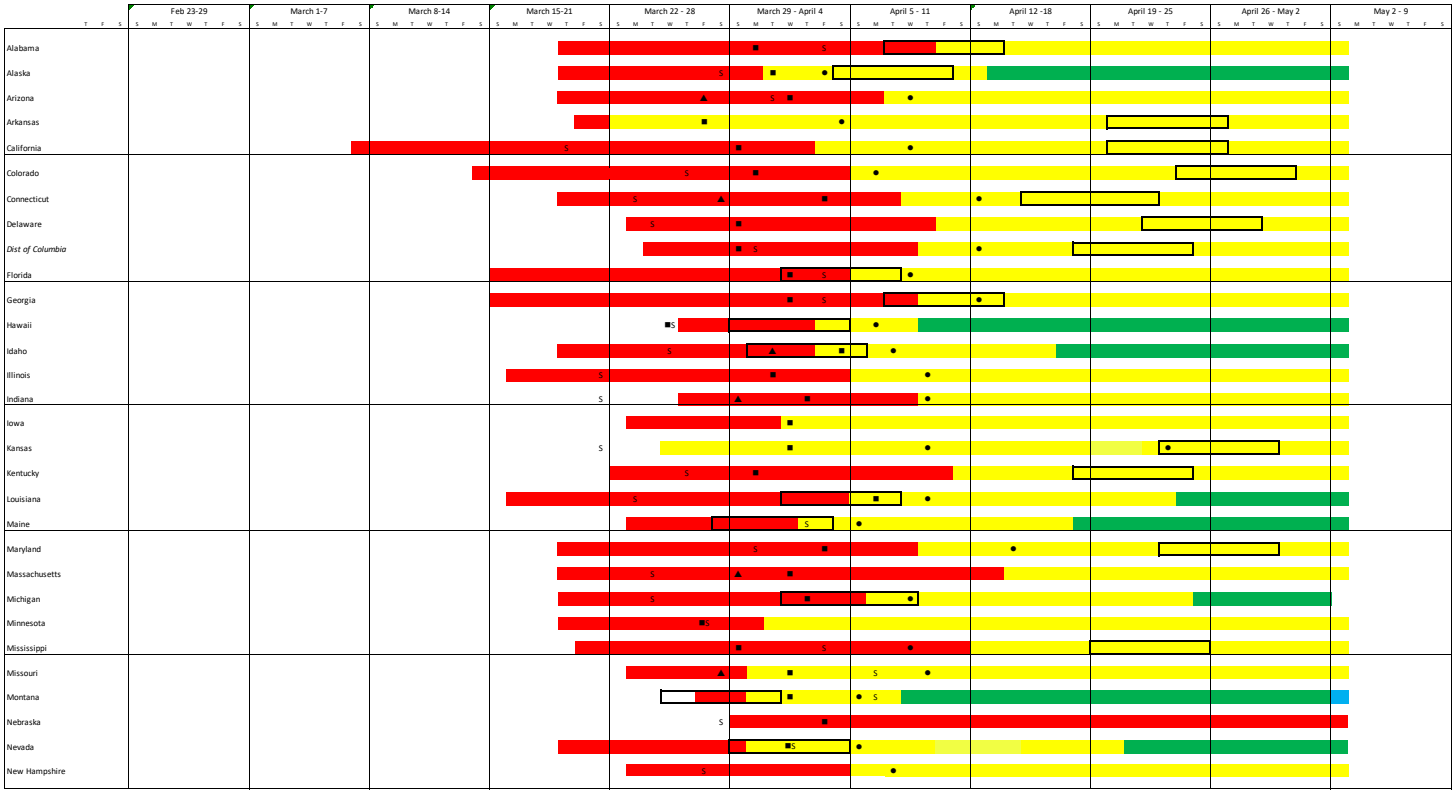
State-by-State

Virus Progression – *1 of 2*

"Strategic Guidance in an Era of Unprecedented Change"

This graphic illustrates when the country first recorded 100 total cases (start of the "contagion" phase); when growth stopped following an exponential pattern (start of the "containment" phase); and, when peak total cases were recorded (start of the "recovery" phase). It uses symbols to indicate when average daily case growth rates fell (and were sustained) below certain benchmarks, as well as when deaths stopped growing exponentially.

A state is not shaded green until active cases appear to have peaked.



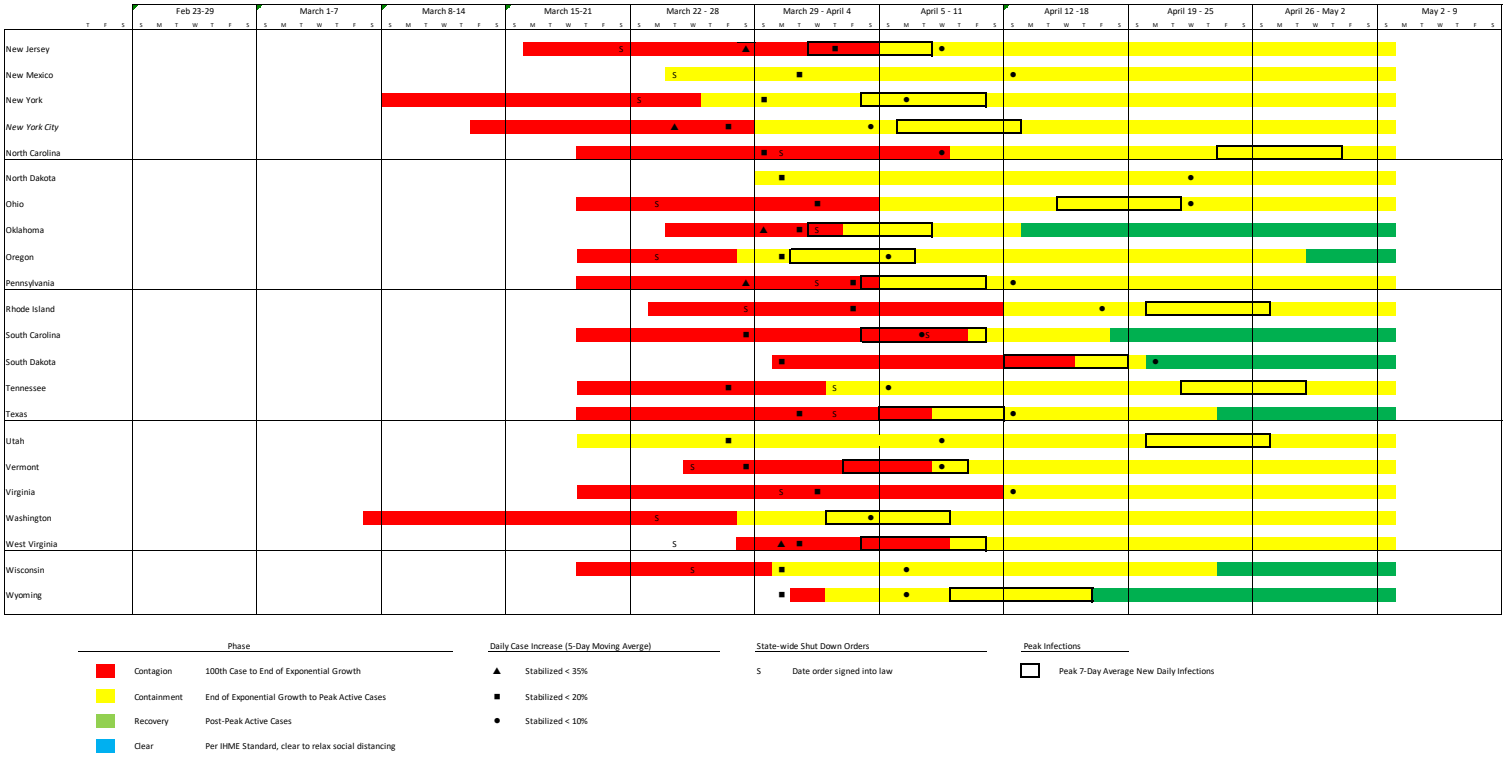
Legend on following page

State-by-State

Virus Progression – *2 of 2*

"Strategic Guidance in an Era of Unprecedented Change"

This graphic illustrates when the country first recorded 100 total cases (start of the "contagion" phase); when growth stopped following an exponential pattern (start of the "containment" phase); and, when peak total cases were recorded (start of the "recovery" phase). It uses symbols to indicate when average daily case growth rates fell (and were sustained) below certain benchmarks, as well as when deaths stopped growing exponentially.
A state is not shaded green until active cases appear to have peaked.

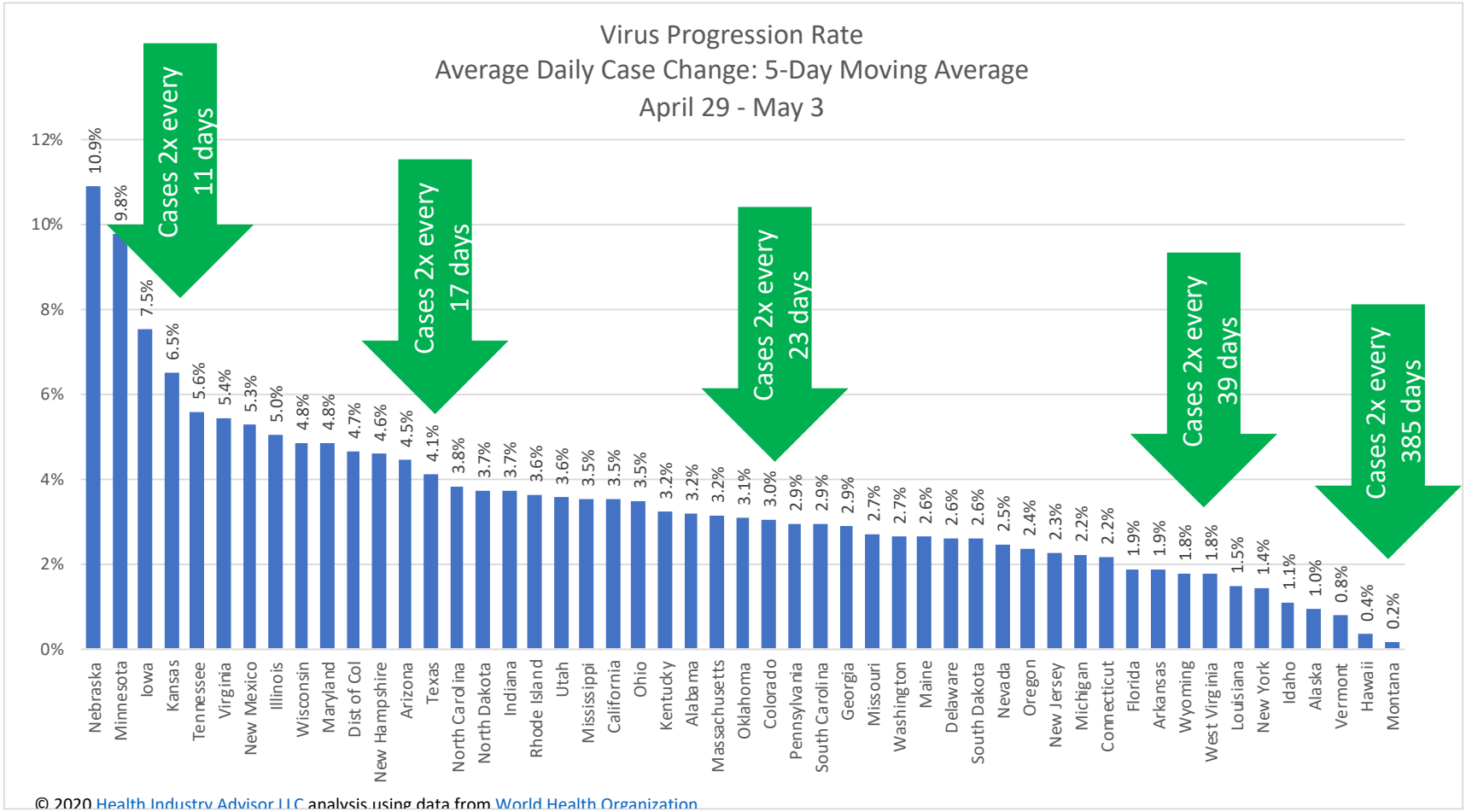


Health Industry Advisor, llc

State-by-State

Average Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"



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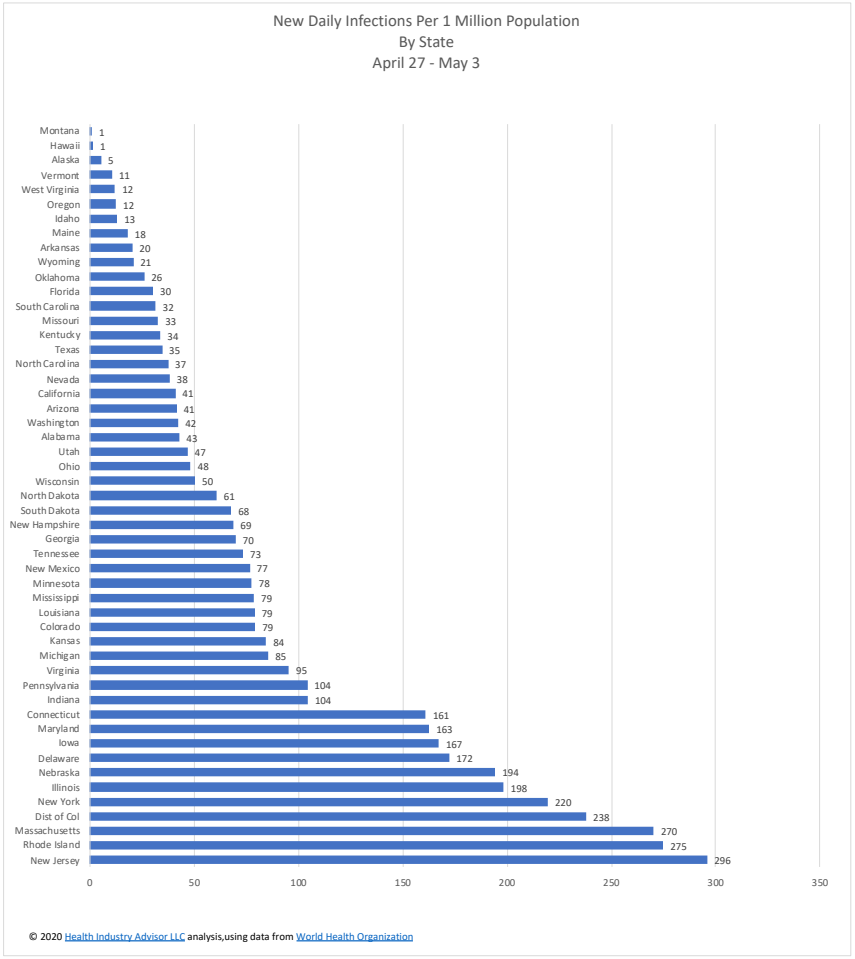
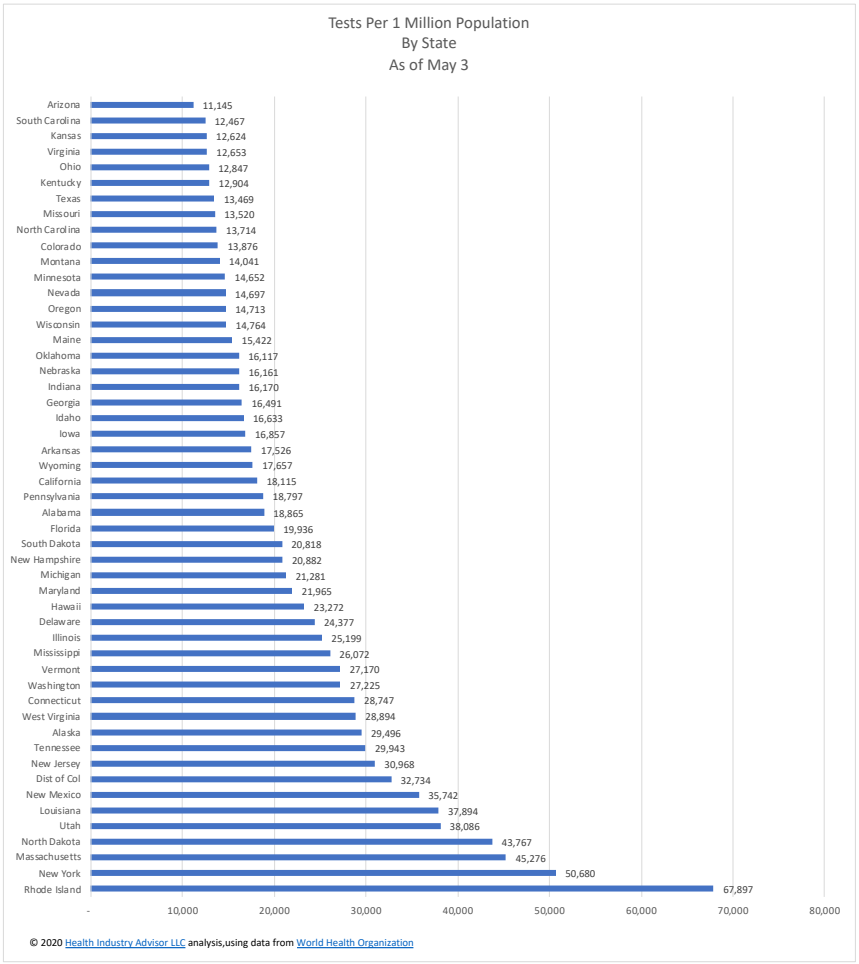
State-by-State

New Daily Infections & Tests Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





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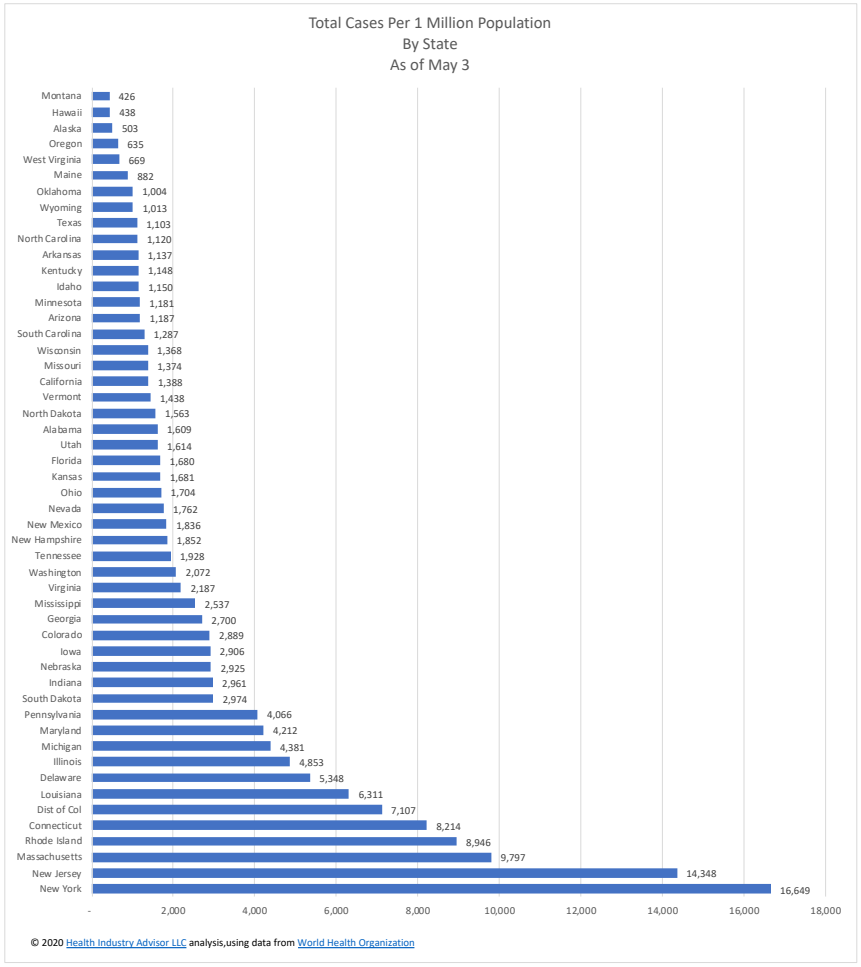
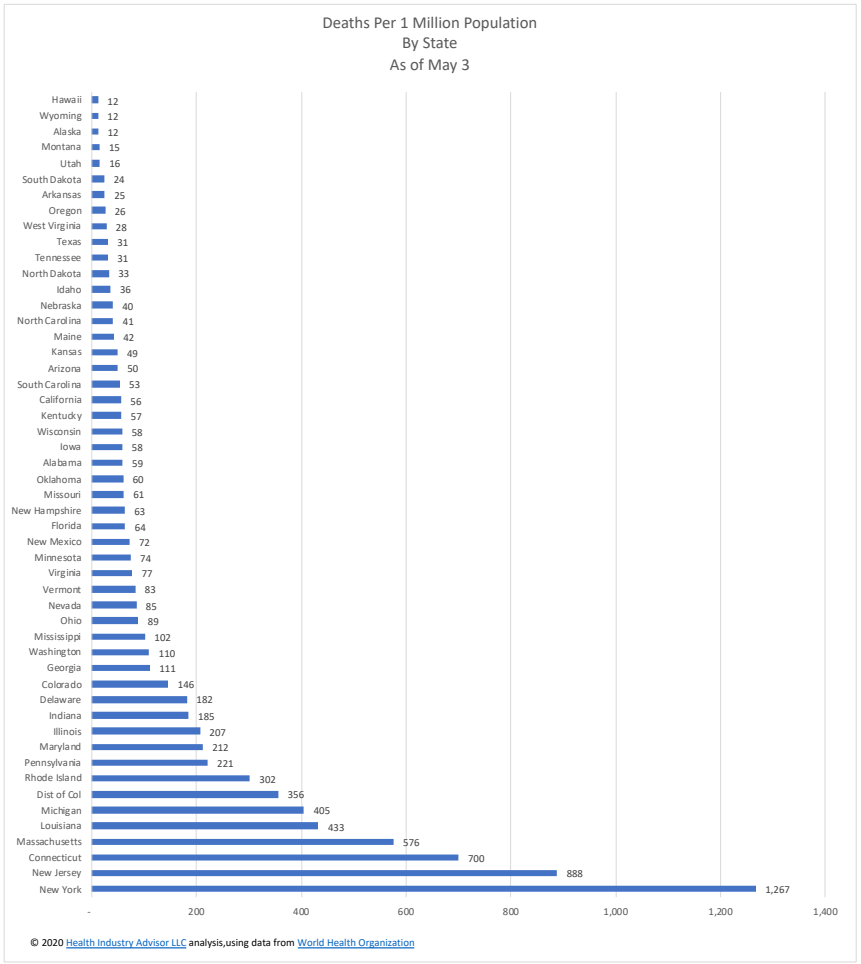
State-by-State

Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





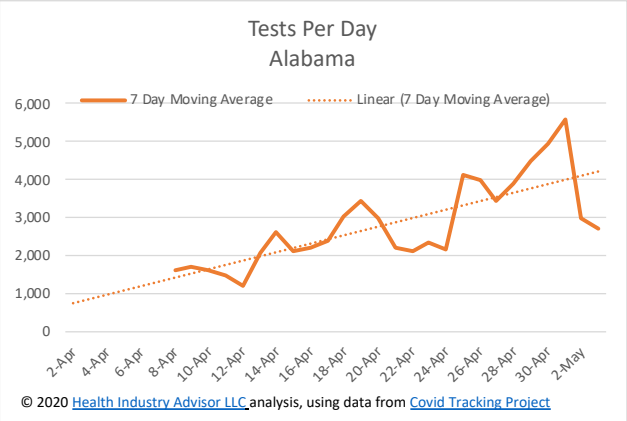
State-by-State

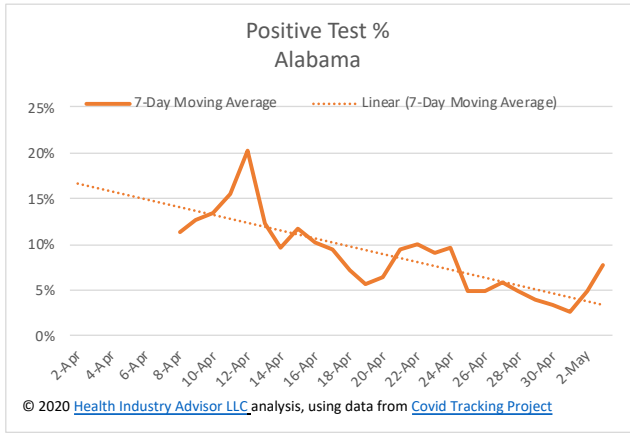
Test, New Daily Infection and Active Case Trends

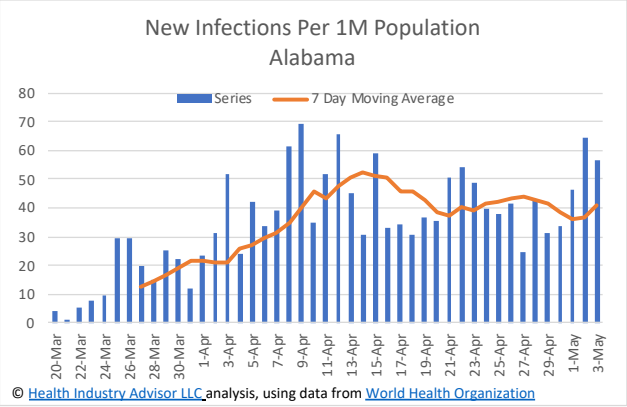
Graphics relevant to judging how far a state has progressed against the virus are provided on the following pages for:

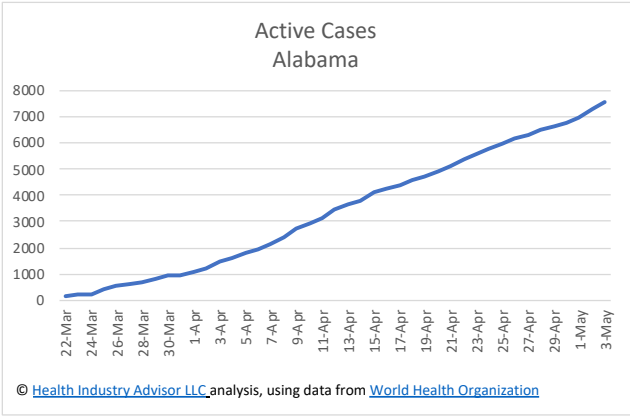
- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas

Test, New Daily Infection and Active Case Trends



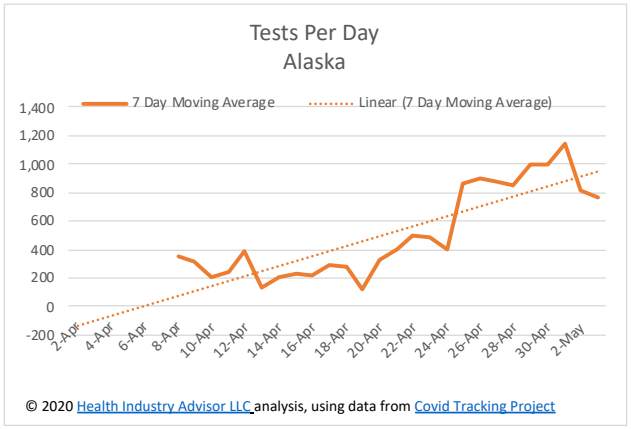


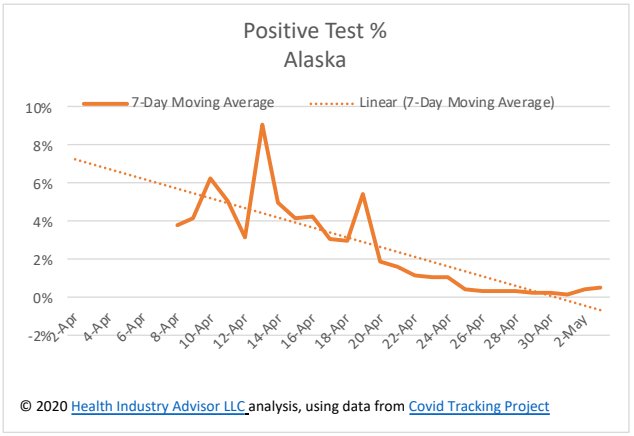


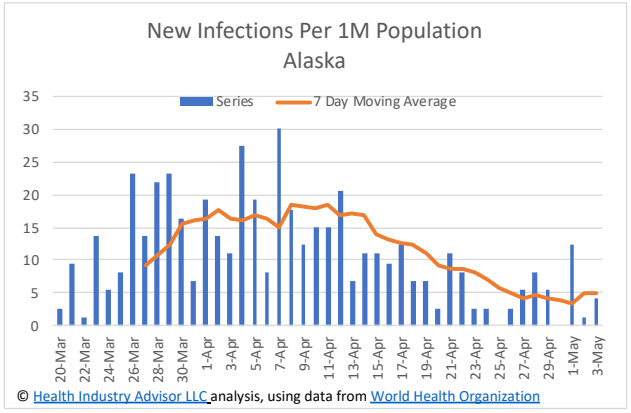


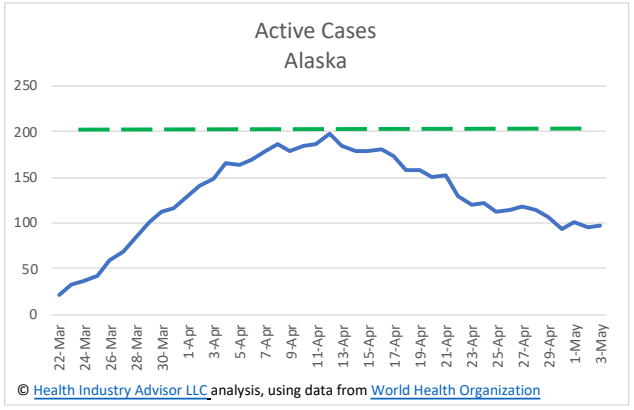
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









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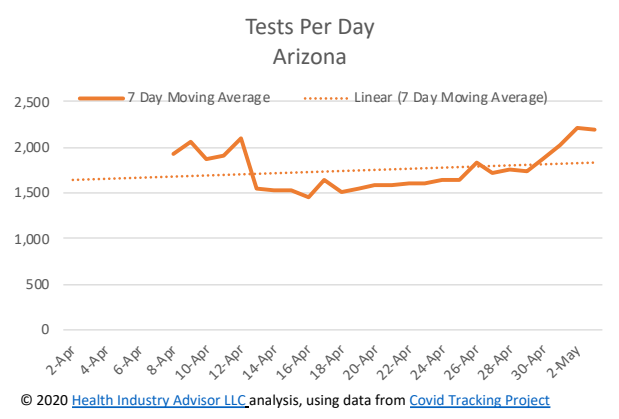
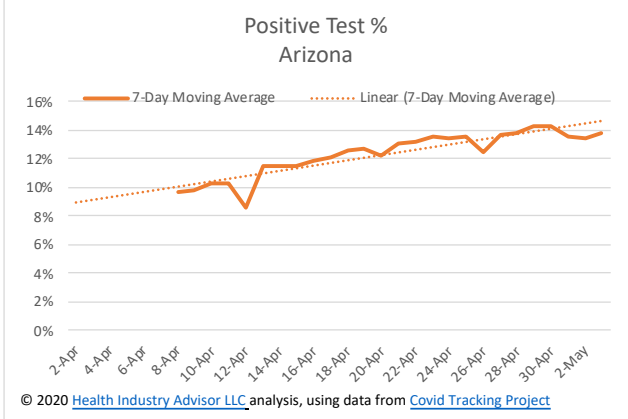
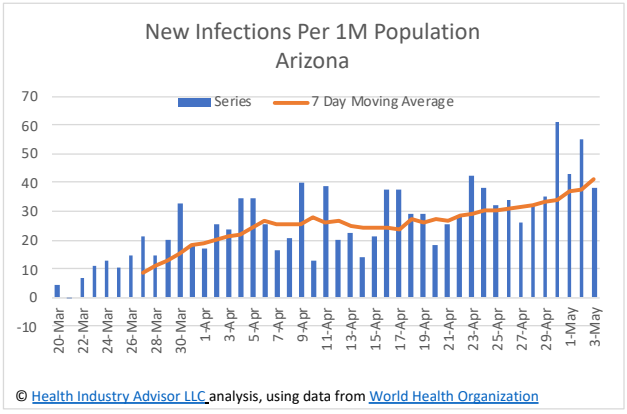
State-by-State

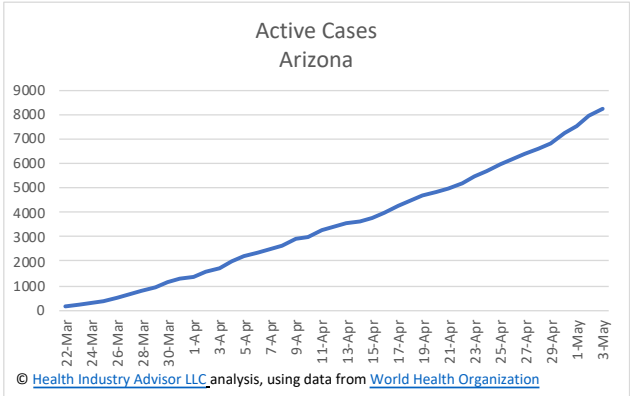
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"

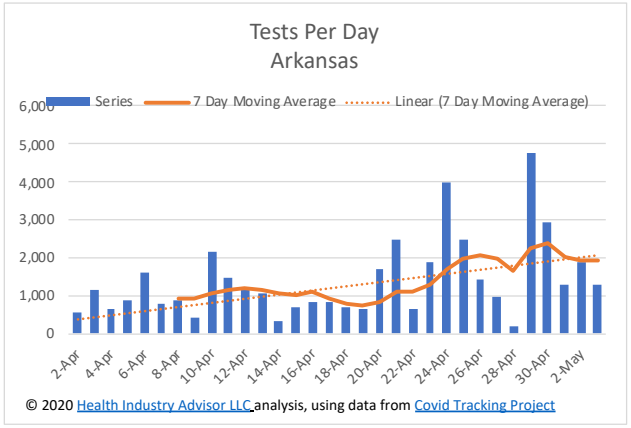


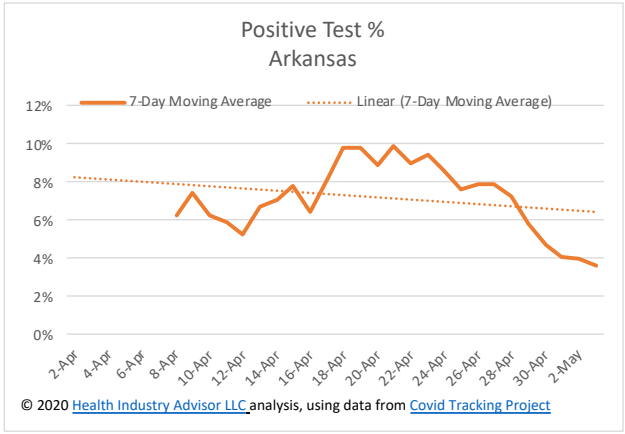


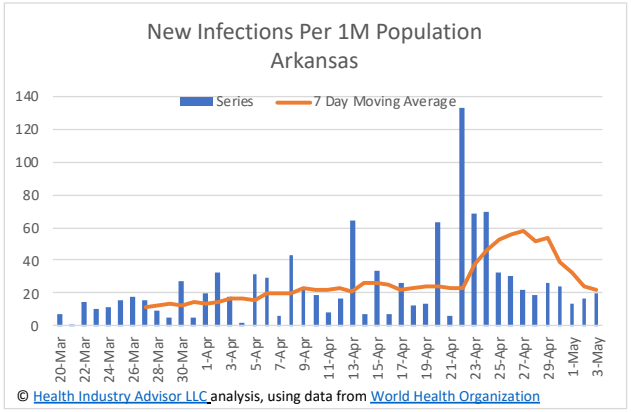


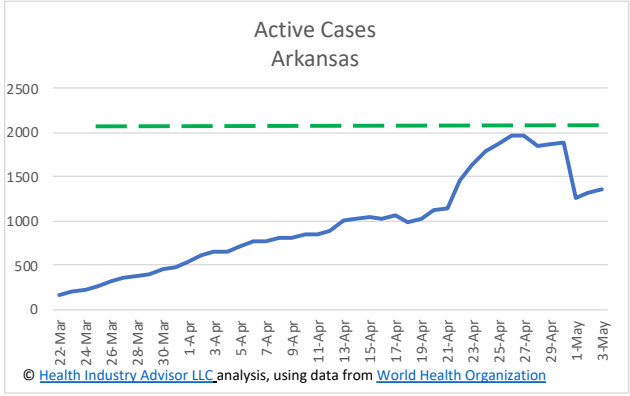


Test, New Daily Infection and Active Case Trends





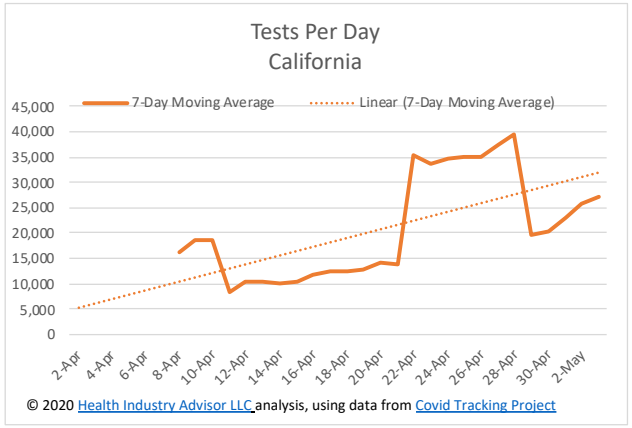


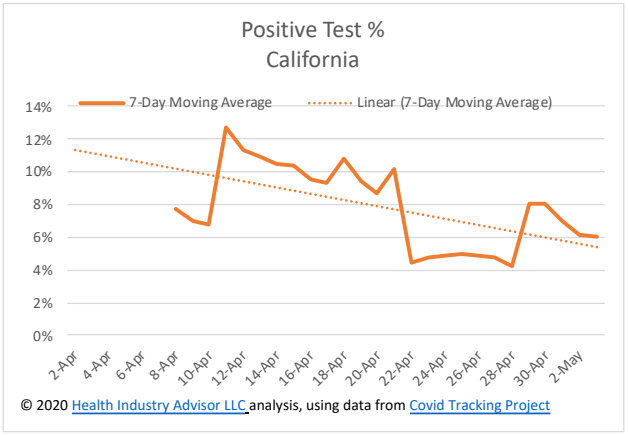


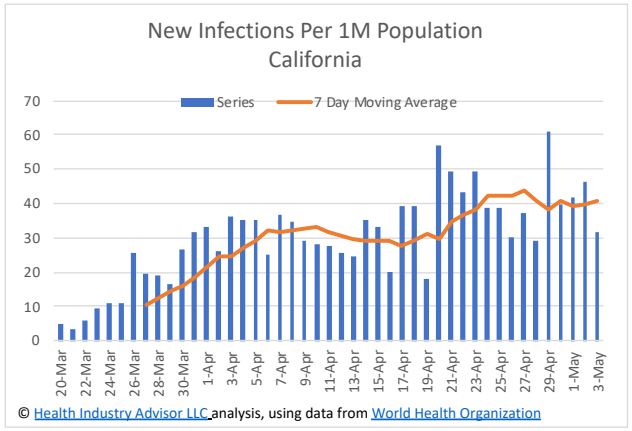
State-by-State

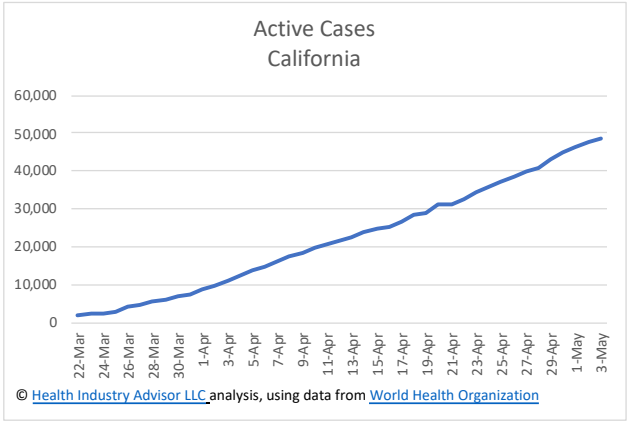
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"



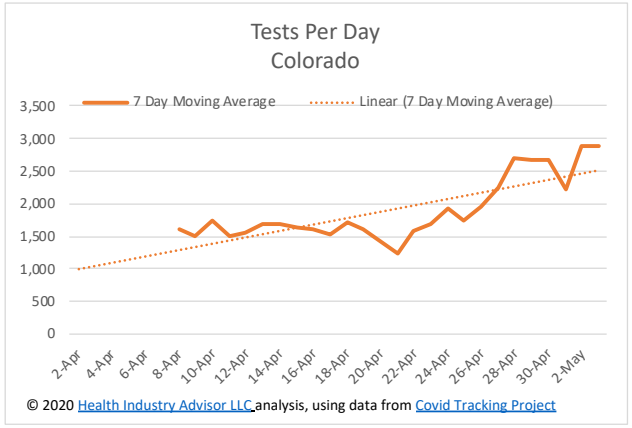


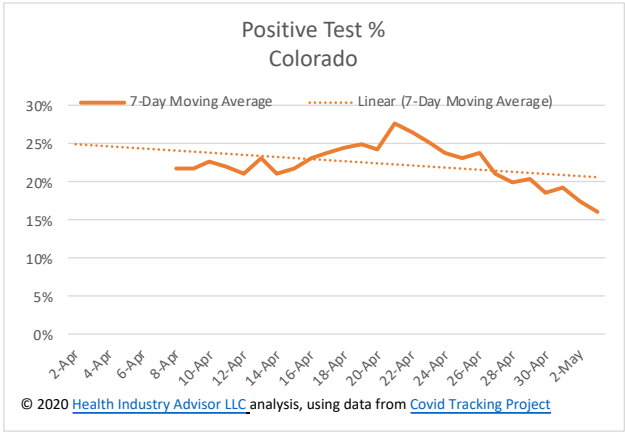


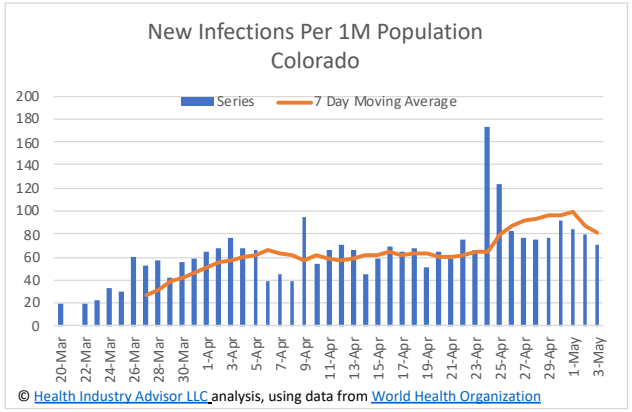


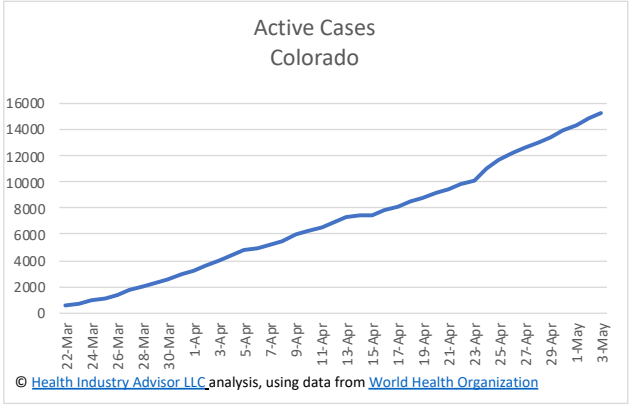
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"

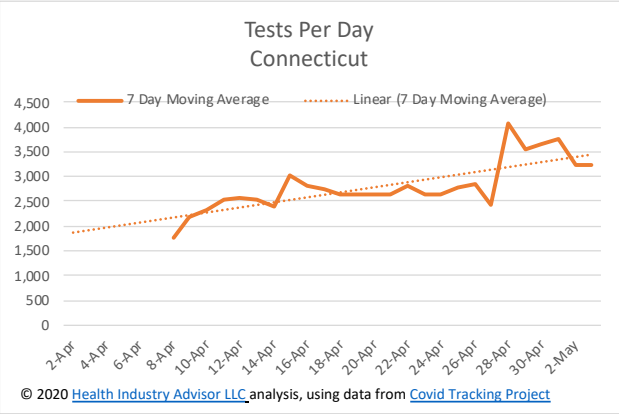


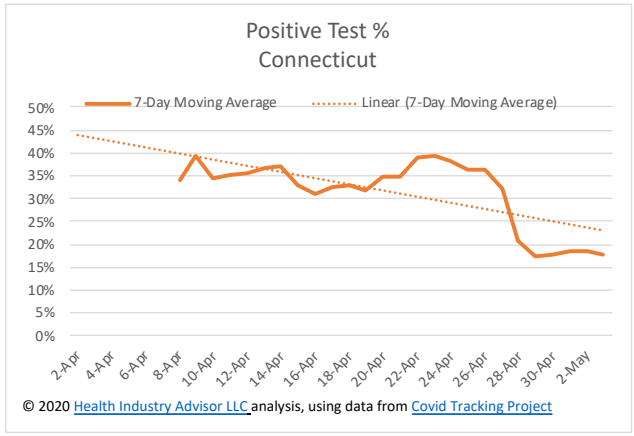


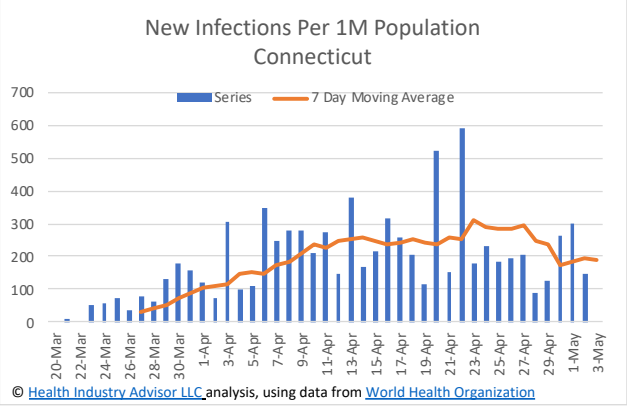


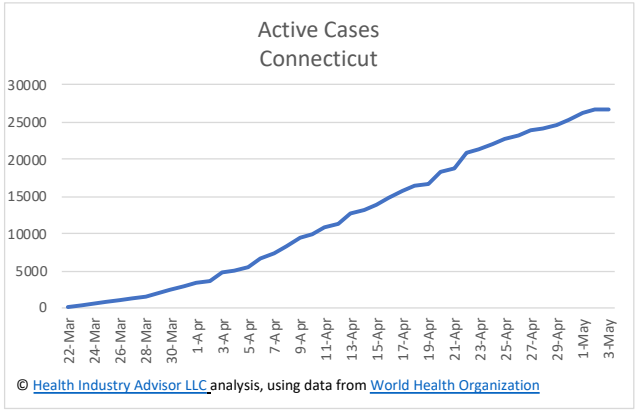


Test, New Daily Infection and Active Case Trends

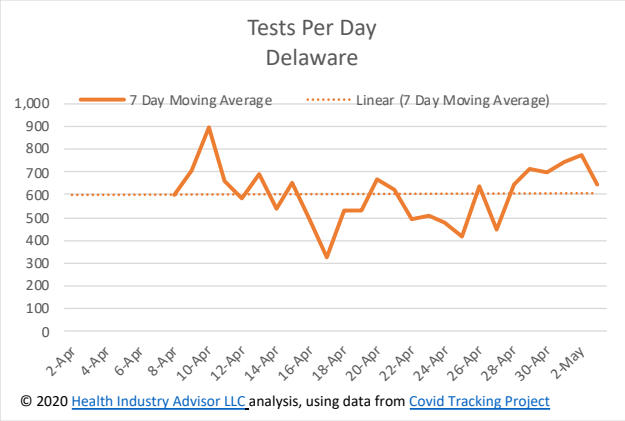


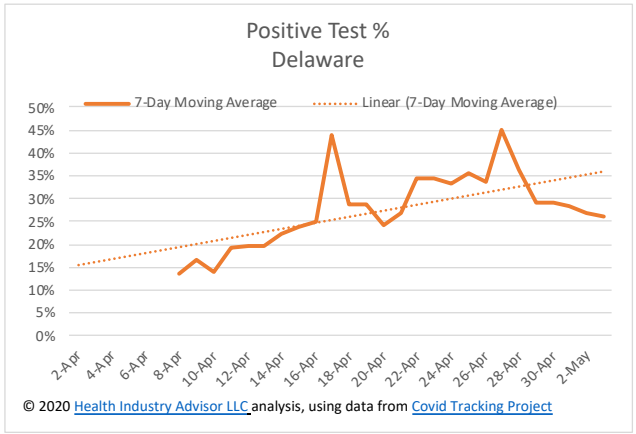


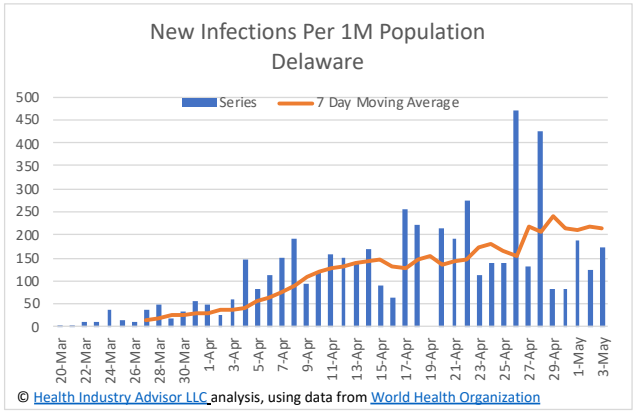


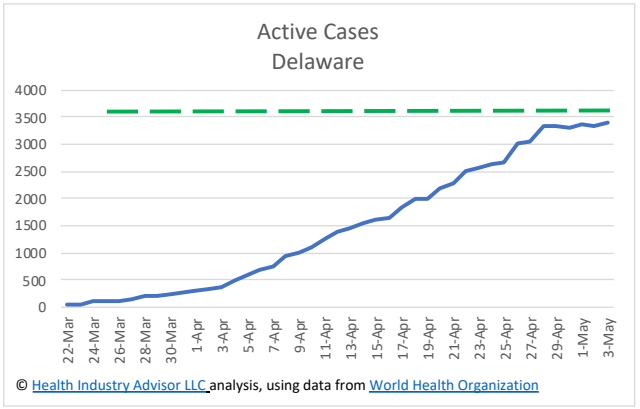


Test, New Daily Infection and Active Case Trends





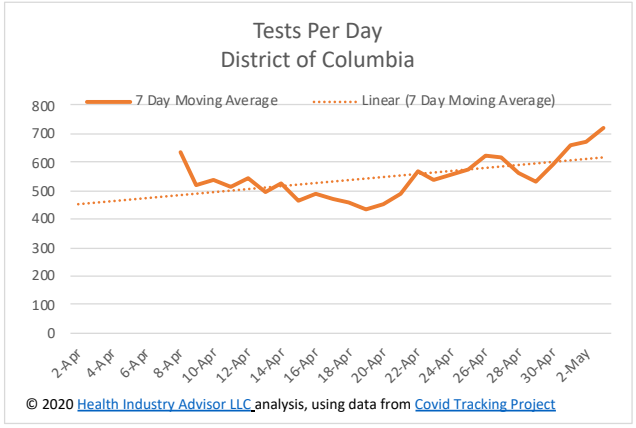


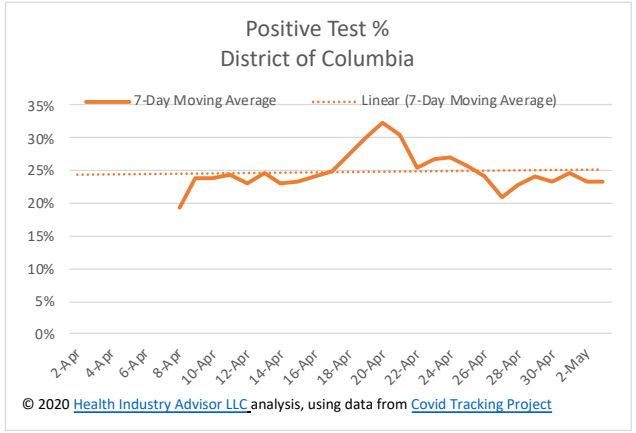


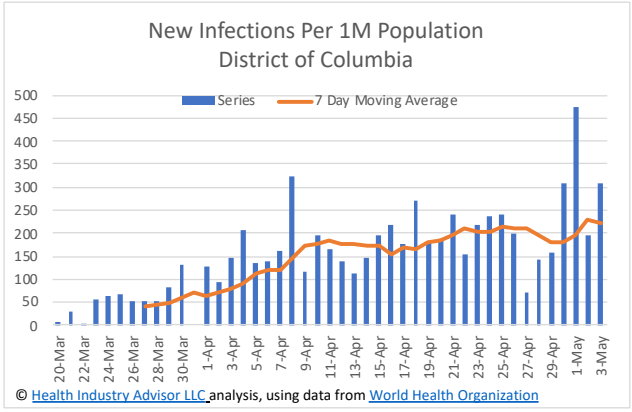
State-by-State

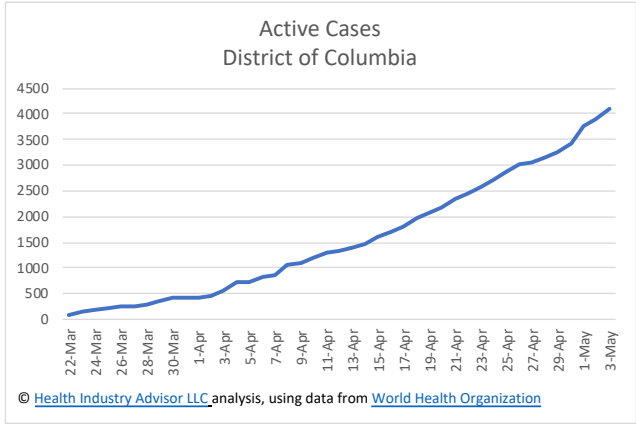
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









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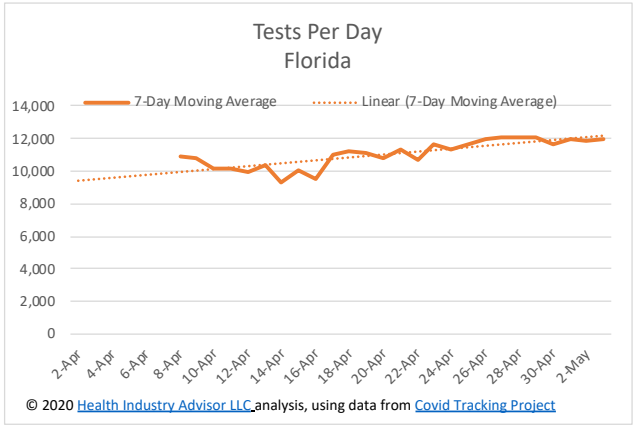
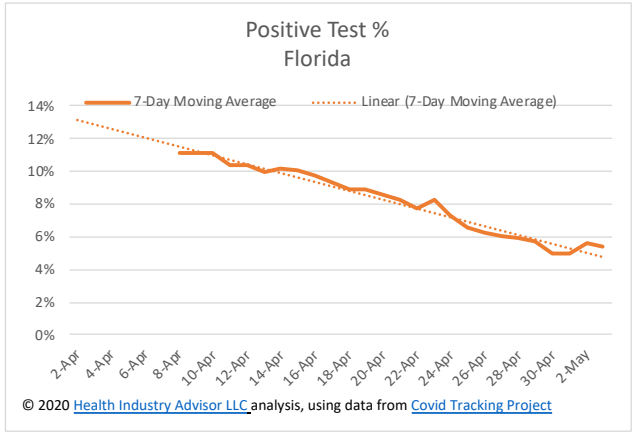
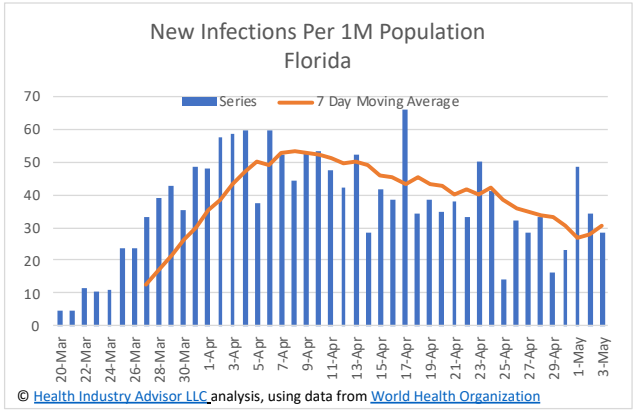
State-by-State

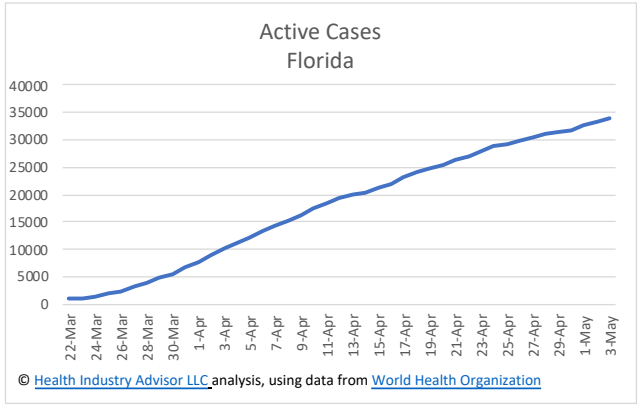
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"

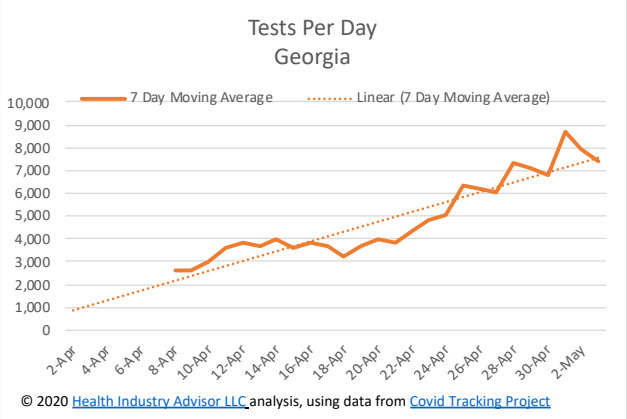


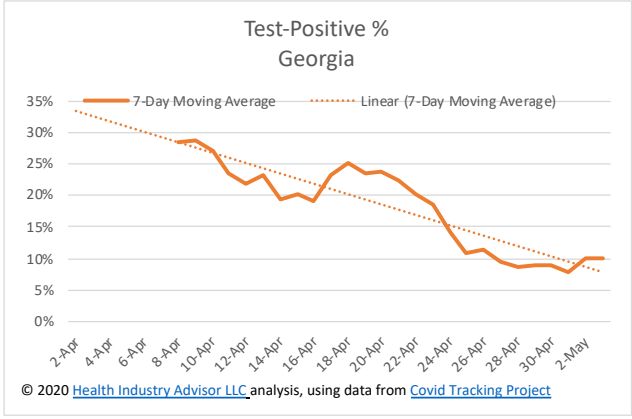


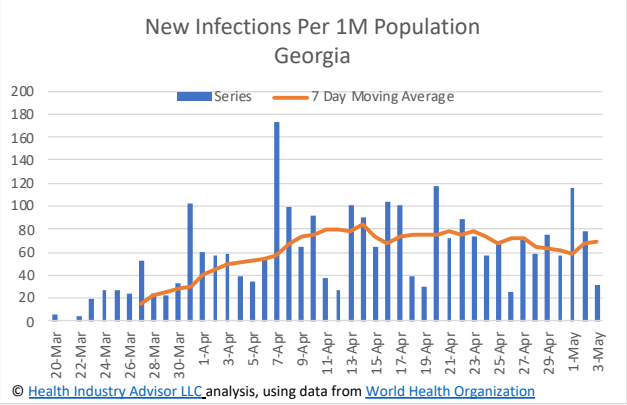


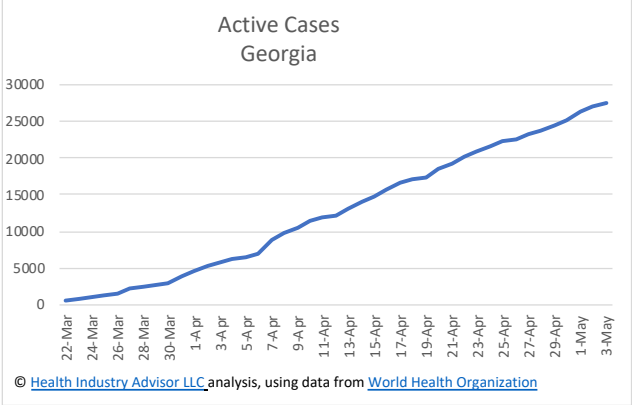


Test, New Daily Infection and Active Case Trends









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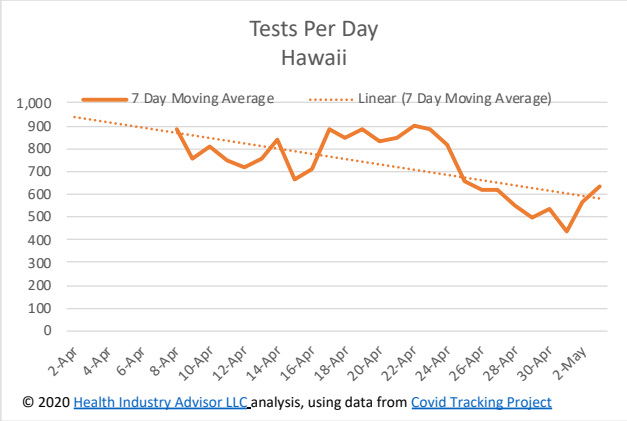
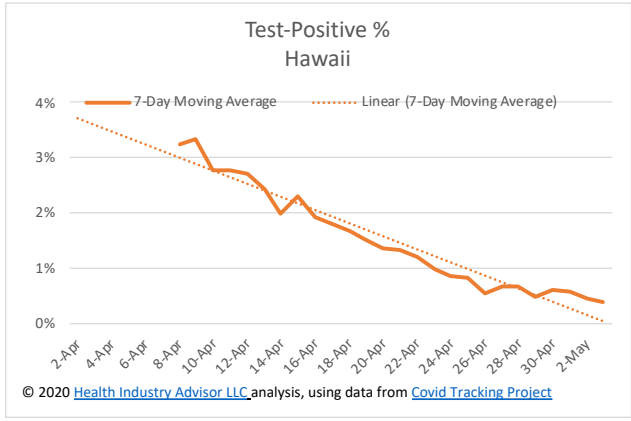
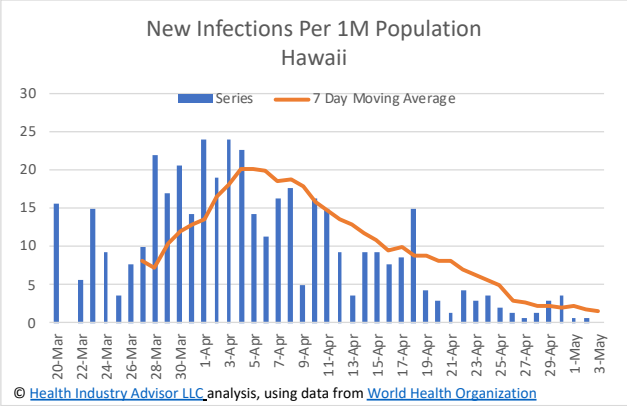
State-by-State

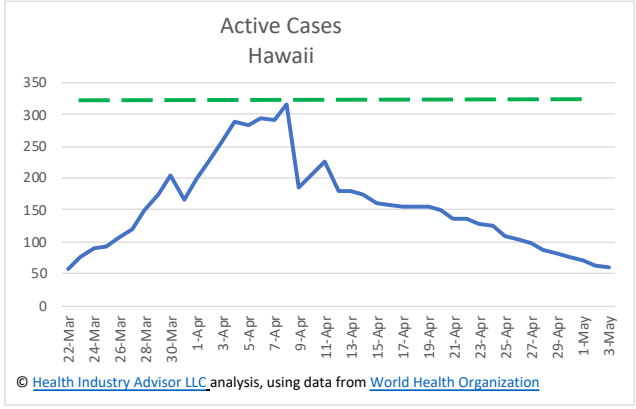
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









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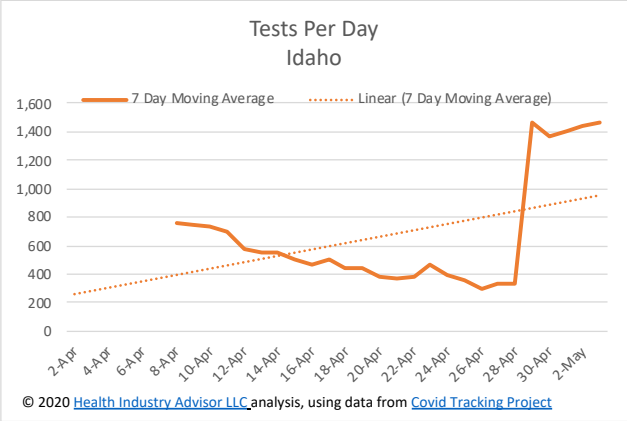

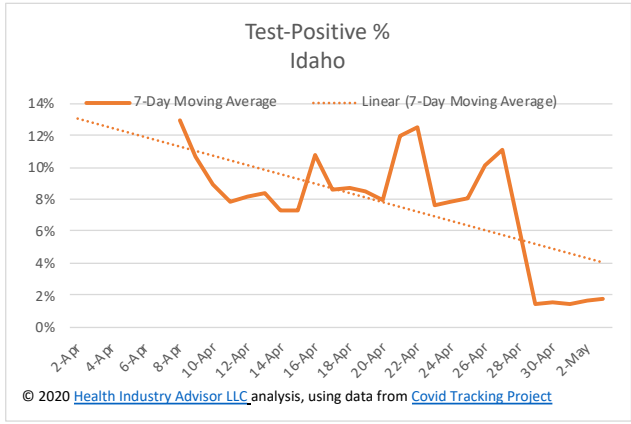

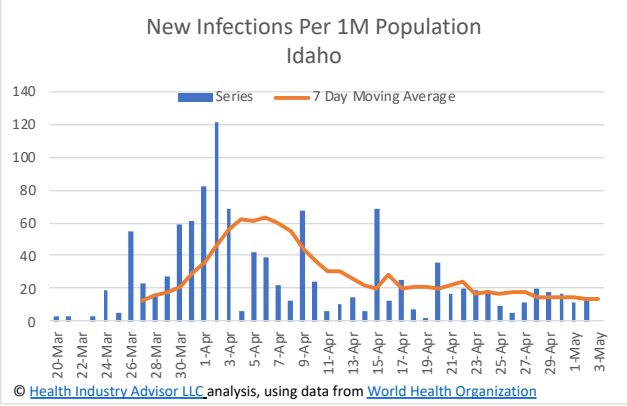

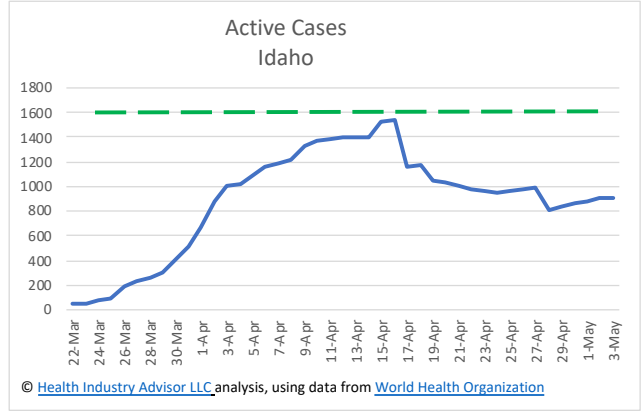

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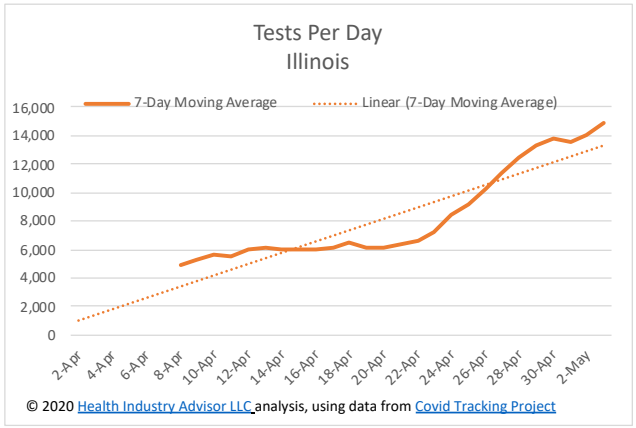

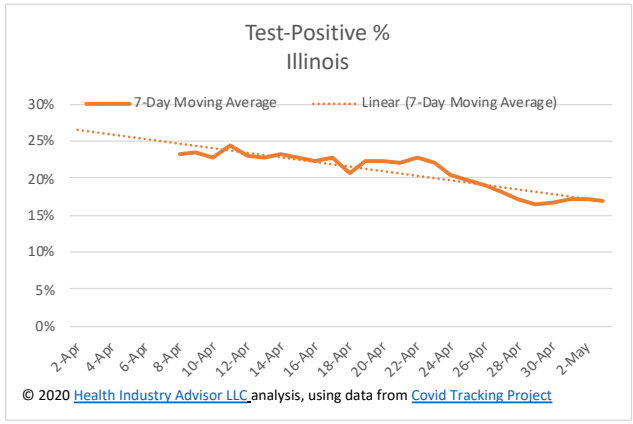

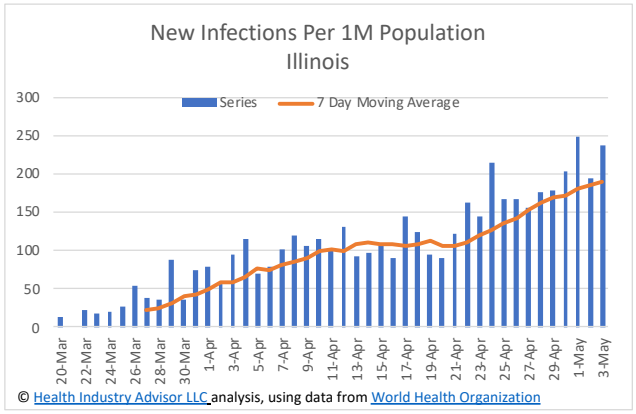

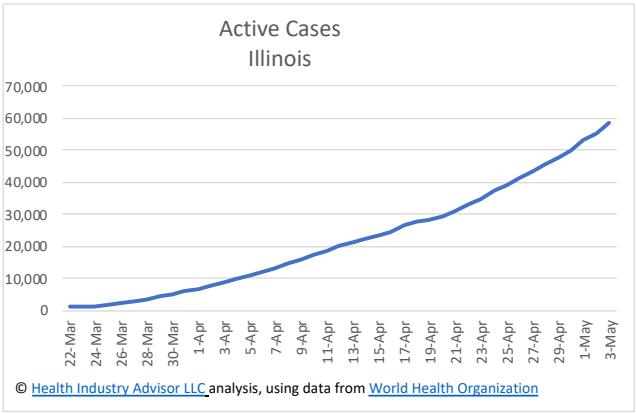

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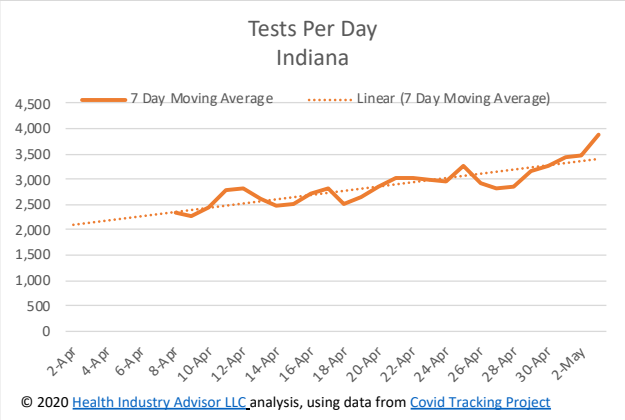

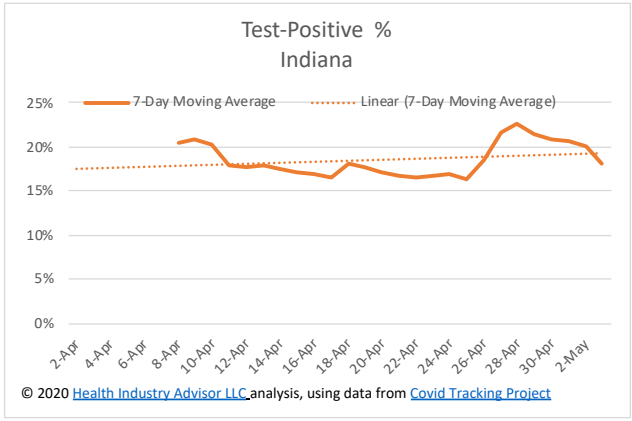

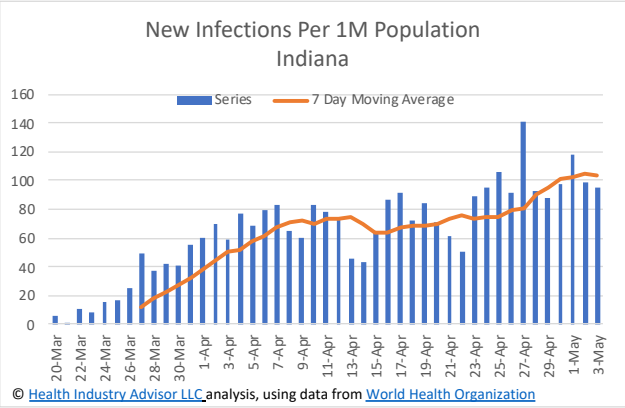

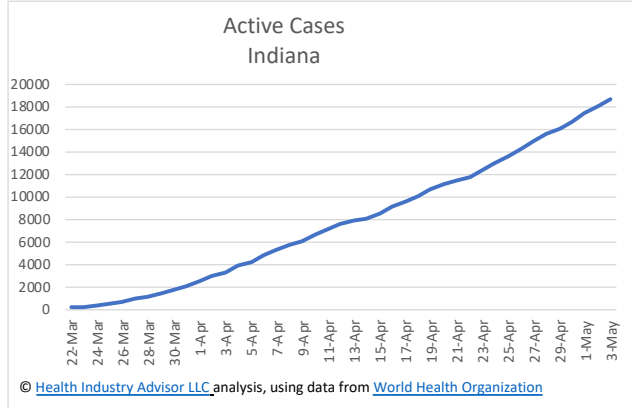

Health Industry Advisor, llc

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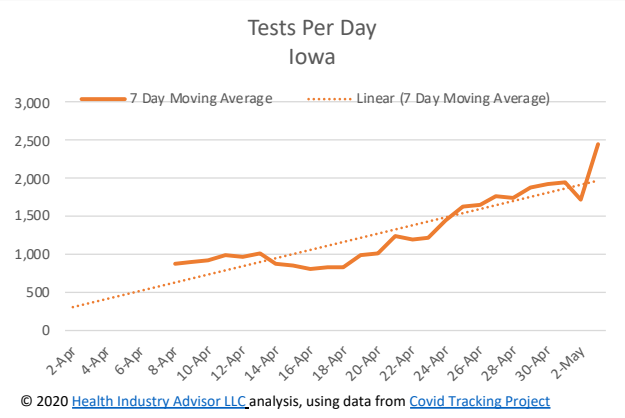

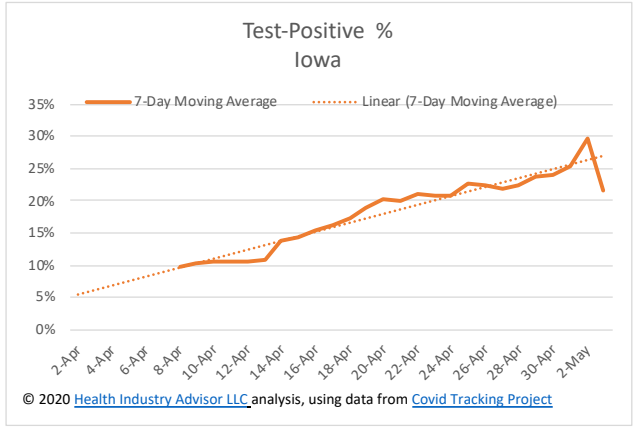

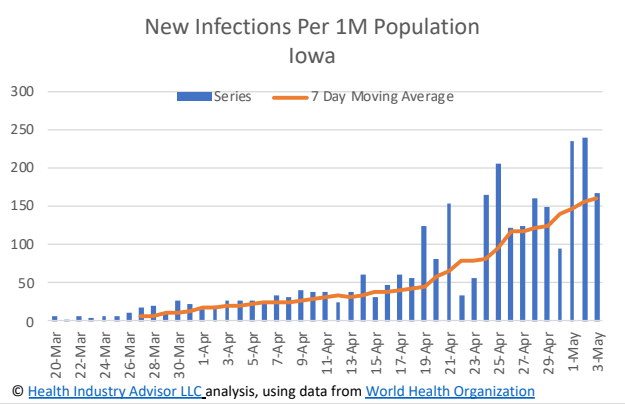

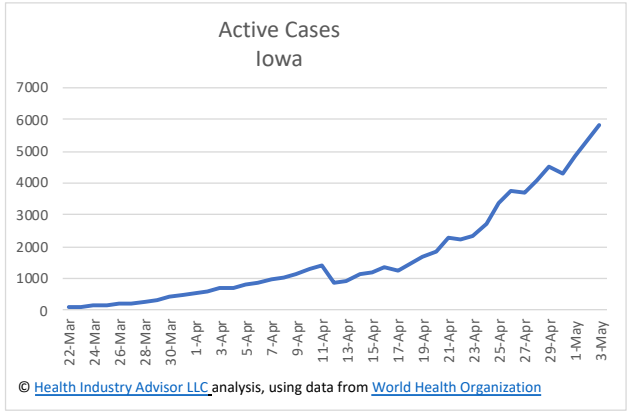

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