Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COVID-19 Dashboard

Issue # 44

Wednesday, May 6, 2020

© 2020 Health Industry Advisor LLC. All rights reserved.

Day's Highlights

"Strategic Guidance in an Era of Unprecedented Change"

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	~260,000 tests on Tuesday, averaging 263,000 last 5 days
Test-Positivity Rate	Decline	8.6% on Tuesday
Number of Cases	Plateau	Active Cases up only 1.6% on Tuesday
Deaths % of Total Cases	Decline	Stable @ 5.8%
Number of Deaths / 1M Population	Plateau	Up to 218.34
Recoveries : Death	Increase	Up to 2.9

- The U.S. reported more than 260,000 new tests on Tuesday; the test-positive rate was 8.6%. In comparison, 172,000 tests per day were completed in April, with a test-positive rate of 16.9%
- Twenty-nine states (AL, AS, AZ, CA, FL, GA, HI, ID, KY, LA, ME, MI, MO, MT, NH, NM, NC, ND, OK, OR, SC, TN, TX, UT, VT, WA, WI WV and WY) reported test-positive rate of 10% or less for the past week; the U.S. rate was 10.9% (10% or lower has been suggested as a target threshold). Six states were at 20% of more (CT, DE, MD, NE, NJ and VA). High rates suggest that insufficient testing is being done to provide visibility to the true prevalence of the virus spread
- Twenty-three states are averaging 50 or fewer new daily cases per capita (AS, AK, AL, AZ, CA, FL, HI, ID, KY, ME, MO, MT, NC, NV, OK, OR, SC, TX, UT, VT, WA, WV and WY). Six or averaging 200 or more (IL, MA,NE, NJ, NY and RI)
- Recoveries continue to lag where they should be, given the expected 4-week lag from infection-onset to recovery. Reported recoveries are 211,000; they should be about 320,000, given the total cases identified 4 weeks ago. Is this a reporting lag at the state level?
- 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.
- Nebraska is of concern: it is the only state not to have broken from exponential case growth; its testing rates are low; its test-positive rate is high (25%) and trending up; and, its new daily infections per capita are high and increasing..
- Delaware and Minnesota now seem to have recently moved past peak active cases – Kentucky, New York, Tennessee, Vermont and Washington seem to be nearing peaks.
- Among countries with the mot total cases, most European countries have moved past peaks in both new daily infections per capita and active cases. Several countries– Brazil, Chile, Indi, Mexico, Pakistan, Peru, Russia, Saudi Arabia – are still experiencing increasing rates of new daily infections per capita

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COUNTRY-BY-COUNTRY INFORMATION

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

Country-by-Country

Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

As of May 5

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	1,237,633	(1)	3,739	(4)	72,271	(1)	5.8%	(14)	218.3	(9)	2.5%	(13)	23,347	(13)	87.1	(2)
Austria	15,650	(28)	1,738	(16)	606	(23)	3.9%	(19)	67.3	(16)	0.3%	(28)	31,742	(8)	4.6	(26)
Belgium	50,509	(14)	4,358	(3)	8,016	(6)	15.9%	(1)	691.6	(1)	0.8%	(21)	39,362	(5)	39.1	(13)
Brazil	114,715	(9)	540	(24)	7,921	(7)	6.9%	(9)	37.3	(19)	6.1%	(6)	1,597	(25)	28.1	(14)
Canada	62,046	(12)	1,644	(17)	4,043	(12)	6.5%	(10)	107.1	(11)	3.1%	(11)	24,921	(11)	45.5	(11)
Chile	22,016	(24)	1,152	(21)	275	(26)	1.2%	(27)	14.4	(22)	6.1%	(5)	11,618	(21)	57.2	(8)
China	82,881	(11)	58	(29)	4,633	(11)	5.6%	(15)	3.2	(27)	0.0%	(30)	0	(30)	0.0	(30)
Ecuador	31,881	(17)	1,807	(15)	1,569	(18)	4.9%	(16)	88.9	(13)	5.1%	(8)	4,544	(24)	61.7	(5)
France	170,551	(5)	2,613	(9)	25,531	(5)	15.0%	(3)	391.1	(5)	0.4%	(26)	16,856	(15)	10.2	(23)
Germany	167,007	(6)	1,993	(13)	6,993	(8)	4.2%	(17)	83.5	(14)	0.5%	(24)	30,400	(10)	12.1	(21)
India	49,400	(15)	36	(30)	1,693	(17)	3.4%	(21)	1.2	(30)	7.6%	(2)	864	(28)	1.9	(27)
Iran	99,970	(10)	1,190	(20)	6,340	(9)	6.3%	(11)	75.5	(15)	1.1%	(18)	6,186	(23)	12.6	(19)
Ireland	21,983	(25)	4,452	(2)	1,339	(21)	6.1%	(12)	271.2	(8)	1.3%	(17)	43,493	(3)	60.9	(6)
Israel	16,289	(27)	1,882	(14)	238	(28)	1.5%	(26)	27.5	(20)	0.4%	(25)	48,189	(1)	9.3	(24)
Italy	213,013	(3)	3,523	(5)	29,315	(3)	13.8%	(4)	484.9	(3)	0.7%	(22)	37,158	(6)	27.2	(15)
Japan	15,253	(29)	121	(27)	556	(24)	3.6%	(20)	4.4	(26)	1.5%	(15)	1,473	(26)	1.7	(28)
Mexico	24,905	(21)	193	(26)	2,271	(15)	9.1%	(8)	17.6	(21)	6.3%	(4)	776	(29)	10.4	(22)
Netherlands	41,087	(16)	2,398	(11)	5,168	(10)	12.6%	(5)	301.6	(6)	0.9%	(20)	13,768	(18)	22.3	(17)
Pakistan	22,049	(23)	100	(28)	514	(25)	2.3%	(25)	2.3	(29)	5.0%	(9)	1,007	(27)	4.8	(25)
Peru	51,189	(13)	1,553	(18)	1,444	(20)	2.8%	(22)	43.8	(17)	6.4%	(3)	12,331	(20)	86.7	(3)
Portugal	25,702	(20)	2,521	(10)	1,074	(22)	4.2%	(18)	105.3	(12)	0.5%	(23)	46,038	(2)	20.7	(18)
Russia	155,370	(7)	1,036	(22)	1,451	(19)	0.9%	(28)	9.7	(23)	7.8%	(1)	30,564	(9)	58.9	(7)
Saudi Arabia	30,251	(18)	869	(23)	200	(29)	0.7%	(29)	5.7	(24)	5.9%	(7)	10,818	(22)	41.7	(12)
Singapore	19,410	(26)	3,318	(7)	18	(30)	0.1%	(30)	3.1	(28)	3.4%	(10)	24,600	(12)	108.9	(1)
South Korea	10,804	(30)	211	(25)	254	(27)	2.4%	(24)	5.0	(25)	0.1%	(29)	12,488	(19)	0.1	(29)
Spain	250,561	(2)	5,359	(1)	25,613	(4)	10.2%	(7)	547.8	(2)	0.9%	(19)	41,332	(4)	56.3	(9)
Sweden	23,216	(22)	2,299	(12)	2,894	(14)	12.5%	(6)	286.6	(7)	1.9%	(14)	14,704	(16)	50.9	(10)
Switzerland	30,009	(19)	3,504	(6)	1,795	(16)	6.0%	(13)	209.6	(10)	0.3%	(27)	33,092	(7)	12.4	(20)
Turkey	129,491	(8)	1,535	(19)	3,520	(13)	2.7%	(23)	41.7	(18)	1.5%	(16)	14,281	(17)	25.1	(16)
UK	194,990	(4)	2,872	(8)	29,427	(2)	15.1%	(2)	433.5	(4)	2.6%	(12)	20,385	(14)	71.2	(4)

© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project and World Health Organization

©2020 Health Industry Advisor LLC
All rights reserved.

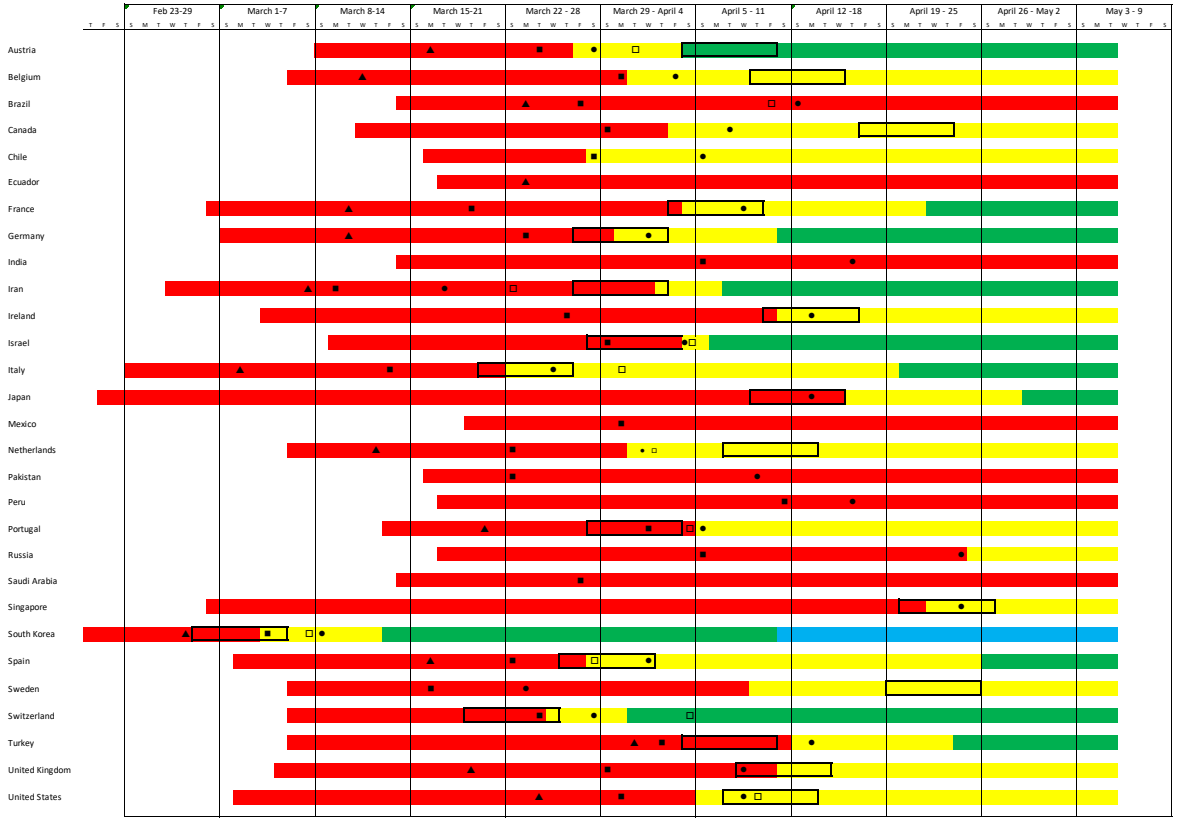
Health Industry Advisor, llc

Country-by-Country

Virus Progression

"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.



© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

Country-By-Country
Listing of Countries By Total Cases

"Strategic Guidance in an Era of Unprecedented Change"

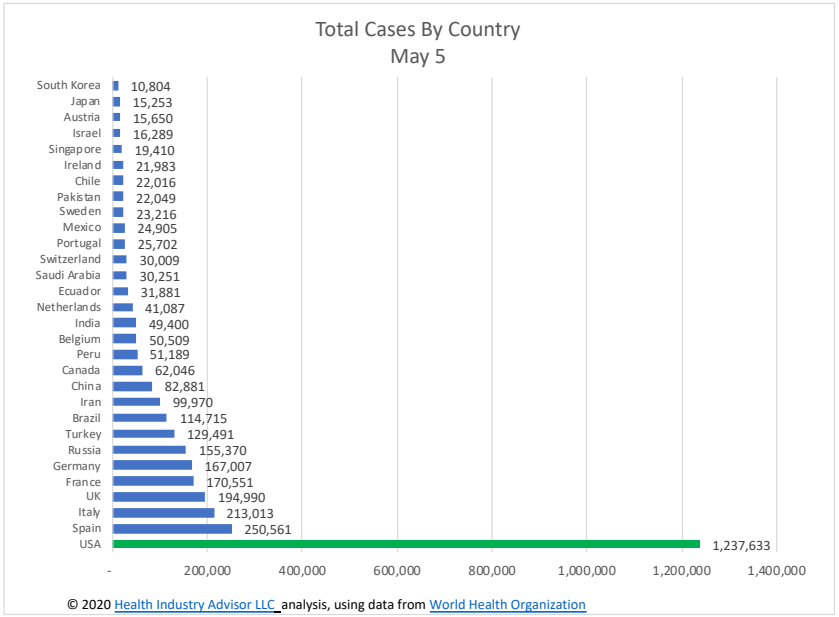
	Total Cases					
	5-May		22-Apr		8-Apr	
1	USA	1,237,633	USA	854,385	USA	441,569
2	Spain	250,561	Spain	208,389	Spain	148,220
3	Italy	213,013	Italy	187,327	Italy	139,422
4	UK	194,990	France	159,877	Germany	113,296
5	France	170,551	Germany	150,648	France	103,061
6	Germany	167,007	UK	133,495	China	81,865
7	Russia	155,370	Turkey	98,674	Iran	64,586
8	Turkey	129,491	Iran	85,996	UK	60,733
9	Brazil	114,715	China	82,788	Turkey	38,226
10	Iran	99,970	Russia	57,999	Belgium	23,403
11	China	82,881	Brazil	45,757	Switzerland	23,280
12	Canada	62,046	Belgium	41,889	Netherlands	20,549
13	Peru	51,189	Canada	40,190	Canada	19,438
14	Belgium	50,509	Netherlands	34,842	Brazil	16,188
15	India	49,400	Switzerland	28,268	Portugal	13,141
16	Netherlands	41,087	Portugal	21,982	Austria	12,942
17	Ecuador	31,881	India	21,370	South Korea	10,384
18	Saudi Arabia	30,251	Peru	19,250	Israel	9,404
19	Switzerland	30,009	Ireland	16,671	Russia	8,672
20	Portugal	25,702	Sweden	16,004	Sweden	8,419
21	Mexico	24,905	Austria	14,925	Ireland	6,074
22	Sweden	23,216	Israel	14,498	India	5,916
23	Pakistan	22,049	Saudi Arabia	12,772	Chile	5,546
24	Chile	22,016	Japan	11,950	Japan	4,667
25	Ireland	21,983	Chile	11,296	Ecuador	4,450
26	Singapore	19,410	Ecuador	10,850	Peru	4,342
29	Israel	16,289	South Korea	10,694	Pakistan	4,263
30	Austria	15,650	Singapore	10,141	Saudi Arabia	2,932
31	Japan	15,253	Pakistan	10,076	Mexico	2,785
37	South Korea	10,804	Mexico	9,501	Singapore	1,623

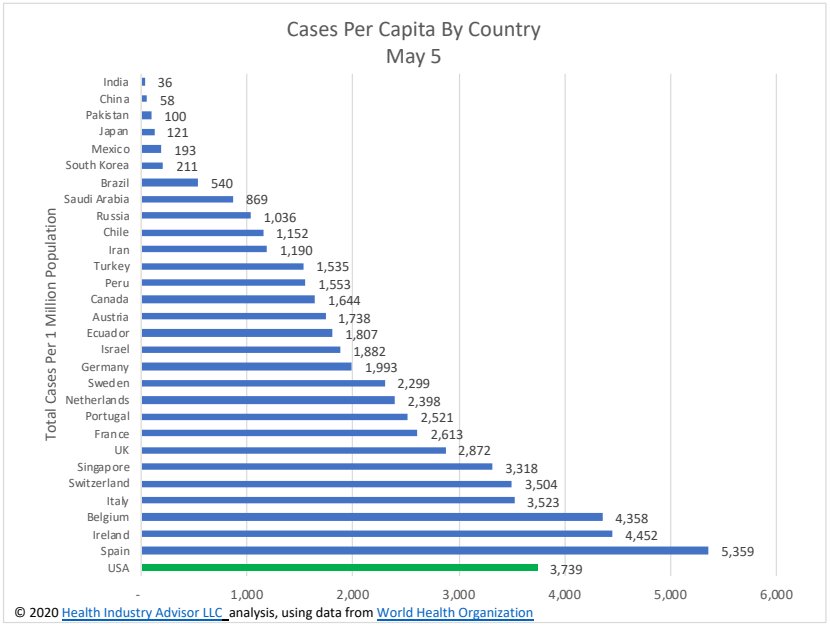
©2020 Health Industry Advisor LLC
All rights reserved.

Country-by-Country

Cases & Cases Per Capita

"Strategic Guidance in an Era of Unprecedented Change"



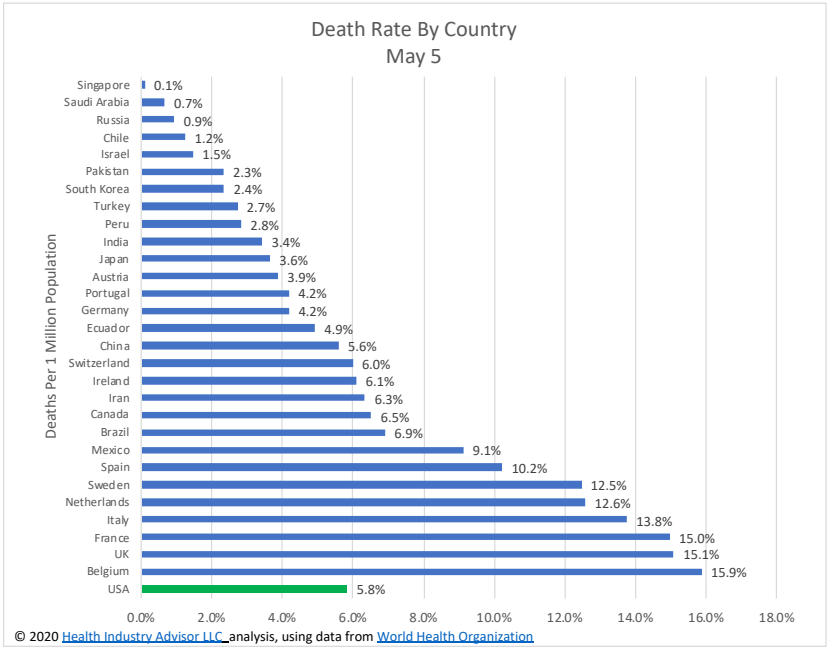


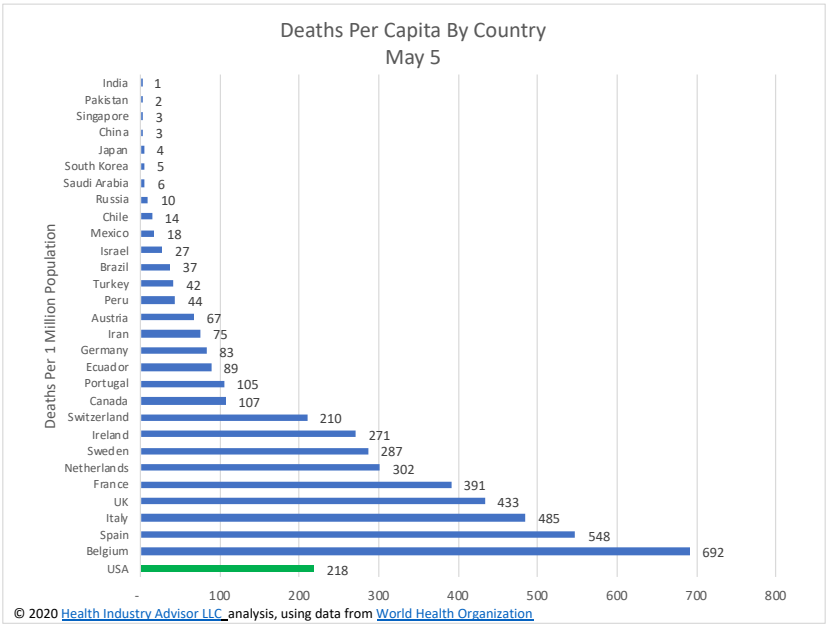
©2020 Health Industry Advisor LLC
All rights reserved.

Country-by-Country

Deaths Per Cases & Per Capita

"Strategic Guidance in an Era of Unprecedented Change"



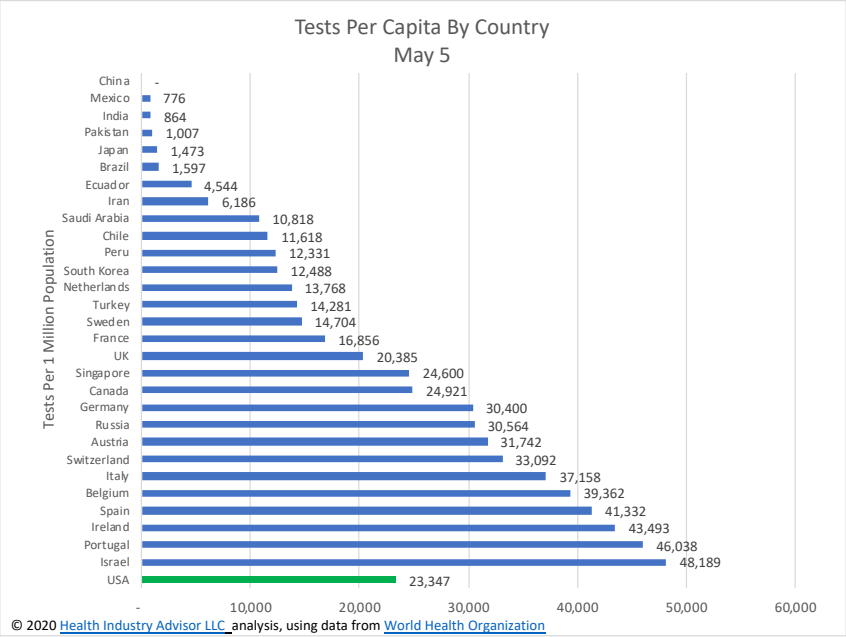


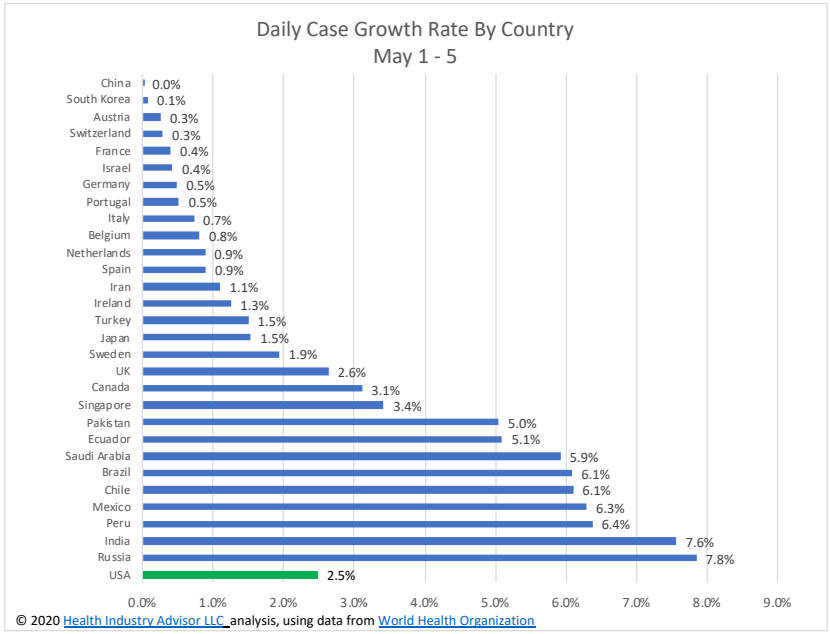
©2020 Health Industry Advisor LLC
All rights reserved.

Country-by-Country

Tests Per Capita & Case Growth Rate

"Strategic Guidance in an Era of Unprecedented Change"





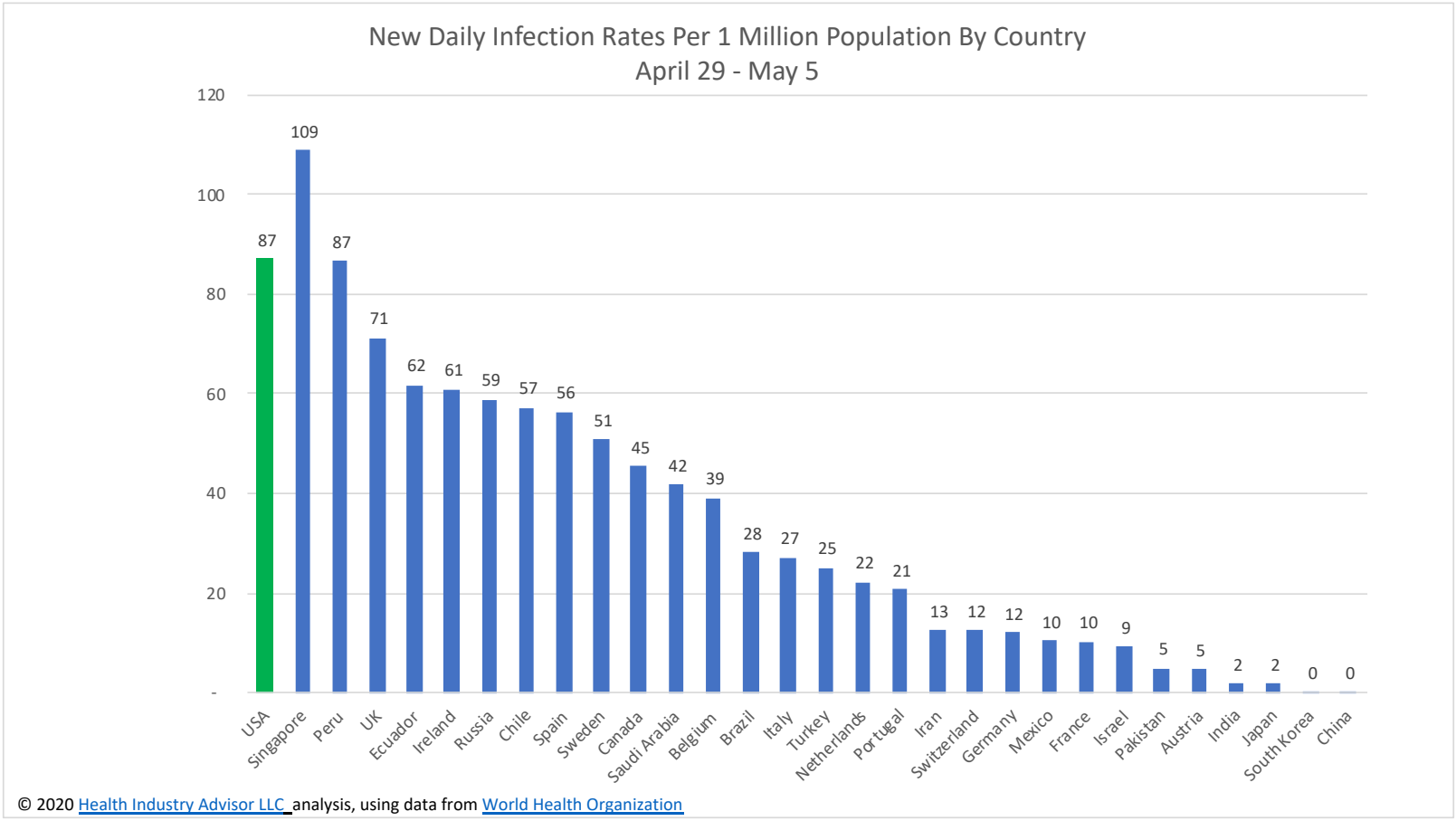
©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

Country-by-Country

New Daily Infection Rate

"Strategic Guidance in an Era of Unprecedented Change"



© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

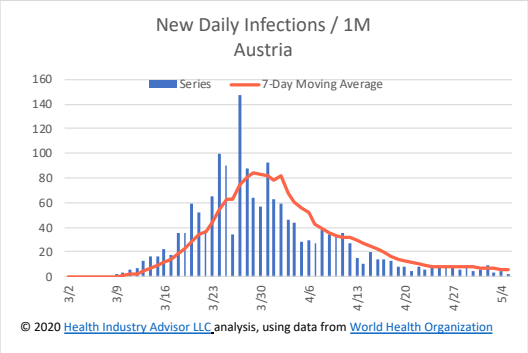
©2020 Health Industry Advisor LLC
All rights reserved.

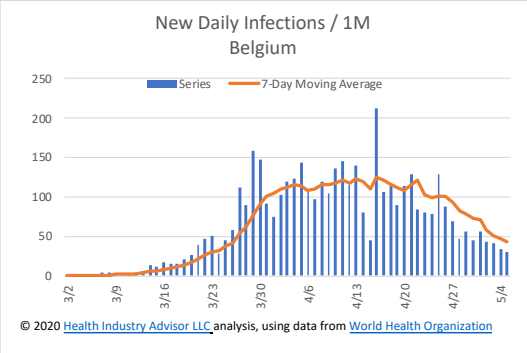
Health Industry Advisor, llc

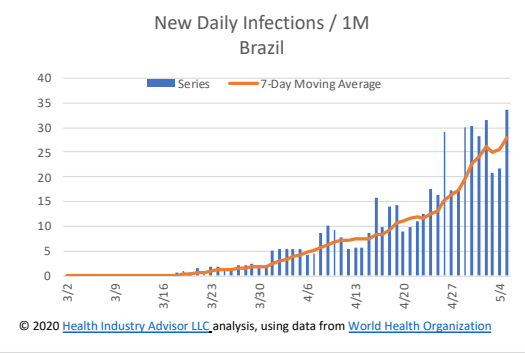
Country-by-Country

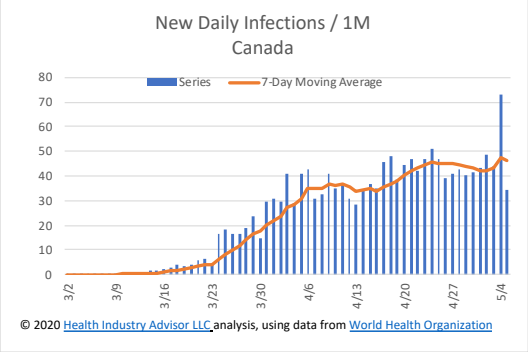
New Daily Infection Rate Time Series

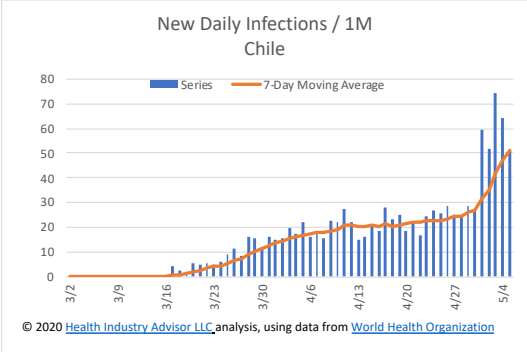
"Strategic Guidance in an Era of Unprecedented Change"

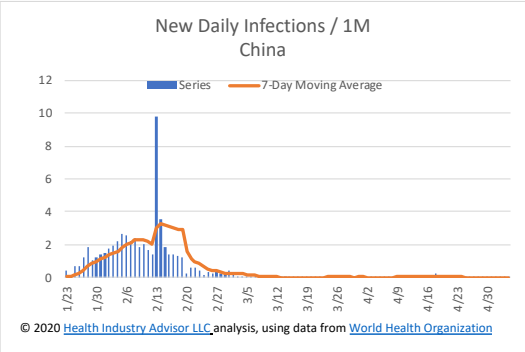












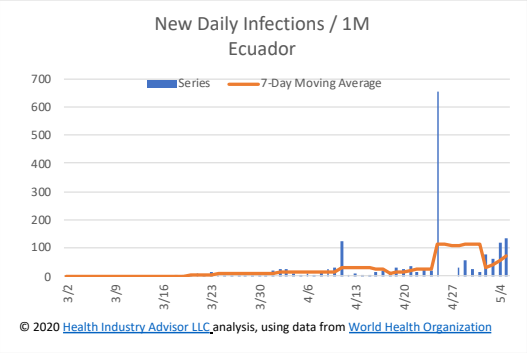
©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

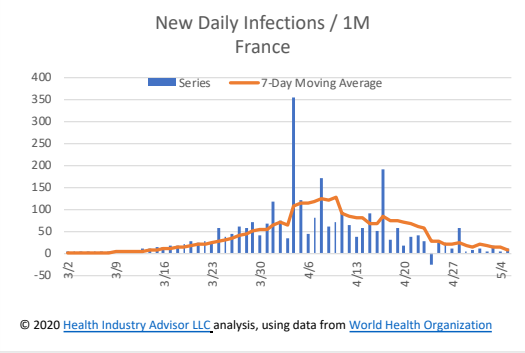
Country-by-Country

New Daily Infection Rate Time Series

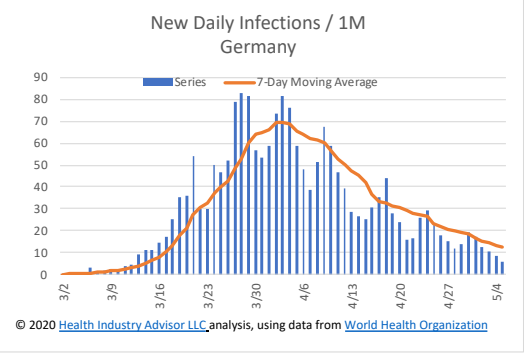
"Strategic Guidance in an Era of Unprecedented Change"



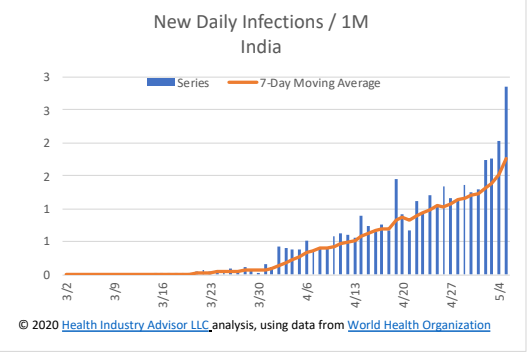
© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization



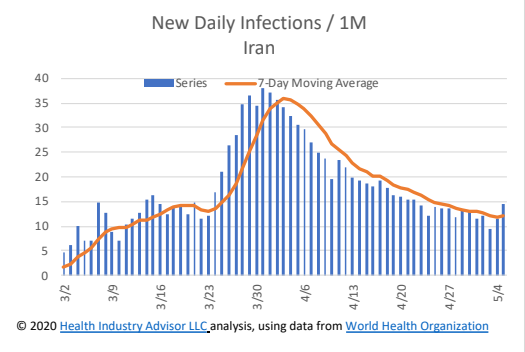
© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization



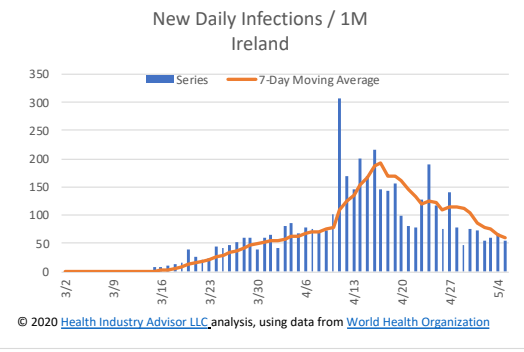
© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization



© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization



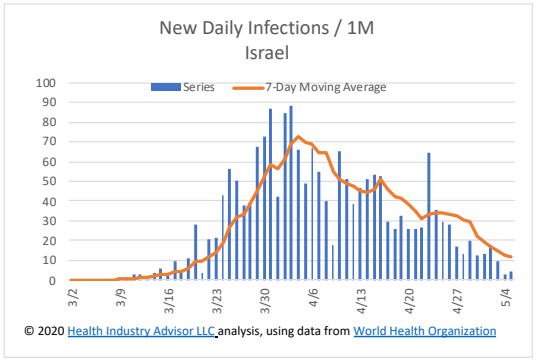
© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

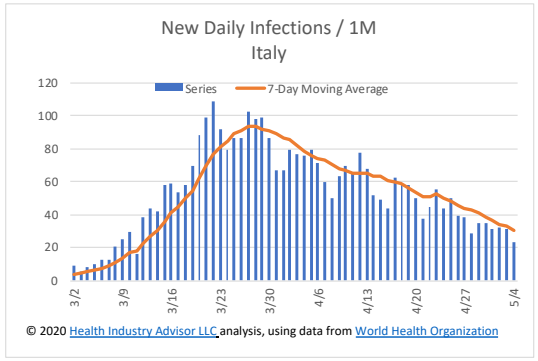


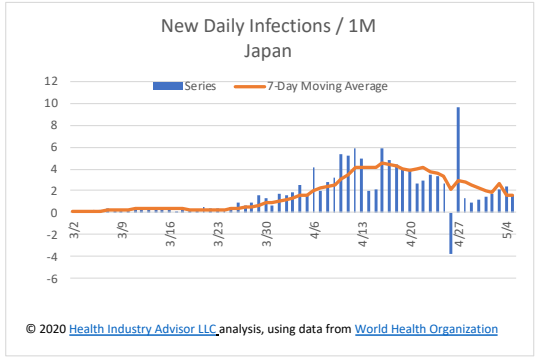
© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

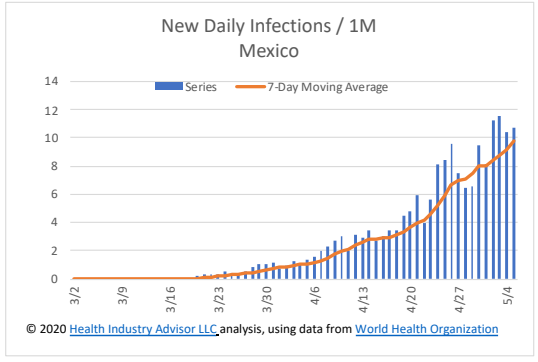
©2020 Health Industry Advisor LLC
All rights reserved.

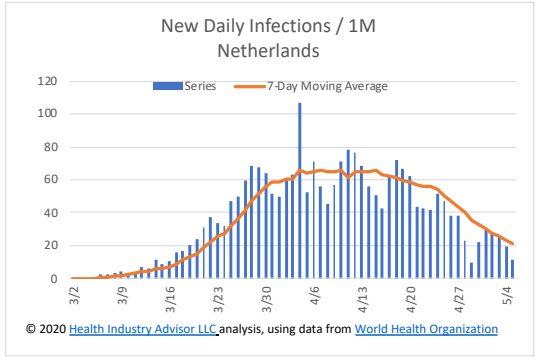
New Daily Infection Rate Time Series

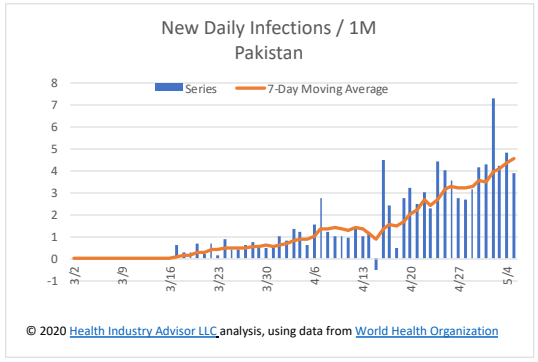












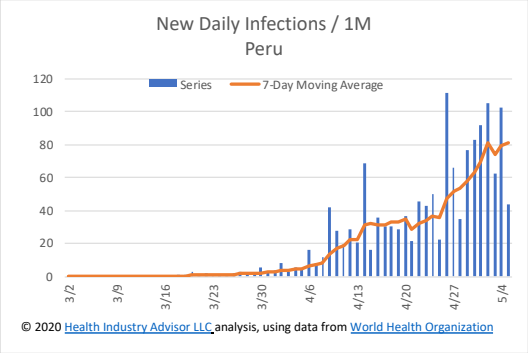
©2020 Health Industry Advisor LLC
All rights reserved.

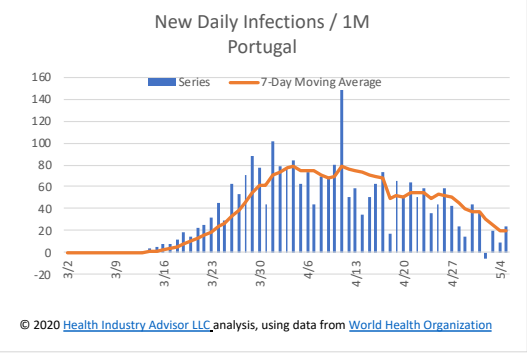
Health Industry Advisor, llc

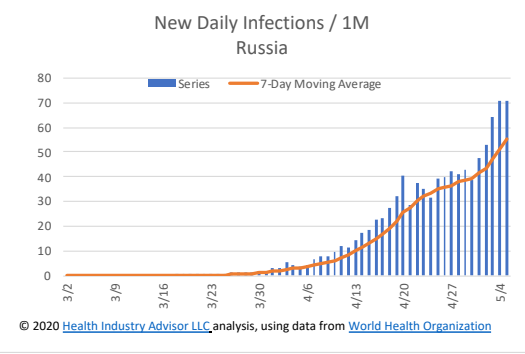
Country-by-Country

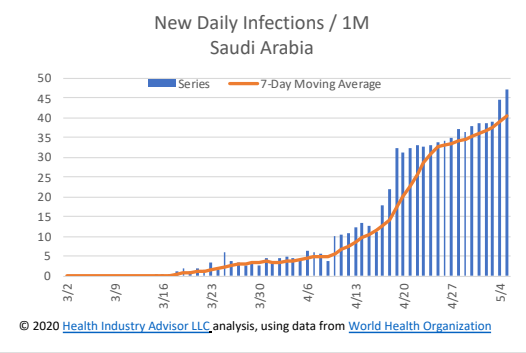
New Daily Infection Rate Time Series

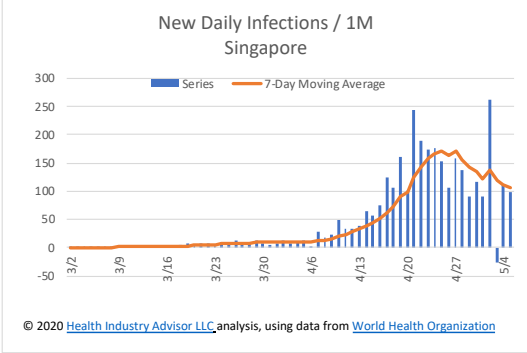
"Strategic Guidance in an Era of Unprecedented Change"

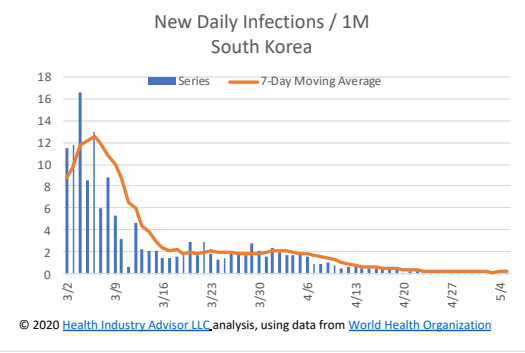












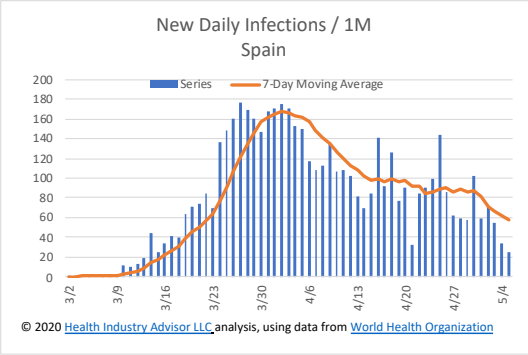
©2020 Health Industry Advisor LLC
All rights reserved.

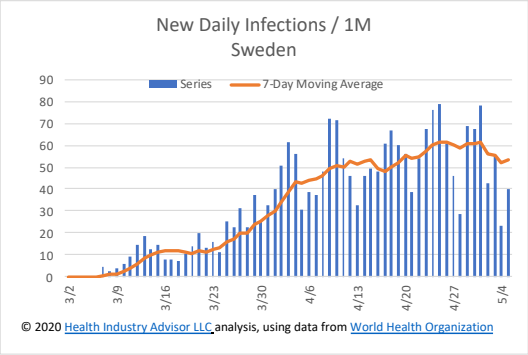
Health Industry Advisor, llc

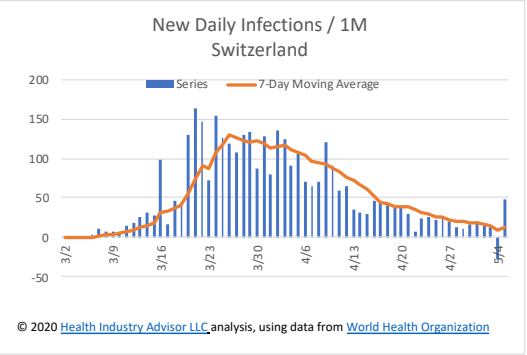
Country-by-Country

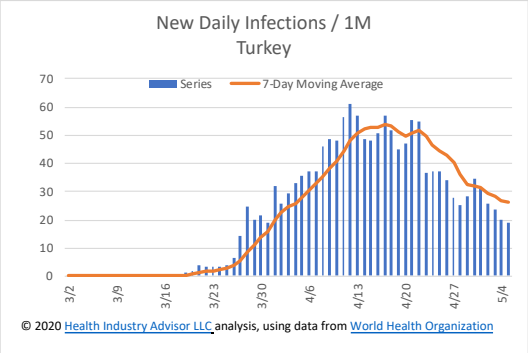
New Daily Infection Rate Time Series

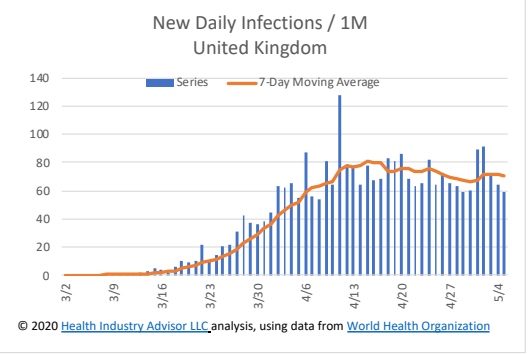
"Strategic Guidance in an Era of Unprecedented Change"

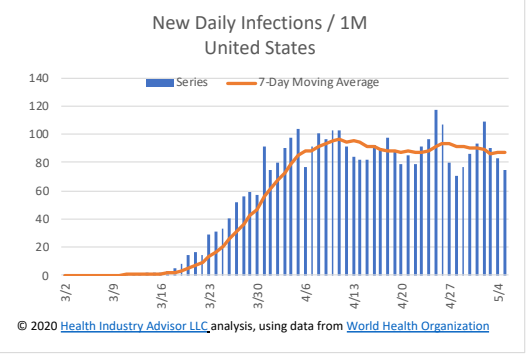












©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

UNITED STATES & STATE-BY-STATE INFORMATION

©2020 Health Industry Advisor LLC
All rights reserved.

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.**

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

State-By-State

Relative "Readiness" For Relaxing Restrictions

"Strategic Guidance in an Era of Unprecedented Change"

May 5

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

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

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

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

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	

© 2020 Health Industry Advisor LLC. All rights reserved.

Sources:

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

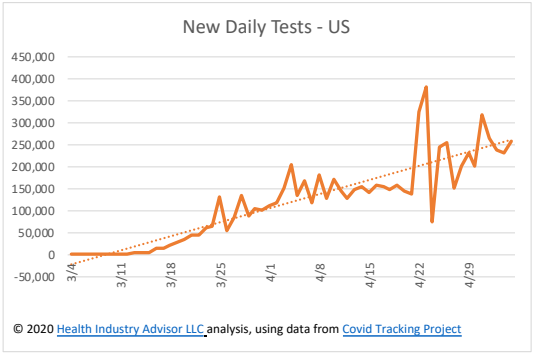
Test data from Covid Tracking Project (https://covidtracking.com/), accessed March 21-May 2, 2020

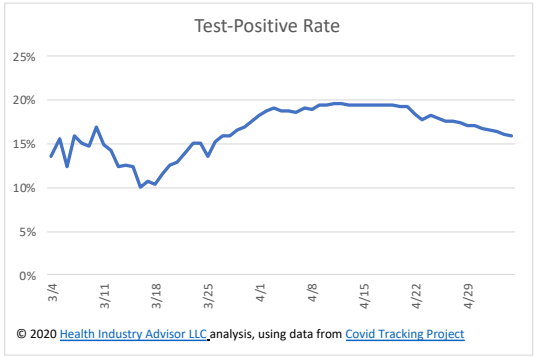
Hospital resource Need projections from Institure for Health Metrics and Evaluation (), accessed April 30, 2020

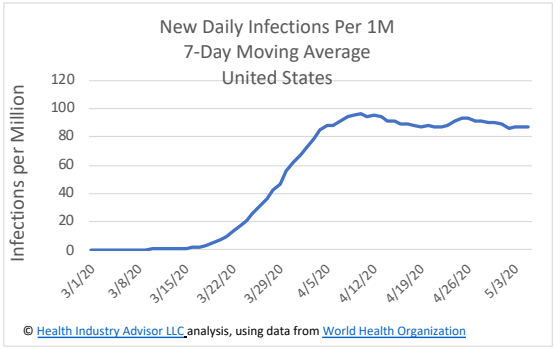
Infection rate data from World Health Organization (worldometer.info), accessed March 21-May 2, 2020

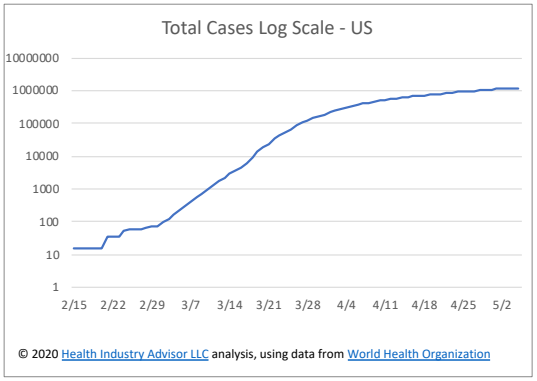
©2020 Health Industry Advisor LLC
All rights reserved.

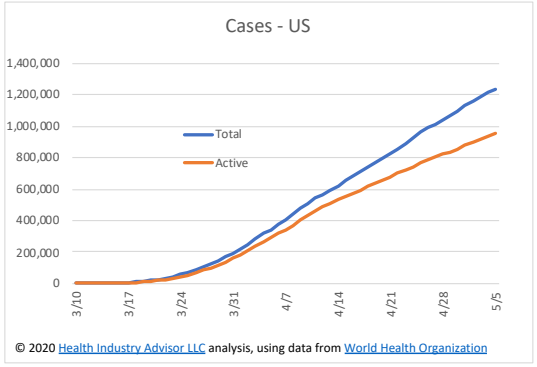
Overall Statistics

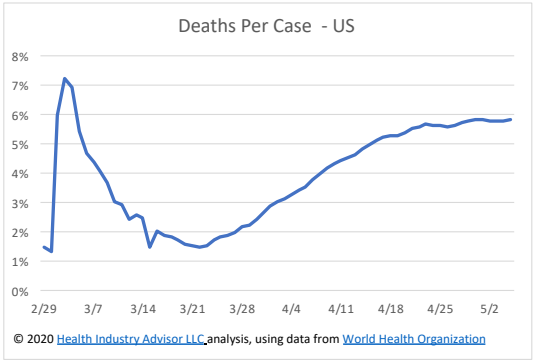






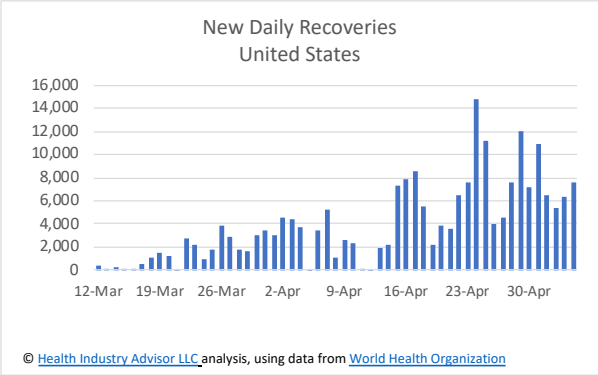


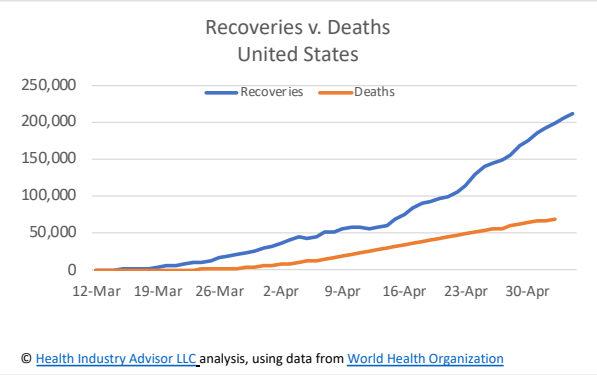


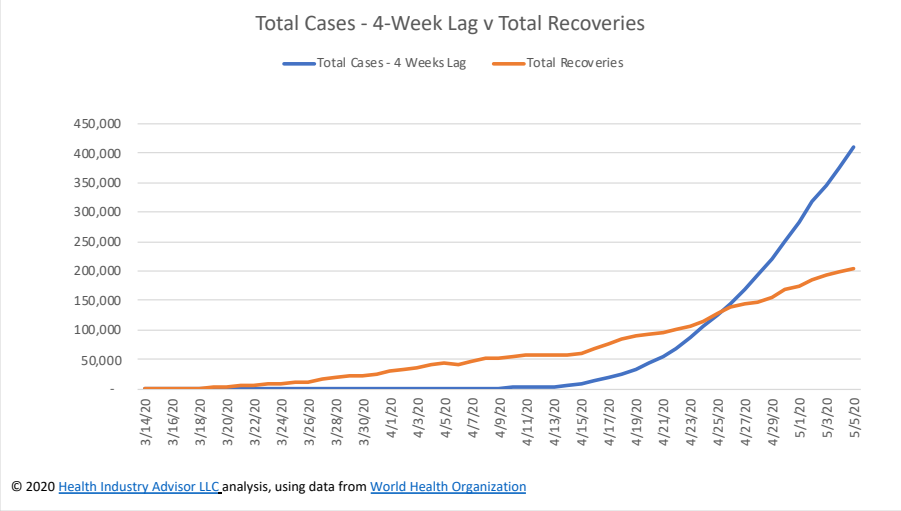


©2020 Health Industry Advisor LLC
All rights reserved.

Recoveries







©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

State-by-State

Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

As of May 5

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 Past 7 days	Rank	New Daily Cases Per 1M Population (5-Day M.A.)	Rank
Alabama	8,437	(26)	1,720.7	(29)	315	(26)	3.7%	(33)	64.2	(28)	3.6%	(17)	901	(14)	49.2	(30)
Alaska	371	(51)	507.1	(49)	9	(50)	2.4%	(43)	12.3	(49)	0.9%	(49)	1,094	(10)	3.9	(49)
Arizona	9,305	(23)	1,278.4	(39)	395	(22)	4.2%	(24)	54.3	(35)	4.0%	(13)	409	(46)	46.3	(33)
Arkansas	3,496	(39)	1,158.5	(43)	82	(40)	2.3%	(44)	27.2	(44)	1.3%	(45)	661	(26)	17.5	(44)
California	58,625	(5)	1,483.7	(32)	2,376	(8)	4.1%	(27)	60.1	(32)	3.2%	(20)	731	(22)	45.1	(34)
Colorado	17,364	(17)	3,015.2	(17)	903	(16)	5.2%	(14)	156.8	(14)	2.6%	(29)	463	(44)	75.6	(21)
Connecticut	30,621	(10)	8,588.6	(5)	2,633	(7)	8.6%	(2)	738.5	(3)	2.0%	(40)	637	(28)	172.7	(8)
Delaware	5,371	(35)	5,515.7	(8)	187	(34)	3.5%	(38)	192.0	(13)	2.6%	(30)	513	(38)	116.8	(11)
District Of Columbia	5,322	(36)	7,540.9	(6)	264	(30)	5.0%	(17)	374.1	(7)	4.2%	(11)	1,102	(9)	268.8	(3)
Florida	37,439	(8)	1,743.2	(28)	1,471	(10)	3.9%	(30)	68.5	(24)	2.1%	(37)	657	(27)	30.5	(40)
Georgia	29,892	(12)	2,815.4	(18)	1,295	(13)	4.3%	(21)	122.0	(15)	2.6%	(28)	819	(17)	67.8	(23)
Hawaii	625	(48)	441.4	(50)	17	(48)	2.7%	(42)	12.0	(51)	0.2%	(50)	486	(40)	1.6	(50)
Idaho	2,127	(43)	1,186.9	(41)	65	(41)	3.1%	(39)	36.3	(39)	1.1%	(47)	818	(18)	14.0	(46)
Illinois	65,962	(4)	5,205.4	(9)	2,838	(6)	4.3%	(23)	224.0	(11)	4.5%	(9)	1,174	(7)	201.3	(7)
Indiana	21,033	(14)	3,124.2	(15)	1,326	(12)	6.3%	(5)	197.0	(12)	3.4%	(19)	608	(31)	94.3	(15)
Iowa	10,111	(21)	3,204.7	(14)	207	(33)	2.0%	(45)	65.6	(26)	7.2%	(3)	939	(13)	169.1	(9)
Kansas	5,632	(32)	1,933.2	(25)	161	(36)	2.9%	(40)	55.3	(34)	5.5%	(4)	589	(32)	100.8	(12)
Kentucky	5,822	(31)	1,303.1	(38)	275	(29)	4.7%	(19)	61.6	(30)	4.3%	(10)	360	(49)	46.3	(32)
Louisiana	29,996	(11)	6,452.4	(7)	2,115	(9)	7.1%	(4)	455.0	(5)	1.4%	(44)	1,141	(8)	83.3	(18)
Maine	1,226	(46)	912.1	(46)	61	(42)	5.0%	(16)	45.4	(36)	2.3%	(35)	313	(50)	19.8	(43)
Maryland	27,117	(13)	4,485.4	(10)	1,390	(11)	5.1%	(15)	229.9	(10)	4.5%	(8)	764	(20)	165.5	(10)
Massachusetts	70,271	(3)	10,111.7	(3)	4,212	(3)	6.0%	(7)	606.1	(4)	2.5%	(32)	1,621	(3)	246.0	(4)
Michigan	44,397	(7)	4,445.5	(11)	4,179	(4)	9.4%	(1)	418.4	(6)	1.4%	(43)	830	(16)	73.5	(22)
Minnesota	7,851	(28)	1,392.1	(36)	455	(20)	5.8%	(10)	80.7	(22)	8.9%	(1)	613	(30)	93.0	(16)
Mississippi	8,207	(27)	2,757.6	(19)	342	(25)	4.2%	(25)	114.9	(16)	3.8%	(15)	763	(21)	89.5	(17)
Missouri	8,977	(24)	1,462.7	(34)	400	(21)	4.5%	(20)	65.2	(27)	2.9%	(24)	502	(39)	37.3	(37)
Montana	457	(50)	427.6	(51)	16	(49)	3.5%	(36)	15.0	(48)	0.2%	(51)	278	(51)	0.8	(51)
Nebraska	6,438	(30)	3,328.2	(13)	82	(40)	1.3%	(48)	42.4	(38)	8.5%	(2)	813	(19)	226.3	(5)
Nevada	5,594	(33)	1,816.1	(26)	276	(28)	4.9%	(18)	89.6	(19)	2.3%	(36)	360	(48)	36.6	(38)
New Hampshire	2,636	(42)	1,938.6	(24)	92	(38)	3.5%	(37)	67.7	(25)	4.2%	(12)	707	(24)	65.8	(25)
New Jersey	131,705	(2)	14,828.0	(2)	8,292	(2)	6.3%	(6)	933.6	(2)	2.1%	(39)	857	(15)	287.1	(1)
New Mexico	4,138	(37)	1,973.5	(23)	162	(35)	3.9%	(31)	77.3	(23)	3.9%	(14)	1,561	(4)	79.3	(19)
New York	330,139	(1)	16,970.6	(1)	25,204	(1)	7.6%	(3)	1,295.6	(1)	1.2%	(46)	1,351	(5)	210.7	(6)
North Carolina	12,511	(20)	1,192.9	(40)	470	(19)	3.8%	(32)	44.8	(37)	3.1%	(23)	532	(35)	37.8	(36)
North Dakota	1,266	(44)	1,661.3	(31)	25	(46)	2.0%	(46)	32.8	(42)	3.5%	(18)	2,380	(2)	51.6	(27)
Ohio	20,971	(15)	1,794.1	(27)	1,136	(14)	5.4%	(12)	97.2	(18)	3.1%	(22)	465	(43)	51.4	(28)
Oklahoma	4,127	(38)	1,043.0	(44)	247	(31)	6.0%	(8)	62.4	(29)	2.7%	(27)	712	(23)	25.9	(41)
Oregon	2,839	(40)	673.1	(48)	113	(37)	4.0%	(29)	26.8	(46)	2.5%	(31)	482	(41)	15.4	(45)
Pennsylvania	53,907	(6)	4,210.8	(12)	3,196	(5)	5.9%	(9)	249.6	(9)	2.3%	(33)	466	(42)	99.2	(13)
Rhode Island	9,933	(22)	9,376.4	(4)	355	(23)	3.6%	(34)	335.1	(8)	2.9%	(25)	2,527	(1)	270.6	(2)
South Carolina	6,841	(29)	1,328.7	(37)	296	(27)	4.3%	(22)	57.5	(33)	2.3%	(34)	434	(45)	30.7	(39)
South Dakota	2,721	(41)	3,075.8	(16)	24	(47)	0.9%	(51)	27.1	(45)	2.1%	(38)	389	(47)	65.9	(24)
Tennessee	13,690	(19)	2,003.5	(22)	226	(32)	1.7%	(47)	33.1	(41)	5.0%	(6)	1,190	(6)	76.1	(20)
Texas	34,238	(9)	1,180.8	(42)	960	(15)	2.8%	(41)	33.1	(40)	3.8%	(16)	625	(29)	39.7	(35)
Utah	5,449	(34)	1,699.6	(30)	56	(43)	1.0%	(50)	17.5	(47)	3.1%	(21)	1,082	(11)	49.3	(29)
Vermont	907	(47)	1,453.6	(35)	52	(44)	5.7%	(11)	83.3	(21)	0.9%	(48)	527	(36)	10.3	(48)
Virginia	20,256	(16)	2,373.1	(20)	713	(18)	3.5%	(35)	83.5	(20)	5.0%	(5)	518	(37)	99.0	(14)
Washington	16,360	(18)	2,148.4	(21)	870	(17)	5.3%	(13)	114.2	(17)	2.7%	(26)	687	(25)	47.2	(31)
West Virginia	1,242	(45)	695.0	(47)	50	(45)	4.0%	(28)	28.0	(43)	2.0%	(41)	941	(12)	11.8	(47)
Wisconsin	8,566	(25)	1,471.2	(33)	353	(24)	4.1%	(26)	60.6	(31)	4.6%	(7)	557	(34)	55.9	(26)
Wyoming	604	(49)	1,012.5	(45)	7	(51)	1.2%	(49)	12.1	(50)	1.8%	(42)	568	(33)	20.7	(42)
United States	1,188,122		3,589.5		68,598		5.8%		218.3		2.8%		753		87.1	

© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project and World Health Organization

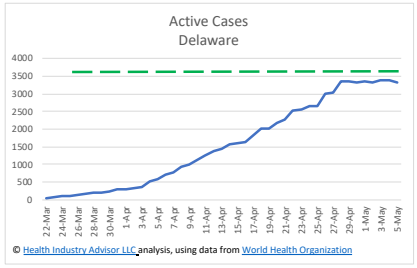
©2020 Health Industry Advisor LLC
All rights reserved.

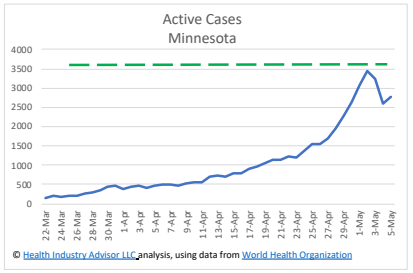
Health Industry Advisor, llc

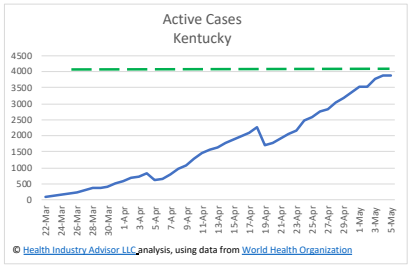
State-by-State

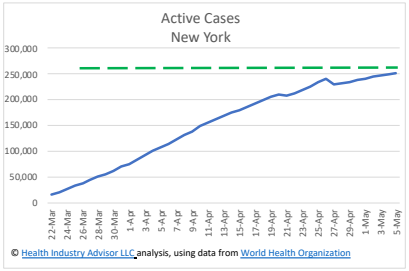
Several States Are Near A Peak in Active Cases

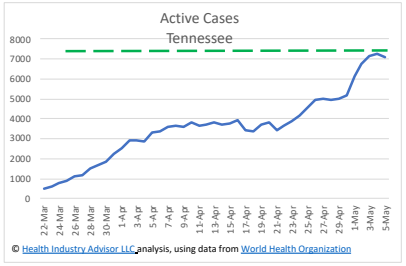
"Strategic Guidance in an Era of Unprecedented Change"

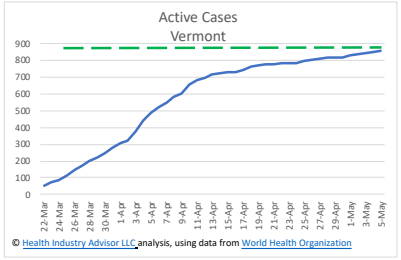


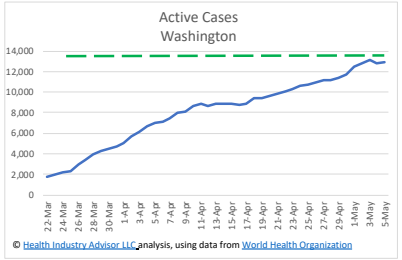












©2020 Health Industry Advisor LLC
All rights reserved.

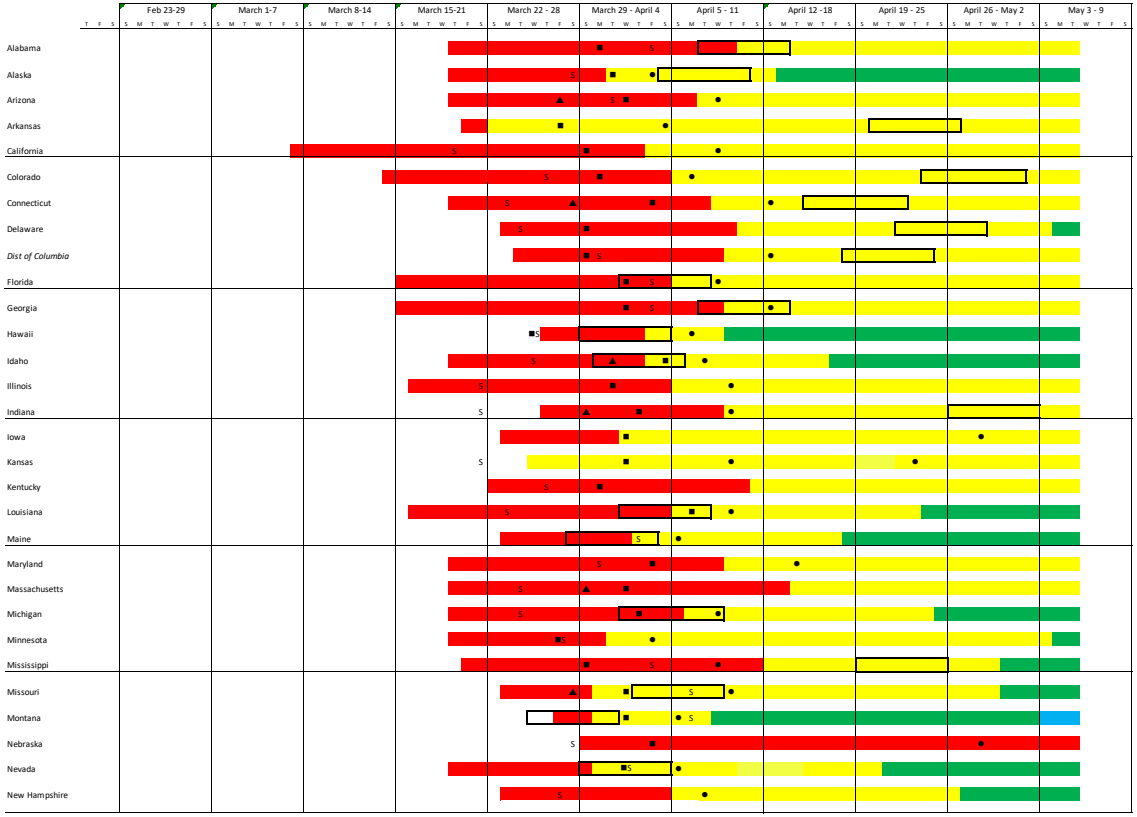
State-by-State

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

© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

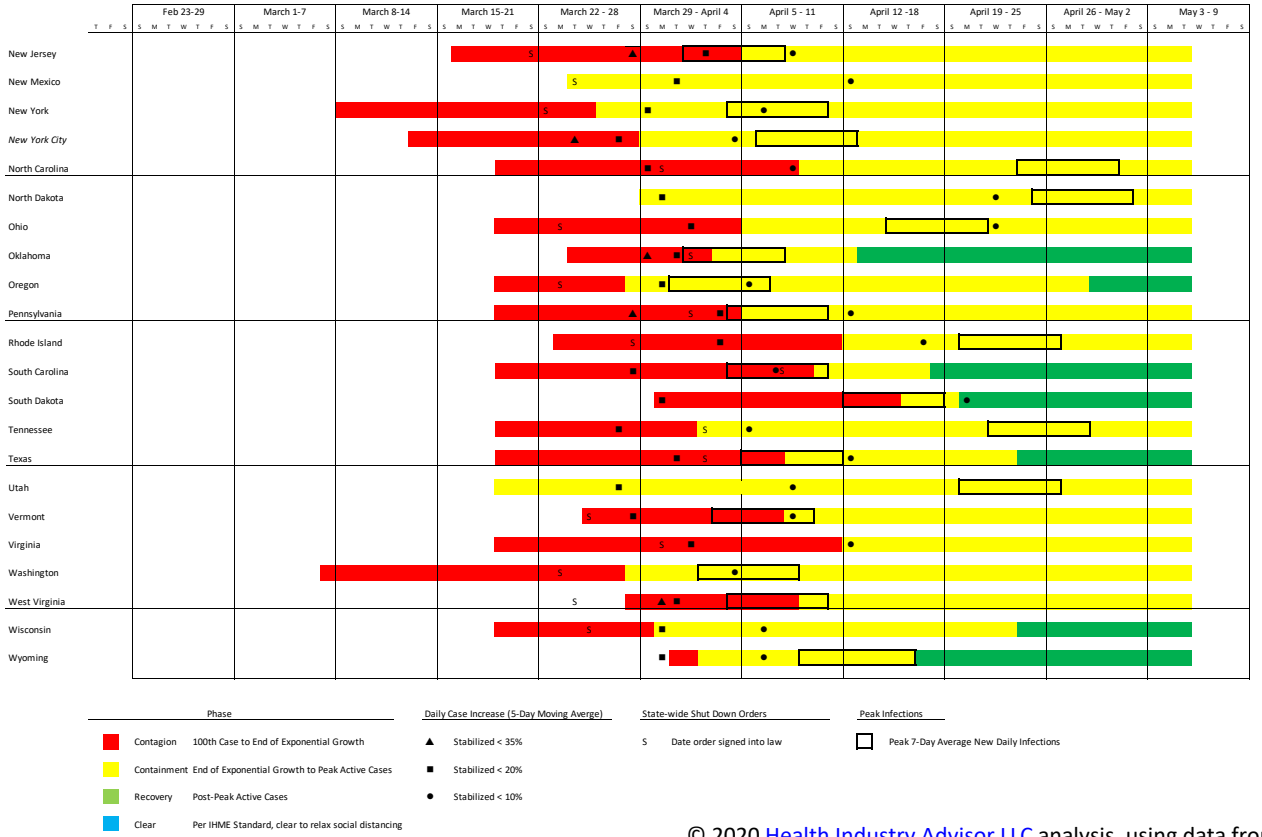
State-by-State

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.



© 2020 Health Industry Advisor LLC analysis, using data from World Health Organization

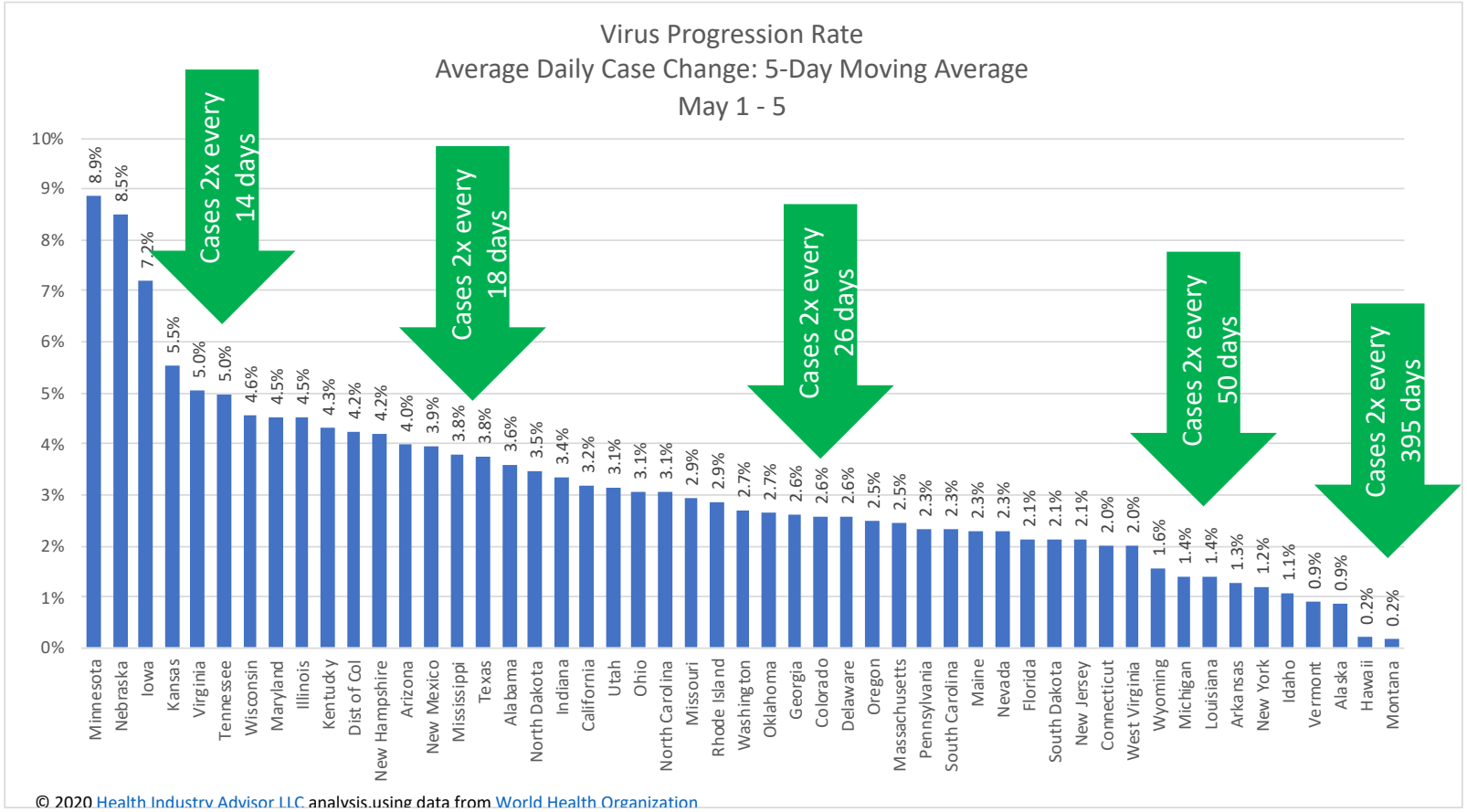
©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

State-by-State

Average Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"



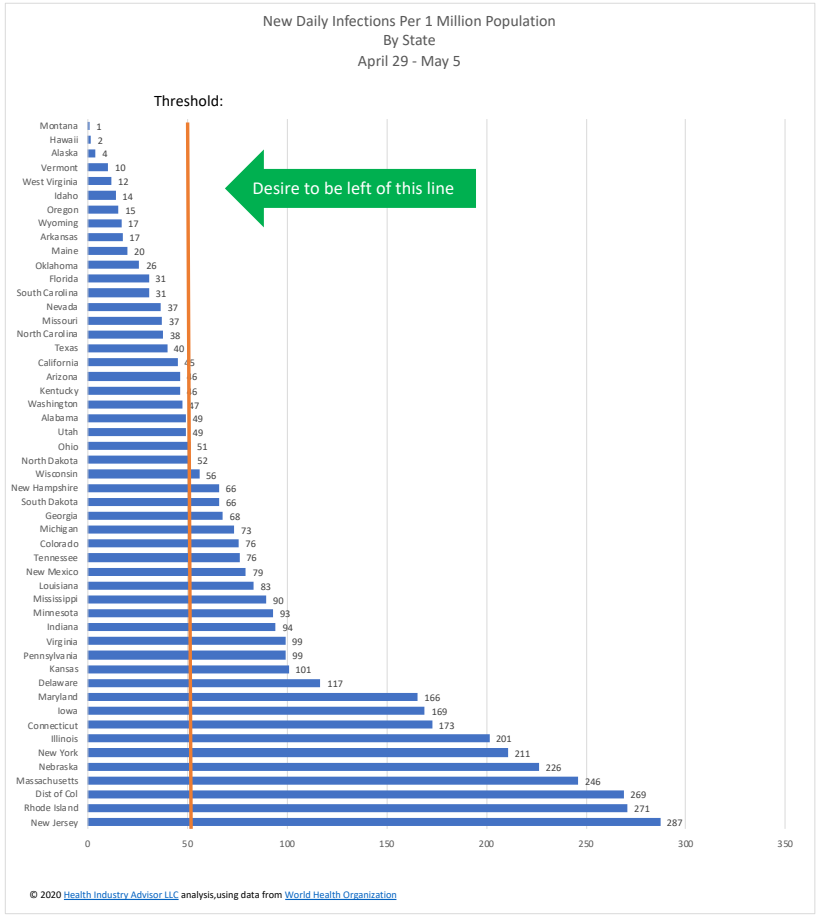
©2020 Health Industry Advisor LLC
All rights reserved.

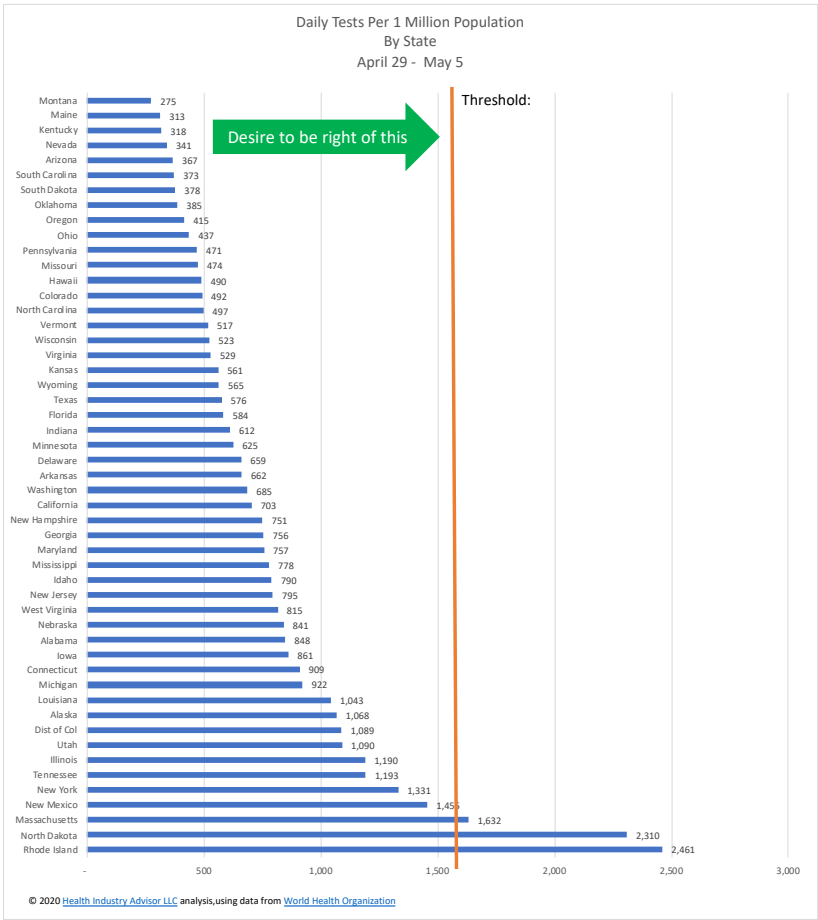
Health Industry Advisor, llc

State-by-State

New Daily Infections & Tests Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





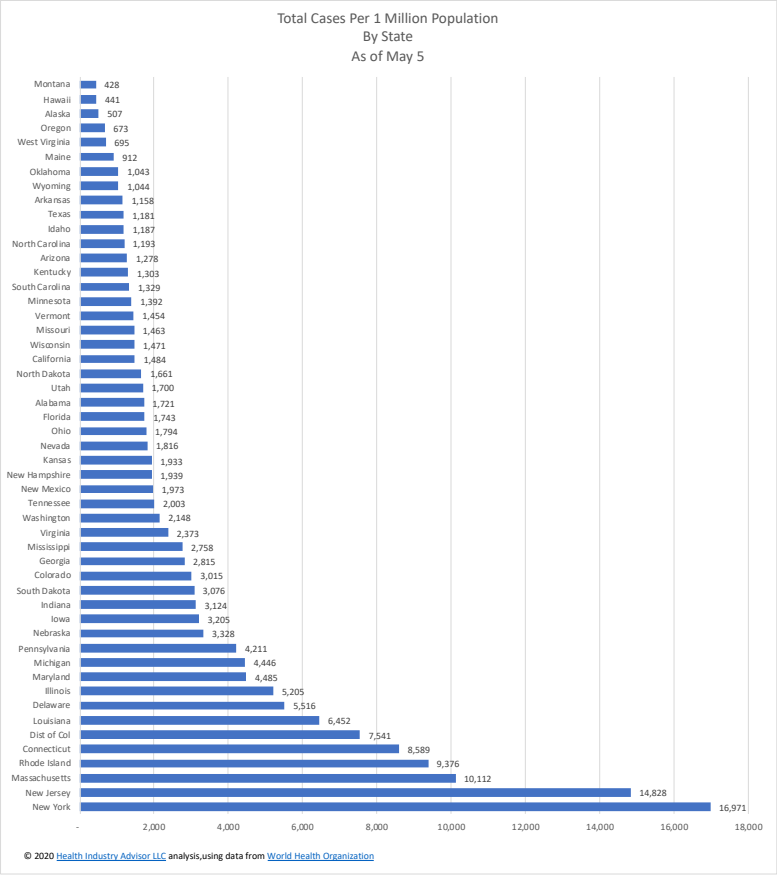
©2020 Health Industry Advisor LLC
All rights reserved.

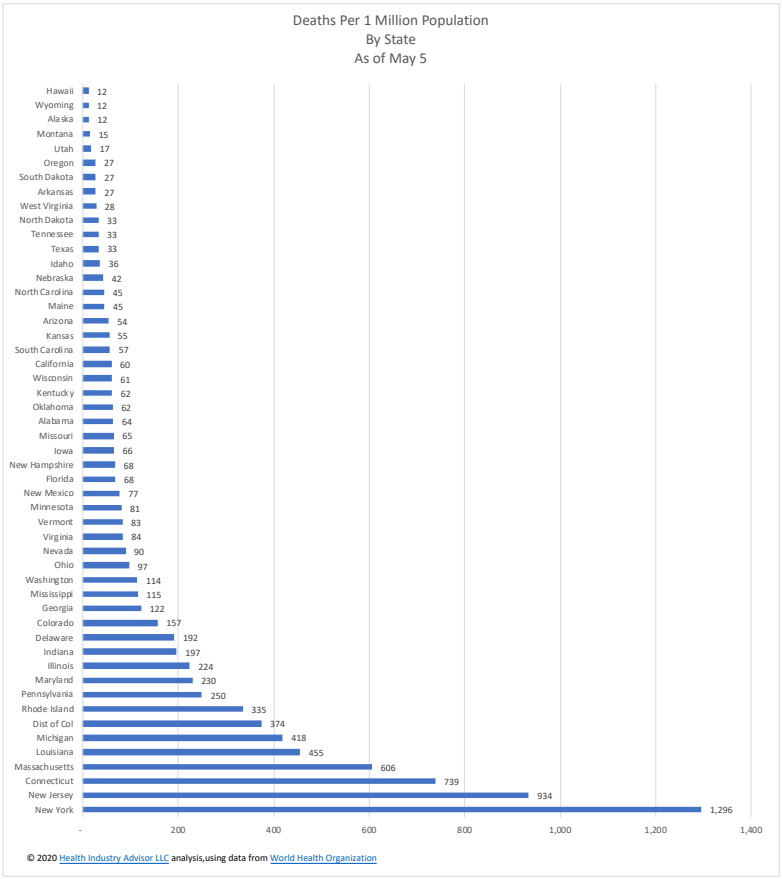
Health Industry Advisor, llc

State-by-State

Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





©2020 Health Industry Advisor LLC
All rights reserved.

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:

- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina

©2020 Health Industry Advisor LLC
All rights reserved.

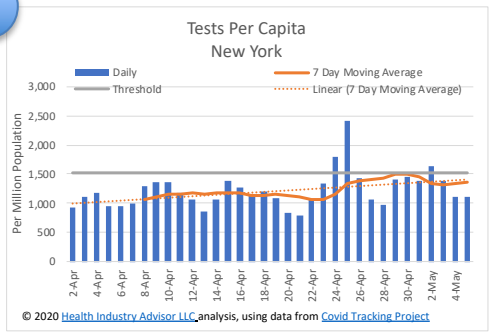
State-by-State

Test, New Daily Infection and Active Case Trends

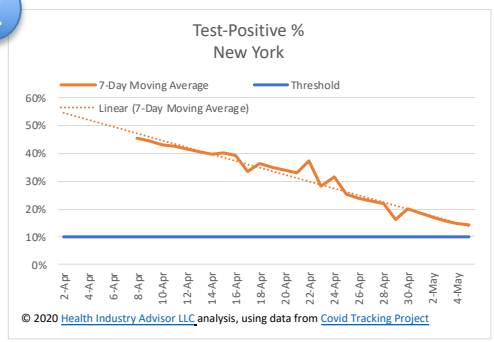
How to "read" these charts:

- Chart 1 – Desire to see tests per capita:
  - Above the threshold
  - Increasing or stable
- Chart 2 - Desire to see Test-Positive %:
  - Below the threshold
  - Declining or stable
- Chart 3 - Desire to see New Infections Per Capita:
  - Below the threshold
  - Declining or stable
- Chart 4 - Desire to see Active Cases:
  - Declining

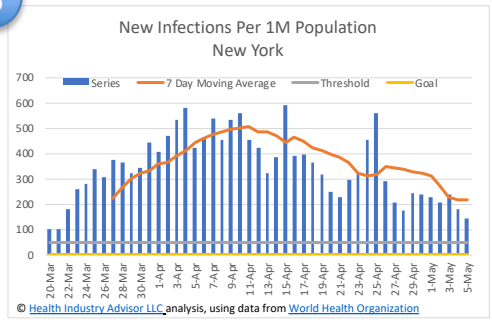
1



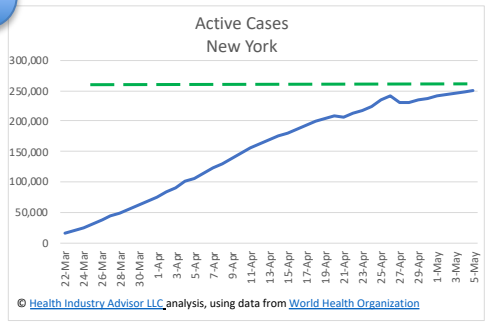
2



3



4



©2020 Health Industry Advisor LLC

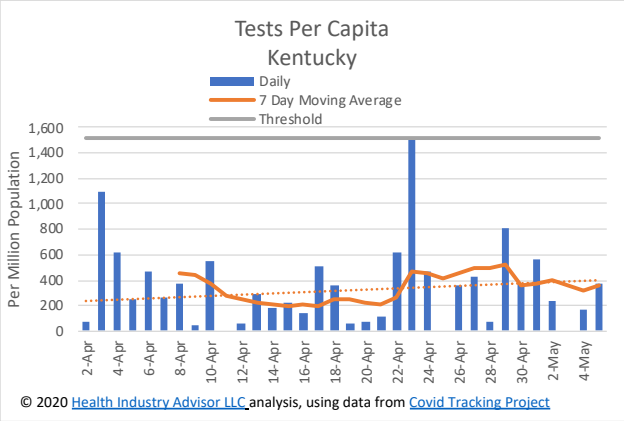
All rights reserved.

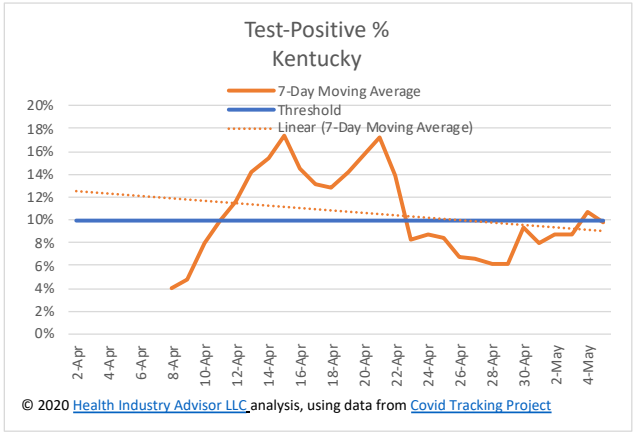
Health Industry Advisor, llc

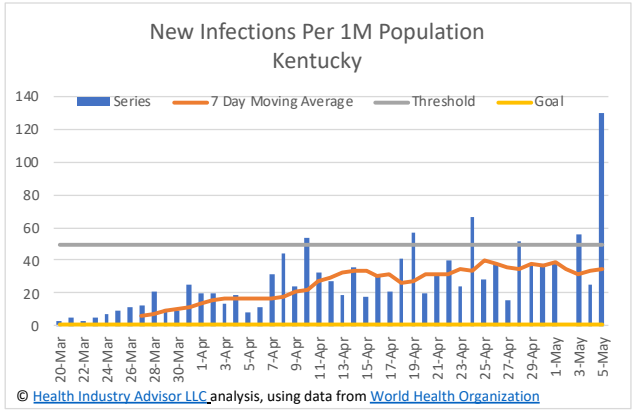
State-by-State

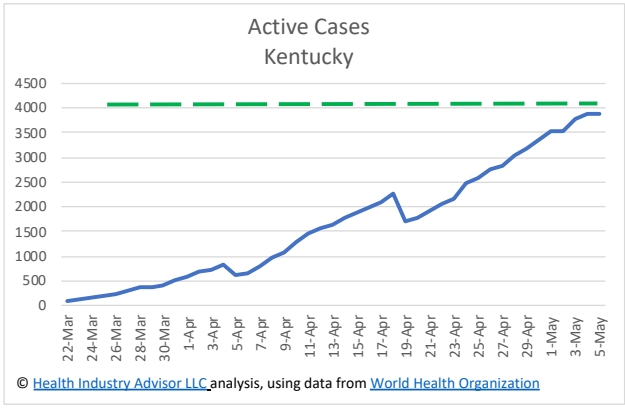
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









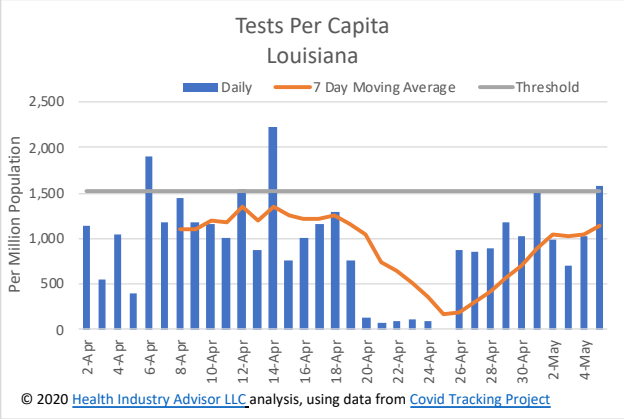
©2020 Health Industry Advisor LLC
All rights reserved.

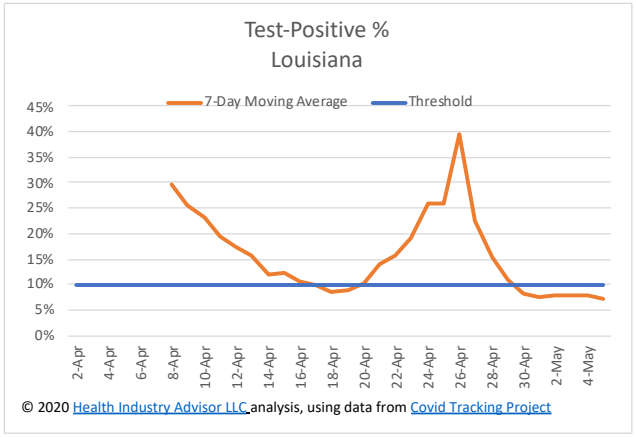
Health Industry Advisor, llc

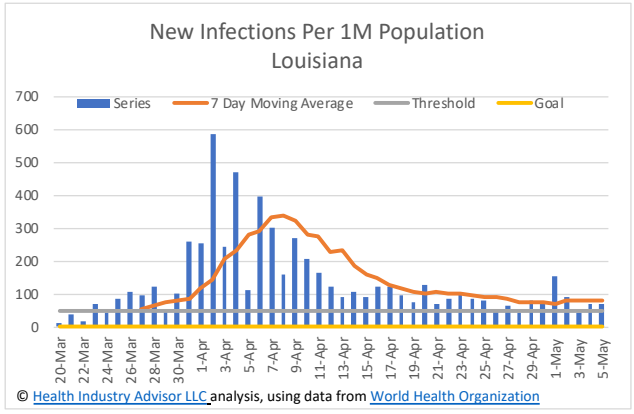
State-by-State

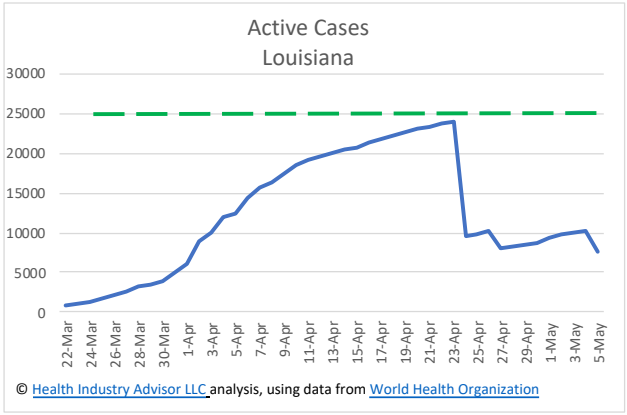
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









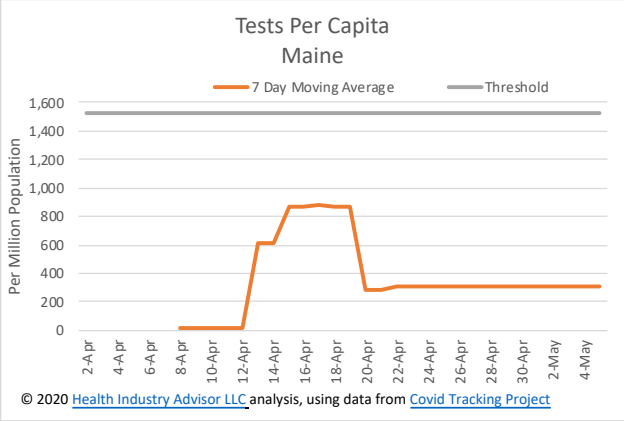
©2020 Health Industry Advisor LLC
All rights reserved.

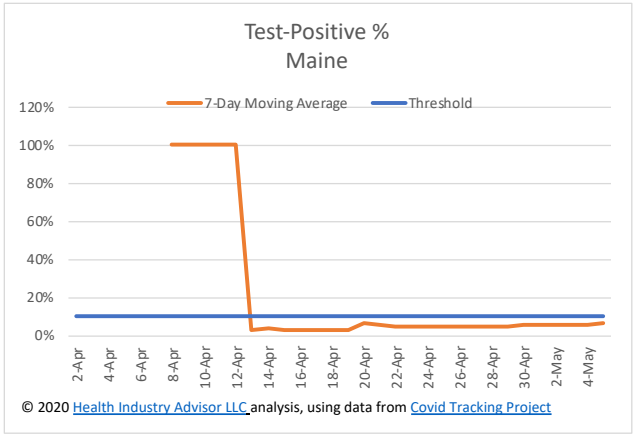
Health Industry Advisor, llc

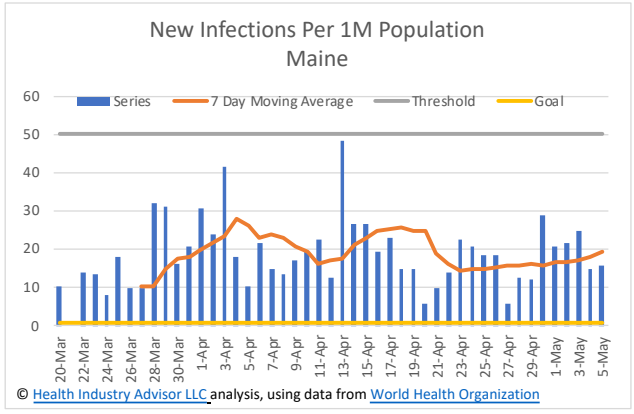
State-by-State

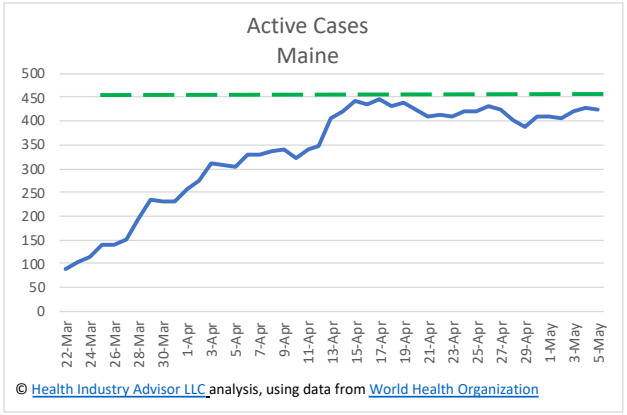
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









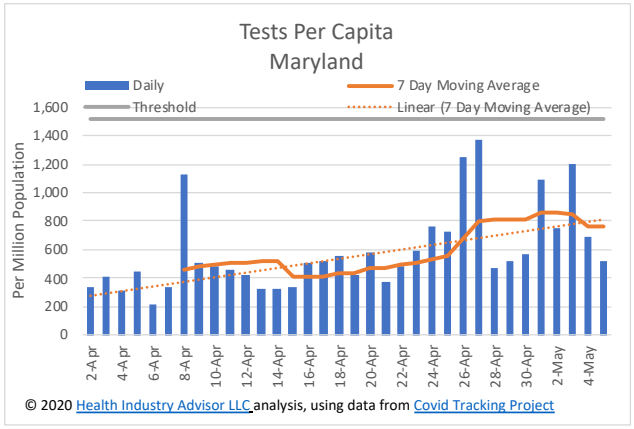
©2020 Health Industry Advisor LLC
All rights reserved.

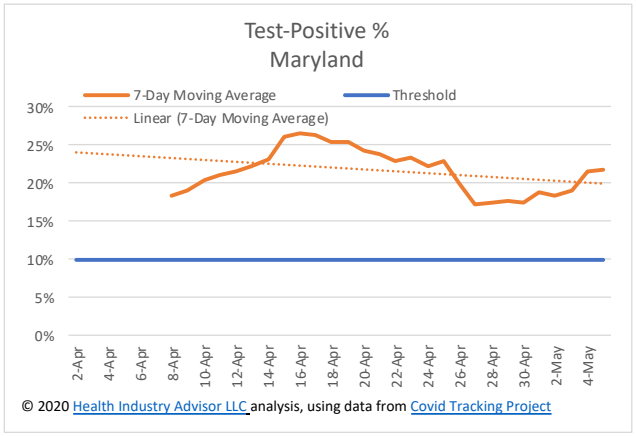
Health Industry Advisor, llc

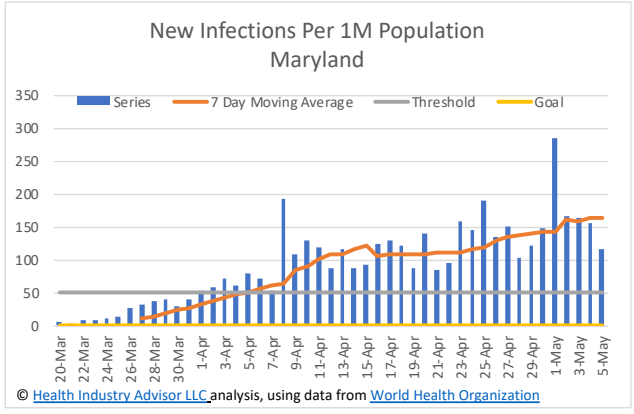
State-by-State

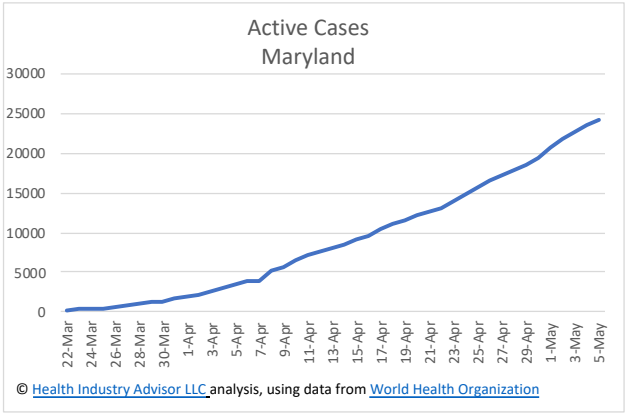
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









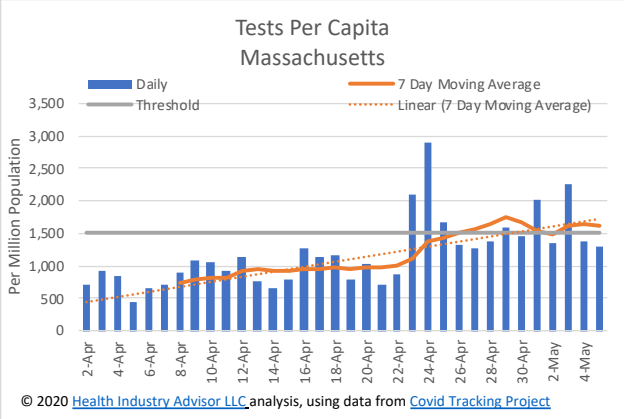
©2020 Health Industry Advisor LLC
All rights reserved.

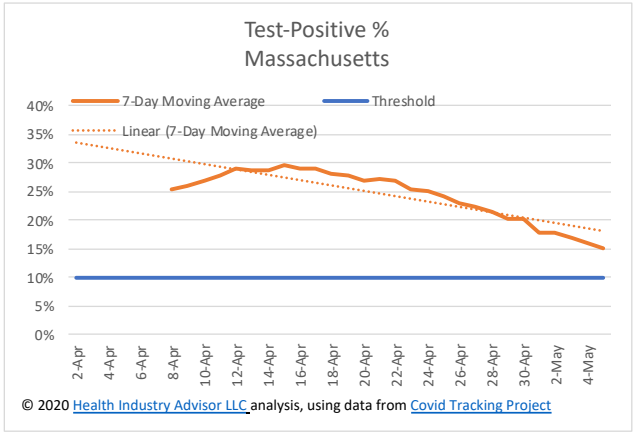
Health Industry Advisor, llc

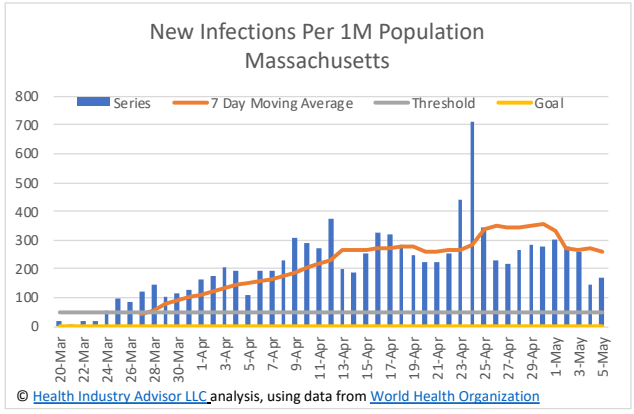
State-by-State

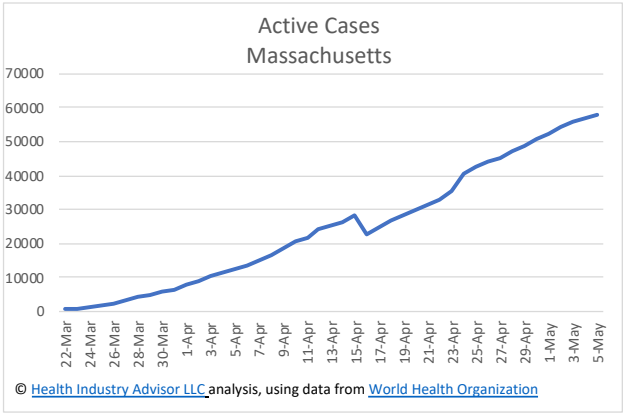
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"



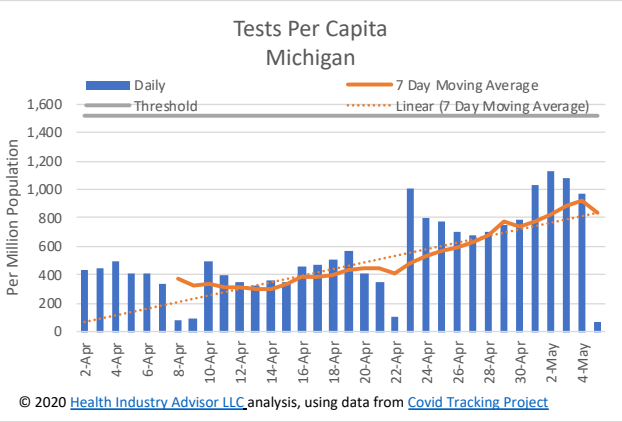


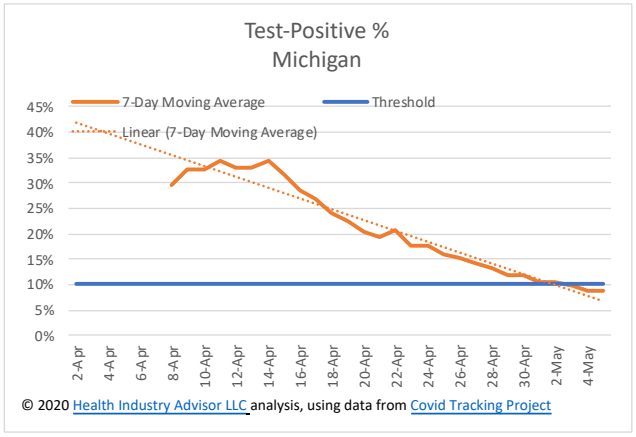


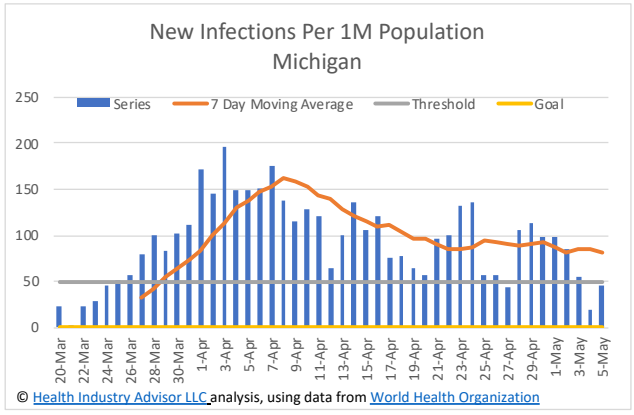


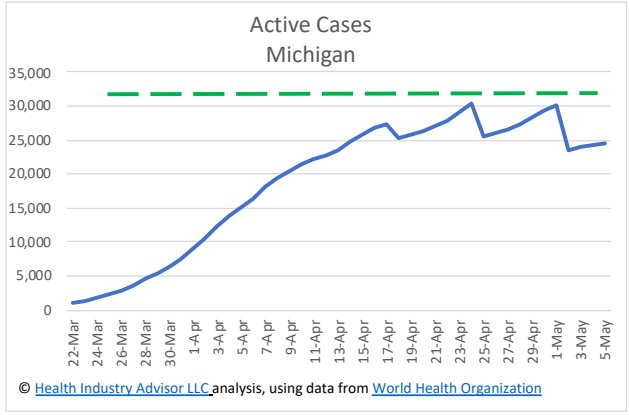
©2020 Health Industry Advisor LLC
All rights reserved.

Test, New Daily Infection and Active Case Trends



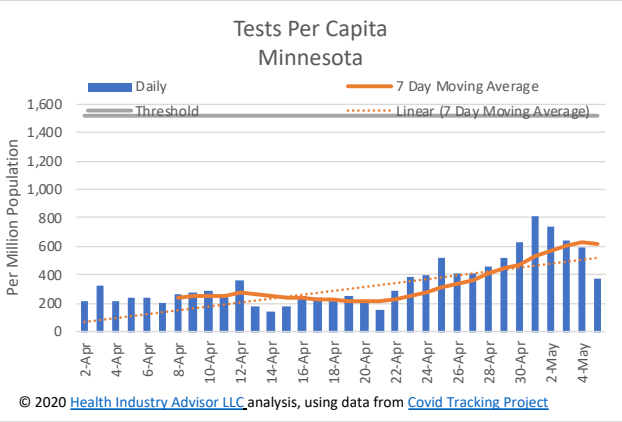




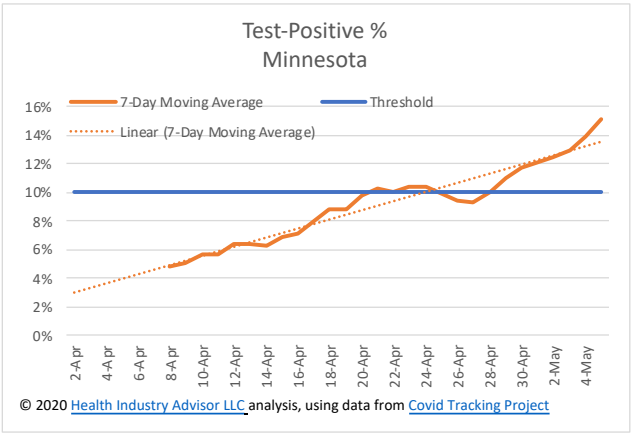


©2020 Health Industry Advisor LLC
All rights reserved.

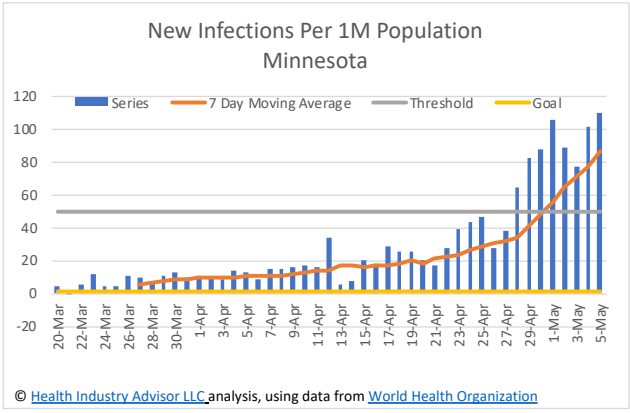
Test, New Daily Infection and Active Case Trends



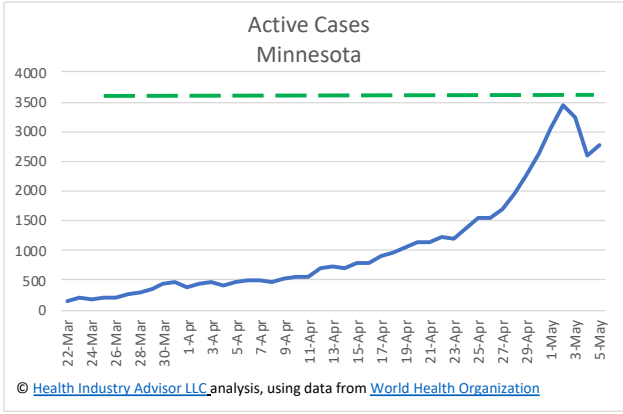
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



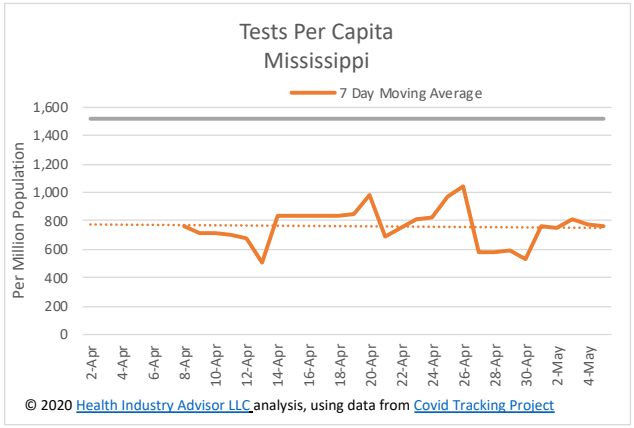
© Health Industry Advisor LLC analysis, using data from World Health Organization

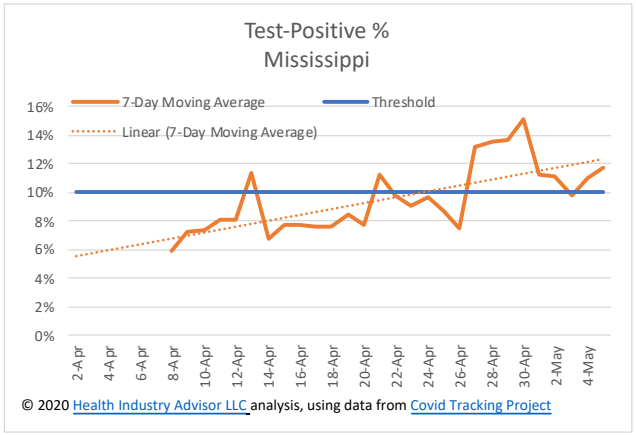


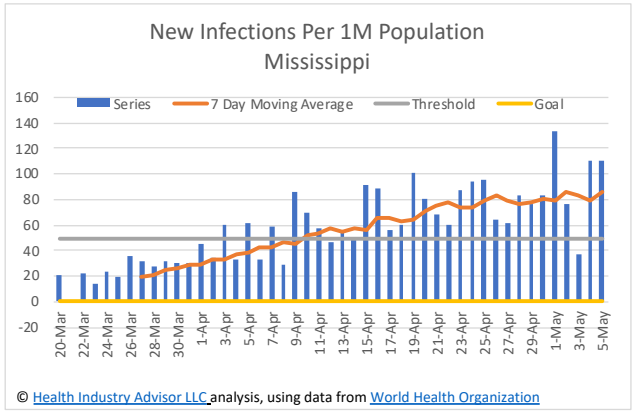
© Health Industry Advisor LLC analysis, using data from World Health Organization

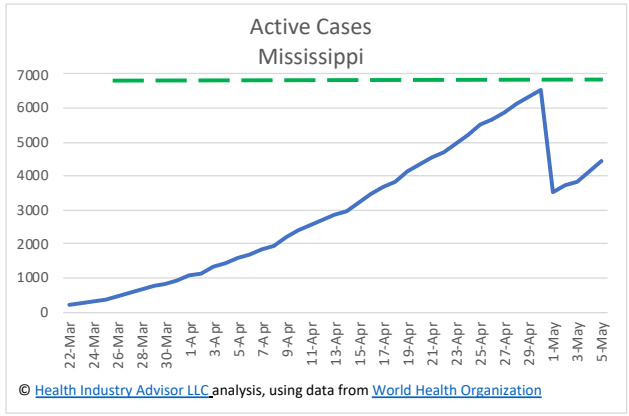
©2020 Health Industry Advisor LLC
All rights reserved.

Test, New Daily Infection and Active Case Trends



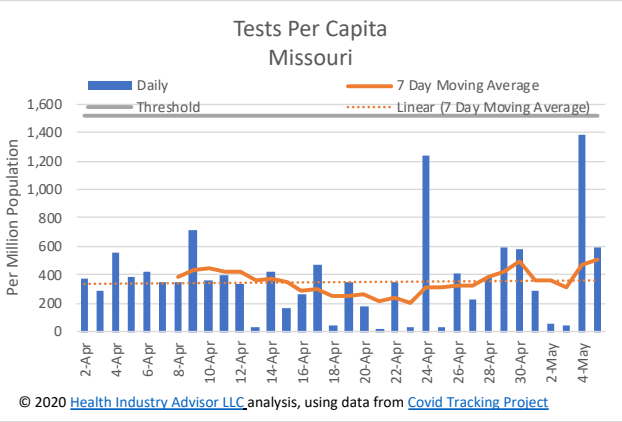


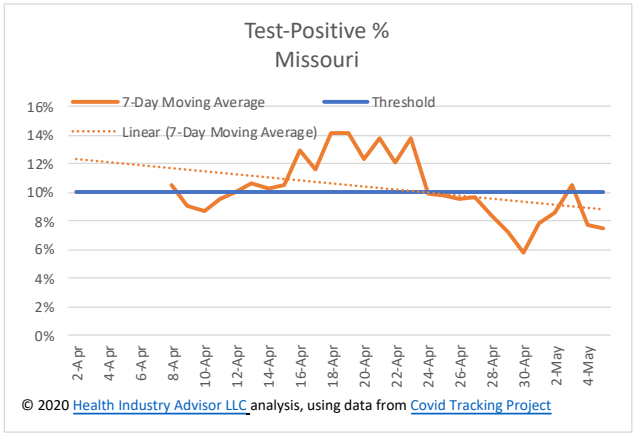


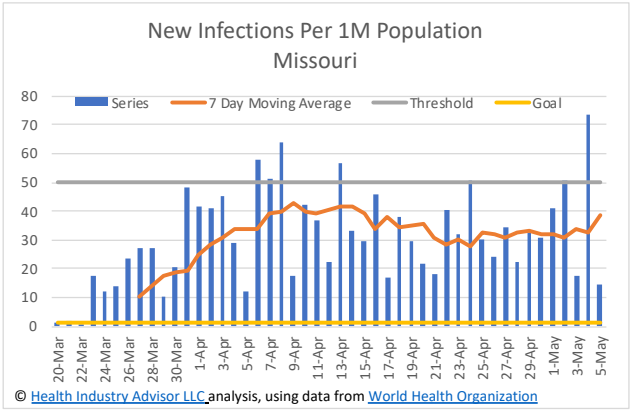


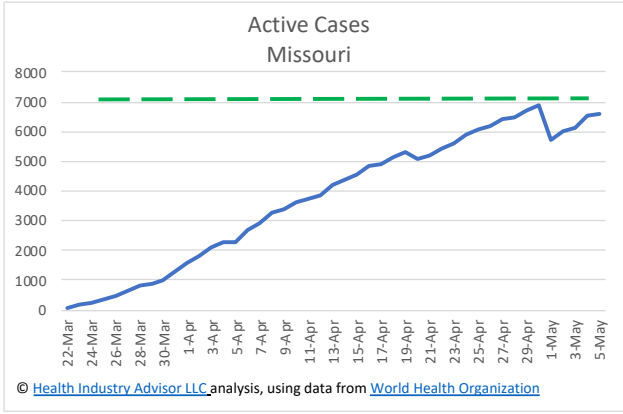
©2020 Health Industry Advisor LLC
All rights reserved.

Test, New Daily Infection and Active Case Trends



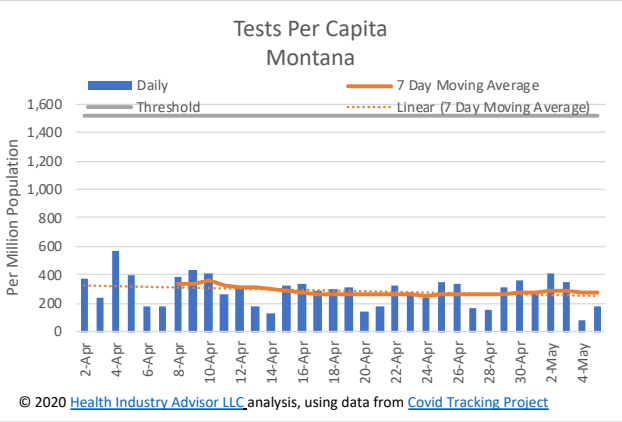


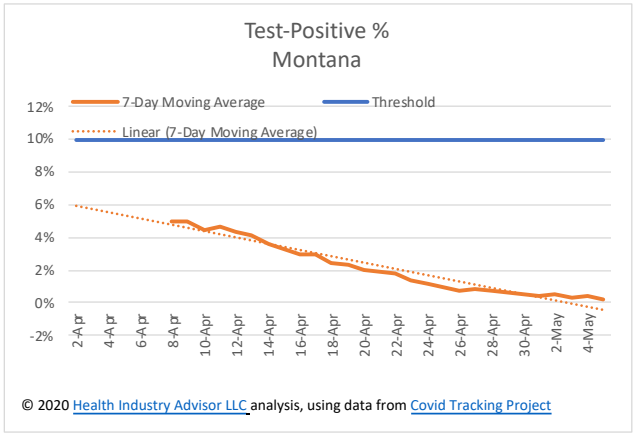


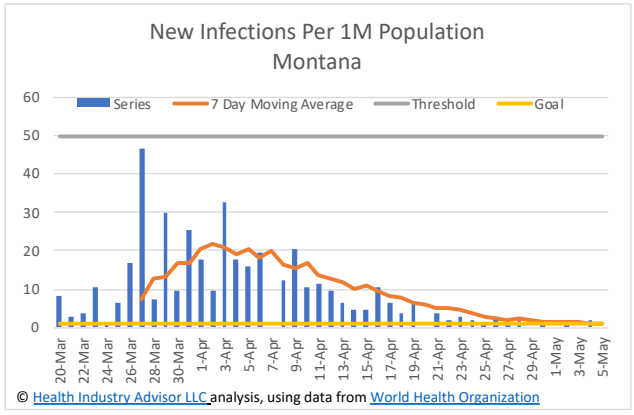


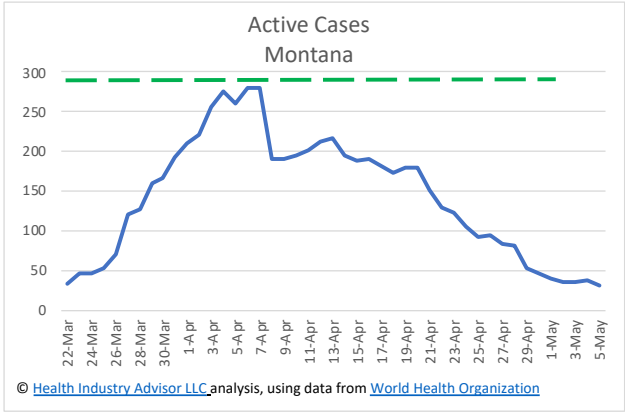
©2020 Health Industry Advisor LLC
All rights reserved.

Test, New Daily Infection and Active Case Trends









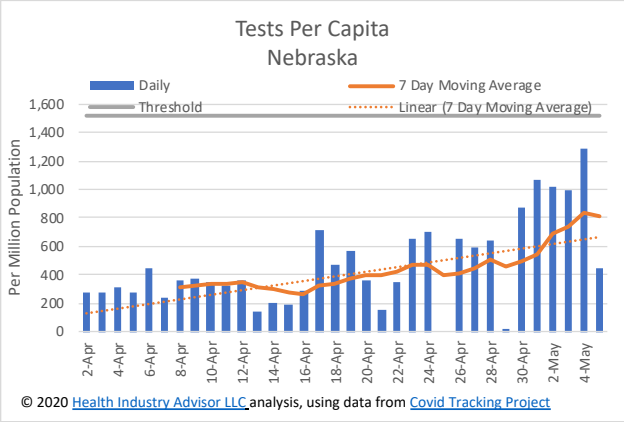
©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

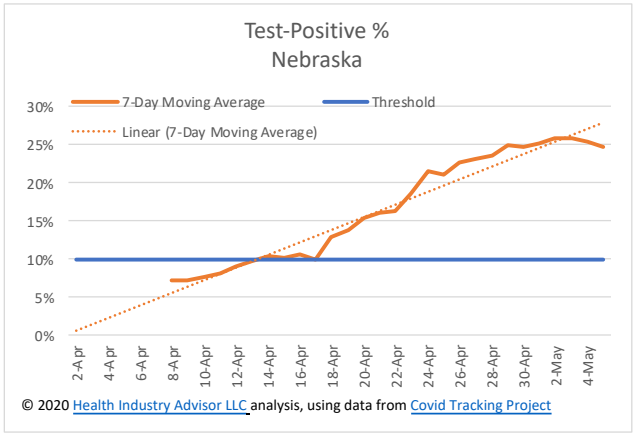
State-by-State

Test, New Daily Infection and Active Case Trends

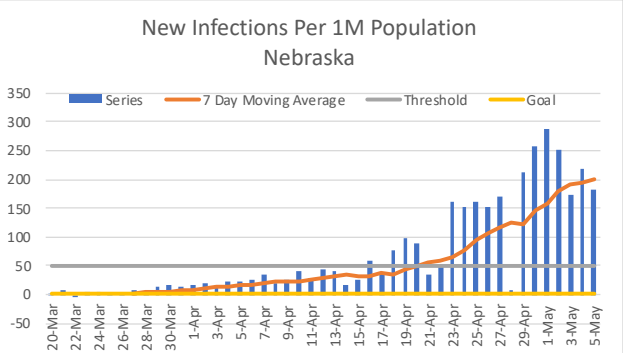
"Strategic Guidance in an Era of Unprecedented Change"



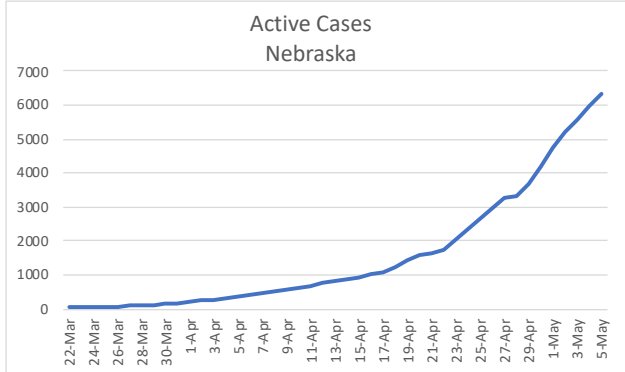
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



© Health Industry Advisor LLC analysis, using data from World Health Organization



© Health Industry Advisor LLC analysis, using data from World Health Organization

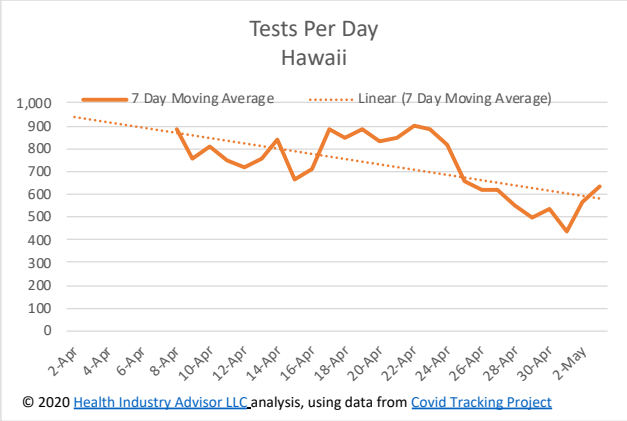
©2020 Health Industry Advisor LLC
All rights reserved.

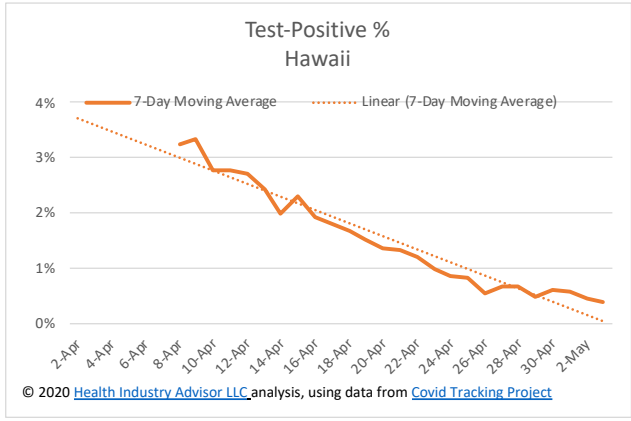
Health Industry Advisor, llc

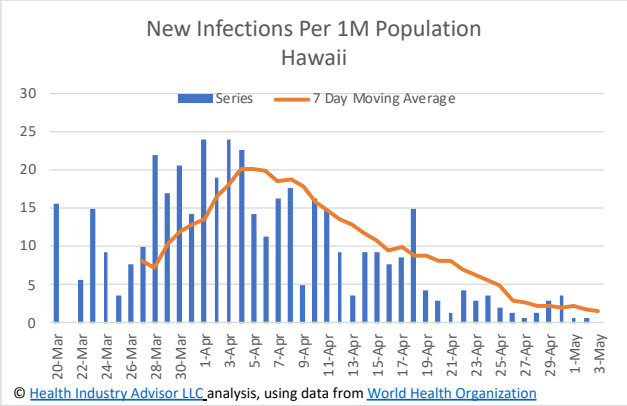
State-by-State

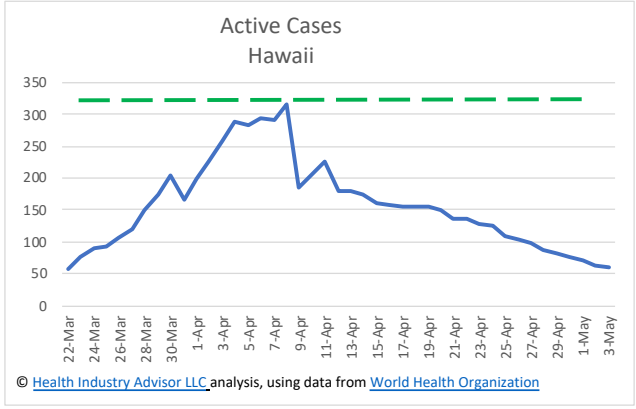
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









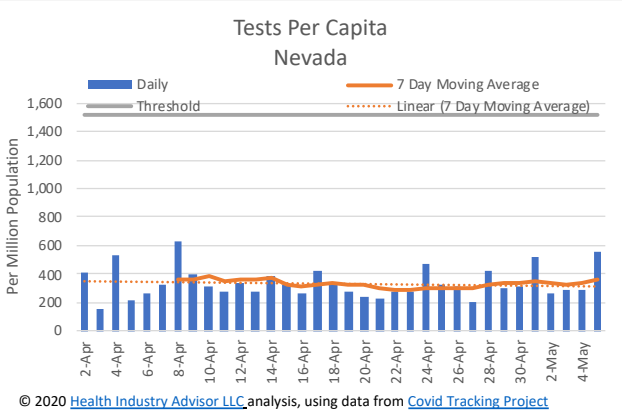
©2020 Health Industry Advisor LLC
All rights reserved.

Health Industry Advisor, llc

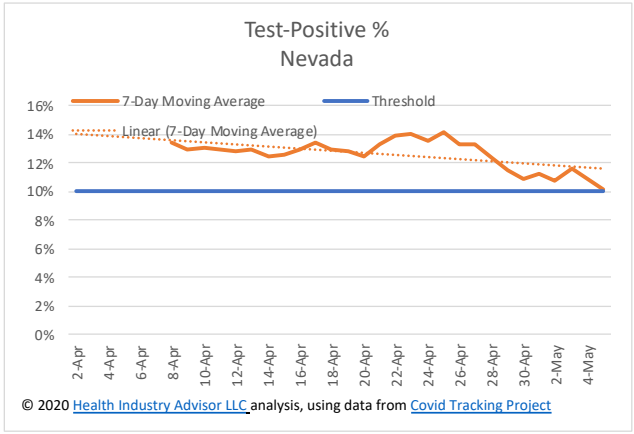
State-by-State

Test, New Daily Infection and Active Case Trends

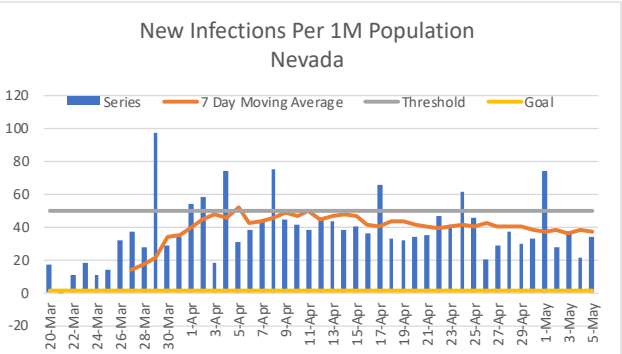
"Strategic Guidance in an Era of Unprecedented Change"



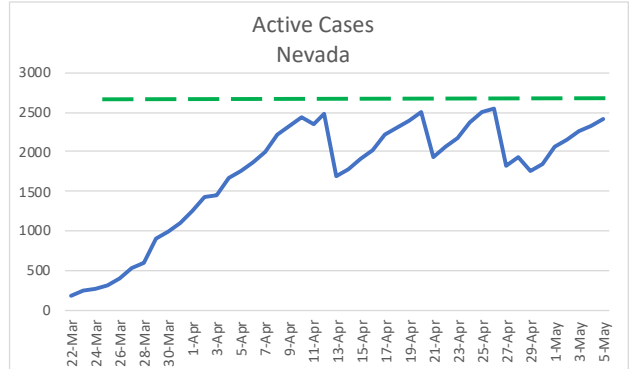
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



© Health Industry Advisor LLC analysis, using data from World Health Organization



© Health Industry Advisor LLC analysis, using data from World Health Organization

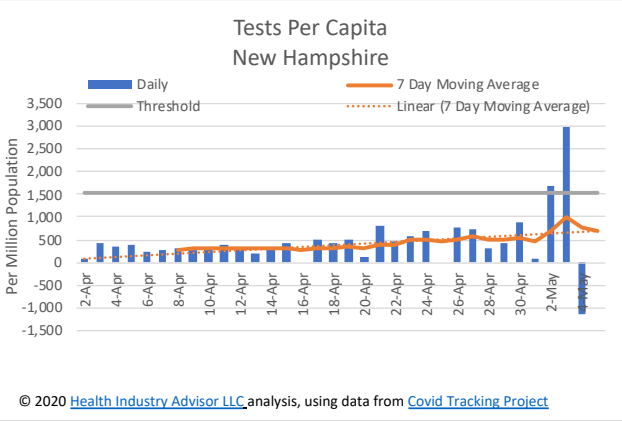
©2020 Health Industry Advisor LLC
All rights reserved.

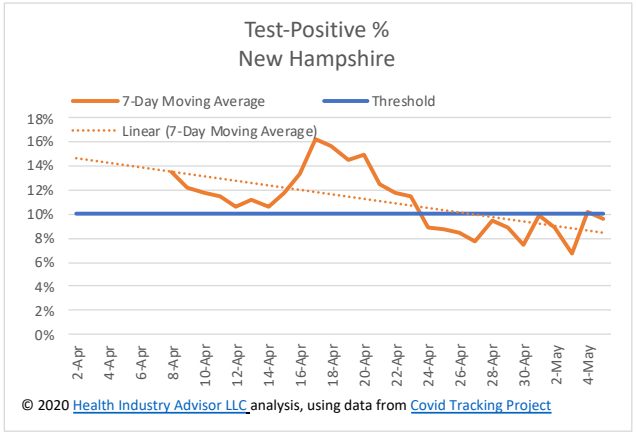
Health Industry Advisor, llc

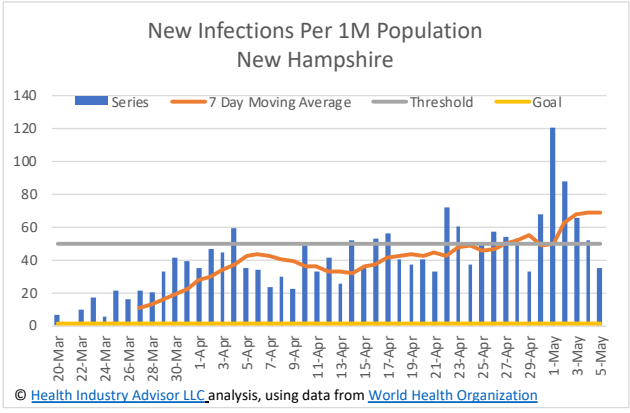
State-by-State

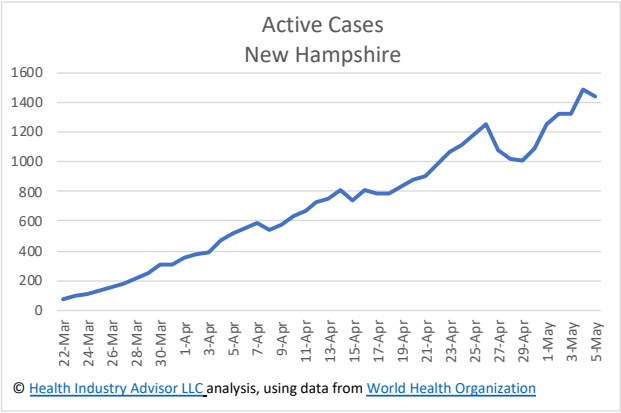
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









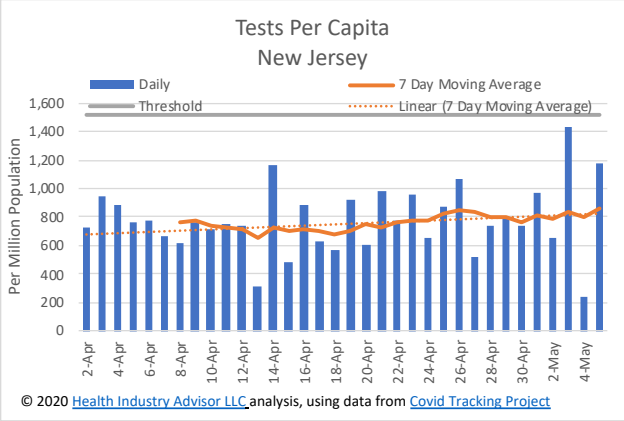
©2020 Health Industry Advisor LLC
All rights reserved.

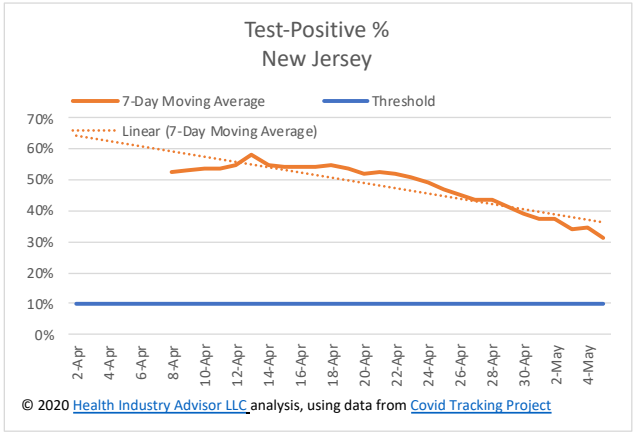
Health Industry Advisor, llc

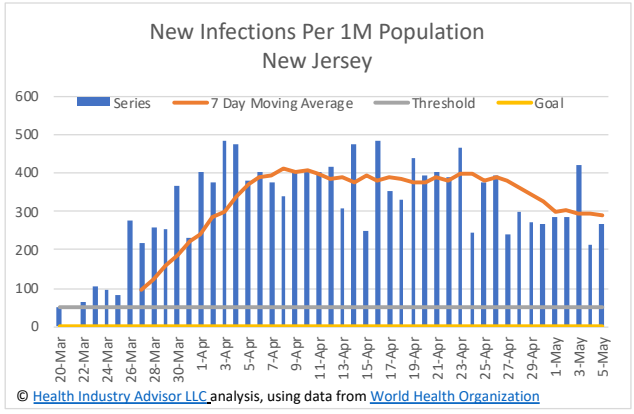
State-by-State

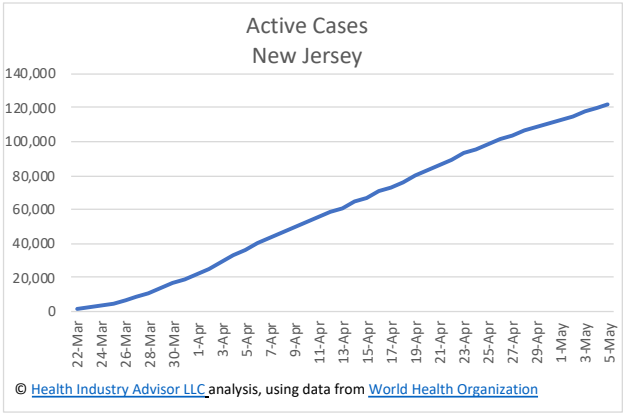
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









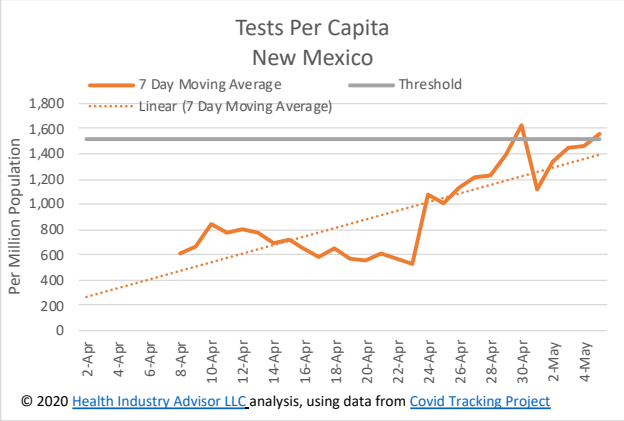
©2020 Health Industry Advisor LLC
All rights reserved.

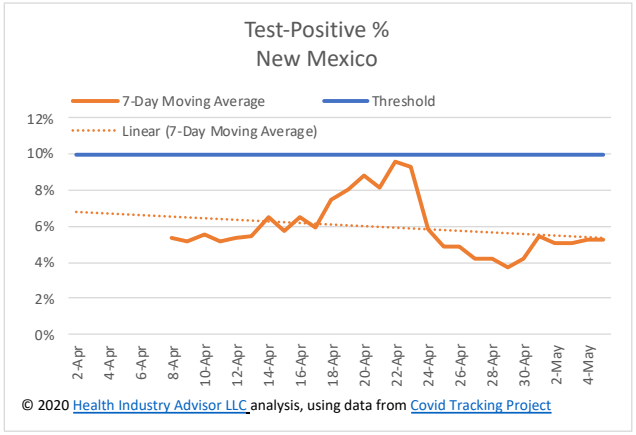
Health Industry Advisor, llc

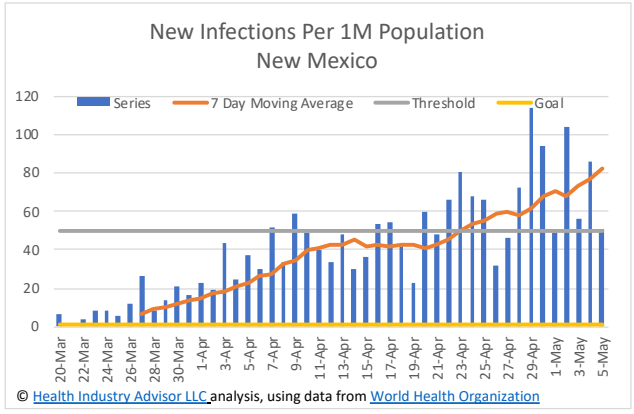
State-by-State

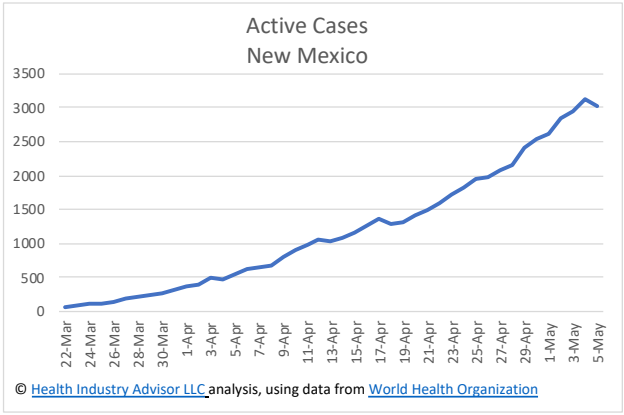
Test, New Daily Infection and Active Case Trends

"Strategic Guidance in an Era of Unprecedented Change"









©2020 Health Industry Advisor LLC
All rights reserved.