Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COVID-19 Dashboard

Issue # 57

Friday, May 22, 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	~409,000 tests on Wednesday – 3rd highest to-date
Test-Positivity Rate	Decline	6.1% for the day; 5.9% for past 7 days
Number of Cases	Plateau	New Cases down 1.0% week-over-week
Deaths % of Total Cases	Decline	5.9%
Number of Deaths / 1M Population	Plateau	291.1
Recoveries : Death	Increase	3.97

- Testing in the U.S. continued its upswing: yesterday's 409,000 tests represented the 3rd most since the spread began; 4 of the 5 highest testing days have now occurred in the past 5 days. 80,000 more tests per day were completed in the past week compared to the prior week. Test-positive rate was 6.1% for the day, 5.9% for the week; it was 7.1% the previous week. (Note: there has been some press about a few states reporting both viral and serology (antibody) tests. We rely on The COVID Tracking Project from The Atlantic for testing data; this site identified Arizona and Virginia as combining these two tests in their counts.)
- Only 5 states - Colorado, Delaware, Massachusetts, Pennsylvania and Virginia - plus the District of Columbia have yet to get their test-positive rates below the 10% for the past week, as suggested by the World Health Organization.
- New cases yesterday were the highest (~28,000) since May 7; for the week, however, they were down 1.0% from the previous week
- With several states re-opening, we are monitoring testing and infection rates to determine if, when and how much impact relaxation has on renewed spread of the virus. In articular, we are focusing on Florida and Wisconsin, as they have received the most criticism for their moves. Wisconsin experienced a 1-day spike in new infections yesterday, following 2 days of low infections. Test-positive and new infection rates in both states, however, remain relatively low.
- South American countries Brazil, Peru and Chile are among the fasting-risers on the rankings of countries with the most cases world-wide. Brazil has moved from 11th on April 27 to 3rd; Peru from 17th to 12th; and Chile from 28th to 16th. Columbia and Argentina are also rising, albeit lower in the rankings. This will be worth monitoring, as the autumn and winter seasons approach in the Southern Hemisphere

©2020 Health Industry Advisor LLC All rights reserved.

COUNTRY-BY-COUNTRY INFORMATION

©2020 Health Industry Advisor LLC All rights reserved.

Countries Included

- In Mid-March, we began tracking the twenty countries with the most coronavirus cases; in mid-April, we expanded it to the thirty countries with the most cases
- Since that time, 14 countries have moved ahead of South Korea in total cases
- We continue to track the 30 countries, which still account for 88.9% of the nearly 5 million total cases worldwide
- Case and death information is sourced from the worldometers.info, which is accessed daily; analysis by Health Industry Advisor LLC

©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 21

Country	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population	Rank7	New Daily Infections Per 1M Population (5-Day M.A.)	Rank8
USA	1,620,902	(1)	4,897	(4)	96,354	(1)	5.9%	(14)	291.1	(9)	1.5%	(13)	40,627	(8)	70.5	(6)
Austria	16,404	(29)	1,821	(21)	633	(25)	3.9%	(20)	70.3	(18)	0.2%	(25)	39,710	(9)	5.5	(24)
Belgium	56,235	(18)	4,852	(5)	9,186	(7)	16.3%	(1)	792.6	(1)	0.4%	(18)	57,302	(4)	24.0	(13)
Brazil	310,921	(3)	1,463	(24)	20,082	(6)	6.5%	(12)	94.5	(16)	5.9%	(2)	3,462	(25)	72.6	(5)
Canada	81,324	(14)	2,155	(15)	6,152	(10)	7.6%	(10)	163.0	(12)	1.4%	(14)	33,567	(14)	30.0	(11)
Chile	57,581	(16)	3,012	(11)	589	(26)	1.0%	(27)	30.8	(22)	6.8%	(1)	18,346	(18)	153.5	(1)
China	82,967	(13)	58	(30)	4,634	(13)	5.6%	(16)	3.2	(29)	0.0%	(30)	N/A	N/A	0.0	(30)
Ecuador	35,306	(21)	2,001	(18)	2,939	(19)	8.3%	(9)	166.6	(11)	1.5%	(12)	5,301	(24)	38.9	(9)
France	181,826	(7)	2,786	(13)	28,215	(4)	15.5%	(2)	432.3	(5)	0.3%	(23)	21,218	(15)	6.5	(23)
Germany	179,021	(8)	2,137	(16)	8,309	(8)	4.6%	(18)	99.2	(14)	0.3%	(20)	37,585	(12)	6.9	(22)
India	118,226	(11)	86	(29)	3,584	(16)	3.0%	(21)	2.6	(30)	5.5%	(3)	1,548	(28)	3.8	(26)
Iran	129,341	(10)	1,540	(23)	7,249	(9)	5.6%	(15)	86.3	(17)	1.8%	(9)	8,022	(23)	25.2	(12)
Ireland	24,391	(26)	4,939	(3)	1,583	(21)	6.5%	(11)	320.6	(8)	0.3%	(22)	52,488	(5)	16.3	(17)
Israel	16,683	(27)	1,927	(19)	279	(28)	1.7%	(26)	32.2	(21)	0.1%	(28)	57,733	(3)	1.7	(27)
Italy	228,006	(6)	3,771	(6)	32,486	(3)	14.2%	(4)	537.3	(3)	0.3%	(21)	48,698	(6)	11.6	(19)
Japan	16,424	(28)	130	(28)	777	(24)	4.7%	(17)	6.1	(25)	0.2%	(26)	1,900	(26)	0.3	(29)
Mexico	56,594	(17)	439	(25)	6,090	(11)	10.8%	(7)	47.2	(20)	4.7%	(4)	1,271	(29)	18.2	(16)
Netherlands	44,700	(20)	2,609	(14)	5,775	(12)	12.9%	(5)	337.0	(7)	0.4%	(19)	16,809	(20)	10.2	(20)
Pakistan	48,091	(19)	218	(26)	1,017	(23)	2.1%	(25)	4.6	(27)	4.4%	(6)	1,631	(27)	8.0	(21)
Peru	108,769	(12)	3,299	(9)	3,148	(17)	2.9%	(22)	95.5	(15)	4.2%	(7)	19,156	(16)	122.0	(2)
Portugal	29,912	(24)	2,933	(12)	1,277	(22)	4.3%	(19)	125.2	(13)	0.8%	(16)	58,828	(2)	22.3	(15)
Russia	317,554	(2)	2,118	(17)	3,099	(18)	1.0%	(28)	20.7	(23)	3.1%	(8)	45,614	(7)	62.2	(7)
Saudi Arabia	65,077	(15)	1,869	(20)	351	(27)	0.5%	(29)	10.1	(24)	4.6%	(5)	14,457	(22)	74.7	(4)
Singapore	29,812	(25)	5,096	(2)	23	(30)	0.1%	(30)	3.9	(28)	1.7%	(10)	15,773	(21)	90.7	(3)
South Korea	11,122	(30)	217	(27)	264	(29)	2.4%	(24)	5.1	(26)	0.2%	(27)	38,371	(11)	0.4	(28)
Spain	280,117	(4)	5,991	(1)	27,940	(5)	10.0%	(8)	597.6	(2)	0.3%	(24)	64,977	(1)	22.8	(14)
Sweden	32,172	(22)	3,186	(10)	3,871	(15)	12.0%	(6)	383.3	(6)	1.6%	(11)	17,589	(19)	50.8	(8)
Switzerland	30,694	(23)	3,584	(8)	1,898	(20)	6.2%	(13)	221.6	(10)	0.1%	(29)	39,247	(10)	3.9	(25)
Turkey	153,548	(9)	1,821	(22)	4,249	(14)	2.8%	(23)	50.4	(19)	0.7%	(17)	18,874	(17)	14.9	(18)
UK	250,908	(5)	3,696	(7)	36,042	(2)	14.4%	(3)	530.9	(4)	0.9%	(15)	36,696	(13)	37.4	(10)

Note: China does not report test volumes

© 2020 Health Industry Advisor LLC analysis, using data from Worldometers.info

©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 on the following page 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.

Legend:

Phase

Contagion	100th Case to End of Exponential Growth
Containment	End of Exponential Growth to Peak Active Cases
Recovery	Post-Peak Active Cases
Clear	Per IHME Standard, clear to relax social distancing

Daily Case Increase (5-Day Moving Averge)

- ▲ Stabilized < 35%
- ■ Stabilized < 20%
- ● Stabilized < 10%

Death Rate

- ☐ No Longer Increasing Exponentially

Peak Infections

- ☐ Peak 7-Day Average New Daily Infections

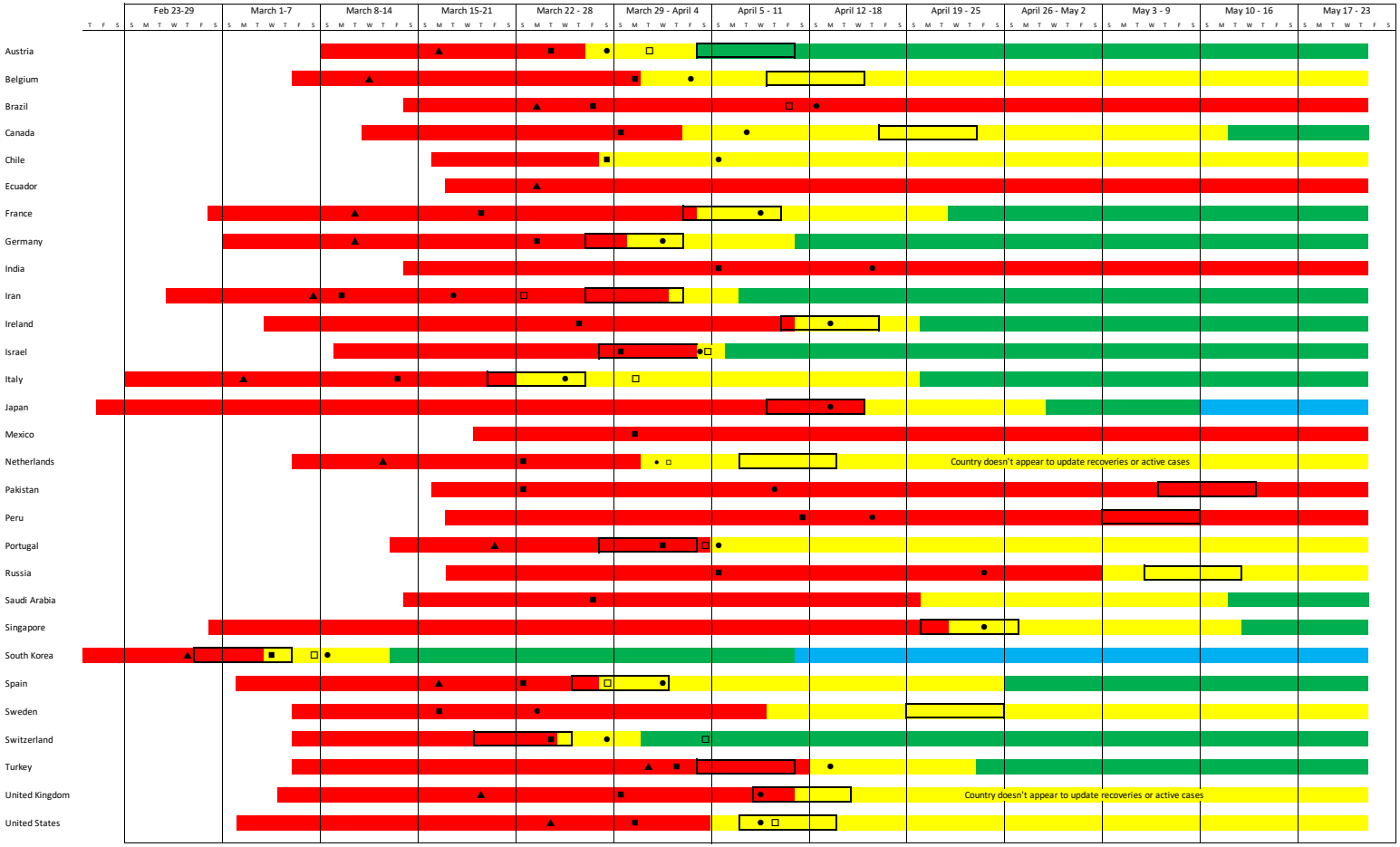
©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

Country-by-Country

Virus Progression

"Strategic Guidance in an Era of Unprecedented Change"



© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

Country-By-Country
Listing of Countries By Total Cases

Countries making large upward movements are highlighted

When we first expanded our tracking to 30 countries in mid-April, they represented the most countries with cases in the world. Since that time, Austria, Israel, Japan and South Korea have dropped in the rankings. These countries have moved up:

- **Bangladesh**
- **Belarus**
- **Columbia**
- **Denmark**
- **Dominican Republic**
- **Indonesia**
- **Kuwait**
- **Poland**
- **Qatar**
- **Philippines**
- **Romania**
- **South Africa**
- **UAE**
- **Ukraine**

The original 30 still account for 89% of all cases worldwide.

Rank	Country	Total Cases 21-May	Rank	Country	6-May	Rank	Country	27-Apr
1	USA	1,620,902	1	USA	1,263,092	1	USA	1,010,356
2	Russia	317,554	2	Spain	253,682	2	Spain	229,422
3	Brazil	310,921	3	Italy	214,457	3	Italy	199,414
4	Spain	280,117	4	UK	201,101	4	France	165,842
5	UK	250,908	5	France	174,191	5	Germany	158,758
6	Italy	228,006	6	Germany	168,162	6	UK	157,149
7	France	181,826	7	Russia	165,929	7	Turkey	112,261
8	Germany	179,021	8	Turkey	131,744	8	Iran	91,472
9	Turkey	153,548	9	Brazil	126,611	9	Russia	87,147
10	Iran	129,341	10	Iran	101,650	10	China	82,830
11	India	118,226	11	China	82,883	11	Brazil	66,501
12	Peru	108,769	12	Canada	63,496	12	Canada	48,500
13	China	82,967	13	Peru	54,817	13	Belgium	46,687
14	Canada	81,324	14	India	52,987	14	Netherlands	38,245
15	Saudi Arabia	65,077	15	Belgium	50,781	15	India	29,451
16	Chile	57,581	16	Netherlands	41,319	16	Switzerland	29,164
17	Mexico	56,594	17	Saudi Arabia	31,938	17	Peru	28,669
18	Belgium	56,235	18	Switzerland	30,060	18	Portugal	24,070
19	Pakistan	48,091	19	Ecuador	29,420	19	Ecuador	23,240
20	Netherlands	44,700	20	Portugal	26,182	20	Ireland	19,648
22	Ecuador	35,306	21	Mexico	26,025	21	Sweden	18,926
24	Sweden	32,172	22	Sweden	23,918	22	Saudi Arabia	18,811
25	Switzerland	30,694	23	Pakistan	23,214	23	Israel	15,555
26	Portugal	29,912	24	Chile	23,048	24	Austria	15,274
27	Singapore	29,812	25	Ireland	22,248	25	Mexico	14,677
30	Ireland	24,391	26	Singapore	20,198	26	Singapore	14,423
38	Israel	16,683	29	Israel	16,310	27	Pakistan	13,915
39	Japan	16,424	31	Austria	15,684	28	Chile	13,813
40	Austria	16,404	32	Japan	15,253	29	Japan	13,614
45	S. Korea	11,122	38	S. Korea	10,806	35	South Korea	10,738
	Others	575,868		Others	356,176		Others	263,943
	World	5,190,496			3,817,382		World	3,062,515
	30 countries' share	88.9%			90.7%			91.4%

© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

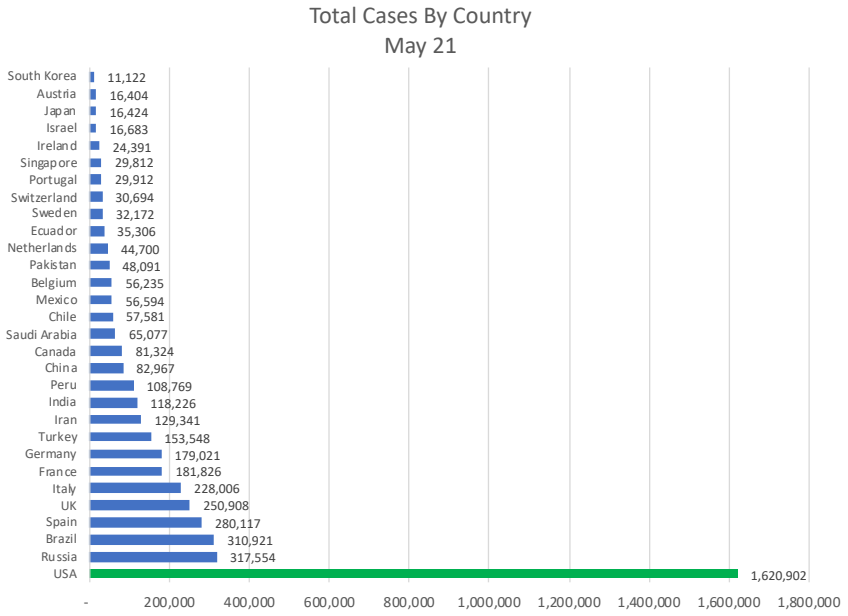
Country-by-Country

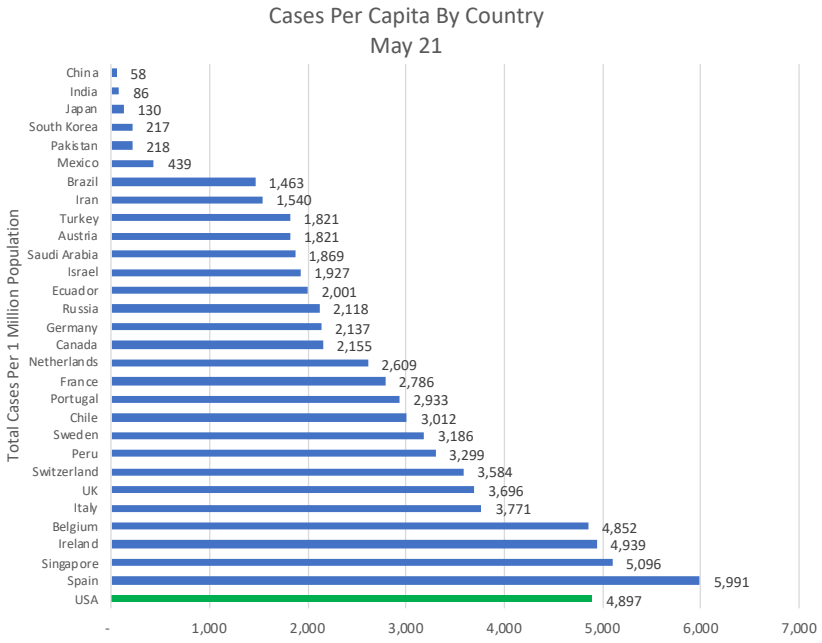
Cases & Cases Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

Brazil, Chile, India, Mexico, Pakistan, Peru, Russia and Saudi Arabia are moving up in the ranks of most cases; Austria, Israel, Japan and South Korea are dropping

Cases per capita remain the highest in European countries, Singapore and the US.





© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

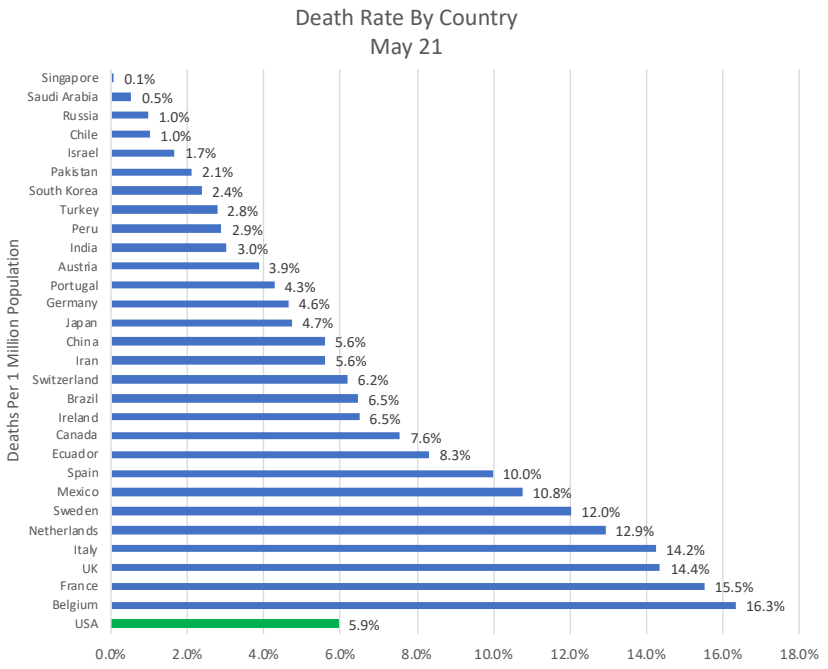
©2020 Health Industry Advisor LLC All rights reserved.

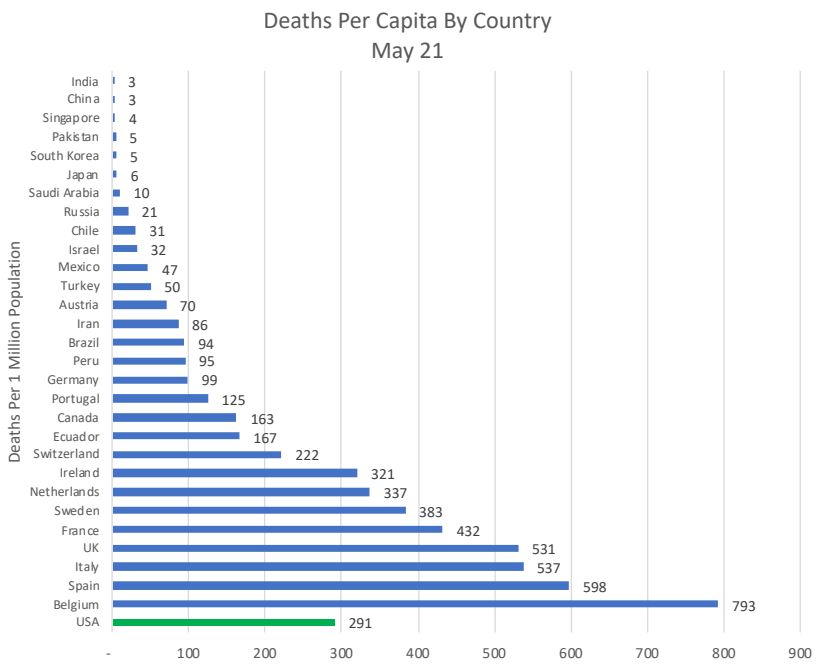
Country-by-Country

Deaths Per Cases & Per Capita

"Strategic Guidance in an Era of Unprecedented Change"

Death rates per case and per capita are the highest in Belgium, France, Italy and the UK. Rates in the US are in the middle of this group of countries





© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

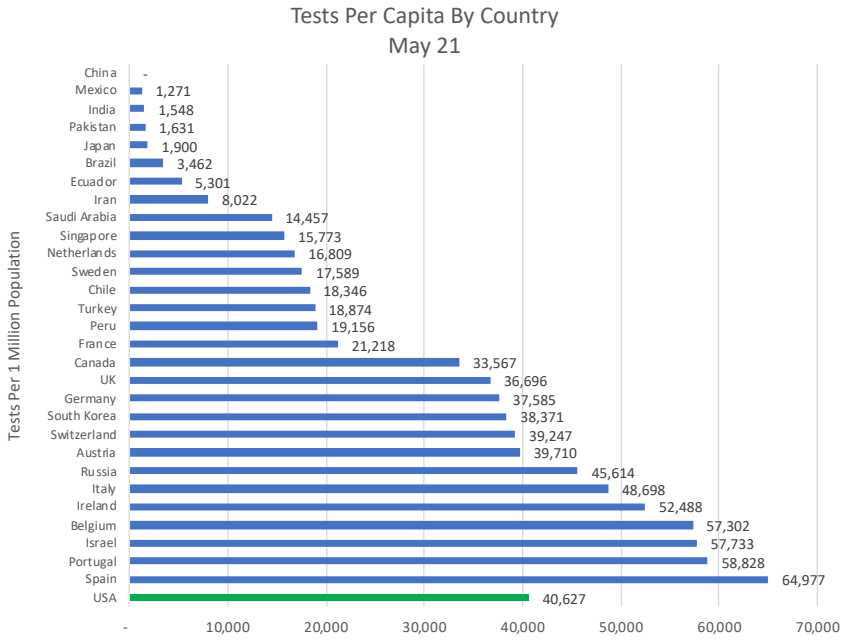
Country-by-Country

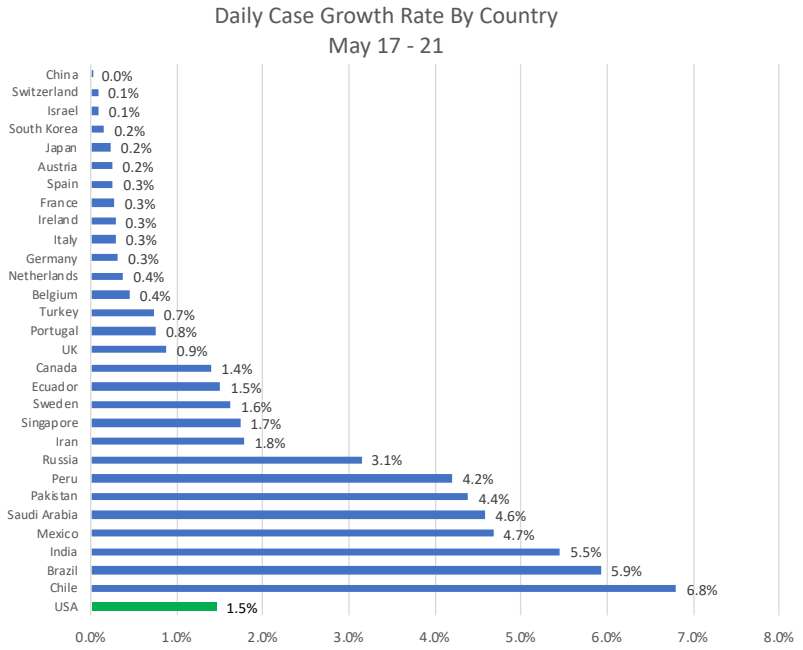
Tests Per Capita & Case Growth Rate

"Strategic Guidance in an Era of Unprecedented Change"

Testing per capita varies widely among these countries. The US, while ramping up testing over the past several weeks, still lags that of many European countries.

Case growth among the hardest-hit countries has fallen sharply over the past month; relatively high in Brazil, Chile, India, Mexico, Peru and Saudi Arabia





© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

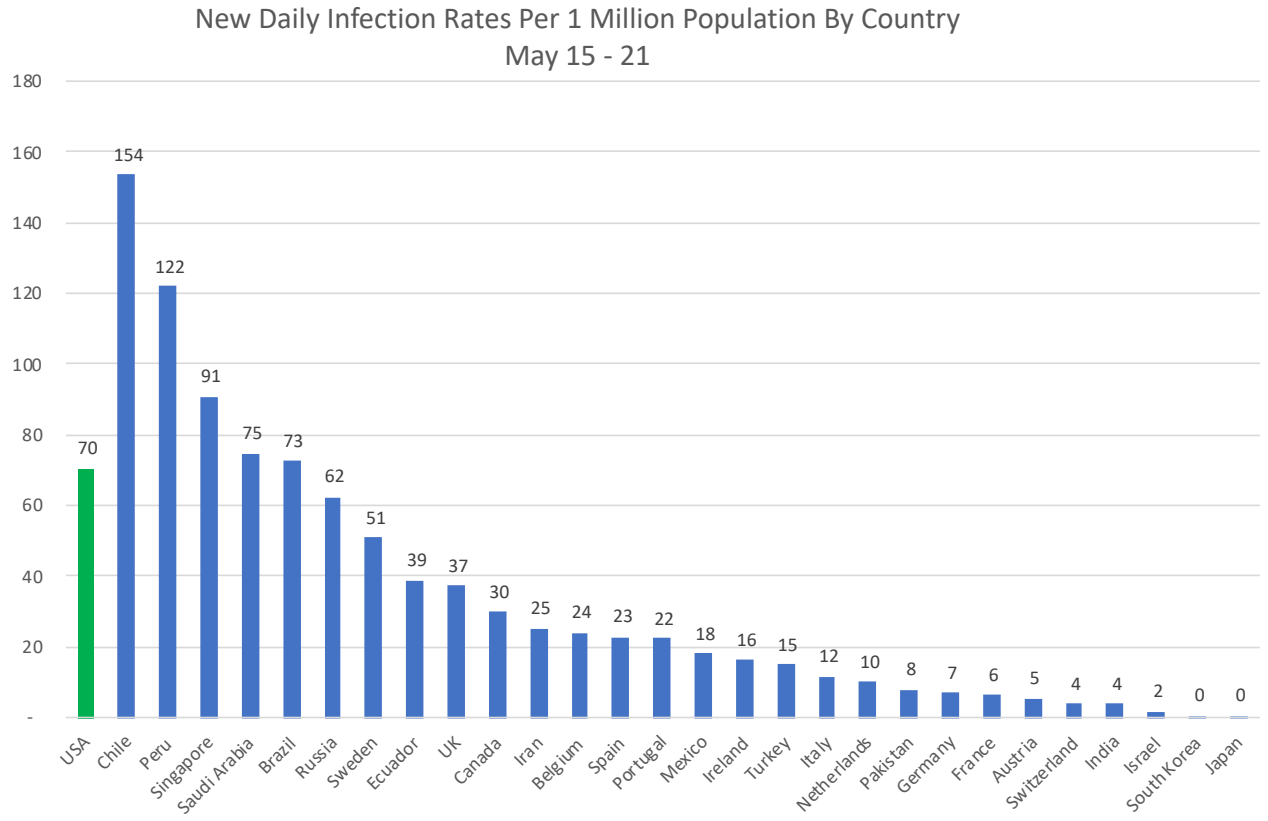
Country-by-Country

New Daily Infection Rate

"Strategic Guidance in an Era of Unprecedented Change"

New daily infection rates are declining in most of the hardest-hit countries. Singapore is high but, declining.

Even in countries with newly-emerging virus-spread - Brazil, India, Mexico and Saudi Arabia - infection rates appear relatively low. Chile and Peru are the exceptions.



© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

UNITED STATES & STATE-BY-STATE INFORMATION

©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 21

State	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population Past 7 days	Rank7	New Daily Cases Per 1M Population (5-Day M.A.)	Rank8
Alabama	13,288	(26)	2,710.1	(27)	529	(25)	4.0%	(31)	107.9	(26)	2.6%	(9)	838	(37)	63.7	(22)
Alaska	402	(51)	549.5	(49)	10	(51)	2.5%	(43)	13.7	(50)	0.5%	(47)	1,520	(14)	2.9	(49)
Arizona	15,315	(23)	2,104.1	(35)	763	(20)	5.0%	(18)	104.8	(27)	2.4%	(11)	732	(43)	51.8	(28)
Arkansas	5,458	(39)	1,808.6	(41)	110	(40)	2.0%	(46)	36.5	(45)	3.6%	(3)	1,110	(27)	51.7	(29)
California	88,201	(5)	2,232.2	(34)	3,619	(7)	4.1%	(29)	91.6	(29)	2.3%	(13)	1,144	(25)	48.5	(31)
Colorado	23,191	(17)	4,027.1	(18)	1,310	(16)	5.6%	(12)	227.5	(14)	1.4%	(37)	523	(50)	58.4	(24)
Connecticut	39,208	(12)	10,997.2	(6)	3,582	(8)	9.1%	(2)	1,004.7	(3)	1.3%	(39)	2,131	(3)	150.0	(8)
Delaware	8,386	(32)	8,611.9	(7)	317	(32)	3.8%	(34)	325.5	(12)	2.1%	(16)	1,568	(13)	170.6	(4)
District Of Columbia	7,788	(35)	11,035.1	(5)	412	(29)	5.3%	(15)	583.8	(5)	2.0%	(20)	1,773	(9)	212.9	(1)
Florida	48,675	(9)	2,266.3	(33)	2,145	(11)	4.4%	(27)	99.9	(28)	1.7%	(30)	1,364	(18)	36.3	(36)
Georgia	40,663	(11)	3,829.8	(20)	1,775	(14)	4.4%	(28)	167.2	(16)	1.8%	(27)	1,639	(12)	63.1	(23)
Hawaii	647	(49)	457.0	(50)	17	(48)	2.6%	(41)	12.0	(51)	0.2%	(51)	834	(38)	1.0	(51)
Idaho	2,534	(43)	1,414.0	(44)	77	(42)	3.0%	(39)	43.0	(43)	0.9%	(45)	409	(51)	14.6	(45)
Illinois	102,686	(3)	8,103.5	(8)	4,607	(6)	4.5%	(24)	363.6	(10)	2.1%	(17)	1,804	(7)	166.3	(5)
Indiana	29,936	(16)	4,446.7	(16)	1,913	(12)	6.4%	(8)	284.2	(13)	1.9%	(24)	907	(34)	82.4	(17)
Iowa	16,170	(22)	5,125.1	(14)	414	(28)	2.6%	(42)	131.2	(22)	2.4%	(10)	1,235	(21)	113.0	(11)
Kansas	8,673	(31)	2,977.0	(23)	204	(36)	2.4%	(44)	70.0	(37)	1.8%	(26)	666	(48)	47.6	(32)
Kentucky	8,286	(33)	1,854.7	(38)	386	(30)	4.7%	(21)	86.4	(31)	1.5%	(34)	1,320	(20)	33.9	(38)
Louisiana	36,504	(13)	7,852.4	(9)	2,629	(9)	7.2%	(4)	565.5	(6)	1.4%	(38)	1,776	(8)	92.7	(15)
Maine	1,877	(45)	1,396.4	(45)	73	(43)	3.9%	(32)	54.3	(39)	2.6%	(8)	1,453	(16)	33.2	(39)
Maryland	43,531	(10)	7,200.3	(10)	2,159	(10)	5.0%	(19)	357.1	(11)	2.8%	(6)	987	(32)	180.2	(3)
Massachusetts	90,084	(4)	12,962.7	(3)	6,148	(3)	6.8%	(7)	884.7	(4)	1.2%	(41)	1,880	(6)	162.4	(6)
Michigan	53,510	(7)	5,358.0	(13)	5,129	(4)	9.6%	(1)	513.6	(8)	1.2%	(42)	1,700	(10)	56.2	(27)
Minnesota	18,200	(21)	3,227.2	(21)	818	(19)	4.5%	(23)	145.0	(19)	4.0%	(1)	1,135	(26)	120.7	(10)
Mississippi	12,222	(27)	4,106.6	(17)	580	(23)	4.7%	(20)	194.9	(15)	1.9%	(23)	991	(30)	83.5	(16)
Missouri	11,655	(28)	1,899.0	(37)	672	(22)	5.8%	(10)	109.5	(25)	1.5%	(35)	814	(39)	25.6	(43)
Montana	479	(50)	448.2	(51)	16	(49)	3.3%	(37)	15.0	(49)	0.5%	(48)	799	(41)	2.3	(50)
Nebraska	11,425	(29)	5,906.2	(11)	143	(39)	1.3%	(49)	73.9	(35)	2.3%	(14)	1,647	(11)	148.4	(9)
Nevada	7,255	(36)	2,355.4	(32)	381	(31)	5.3%	(16)	123.7	(24)	1.7%	(29)	1,155	(23)	35.1	(37)
New Hampshire	3,935	(41)	2,894.0	(25)	199	(37)	5.1%	(17)	146.4	(18)	2.0%	(19)	1,435	(17)	58.1	(25)
New Jersey	153,441	(2)	17,275.1	(2)	10,852	(2)	7.1%	(6)	1,221.8	(2)	0.9%	(44)	1,489	(15)	151.5	(7)
New Mexico	6,472	(37)	3,086.6	(22)	294	(35)	4.5%	(22)	140.2	(21)	2.1%	(18)	2,203	(2)	66.0	(20)
New York	366,357	(1)	18,832.4	(1)	28,885	(1)	7.9%	(3)	1,484.8	(1)	0.5%	(49)	1,882	(5)	97.4	(13)
North Carolina	21,220	(18)	2,023.2	(36)	745	(21)	3.5%	(35)	71.0	(36)	3.2%	(4)	972	(33)	57.5	(26)
North Dakota	2,229	(44)	2,925.0	(24)	51	(46)	2.3%	(45)	66.9	(38)	3.8%	(2)	2,068	(4)	96.9	(14)
Ohio	30,212	(15)	2,584.6	(29)	1,840	(13)	6.1%	(9)	157.4	(17)	1.9%	(22)	803	(40)	47.0	(34)
Oklahoma	5,680	(38)	1,435.4	(43)	304	(34)	5.4%	(14)	76.8	(34)	1.6%	(31)	1,351	(19)	25.9	(41)
Oregon	3,817	(42)	905.0	(47)	145	(38)	3.8%	(33)	34.4	(46)	1.1%	(43)	717	(46)	11.4	(47)
Pennsylvania	69,372	(6)	5,418.8	(12)	4,920	(5)	7.1%	(5)	384.3	(9)	1.2%	(40)	644	(49)	68.7	(19)
Rhode Island	13,571	(25)	12,810.6	(4)	556	(24)	4.1%	(30)	524.8	(7)	1.8%	(28)	2,935	(1)	209.7	(2)
South Carolina	9,379	(30)	1,821.6	(40)	416	(27)	4.4%	(25)	80.8	(33)	1.6%	(32)	991	(31)	33.0	(40)
South Dakota	4,250	(40)	4,804.1	(15)	48	(47)	1.1%	(51)	54.3	(40)	1.4%	(36)	780	(42)	74.0	(18)
Tennessee	18,961	(20)	2,774.8	(26)	313	(33)	1.7%	(47)	45.8	(42)	1.9%	(25)	1,218	(22)	47.3	(33)
Texas	53,507	(8)	1,845.3	(39)	1,486	(15)	2.8%	(40)	51.2	(41)	2.3%	(12)	724	(45)	43.0	(35)
Utah	7,874	(34)	2,456.1	(30)	92	(41)	1.2%	(50)	28.7	(47)	2.2%	(15)	1,014	(29)	50.1	(30)
Vermont	950	(47)	1,522.5	(42)	54	(45)	5.7%	(11)	86.5	(30)	0.3%	(50)	732	(44)	4.1	(48)
Virginia	34,137	(14)	3,999.4	(19)	1,099	(17)	3.2%	(38)	128.8	(23)	2.8%	(5)	866	(35)	105.8	(12)
Washington	20,026	(19)	2,629.8	(28)	1,074	(18)	5.4%	(13)	141.0	(20)	0.8%	(46)	692	(47)	25.6	(42)
West Virginia	1,603	(46)	897.0	(48)	71	(44)	4.4%	(26)	39.7	(44)	1.9%	(21)	1,153	(24)	13.5	(46)
Wisconsin	13,885	(24)	2,384.7	(31)	487	(26)	3.5%	(36)	83.6	(32)	2.6%	(7)	1,061	(28)	64.0	(21)
Wyoming	801	(48)	1,384.0	(46)	12	(50)	1.5%	(48)	20.7	(48)	1.6%	(33)	842	(36)	24.7	(44)
United States	1,620,902		4,896.9		96,354		5.9%		291.1		1.5%		1,171		70.5	

© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project and worldometers.info

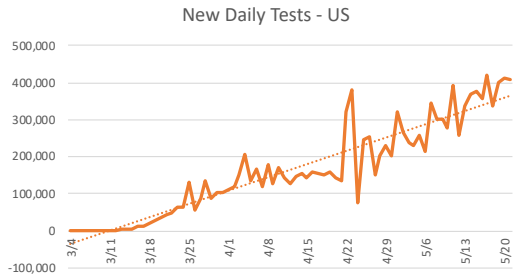
©2020 Health Industry Advisor LLC All rights reserved.

United States

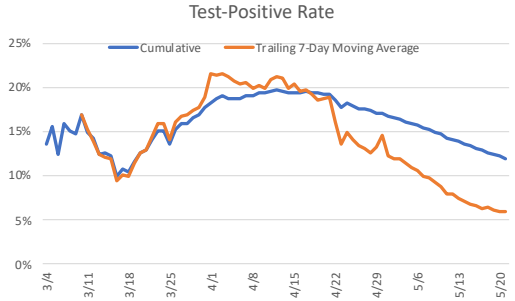
Overall Statistics

"Strategic Guidance in an Era of Unprecedented Change"

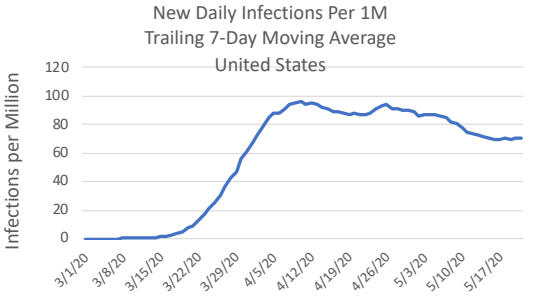
With significantly increased testing, the US is now meeting the WHO standard of <10% test-positives. This suggests that asymptomatic cases are being captured and that we have a better view of true infection rates.
Further, new daily infections continue to decline; the death rate seems to have stabilized.



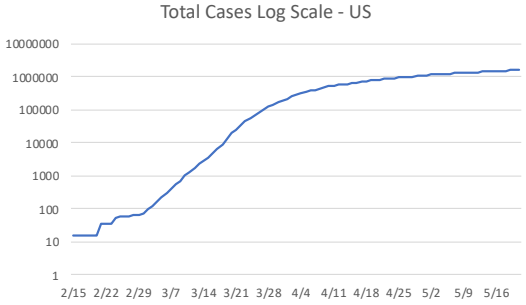
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



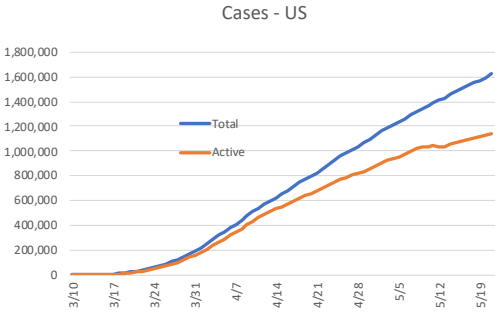
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



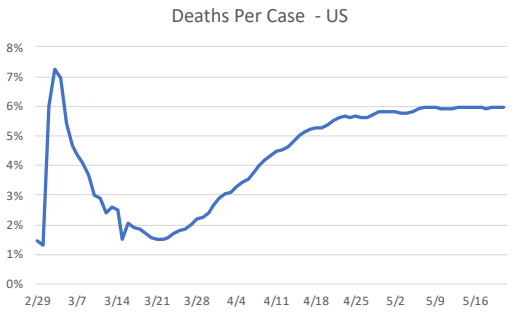
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

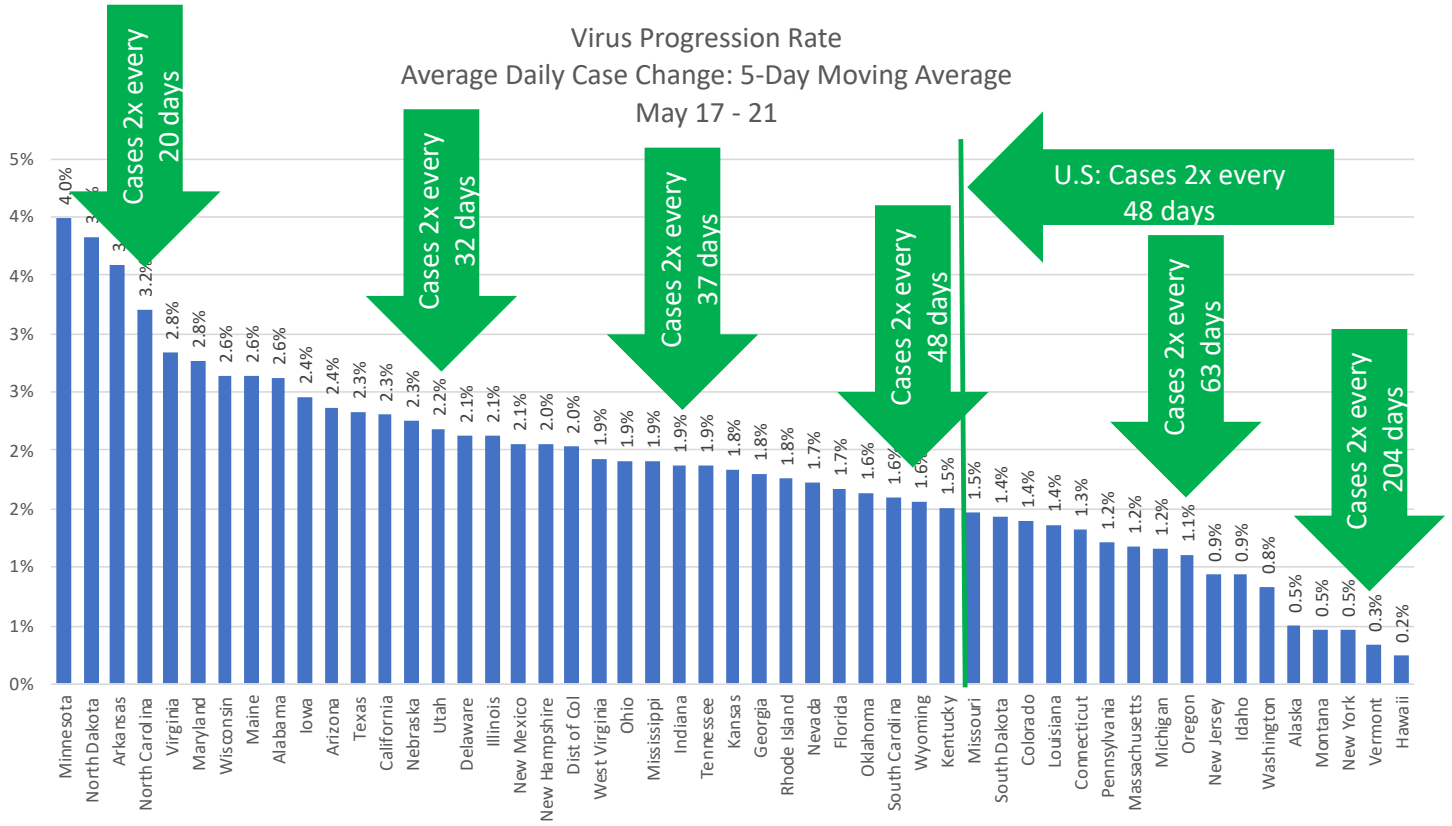
Health Industry Advisor, llc

State-by-State

Average Daily Case Growth

"Strategic Guidance in an Era of Unprecedented Change"

Just 1 month ago, cases in every state were doubling every 1 – 3 weeks.
Now, they would take from 18 to 289 days to double



© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

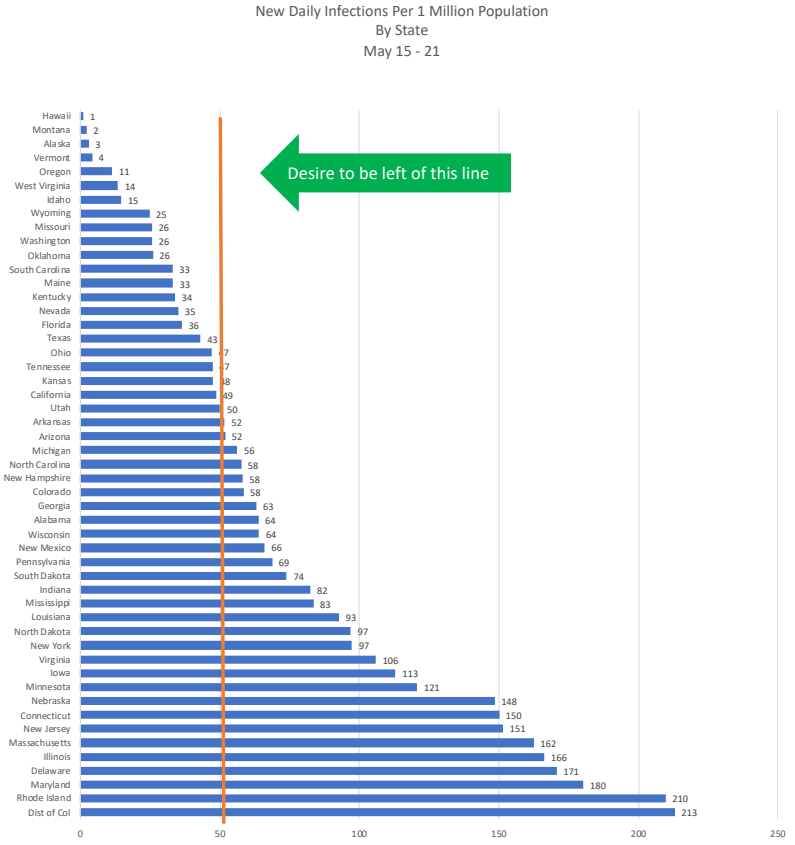
©2020 Health Industry Advisor LLC All rights reserved.

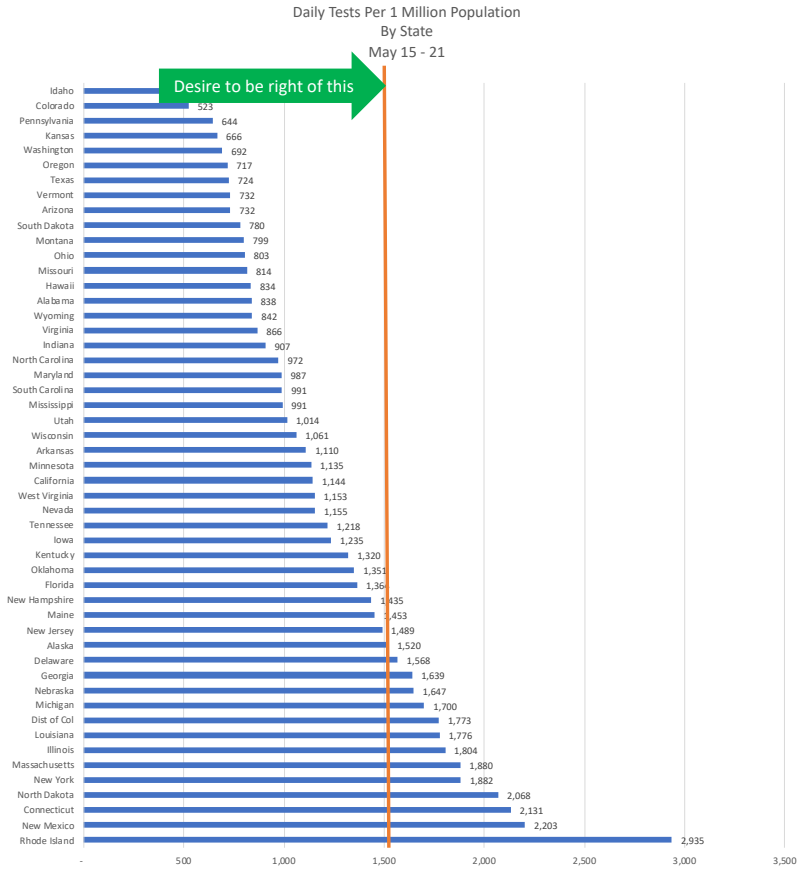
Health Industry Advisor, llc

State-by-State

New Daily Infections & Tests Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





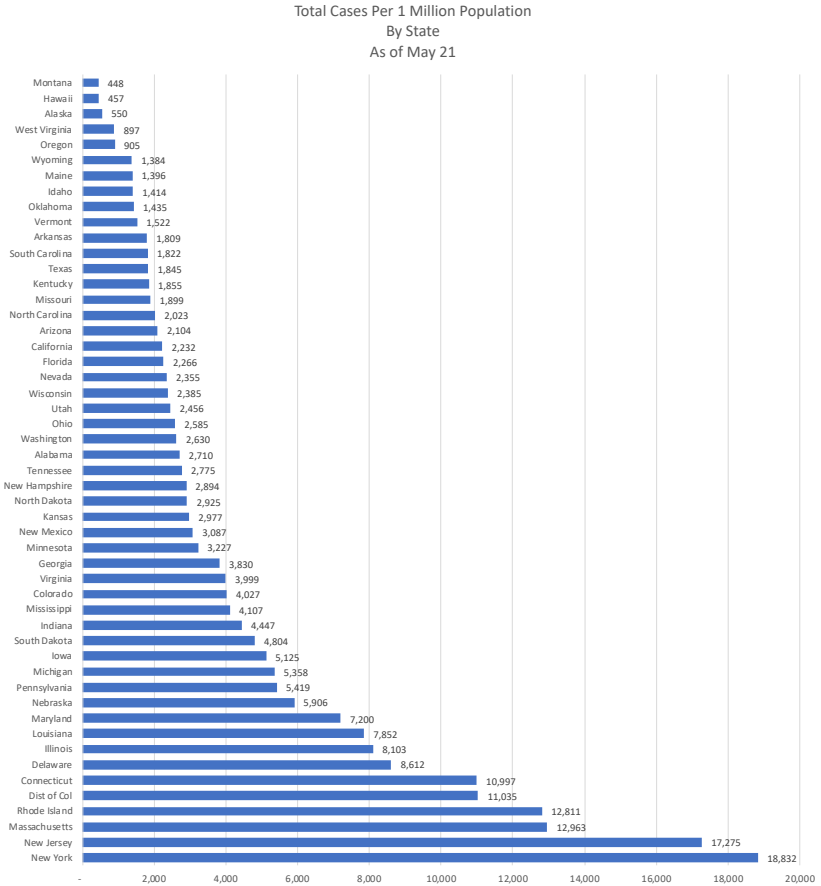
© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

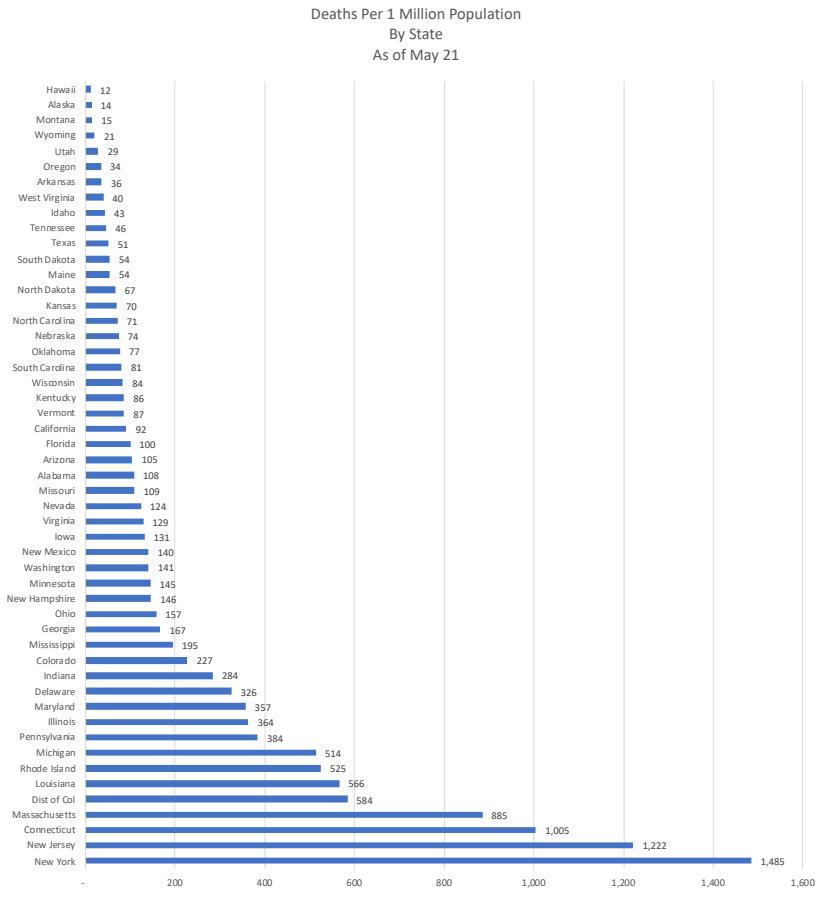
©2020 Health Industry Advisor LLC All rights reserved.

State-by-State

Cases & Deaths Per Capita

"Strategic Guidance in an Era of Unprecedented Change"





© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

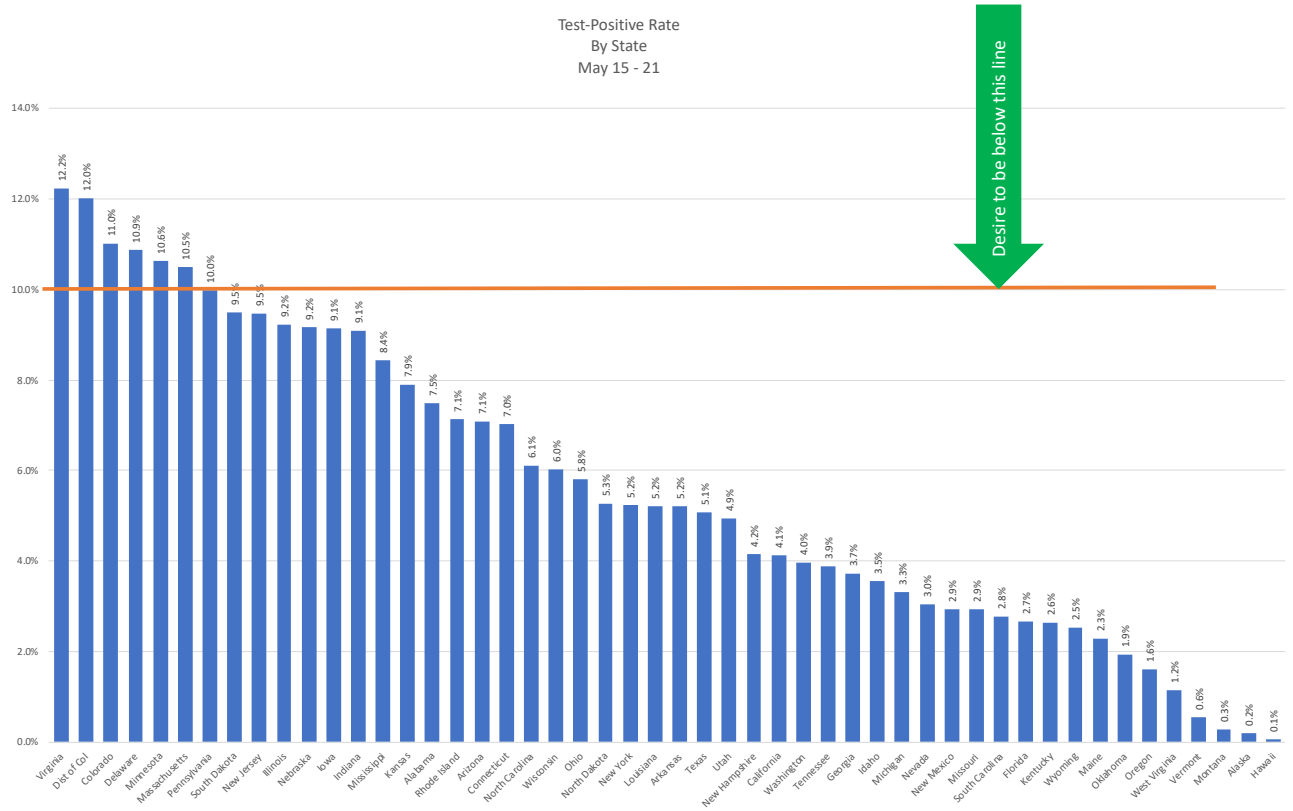
Health Industry Advisor, llc

State-by-State

Which States Are Performing Sufficient Tests?

"Strategic Guidance in an Era of Unprecedented Change"

The World Health Organization suggested that the test-positive rate should be 10% or lower, for testing to be sufficient to assess the true prevalence of the virus. All except 7 states and the District of Columbia effectively met this guideline for the past week.



© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

STATE-BY-STATE READINESS FOR RELAXING RESTRICTIONS

©2020 Health Industry Advisor LLC All rights reserved.

State-By-State

Readiness For Relaxing Restrictions

We recently 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.

State-By-State

Readiness For Relaxing Restrictions

Highlights:

- Progress has been made in several states, on both testing volumes and test-positive rates
  - Most states are still testing far below the minimum 152 daily tests per 1 million population cited in a recent NY Times article; and the higher standard of 2.7% of the population tested weekly (386 daily per 1 million, as suggested by a recent Kaiser Family Foundation article. Both articles referenced Harvard researchers as the source of these metrics
  - Test-positive rates in many states, however, are below or close to the 10% threshold suggested by Dr. Maria Van Kerkhove of the World Health Organization, as indicative of sufficient testing to have reasonable visibility to true infection rates
- As we have progressed past the peak flu season in many states, that "constraint" on re-opening is diminishing
- With the relaxing of restrictions in many states, the Institute for Health Metrics and Evaluation's (IHME) projections of these states' hospital resources needs have increased significantly in the past week. Note: these metrics consider hospital resource needs, however, they do not consider capacity

©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"

Change over past week

May 21

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 Co		✓		✓		✓	✓	✓	
Florida		✓		✓		✓	✗	!	
Georgia		✓		✓		✓	✓	✓	
Hawaii		✓		✓		✓	✓	✓	
Idaho		✓		✓		✓	✓	✓	
Illinois		✓		✓		✓	✓	✓	
Indiana		✓		✓		✓	✓	✓	
Iowa		✓		✓		✓	✓	✗	
Kansas		✓		✓		✓	✓	✓	
Kentucky		✓		✓		✓	✗	✗	
Louisiana		✓		✓		✗	✗	✓	
Maine		✓		✗		✗	✓	✓	
Maryland		✓		✗		✓	✓	✓	
Massachusett		✓		✓		✓	✓	✓	
Michigan		✓		✓		✓	✓	✓	
Minnesota		✓		✗		✗	✓	✗	
Mississippi		✓		✗		✓	✓	✓	
Missouri		✓		✓		✓	✓	✓	
Montana		✓		✓		✗	✓	✓	
Nebraska		✓		✗		✓	✓	✓	
Nevada		✓		✓		✓	✓	✓	
New Hampsh		✓		✓		✓	✓	✓	
New Jersey		✓		✓		✓	✓	✓	
New Mexico		✓		✓		✓	✓	✓	
New York		✓		✓		✓	✓	✓	
North Carolin		✓		✓		✗	✓	✓	
North Dakota		✓		✓		✗	✓	✓	
Ohio		✓		✓		✗	✓	✗	
Oklahoma		✓		✓		✓	✓	✓	
Oregon		✓		✓		✓	✓	✓	
Pennsylvania		✓		✓		✓	✓	✓	
Rhode Island		✓		✓		✗	✓	✗	
South Carolin		✓		✓		✓	✓	✓	
South Dakota		✓		✗		✗	✓	✓	
Tennessee		✓		✓		✓	✓	✓	
Texas		✓		✓		✗	✓	✓	
Utah		✓		✓		✓	✓	✓	
Vermont		✓		✓		✓	✓	✓	
Virginia		✓		✓		✗	✗	✓	
Washington		✓		✓		✓	✗	✓	
West Virginia		✓		✓		✓	✗	✗	
Wisconsin		✓		✓		✗	✗	✓	
Wyoming		✓		✓		✓	✗	✗	

May 14

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

Change in "Hospital Resources" due to IHME raising projections, in response to relaxed social distancing

©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"

Progress over past 5 weeks

May 21

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 Co									
Florida									
Georgia									
Hawaii									
Idaho									
Illinois									
Indiana									
Iowa									
Kansas									
Kentucky									
Louisiana									
Maine									
Maryland									
Massachuset									
Michigan									
Minnesota									
Mississippi									
Missouri									
Montana									
Nebraska									
Nevada									
New Hampsh									
New Jersey									
New Mexico									
New York									
North Carolin									
North Dakota									
Ohio									
Oklahoma									
Oregon									
Pennsylvania									
Rhode Island									
South Carolin									
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:

Time period	Tests per Capita: per 1M Average last 2 weeks	Direction: last 14 days v prior 2 weeks	Test-Positive Rate: last 7 days	Direction: last 14 days v prior 2 weeks	New Daliy Infection Rate: per 1M last 7 days	Direction: last 14 days v prior 2 weeks	Baseline: CDC Baseline by region	Direction: last 14 days v prior 2 weeks	Hospital Resources: 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 - May 16, 2020

Test data from Covid Tracking Project (https://covidtracking.com/), accessed March 21-May 22, 2020

Hospital resource Need projections from Institure for Health Metrics and Evaluation (), accessed April 30- May 16, 2020

Infection rate data from worldometer.info, accessed March 21-May 22, 2020

Articles of interest:

"What does doing enough coronavirus testing look like? Here's a number to watch", Patrick Cain, msn.com, (https://www.msn.com/en-ca/news/canada/what-does-doing-enough-coronavirus-testing-look-like-heres-a-number-to-watch/ar-BB138Hf4?li=AAggXBV), accessed April 24, 2020

"A New Statistic Reveals Why America's COVID-19 Numbers Are Flat", Robinson Meyer and Alexis C. Madrigal, April 16, 2020, The Atlantic, accessed April 24, 2020

©2020 Health Industry Advisor LLC All rights reserved.

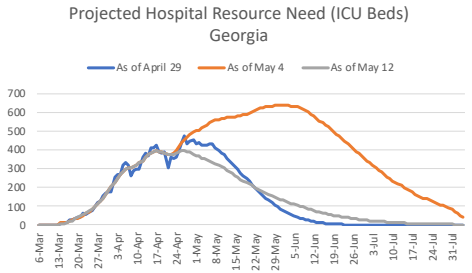
Health Industry Advisor, llc

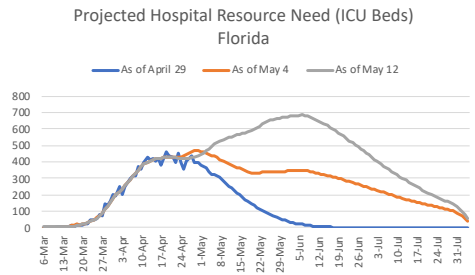
Impact of Relaxing Social Distancing

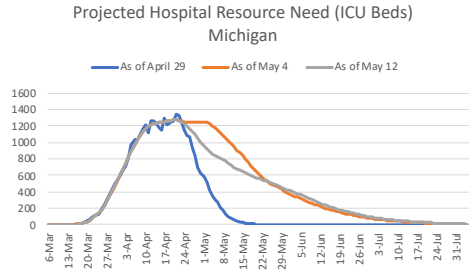
IHME's Hospital Resource Need Projections Are Sensitive to Relaxing Restrictions

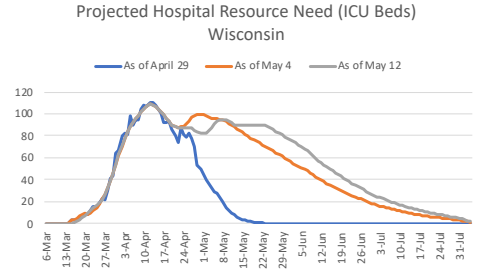
"Strategic Guidance in an Era of Unprecedented Change"

The Institute for Health Metrics and Evaluation (IHME) regularly updates projections of hospital resource needs. Comparing their projections from April 29. May 2 and May 12 indicates how much relaxing restrictions factors into these projections. Consider how much the projections changed for Florida and Wisconsin:









Note: ICU beds were selected as representative of the three metrics that IHME uses: total beds, ICU beds and ventilators. HIA does not vouch for the accuracy of these projections; in our limited experience, they seem to over-state actual needs.

©2020 Health Industry Advisor LLC All rights reserved.

MONITORING THE IMPACT OF RELAXING RESTRICTIONS

©2020 Health Industry Advisor LLC All rights reserved.

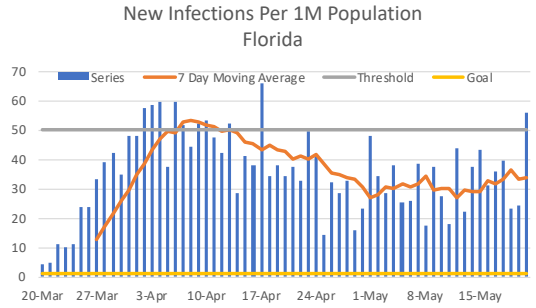
State-By-State

Impact of Relaxing Restrictions

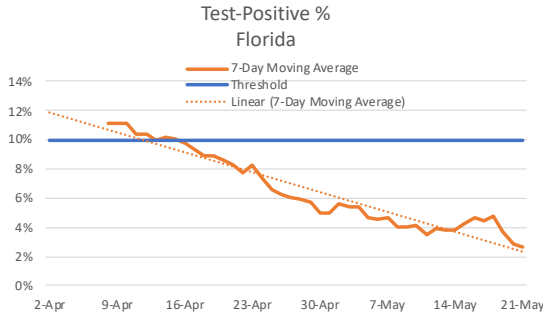
"Strategic Guidance in an Era of Unprecedented Change"

With several states re-opening, we are monitoring testing and infection rates to determine if, when and how much impact relaxation has on renewed spread of the virus. Here, we focus on Florida and Wisconsin

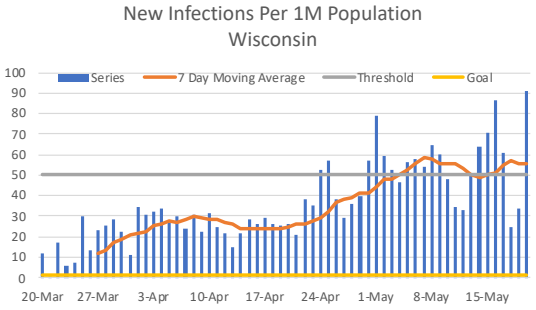
Wisconsin experienced a 1-day spike in new infections yesterday, following 2 days of low infections. Test-positive and new infection rates in both states are relatively low.



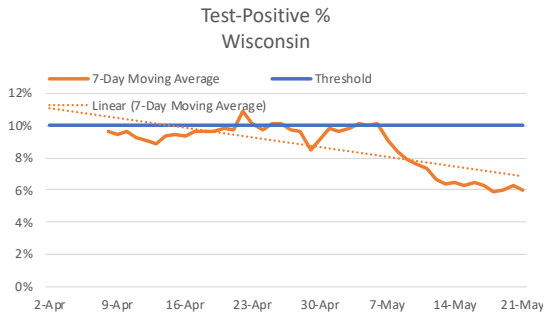
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



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

©2020 Health Industry Advisor LLC All rights reserved.

VIRUS PROGRESSION: ROADMAP TO RECOVERY

©2020 Health Industry Advisor LLC All rights reserved.

Virus Progression

The graphic on the following two pages illustrates when the state 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.

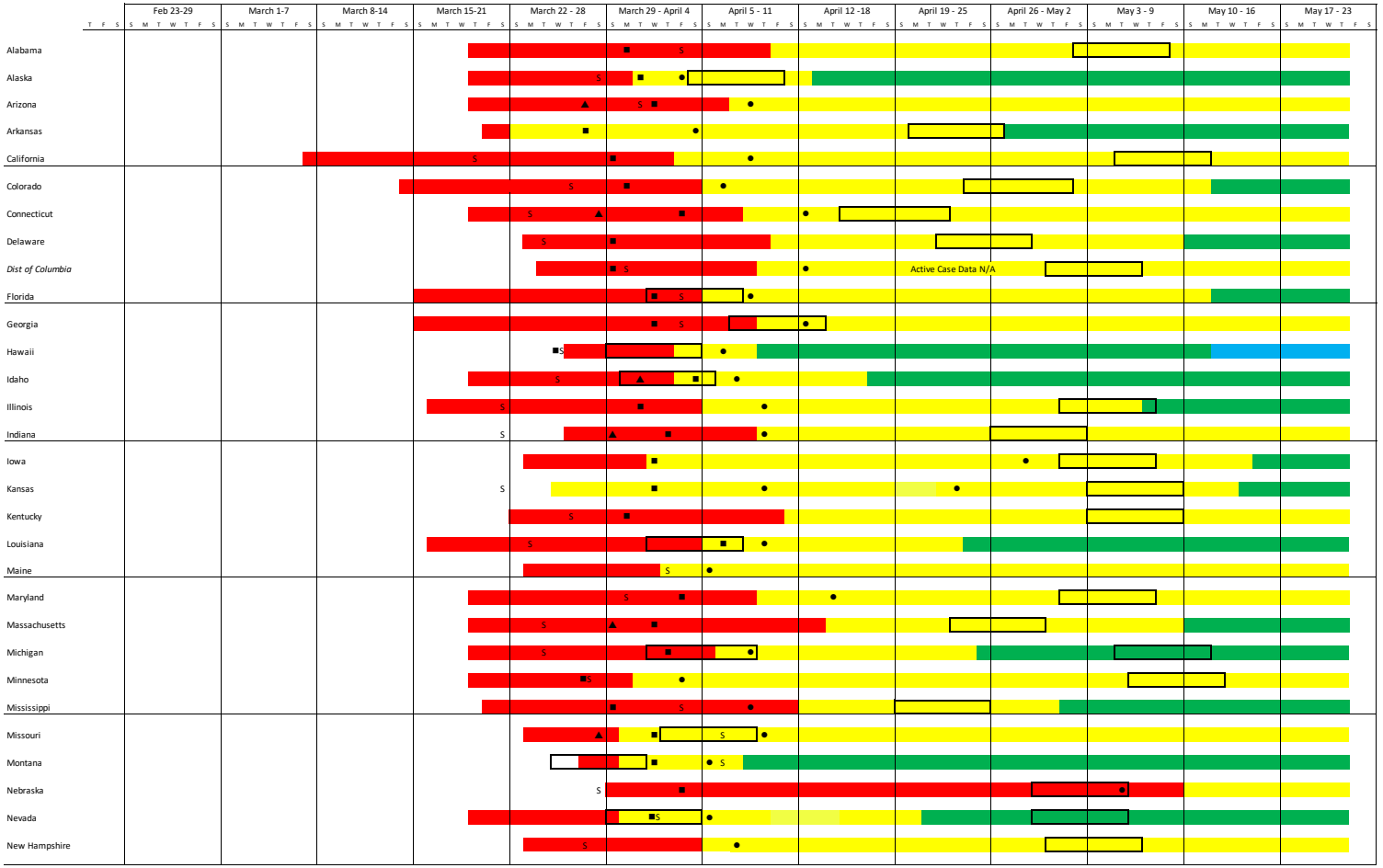
A state is not shaded green until active cases appear to have peaked.

©2020 Health Industry Advisor LLC All rights reserved.

State-by-State

Virus Progression – *1 of 2*

"Strategic Guidance in an Era of Unprecedented Change"



Legend on following page

© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

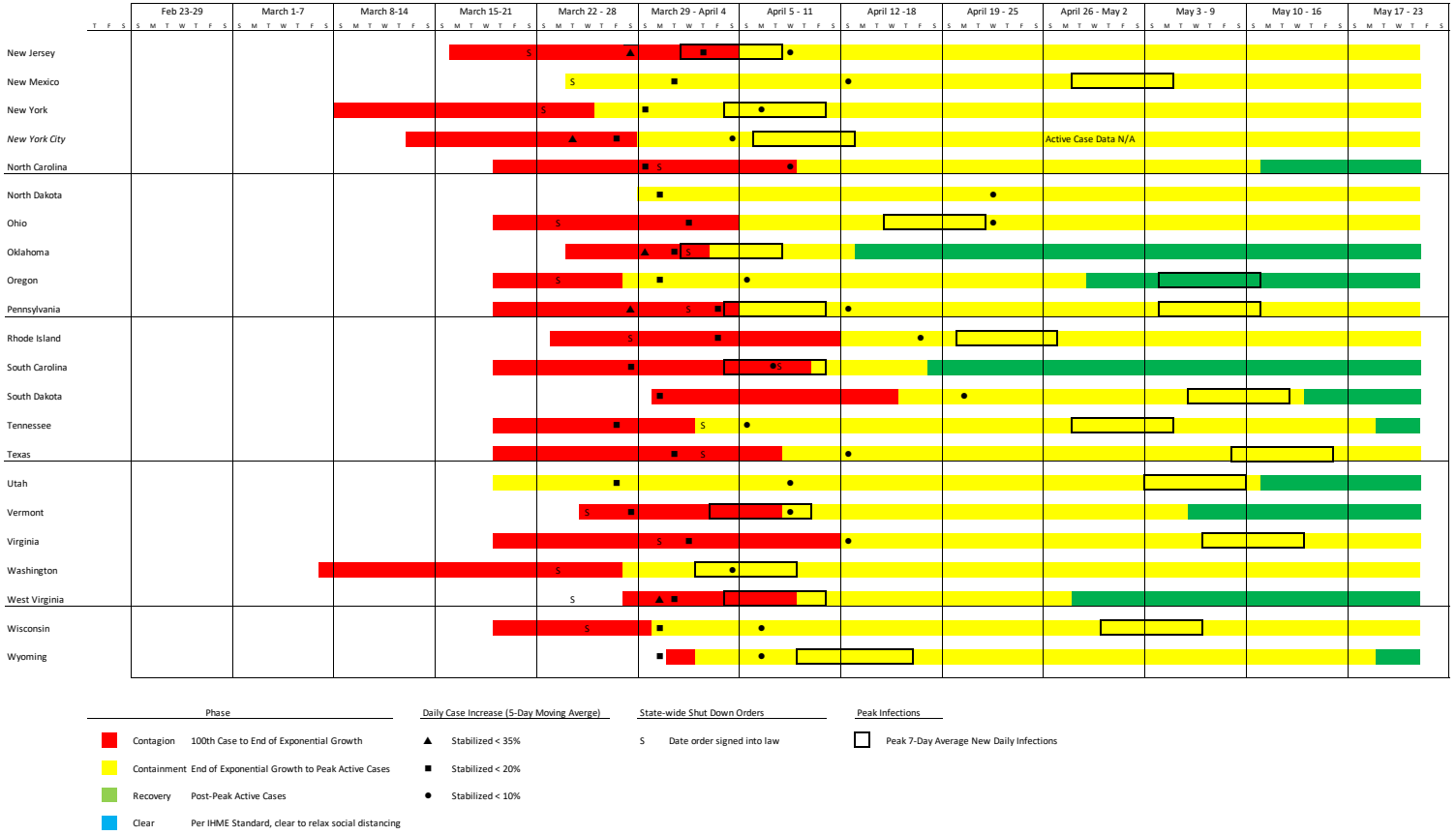
©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

State-by-State

Virus Progression – *2 of 2*

"Strategic Guidance in an Era of Unprecedented Change"



© 2020 Health Industry Advisor LLC analysis, using data from worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

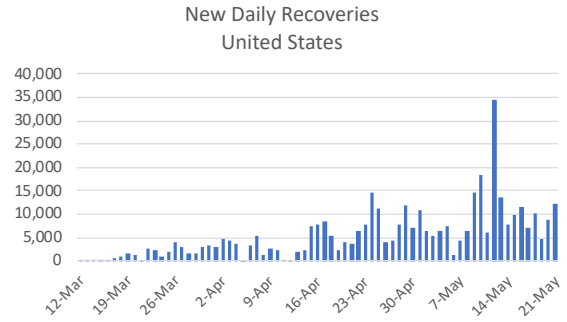
UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

©2020 Health Industry Advisor LLC All rights reserved.

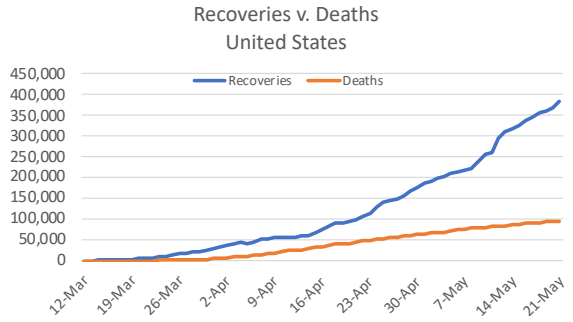
United States

Recoveries

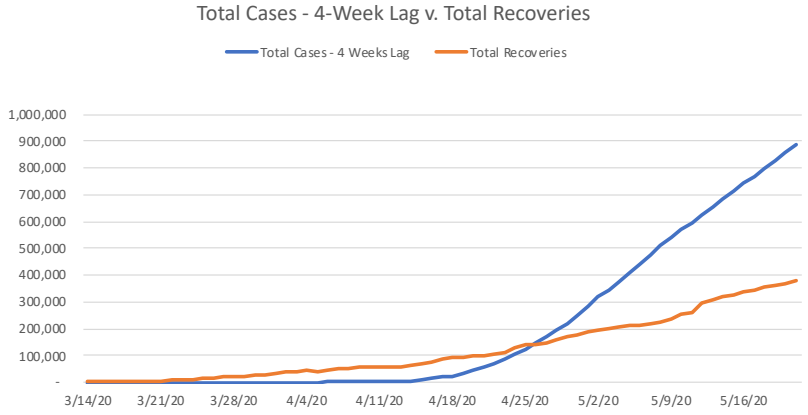
"Strategic Guidance in an Era of Unprecedented Change"



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

Recoveries

Reporting of Recoveries Seems to Be Lagging

"Strategic Guidance in an Era of Unprecedented Change"

Which states seem to be lagging in reporting?

At this point, we should be expecting far more recoveries in the U.S.

Comparing the reported recoveries to Total Cases 4 weeks ago*, this shortfall is ~325-415k

State	Recoveries	Expected Recoveries Low	High
Alabama	20	4,666	5,249
Alaska	356	270	303
Arizona	70	4,615	5,192
Arkansas	3,852	2,079	2,339
California	16,106	31,430	35,359
Colorado	1,491	9,010	10,136
Connecticut	6,264	18,480	20,790
Delaware	4,130	2,646	2,977
District Of Columbia	1,061	2,689	3,025
Florida	7,638	23,718	26,683
Georgia	340	17,506	19,695
Hawaii	579	477	536
Idaho	1,379	1,469	1,652
Illinois	111	29,547	33,241
Indiana	1,869	10,431	11,735
Iowa	8,768	3,139	3,532
Kansas	2,855	1,986	2,234
Kentucky	3,008	2,785	3,133
Louisiana	26,249	20,591	23,165
Maine	1,110	750	843
Maryland	2,806	12,590	14,163
Massachusetts	32,549	36,818	41,421
Michigan	28,234	28,233	31,762
Minnesota	12,488	2,354	2,648
Mississippi	7,681	4,122	4,638
Missouri	2,965	5,107	5,746

State	Recoveries	Expected Recoveries Low	High
Montana	440	354	398
Nebraska	349	1,699	1,912
Nevada	5,039	3,366	3,787
New Hampshire	1,767	1,336	1,503
New Jersey	8,544	80,020	90,023
New Mexico	2,041	1,903	2,141
New York	63,131	214,865	241,723
North Carolina	11,637	6,283	7,069
North Dakota	1,340	567	638
Ohio	4,963	11,755	13,225
Oklahoma	4,361	2,414	2,715
Oregon	1,406	1,702	1,914
Pennsylvania	7,269	29,642	33,348
Rhode Island	886	5,005	5,630
South Carolina	6,043	3,934	4,425
South Dakota	3,145	1,565	1,760
Tennessee	11,783	6,613	7,439
Texas	31,785	17,914	20,154
Utah	4,596	2,890	3,251
Vermont	827	660	743
Virginia	4,271	8,798	9,898
Washington	5,287	10,202	11,478
West Virginia	977	785	883
Wisconsin	7,728	4,042	4,547
Wyoming	546	362	408
	-	-	-
United States	382,169	709,154	797,798

* - 4 weeks is the presumed time from infection-onset to recovery referenced by many states

Low = 80% of Total Cases 4 week ago
High = 90% of Total Cases 4 week ago

- States seemingly up-to-date with reporting recoveries
- States only reporting~ 1/2 expected recoveries
- States well-behind in reporting recoveries

©2020 Health Industry Advisor LLC All rights reserved.

STATE TEST, INFECTION AND CASE TRENDS

©2020 Health Industry Advisor LLC All rights reserved.

State-by-State

Test, New Daily Infection and Active Case Trends

On Mondays, Wednesday and Fridays we provide graphics relevant to judging how far a state (or the District of Columbia) has progressed against the virus. Seventeen states (or, sixteen and D.C.) are provided at a time. Today, we provide:

- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

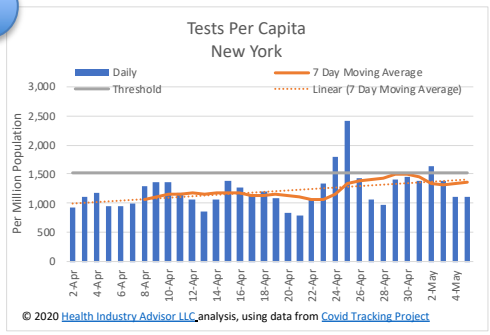
©2020 Health Industry Advisor LLC All rights reserved.

Test, New Daily Infection and Active Case Trends

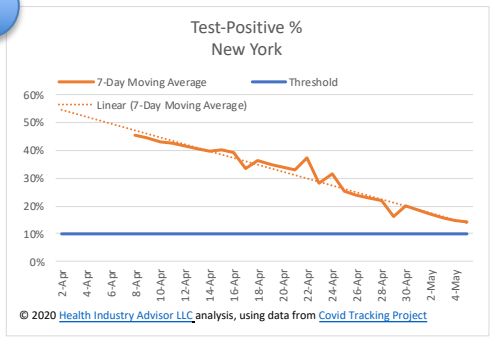
How to "read" these charts:

- 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

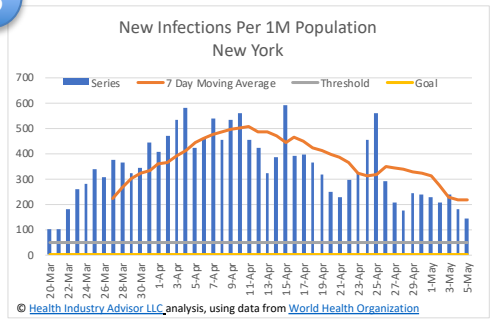
1



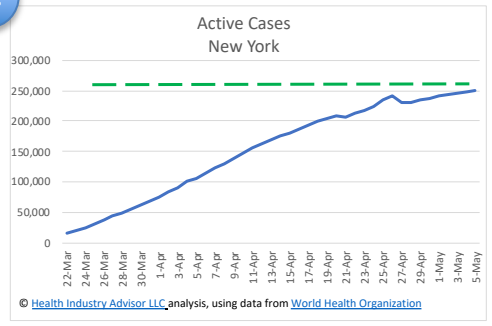
2



3



4

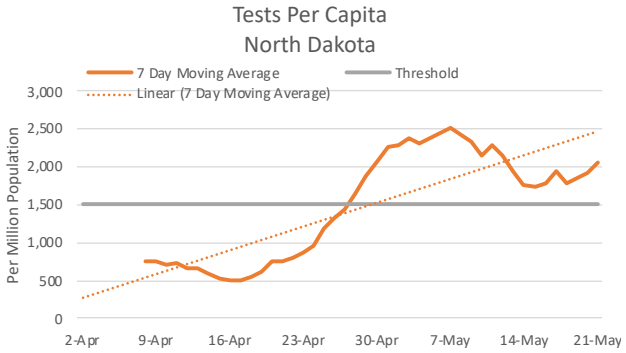


©2020 Health Industry Advisor LLC All rights reserved.

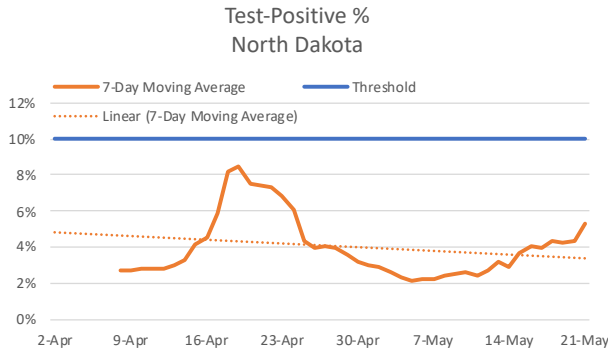
State-by-State

Test, New Daily Infection and Active Case Trends

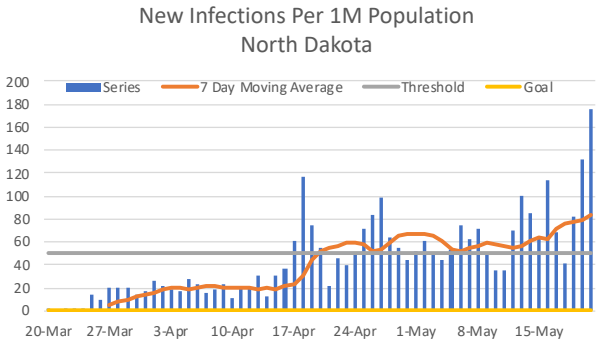
"Strategic Guidance in an Era of Unprecedented Change"



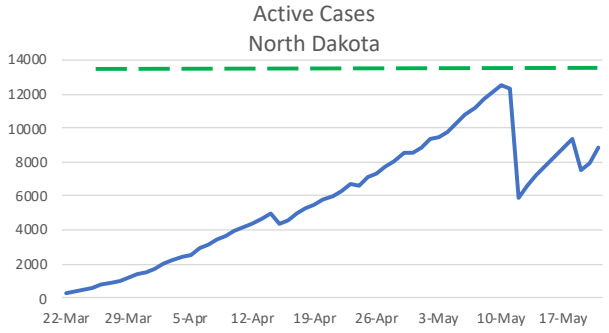
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



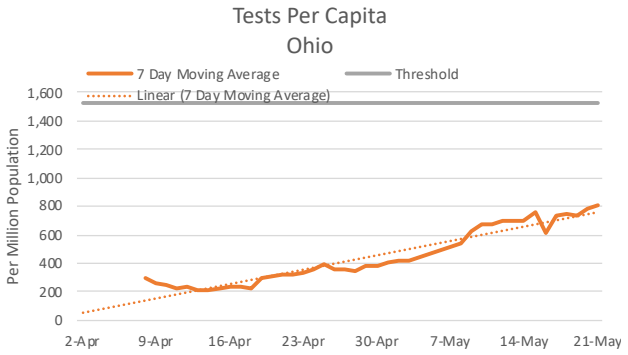
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

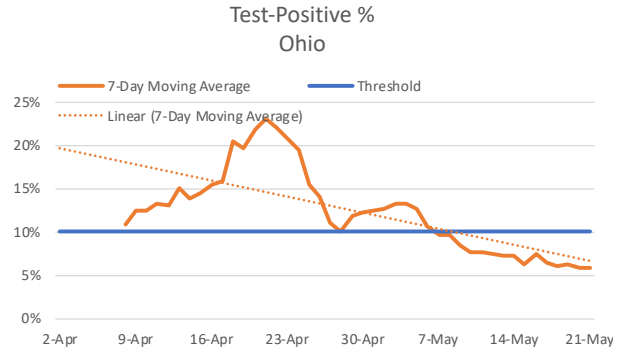
State-by-State

Test, New Daily Infection and Active Case Trends

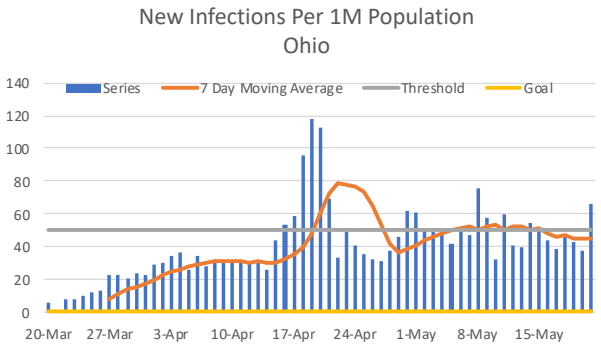
"Strategic Guidance in an Era of Unprecedented Change"



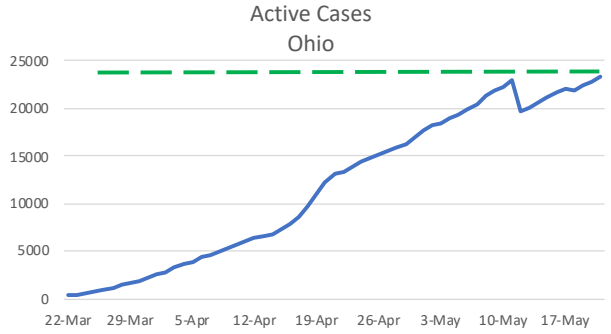
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



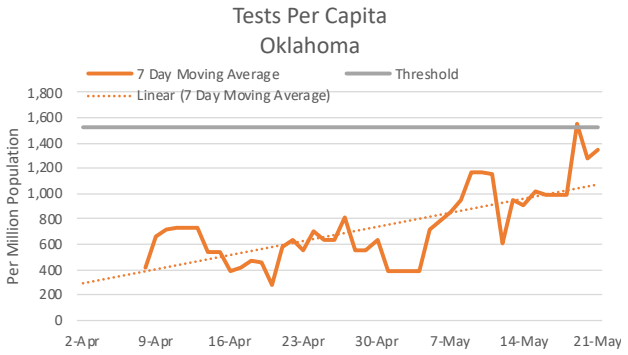
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

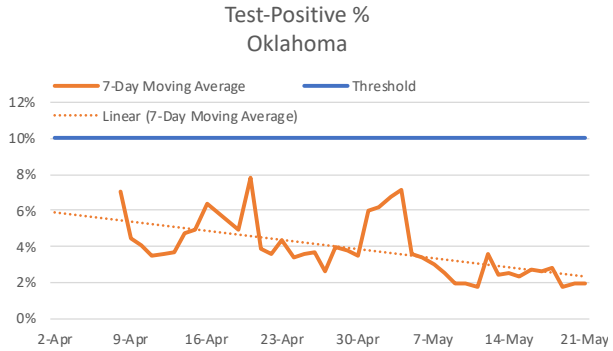
State-by-State

Test, New Daily Infection and Active Case Trends

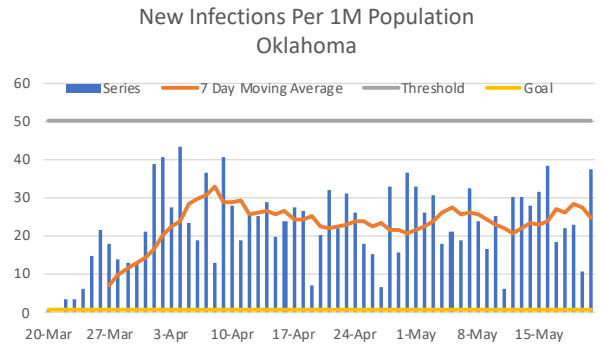
"Strategic Guidance in an Era of Unprecedented Change"



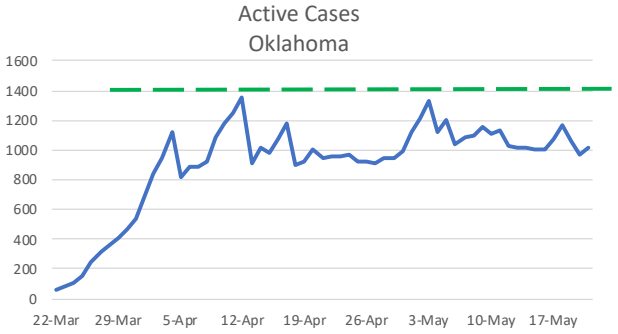
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



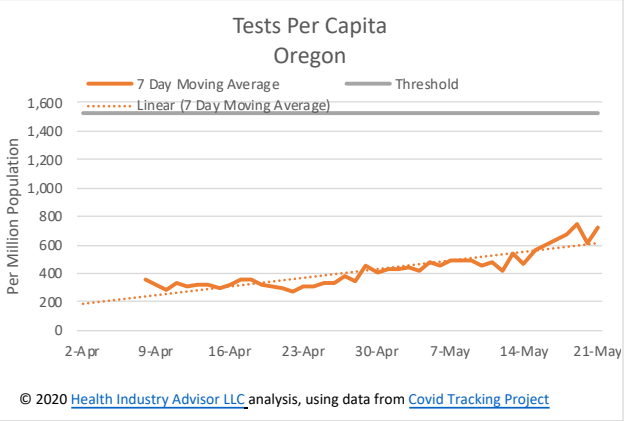
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

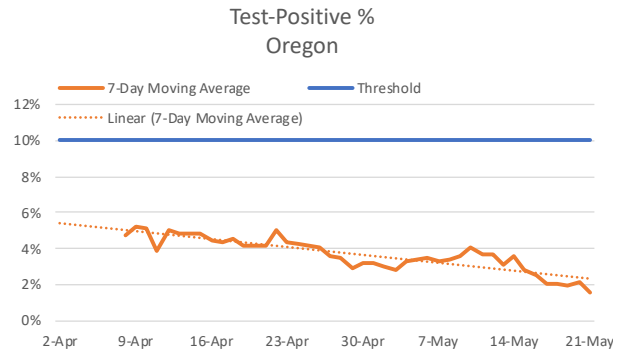
State-by-State

Test, New Daily Infection and Active Case Trends

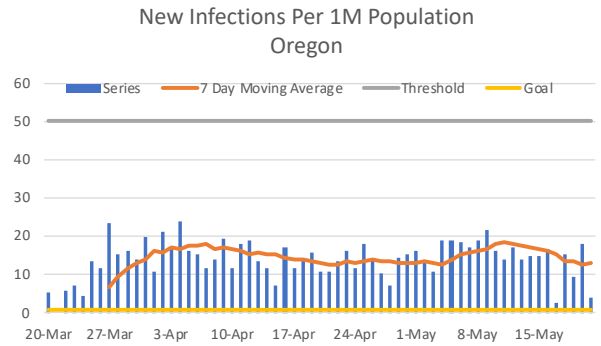
"Strategic Guidance in an Era of Unprecedented Change"



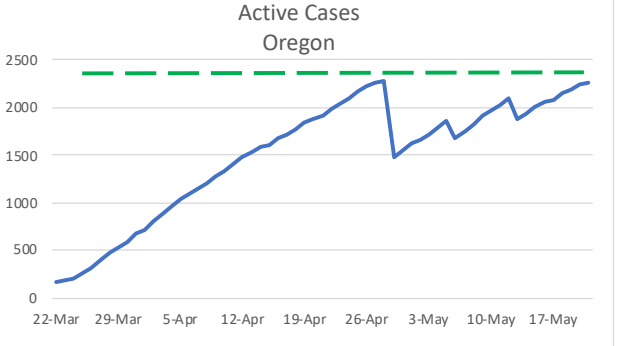
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



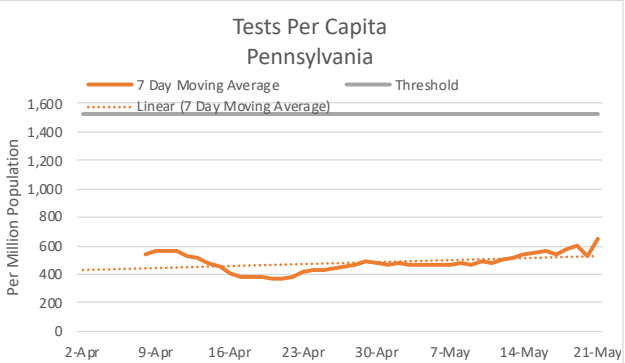
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



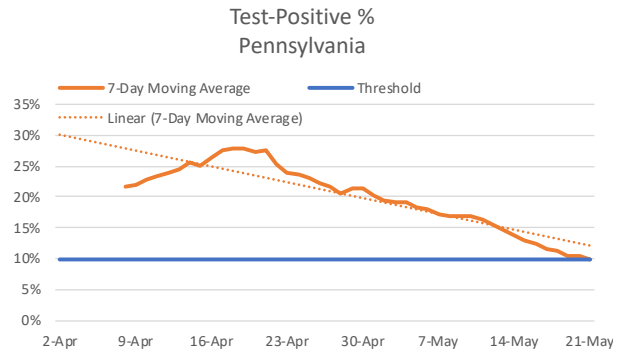
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

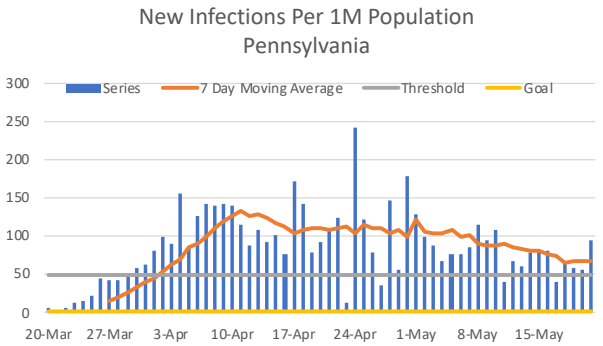
Test, New Daily Infection and Active Case Trends



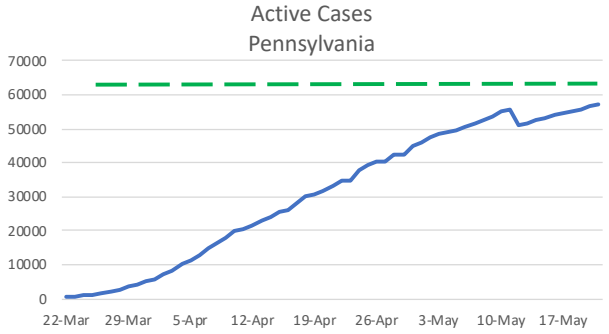
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



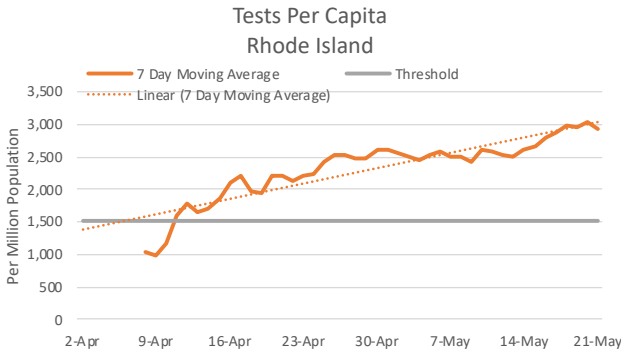
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

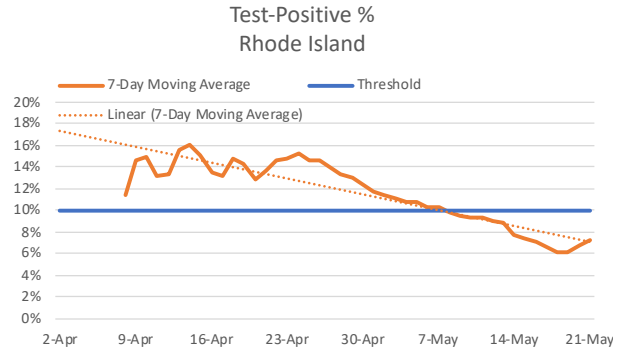
State-by-State

Test, New Daily Infection and Active Case Trends

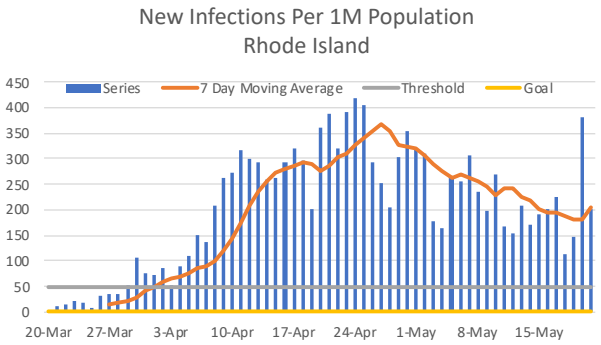
"Strategic Guidance in an Era of Unprecedented Change"



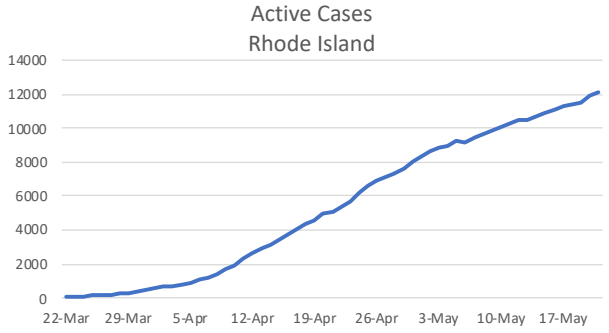
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



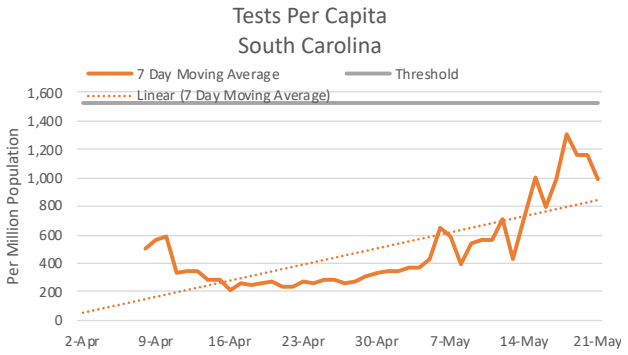
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

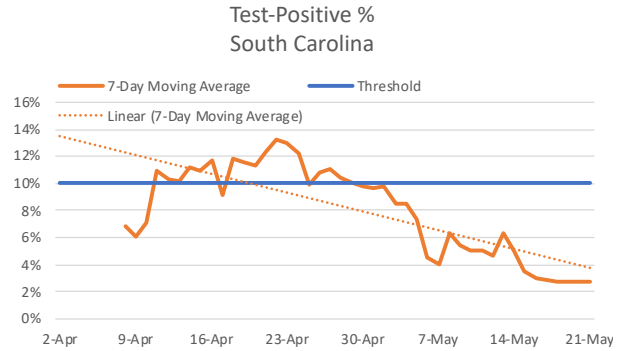
State-by-State

Test, New Daily Infection and Active Case Trends

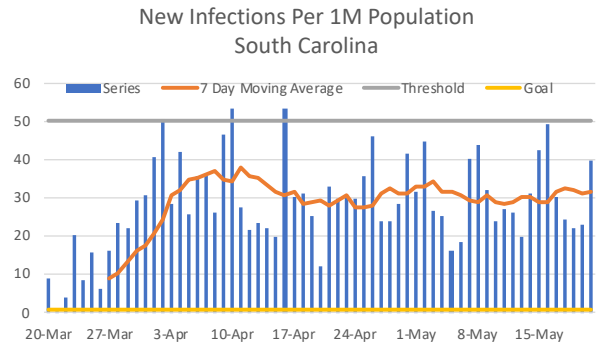
"Strategic Guidance in an Era of Unprecedented Change"



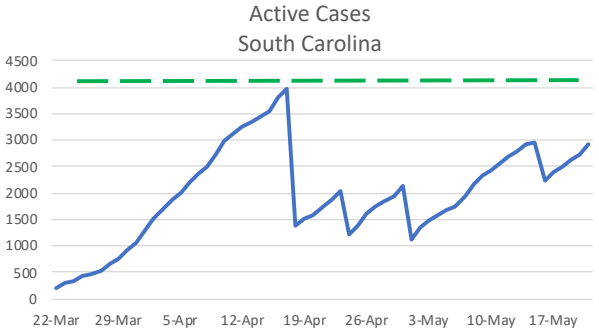
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



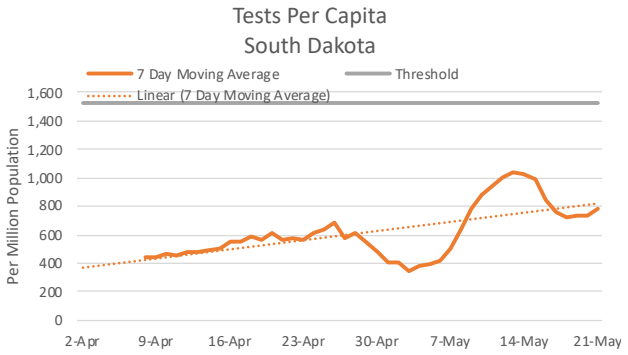
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

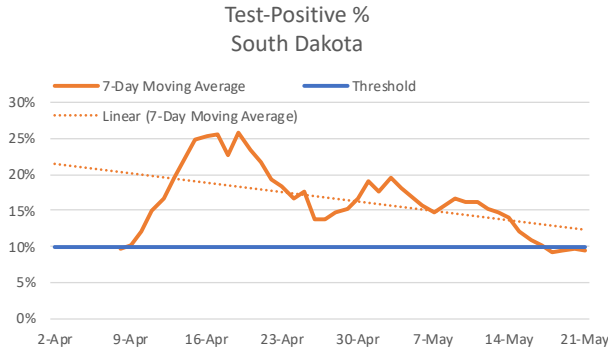
State-by-State

Test, New Daily Infection and Active Case Trends

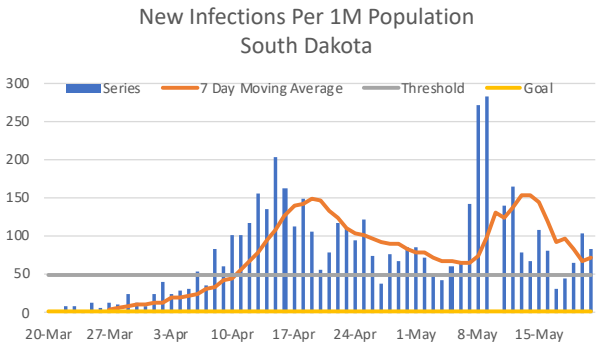
"Strategic Guidance in an Era of Unprecedented Change"



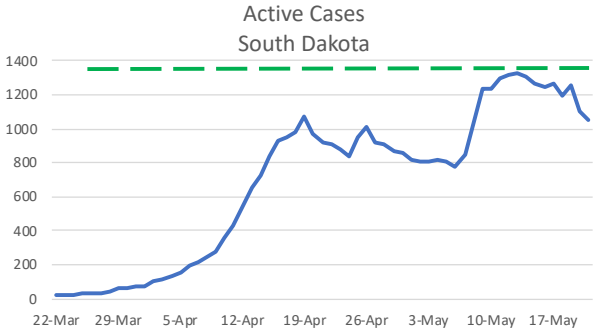
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



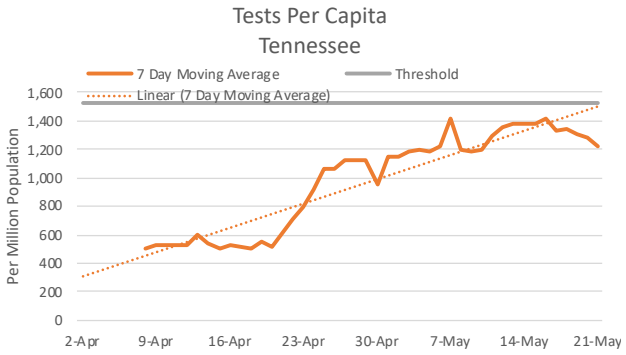
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

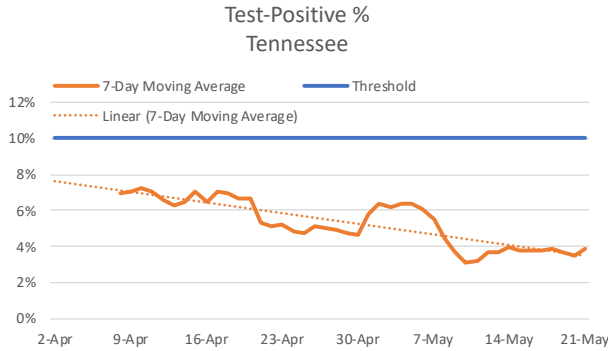
State-by-State

Test, New Daily Infection and Active Case Trends

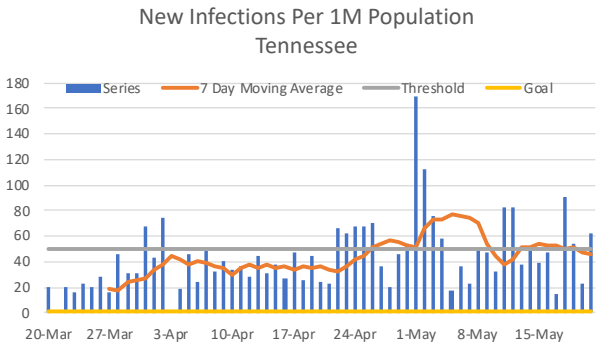
"Strategic Guidance in an Era of Unprecedented Change"



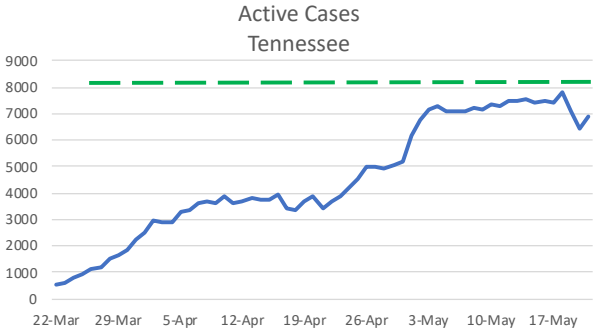
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



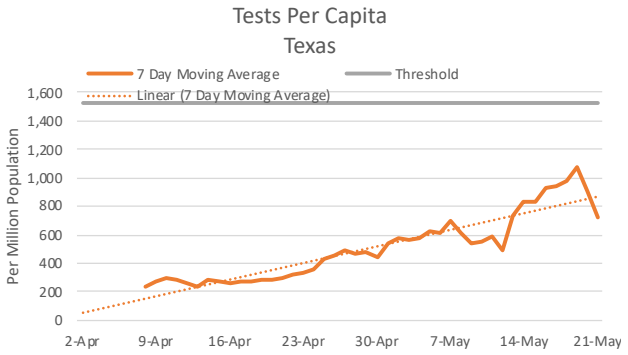
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

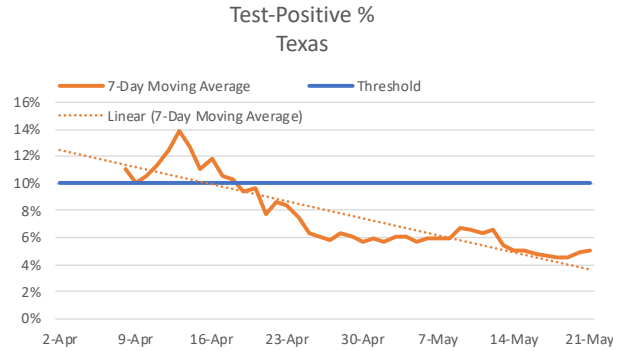
State-by-State

Test, New Daily Infection and Active Case Trends

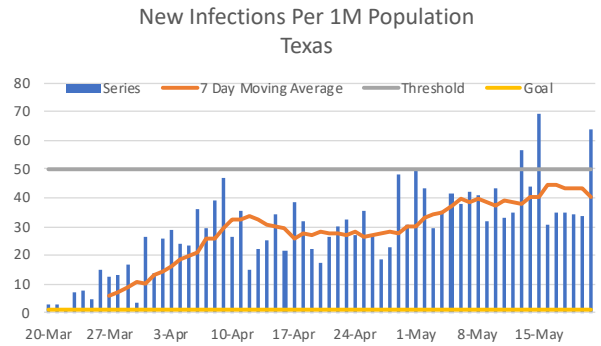
"Strategic Guidance in an Era of Unprecedented Change"



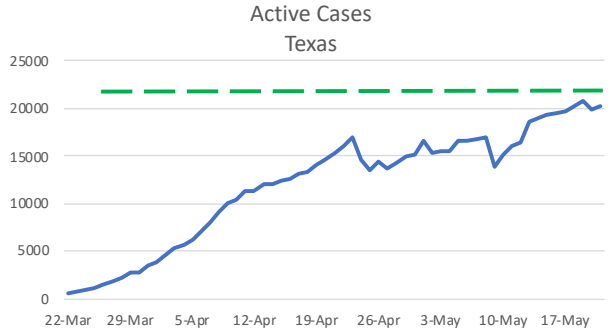
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



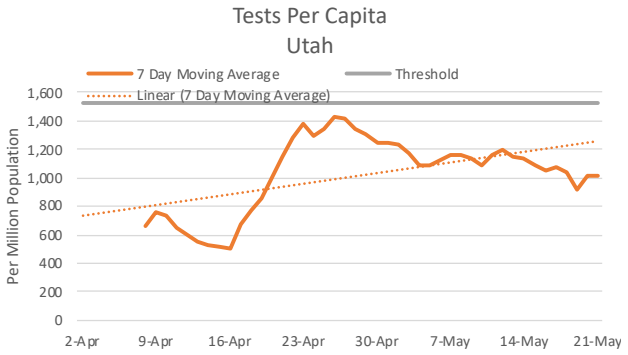
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

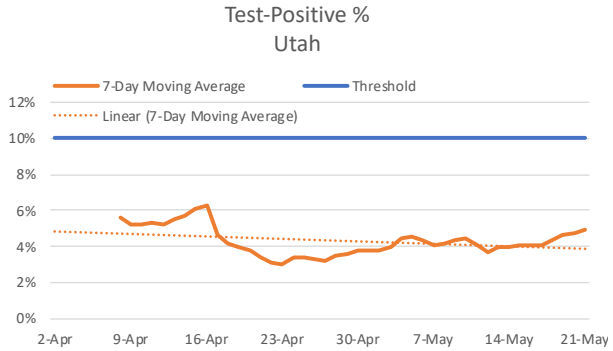
State-by-State

Test, New Daily Infection and Active Case Trends

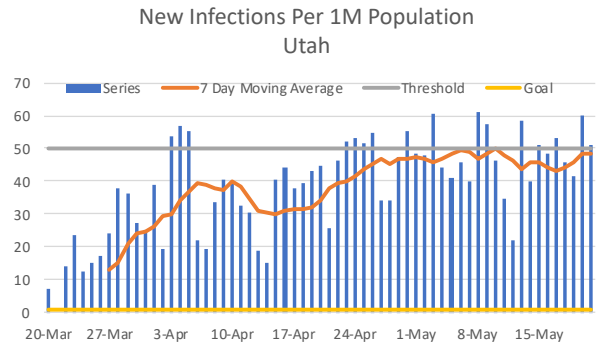
"Strategic Guidance in an Era of Unprecedented Change"



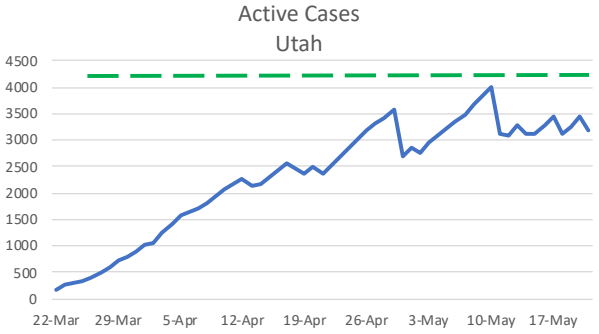
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



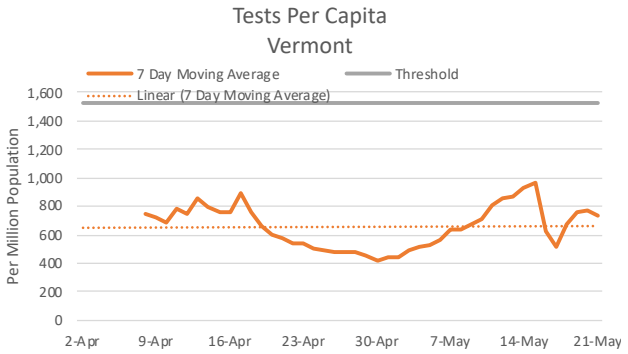
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



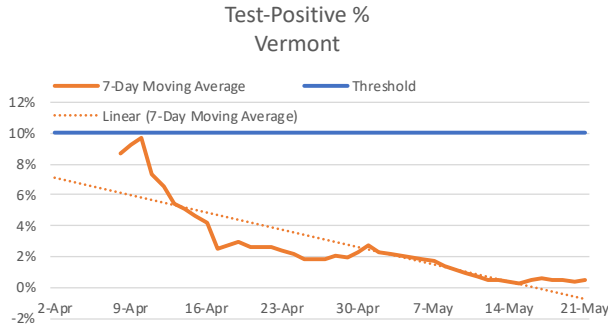
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

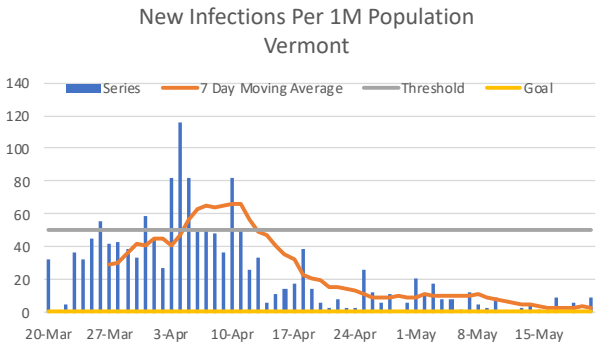
Test, New Daily Infection and Active Case Trends



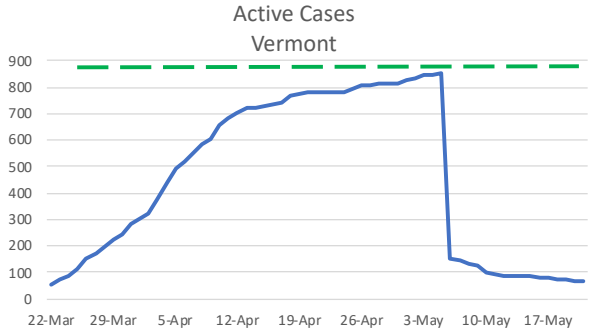
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



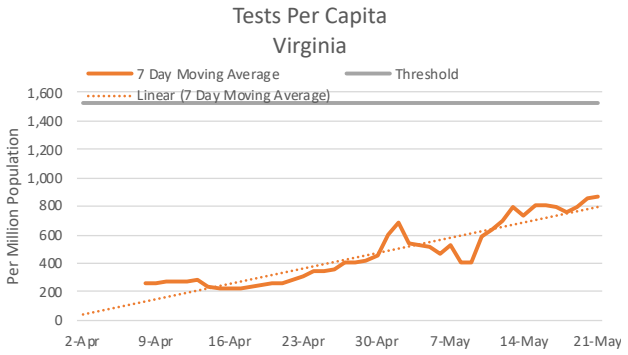
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

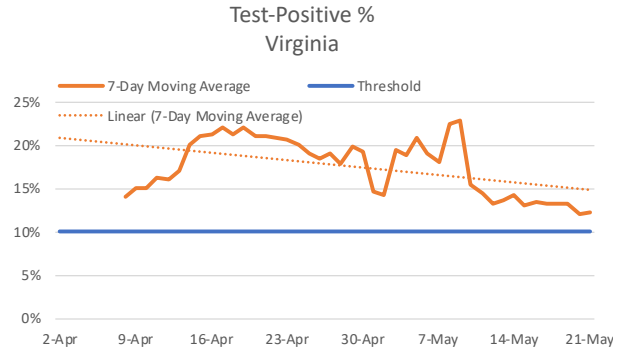
State-by-State

Test, New Daily Infection and Active Case Trends

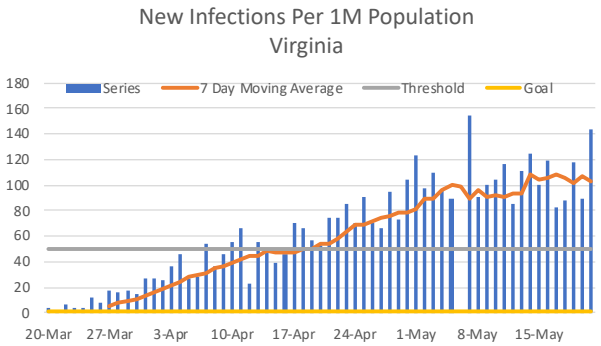
"Strategic Guidance in an Era of Unprecedented Change"



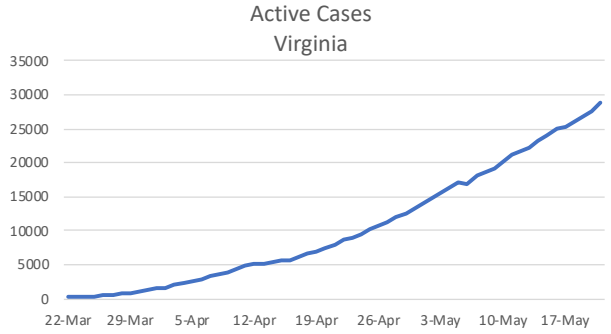
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



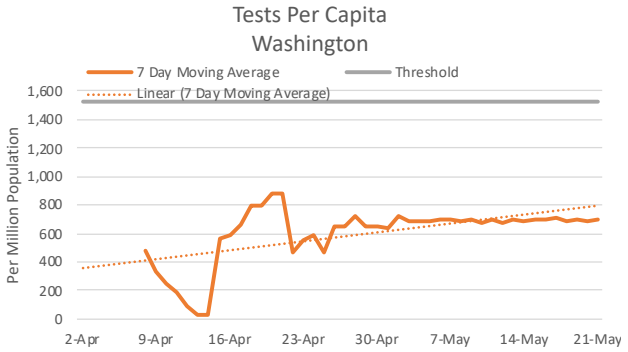
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



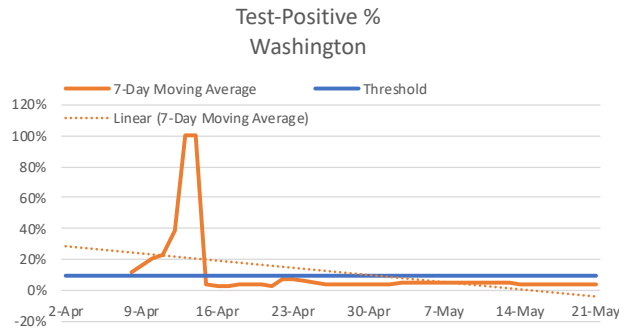
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

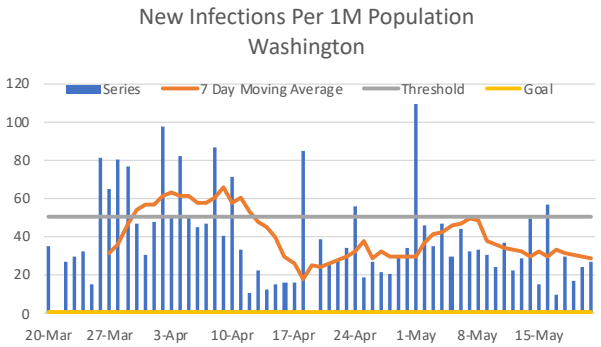
Test, New Daily Infection and Active Case Trends



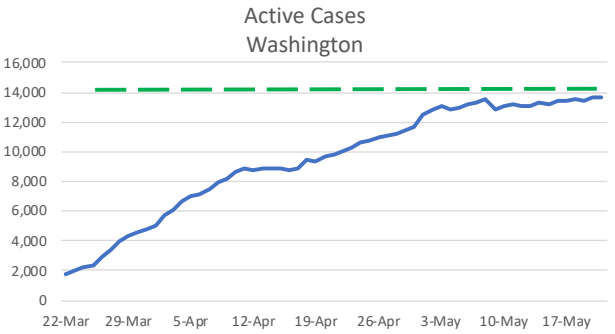
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



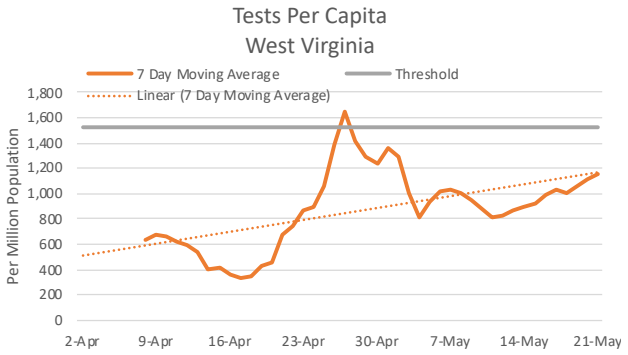
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

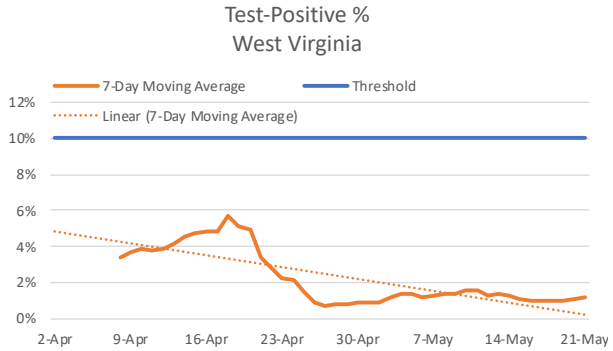
State-by-State

Test, New Daily Infection and Active Case Trends

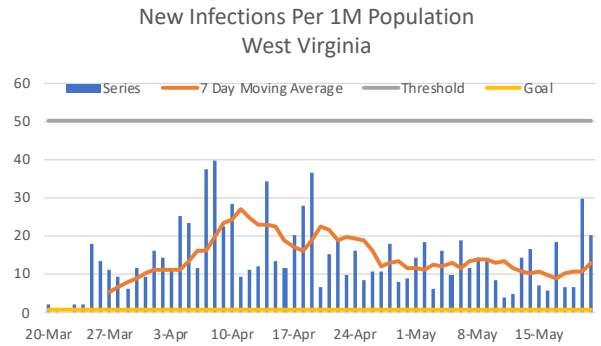
"Strategic Guidance in an Era of Unprecedented Change"



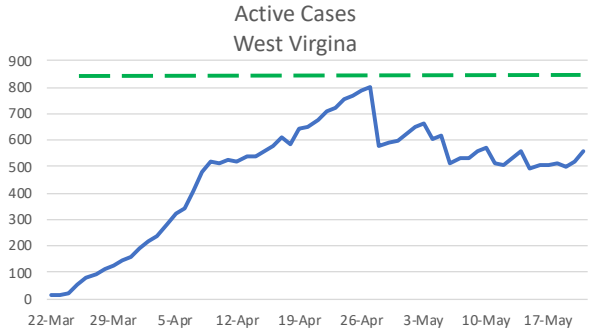
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



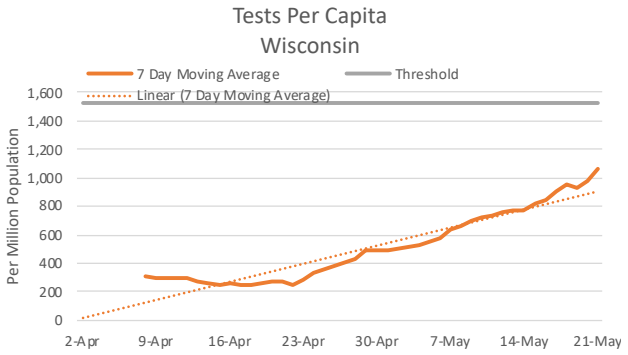
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

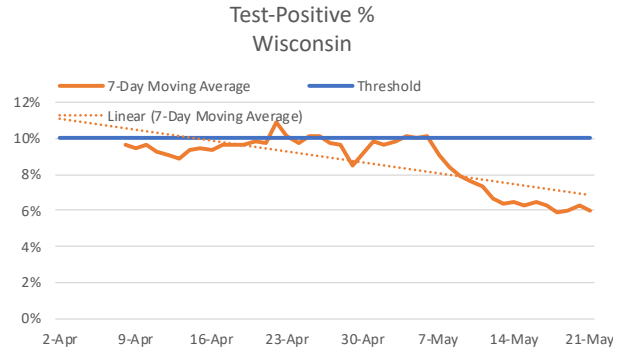
State-by-State

Test, New Daily Infection and Active Case Trends

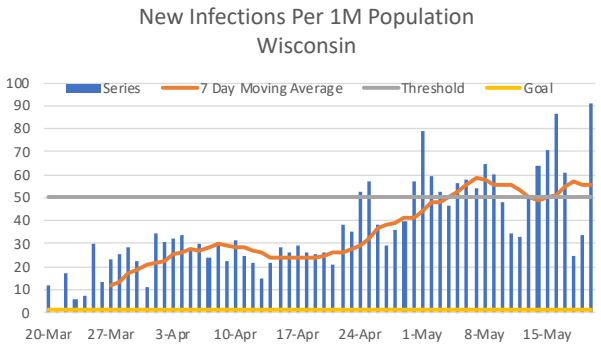
"Strategic Guidance in an Era of Unprecedented Change"



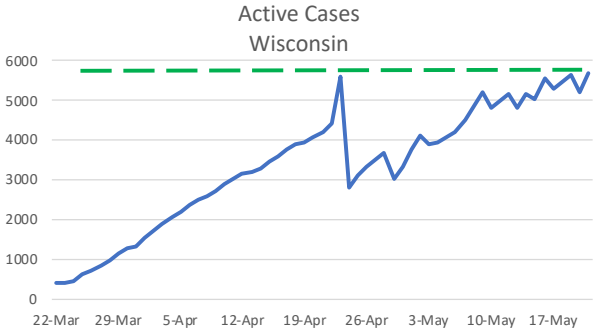
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



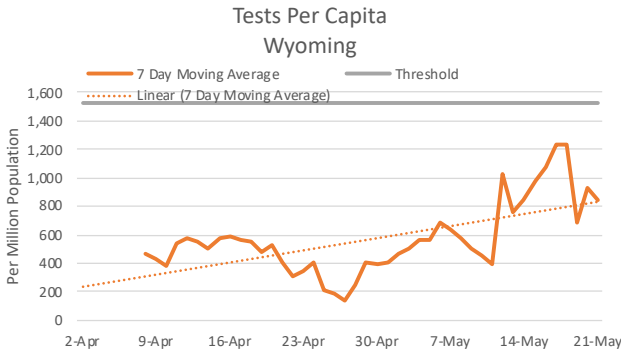
© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

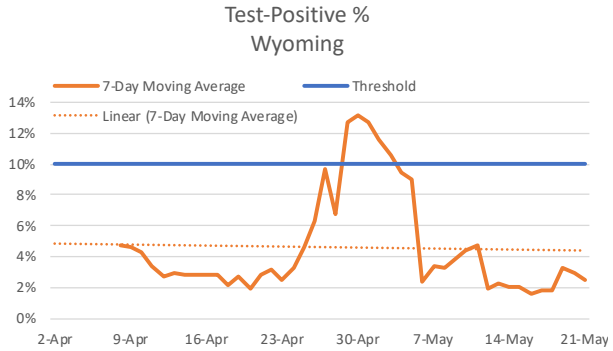
State-by-State

Test, New Daily Infection and Active Case Trends

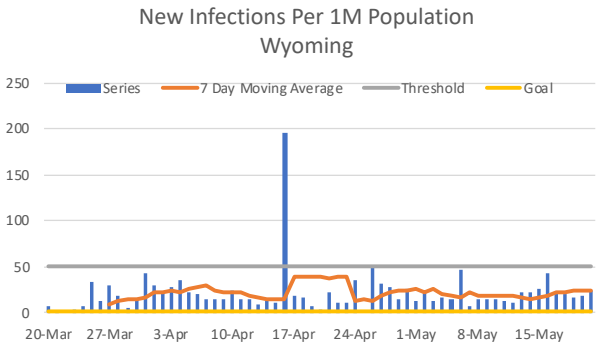
"Strategic Guidance in an Era of Unprecedented Change"



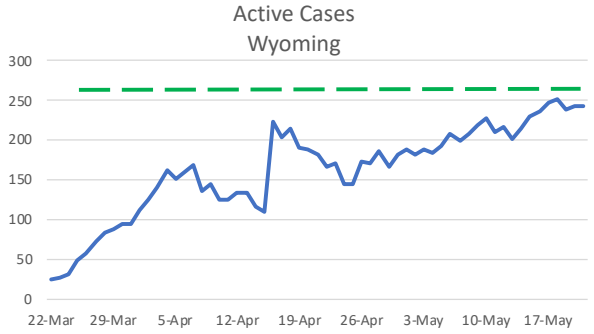
© 2020 Health Industry Advisor LLC analysis, using data from Covid Tracking Project



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



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info



© 2020 Health Industry Advisor LLC analysis,using data from Worldometers.info

©2020 Health Industry Advisor LLC All rights reserved.

U.S. COUNTY-BY-COUNTY INFORMATION

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

U.S. County-By-County

Case and Death Information By County and Cities Not In A County

- On the following pages, case and death information[1] is presented by county/municipality in the United States
  - New York case and death information are reported on a combined basis for Bronx, Kings, New York, Queens and Richmond counties
  - Cities that are not otherwise part of a county are listed separately
- Counties are grouped according to the 2013 Rural/Urban classification from Center for Disease Control, "NCHS Urban-Rural Classification Scheme for Counties"[3]:
  - **Large Central Metro Areas** – Located in MSA of 1 million population that: 1) contain the entire population of the largest principal city of the MSA, or 2) are completely contained within the largest principal city of the MSA, or 3) contain at least 250,000 residents of any principal city in the MSA
  - **Large Fringe Metro Areas** – Located in in MSA of 1 million or more population
  - **Medium Metro Areas** – Located in in MSA of 250,000-999,999 population
  - **Small Metro Areas** – Located in MSAs of less than 250,000 population
  - **Micropolitan Areas** – Located in micropolitan statistical area
  - **Non-Core Areas** - not in micropolitan statistical areas data access website
- Population information is the 2019 official estimate from the US Census Bureau[2]

1. Data from The New York Times, based on reports from state and local health agencies. Accessed May 10-20, 2020
2. "Annual Estimates of the Resident Population for Counties in the United States: April 1, 2010 to July 1, 2019 (CO-EST2019-ANNRES)",Source: U.S. Census Bureau, Population Division, Release Date: March 2020. Accessed May 12, 2020
3. Urban-Rural Classification of counties from CDC's "NCHS Urban-Rural Classification Scheme for Counties". Accessed May 19, 2020

©2020 Health Industry Advisor LLC All rights reserved.

County-By-County

Counties Within States With Highest Recent New Daily Infection Rates

- The states with the highest new daily infection rates per capita for the past week:
  - Rhode Island
  - Maryland
  - Delaware
  - Illinois
  - Maryland
- On the following pages, we present information for each of the counties in these states

©2020 Health Industry Advisor LLC All rights reserved.

County-By-County

Counties In States With Highest Recent New Daily Infection Rates

Rhode Island

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7-Day MA)	Peak Daily Inf Rate (Trailing 7-Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
44001	Bristol	Rhode Island	2	198	4,311	81	236		1	18	0.5%
44003	Kent	Rhode Island	2	958	5,899	66	225		46	835	4.8%
44005	Newport	Rhode Island	2	206	2,613	16	83		4	73	1.9%
44007	Providence	Rhode Island	1	9,976	16,359	202	656		342	6,210	3.4%
44009	Washington	Rhode Island	2	462	3,867	44	158		32	581	6.9%

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

County-By-County

Counties In States With Highest Recent New Daily Infection Rates

"Strategic Guidance in an Era of Unprecedented Change"

Maryland

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7-Day MA)	Peak Daily Inf Rate (Trailing 7-Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
24001	Allegany	Maryland	4	166	2,623	38	194		14	254	8.4%
24003	Anne Arundel	Maryland	2	3,041	5,428	111	160		145	2,633	4.8%
24005	Baltimore	Maryland	2	5,041	6,250	153	171		277	5,030	5.5%
24510	Baltimore city	Maryland	1	4,159	7,183	166	246		215	3,904	5.2%
24009	Calvert	Maryland	2	260	2,852	71	91		14	254	5.4%
24011	Caroline	Maryland	6	210	6,409	144	392		-	-	0.0%
24013	Carroll	Maryland	2	721	4,369	109	122		71	1,289	9.8%
24015	Cecil	Maryland	2	328	3,227	80	125		20	363	6.1%
24017	Charles	Maryland	2	922	5,769	128	154		64	1,162	6.9%
24019	Dorchester	Maryland	5	122	3,875	91	154		2	36	1.6%
24021	Frederick	Maryland	2	1,540	6,129	132	173		93	1,689	6.0%
24023	Garrett	Maryland	6	7	244	5	10		-	-	0.0%
24025	Harford	Maryland	2	724	2,883	52	108		39	708	5.4%
24027	Howard	Maryland	2	1,498	4,659	106	146		50	908	3.3%
24029	Kent	Maryland	6	145	8,048	174	420		14	254	9.7%
24031	Montgomery	Maryland	2	9,093	8,717	243	250	Yes	515	9,351	5.7%
24033	Prince George's	Maryland	2	12,467	14,062	383	399		453	8,225	3.6%
24035	Queen Anne's	Maryland	2	135	2,714	89	129		11	200	8.1%
24039	Somerset	Maryland	3	64	3,152	91	127		1	18	1.6%
24037	St. Mary's	Maryland	4	340	3,099	112	120	Yes	12	218	3.5%
24041	Talbot	Maryland	5	69	1,889	27	78		1	18	1.4%
24043	Washington	Maryland	3	364	2,552	77	83		9	163	2.5%
24045	Wicomico	Maryland	3	848	8,619	160	359		21	381	2.5%
24047	Worcester	Maryland	3	170	3,329	123	143	Yes	8	145	4.7%

©2020 Health Industry Advisor LLC All rights reserved.

County-By-County

Counties In States With Highest Recent New Daily Infection Rates

Delaware

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7-Day MA)	Peak Daily Inf Rate (Trailing 7-Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
10001	Kent	Delaware	4	1,253	7,228	139	247		55	999	4.4%
10003	New Castle	Delaware	2	2,933	5,413	115	127		138	2,506	4.7%
10005	Sussex	Delaware	3	3,960	17,556	395	682		116	2,106	2.9%

Note: Non-Core Areas omitted

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

County-By-County

Counties In States With Highest Recent New Daily Infection Rates

"Strategic Guidance in an Era of Unprecedented Change"

Illinois

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7-Day MA)	Peak Daily Inf Rate (Trailing 7-Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
17005	Bond	Illinois	2	12	801	19	29	Yes	1	18	8.3%
17007	Boone	Illinois	3	324	6,100	191	272	Yes	14	254	4.3%
17013	Calhoun	Illinois	2	1	212	-			-	-	0.0%
17027	Clinton	Illinois	2	167	4,699	100	245		16	291	9.6%
17031	Cook	Illinois	1	66,213	12,996	275	404		3,074	55,817	4.6%
17037	DeKalb	Illinois	2	276	2,807	94	115	Yes	4	73	1.4%
17043	DuPage	Illinois	2	6,308	6,893	166	208	Yes	326	5,919	5.2%
17063	Grundy	Illinois	2	83	1,641	59	59	Yes	2	36	2.4%
17073	Henry	Illinois	3	65	1,348	9	50		-	-	0.0%
17083	Jersey	Illinois	2	20	951	20	34		1	18	5.0%
17089	Kane	Illinois	2	4,813	9,115	289	405		136	2,469	2.8%
17093	Kendall	Illinois	2	635	4,981	155	192		22	399	3.5%
17097	Lake	Illinois	2	130	1,228	26	53		8	145	6.2%
17117	Macoupin	Illinois	2	42	947	6	42		1	18	2.4%
17119	Madison	Illinois	2	502	1,927	29	82		46	835	9.2%
17123	Marshall	Illinois	3	5	445	13	38		-	-	0.0%
17111	McHenry	Illinois	2	1,255	4,093	96	126		66	1,198	5.3%
17131	Mercer	Illinois	3	15	976	9	37		-	-	0.0%
17133	Monroe	Illinois	2	90	2,652	38	156		12	218	13.3%
17143	Peoria	Illinois	3	167	951	15	36		6	109	3.6%
17161	Rock Island	Illinois	3	600	4,328	64	171		21	381	3.5%
17163	St. Clair	Illinois	2	926	3,612	77	117		70	1,271	7.6%
17175	Stark	Illinois	3	2	376	27	27	Yes	-	-	0.0%
17179	Tazewell	Illinois	3	65	502	7	24		4	73	6.2%
17197	Will	Illinois	2	4,718	6,908	156	197		248	4,503	5.3%
17201	Winnebago	Illinois	3	1,648	5,899	225	320	Yes	44	799	2.7%
17203	Woodford	Illinois	3	18	482	11	19		2	36	11.1%

Note: Small Metro, Micropolitan and Non-Core Areas omitted

©2020 Health Industry Advisor LLC All rights reserved.

Health Industry Advisor, llc

County-By-County

Counties In States With Highest Recent New Daily Infection Rates

"Strategic Guidance in an Era of Unprecedented Change"

Massachusetts

FIPS	County	State	2013 CDC Urban / Rural Classification	Total Cases	Cases Per 1M	Daily Inf Rate (Last 7-Day MA)	Peak Daily Inf Rate (Trailing 7-Day MA)	Highest Occured in Past 3 Days?	Total Deaths	Deaths Per 1M	Deaths / Case
25001	Barnstable	Massachusetts	4	1,197	5,717	59	236		98	1,779	8.2%
25003	Berkshire	Massachusetts	4	500	4,142	17	295		37	672	7.4%
25005	Bristol	Massachusetts	2	6,165	11,231	238	469		338	6,137	5.5%
25007	Dukes	Massachusetts	5	26	1,513	25	67		2	36	7.7%
25009	Essex	Massachusetts	2	12,920	16,717	225	624		817	14,835	6.3%
25011	Franklin	Massachusetts	5	309	4,424	14	202		46	835	14.9%
25013	Hampden	Massachusetts	3	5,418	11,882	166	420		526	9,551	9.7%
25015	Hampshire	Massachusetts	3	792	5,690	86	220		76	1,380	9.6%
25017	Middlesex	Massachusetts	2	19,708	12,637	138	454		1,462	26,547	7.4%
25019	Nantucket	Massachusetts	6	12	1,066	-	102		-	-	0.0%
25021	Norfolk	Massachusetts	2	7,607	11,054	99	402		749	13,600	9.8%
25023	Plymouth	Massachusetts	2	7,280	14,365	194	594		481	8,734	6.6%
25025	Suffolk	Massachusetts	1	16,962	22,268	258	858		807	14,653	4.8%
25027	Worcester	Massachusetts	3	9,780	12,171	274	422		625	11,349	6.4%

©2020 Health Industry Advisor LLC All rights reserved.