Health Industry Advisor, llc

"Strategic Guidance in an Era of Unprecedented Change"

COVID-19 Dashboard

Issue # 61

Thursday, May 28, 2020

Day's Highlights

"Strategic Guidance in an Era of Unprecedented Change"

Measure	Desired Change	Yesterday in the U.S.
Number of Tests	Increase	~290,000 tests on Wednesday (net, after GA reduced count by ~74,000)
Test-Positivity Rate	Decline	6.5% test-positive on Wednesday; 5.8% for past 7 days
Number of Cases	Plateau	New Cases down 5.7% week-over-week
Deaths % of Total Cases	Decline	5.8%
Number of Deaths / 1M Population	Plateau	308.5
Recoveries : Death	Increase	4.80

- For the first, time, we report on all 215 countries worldwide that have at least 1 coronavirus case:
  - Observing the ranking by total cases per million, you will note that several smaller countries - San Marino, Qatar, Vatican City, Andorra, Luxembourg - have the highest rates per capita
  - San Marino also has the most deaths per million; Andorra has the 3rd most
- The testing rate in the U.S. appeared somewhat lower - at least on the surface. Georgia took the step yesterday of removing 74,000 serology tests from their count yesterday. Otherwise, testing volumes continued at the high rate observed for the past several weeks. Test-positive rate was 6.5%, up from 5.4% on Tuesday - likely influenced by the removal of tests in the count by Georgia
- New cases continued a downward trend, with a 5.7% decline week-over-week
- Only 6 states - Alabama, Arkansas, Mississippi, South Carolina, Virginia and Wisconsin - are still experiencing increasing new daily infection rates. Of the original 30 countries in our dataset, only Chile, India, Mexico and Peru are still experiencing increasing infection rates
- Wisconsin experienced a significant spike in cases on Wednesday. They also recorded their highest daily test volume and lowest-ever test-positive rate (5.1%). So, it is difficult to determine how much of the increase in new infections was due to increasing virus spread versus increased testing.
- There are only 7 Large Central Metro Areas that are still experiencing increasing infection rates
- There are 51 Large Fringe metro areas that are still experiencing increasing new daily infection rates; of these, 4 of the top 5 ranked by current infection rate are in the Commonwealth of Virginia (the other in the top five is in neighboring Maryland

COUNTRY-BY-COUNTRY INFORMATION

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, 18 countries have moved ahead of South Korea in total cases
- We continue to track the 30 countries, which still account for 88.1% of the 5.8 million total cases worldwide
- Case and death information is sourced from the worldometers.info, which is accessed daily; analysis by Health Industry Advisor LLC

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Country-by-Country

Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

As of May 27

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	1,745,803	(1)	5,274	(3)	102,107	(1)	5.8%	(14)	308.5	(9)	1.2%	(13)	47,988	(10)	66.1	(5)
Austria	16,591	(29)	1,842	(23)	645	(26)	3.9%	(20)	71.6	(18)	0.2%	(24)	46,514	(12)	3.8	(24)
Belgium	57,592	(19)	4,969	(5)	9,364	(7)	16.3%	(1)	807.9	(1)	0.4%	(19)	69,477	(3)	19.8	(15)
Brazil	414,661	(2)	1,951	(20)	25,697	(6)	6.2%	(13)	120.9	(14)	4.6%	(3)	4,104	(25)	81.5	(4)
Canada	87,519	(13)	2,319	(16)	6,765	(11)	7.7%	(10)	179.2	(12)	1.2%	(14)	40,597	(14)	27.9	(10)
Chile	82,289	(15)	4,305	(6)	841	(25)	1.0%	(28)	44.0	(21)	5.9%	(1)	26,937	(16)	214.3	(1)
China	82,993	(14)	58	(30)	4,634	(13)	5.6%	(15)	3.2	(30)	0.0%	(30)		N/A	0.0	(30)
Ecuador	38,103	(21)	2,160	(19)	3,275	(19)	8.6%	(9)	185.6	(11)	1.2%	(12)	6,218	(24)	26.3	(11)
France	182,913	(7)	2,802	(13)	28,596	(4)	15.6%	(2)	438.1	(5)	0.1%	(28)	21,217	(20)	2.9	(25)
Germany	181,895	(8)	2,171	(18)	8,533	(8)	4.7%	(18)	101.8	(16)	0.2%	(20)	47,194	(11)	5.7	(22)
India	158,086	(10)	115	(29)	4,534	(14)	2.9%	(22)	3.3	(29)	4.8%	(2)	2,352	(26)	4.8	(23)
Iran	141,591	(11)	1,686	(24)	7,564	(10)	5.3%	(16)	90.1	(17)	1.5%	(10)	10,210	(23)	24.9	(12)
Ireland	24,803	(26)	5,023	(4)	1,631	(21)	6.6%	(11)	330.3	(8)	0.2%	(21)	66,051	(4)	14.1	(16)
Israel	16,793	(27)	1,940	(21)	281	(28)	1.7%	(26)	32.5	(22)	0.1%	(27)	60,067	(6)	2.1	(26)
Italy	231,139	(6)	3,823	(9)	33,072	(3)	14.3%	(3)	547.0	(4)	0.2%	(23)	59,654	(7)	8.9	(20)
Japan	16,651	(28)	132	(28)	858	(24)	5.2%	(17)	6.8	(25)	0.2%	(25)	2,203	(28)	0.3	(29)
Mexico	74,560	(17)	578	(25)	8,134	(9)	10.9%	(7)	63.1	(19)	4.6%	(4)	1,825	(29)	22.4	(14)
Netherlands	45,768	(20)	2,671	(14)	5,871	(12)	12.8%	(5)	342.6	(7)	0.4%	(18)	19,585	(21)	11.0	(19)
Pakistan	59,151	(18)	268	(26)	1,225	(23)	2.1%	(25)	5.5	(26)	3.1%	(6)	2,265	(27)	8.6	(21)
Peru	135,905	(12)	4,122	(7)	3,983	(17)	2.9%	(21)	120.8	(15)	4.0%	(5)	27,493	(15)	138.2	(2)
Portugal	31,292	(24)	3,069	(12)	1,356	(22)	4.3%	(19)	133.0	(13)	0.7%	(16)	74,916	(2)	22.9	(13)
Russia	370,680	(3)	2,472	(15)	3,968	(18)	1.1%	(27)	26.5	(23)	2.6%	(8)	64,525	(5)	59.0	(7)
Saudi Arabia	78,541	(16)	2,256	(17)	425	(27)	0.5%	(29)	12.2	(24)	3.0%	(7)	16,637	(22)	65.6	(6)
Singapore	32,876	(23)	5,620	(2)	23	(30)	0.1%	(30)	3.9	(28)	1.6%	(9)	21,699	(19)	85.8	(3)
South Korea	11,265	(30)	220	(27)	269	(29)	2.4%	(24)	5.2	(27)	0.2%	(22)	57,251	(8)	0.4	(28)
Spain	283,849	(4)	6,071	(1)	27,118	(5)	9.6%	(8)	580.0	(2)	0.1%	(26)	76,071	(1)	13.2	(17)
Sweden	35,088	(22)	3,474	(11)	4,220	(16)	12.0%	(6)	417.9	(6)	1.4%	(11)	23,659	(17)	50.4	(8)
Switzerland	30,776	(25)	3,594	(10)	1,917	(20)	6.2%	(12)	223.8	(10)	0.0%	(29)	44,015	(13)	2.0	(27)
Turkey	159,797	(9)	1,895	(22)	4,431	(15)	2.8%	(23)	52.5	(20)	0.7%	(17)	22,488	(18)	12.2	(18)
UK	267,240	(5)	3,937	(8)	37,460	(2)	14.0%	(4)	551.8	(3)	1.0%	(15)	55,981	(9)	39.9	(9)

Note: China does not report test volumes

VIRUS PROGRESSION BY COUNTRY

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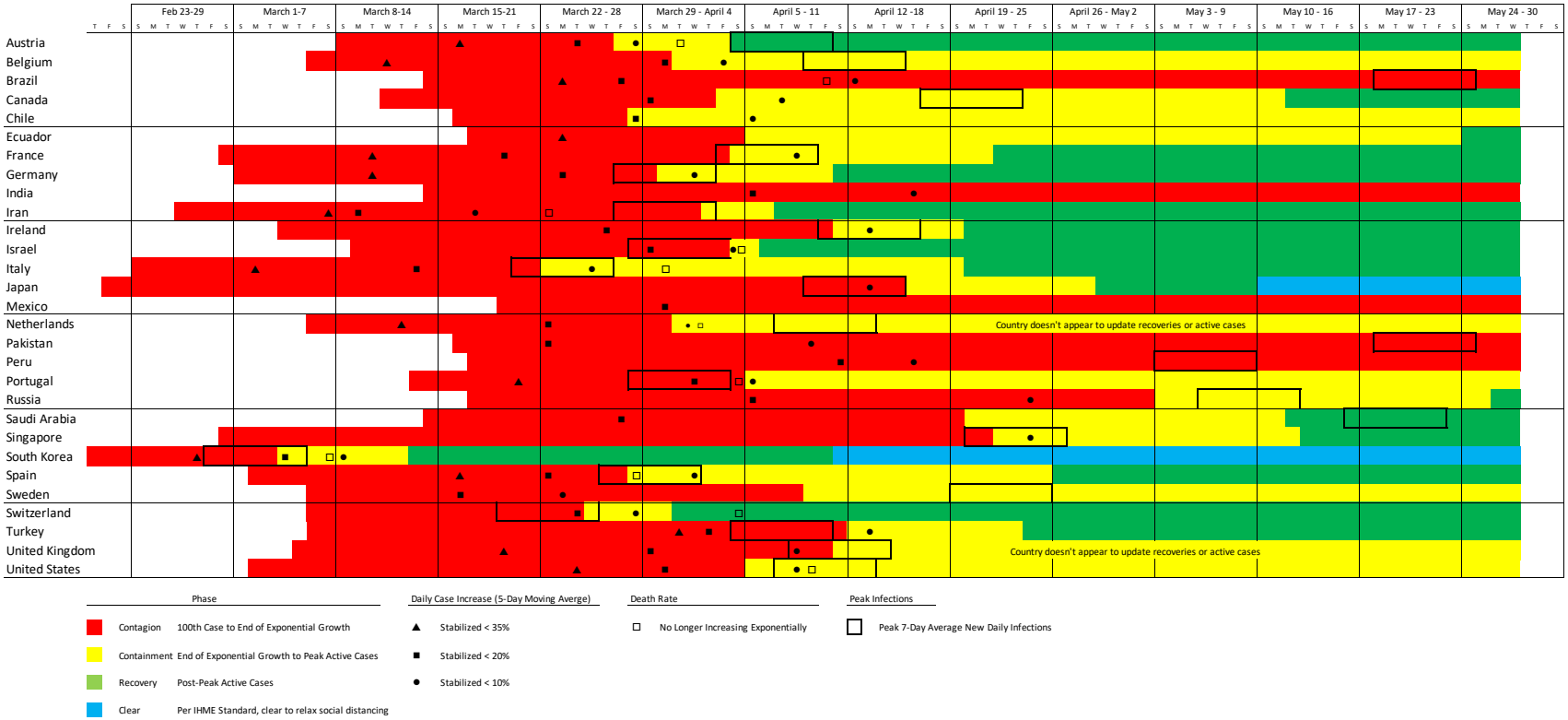
Country-by-Country

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.



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"Strategic Guidance in an Era of Unprecedented Change"

Country-By-Country
Listing of Countries By Total Cases

Countries making large upward movements are highlighted

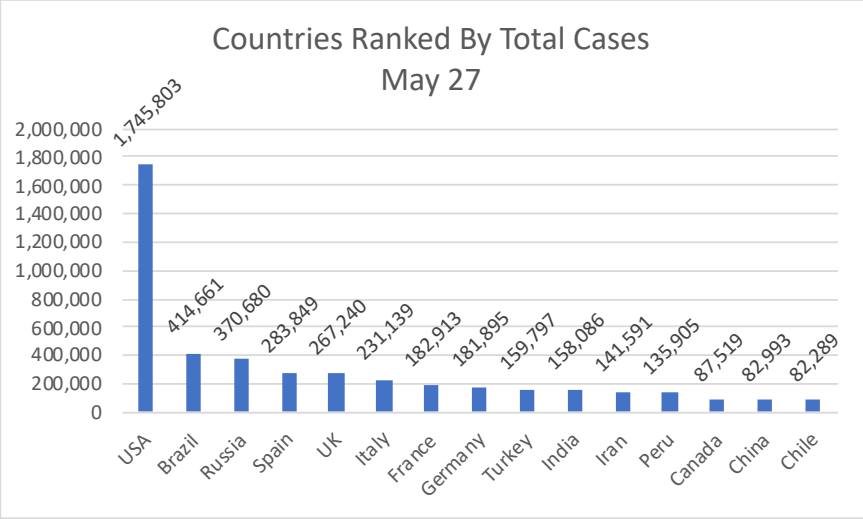
When we first expanded our tracking to 30 countries in mid-April, they represented the most countries with cases in the world. Since that time, Austria, Israel, Japan and South Korea have dropped in the rankings. These countries have moved up:

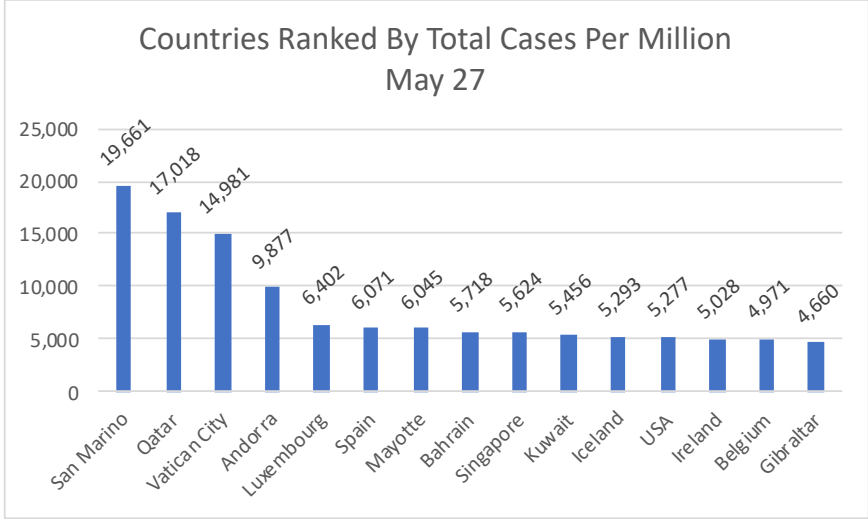
- **Afghanistan**
- **Argentina**
- **Bangladesh**
- **Belarus**
- **Columbia**
- **Denmark**
- **Dominican Republic**
- **Indonesia**
- **Kuwait**
- **Poland**
- **Qatar**
- **Panama**
- **Philippines**
- **Romania**
- **Serbia**
- **South Africa**
- **UAE**
- **Ukraine**

The original 30 still account for 88% of all cases worldwide.

		Total Cases						
Rank	Country	27-May	Rank	Country	6-May	Rank	Country	27-Apr
1	USA	1,745,803	1	USA	1,263,092	1	USA	1,010,356
2	Brazil	414,661	2	Spain	253,682	2	Spain	229,422
3	Russia	370,680	3	Italy	214,457	3	Italy	199,414
4	Spain	283,849	4	UK	201,101	4	France	165,842
5	UK	267,240	5	France	174,191	5	Germany	158,758
6	Italy	231,139	6	Germany	168,162	6	UK	157,149
7	France	182,913	7	Russia	165,929	7	Turkey	112,261
8	Germany	181,895	8	Turkey	131,744	8	Iran	91,472
9	Turkey	159,797	9	Brazil	126,611	9	Russia	87,147
10	India	158,086	10	Iran	101,650	10	China	82,830
11	Iran	141,591	11	China	82,883	11	Brazil	66,501
12	Peru	135,905	12	Canada	63,496	12	Canada	48,500
13	Canada	87,519	13	Peru	54,817	13	Belgium	46,687
14	China	82,993	14	India	52,987	14	Netherlands	38,245
15	Chile	82,289	15	Belgium	50,781	15	India	29,451
16	Saudi Arabia	78,541	16	Netherlands	41,319	16	Switzerland	29,164
17	Mexico	74,560	17	Saudi Arabia	31,938	17	Peru	28,669
18	Pakistan	59,151	18	Switzerland	30,060	18	Portugal	24,070
19	Belgium	57,592	19	Ecuador	29,420	19	Ecuador	23,240
21	Netherlands	45,768	20	Portugal	26,182	20	Ireland	19,648
24	Ecuador	38,103	21	Mexico	26,025	21	Sweden	18,926
25	Sweden	35,088	22	Sweden	23,918	22	Saudi Arabia	18,811
26	Singapore	32,876	23	Pakistan	23,214	23	Israel	15,555
28	Portugal	31,292	24	Chile	23,048	24	Austria	15,274
29	Switzerland	30,776	25	Ireland	22,248	25	Mexico	14,677
31	Ireland	24,803	26	Singapore	20,198	26	Singapore	14,423
39	Israel	16,793	29	Israel	16,310	27	Pakistan	13,915
40	Japan	16,651	31	Austria	15,684	28	Chile	13,813
41	Austria	16,591	32	Japan	15,253	29	Japan	13,614
49	S. Korea	11,265	38	S. Korea	10,806	35	South Korea	10,738
	Others	688,393		Others	356,176		Others	263,943
	World	5,784,603			3,817,382		World	3,062,515
	30 countries' share	88.1%			90.7%			91.4%

Cases & Cases Per Capita





Country-by-Country

Deaths Per Cases & Per Capita

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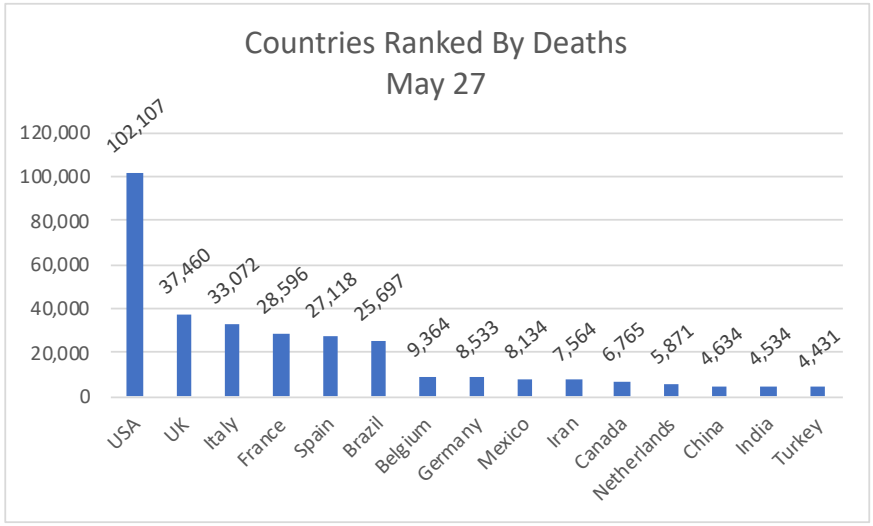
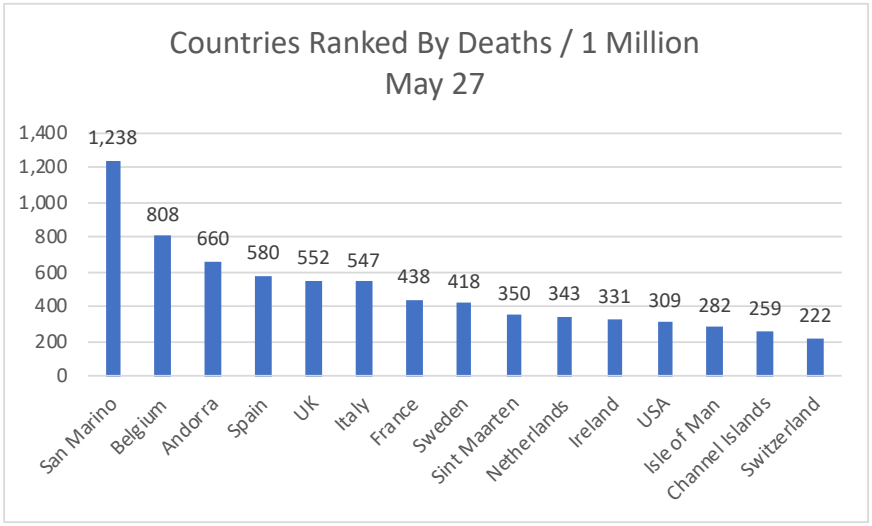




UNITED STATES & STATE-BY-STATE INFORMATION

Health Industry Advisor, llc

State-by-State

Comparative Statistics

"Strategic Guidance in an Era of Unprecedented Change"

As of May 27

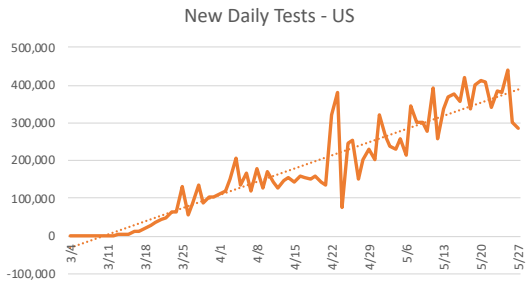
State	Total Cases	Rank	Cases per 1M Population	Rank2	Deaths	Rank3	Death Rate	Rank4	Deaths per 1 Million Population	Rank5	5-day Moving Average Case Growth Rate	Rank6	Tests per 1M Population Past 7 days	Rank7	New Daily Cases Per 1M Population (5-Day M.A.)	Rank8
Alabama	16,032	(25)	3,269.7	(23)	583	(25)	3.6%	(34)	118.9	(25)	3.2%	(2)	913	(31)	95.8	(13)
Alaska	412	(51)	563.2	(49)	10	(51)	2.4%	(43)	13.7	(50)	0.4%	(48)	1,820	(6)	2.0	(49)
Arizona	17,262	(23)	2,371.6	(36)	831	(21)	4.8%	(19)	114.2	(27)	2.0%	(12)	605	(44)	46.4	(30)
Arkansas	6,277	(38)	2,080.0	(38)	120	(40)	1.9%	(46)	39.8	(45)	2.3%	(7)	915	(30)	60.3	(25)
California	101,555	(4)	2,570.2	(33)	3,955	(7)	3.9%	(30)	100.1	(29)	2.3%	(6)	1,290	(18)	56.7	(27)
Colorado	24,767	(18)	4,300.8	(19)	1,392	(16)	5.6%	(10)	241.7	(14)	1.1%	(35)	684	(40)	48.9	(29)
Connecticut	41,288	(12)	11,580.6	(6)	3,803	(8)	9.2%	(2)	1,066.7	(3)	0.8%	(43)	1,388	(13)	91.0	(15)
Delaware	9,096	(32)	9,341.1	(7)	344	(33)	3.8%	(32)	353.3	(12)	1.3%	(30)	1,468	(10)	132.3	(6)
District Of Columbia	8,406	(35)	11,910.8	(5)	445	(29)	5.3%	(13)	630.5	(5)	1.3%	(31)	461	(48)	173.1	(1)
Florida	52,634	(9)	2,450.6	(34)	2,320	(11)	4.4%	(24)	108.0	(28)	1.3%	(33)	1,079	(27)	34.3	(38)
Georgia	44,638	(11)	4,204.2	(20)	1,933	(14)	4.3%	(27)	182.1	(16)	1.5%	(26)	509	(45)	65.1	(20)
Hawaii	644	(49)	454.8	(50)	17	(49)	2.6%	(42)	12.0	(51)	0.1%	(51)	494	(47)	0.1	(51)
Idaho	2,731	(43)	1,523.9	(45)	82	(42)	3.0%	(39)	45.8	(43)	1.0%	(37)	355	(50)	17.9	(46)
Illinois	114,306	(3)	9,020.5	(8)	5,083	(6)	4.4%	(23)	401.1	(10)	1.6%	(20)	1,818	(7)	156.6	(2)
Indiana	32,437	(16)	4,818.2	(16)	2,030	(13)	6.3%	(8)	301.5	(13)	1.3%	(29)	840	(34)	67.1	(19)
Iowa	18,361	(22)	5,819.5	(12)	496	(27)	2.7%	(41)	157.2	(20)	2.2%	(11)	1,303	(17)	124.1	(7)
Kansas	9,412	(31)	3,230.7	(24)	214	(37)	2.3%	(45)	73.5	(38)	0.8%	(41)	651	(42)	44.5	(31)
Kentucky	9,077	(33)	2,031.7	(41)	400	(31)	4.4%	(25)	89.5	(32)	1.5%	(25)	899	(32)	29.1	(42)
Louisiana	38,504	(14)	8,282.6	(9)	2,726	(9)	7.1%	(6)	586.4	(7)	0.8%	(42)	1,895	(5)	98.0	(12)
Maine	2,137	(45)	1,589.8	(42)	81	(43)	3.8%	(31)	60.3	(40)	1.9%	(15)	887	(33)	33.8	(39)
Maryland	48,423	(10)	8,009.5	(10)	2,392	(10)	4.9%	(18)	395.7	(11)	1.7%	(18)	1,104	(26)	144.1	(3)
Massachusetts	94,220	(5)	13,557.8	(3)	6,547	(3)	6.9%	(7)	942.1	(4)	0.7%	(44)	1,141	(24)	107.9	(10)
Michigan	55,608	(8)	5,568.1	(14)	5,334	(4)	9.6%	(1)	534.1	(8)	0.6%	(45)	818	(35)	37.2	(36)
Minnesota	22,464	(19)	3,983.2	(21)	932	(19)	4.1%	(28)	165.3	(18)	3.4%	(1)	1,246	(19)	121.4	(9)
Mississippi	14,044	(27)	4,718.8	(17)	670	(23)	4.8%	(20)	225.1	(15)	2.2%	(10)	1,318	(16)	99.7	(11)
Missouri	12,813	(29)	2,087.7	(37)	705	(22)	5.5%	(12)	114.9	(26)	1.6%	(23)	82	(51)	30.3	(40)
Montana	481	(50)	450.0	(51)	17	(49)	3.5%	(35)	15.9	(49)	0.1%	(50)	791	(36)	0.4	(50)
Nebraska	12,976	(28)	6,708.0	(11)	163	(38)	1.3%	(49)	84.3	(34)	2.2%	(9)	1,350	(15)	136.9	(4)
Nevada	8,114	(36)	2,634.3	(32)	402	(30)	5.0%	(17)	130.5	(24)	1.9%	(16)	1,734	(8)	44.0	(33)
New Hampshire	4,286	(41)	3,152.1	(26)	223	(36)	5.2%	(14)	164.0	(19)	1.3%	(28)	1,402	(12)	43.9	(34)
New Jersey	157,818	(2)	17,767.9	(2)	11,341	(2)	7.2%	(5)	1,276.8	(2)	0.4%	(46)	2,074	(4)	92.0	(14)
New Mexico	7,252	(37)	3,458.6	(22)	329	(34)	4.5%	(22)	156.9	(21)	1.8%	(17)	2,616	(1)	63.7	(22)
New York	374,672	(1)	19,259.8	(1)	29,553	(1)	7.9%	(3)	1,519.2	(1)	0.4%	(49)	2,245	(3)	76.5	(17)
North Carolina	24,895	(17)	2,373.6	(35)	841	(20)	3.4%	(36)	80.2	(36)	2.4%	(5)	1,179	(22)	63.1	(23)
North Dakota	2,439	(44)	3,200.5	(25)	56	(45)	2.3%	(44)	73.5	(37)	1.0%	(36)	1,526	(9)	64.5	(21)
Ohio	33,497	(15)	2,865.7	(28)	2,053	(12)	6.1%	(9)	175.6	(17)	1.7%	(19)	736	(39)	49.6	(28)
Oklahoma	6,229	(39)	1,574.2	(43)	322	(35)	5.2%	(15)	81.4	(35)	1.3%	(32)	1,237	(20)	25.2	(44)
Oregon	4,038	(42)	957.4	(48)	148	(39)	3.7%	(33)	35.1	(46)	0.9%	(39)	503	(46)	8.0	(47)
Pennsylvania	73,652	(6)	5,753.2	(13)	5,322	(5)	7.2%	(4)	415.7	(9)	0.9%	(38)	778	(37)	61.4	(24)
Rhode Island	14,353	(26)	13,548.7	(4)	655	(24)	4.6%	(21)	618.3	(6)	0.9%	(40)	2,408	(2)	134.4	(5)
South Carolina	10,623	(30)	2,063.2	(39)	466	(28)	4.4%	(26)	90.5	(31)	2.0%	(13)	1,127	(25)	40.2	(35)
South Dakota	4,710	(40)	5,324.1	(15)	54	(47)	1.1%	(51)	61.0	(39)	1.6%	(22)	1,230	(21)	86.1	(16)
Tennessee	21,306	(21)	3,118.0	(27)	353	(32)	1.7%	(47)	51.7	(42)	1.9%	(14)	1,163	(23)	58.0	(26)
Texas	59,121	(7)	2,038.9	(40)	1,602	(15)	2.7%	(40)	55.2	(41)	1.6%	(21)	421	(49)	36.8	(37)
Utah	8,706	(34)	2,715.6	(31)	105	(41)	1.2%	(50)	32.8	(47)	1.6%	(24)	934	(29)	44.4	(32)
Vermont	971	(47)	1,556.1	(44)	54	(47)	5.6%	(11)	86.5	(33)	0.4%	(47)	1,360	(14)	6.2	(48)
Virginia	40,249	(13)	4,715.5	(18)	1,281	(17)	3.2%	(38)	150.1	(22)	2.9%	(3)	1,078	(28)	122.9	(8)
Washington	21,422	(20)	2,813.2	(30)	1,093	(18)	5.1%	(16)	143.5	(23)	1.2%	(34)	744	(38)	30.0	(41)
West Virginia	1,899	(46)	1,062.6	(47)	74	(44)	3.9%	(29)	41.4	(44)	2.2%	(8)	625	(43)	26.5	(43)
Wisconsin	16,462	(24)	2,827.3	(29)	539	(26)	3.3%	(37)	92.6	(30)	2.7%	(4)	1,456	(11)	74.8	(18)
Wyoming	860	(48)	1,485.9	(46)	14	(50)	1.6%	(48)	24.2	(48)	1.4%	(27)	657	(41)	18.0	(45)
United States	1,745,803		5,274.3		102,107		5.8%		308.5		1.2%		1,097		66.1	

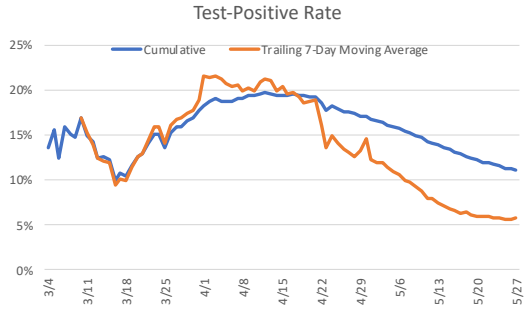
United States

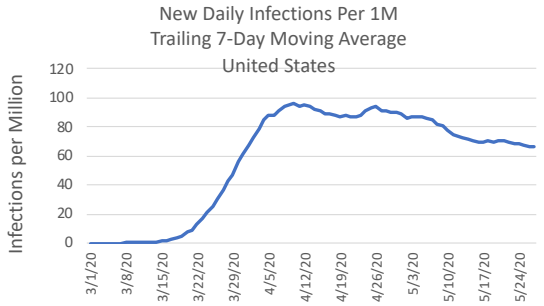
Overall Statistics

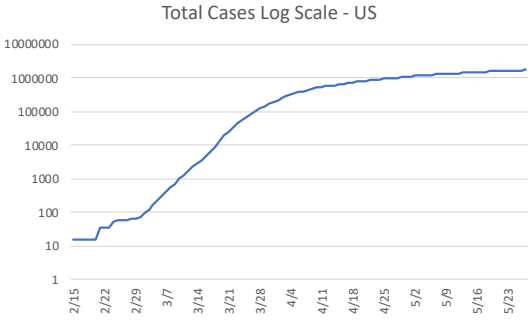
"Strategic Guidance in an Era of Unprecedented Change"

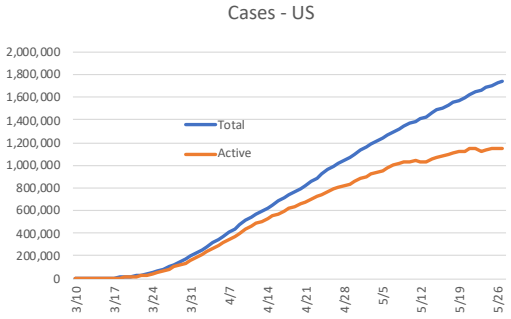
With significantly increased testing, the US is now meeting the WHO standard of <10% test-positives. This suggests that asymptomatic cases are being captured and that we have a better view of true infection rates.
Further, new daily infections continue to decline; the death rate seems to have stabilized.

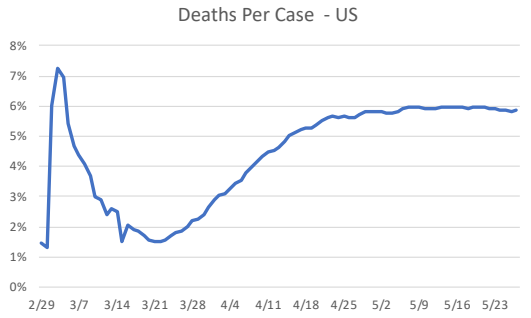












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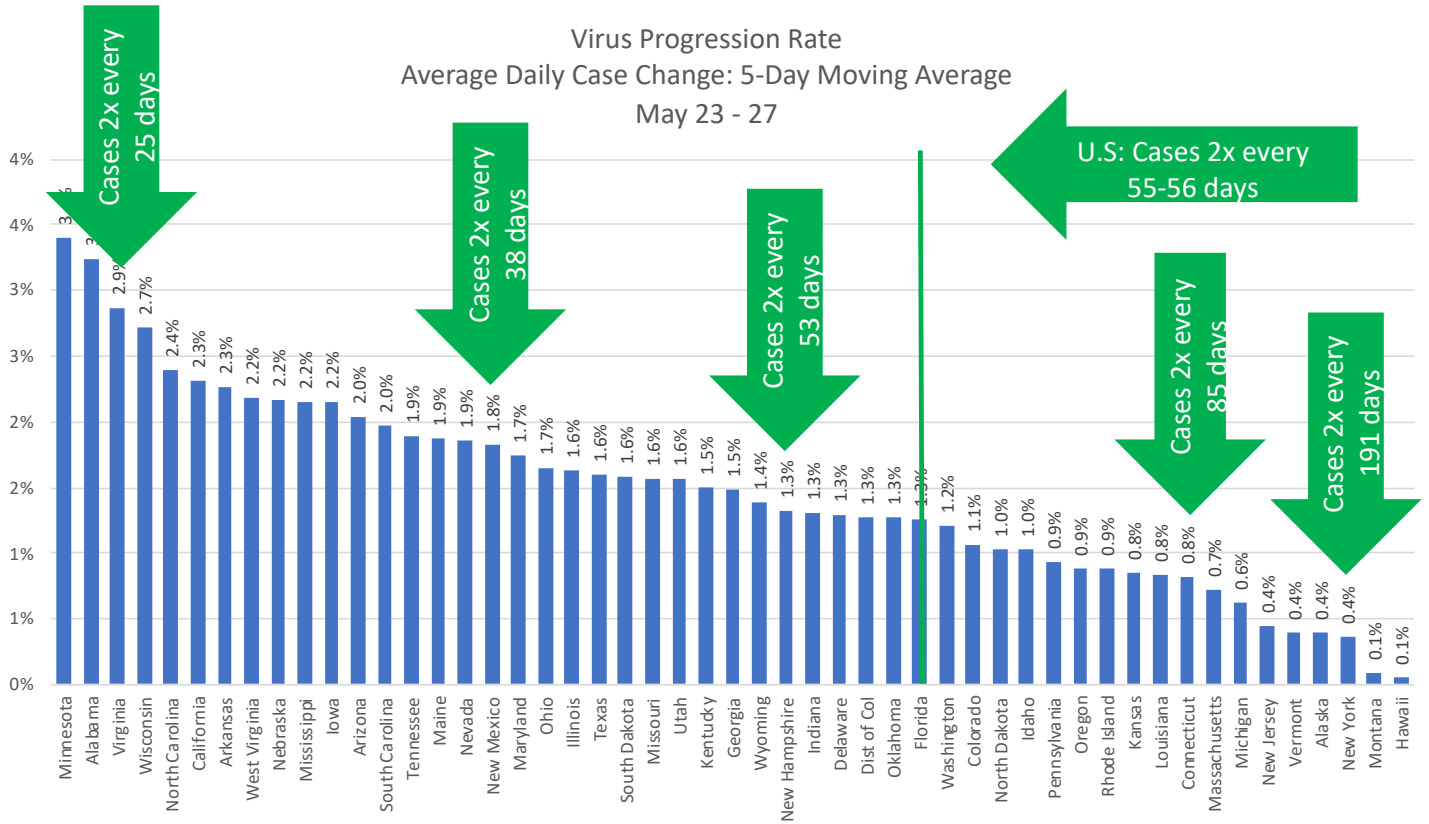
State-by-State

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 21 days to more than 3 years to double



State-by-State

New Daily Infections & Tests Per Capita

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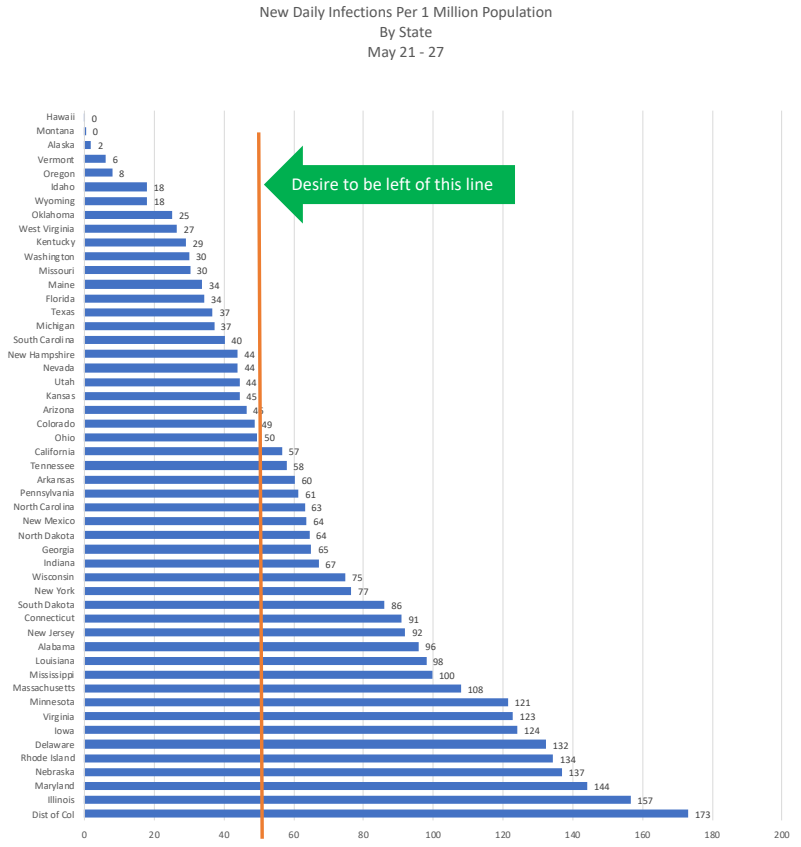

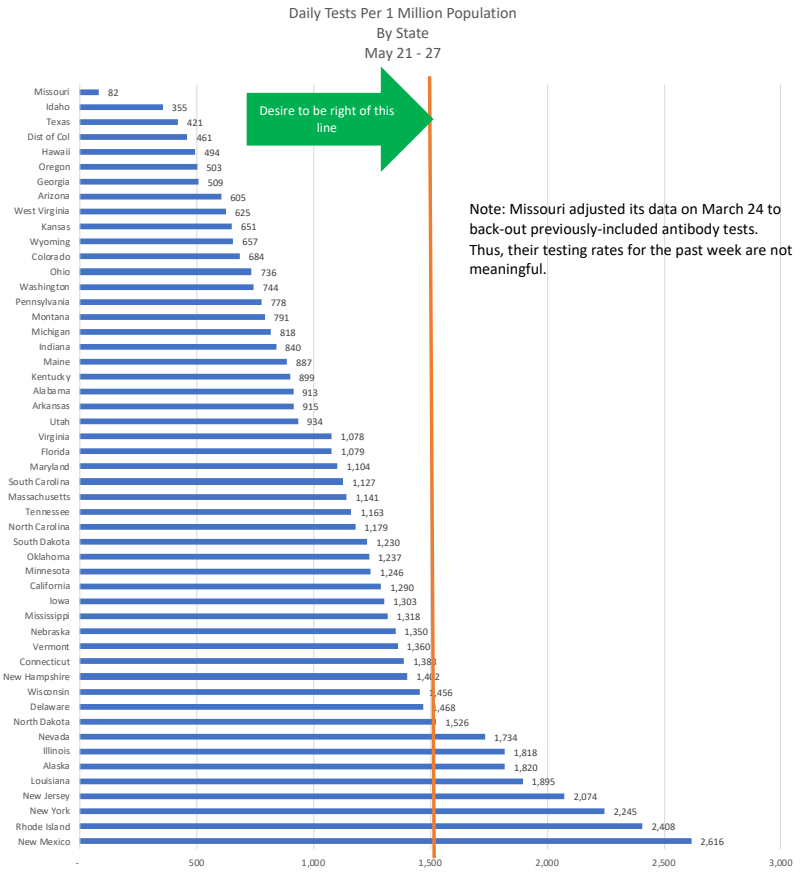

Note: Missouri adjusted its data on March 24 to back-out previously-included antibody tests. Thus, their testing rates for the past week are not meaningful.

State-by-State

Cases & Deaths Per Capita

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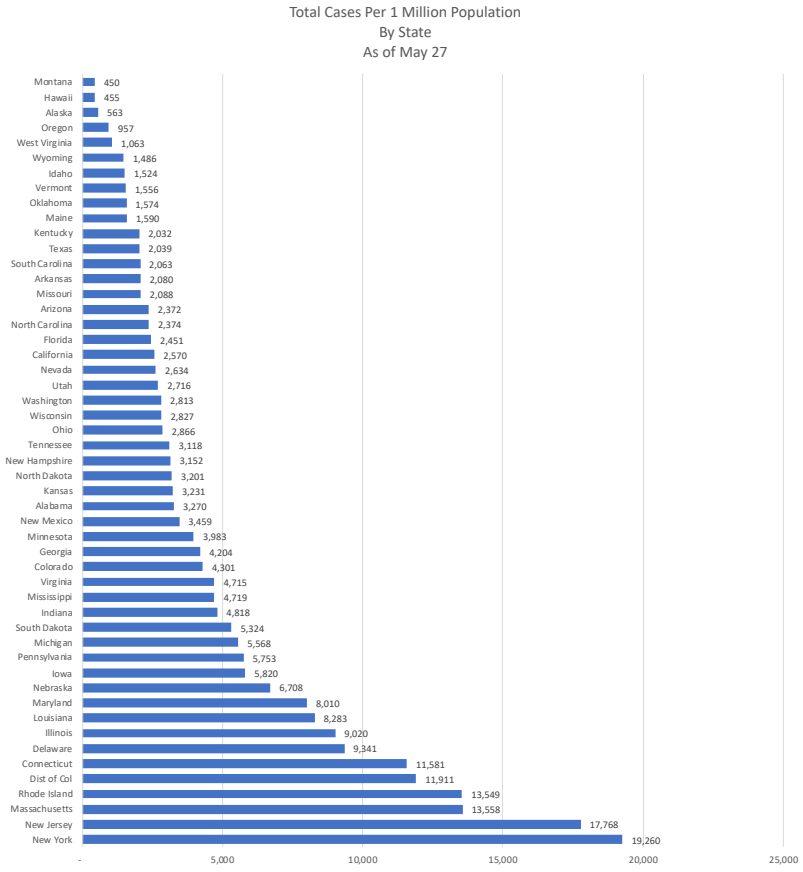

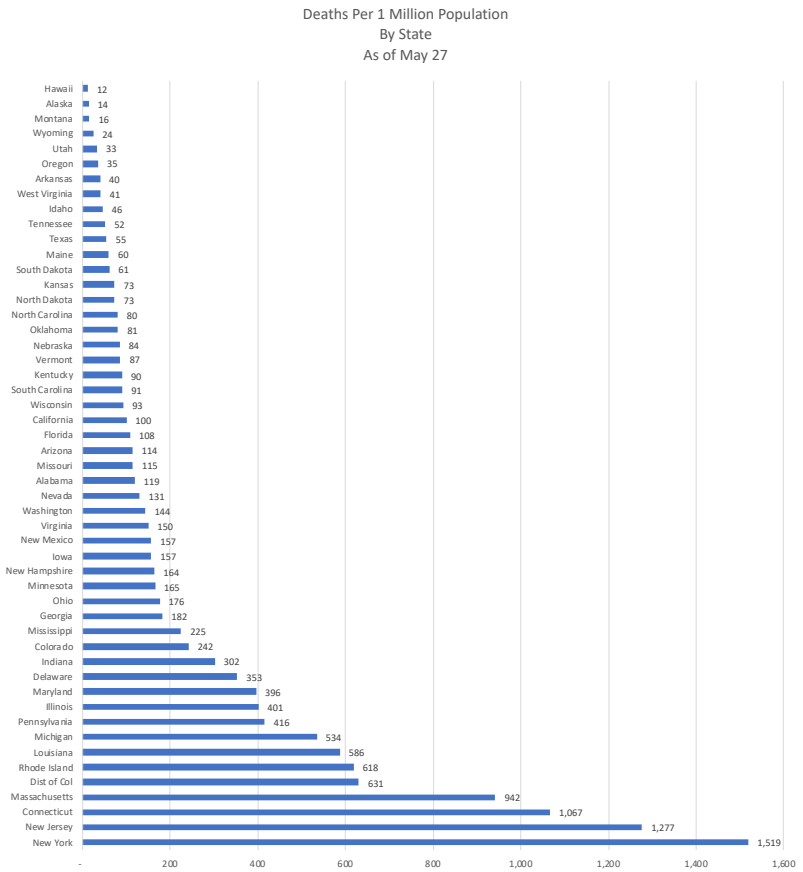

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State-by-State

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 4 states and the District of Columbia met this guideline for the past week.

VIRUS PROGRESSION: ROADMAP TO RECOVERY

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.

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State-by-State

Virus Progression – *1 of 2*

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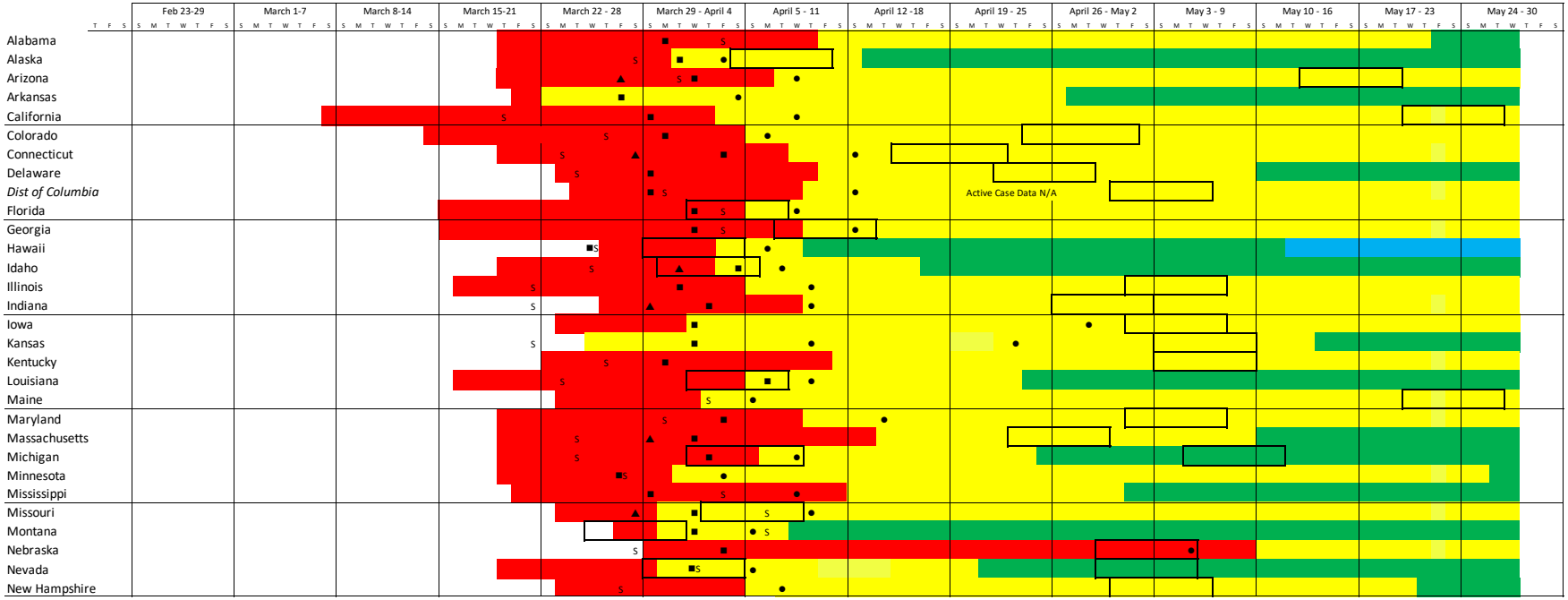
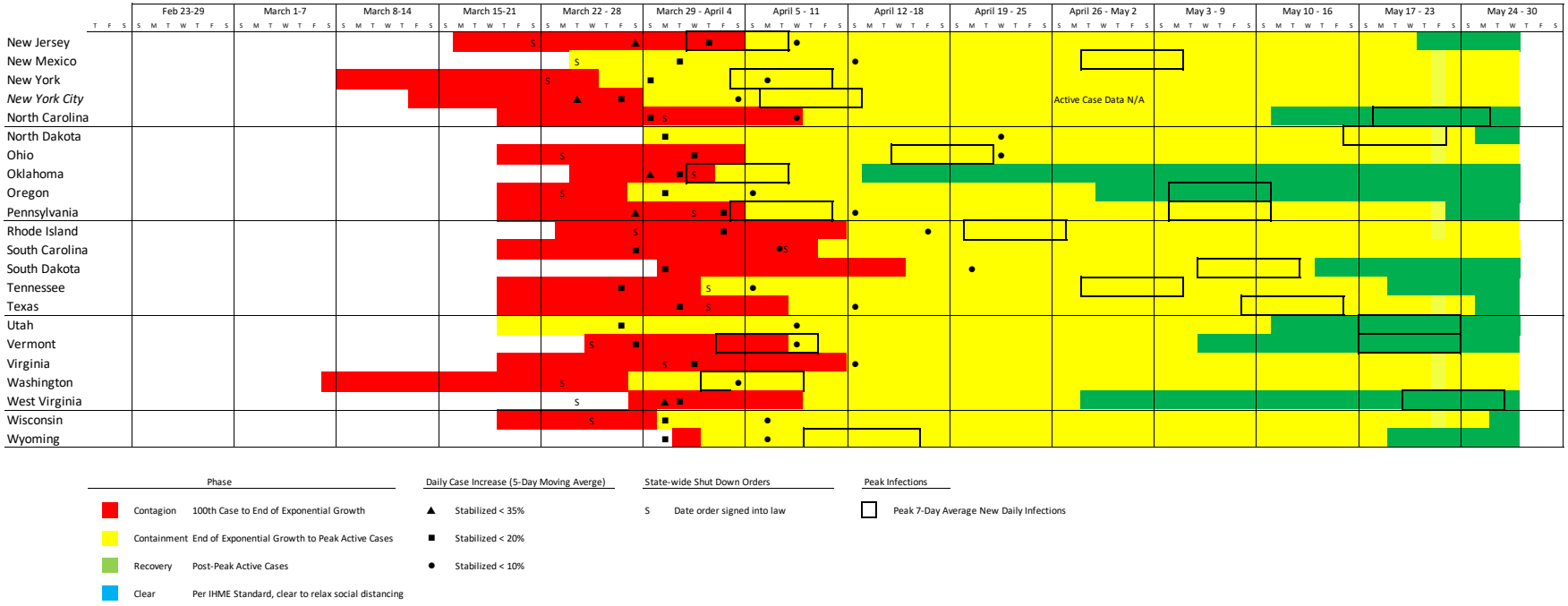


Legend on following page

State-by-State

Virus Progression – *2 of 2*

"Strategic Guidance in an Era of Unprecedented Change"



UNDER-REPORTED RECOVERIES? POSSIBLE LAG IN STATE REPORTING

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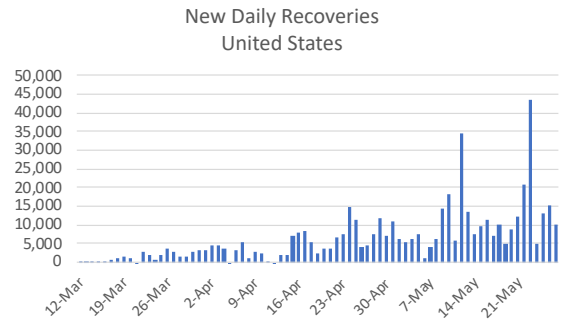
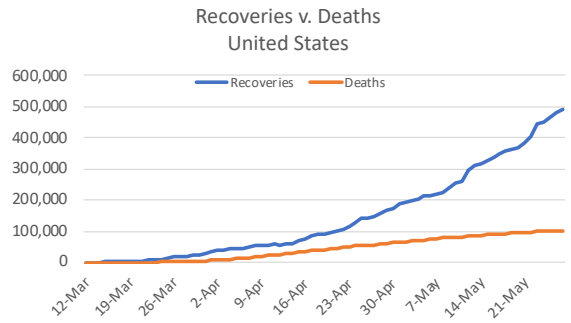
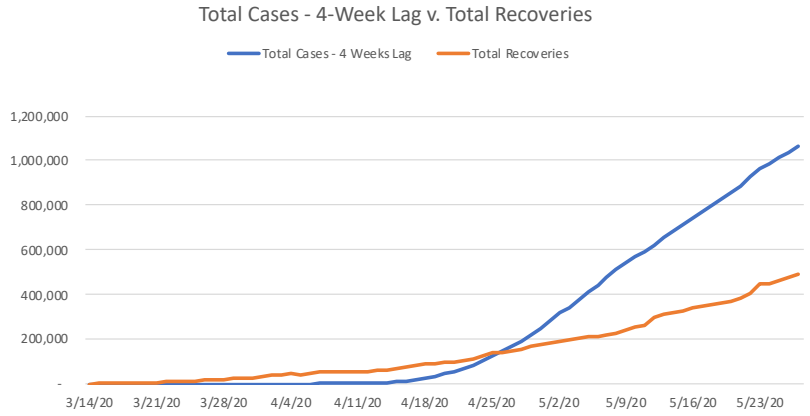
United States

Recoveries

"Strategic Guidance in an Era of Unprecedented Change"







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Recoveries

Reporting of Recoveries Seems to Be Lagging

"Strategic Guidance in an Era of Unprecedented Change"

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 ~360-470k

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

Which states seem to be lagging in reporting?

State	Recoveries	Expected Recoveries Low	Expected Recoveries High
Alabama	9,355	5,523	6,214
Alaska	364	284	320
Arizona	70	5,762	6,482
Arkansas	4,424	2,566	2,886
California	21,924	38,852	43,709
Colorado	1,722	11,806	13,282
Connecticut	6,622	21,414	24,090
Delaware	4,909	3,724	4,190
District Of Columbia	1,080	3,285	3,695
Florida	8,662	26,554	29,874
Georgia	697	20,521	23,086
Hawaii	600	490	552
Idaho	2,185	1,587	1,786
Illinois	3,615	40,284	45,320
Indiana	2,778	13,746	15,464
Iowa	10,116	5,474	6,159
Kansas	4,019	3,071	3,455
Kentucky	3,124	3,631	4,085
Louisiana	28,700	22,128	24,894
Maine	1,357	845	950
Maryland	3,401	16,679	18,764
Massachusetts	32,549	48,212	54,239
Michigan	33,168	32,319	36,359
Minnesota	16,314	3,715	4,180
Mississippi	9,401	5,255	5,912
Missouri	3,047	6,061	6,818
Montana	444	361	406
Nebraska	349	3,027	3,406
Nevada	5,852	3,918	4,408
New Hampshire	2,691	1,643	1,849
New Jersey	14,820	93,011	104,638
New Mexico	2,638	2,570	2,892
New York	65,206	244,926	275,542
North Carolina	14,954	8,145	9,163
North Dakota	1,762	826	930
Ohio	6,014	13,842	15,573
Oklahoma	5,135	2,778	3,126
Oregon	1,894	1,957	2,201
Pennsylvania	41,602	36,582	41,155
Rhode Island	1,084	6,598	7,422
South Carolina	6,043	4,705	5,293
South Dakota	3,619	1,898	2,136
Tennessee	13,916	8,293	9,329
Texas	37,940	22,053	24,809
Utah	5,346	3,596	4,046
Vermont	849	690	776
Virginia	5,367	11,969	13,465
Washington	5,984	11,256	12,663
West Virginia	1,207	887	998
Wisconsin	9,846	5,216	5,868
Wyoming	624	435	490
United States	490,130	851,355	957,775

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

U.S. COUNTY-BY-COUNTY INFORMATION

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"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

County-By-County

Daily Infection Rates By Rural/Metro Class

Large Central Metro Areas – Top 20 Ranked By Trailing 7-Day Moving Average

"Strategic Guidance in an Era of Unprecedented Change"

Large Central Metro Areas With Most New Daily Infections / Capita Last Week

As of May 26

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
44007	Providence	Rhode Island	1	10,607	17,394	350	656		342	561	3.2%
17031	Cook	Illinois	1	73,097	14,347	256	404		3,324	652	4.5%
24510	Baltimore city	Maryland	1	4,897	8,457	246	261	yes	234	404	4.8%
27123	Ramsey	Minnesota	1	2,437	4,556	222	222	yes	97	181	4.0%
51510	Alexandria city	Virginia	1	1,754	11,059	217	300		38	240	2.2%
55079	Milwaukee	Wisconsin	1	6,403	6,910	215	220	yes	276	298	4.3%
27053	Hennepin	Minnesota	1	7,168	5,795	205	208		539	436	7.5%
11001	District of Columbia	District of Columbia	1	8,225	12,294	192	284		440	658	5.3%
51760	Richmond city	Virginia	1	1,040	4,788	183	185	yes	20	92	1.9%
51013	Arlington	Virginia	1	1,897	8,080	150	228		101	430	5.3%
42101	Philadelphia	Pennsylvania	1	21,641	14,108	150	458		1,235	805	5.7%
9003	Hartford	Connecticut	1	9,841	11,318	142	287		1,187	1,365	12.1%
25025	Suffolk	Massachusetts	1	17,480	22,948	133	858		839	1,101	4.8%
47037	Davidson	Tennessee	1	4,821	7,230	125	197		58	87	1.2%
6037	Los Angeles	California	1	46,018	4,624	118	118	yes	2,116	213	4.6%
36029	Erie	New York	1	5,700	6,369	114	193		490	548	8.6%
18097	Marion	Indiana	1	9,287	9,926	112	268		571	610	6.1%
26081	Kent	Michigan	1	3,385	5,265	108	206		68	106	2.0%
34013	Essex	New Jersey	1	17,202	22,019	104	745		1,595	2,042	9.3%
34017	Hudson	New Jersey	1	18,051	27,056	102	852		1,137	1,704	6.3%

2013 Rural/Urban classification from Center for Disease Control, "NCHS Urban-Rural Classification Scheme for Counties"

County-By-County

Daily Infection Rates By Rural/Metro Class

Large Fringe Metro Areas – Top 20 Ranked By Trailing 7-Day Moving Average

"Strategic Guidance in an Era of Unprecedented Change"

Large Fringe Metro Areas With Most New Daily Infections / Capita Last Week

As of May 26

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
51683	Manassas city	Virginia	2	849	20,547	954	954	yes	9	218	1.1%
51685	Manassas Park city	Virginia	2	261	15,151	622	622	yes	5	290	1.9%
51183	Sussex	Virginia	2	114	13,165	610	1,006		1	115	0.9%
51047	Culpeper	Virginia	2	614	12,226	529	683	yes	5	100	0.8%
17089	Kane	Illinois	2	5,846	11,071	335	405		152	288	2.6%
24033	Prince George's	Maryland	2	14,240	16,062	334	435	yes	497	561	3.5%
51153	Prince William	Virginia	2	4,702	10,144	326	326	yes	94	203	2.0%
1127	Walker	Alabama	2	239	3,812	283	283	yes	1	16	0.4%
34033	Salem	New Jersey	2	566	9,213	240	328		29	472	5.1%
47147	Robertson	Tennessee	2	389	5,551	236	236	yes	1	14	0.3%
51107	Loudoun	Virginia	2	2,047	5,060	233	233	yes	52	129	2.5%
51059	Fairfax	Virginia	2	9,482	8,331	228	239		331	291	3.5%
17097	Lake	Illinois	2	7,723	11,318	222	277		250	366	3.2%
51630	Fredericksburg city	Virginia	2	123	4,645	189	189	yes	-	-	0.0%
24031	Montgomery	Maryland	2	10,147	9,727	183	250		562	539	5.5%
17043	DuPage	Illinois	2	7,207	7,875	177	208		339	370	4.7%
10003	New Castle	Delaware	2	3,436	6,341	175	184	yes	149	275	4.3%
25009	Essex	Massachusetts	2	13,575	17,565	170	624		863	1,117	6.4%
17093	Kendall	Illinois	2	722	5,663	170	192		22	173	3.0%
25005	Bristol	Massachusetts	2	6,681	12,172	170	469		375	683	5.6%

2013 Rural/Urban classification from Center for Disease Control, "NCHS Urban-Rural Classification Scheme for Counties"

County-By-County

Daily Infection Rates By Rural/Metro Class

Medium Metro Areas – Top 20 Ranked By Trailing 7-Day Moving Average

"Strategic Guidance in an Era of Unprecedented Change"

Medium Metro Areas With Most New Daily Infections / Capita Last Week

As of May 26

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
1085	Lowndes	Alabama	3	193	19,572	971	971	yes	10	1,014	5.2%
28029	Copiah	Mississippi	3	284	10,214	396	411	yes	4	144	1.4%
1101	Montgomery	Alabama	3	1,274	5,892	315	315	yes	33	153	2.6%
22001	Acadia	Louisiana	3	299	4,892	311	311	yes	17	278	5.7%
35057	Torrance	New Mexico	3	22	1,474	268	268	yes	1	67	4.5%
22017	Caddo	Louisiana	3	2,343	9,890	262	389		174	734	7.4%
17007	Boone	Illinois	3	397	7,475	250	288		16	301	4.0%
34021	Mercer	New Jersey	3	6,491	18,538	215	549		450	1,285	6.9%
22125	West Feliciana	Louisiana	3	200	19,745	212	832		10	987	5.0%
19153	Polk	Iowa	3	3,795	7,939	211	319		109	228	2.9%
17201	Winnebago	Illinois	3	1,953	6,991	207	320		52	186	2.7%
31055	Douglas	Nebraska	3	3,200	5,777	199	240		29	52	0.9%
28163	Yazoo	Mississippi	3	219	9,657	183	277		2	88	0.9%
13053	Chattahoochee	Georgia	3	25	3,064	175	175	yes	-	-	0.0%
25027	Worcester	Massachusetts	3	10,505	13,073	173	422		692	861	6.6%
45039	Fairfield	South Carolina	3	160	7,259	169	363		9	408	5.6%
1001	Autauga	Alabama	3	168	3,050	161	161	yes	3	54	1.8%
1051	Elmore	Alabama	3	270	3,519	158	158	yes	7	91	2.6%
28089	Madison	Mississippi	3	653	6,279	157	265		21	202	3.2%
37023	Burke	North Carolina	3	296	3,387	147	160	yes	14	160	4.7%

2013 Rural/Urban classification from Center for Disease Control, "NCHS Urban-Rural Classification Scheme for Counties"

County-By-County

Daily Infection Rates By Rural/Metro Class

Small Metro Areas – Top 20 Ranked By Trailing 7-Day Moving Average

"Strategic Guidance in an Era of Unprecedented Change"

Small Metro Areas With Most New Daily Infections / Capita Last Week

As of May 26

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
13101	Echols	Georgia	4	62	15,586	2,693	2,693	yes	-	-	0.0%
20085	Jackson	Kansas	4	92	7,027	666	742		-	-	0.0%
31043	Dakota	Nebraska	4	1,622	82,093	600	5,011		20	1,012	1.2%
19193	Woodbury	Iowa	4	2,635	26,368	432	1,084		24	240	0.9%
6025	Imperial	California	4	1,369	7,914	386	410	yes	22	127	1.6%
1065	Hale	Alabama	4	132	9,114	385	434	yes	4	276	3.0%
22111	Union	Louisiana	4	291	13,344	328	557		16	734	5.5%
53077	Yakima	Washington	4	3,066	12,380	303	382		87	351	2.8%
51660	Harrisonburg city	Virginia	4	727	15,684	293	700		21	453	2.9%
6031	Kings	California	4	688	5,084	287	291	yes	2	15	0.3%
38017	Cass	North Dakota	4	1,564	8,877	285	332		43	244	2.7%
51840	Winchester city	Virginia	4	145	5,381	270	345	yes	1	37	0.7%
34011	Cumberland	New Jersey	4	1,991	14,121	269	448		63	447	3.2%
51029	Buckingham	Virginia	4	443	29,941	251	1,699		3	203	0.7%
55101	Racine	Wisconsin	4	1,394	7,277	249	281	yes	25	131	1.8%
13273	Terrell	Georgia	4	211	25,361	240	962		26	3,125	12.3%
18039	Elkhart	Indiana	4	1,013	5,033	231	231	yes	28	139	2.8%
35045	San Juan	New Mexico	4	1,581	12,827	228	416		110	892	7.0%
46127	Union	South Dakota	4	79	5,087	221	294		-	-	0.0%
1067	Henry	Alabama	4	64	3,774	211	211	yes	2	118	3.1%

2013 Rural/Urban classification from Center for Disease Control, "NCHS Urban-Rural Classification Scheme for Counties"

County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

- Among Large Central Metro Areas, only 7 are still experiencing increasing new daily infection rates (in descending order):
  - Baltimore city, MD
  - Ramsey, MN
  - Milwaukee, WI
  - City of Richmond, VA
  - Los Angeles, CA
  - Mecklenburg, NC
  - Orange, CA
- On the following page, we present graphs depicting the trend in new daily infection rates for the first six of these areas.

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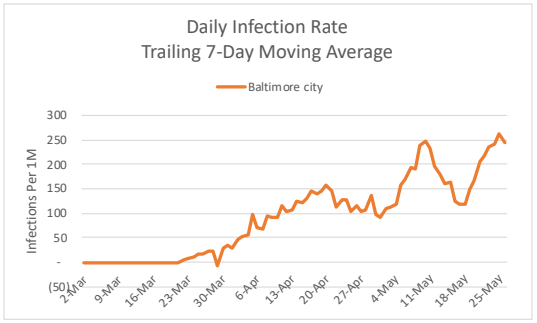
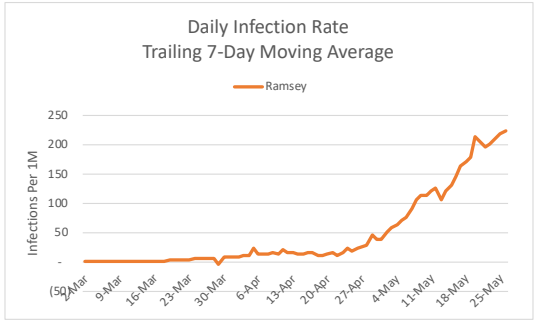
County-By-County

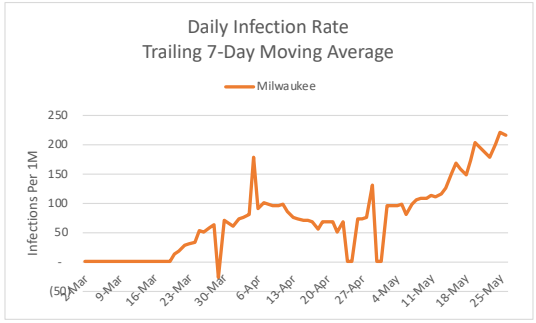
Counties/Municipalities Still Experiencing Increasing New Infection Rates

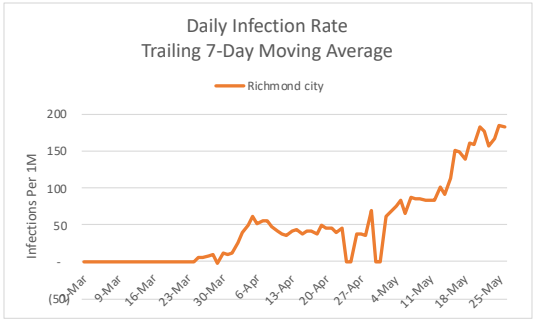
"Strategic Guidance in an Era of Unprecedented Change"

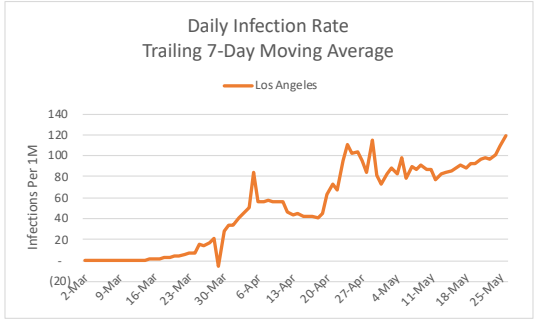
Large Central Metro Areas

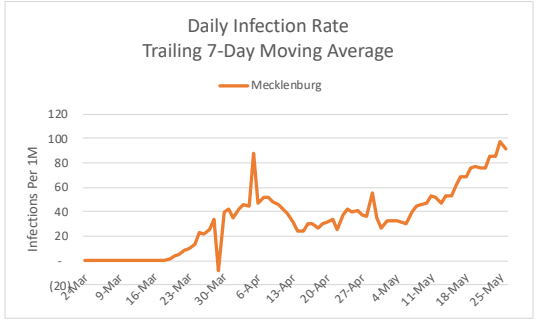












County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

- Among Large Fringe Metro Areas, 51 counties and independent municipalities are still experiencing increasing new daily infection rates
- On the following page, we present graphs depicting the trend in new daily infection rates for the 6 of these 51 areas with the highest new daily infection rates over the past week:
  - Manassas City, VA
  - Manassas Park City, VA
  - Culpeper, VA
  - Prince George's, MD
  - Prince William, VA
  - Walker, AL

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County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

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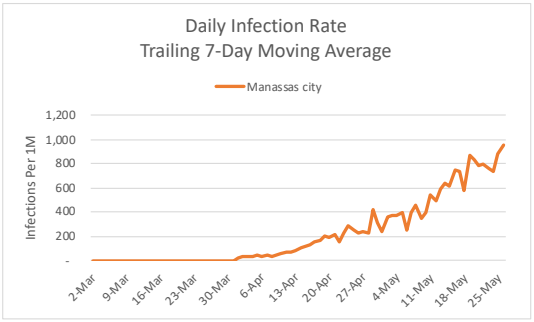
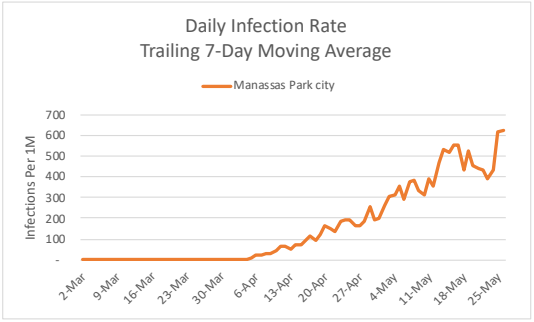
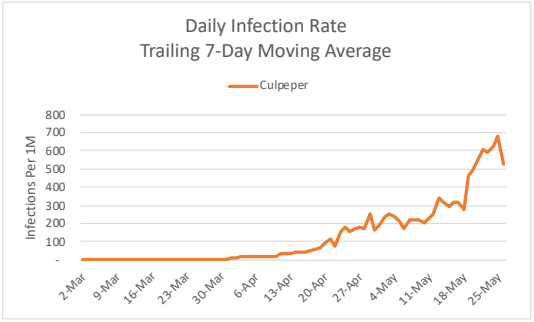
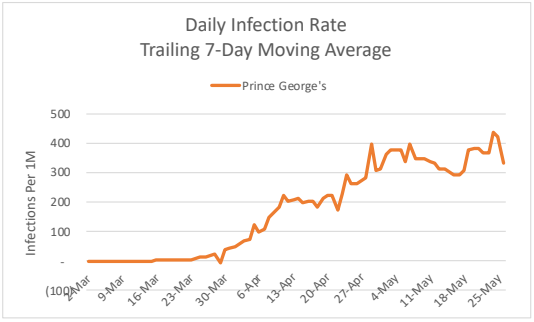
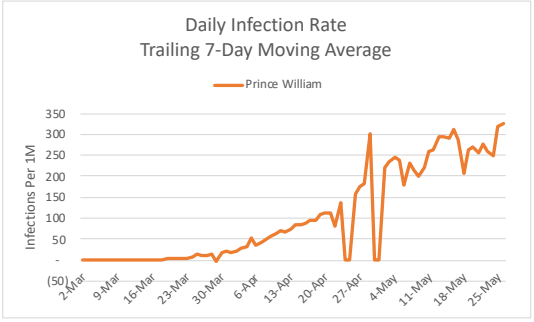
Large Fringe Metro Areas Ranked By Recent New Infection Rate

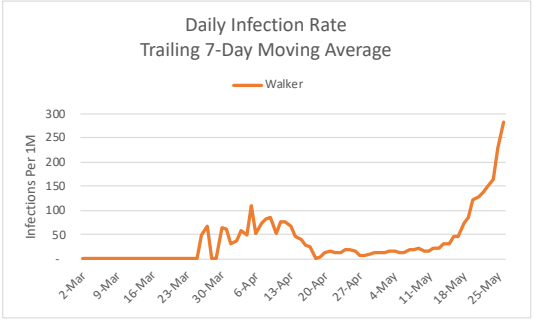












County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

- Among Medium Metro Areas, 56 counties and independent municipalities are still experiencing increasing new daily infection rates
- On the following page, we present graphs depicting the trend in new daily infection rates for the 6 of these 56 areas with the highest new daily infection rates for the past week:
  - Lowndes, AL
  - Copiah, MS
  - Montgomery, AL
  - Acadia, LA
  - Torrance, NM

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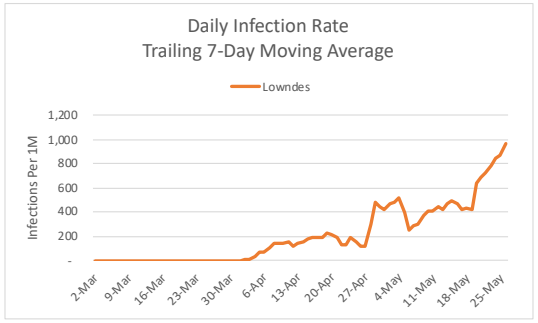
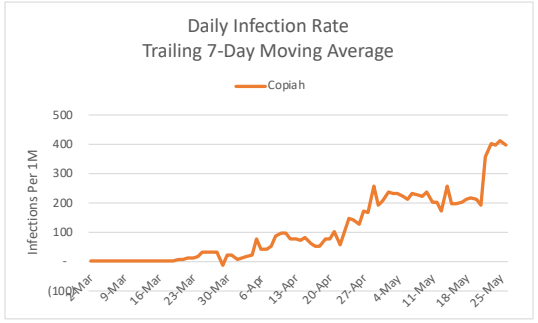
County-By-County

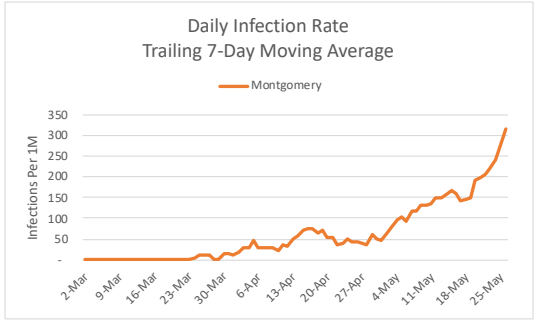
Counties/Municipalities Still Experiencing Increasing New Infection Rates

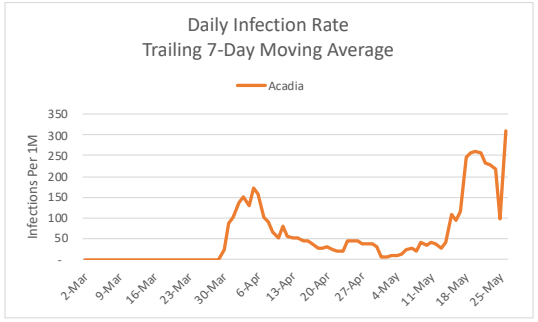
"Strategic Guidance in an Era of Unprecedented Change"

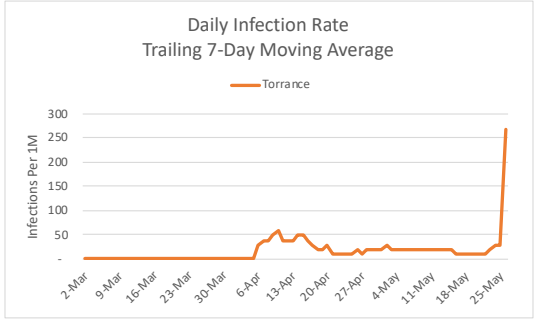
Medium Metro Areas
Ranked By Recent New Infection Rate

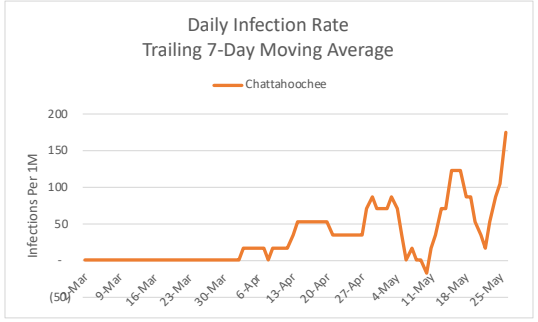












County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

- Among Small Metro Areas, 52 counties and independent municipalities are still experiencing increasing new daily infection rates
- On the following page, we present graphs depicting the trend in new daily infection rates for the 6 of these 52 areas with the highest rate of new infections over the past week:
  - Echols, GA
  - Imperial, CA
  - Hale, AL
  - Kings, CA
  - Winchester city, VA
  - Racine, WI

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County-By-County

Counties/Municipalities Still Experiencing Increasing New Infection Rates

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Small Metro Areas
Ranked By Recent New Infection Rate