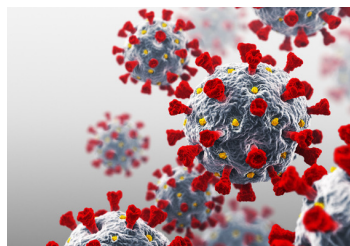


Covid-19 "Vital Signs"

Issue # 326

April 30, 2021



Vaccination Status By Age

Seniors are participating in the process at strong levels. Full vaccination approaching 70%. Nearly half of younger adults have received at least one shot.

Vaccination Status By Age

As of April 28

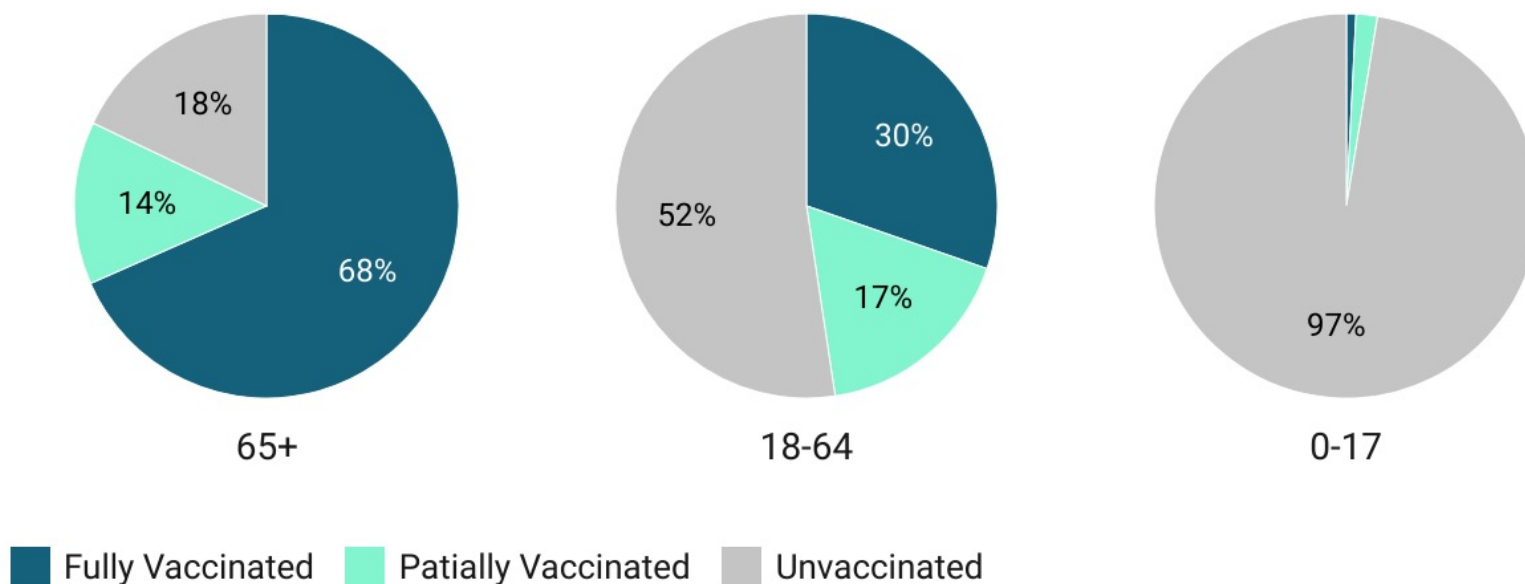
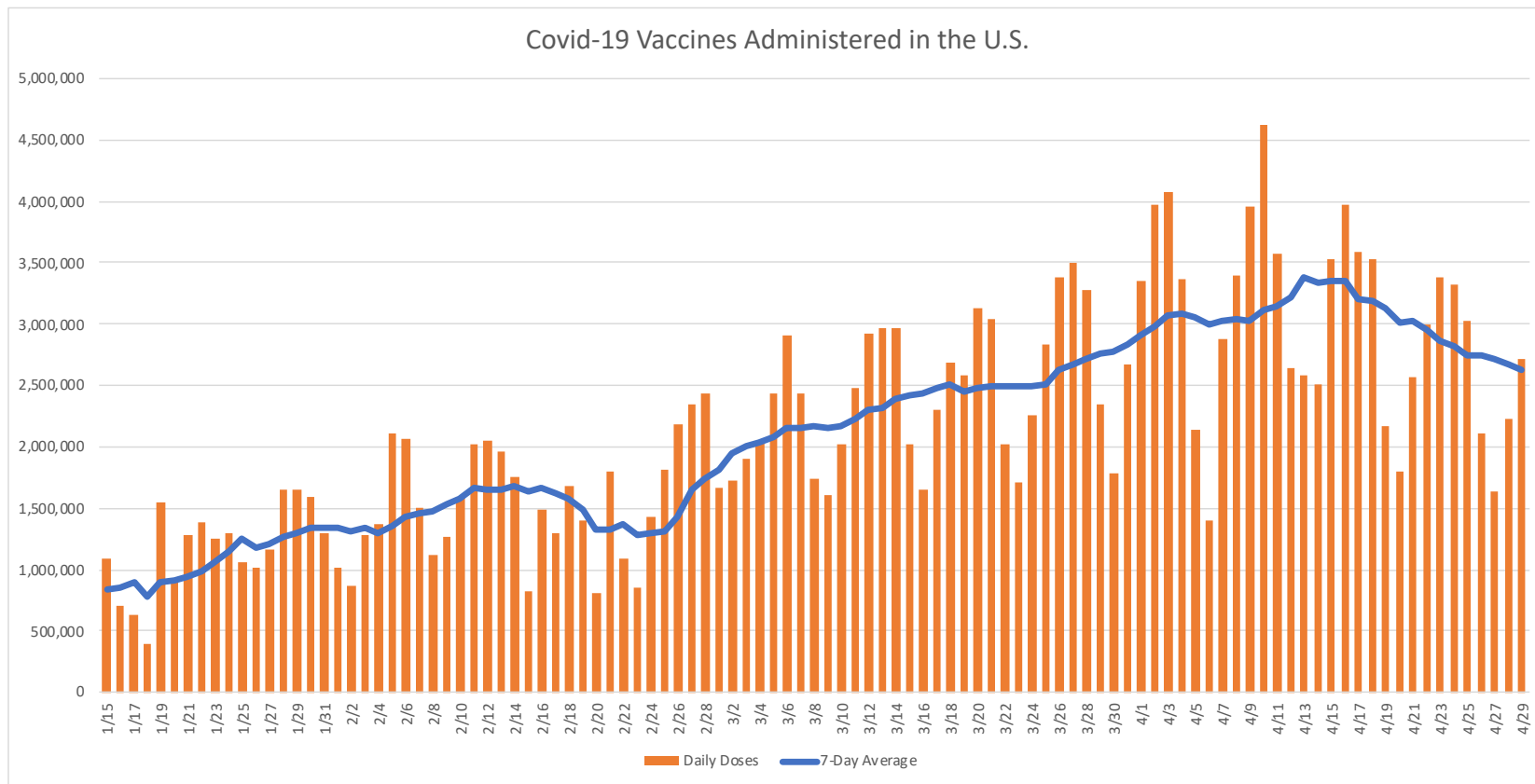


Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

Pace of Vaccinations

Vaccinations continue to decline, despite resumption of the JNJ/Janssen vaccine.



Covid-19 “Vital Signs”

Vaccine Tracking

To date, the US has distributed 3058 million doses and administered 237 million. 98.5 million people are fully inoculated – 38.6% of the adult population. Another 40 million people have received the first of two required doses.

Vaccination Progress

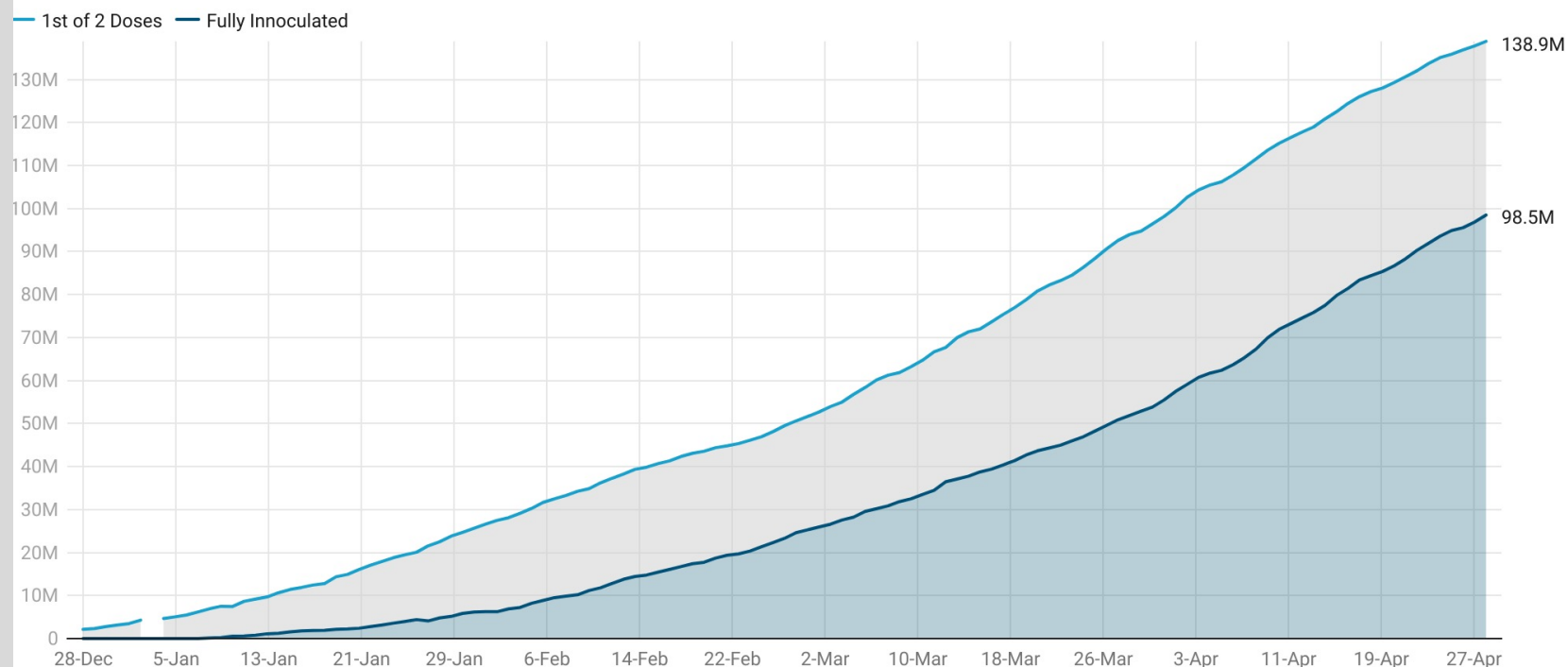


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

Vaccine data from: [Centers for Disease Control and Prevention](#) and [Bloomberg Vaccine Tracker](#)

Covid-19 "Vital Signs"

Vaccine Tracking - % of Adult Population Vaccinated

Connecticut, Hawaii, Maryland, Massachusetts, New Hampshire, New Jersey, New Mexico, and Vermont have administered at least one dose to more than six of every ten adult residents.

Vaccinations of Adult Population

% Receiving 1 or 2 doses, as of April 28

■ % 2 Doses ■ % 1 dose

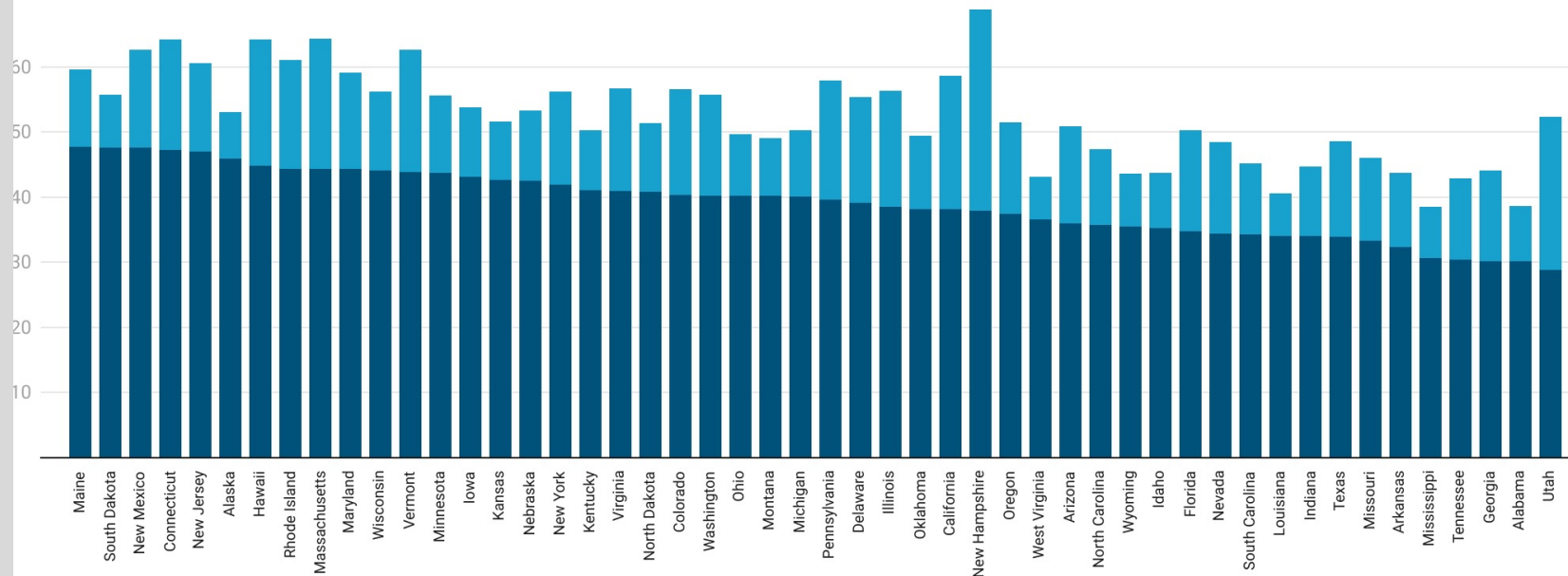


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

Estimated Immunity By State

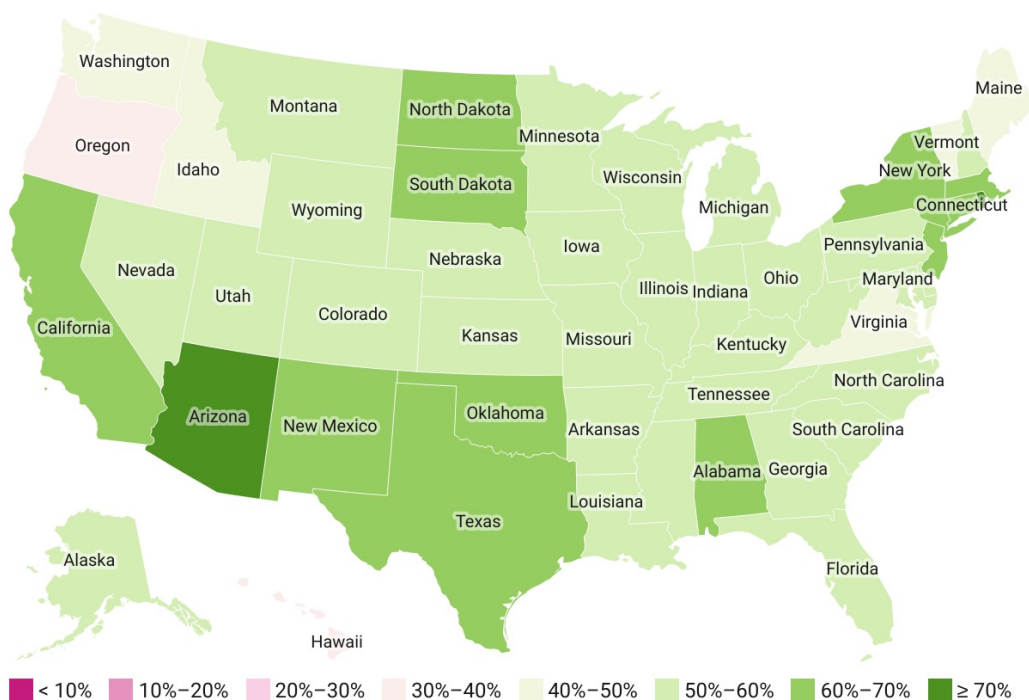
Estimated immunity is highest in Alabama, Arizona, California, Connecticut, New Jersey, New Mexico, New York, North Dakota, Oklahoma, South Dakota, and Texas.

- Public health experts have suggested that 60-80% of the population would need immunity, for herd immunity to be reached
- Immunity could result from an infection or via vaccination
- It is not established how long immunity, from either infection or vaccination, will last
- For purposes of this illustration, we use both reported vaccination rates and the Yale/Harvard* mean estimates of true infections

* <https://covidestim.org>

Estimated Immunity Prevalence, As of April 28

Based on Vaccinations To-Date & Harvard/Yale Estimated Infection Model



Presumed 14-day lag for immunity.

Map: Health Industry Advisor LLC • Source: Harvard/Yale Schools of Public Health • Created with Datawrapper

Covid-19 "Vital Signs"

Newly Detected Cases Per Day

In the US, 7-day new case rate declined 5% in the last week. Outside the U.S., cases increased 4% week-over-week and 40% in the last three weeks.

Newly Detected Cases

As of April 29

■ United States ■ Outside the US

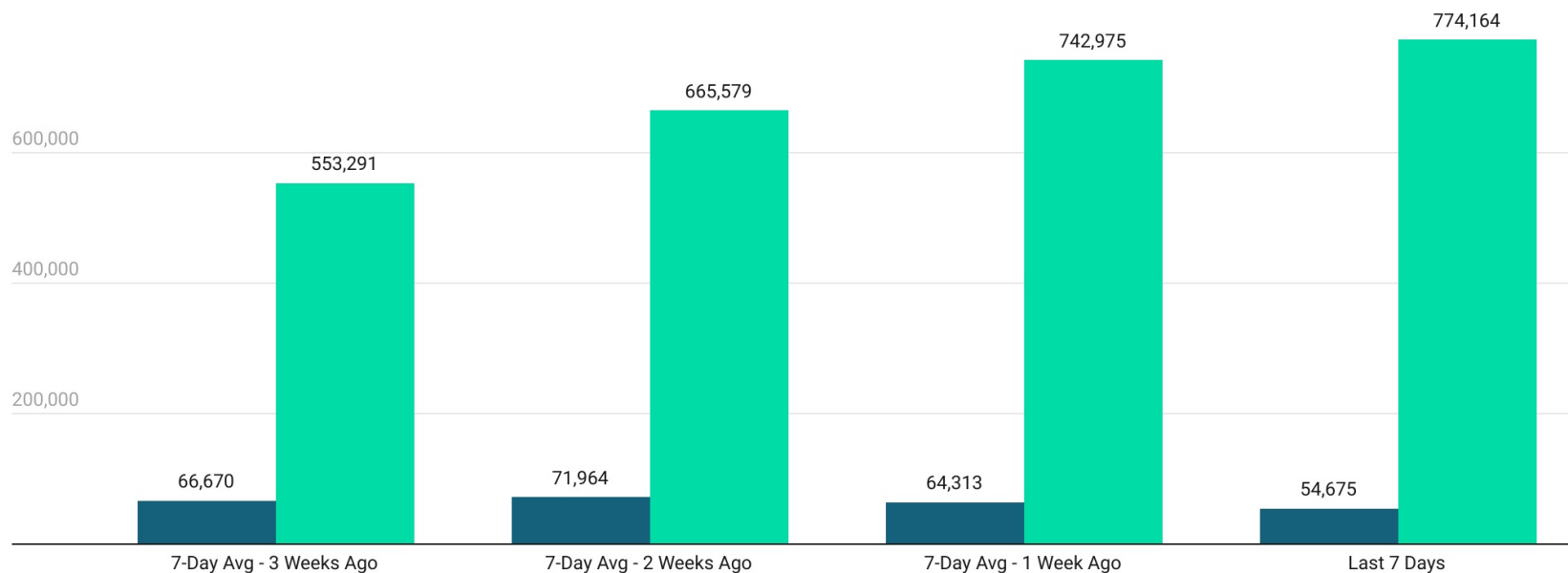


Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Covid-19 "Vital Signs"

Newly Detected Cases / Million - US

The U.S. 7-day new case rate declined for the fifteenth straight day, dropping 25% during that time. This rate is lower than it has been in six-and-one-half months.

Newly-Detected Cases / Million

7-Day Average

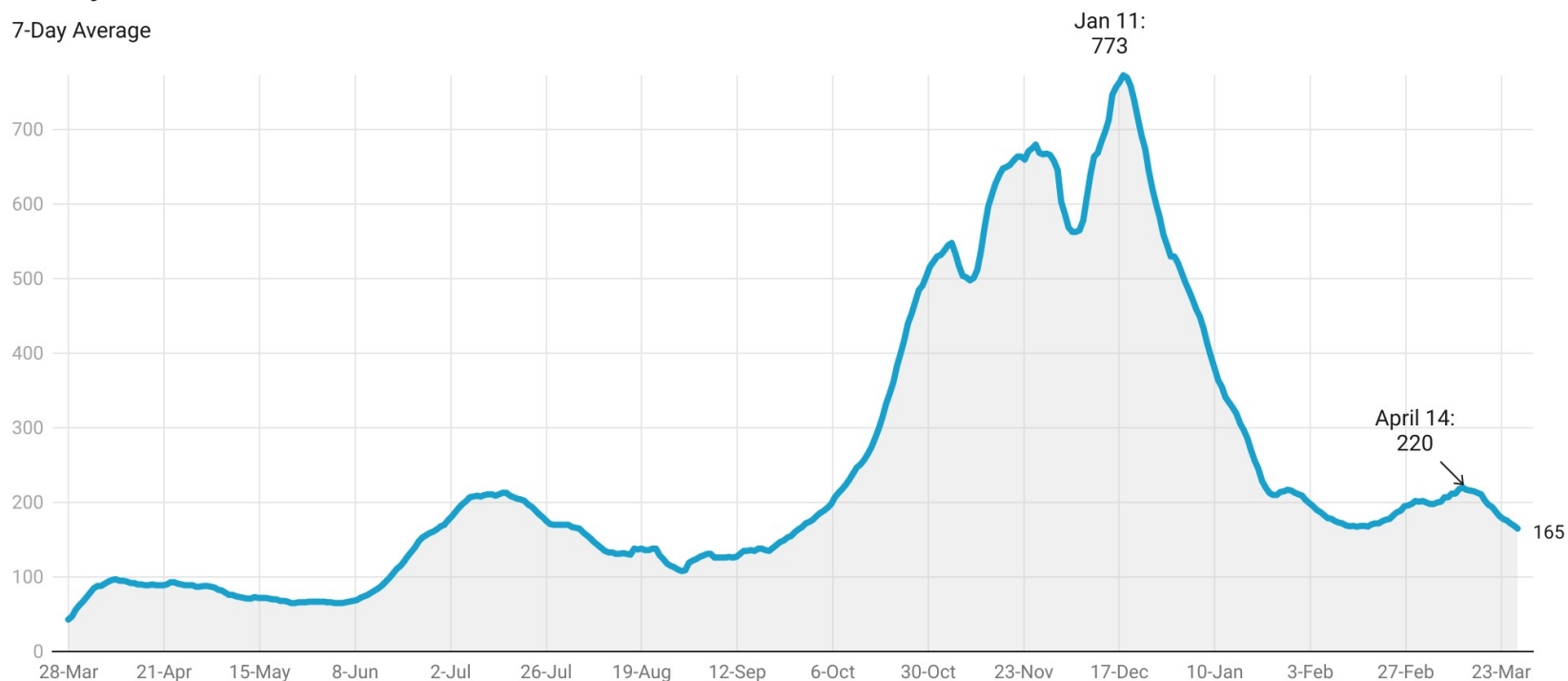


Chart: Health Industry Advisor LLC • Created with Datawrapper

Estimated Daily Infections & New Case Rates

Estimated infections have dropped to the lowest level in nine months.

Estimated Daily Infections v. Detected Cases

Yale/Harvard Schools of Public Health Model

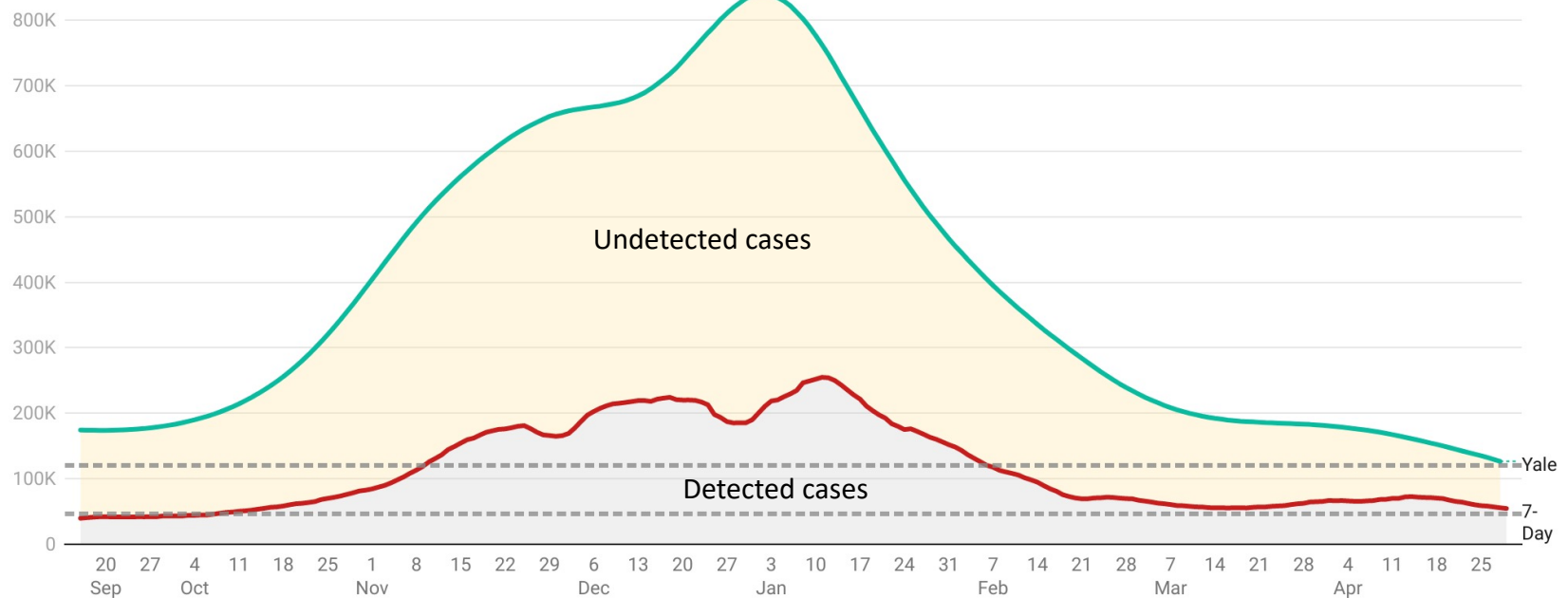


Chart: Health Industry Advisor LLC • Source: Youyang Gu, Yale School of Public Health • Created with Datawrapper

Covid-19 "Vital Signs"

Week-Over-Week Changes in New Cases

The rate of change in new cases turned negative eleven days ago. Worldwide, although cases are increasing day-over-day, the rate of increase is declining.

Week-Over-Week Changes in Newly-Detected Cases: USA v. Worldwide

7-Day Moving Average, As of April 29

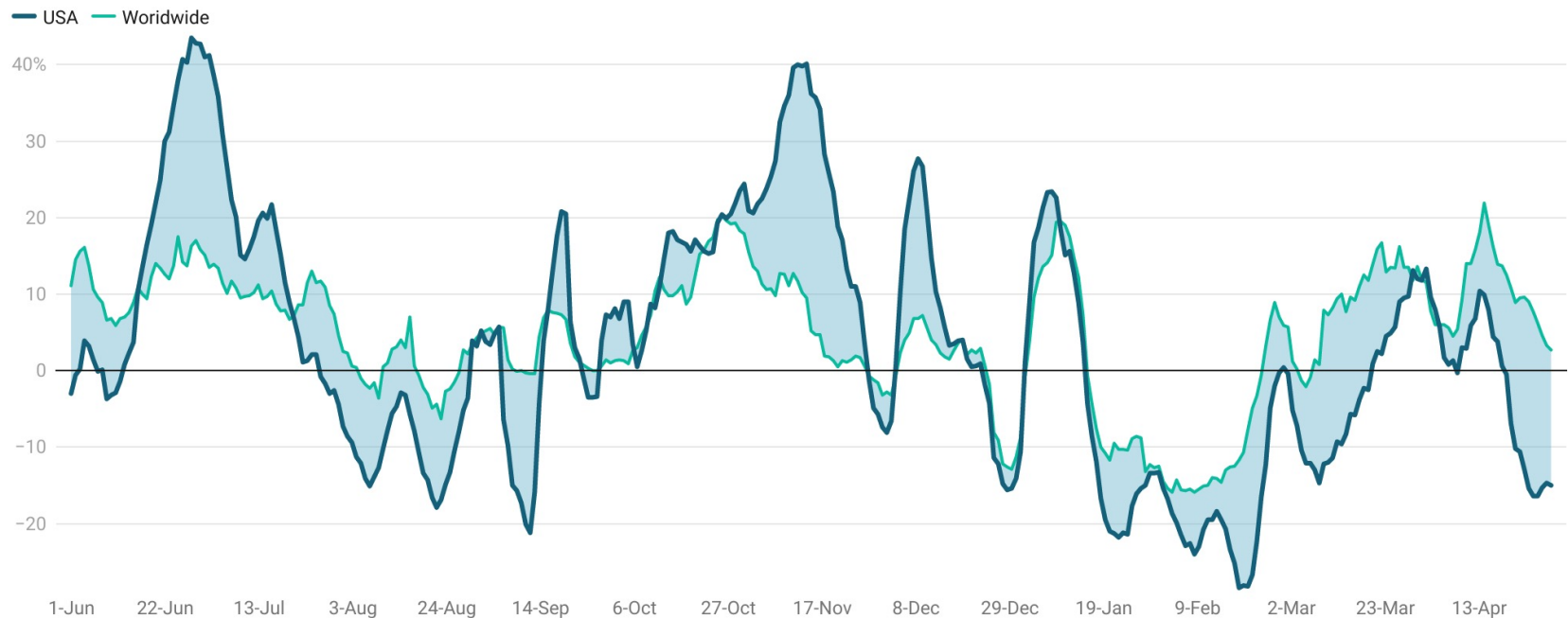
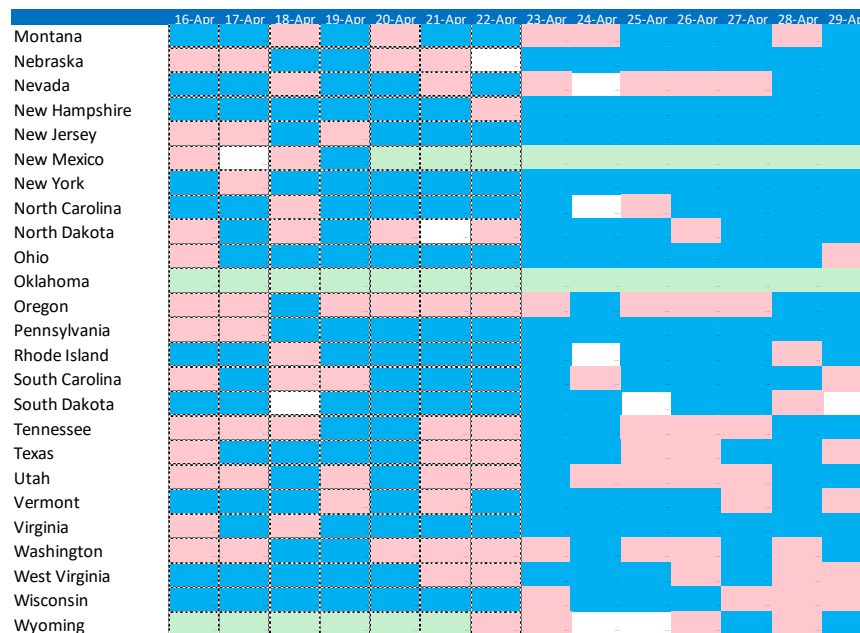
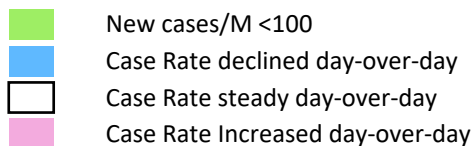
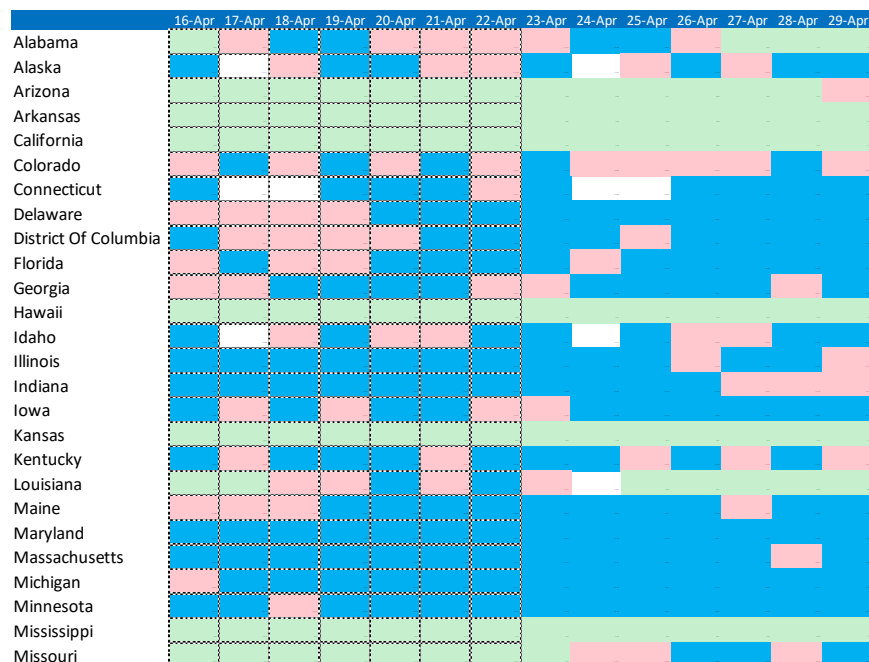


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Trends in New Case Rates

Covid-19 "Vital Signs"

Oregon had seen rates increase ten of twelve days yet, saw cases drop each of the past two day.. Michigan is recovering, with declining rates on thirteen consecutive days.



Deaths Reported With Coronavirus

The 7-day death rate declined 5% week-over-week and 8% in the past three weeks.

Daily Deaths Reported With Coronavirus

As of April 29

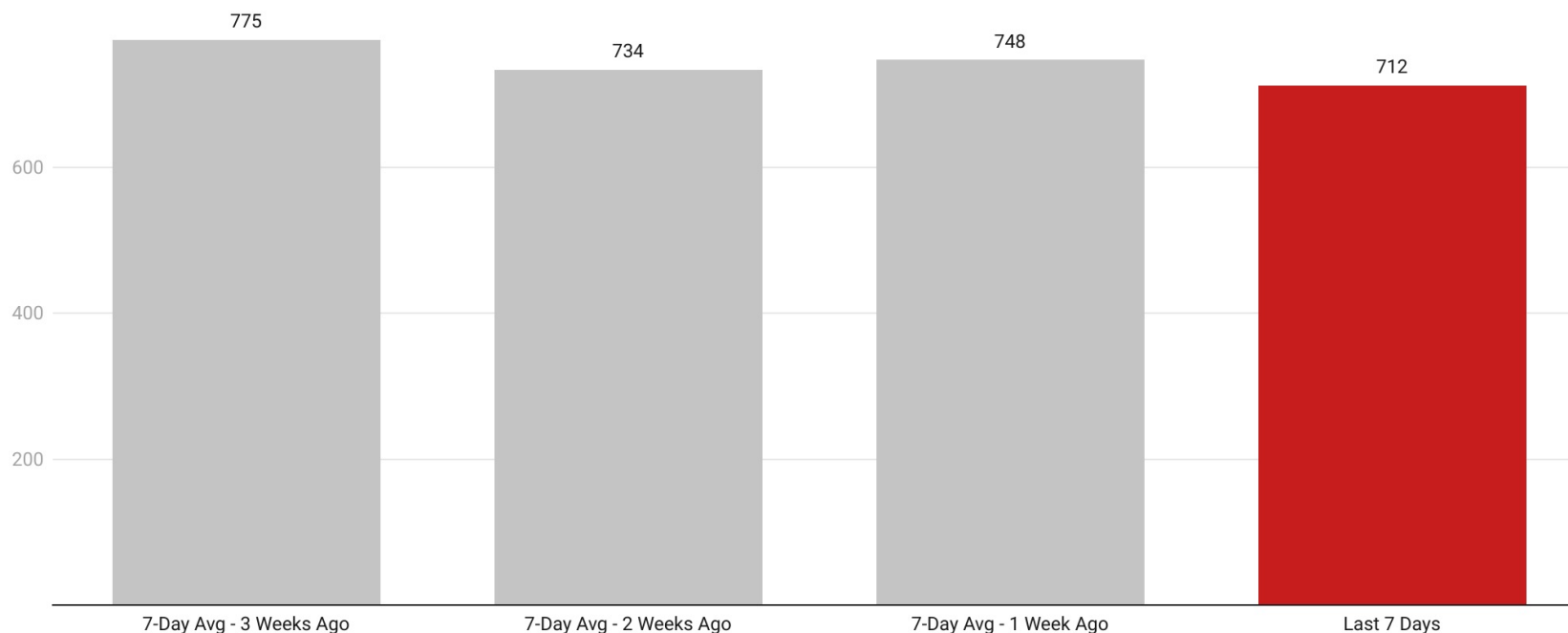


Chart: Health Industry Advisor LLC • Source: worldometer.info • Created with Datawrapper

Covid-19 Inpatient Census

Covid-19 inpatient census declined 7.4% week-over-week.

Hospitalized Covid-19 Patients

Compared to Same Day, Prior Weeks

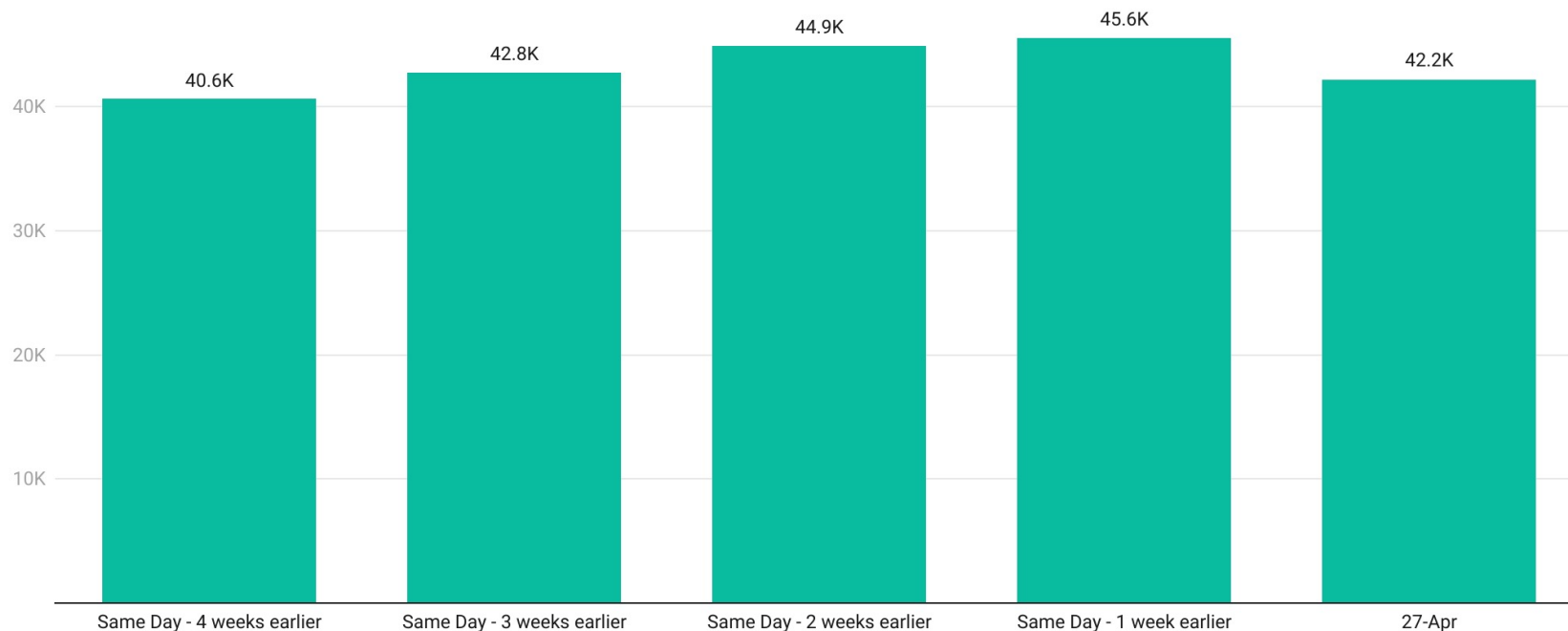


Chart: Health Industry Advisor LLC • Source: U.S. Department of Health & Human Services • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Hospitalizations

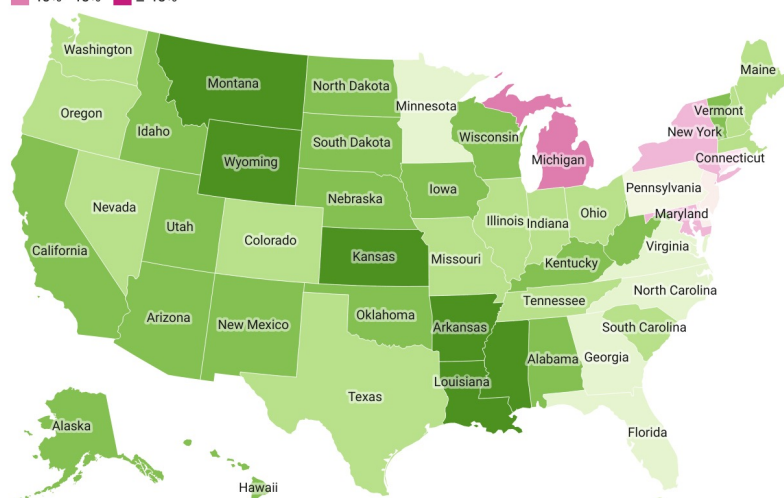
Covid-19 hospital census is of concern in Connecticut, Delaware, Maryland, Michigan, and New York. Yet, the situation has improved in each state over the last two weeks.

As of April 13

As of April 27

Covid-19 Patients As % of All Inpatient Beds

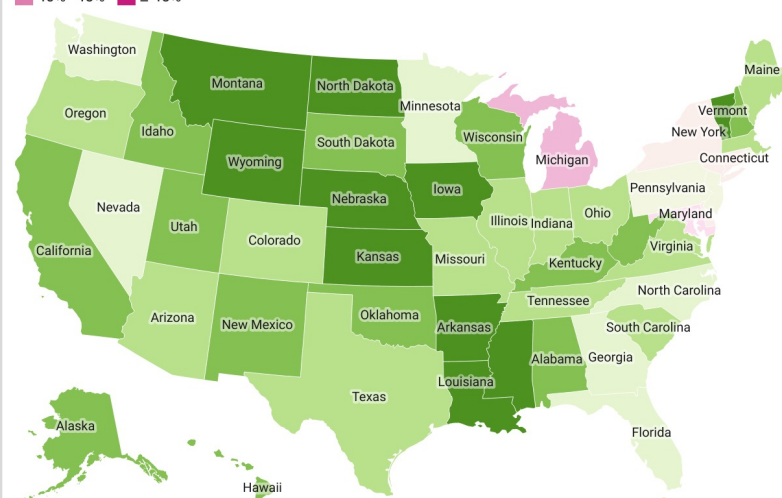
As of April 13



Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Covid-19 Patients As % of All Inpatient Beds

As of April 27



Map: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Covid-19 "Vital Signs"

Projected Covid-19 Admission Trends

For the U.S. overall, projected Covid-19 admissions drop 12% in the next three weeks. Projected declines are steepest in Connecticut, Nebraska, New Hampshire, New Jersey and New York. Projected increases are most significant in Alabama, Missouri, and Oregon.

% Change in Hospital Admissions

Week Ending May 25 v. Week Ending May 4

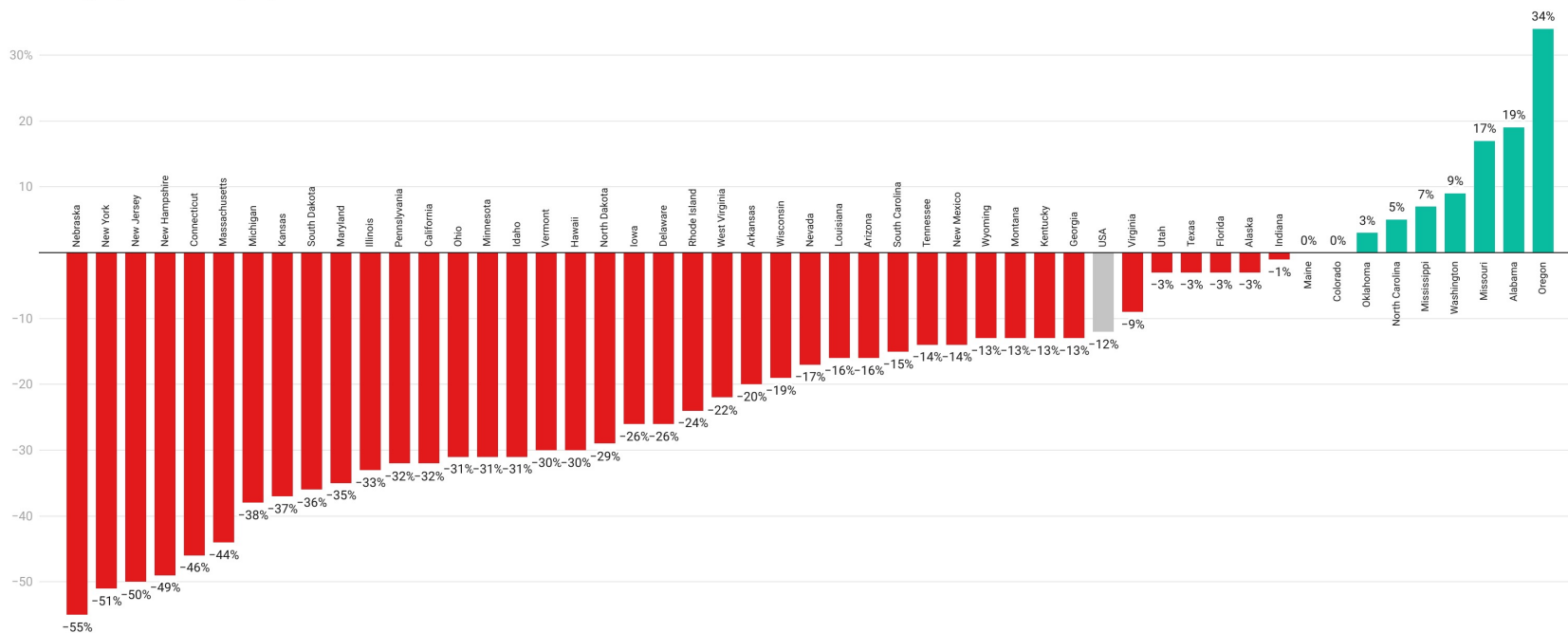


Chart: Health Industry Advisor LLC • Source: Centers for Disease Control and Prevention • Created with Datawrapper

Test-Positivity Rate

The test-positivity rate dropped below the suggested WHO target.

Test-Positivity Rate

As of April 29

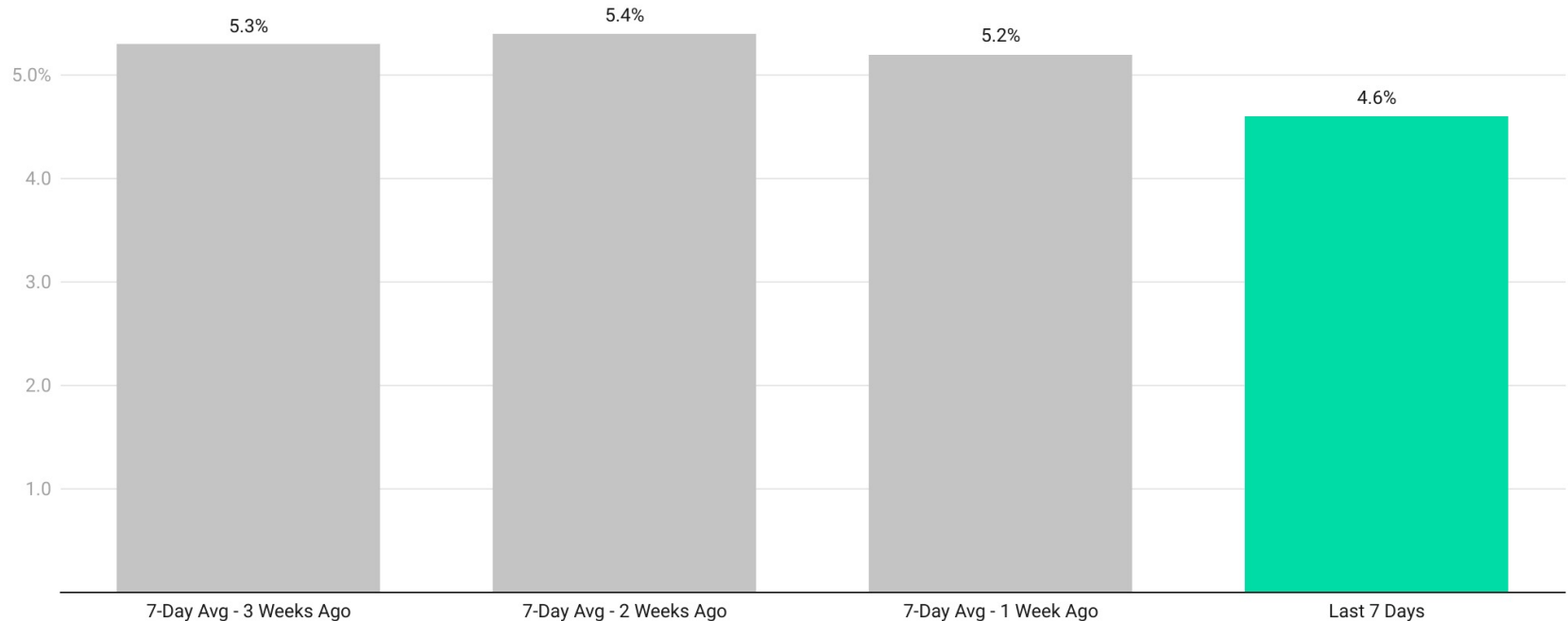


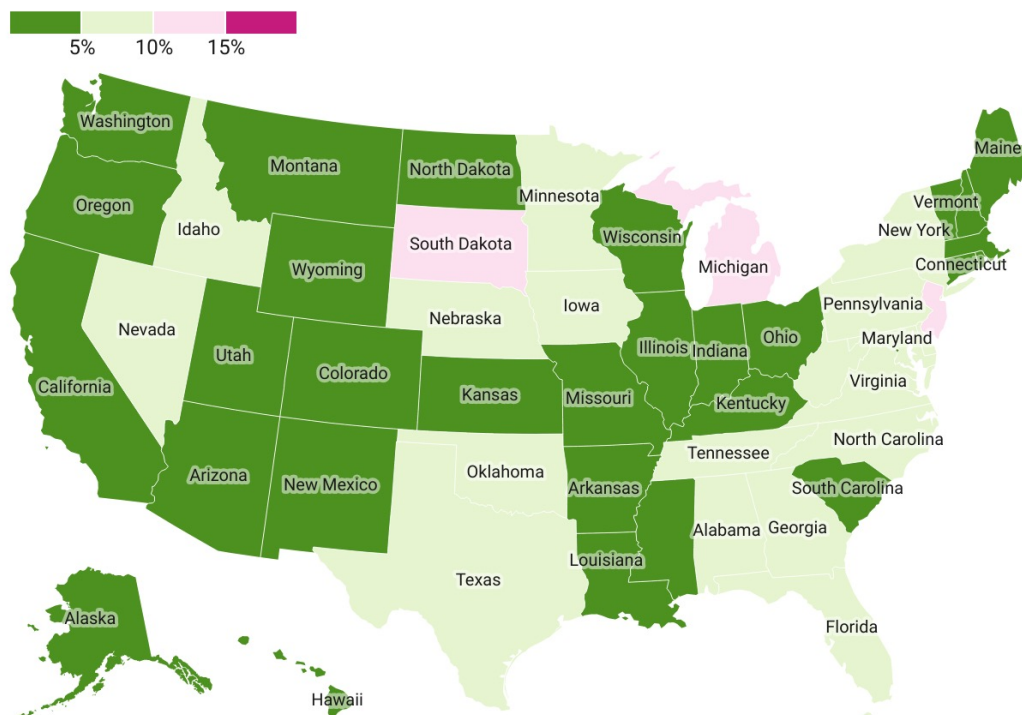
Chart: Health Industry Advisor LLC • Source: The Atlantic • Created with Datawrapper

Test-Positivity %

Michigan, New Jersey and South Dakota are the only states where test-positivity exceeds 10%

Test Positivity %

Latest Available Data, As of April 24



Map: Health Industry Advisor LLC • Source: U.S. Department of Health & Human Services • Created with Datawrapper

Covid-19 "Vital Signs"

State-By-State Scorecard: Scoring Grid

Designed to reflect five critical measures of a state's current experience with Covid-19



Metric		Black	Red	Orange	Yellow	Green	Blue
7-Day Average New Daily Reported Infections per Capita	Greater than	450	350	250	150	50	0
Week-over-Week Change in Newly Reported Cases	Greater than	30%	20%	10%	0%	-10%	N/A
7-Day Average Viral Tests per 7-Day Average Newly Reported Cases	Less than	5	10	25	50	75	N/A
Covid-19 Inpatient Census as % of All Inpatient Beds	Greater than	50%	40%	30%	20%	10%	0%
7-Day Deaths per 1000 New Cases (14-day lag)	Greater than	25	20	15	10	5	0

Covid-19 "Vital Signs"

State-By-State Scorecard:

New case rates are of concern in Colorado, Delaware, Michigan, Pennsylvania, and Rhode Island.

State	7-Day New Infections per Capita	Week-over-Week Change in New Cases	7-Day Tests per New Case	7-Day CV-19 Census as % of all Inpatient Beds	7-Day Deaths per 1000 New Cases (14-day lag)
Alabama	Green	Blue	Orange	Blue	Orange
Alaska	Yellow	Green	Yellow	Green	Yellow
Arizona	Green	Orange	Orange	Green	Orange
Arkansas	Green	Yellow	Orange	Blue	Orange
California	Blue	Yellow	Blue	Blue	Orange
Colorado	Orange	Yellow	Blue	Green	Green
Connecticut	Orange	Blue	Yellow	Yellow	Green
Delaware	Orange	Blue	Orange	Yellow	Green
District Of Columbia	Green	Blue	Blue	Green	Green
Florida	Yellow	Blue	Orange	Green	Green
Georgia	Green	Green	Orange	Blue	Black
Hawaii	Green	Yellow	Orange	Blue	Yellow
Idaho	Yellow	Green	Orange	Green	Green
Illinois	Yellow	Green	Orange	Green	Green
Indiana	Green	Blue	Orange	Blue	Green
Iowa	Blue	Blue	Blue	Blue	Green
Kansas	Blue	Blue	Blue	Blue	Green
Kentucky	Green	Yellow	Orange	Blue	Black
Louisiana	Green	Blue	Orange	Blue	Orange
Maine	Yellow	Blue	Yellow	Green	Blue
Maryland	Yellow	Blue	Yellow	Orange	Green
Massachusetts	Black	Blue	Orange	Orange	Green
Michigan	Orange	Green	Orange	Green	Green
Minnesota	Orange	Green	Red	Green	Yellow
Mississippi	Green	Red	Orange	Blue	Yellow
Missouri	Green	Red	Orange	Green	Yellow

State	7-Day New Infections per Capita	Week-over-Week Change in New Cases	7-Day Tests per New Case	7-Day CV-19 Census as % of all Inpatient Beds	7-Day Deaths per 1000 New Cases (14-day lag)
Montana	Green	Yellow	Orange	Blue	Yellow
Nebraska	Green	Yellow	Orange	Green	Green
Nevada	Green	Yellow	Orange	Green	Orange
New Hampshire	Yellow	Blue	Yellow	Blue	Green
New Jersey	Yellow	Blue	Orange	Yellow	Green
New Mexico	Green	Yellow	Orange	Blue	Black
New York	Yellow	Blue	Yellow	Yellow	Green
North Carolina	Yellow	Green	Orange	Blue	Green
North Dakota	Green	Blue	Orange	Blue	Yellow
Ohio	Green	Blue	Orange	Green	Yellow
Oklahoma	Yellow	Yellow	Orange	Blue	Black
Oregon	Yellow	Blue	Orange	Green	Green
Pennsylvania	Orange	Blue	Orange	Yellow	Green
Rhode Island	Orange	Blue	Yellow	Yellow	Blue
South Carolina	Green	Blue	Orange	Green	Orange
South Dakota	Green	Blue	Orange	Blue	Blue
Tennessee	Green	Blue	Red	Green	Green
Texas	Green	Orange	Orange	Blue	Orange
Utah	Green	Blue	Orange	Blue	Green
Vermont	Green	Blue	Orange	Blue	Green
Virginia	Green	Blue	Orange	Green	Green
Washington	Yellow	Yellow	Orange	Green	Green
West Virginia	Yellow	Green	Orange	Blue	Blue
Wisconsin	Green	Green	Yellow	Blue	Orange
Wyoming	Green	Orange	Orange	Blue	Blue

State-By-State Data Table (1 of 3)

State-By-State Comparisons

State ▲	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	7-Day Deaths /1000 New Cases , 14-Day Lag
Alabama	10.8%	2,220	1,219	7.4%	72	17	7%	19
Alaska	8.9%	466	7,809	3.2%	208	38	8%	10
Arizona	11.8%	2,377	2,173	4.6%	102	21	10%	17
Arkansas	11.1%	1,900	1,105	2.5%	62	18	4%	19
California	9.5%	1,561	3,964	1.3%	44	90	8%	17
Colorado	8.8%	1,119	4,104	5.8%	305	13	15%	7
Connecticut	9.5%	2,267	8,006	2.8%	189	42	27%	5
Delaware	10.7%	1,668	5,697	5.3%	260	22	27%	8
District Of Columbia	6.7%	1,566	8,095	2.1%	116	70	15%	9
Florida	10.4%	1,634	3,448	8.4%	247	14	19%	9
Georgia	10.3%	1,899	1,540	5.4%	124	12	17%	28
Hawaii	2.3%	341	3,497	1.6%	58	60	6%	12
Idaho	10.5%	1,141	1,865	4.3%	118	16	8%	10
Illinois	10.5%	1,914	4,938	3.9%	216	23	15%	8
Indiana	10.7%	1,979	2,808	4.6%	152	18	11%	8
Iowa	12.5%	1,880	2,124	5.6%	128	17	4%	7
Kansas	10.6%	1,716	1,809	4.1%	12	148	5%	6

Covid-19 "Vital Signs"

State-By-State Data Table (2 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
Kentucky	9.9%	1,454	2,362	3.8%	123	19	7%	27	
Louisiana	9.8%	2,232	2,002	2.9%	89	23	4%	15	
Maine	4.5%	582	6,630	2.8%	221	30	12%	4	
Maryland	7.4%	1,442	4,827	4.9%	153	32	33%	9	
Massachusetts	9.9%	2,532	10,994	1.9%	190	58	10%	6	
Michigan	9.3%	1,874	4,670	11.7%	453	10	35%	9	
Minnesota	10.2%	1,278	6,650	6.1%	292	23	15%	6	
Mississippi	10.5%	2,418	467	3.9%	73	6	4%	13	
Missouri	9.5%	1,529	1,306	4.8%	103	13	10%	15	
Montana	10.2%	1,469	2,198	4.8%	126	17	3%	12	
Nebraska	11.4%	1,160	1,823	7.2%	122	15	5%	5	
Nevada	10.2%	1,772	1,597	6.4%	123	13	15%	17	
New Hampshire	7.0%	957	5,060	3.4%	177	29	9%	9	
New Jersey	11.2%	2,874	4,459	7.0%	246	18	23%	9	
New Mexico	9.4%	1,935	2,118	2.7%	99	21	8%	26	
New York	10.8%	2,698	7,331	3.5%	203	36	29%	8	
North Carolina	9.2%	1,204	2,569	5.8%	174	15	16%	9	

Covid-19 "Vital Signs"

State-By-State Data Table (3 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
North Dakota	14.1%	1,957	3,080	3.3%	171		18	5%	7
Ohio	9.2%	1,642	2,589	4.1%	130		20	11%	11
Oklahoma	11.3%	1,715	761	4.5%	61		13	5%	33
Oregon	4.4%	591	2,812	6.0%	194		15	15%	6
Pennsylvania	9.0%	2,054	3,508	7.6%	264		13	20%	9
Rhode Island	14.0%	2,519	11,991	1.9%	252		48	23%	3
South Carolina	11.2%	1,844	2,778	4.1%	147		19	10%	17
South Dakota	13.9%	2,218	1,601	9.1%	142		11	6%	4
Tennessee	12.4%	1,784	1,372	6.6%	139		10	11%	7
Texas	10.0%	1,738	1,514	5.1%	119		13	11%	16
Utah	12.4%	685	2,433	4.1%	118		21	6%	7
Vermont	3.7%	394	12,503	1.5%	114		109	4%	3
Virginia	7.7%	1,260	2,123	5.3%	123		17	14%	9
Washington	5.3%	727	2,187	6.0%	188		12	18%	7
West Virginia	8.5%	1,496	3,203	6.5%	195		16	9%	(48)
Wisconsin	10.3%	1,170	3,677	3.5%	107		34	7%	16
Wyoming	10.0%	1,222	2,150	3.3%	113		19	3%	5

Table: Health Industry Advisor LLC • Created with Datawrapper

Sources

The following data sources are accessed on a daily or weekly basis

- U.S. Department of Health & Human Services: <https://healthdata.gov/dataset/covid-19-estimated-patient-impact-and-hospital-capacity-state>
- U.S. Department of Health & Human Services <https://beta.healthdata.gov/dataset/COVID-19-Diagnostic-Laboratory-Testing-PCR-Testing/j8mb-icvb>
- Worldometers.info: <https://www.worldometers.info/coronavirus/>
- Centers for Disease Control and Prevention, National, Regional, and State Level Outpatient Illness and Viral Surveillance <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
- Centers for Disease Control and Prevention, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control and Prevention, COVID Data Tracker <https://www.cdc.gov/covid-data-tracker/index.html#mobility>
- Centers for Disease Control and Prevention, Vaccines, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>
- Institute for Health Metrics and Evaluation, COVID-19 estimate downloads <http://www.healthdata.org/covid/data-downloads>
- New York Times, Covid-19 data <https://github.com/nytimes/covid-19-data>
- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University <https://github.com/CSSEGISandData/COVID-19>
- COVID-19 Projections Using Machine Learning, <https://covid19-projections.com>
- Our World In Data, <https://ourworldindata.org/covid-vaccinations>
- Covid-19 Forecast Hub, <https://viz.covid19forecasthub.org>
- Yale School of Public Health & Harvard TH Chan School of Public Health, <https://covidestim.org>
- Bloomberg Vaccine Trackers, <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmH>