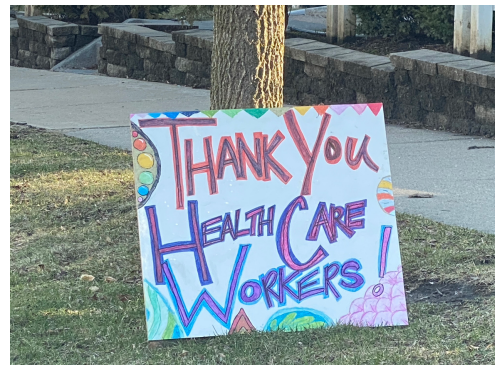
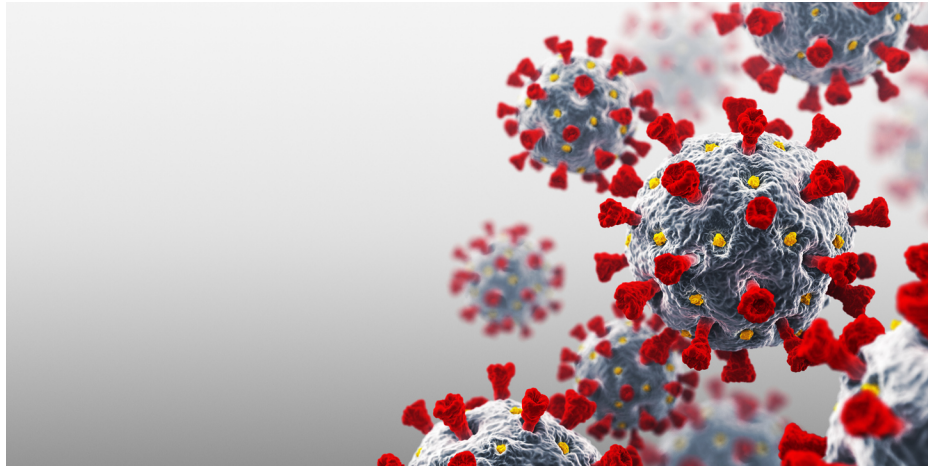
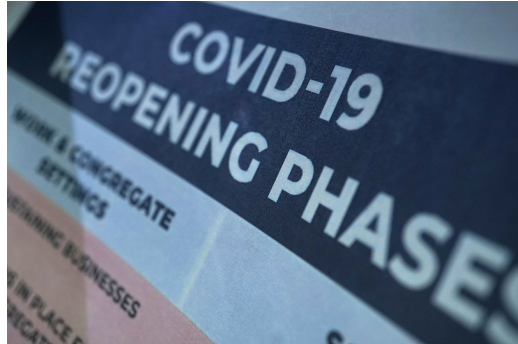




COVID-19 Report

Issue # 133

Wednesday, August 12, 2020

- Starting with vaccine development:
 - **The United States government announced yesterday an agreement to purchase 100 million doses of Moderna's vaccine, with an option to purchase an additional 400 million**
 - Through its *Operation Warp Speed*, the U.S. is now funding at least 8 separate vaccine development efforts: AstraZeneca/University of Oxford, BioNTech/Pfizer, GlaxoSmithKline/Sanofi, Johnson & Johnson (Janssen), Merck, Moderna, Novavax and Regeneron
 - **AstraZeneca/Oxford, BioNTech/Pfizer and Moderna each expect to have Phase III clinical results in October**
- New infection rates
 - The trailing 7-day moving average **rate of new daily infections per million in the U.S. has hit a plateau over the past several days** - at a level far higher than desired
 - New daily cases have declined 6.2% on a week-over-week basis; the rate by which these are declining, however, is diminishing
 - New cases seem to follow a consistent day-of-week pattern: lowest on the weekend then, rising until Thursday or Friday; Yesterday's new case count was the lowest for a Tuesday since June
 - Fourteen states saw the new infection rate increase week-over-week; Four of these states - California, Georgia, Idaho and North Dakota - have rates > 150
 - Twelve additional states have rates > 150; Each of these, however, saw their rates decline on a week-over-week basis. Arizona's rate declined by 43%; Louisiana's by 35%
- **There are significant concentrations in the Southeast U.S. of Large Central and Large Fringe Metro areas with rates > 150**
- There are similar concentrations in the Southeast for Medium and Small Metro Areas, along with scattered concentrations in the West
- Testing in the U.S.
 - After failing sharply from July 25-August 4, testing per capita has been relatively stable the past week
 - **Test-positive % has trended down since July 11; the current 7-day rate is its lowest since July 1**
- **Healthcare resource use continues to ease**
 - COVID-19 hospital census declined again on Tuesday; it is 20% lower than its mid-April peak (despite 8 more states reporting now than in April)
 - ICU census has similarly been declining since July 29; it is 40% lower than its mid-April peak (again, with 8 more states reporting now than in April)
 - ER visits for COVID-19-like illnesses (on a % basis) are also declining. The most-recent rate is 1/2 its July 8th rate, and is at its lowest since June 14
- Deaths with the Coronavirus
 - **Deaths reported yesterday were up sharply and the most reported on a single day since May 16**
 - On a 7-day average basis, however, daily deaths were lower yesterday than from July 28-August 6
 - Deaths per case are 3.16%

August 11 Update: Moderna agrees to sell 100 million doses to the U.S government; with an option for an additional 400 million; Phase III results expected by October

Pre-Clinical –

Vaccines not yet in clinical trial

135+

Phase I –

Vaccines testing safety and dosage

19

- Medigen – announced a September Phase I launch
- ReiThera – launches a Phase I trial

Phase II –

Vaccines in expanded safety trials

12

- Noravax –announced strong preliminary results
- Zydus Caila – launched a Phase II trial

Phase III –

Vaccines in large-scale efficacy tests

8

- Moderna/National Institutes of Health
- BioNTech/Pfizer/Fosun Pharma
- AstraZeneca/University of Oxford
- CanSinoBIO
- Sinopharm
- Sinovac Biotech
- Murdoch Children’s Research Institute

Phase IV –

Vaccine approved for limited use

2

- CanSinoBIO/China’s Academy of Military Medical Sciences
- Gamaleya Research Institute – Russian health regulator approves for use

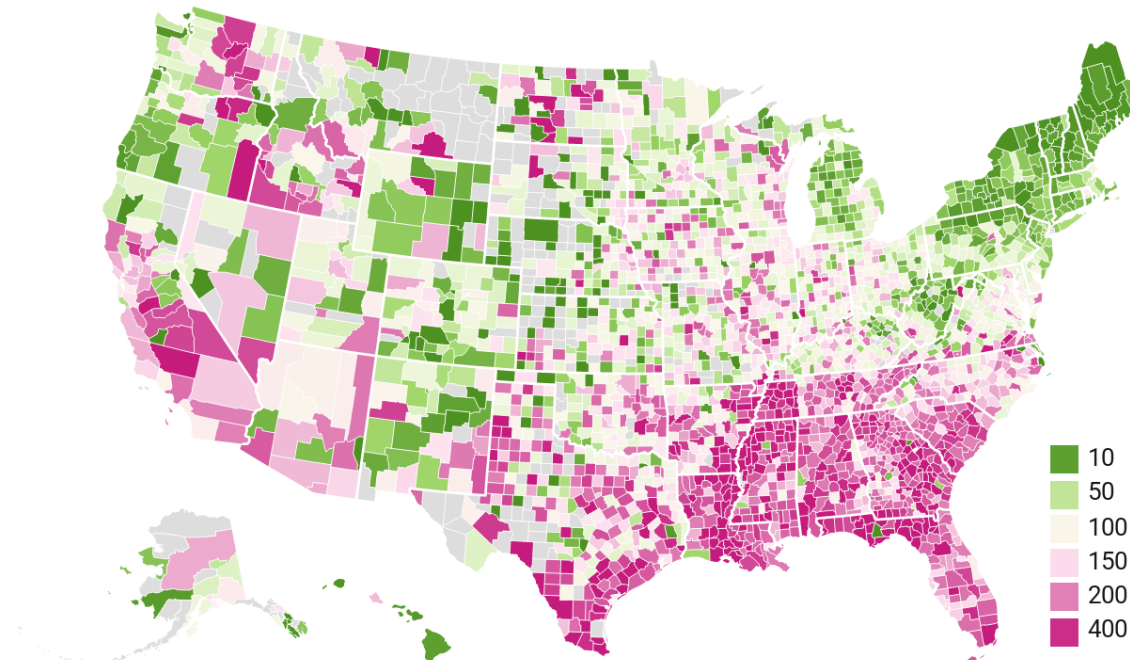
* - Source: “Coronavirus Vaccine Tracker”, New York Times, Updated August 10, 2020
<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>

Metro-By-Metro

New Infection rates remain highest in the Southeast, southern Texas, central California and southern Arizona

New Daily Infections Per Million Population

Trailing 7-Day Moving Average, As of August 10



Health Industry Advisor LLC analysis

Map: Health Industry Advisor LLC • Source: New York Times • Created with Datawrapper

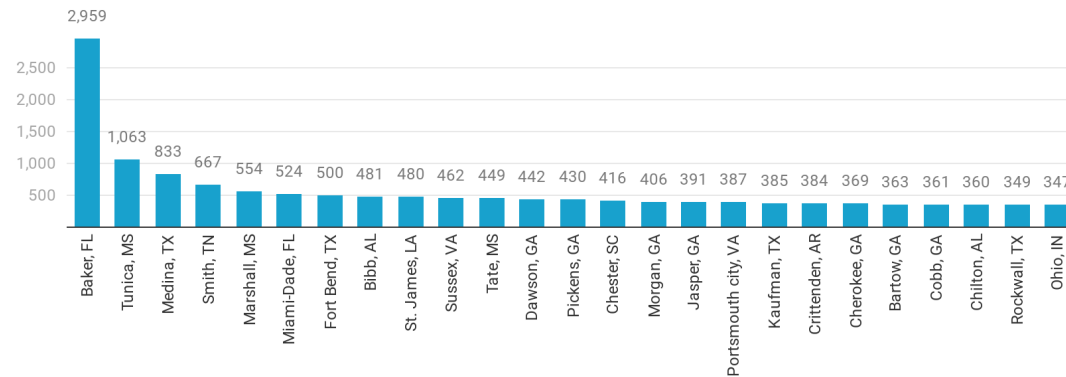
Large Central and Fringe Metro Areas

Highest rates of new infections are concentrated in a few southeastern states

Large Central & Fringe Metro Areas Top 25 by New Infection Rate

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of August 10

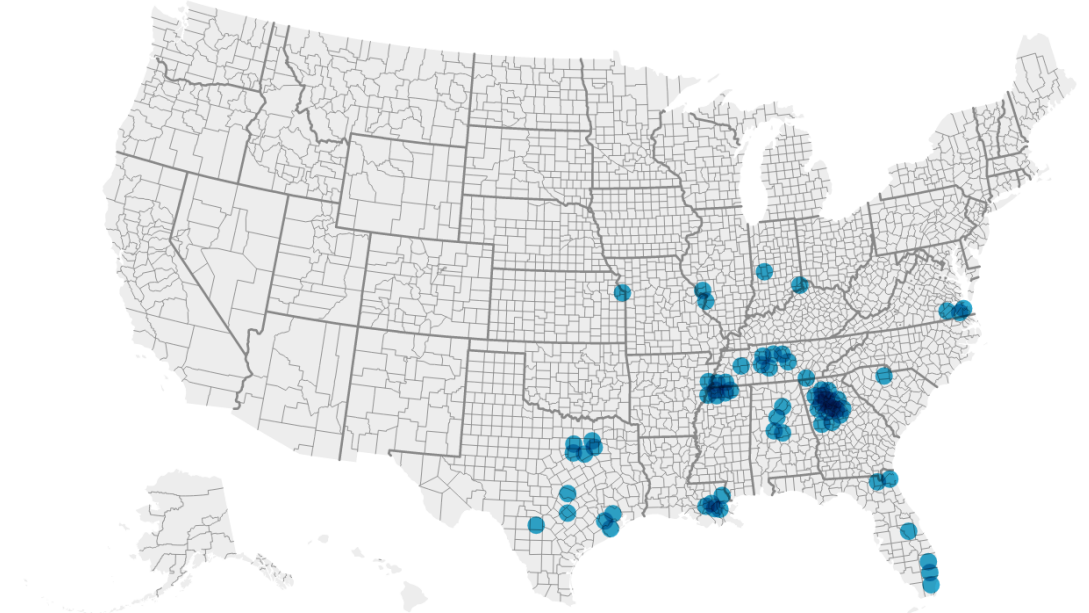


Health Industry Advisor LLC analysis

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

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of August 10



Large Central & Fringe Metro Areas, >250 infections / million / day

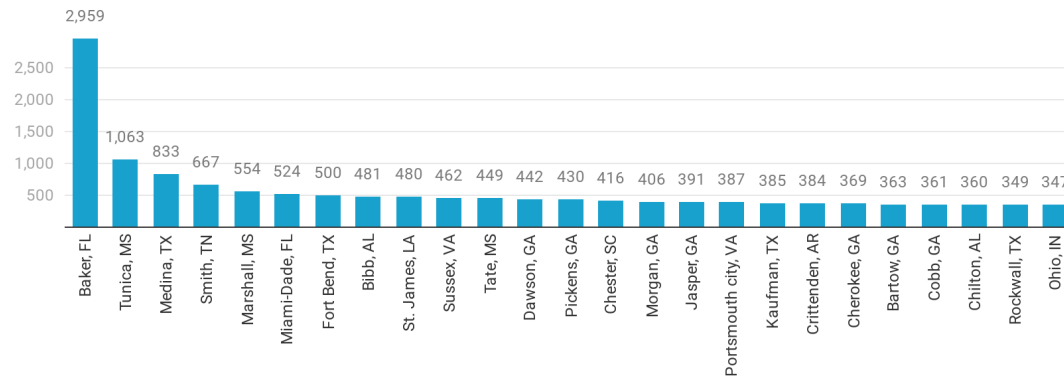
Map: Health Industry Advisor LLC • Created with Datawrapper

Rate > 250

Medium & Small Metro Areas Top 25 by New Infection Rate

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of August 10

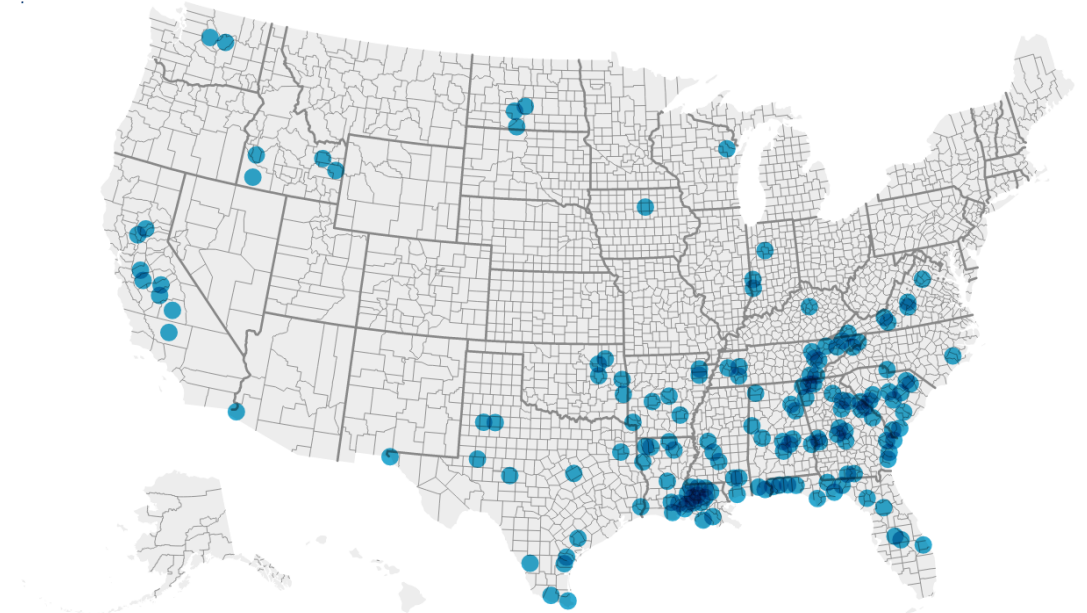


Health Industry Advisor LLC analysis

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

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of August 10



Medium & Small Metro Areas, >250 infections / million / day

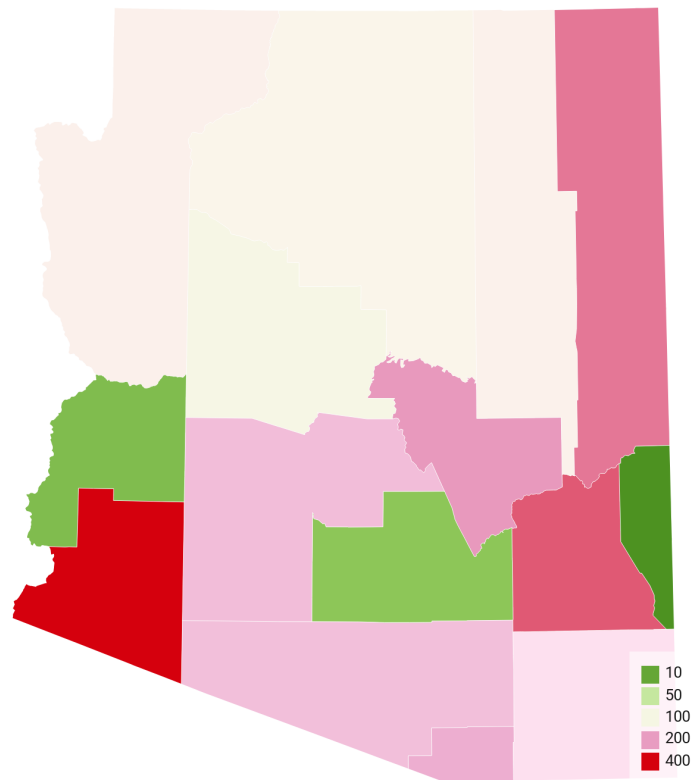
Map: Health Industry Advisor LLC • Created with Datawrapper

Rate > 250

Highest rates of new infections in Arizona are concentrated in the south and east; In California, in the central part of the state

New Daily Infections / Million Population - Arizona

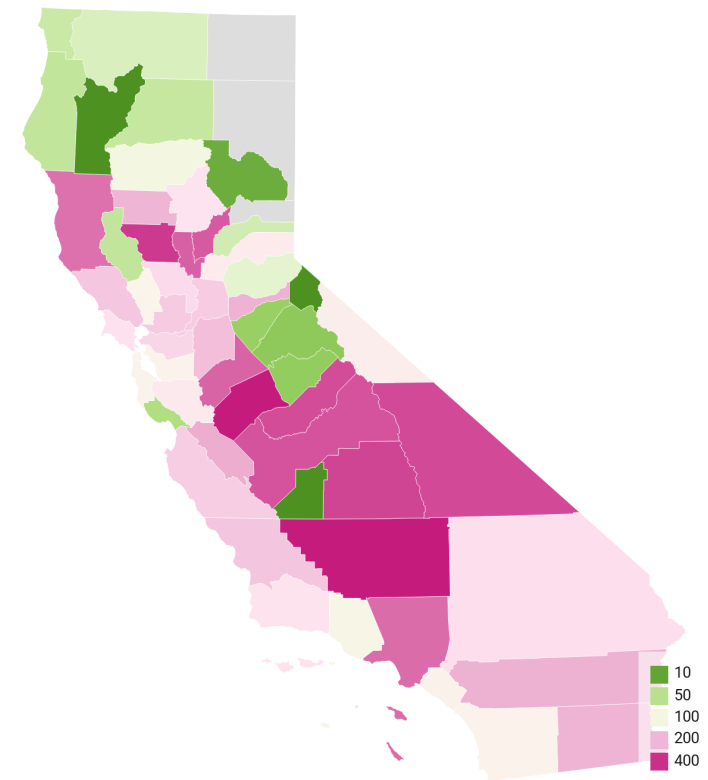
Trailing 7-Day Moving Average, As of August 10



Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections / Million Population - California

Trailing 7-Day Moving Average, As of August 10

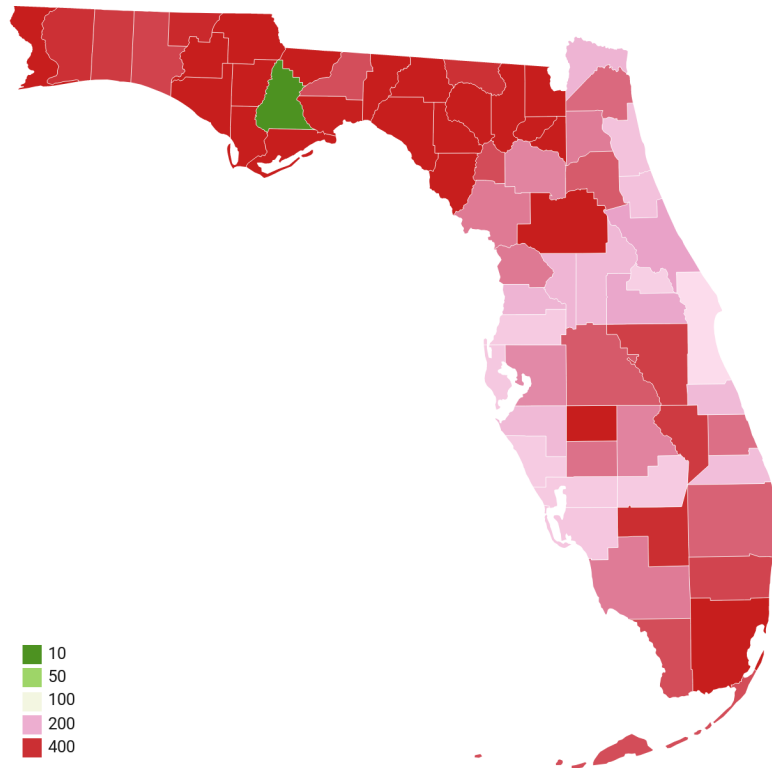


Map: Health Industry Advisor LLC • Created with Datawrapper

Florida and Georgia High rates of new infections in throughout each state

New Daily Infections / Million Population - Florida

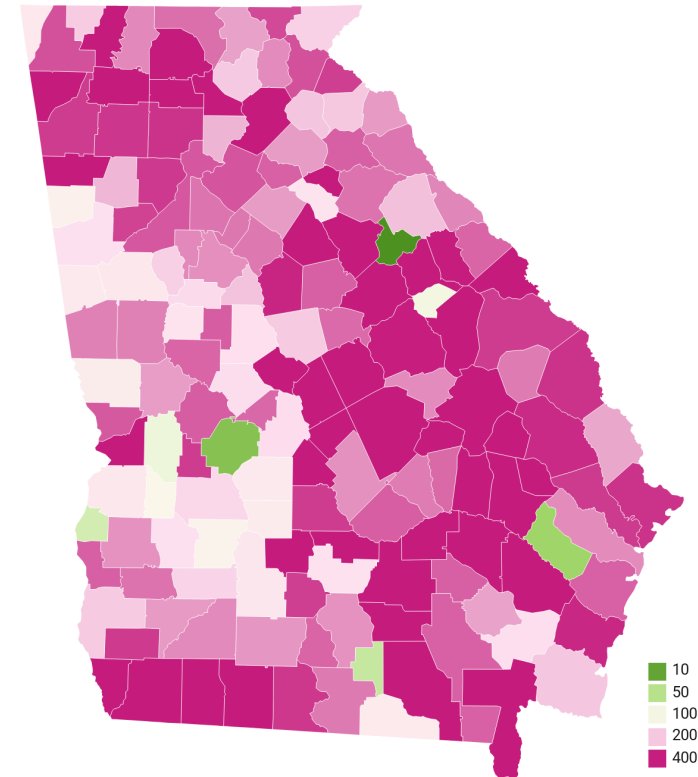
Trailing 7-Day Moving Average, As of August 10



Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections /Million Population - Georgia

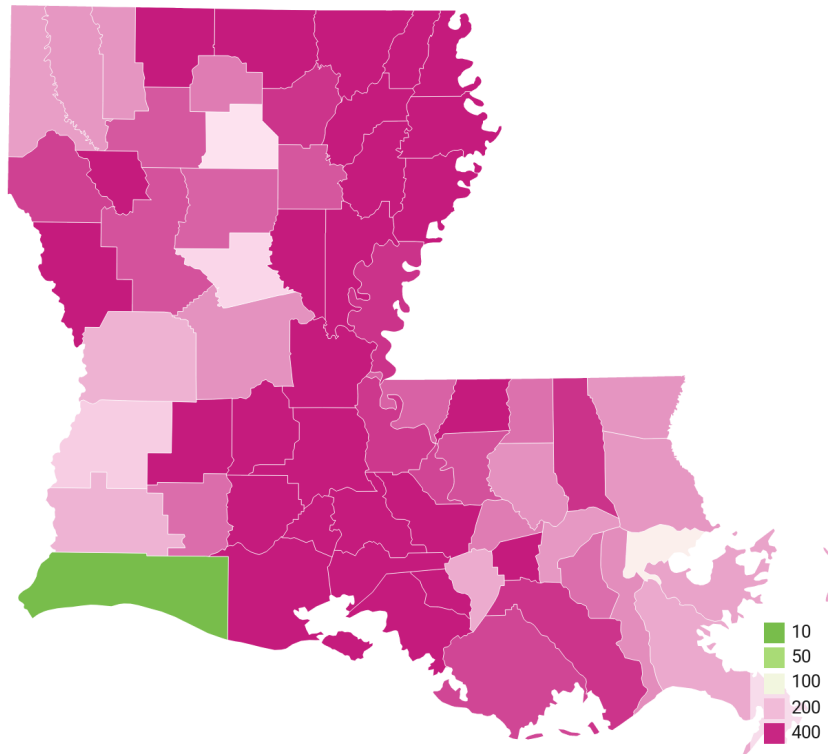
Trailing 7-Day Moving Average, As of August 10



Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections / Million Population - Louisiana

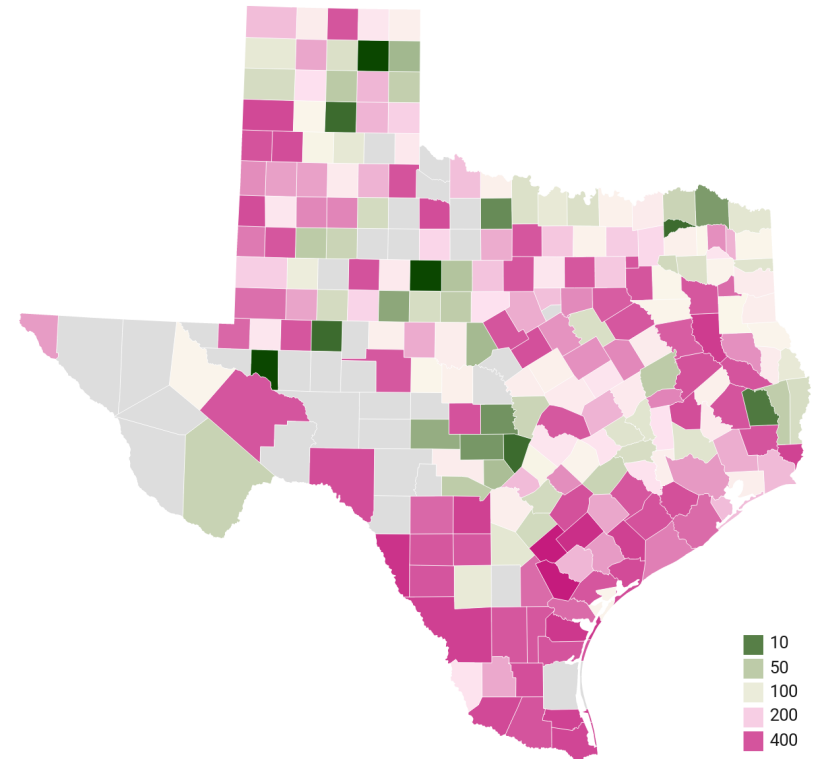
Trailing 7-Day Moving Average, As of August 10



Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections / Million Population - Texas

Trailing 7-Day Moving Average, As of August 10



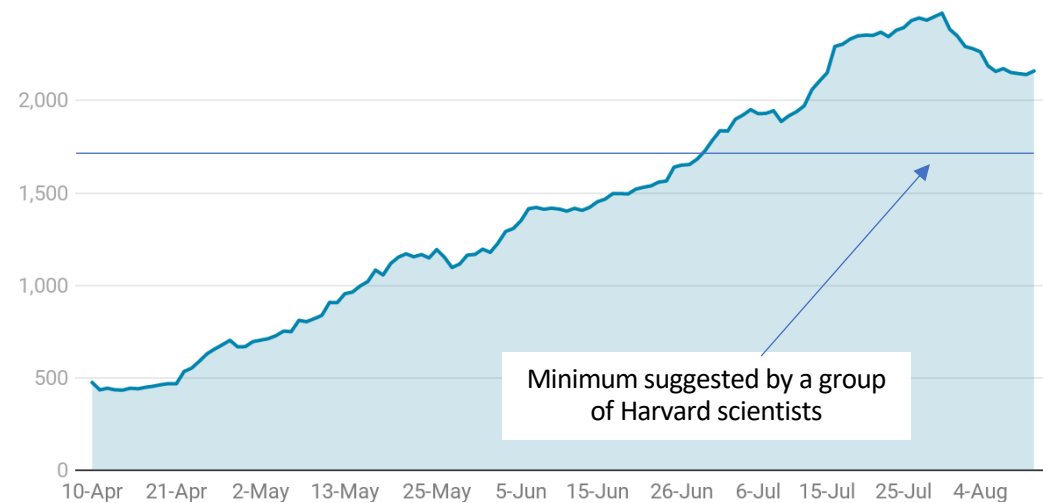
Map: Health Industry Advisor LLC • Created with Datawrapper

Test volume stable for the past week

Test-positive rate on a downward trend since July 11; current rate is lowest since July 1

Daily Tests Per 1 Million - United States

Trailing 7-Day Moving Average, As of August 11

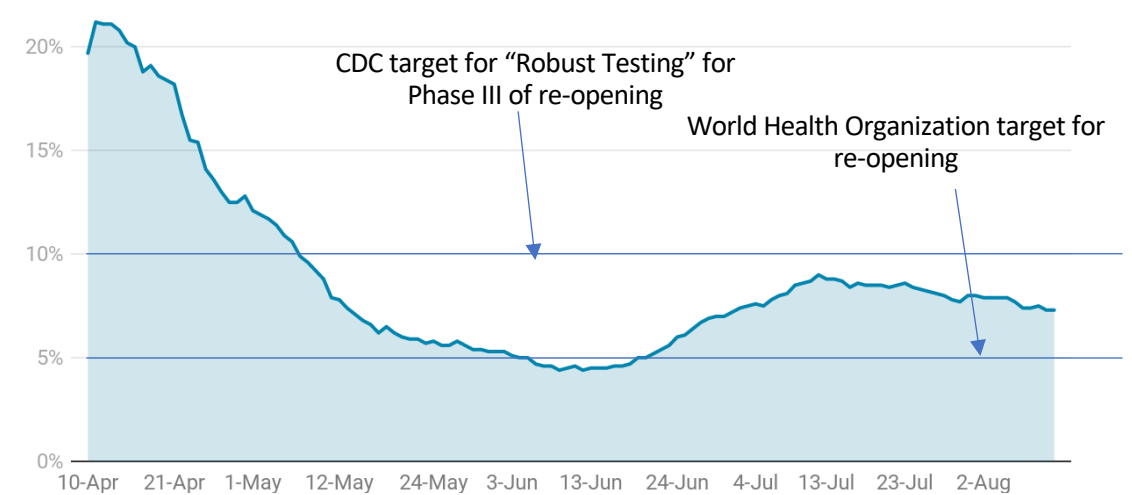


Health Industry Advisor LLC analysis

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

Test-Positive Rate - United States

Trailing 7-Day Moving Average, As of August 11



Health Industry Advisor LLC analysis

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

Note: Due to a computer glitch, Washington has only reported positive results since August 1. Therefore, test volumes from that point forward are slightly understated

Note: Due to a computer glitch, Washington has only reported positive results since August 1. Therefore, test-positive rates from that point forward are slightly overstated by ~0.1%

New cases were up on yesterday, following the typical pattern for Tuesdays (fewest new cases on a Tuesday since June); Week-over-week, new cases are down 6.2%, although this rate of decline is diminishing

New Cases

Through August 11

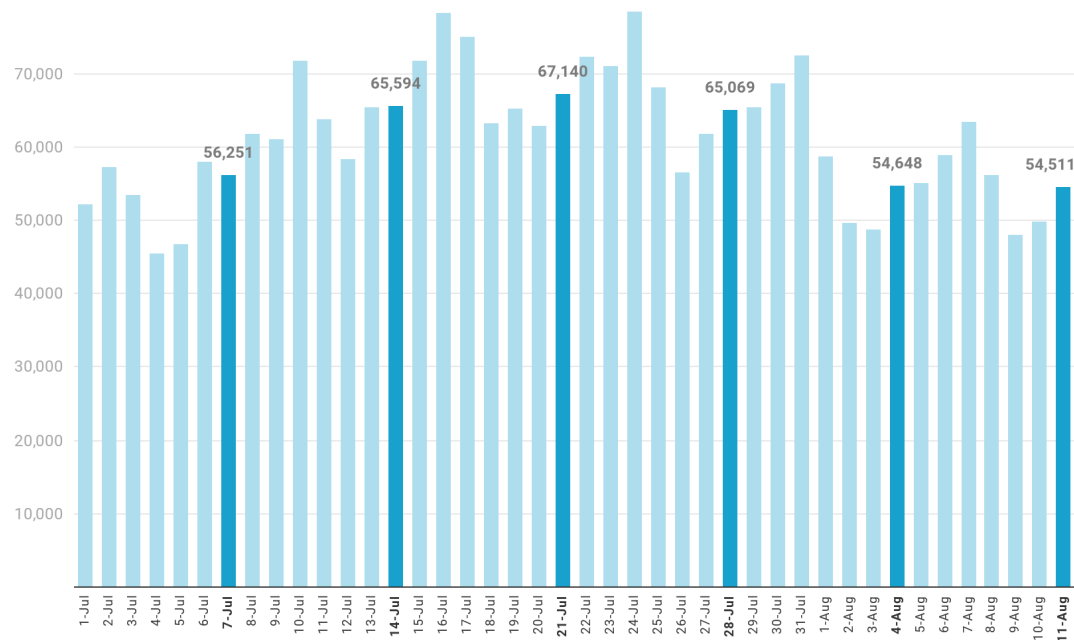
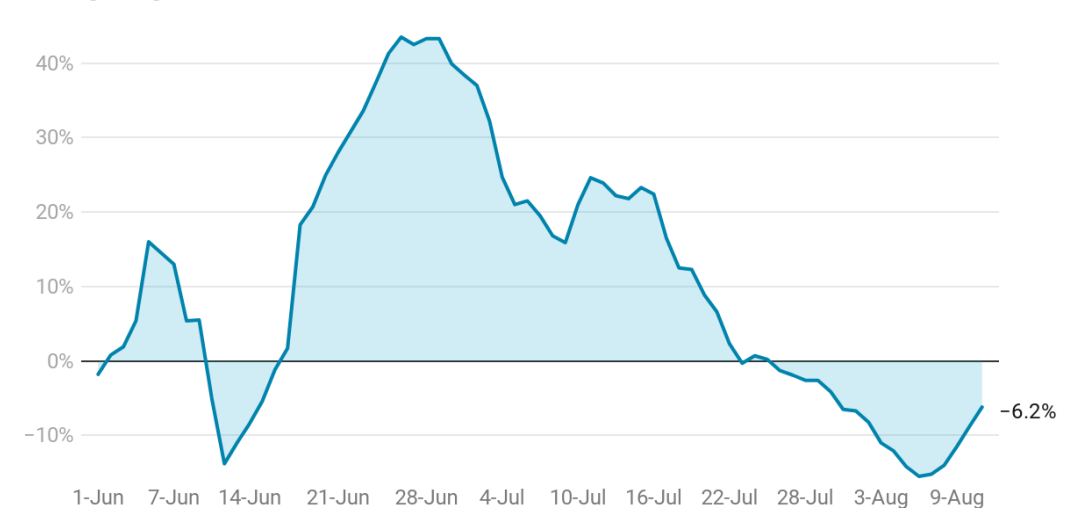


Chart: Health Industry Advisor LLC • Source: eorlometers.info • Created with Datawrapper

Week-Over-Week Change In New Cases

Through August 11



Health Industry Advisor LLC analysis

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

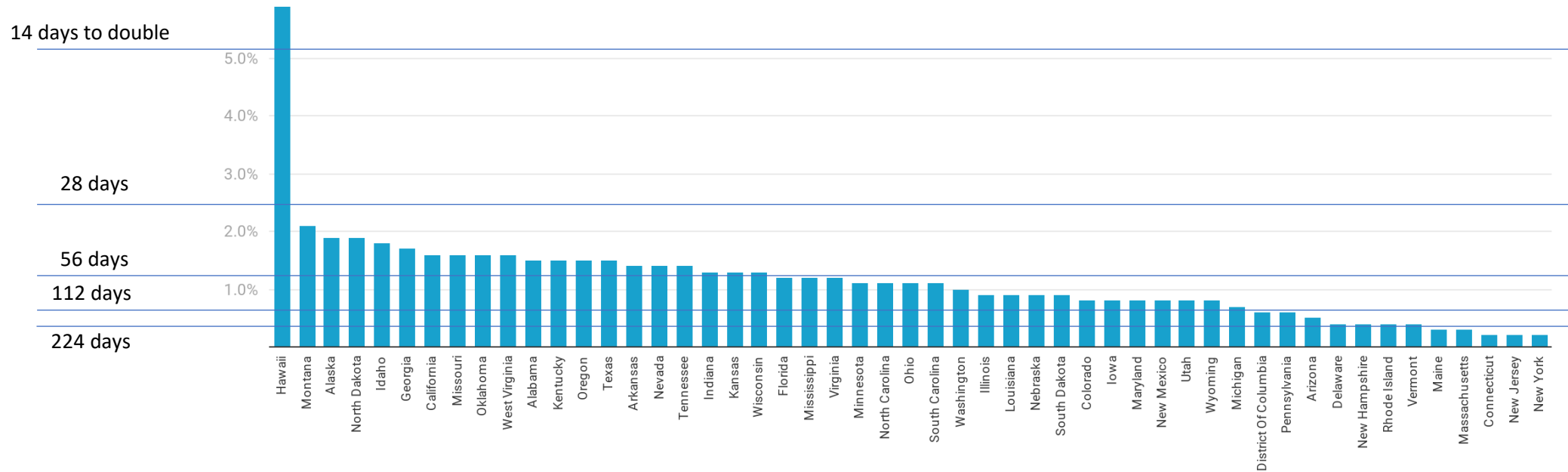
Note the daily pattern: new cases are typically low on Sunday, then increase each day through the week

State-By-State

Case growth is slowing but, Hawaii remains the outlier. At current rates, cases are doubling every 12 days in Hawaii; every 437 days in New York; 65-66 days for the United States overall

Growth Rate in Total Cases

Trailing 5-Day Moving Average, Through August 11

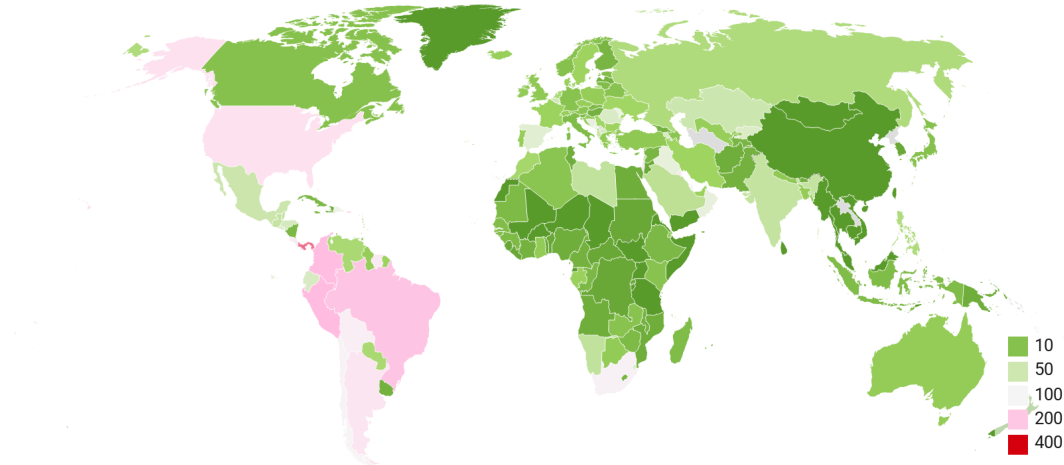


Health Industry Advisor LLC analysis

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

New Daily Infections / 1 Million Population

Trailing 7-Day Moving Average, As of August 11

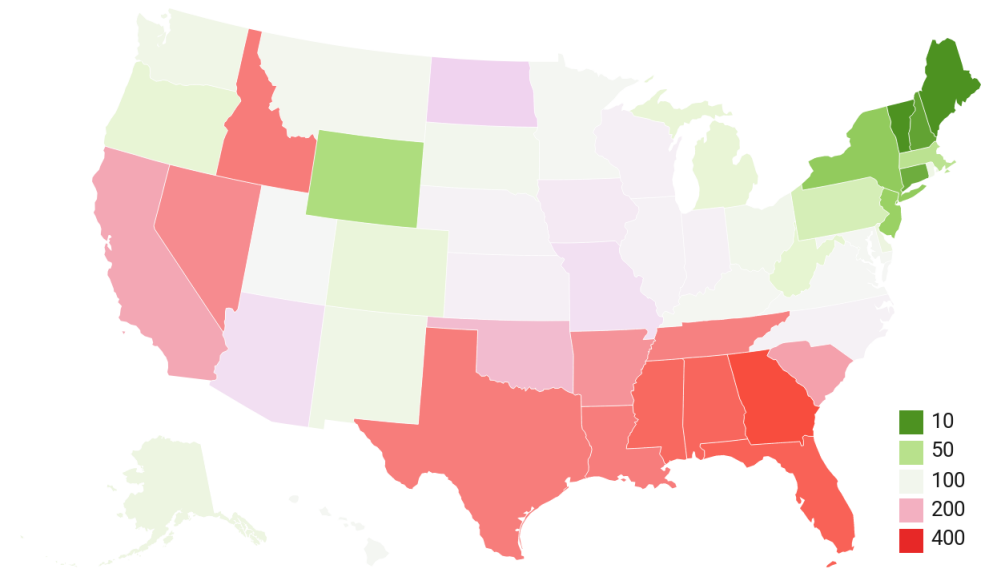


Health Industry Advisor LLC analysis

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

New Daily Infections Per 1 Million Population

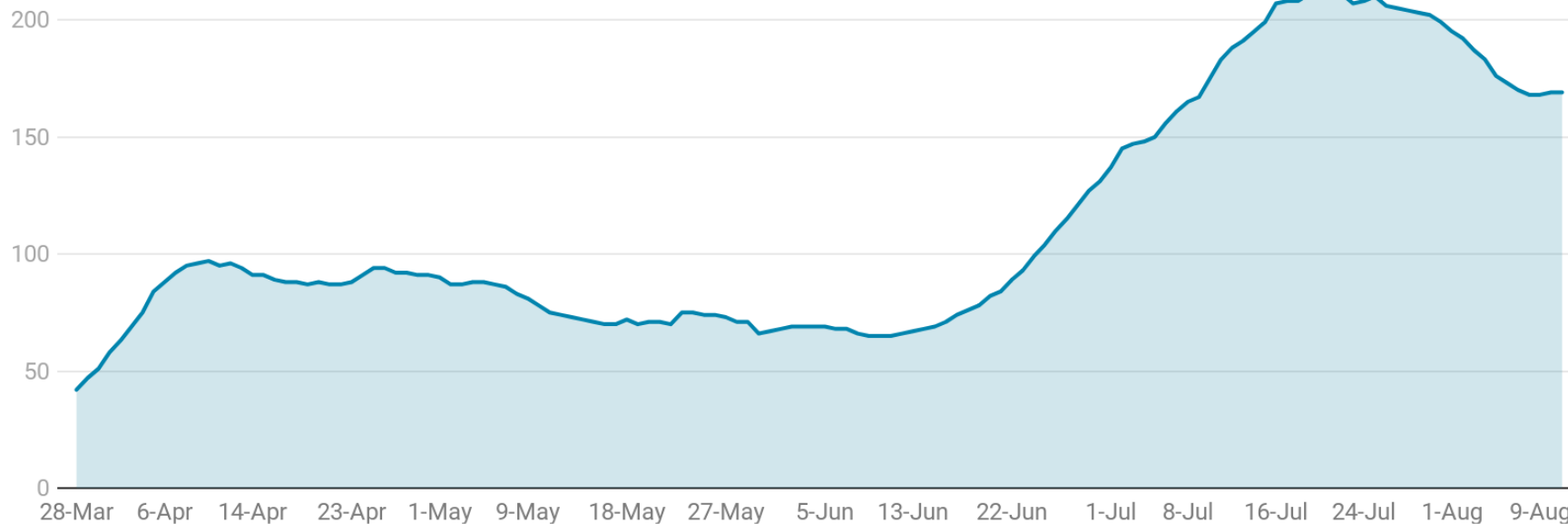
Trailing 7-Day Moving Average, As of August 11



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

New Infections Per 1 Million Population - United States

Trailing 7-Day Moving Average, Through August 11



Health Industry Advisor LLC analysis

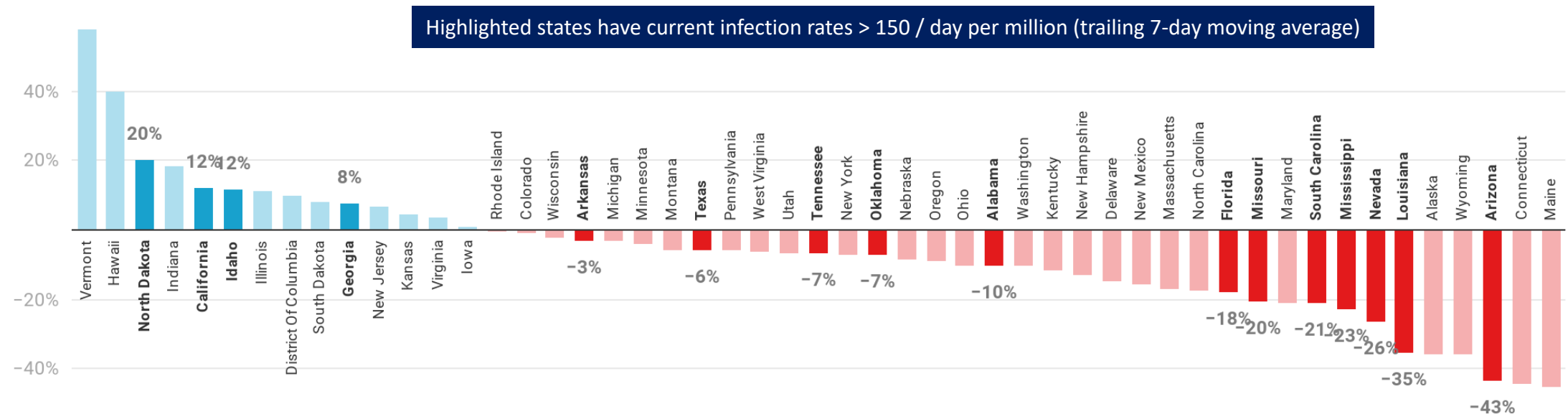
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

* - per million per day, trailing 7-day moving average

New daily infection rates declined in most states during the past week;
Concerns are North Dakota, California, Idaho and Georgia, which saw increases to relatively high rates

Week-Over-Week Change in New Infection Rate

Trailing 7-Day Moving Average, August 11 v. August 3



Health Industry Advisor LLC analysis

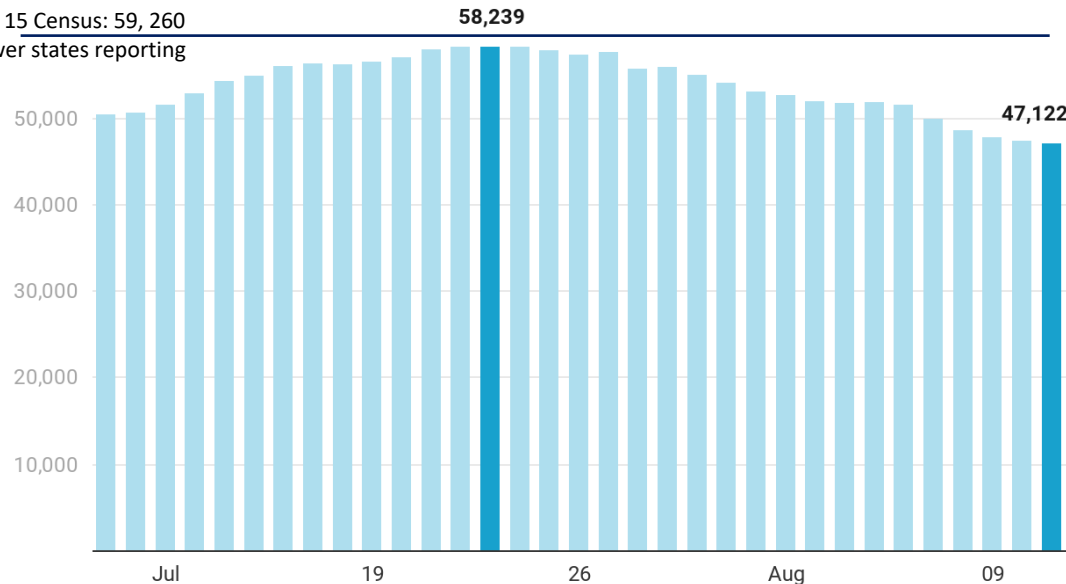
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

COVID-19 census continues to decline; Now, down 20% from April peak; Twenty states, however, led by Idaho, South Dakota and Wisconsin, are seeing far more patients

Hospital Census: COVID-19 Patients

As of August 11

April 15 Census: 59,260
8 fewer states reporting



Florida data first available on July 10

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

Week-Over-Week Change in COVID-19 Hospital Census

As of August 11

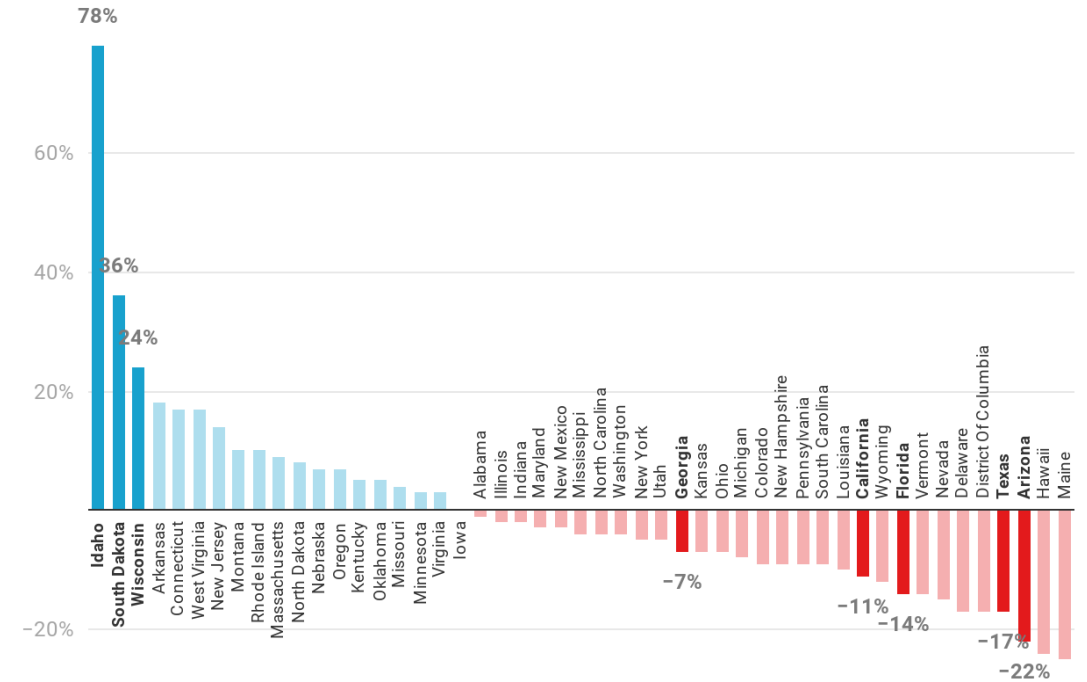
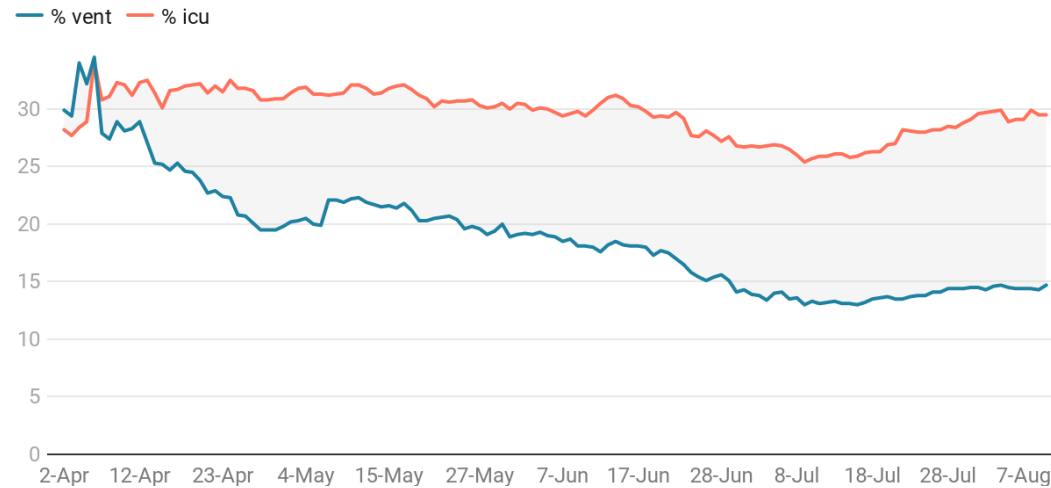


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid tracking Project • Created with Datawrapper

ER Visits for COVID-19 are Declining

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of August 11



Health Industry Advisor LLC analysis

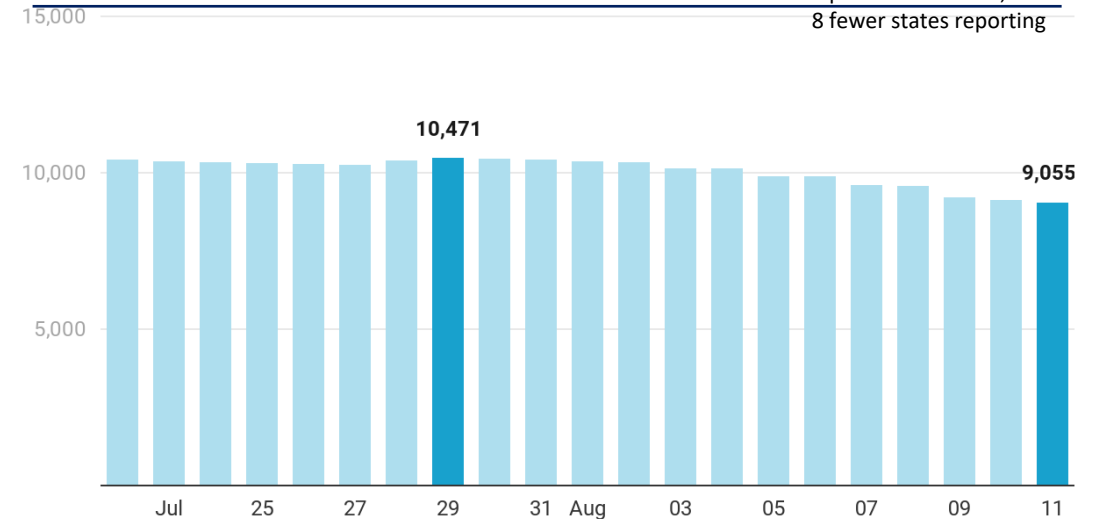
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

ICU COVID-19 Census Also Down

COVID-19 ICU Census

April 22 Census: 15,013

8 fewer states reporting

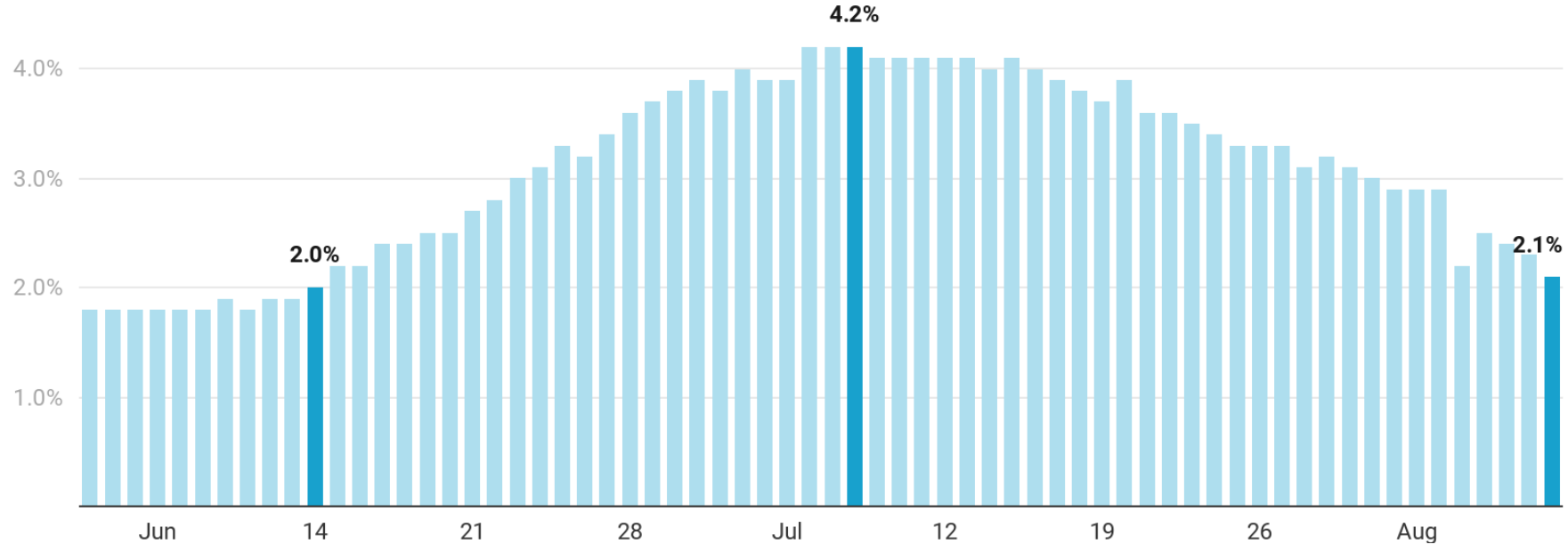


For states reporting these data: AZ, CA, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MS, NV, NJ, NY, NC, OH, OK, OR, RI, SC, TX, UT, VA, WI & WY

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

% of Emergency Department Visits for COVID-Like Illness

As of August 8

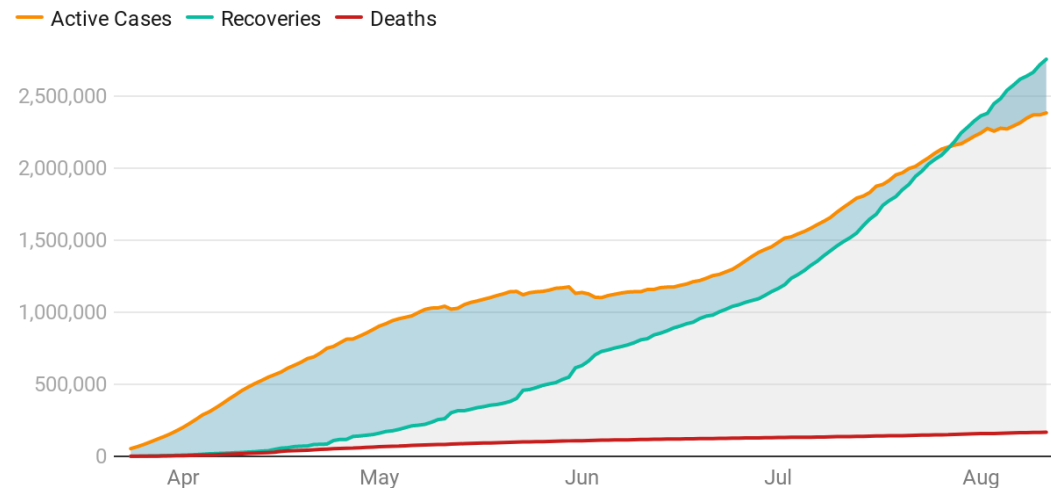


Health Industry Advisor LLC analysis

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

Active Cases v. Recoveries & Deaths

Through August 11

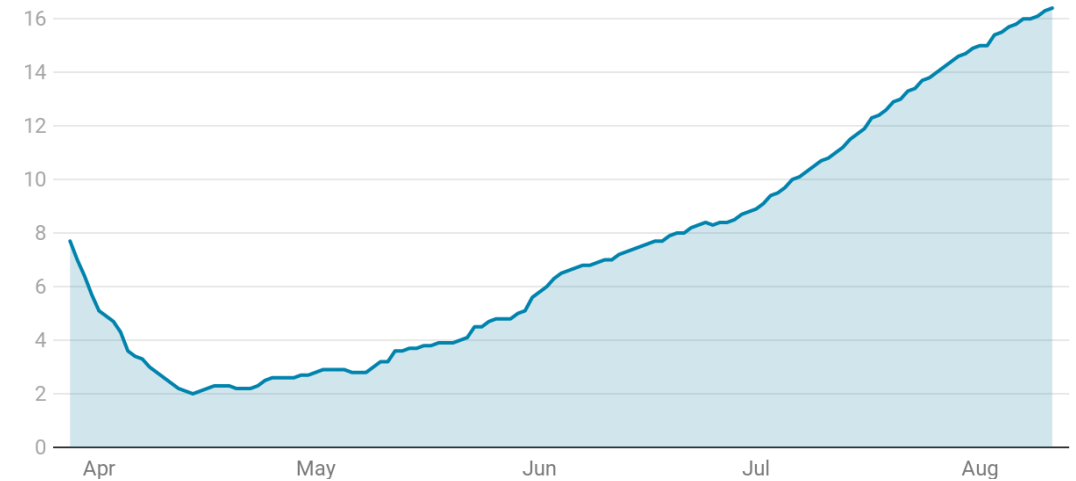


Health Industry Advisor LLC analysis

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

Recoveries: Deaths - United States

As of August 11



Health Industry Advisor LLC analysis

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

Deaths Recorded With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of August 11

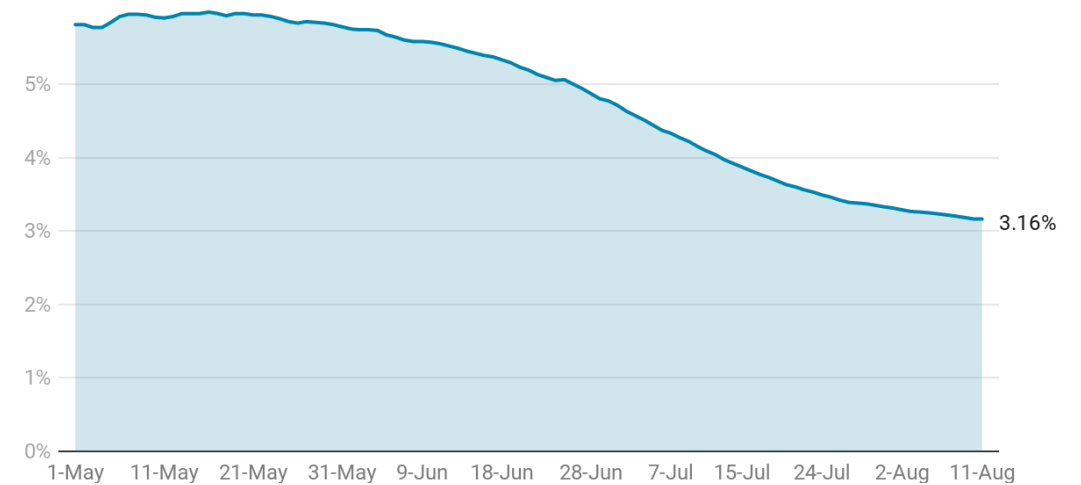


Health Industry Advisor LLC analysis

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

Deaths Per Case

As of August 10



Health Industry Advisor LLC analysis

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

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

- The Atlantic's Covid Tracking Project: <https://covidtracking.com>
- Worldometers.info: <https://www.worldometers.info/coronavirus/>
- Centers for Disease Control, National, Regional, and State Level Outpatient Illness and Viral Surveillance <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
- Centers for Disease Control, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control, COVID Data Tracker <https://www.cdc.gov/covid-data-tracker/index.html#mobility>
- 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>