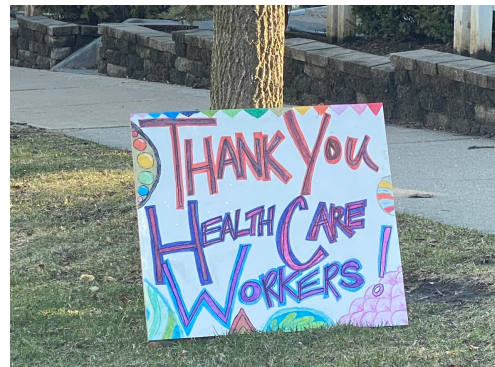
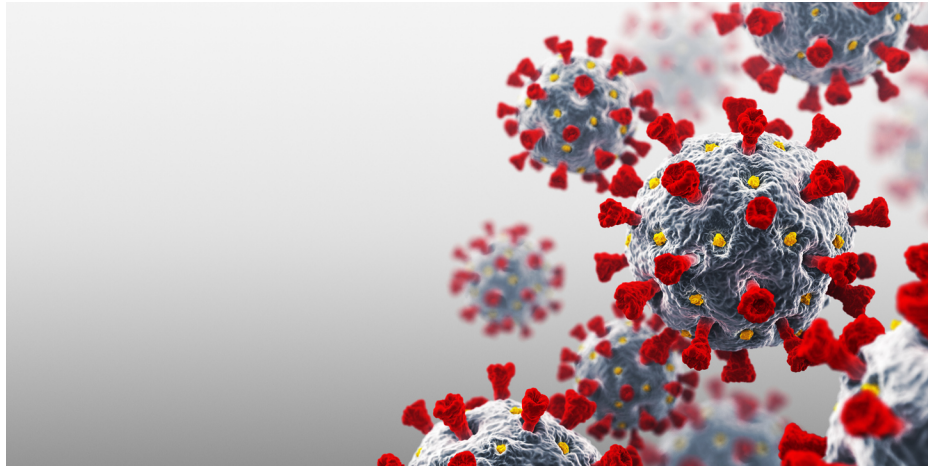
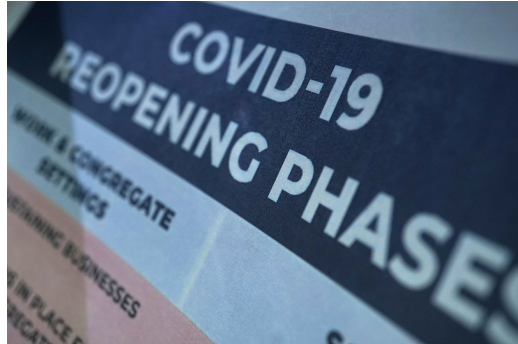




COVID-19 Report

Issue # 139

Tuesday, August 18, 2020

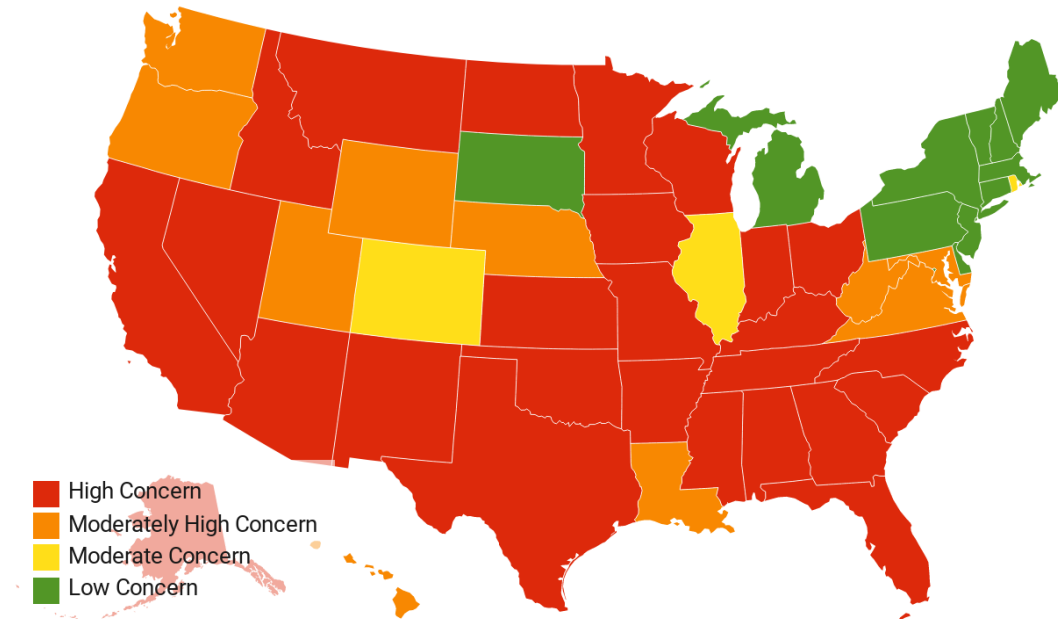
- The slowing rate of infections and hospital stays is finally presenting itself in our multi-factor model of "concern" with the virus: **Since the beginning of August, several states have shown improvements in their overall rating:**
 - **Colorado and New Mexico and Colorado** have improved to "Green"
 - **Maryland, Oregon and Wyoming** to "Yellow"
 - **Arizona, California, Minnesota, Ohio, South Carolina and Wisconsin** to "Orange"
 - Hawaii, however, is now "Red" and Illinois, "Orange"
- Internationally, the islands of **Aruba, Sint Maarten and Turks and Caicos** report the highest rates of new infections per capita over the past seven days
- The **United States** ranks high on several categories - cases, deaths, cases and deaths per capita, however, it **has dropped from 5th a few weeks ago to 13th in the rate of new infections per capita** over a 7-day period
- Tests reported yesterday were the lowest on any single day since July 11; Countering the historical inverse relationship between test volume and test-positive %, however, the **test-positive rate continued its now month-long downward trend**
- Improvements are being seen across the states, as only Florida, Mississippi and Nevada report test-positive rates > 15% for the past week; only Georgia, Iowa, Kansas and Nevada report both rates >10% and increasing rates week-over-week
- **New cases yesterday were the fewest on a Monday in seven weeks;** on a week-over-week basis, new cases are down 7.6% - this rate of decline has increased each of the past 4 days
- While most states are moving further from their peak infection rates, Kansas set a record yesterday - 28 days after setting its previous high mark. Kentucky is at risk of breaking its now 23-day old record high
- The CDC and others have provided evidence that the actual infection rate is several x higher than reported. Youyang Gu, whose model has been referenced here several times, estimates that infections in the U.S to-date exceed 44M, versus the 5.6M reported (10x higher). He estimates that new cases yesterday were ~ 333k verses ~40,000 reported. **Gu suggests that new daily cases in the U.S. peaked on or about July 11 and have declined about 20% since. His model projects these new cases to decline by another 35% by November**
- While stress on the U.S. healthcare system continued to ease yesterday, we have yet to see the decline in deaths that we would hope and expect to see. **Deaths reported yesterday were relatively low, as typical for a Monday. On a week-over-week basis, however, they are up 3%.** Given the on-going decline in new cases, we should expect to see a declining rate by this point

State-By-State – Multi-Factor Scorecard

Colorado and New Mexico and Colorado have improved to “Green”; Maryland, Oregon and Wyoming to “Yellow”; Arizona, California, Minnesota, Ohio, South Carolina and Wisconsin to “Orange”. Hawaii is now “Red” and Illinois, “Orange”

Scorecard

As of July 31

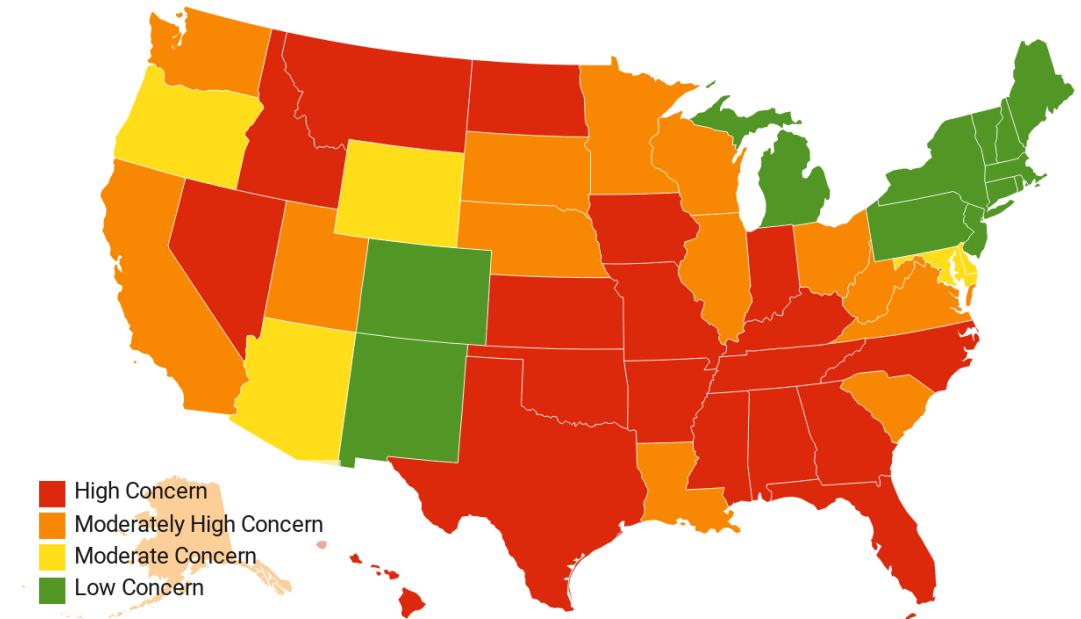


Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

Scorecard

As of August 17



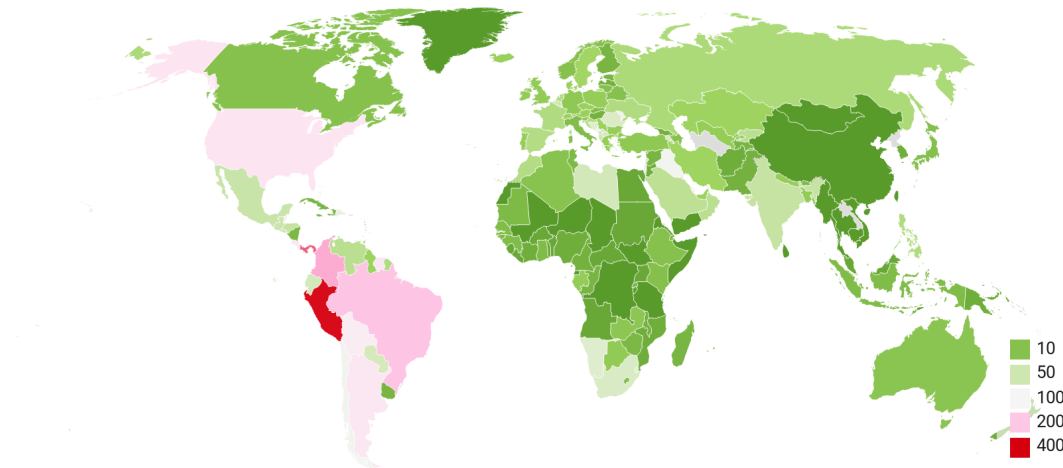
Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

The islands of Aruba, Sint Maarten and Turks and Caicos lead the world in New Daily Infection Rates; South American countries Peru, Colombia and Brazil are high in these ranking

New Daily Infections / 1 Million Population

Trailing 7-Day Moving Average, As of August 17



Health Industry Advisor LLC analysis

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

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of August 17

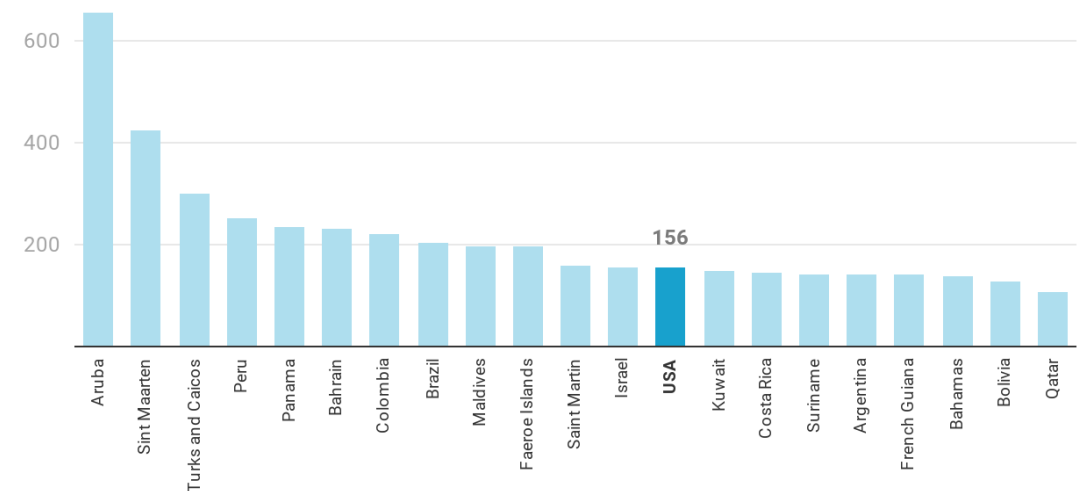


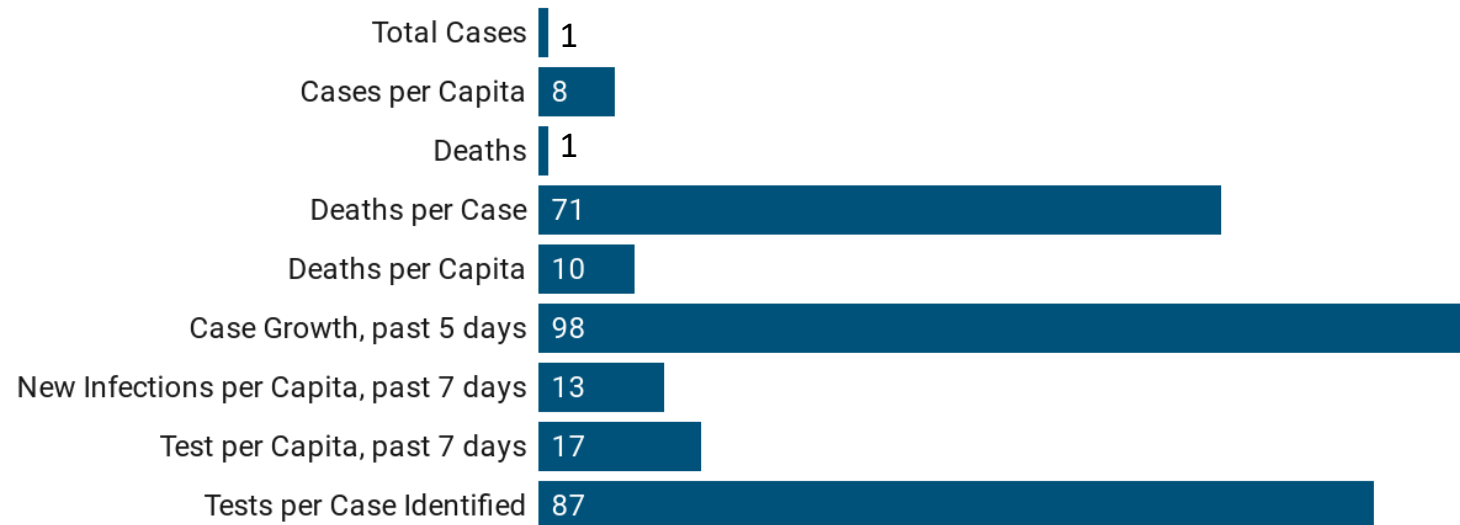
Chart: Health IndustryAdvisor LLC • Created with Datawrapper

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

U.S. ranks high in cases, deaths, cases/capita, deaths/capita; lower in deaths/case and case growth rate. Tests/capita is reasonably favorable

U.S. Rankings Among All 215 Countries With Coronavirus Cases

As of August 17



Health Industry Advisor LLC analysis

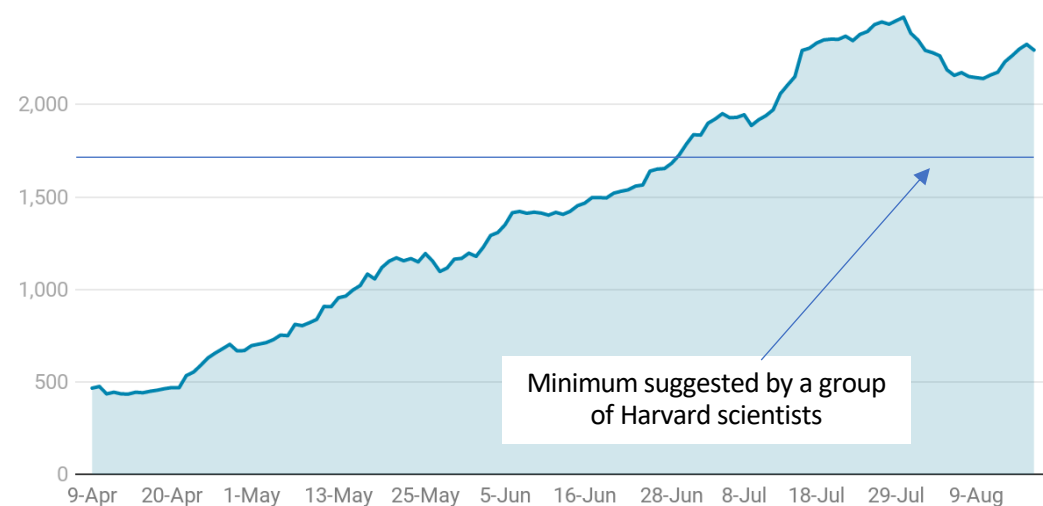
Chart: Health Industry Advisor LLC • Source: various • Created with Datawrapper

Testing volume fell yesterday to its lowest single-day volume since July 11; test-positive rate, however, remained relatively low – countering historical inverse relationship

Testing refers to tests for active infection, as reported via state health agencies; does not reflect antibody testing for prior infection

Daily Tests Per 1 Million - United States

Trailing 7-Day Moving Average, As of August 17

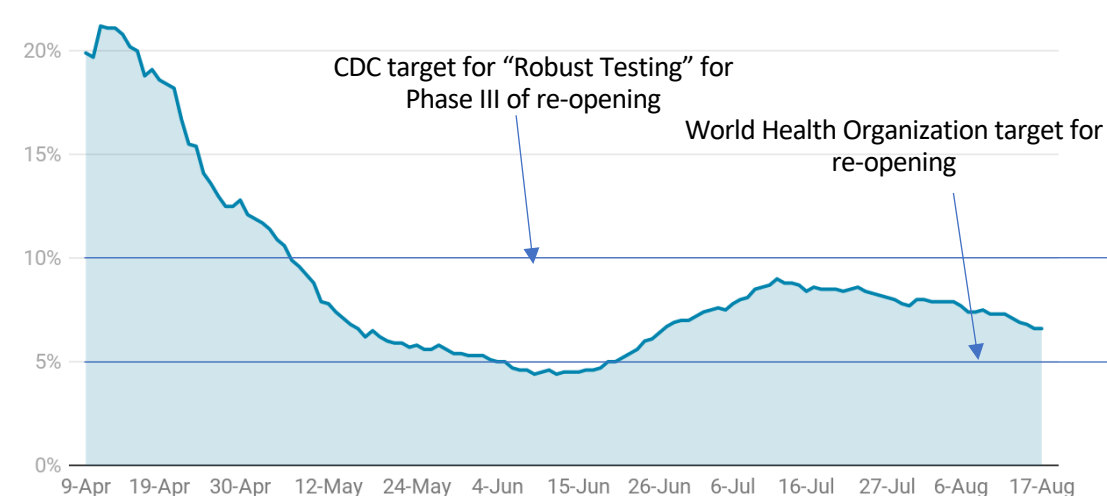


Health Industry Advisor LLC analysis

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 17



Health Industry Advisor LLC analysis

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

Note: On August 11, North Carolina made a significant adjustment, removing 220,000 tests from their YTD totals. We manually removed this negative adjustment from the August 11 data to better reflect actual testing for that date

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%

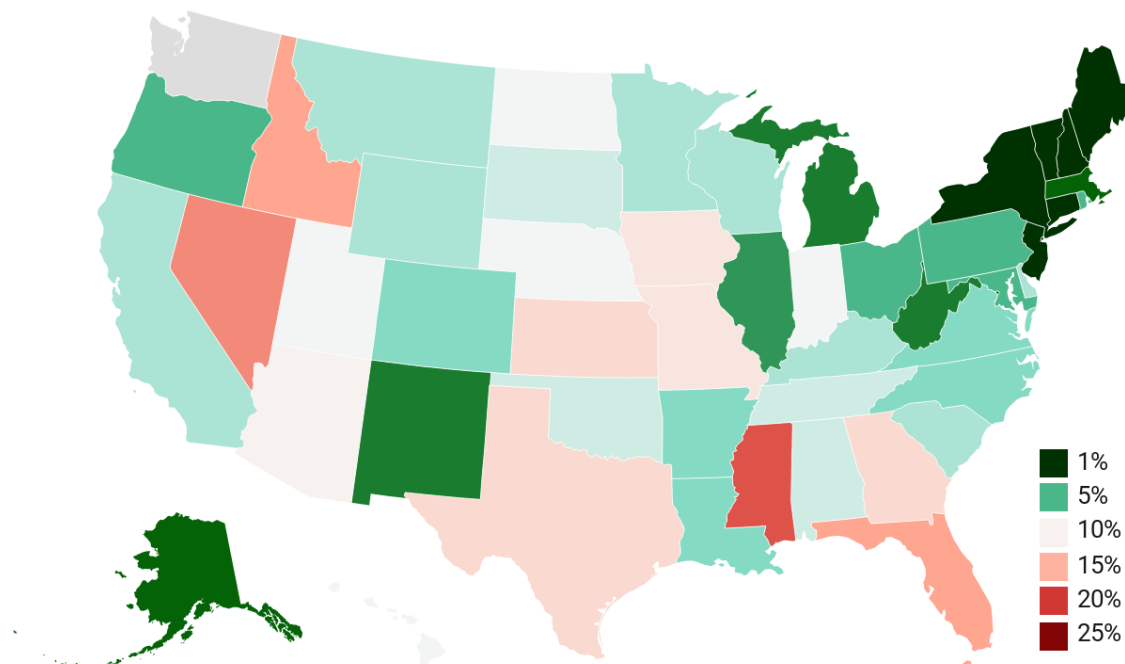
State-By-State

Test results are improving: Only Florida, Mississippi and Nevada report test-positive% >15% for the past 7 days; Only Georgia, Iowa, Kansas and Nevada report rates above 10% and increasing. Texas' rate fell from 20% to >12%

Test-Positive Rate

Trailing 7-Day Moving Average, As of August 17

Testing refers to tests for active infection, as reported via state health agencies; does not reflect antibody testing for prior infection



Health Industry Advisor LLC analysis

Note: Due to a computer glitch, Washington has only reported positive results since August 1.

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

As typical for a Monday, new cases were higher yesterday, however, they were the fewest new cases on a Monday since June 29; Week-over-week, new cases are down 7.6%

New Cases

Through August 17

Mondays Highlighted

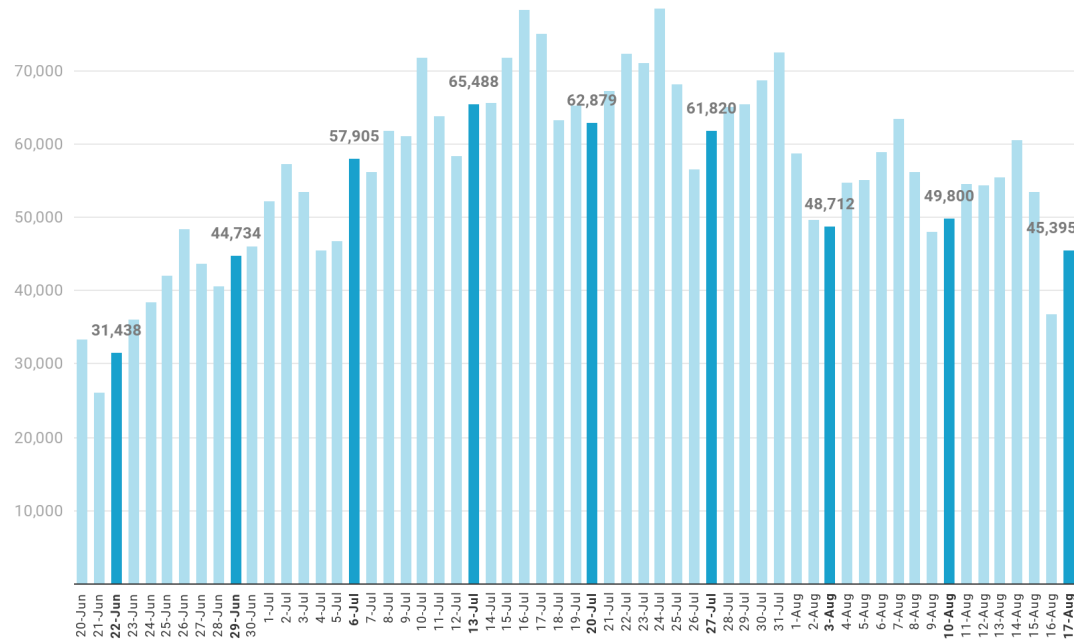
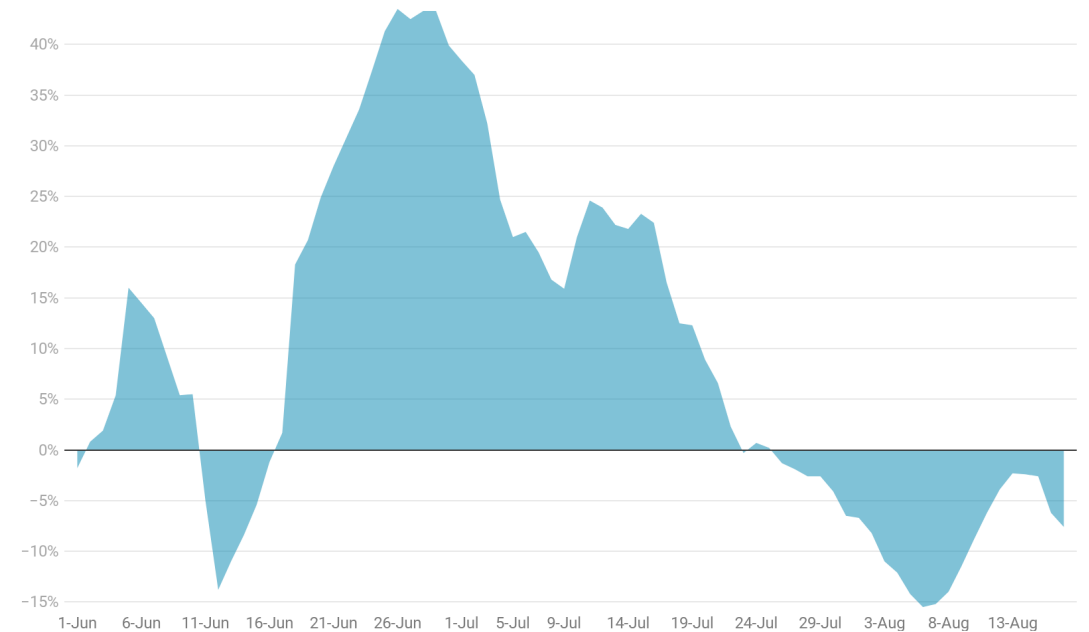


Chart: Health Industry Advisor LLC • Source: eorlometers.info • Created with Datawrapper

Note the daily pattern: new cases are typically low on Sunday, then increase each day through the week. While we have been noting *this for the past few weeks*, researchers from MIT, Boston University and Harvard Medical School confirmed this in a report published by CIDRAP on August 17

Week-Over-Week Change In New Cases

Through August 17



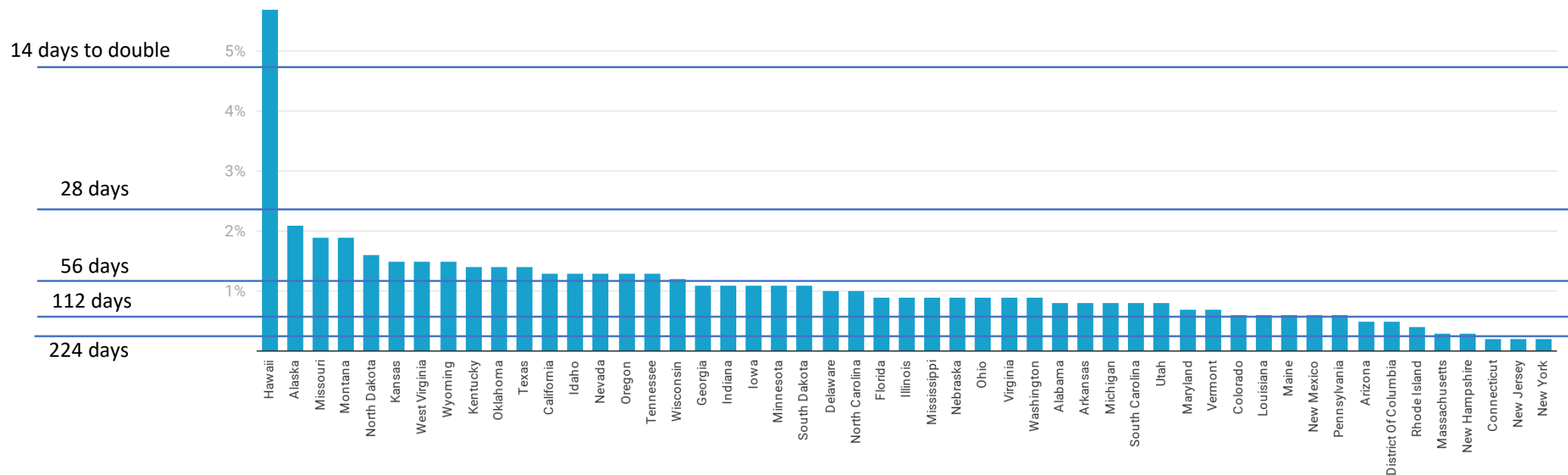
Health Industry Advisor LLC analysis

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

Case growth is slowing but, Hawaii remains the outlier. At current rates, cases are doubling every 12-13 days in Hawaii; every 315 days in New York; 75-76 days for the United States overall

Growth Rate in Total Cases

Trailing 5-Day Moving Average, Through August 17

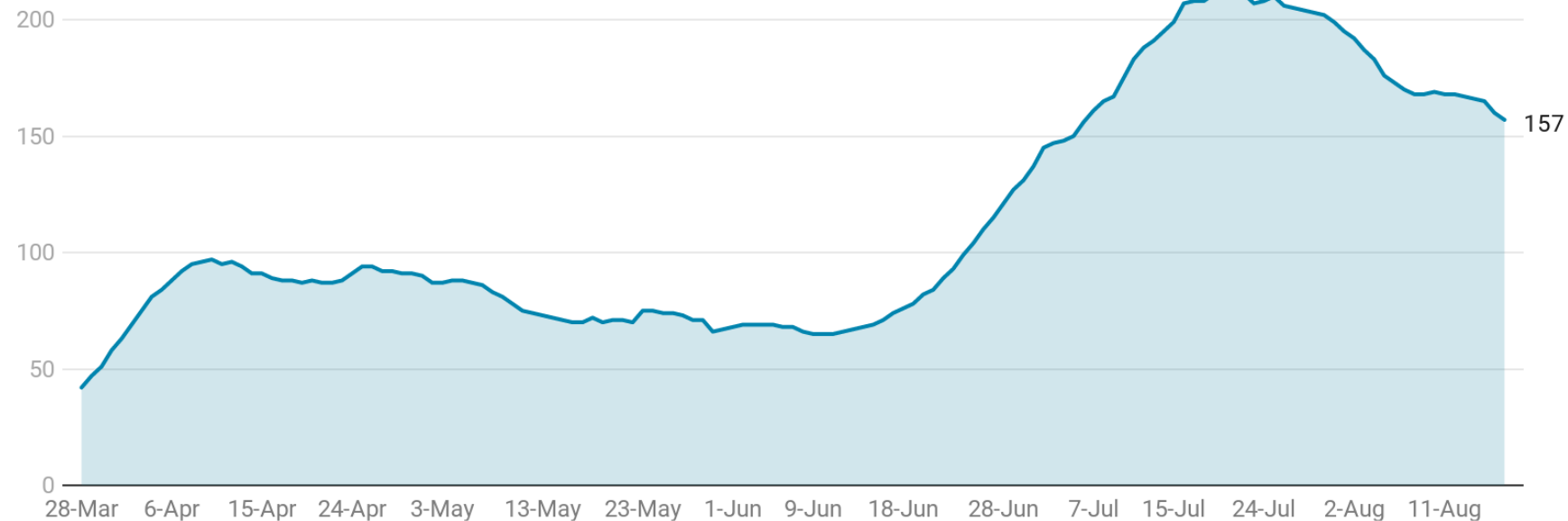


Health Industry Advisor LLC analysis

Chart: 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 17



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

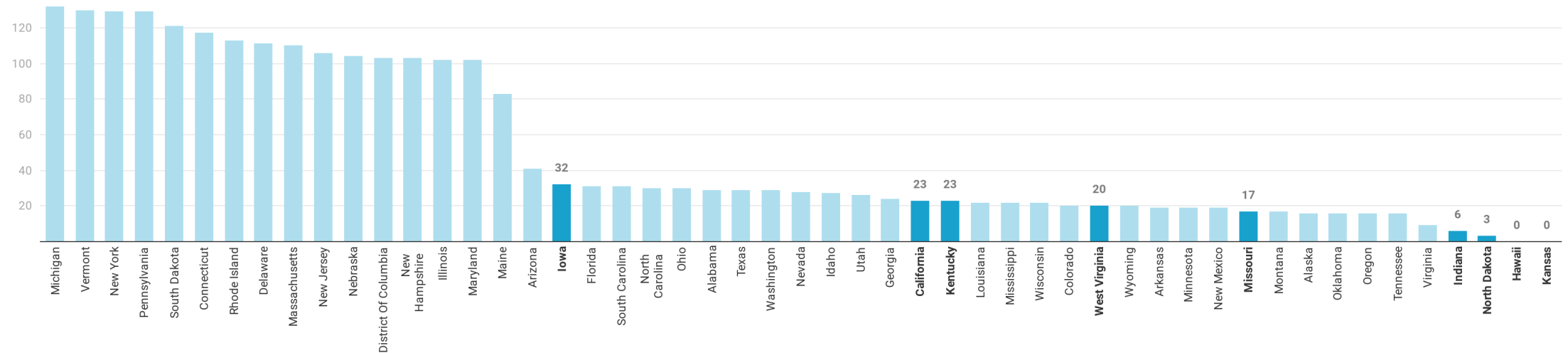
Most states have gone at least a week since posting their highest rate of new infections per capita

Kansas set a new high yesterday – 28 days after its previous high; Kentucky is close to its high posted 23 days ago

Days Since Peak New Infections Per Capita

As of August 17

Highlighted states are within 15% of their highest rate



Health Industry Advisor LLC analysis

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

Given testing limitations and asymptomatic cases, how many infections have there been to-date?
 Gu* estimates 44M; new daily infection peaked in mid-July yet, may have been 333k yesterday

Estimated New Daily Infections - United States

Based on Youyang Gu's Model, As of August 17

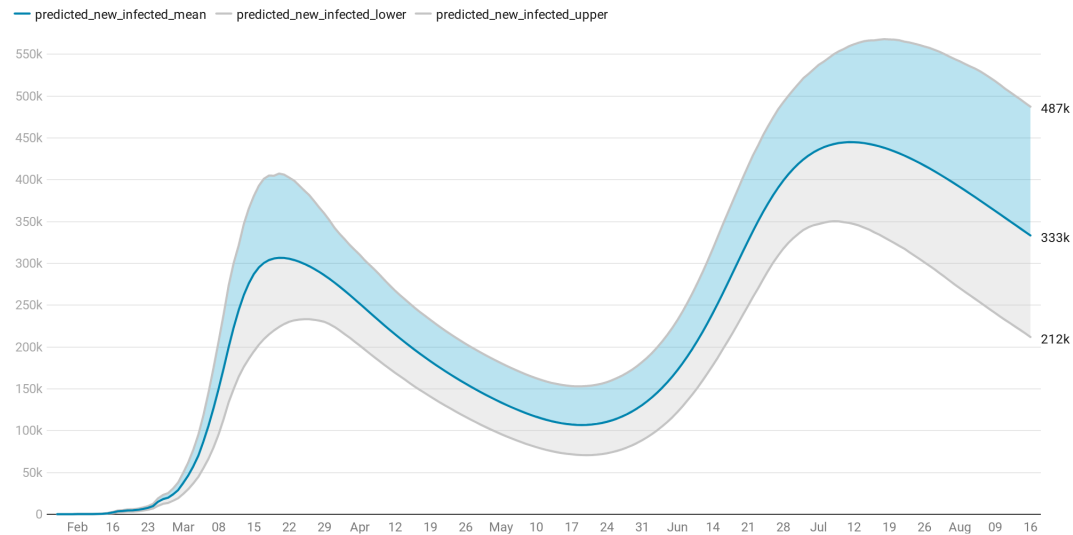


Chart: Health Industry Advisor LLC • Source: Youyang Gu • Created with Datawrapper

Estimated Total Infections - United States

Based on Youyang Gu's Model, As of August 17

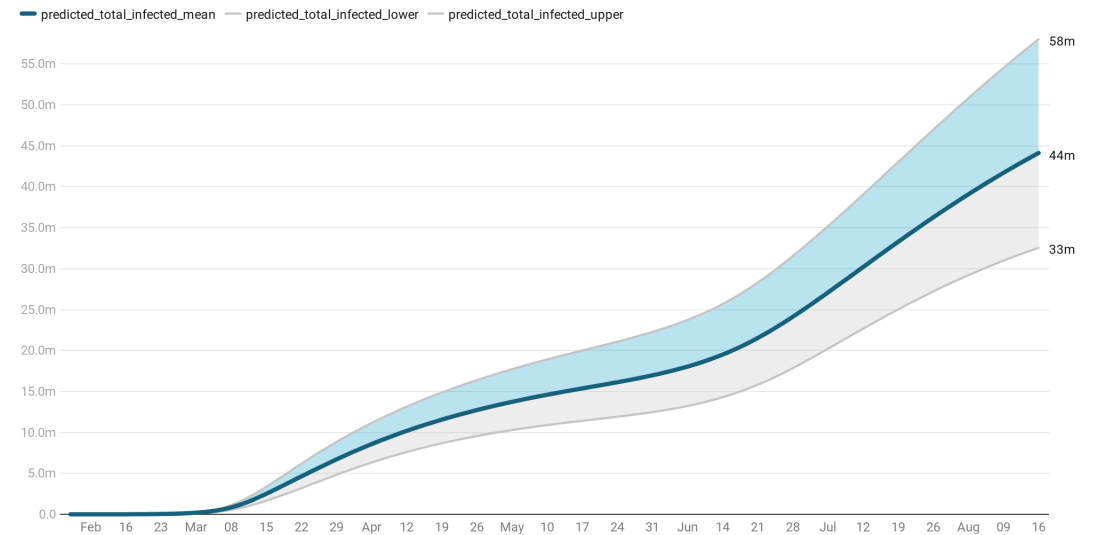
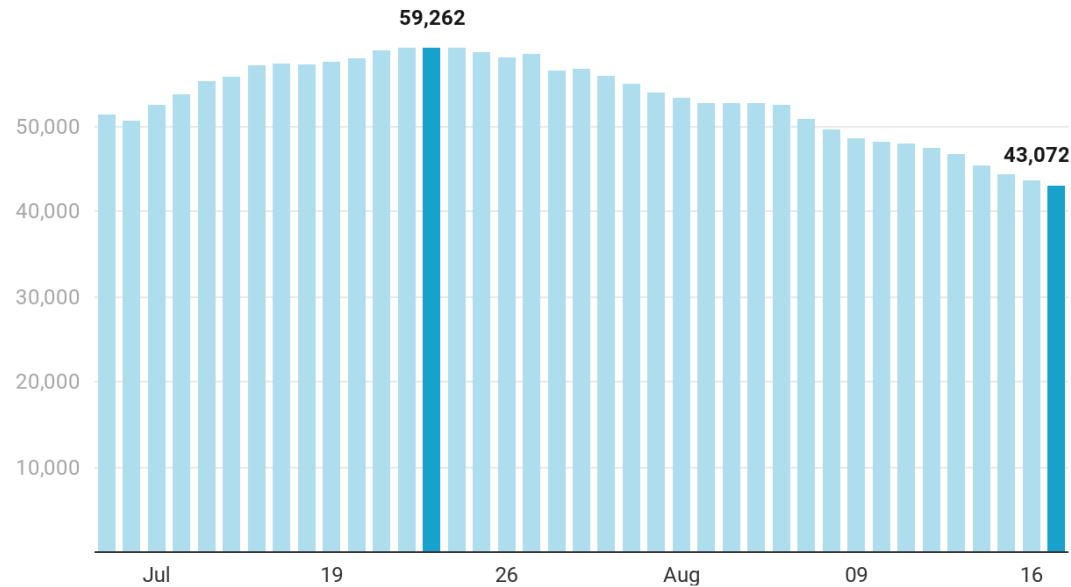


Chart: Health Industry Advisor LLC • Source: Youyang Gu • Created with Datawrapper

[* "Estimating True Infections: A Simple Heuristic to Measure Implied Infection Fatality Rate", Youyang Gu, July 29, 2020 \(Updated August 18\)](#)

Hospital Census: COVID-19 Patients

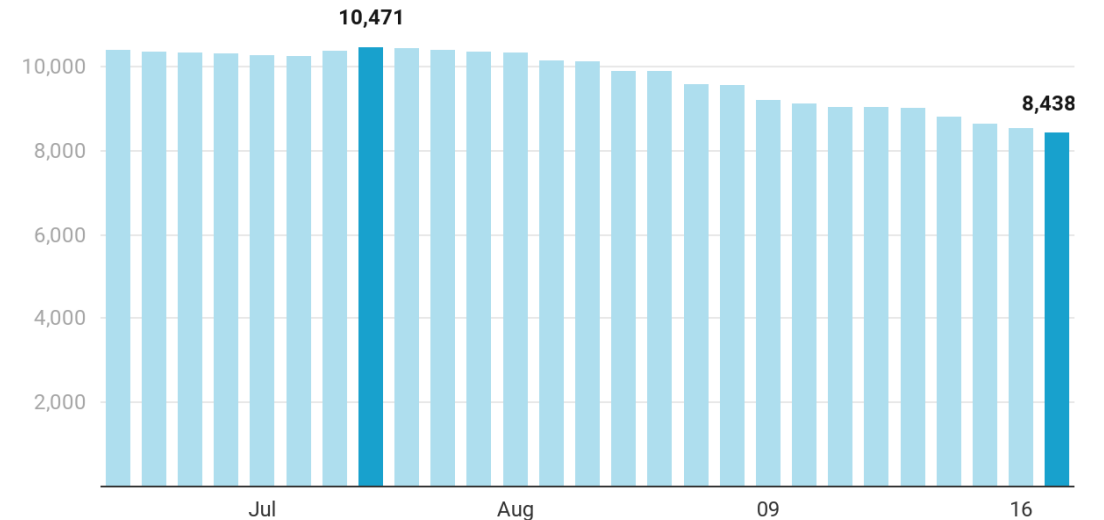
As of August 17



Florida data first available on July 10

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

COVID-19 ICU Census



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

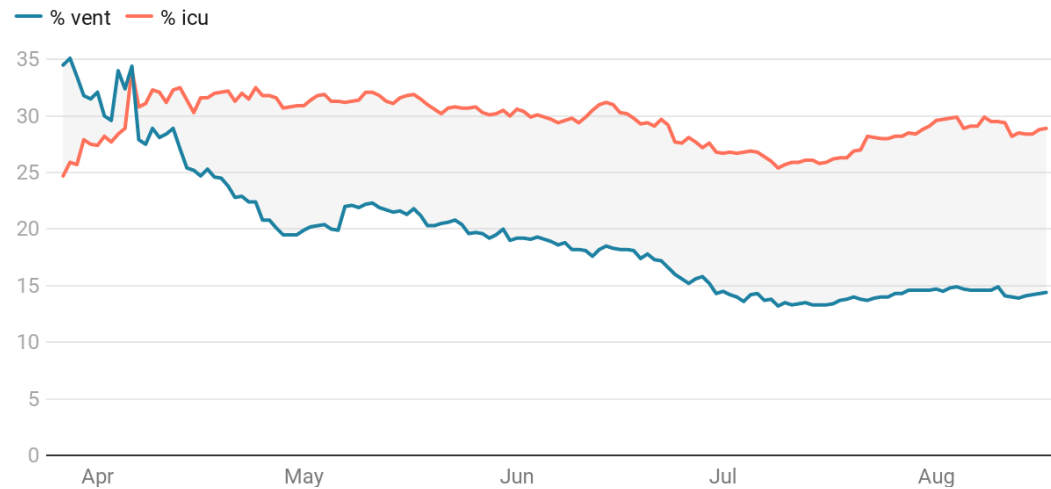
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

As hospital census declines, % in ICU is stable

ICU COVID-19 Census Also Down

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of August 17

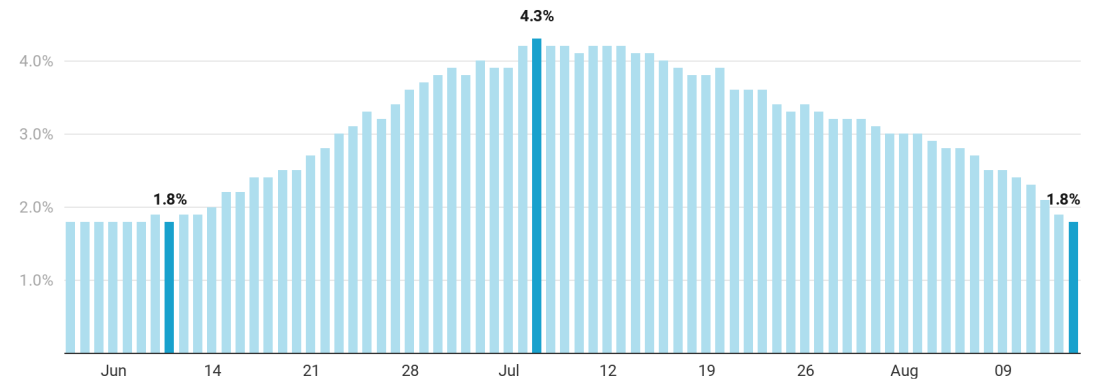


Health Industry Advisor LLC analysis

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 14



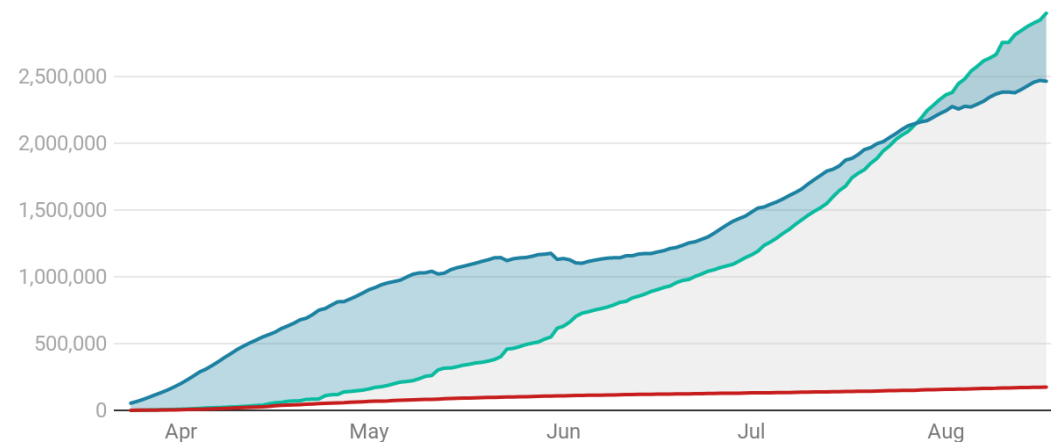
Health Industry Advisor LLC analysis

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

Active Cases v. Recoveries & Deaths

Through August 17

— Active Cases — Recoveries — Deaths

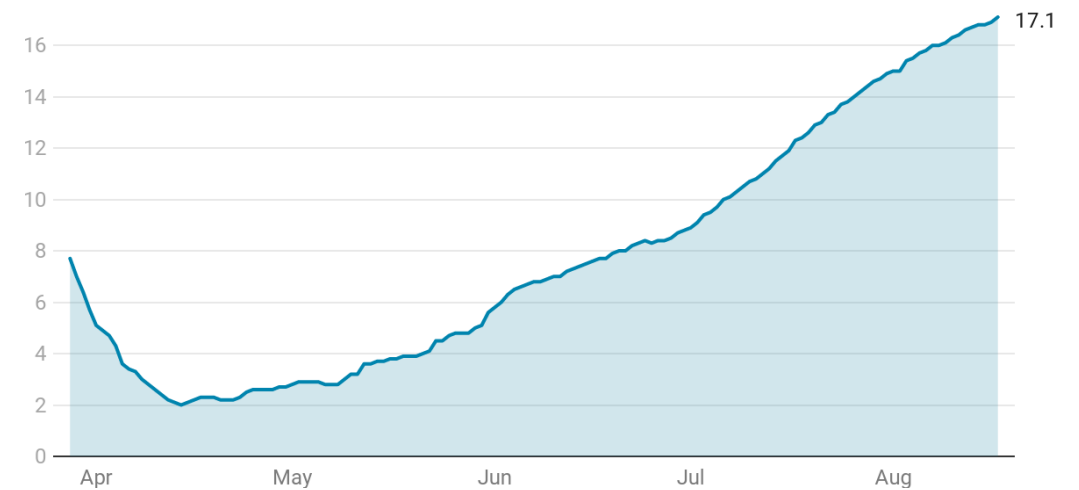


Health Industry Advisor LLC analysis

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

Recoveries: Deaths - United States

As of August 17



Health Industry Advisor LLC analysis

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

Following recent day-of-week pattern, deaths were relatively low on Monday. Seven-day average is up 3% versus a week ago
Deaths per case down to 3.1%

Deaths Recorded With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of August 17

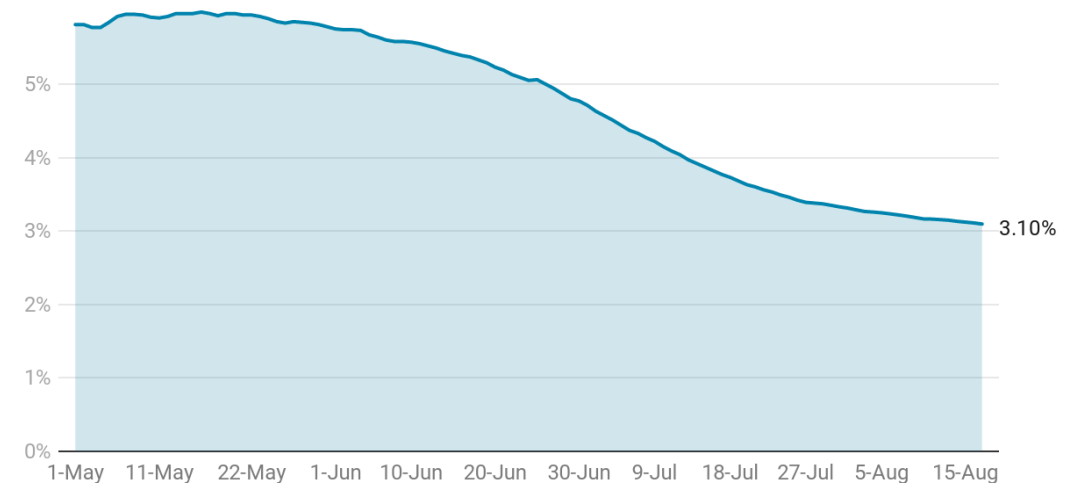


Health Industry Advisor LLC analysis

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

Deaths Per Case

As of August 17



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>
- COVID-19 Projections Using Machine Learning, <https://covid19-projections.com>