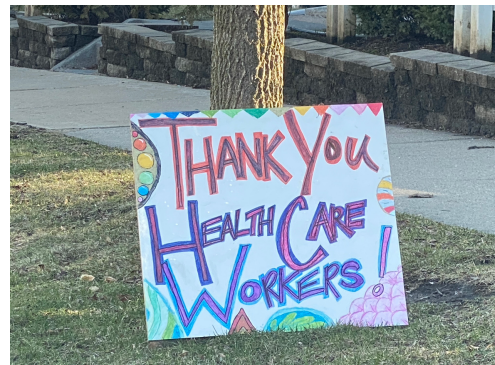
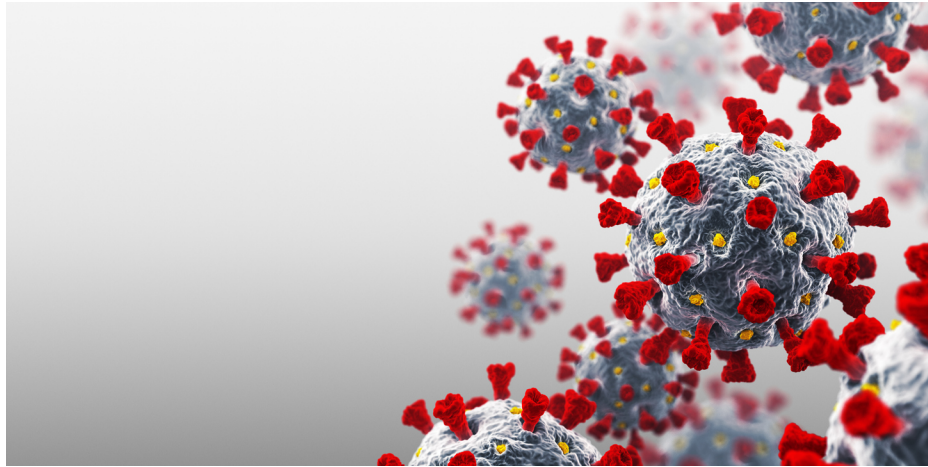
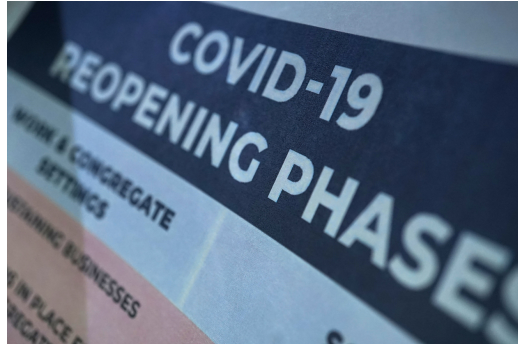




COVID-19 Report

Issue # 151

Tuesday, September 1, 2020

Comparing where we are at the end of August v. the end of July (all figures represent trailing 7-day averages, as of the end of the month):

- Using our multi-factor (rates of infections, case growth, hospitalization and test-positive%) scorecard, **the overall situation in the U.S. improved but, remains concerning:**
 - Arizona, Colorado, Delaware, New Mexico, Oregon improved to "Green" (Low Concern)
 - Louisiana, Ohio, Utah and Washington, improved to "Yellow" (Moderate Concern)
 - California, Indiana, Nebraska, South Carolina and Tennessee improved to "Orange" (Moderately High Concern)
 - Illinois and South Dakota have regressed
- **The infection hot-spots in the U.S. shifted from the South and West (Arizona, California, Florida and Georgia, in particular) to the Heartland/Upper Midwest (Iowa and the Dakotas)**
- Internationally, July "hot-spots" of the United States, Oman and South Africa cooled somewhat, while South America (Argentina, Brazil, Colombia and Peru, in particular) heated-up. Europe, while experiencing relatively low infection rates, has seen these rates increase during August
- Daily test volume regressed slightly (3%)
- **The test-positive rate improved to 5.3%, from 8.3%.** WHO has set a 5% target, while the CDC uses 10% as the target for Phase III re-opening
- **Average daily new cases declined by more than 1/3**, to 42k from 65.6k
- **Deaths did not fall as sharply**, however, dropping from 1,151 per day to 946
- Daily inpatient census of COVID-19 patients fell from 57k to 36.6k; ICU census similarly fell, from 10.4k to 7.4k
- **At the end of July 1-in-50 active COVID-19 cases were in the hospital; at the end of August, this fell to 1-in-90**
- **At the end of July 1-in-200 active cases were in the ICU; at the end of August 1-in-360 were in the ICU**
- ER visits for both COVID-19-like illnesses and influenza-like illnesses are down at the end of August versus where they were at the end of July
- Due to the declining infection and infection transmission rate, **Youyang Gu lowered his projected deaths by the end of November to 219.5k, versus the 230.5k he had projected at the end of July for November 1; He also lowered his projection of estimated total infections as of November 1 by nearly 9%**

Good, not great momentum during August –

Cases, test-positive rates, healthcare resource use is down

Gu translates this to 9% fewer total infections and 5% fewer deaths by 11/1

Change in Key Metrics

July 31 v. August 31

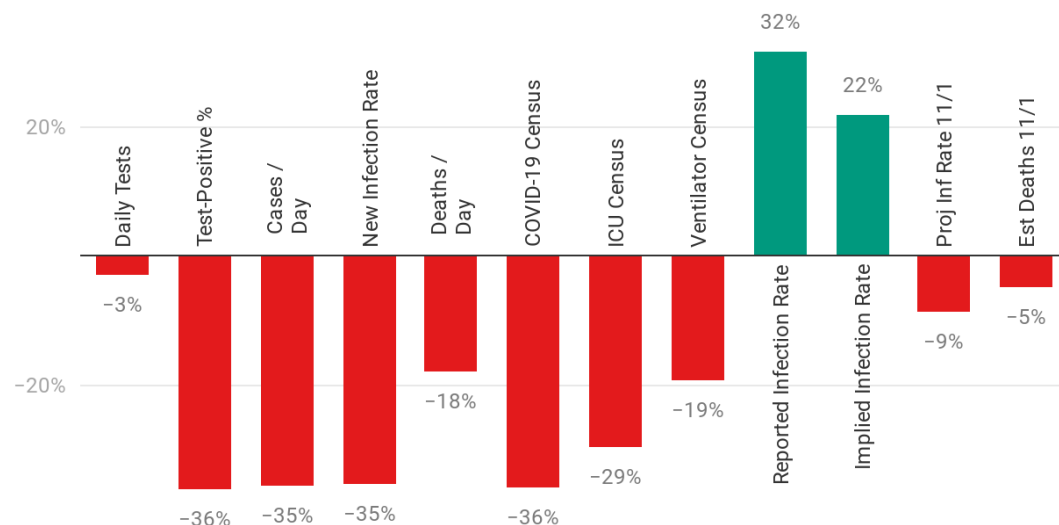


Chart: Health Industry Advisor LLC • Created with Datawrapper

- Slight reduction in average tests per day
- Test-positive rate down to 5.3%, from 8.3%
- New daily cases down by > 1/3
- Deaths remain high – not falling as rapidly as cases
- Census and ventilator use is down - *even with more states reporting these data*
- Implied infections (Gu*) haven't increased as much as reported cases – better testing?
- Gu has revised his projected cases and deaths for November 1 downward, due to lower transmission rates

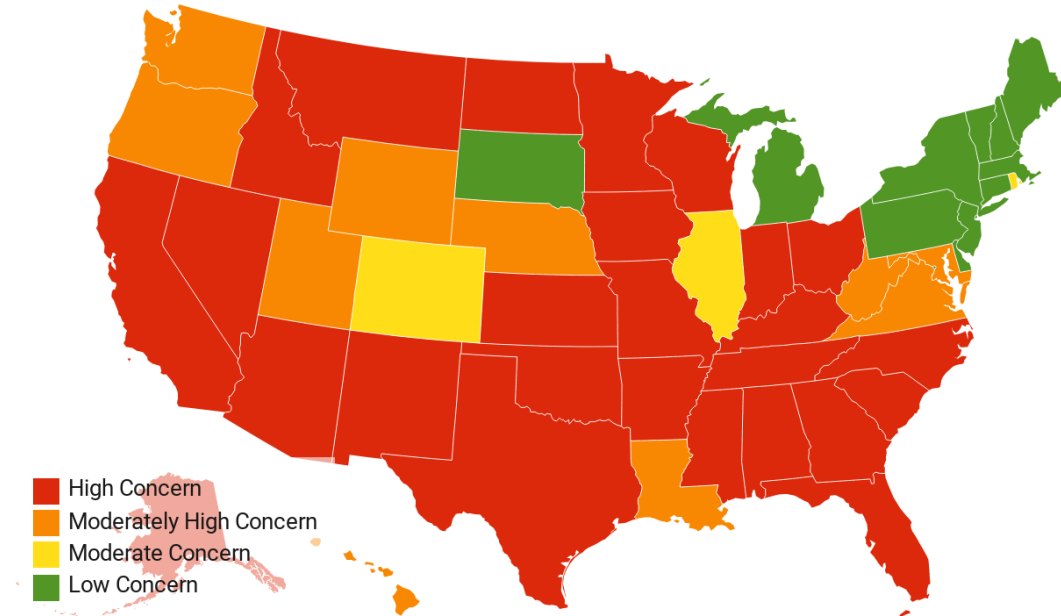
*Source: “Estimating True Infections: A Simple Heuristic to Measure Implied Infection Fatality Rate”, Youyang Gu, July 29, 2020 (Updated August 31)

State-By-State – Multi-Factor Scorecard

Overall, the map has improved but, shows mostly “high concern”. Arizona, Colorado, Delaware, New Mexico, Oregon are now “Green”; Louisiana, Ohio, Utah and Washington, “Yellow”; California, Indiana, Nebraska, South Carolina and Tennessee now “Orange”
Illinois and South Dakota have regressed

Scorecard

As of July 31

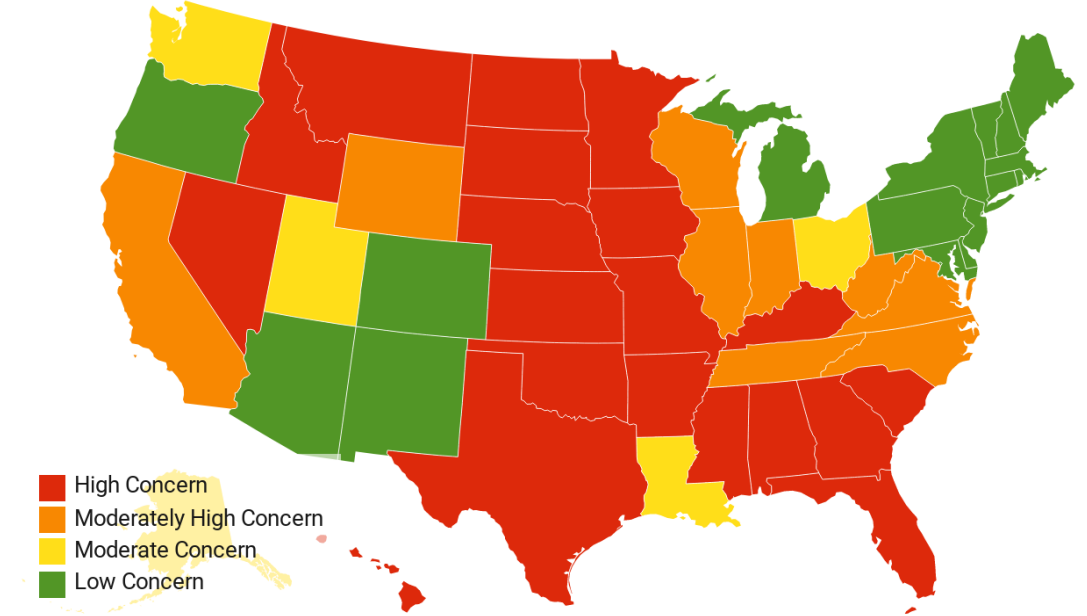


Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

Scorecard

As of August 31



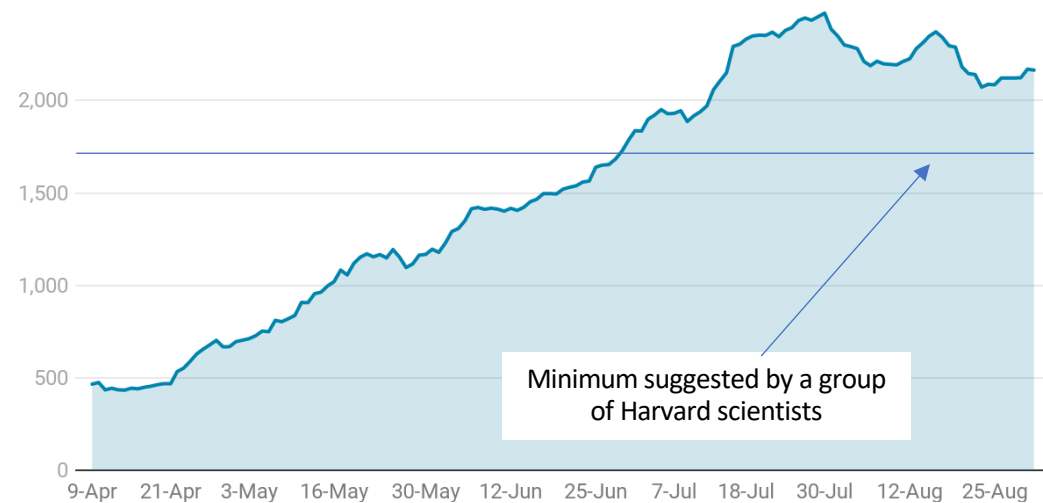
Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

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 31

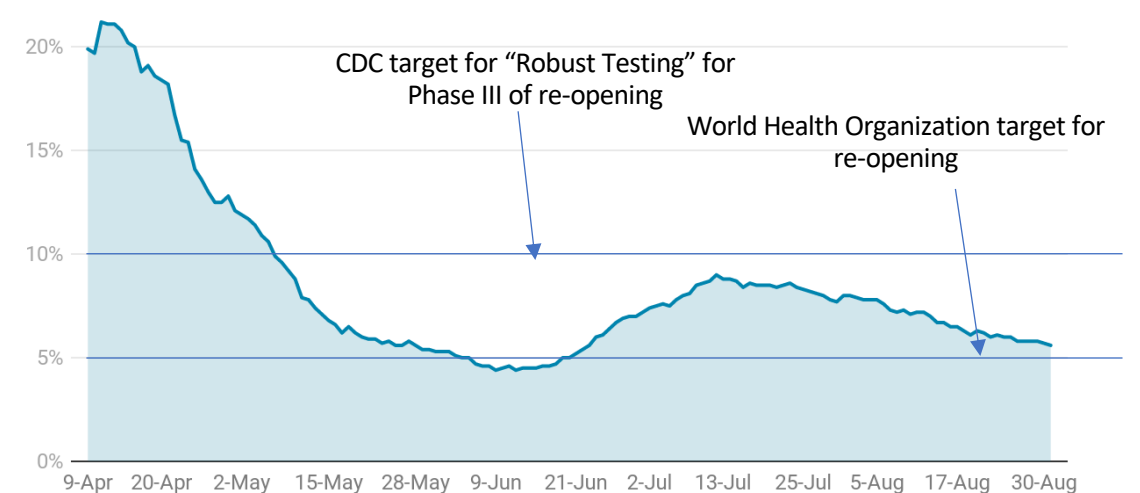


Health Industry Advisor LLC analysis

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 31



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

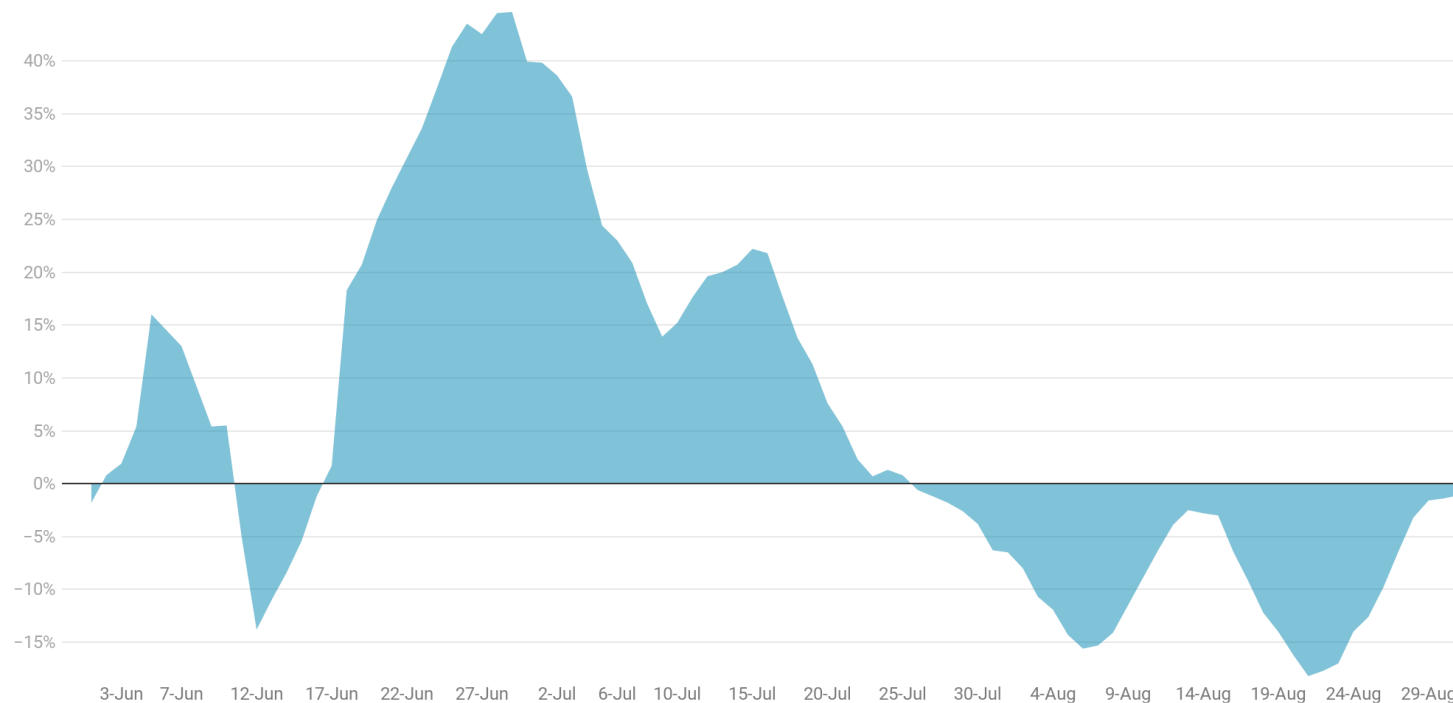
Note: Due to a computer glitch, Washington batch-reported on August 26 all its negative test results from August 1-25. We "smoothed" the data, by applying a constant test-positive rate to estimate the negative tests by day for this period

United States

Week-over-week, new cases are down 1.1%; new cases haven't increased week-over-week since July 25

Week-Over-Week Change In New Cases

Through August 31



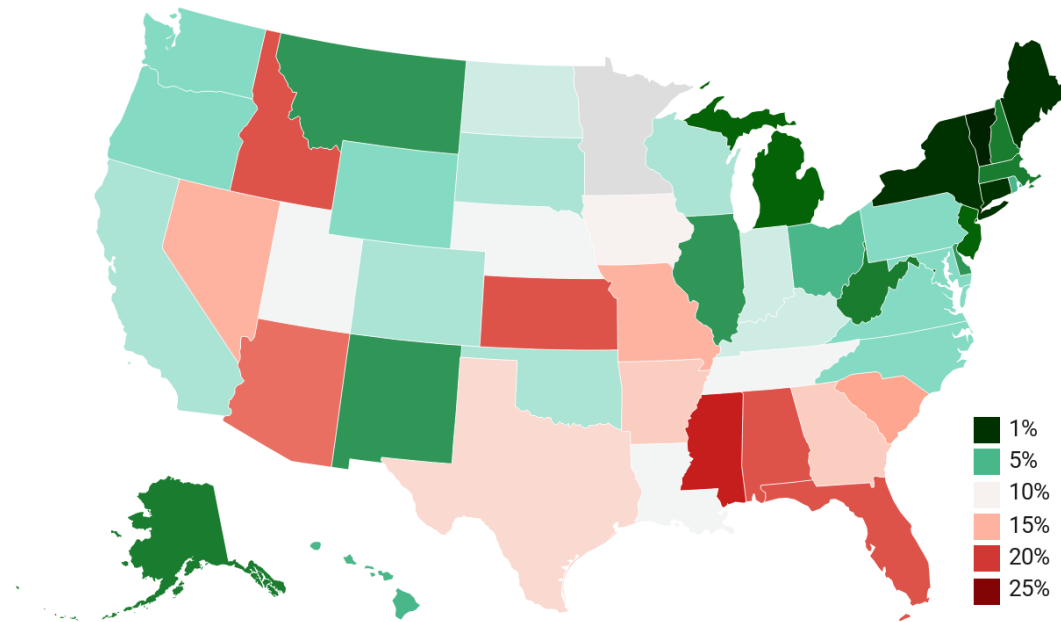
Health Industry Advisor LLC analysis

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

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

Test-Positive Rate

Trailing 7-Day Moving Average, As of July 31

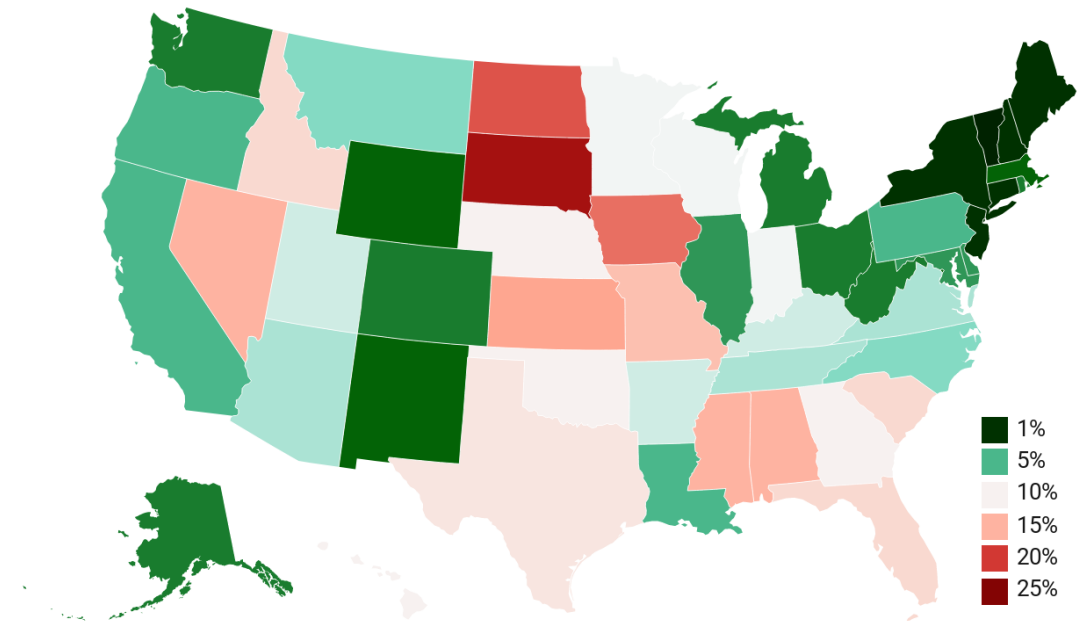


Health Industry Advisor LLC analysis

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

Test-Positive Rate

Trailing 7-Day Moving Average, As of August 31



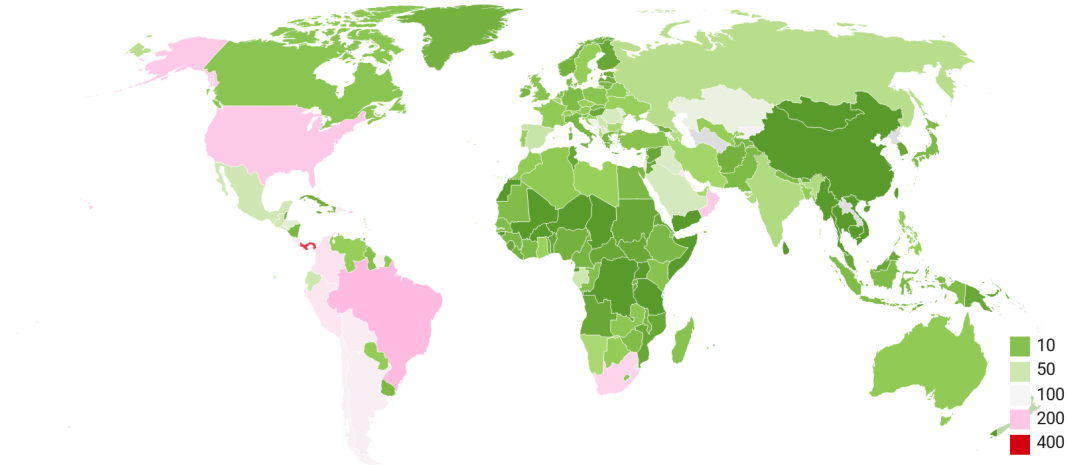
Health Industry Advisor LLC analysis

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

Infection intensity is now highest in South America
Infection rates have eased in the U.S. Oman and South Africa
Rates in Europe are relatively low yet, increasing

New Daily Infections / 1 Million Population

Trailing 7-Day Moving Average, As of July 31

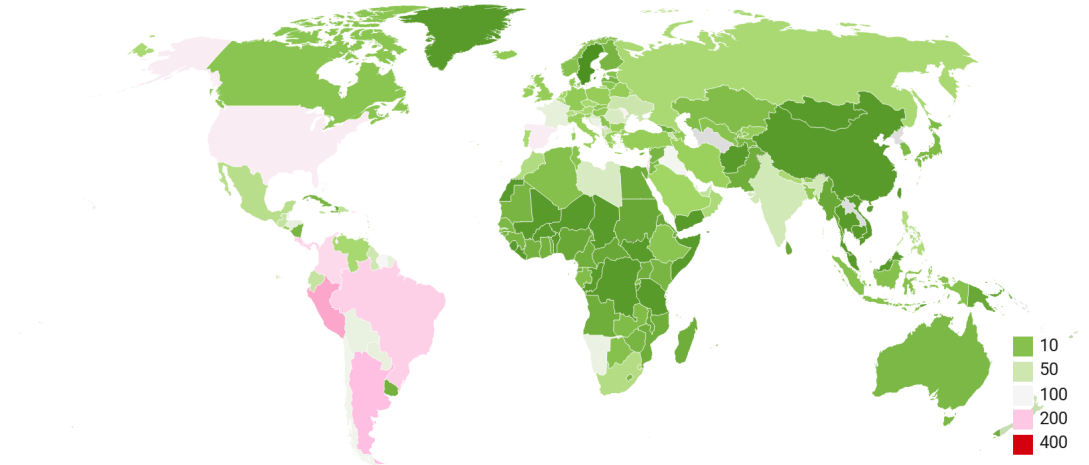


Health Industry Advisor LLC analysis

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

New Daily Infections / 1 Million Population

Trailing 7-Day Moving Average, As of August 31



Health Industry Advisor LLC analysis

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

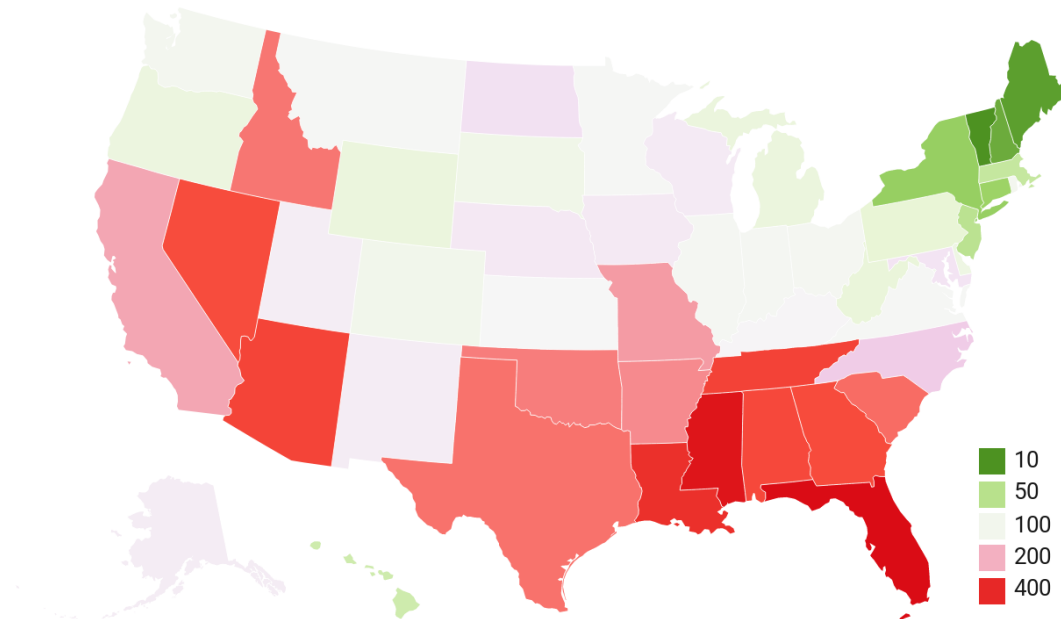
* - per million per day, trailing 7-day moving average

State-By-State – New Infections per Capita

As infection rates have eased across the Southeast and West, the Heartland is now experiencing accelerating infections. Rates are particularly high in Iowa and the Dakotas

New Daily Infections Per 1 Million Population

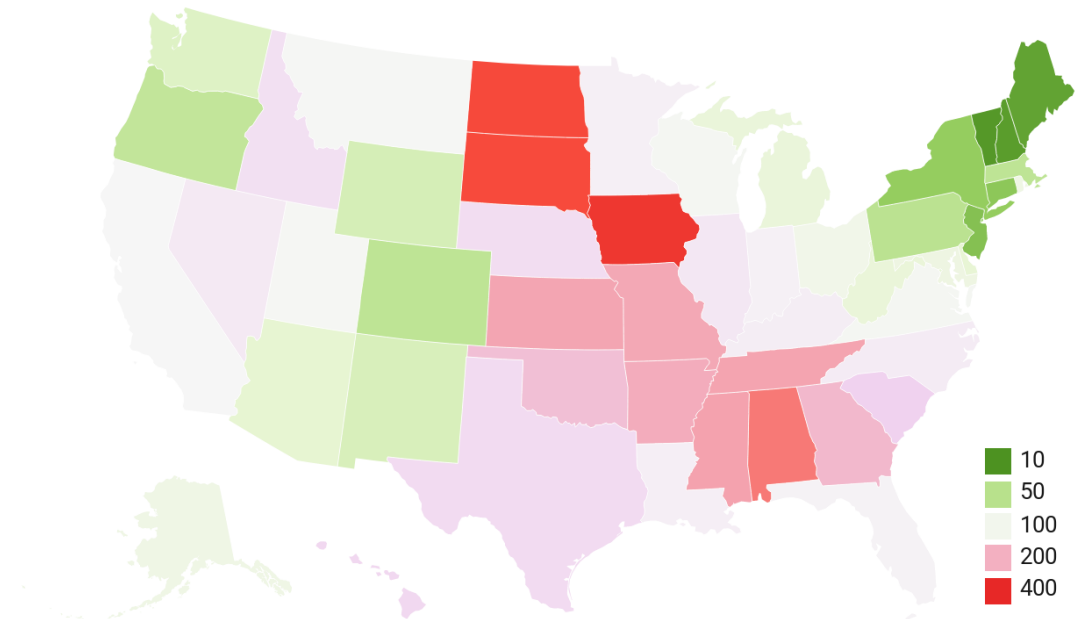
Trailing 7-Day Moving Average, As of July 31



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 31

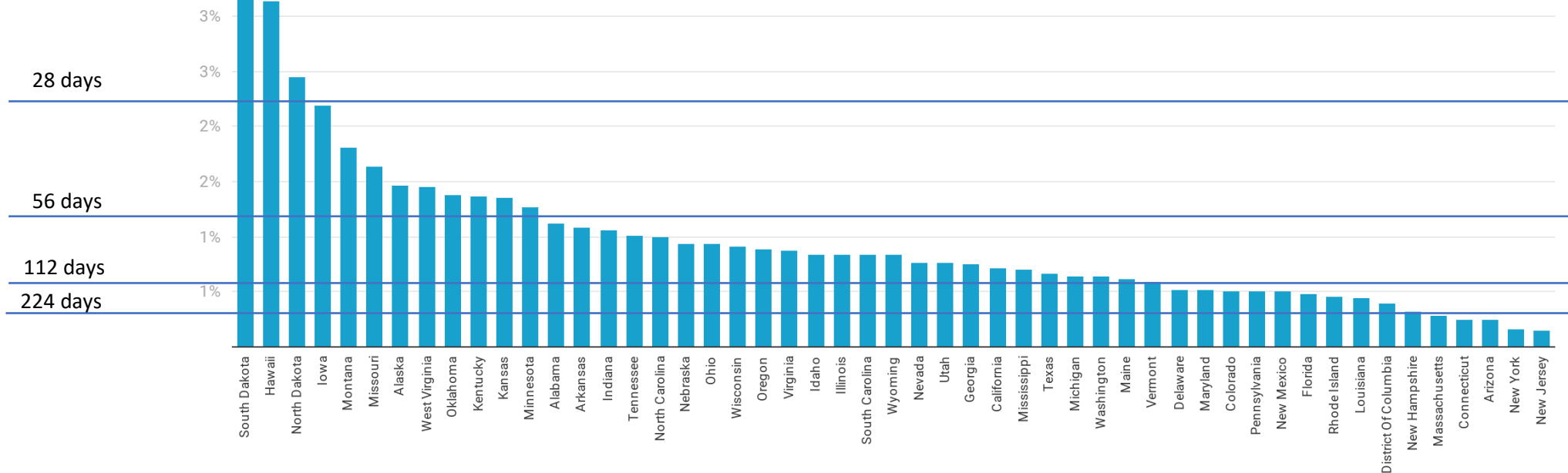


Map: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

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

Growth Rate in Total Cases

Trailing 5-Day Moving Average, Through August 31



Health Industry Advisor LLC analysis

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

Monday's Experience— New Cases & Deaths

New cases on Monday were, lower than previous nine Mondays

Two more deaths reported on Monday than last Monday; Fewer deaths than prior five Mondays

New Daily Cases

Through August 31

Mondays Highlighted

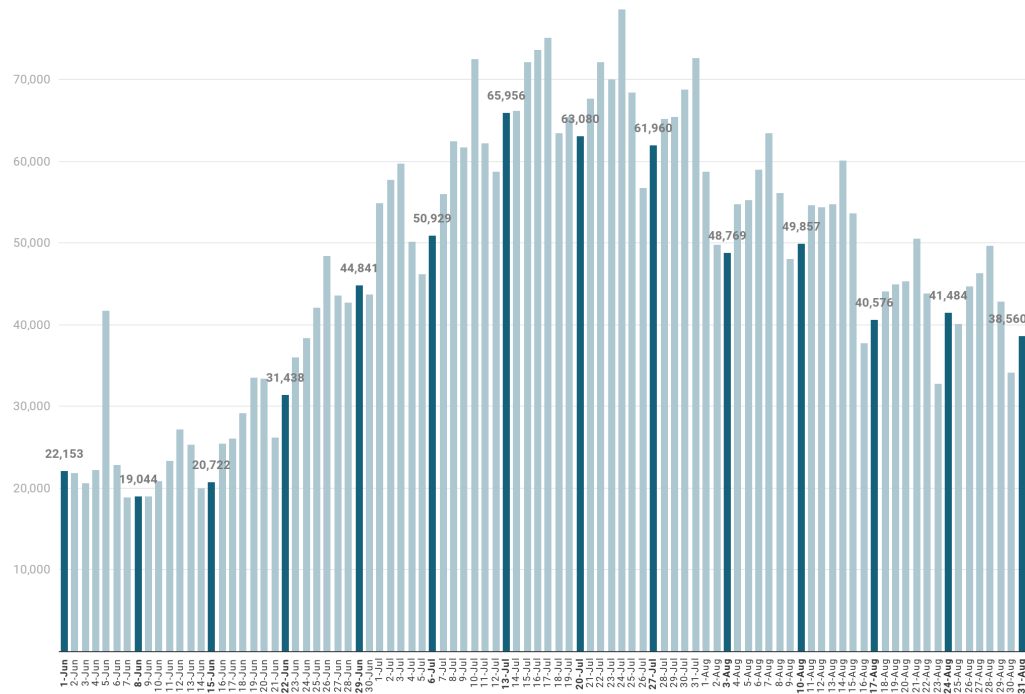


Chart: Health Industry Advisor LLC • Source: eoridometers.info • Created with Datawrapper

Newly Reported Deaths

Through August 31

Mondays Highlighted

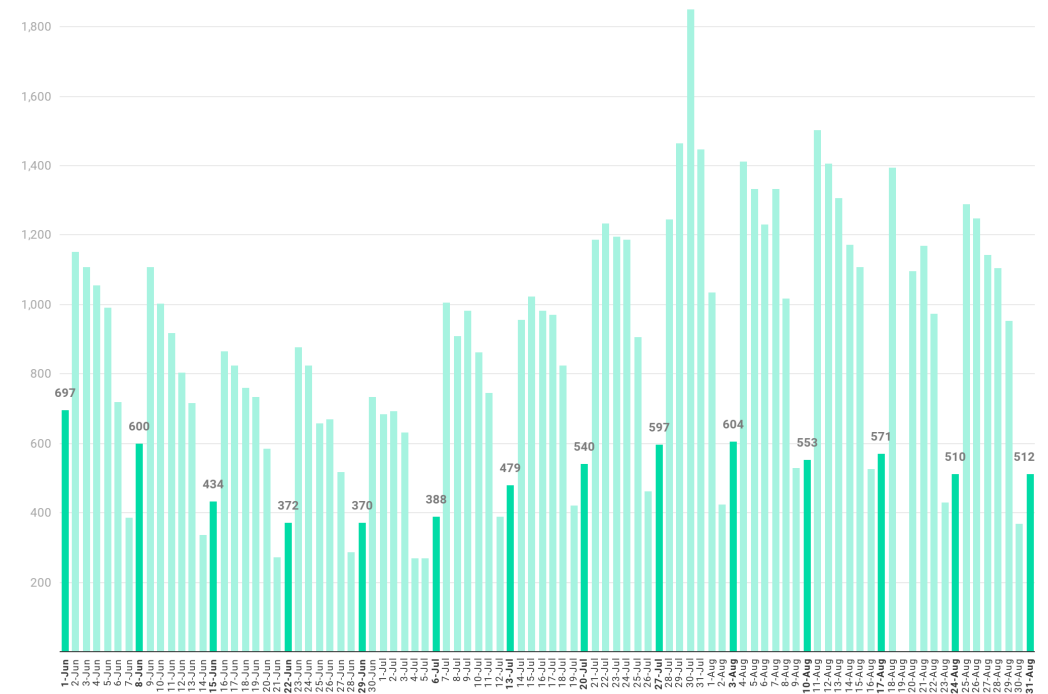


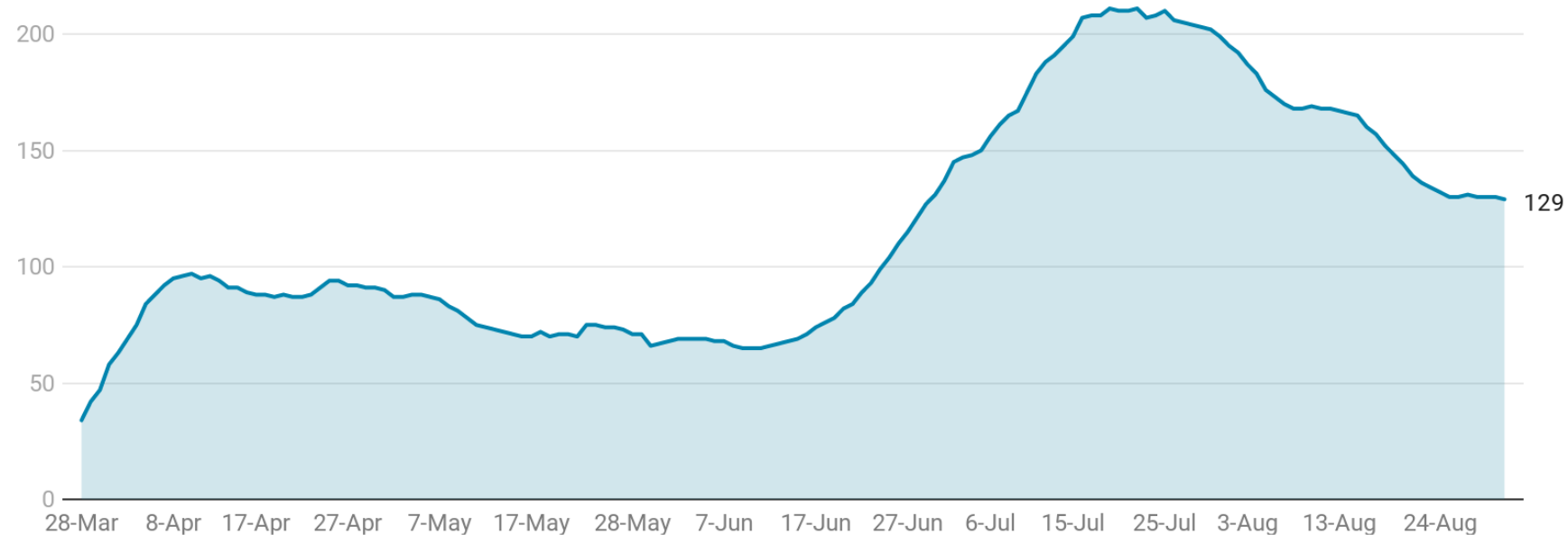
Chart: Health Industry Advisor LLC • Source: eoridometers.info • Created with Datawrapper

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](#)

New infections per capita* has been essentially flat for the past 7 days, pausing the gradual decline from July 25 – August 24

New Infections Per 1 Million Population - United States

Trailing 7-Day Moving Average, Through August 31



Health Industry Advisor LLC analysis

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

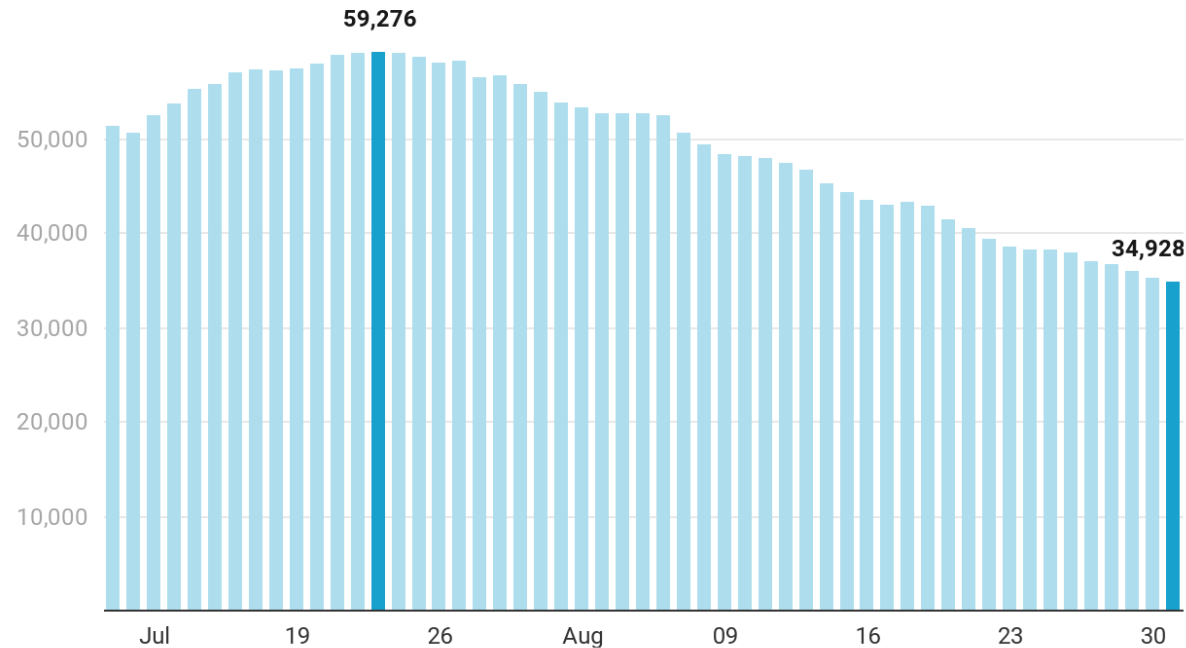
ng average

United States

COVID-19 inpatient declined again yesterday, continuing a trend that began more than a month ago; This census has declined on 34 of the past 39 days, dropping 40% during this time

Hospital Census: COVID-19 Patients

As of August 31



Florida data first available on July 10

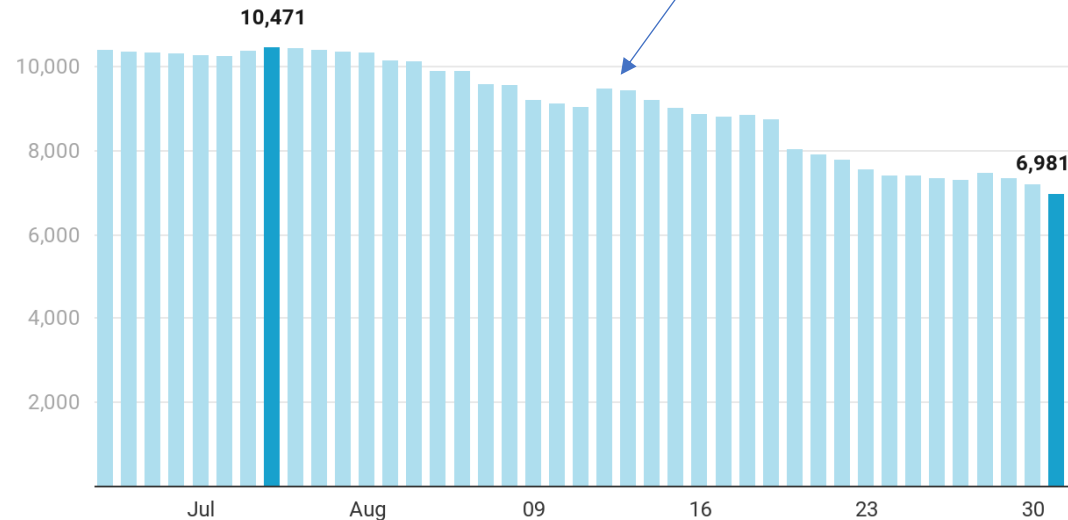
Chart: Health Industry Advisor LLC • Source: the Atlantic's Covid Tracking Project • Created with Datawrapper

Stress on ICU beds and ventilators continues to ease:

Daily ICU census has declined >30% since mid-July

% of inpatients in the ICU or on ventilators are both steady or decreasing . . . even as census declines

COVID-19 ICU Census

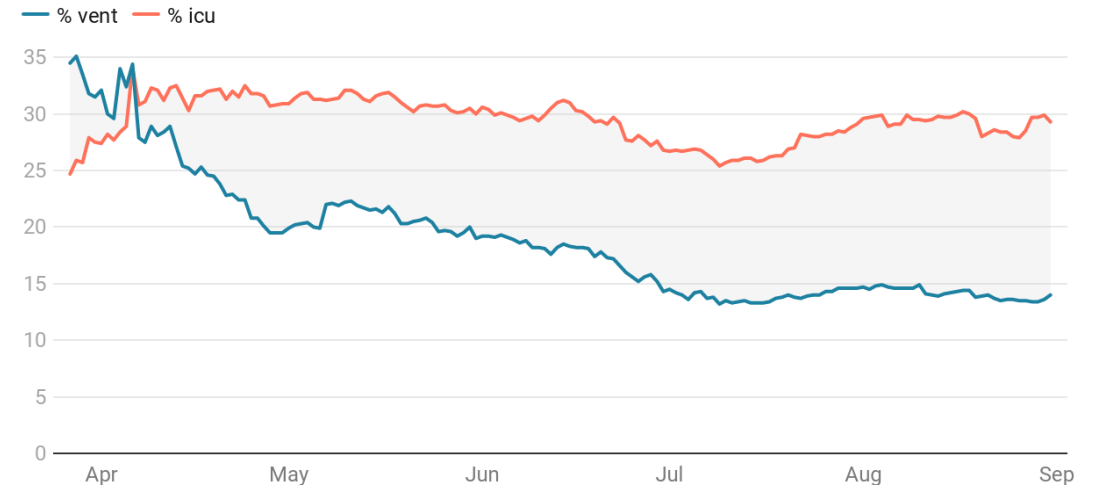


For states reporting these data: AZ, CA, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MS, NV, NJ, NY, NC, OH, OK, OR, RI, SC, TX, UT, VA, WI & WY

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

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of August 31



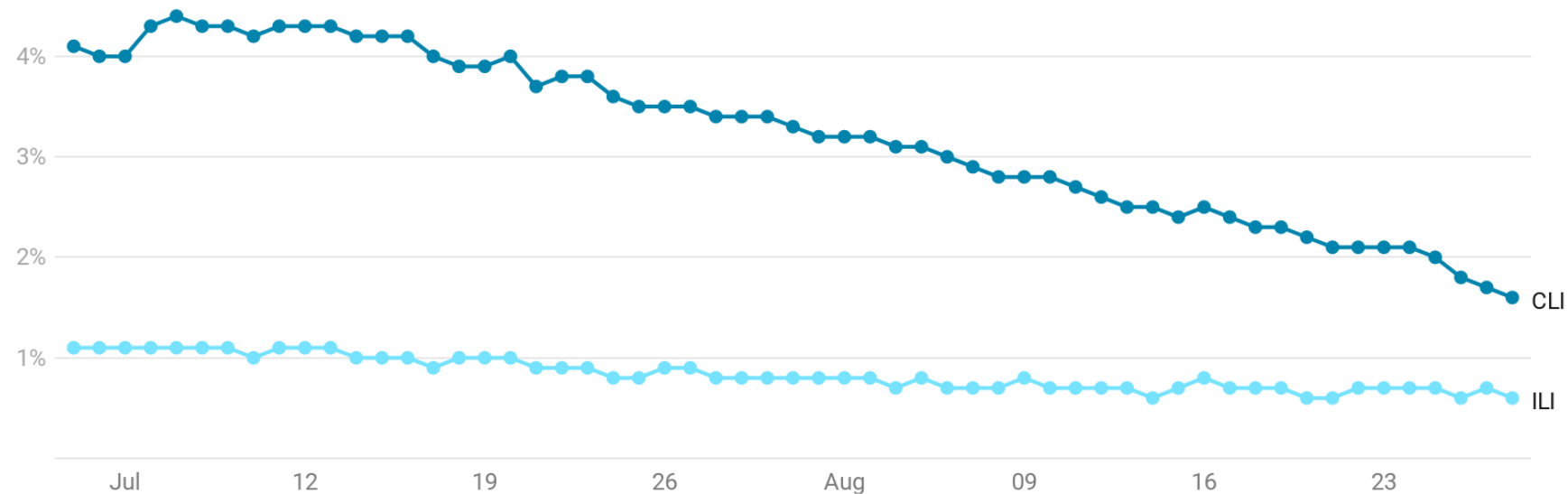
Health Industry Advisor LLC analysis

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

COVID-19 Visits to the ER have been declining all summer
Flu season – which is of great interest in how we manage the Fall – has yet to arrive

% of Emergency Department Visits for COVID-Like Illness (CLI) and Influenza-Like Illness (ILI)

As of August 28



Health Industry Advisor LLC analysis

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

United States – Deaths with Coronavirus

7-day average deaths have been declining for past three weeks - has averaged fewer than 1,000 per day since August 11-17

Deaths Reported With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of August 31



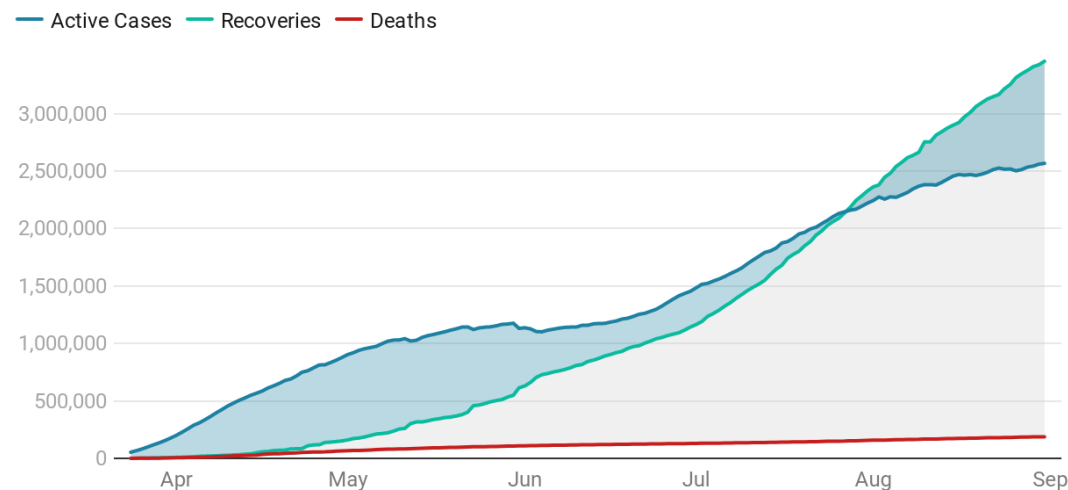
Health Industry Advisor LLC analysis

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

Recoveries continued on a steep upward climb; Active cases nearing a plateau? 35% more recoveries than active cases at this point
> 18 people have recovered from the virus for each death

Active Cases v. Recoveries & Deaths

Through August 31

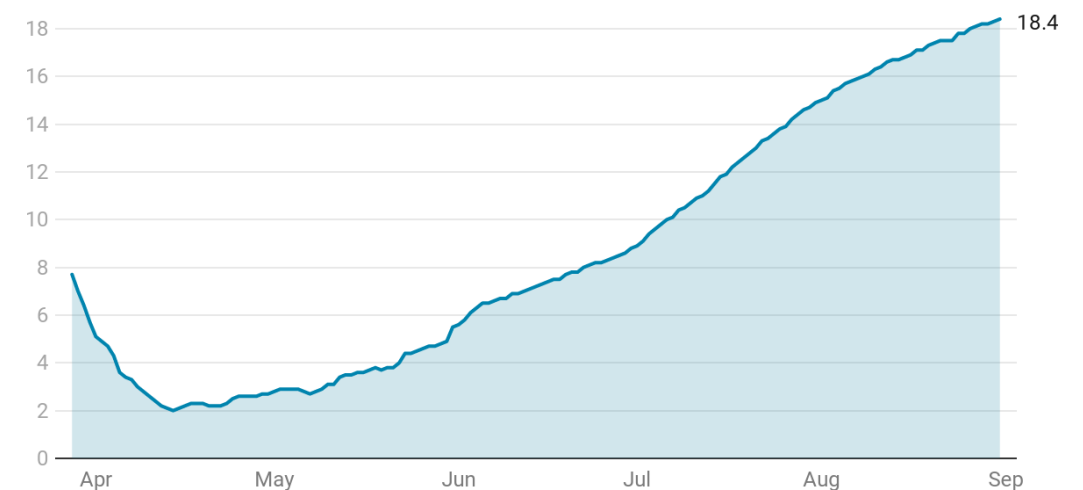


Health Industry Advisor LLC analysis

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

Recoveries: Deaths - United States

As of August 31



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>