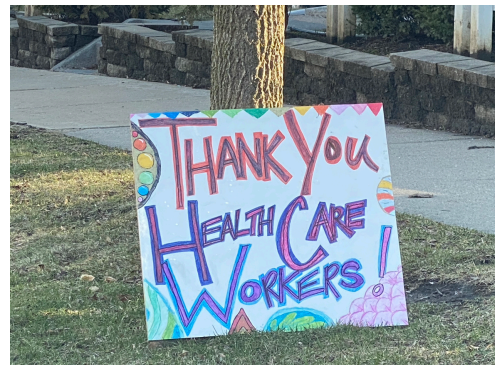
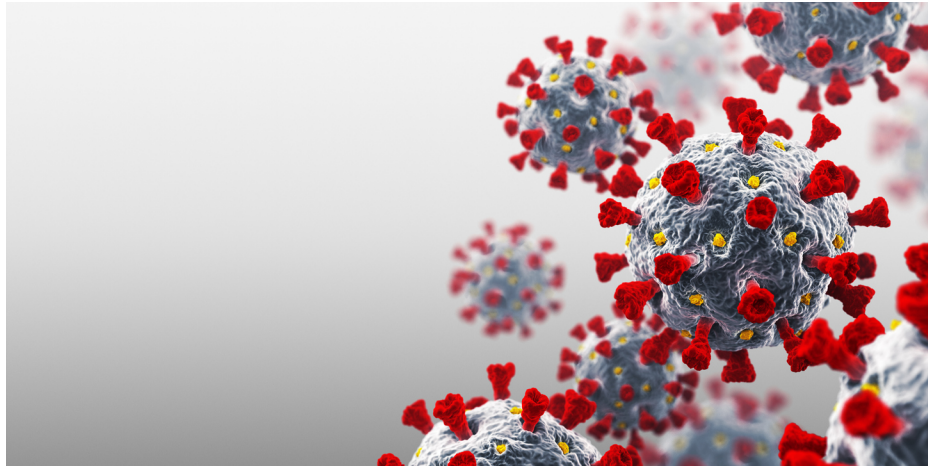
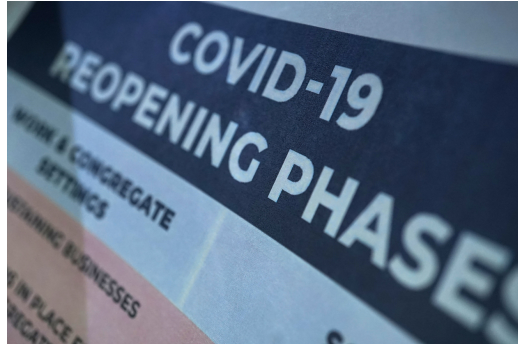




COVID-19 Report

Issue # 148

Friday, August 28, 2020

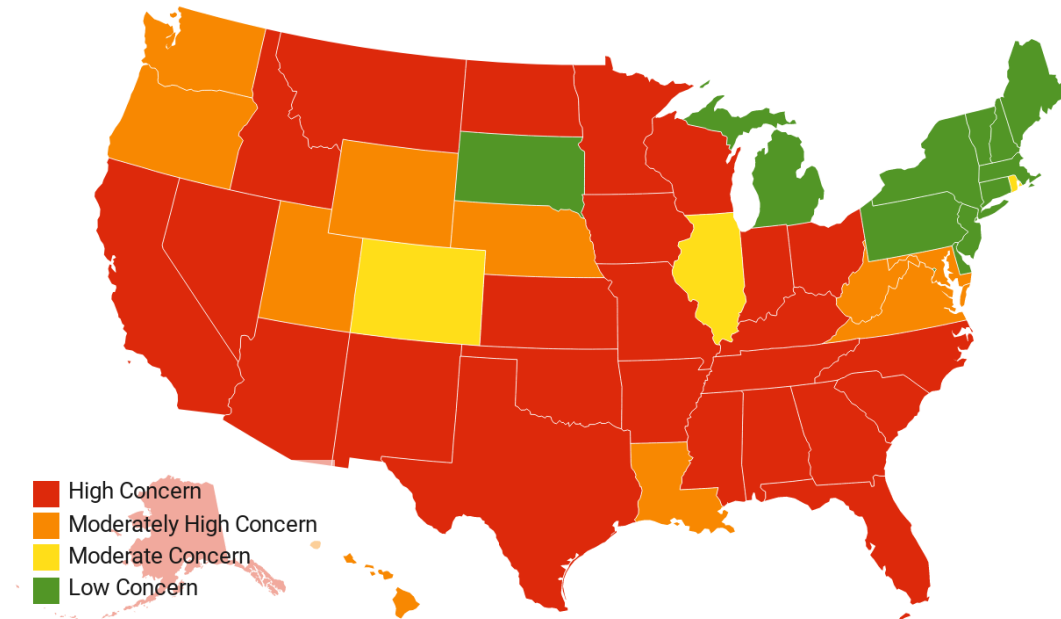
- **Just days after data scientist Youyang Gu lowered his projections for deaths with the coronavirus by 10% for the rest of the year, widely-quoted Institute for Health Metrics and Evaluation (IHME) increased its projection:**
 - Gu lowered his mean estimate of additional deaths by November 1 to 42,000, with an estimated 202k total deaths by that date (range: 202k-244k)
 - Yesterday, IHME increased its estimated deaths by December 1 by 8,000, to 317k; this projection estimates an additional 138,000 deaths from now until December
 - The significant discrepancies in these estimates underscores a fundamental difference in modeling approaches:
 - IHME's model reflects public health-informed assumptions about infection transmission and fatality rates, as well as assumptions about social behaviors (mobility, mask-wearing, social distancing mandates)
 - Gu relies on a machine learning model, using dynamic relationships between implied infection and fatality rates with reported deaths, to update his projections each day
 - Proponents of the IHME (and similar) models argue superiority stemming from their underlying public health-informed assumptions
 - Gu and his proponents argue that, although well-intentioned, these public-health-informed assumptions are failing to respond to real-time differences in observed infection transmission and fatality rates; they also provide evidence that Gu's estimates to-date have consistently been more accurate than these other models
- **The recent 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:**
 - Arizona, Colorado, Delaware, New Mexico, Oregon, Rhode Island and West Virginia are now "Green" ("Low Concern")
 - Louisiana, Ohio, Utah, Washington and Washington are "Yellow" ("Moderate Concern")
 - California, Georgia, North Carolina, Tennessee and Wisconsin are now "Orange" ("Moderately High Concern")
 - Illinois slipped to "Orange";
 - South Dakota slipped to "Red" ("High Concern")
- In today's report, we focus on new infection rates by metro area in the United States. We rely on the CDC's classification schema for these metro areas (Large Central, Large Fringe, Medium, Small, Micropolitan and Non-Core). Several takeaways:
 - **The large central metro areas with the highest new infection rates have experienced significant declines in these rates during August. Miami-Dade, which has the highest current rate of new infections among all large metro areas, has seen this rate decline to 1/3 of what it was in late July**
 - The highest rates of new infections among large fringe areas is higher than the highest rates among large central areas; the highest rates among medium areas is even higher than the highest among large fringe areas
 - **Among large central areas, the majority experienced relatively moderate-to-moderately high new infection rates recently (100-249 daily infections per million);**
 - **Small, micropolitan and non-core areas tended to be more concentrated at the high or low end of new infection rates (<100 or 5250)**
 - **About 50% of all areas, regardless of size, experienced relatively low new infections (<100 new daily infections per million)**
- **New infection rates in the United States have essentially plateaued now for the past 4 days.** This follows a month-long decline in this rate, from July 25-August 24. This rate fell by nearly 40% during this time
- **High infection rates are shifting to the Heartland states: Indiana, Iowa, Kansas, Minnesota, North and South Dakota each set new highs yesterday for 7-day average infections per capita;** they were joined by Hawaii in this dubious distinction
- New cases, however, are down by 6.4% on a week-over-week basis. New cases have been falling on a week-over-week basis since July 19-25

State-By-State – Multi-Factor Scorecard

The map has improved in August: Arizona, Colorado, Delaware, New Mexico, Oregon, Rhode Island and West Virginia are now “Green”; Louisiana, Ohio, Utah, Washington and Washington are “Yellow”; California, Georgia, North Carolina, Tennessee and Wisconsin are now “Orange”; Illinois slipped to “Orange”; South Dakota slipped to “Red”

Scorecard

As of July 31

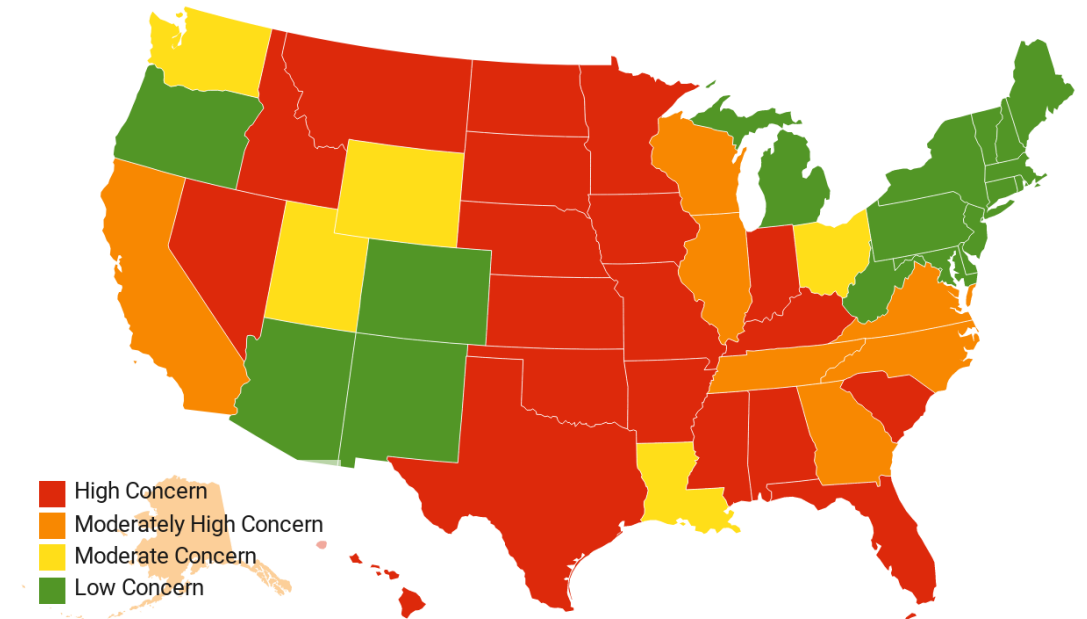


Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

Scorecard

As of August 27

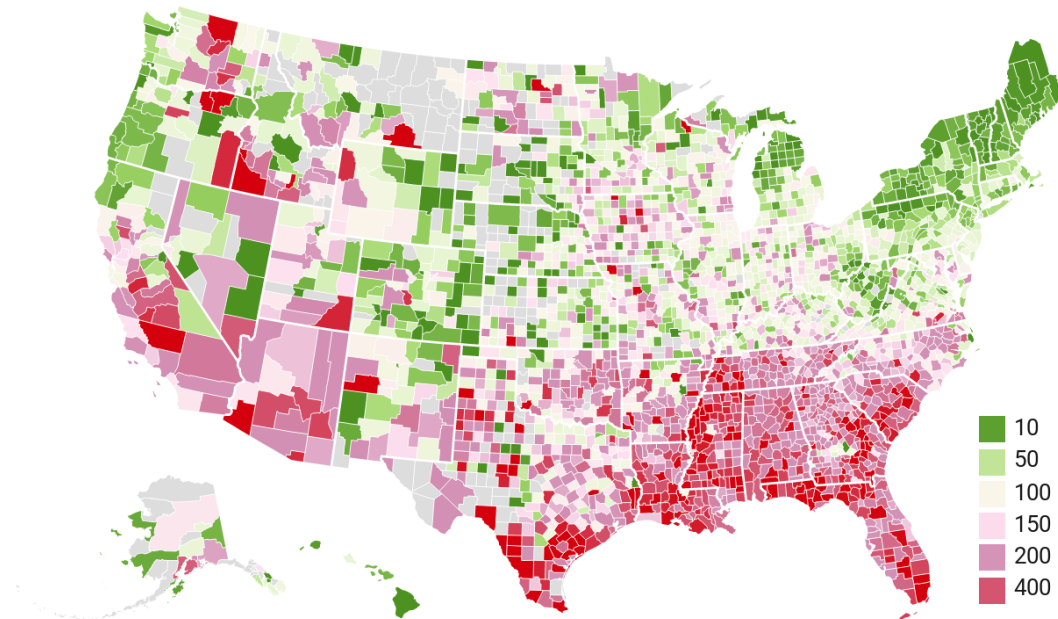


Scoring based on new infection, test-positive, hospitalization and case growth rates

Map: Health Industry Advisor LLC • Created with Datawrapper

New Daily Infections Per Million Population

Trailing 7-Day Moving Average, As of July 30

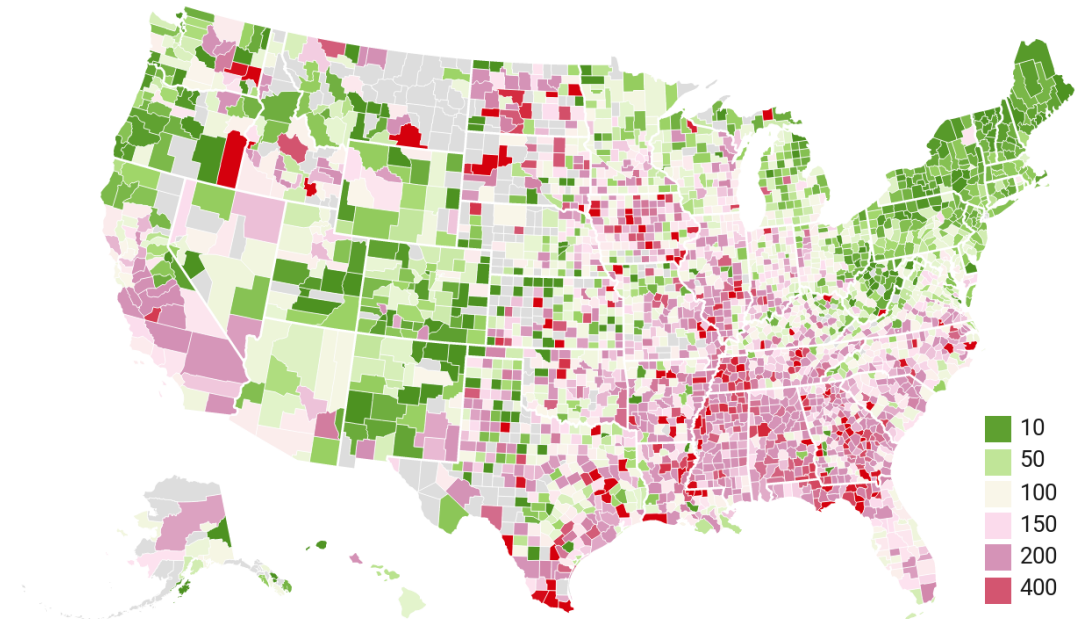


Health Industry Advisor LLC analysis

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

New Daily Infections Per Million Population

Trailing 7-Day Moving Average, As of August 27



Health Industry Advisor LLC analysis

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

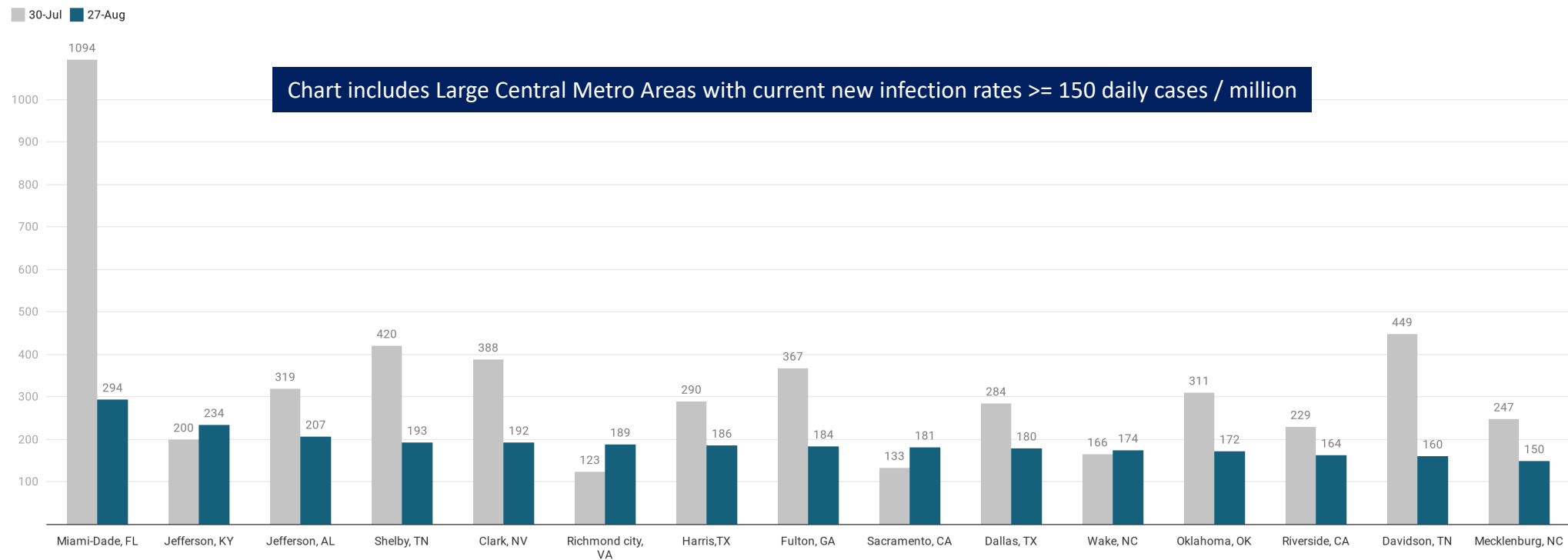
Large Central Metro Areas

Highest new infection rates in Large Central Metro Areas have eased substantially in the past 4 weeks

Miami-Dade, despite still experiencing the highest rate has seen its rate fall by 2/3

New Daily Infections / Million Population - Large Central Metro Areas

Trailing 7-Day Moving Average, As of August 27



Health Industry Advisor LLC analysis

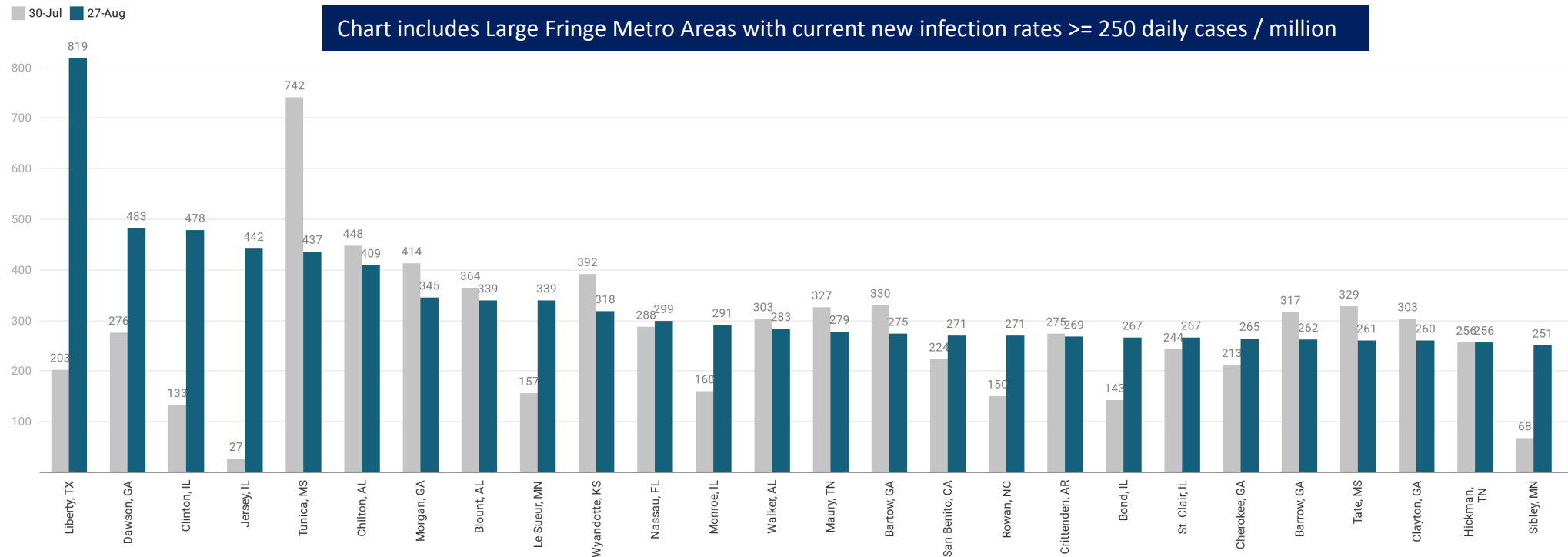
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Large Fringe Metro Areas

Eleven Large Fringe Metro Areas experienced new infection rates > than Miami-Dade
Chilton, IL, Dawson, GA, Liberty, TX and Jersey, IL have experienced large spikes in the
past 4 weeks and now have highest rates among these areas

New Daily Infections / Million Population - Large Fringe Metro Areas

Trailing 7-Day Moving Average, As of August 27



Health Industry Advisor LLC analysis

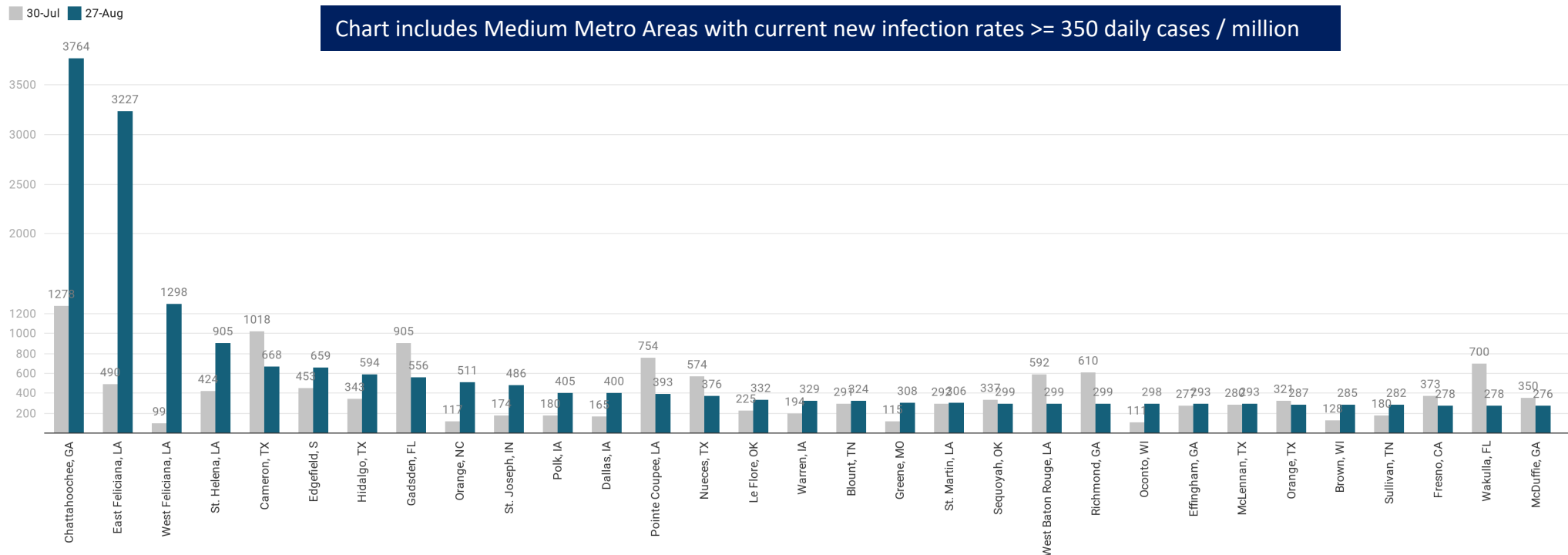
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Medium Metro Areas

Chattahoochee, GA, East Feliciana, LA, West Feliciana, LA and St. Helena, LA each experienced significant infection spikes in past 4 weeks and report rates > any Large Fringe Metro Area

New Daily Infections / Million Population - Medium Metro Areas

Trailing 7-Day Moving Average, As of August 27



Health Industry Advisor LLC analysis

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

New Infection Rates By Metro-Type

Infection rates in larger metro areas are more heavily weighted toward moderate levels; In smaller metro areas, we observe more at the extreme high and low ends
Nearly ½ of all areas have rates < 100 per million; 16% are >250 per million

Distribution of New Daily Infection Rates by Metro Designation

Rates are per Million, Trailing 7-Day Moving Average, As of August 27

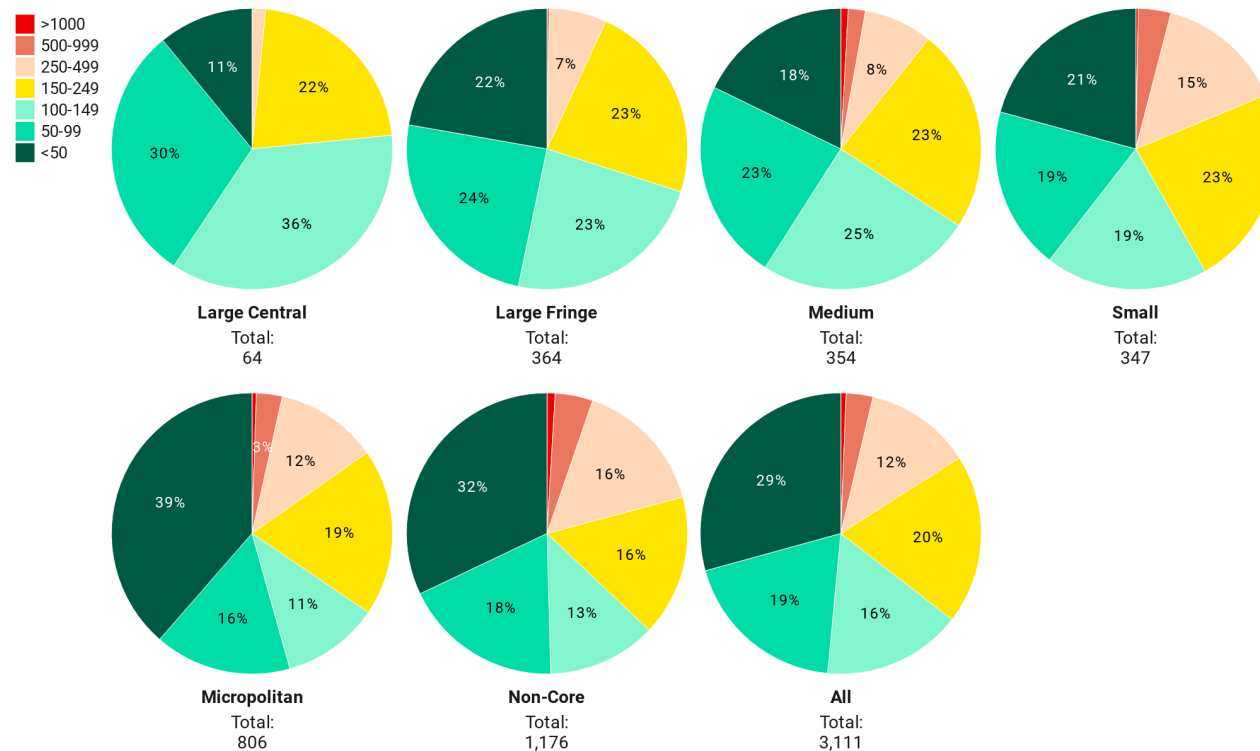


Chart: Health Industry Advisor LLC • Created with Datawrapper

Source: CDC

NCHS Urban-Rural Classification Scheme for Counties
https://www.cdc.gov/nchs/data_access/urban_rural.htm

1 - Metropolitan counties: Large central metro counties 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.

2 - Large fringe metro counties in MSA of 1 million or more population

3 - Medium metro counties in MSA of 250,000-999,999 population

4 - Small metro counties are counties in MSAs of less than 250,000 population.

5 - Micropolitan counties in micropolitan statistical area;

6 - Noncore counties not in micropolitan statistical areas data access website

Thursday's Experience— New Cases & Deaths

There slightly new cases and more deaths reported yesterday last Thursday
Nonetheless, new cases were lower than previous 7 weeks and reported deaths were lower than previous 4 weeks

New Daily Cases

Through August 27

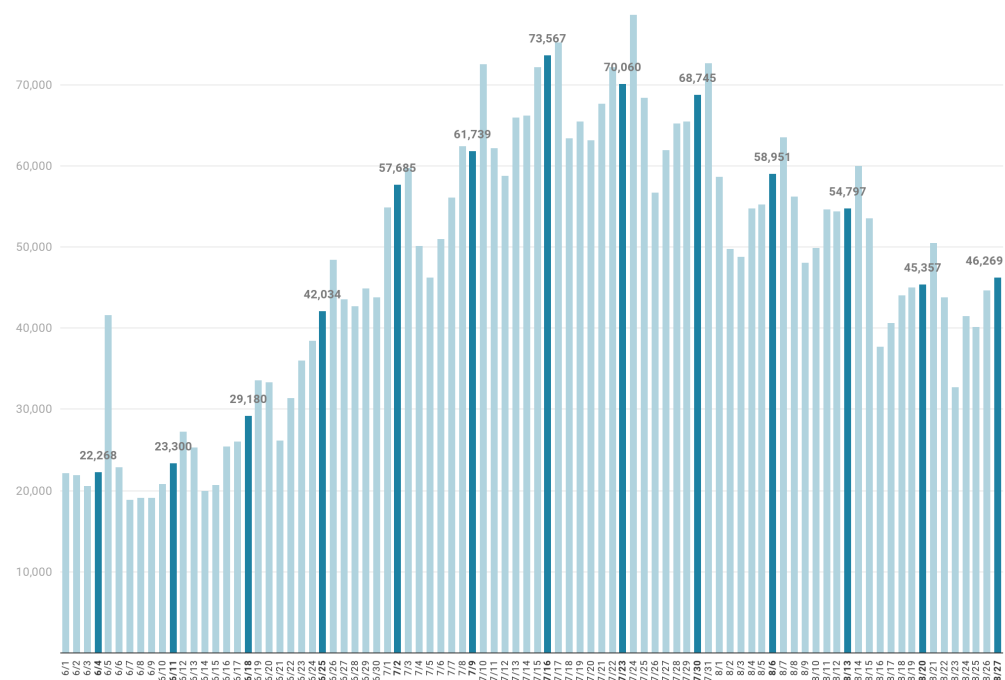


Chart: Health Industry Advisor LLC • Source: eorlometers.info • Created with Datawrapper

Thursdays Highlighted

Newly Reported Deaths

Through August 27

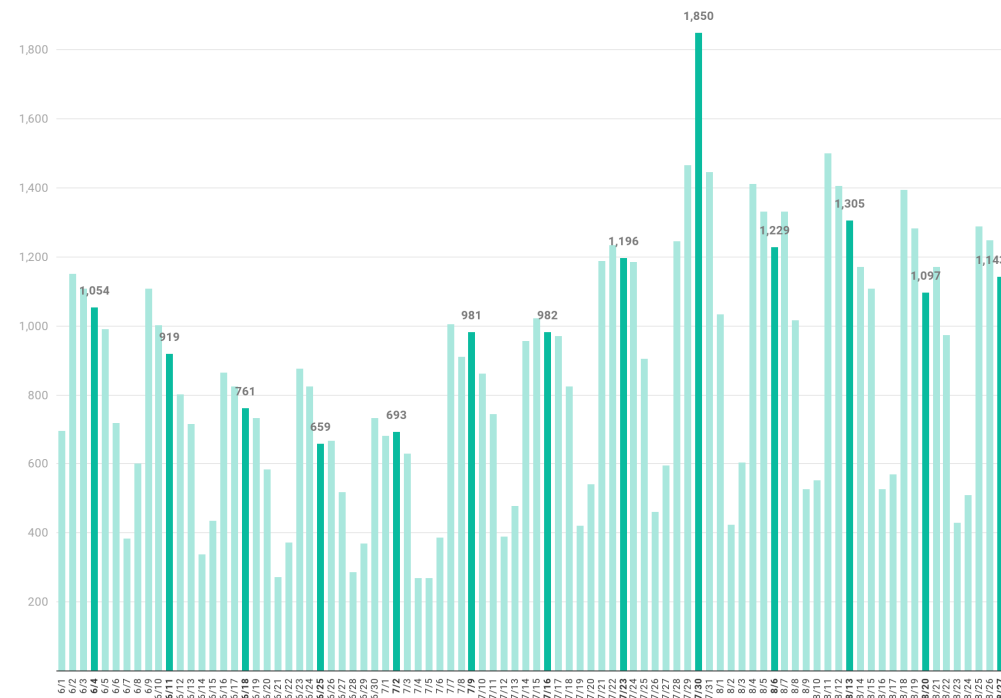


Chart: Health Industry Advisor LLC • Source: eorlometers.info • Created with Datawrapper

Thursdays Highlighted

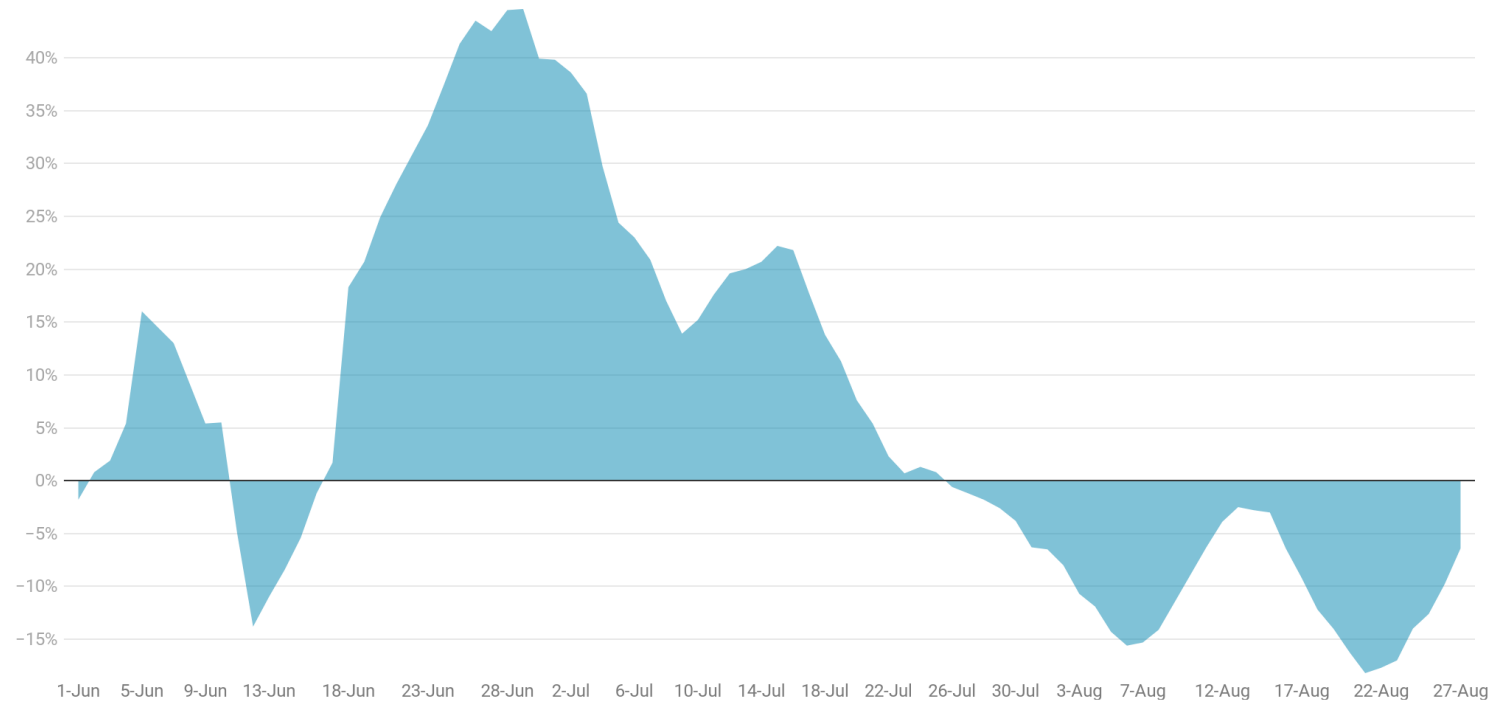
Note the daily pattern: new cases are typically low on Sunday, then increase each day through the week. While we have been noting this for the past few weeks, researchers from MIT, Boston University and Harvard Medical School confirmed this in [a report published by CIDRAP on August 17](#)

United States

Week-over-week, new cases are down 6.4%; new cases haven't increased week-over-week since July 25

Week-Over-Week Change In New Cases

Through August 27

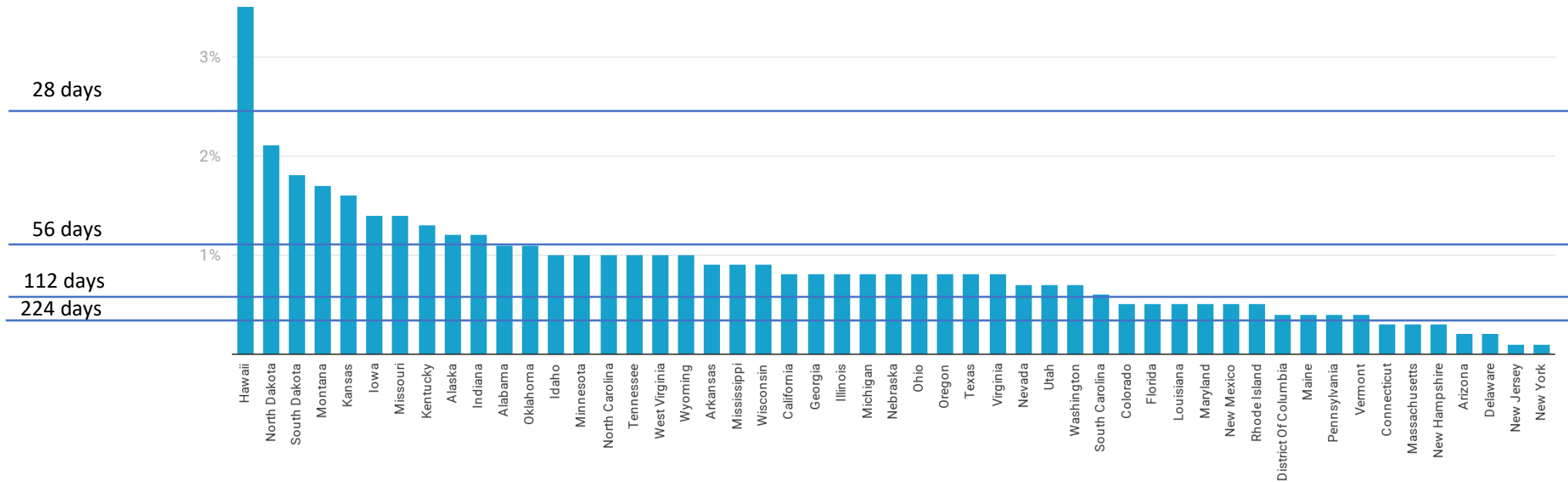


Health Industry Advisor LLC analysis

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

Growth Rate in Total Cases

Trailing 5-Day Moving Average, Through August 27



Health Industry Advisor LLC analysis

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

Test volume on Thursday was 2nd highest in past 11 days

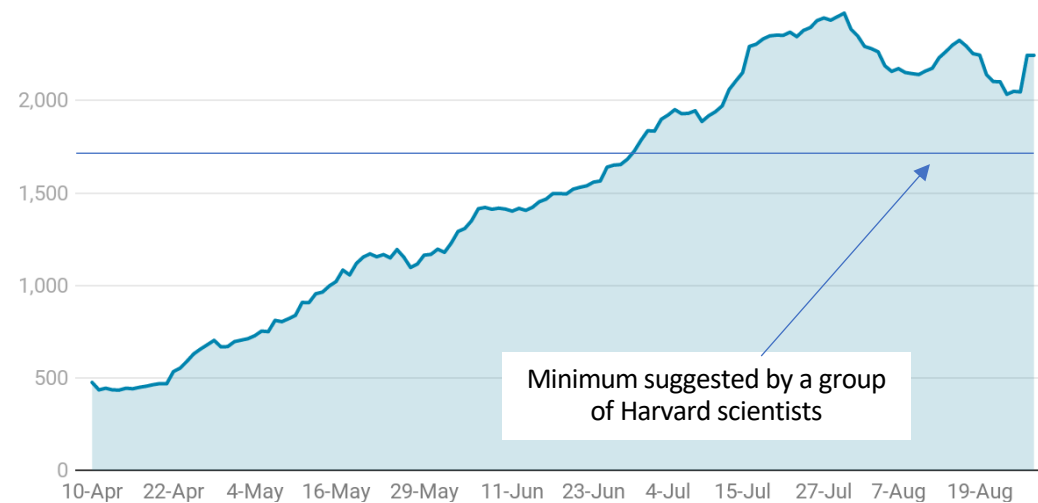
Test-positive rate on Thursday was 5.9%

7-day rates for both volume and test-positive% are skewed by recent batch reporting of negative results in Washington state

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 27

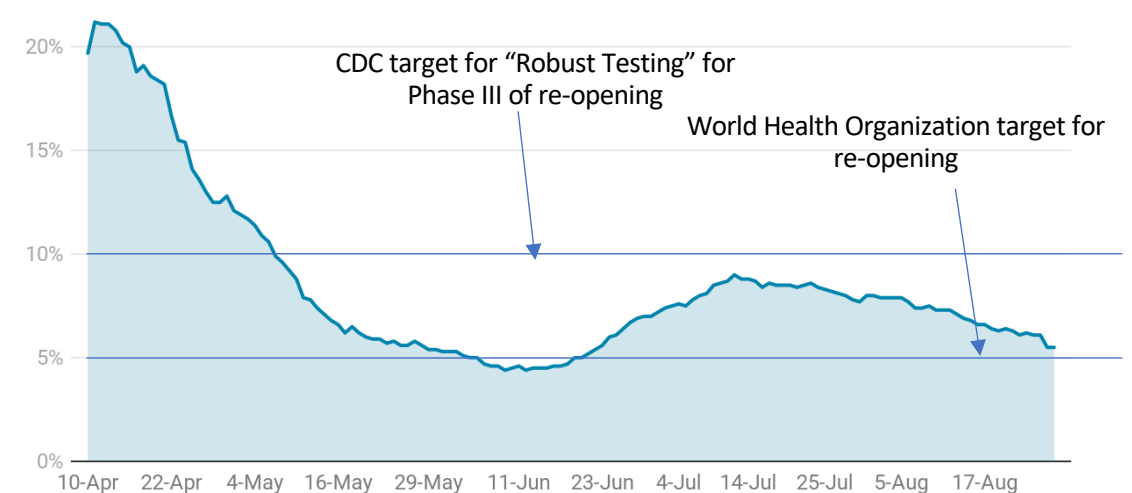


Health Industry Advisor LLC analysis

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 27



Health Industry Advisor LLC analysis

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

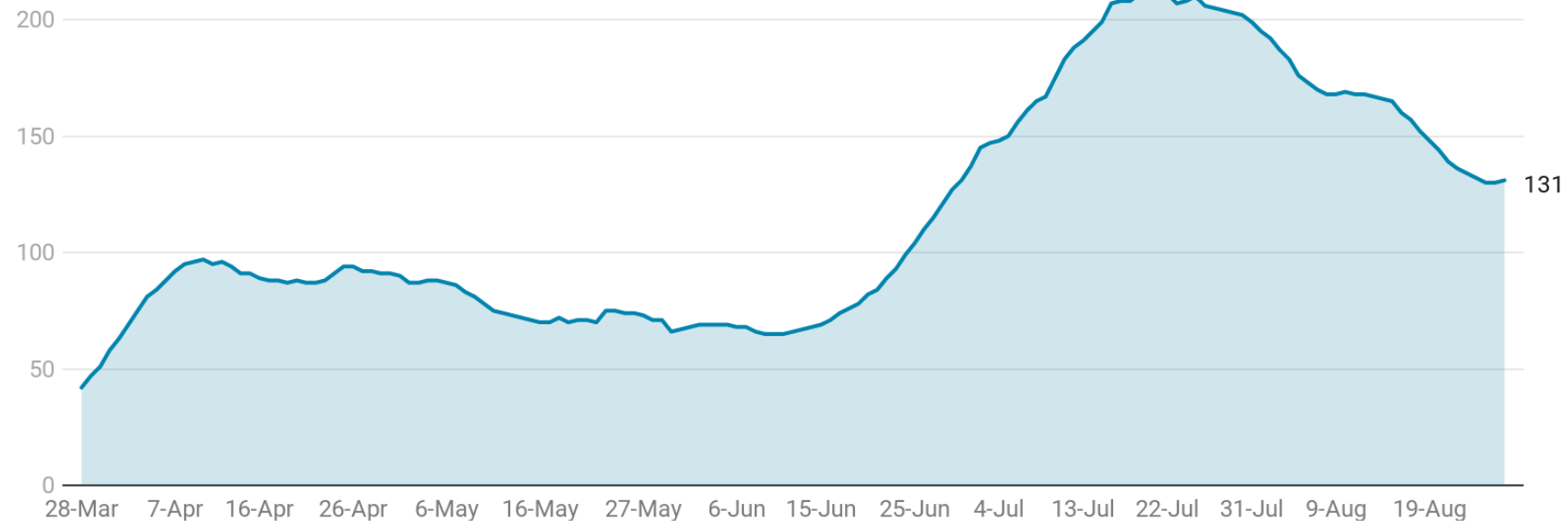
Note: On August 11, North Carolina made a significant adjustment, removing 220,000 tests from their YTD totals. We manually removed this negative adjustment from the August 11 data to better reflect actual testing for that date

Note: Due to a computer glitch, Washington batch-reported on August 26 all its negative test results from August 1-25.

New infections per capita* has been essentially flat for the past 4 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 27



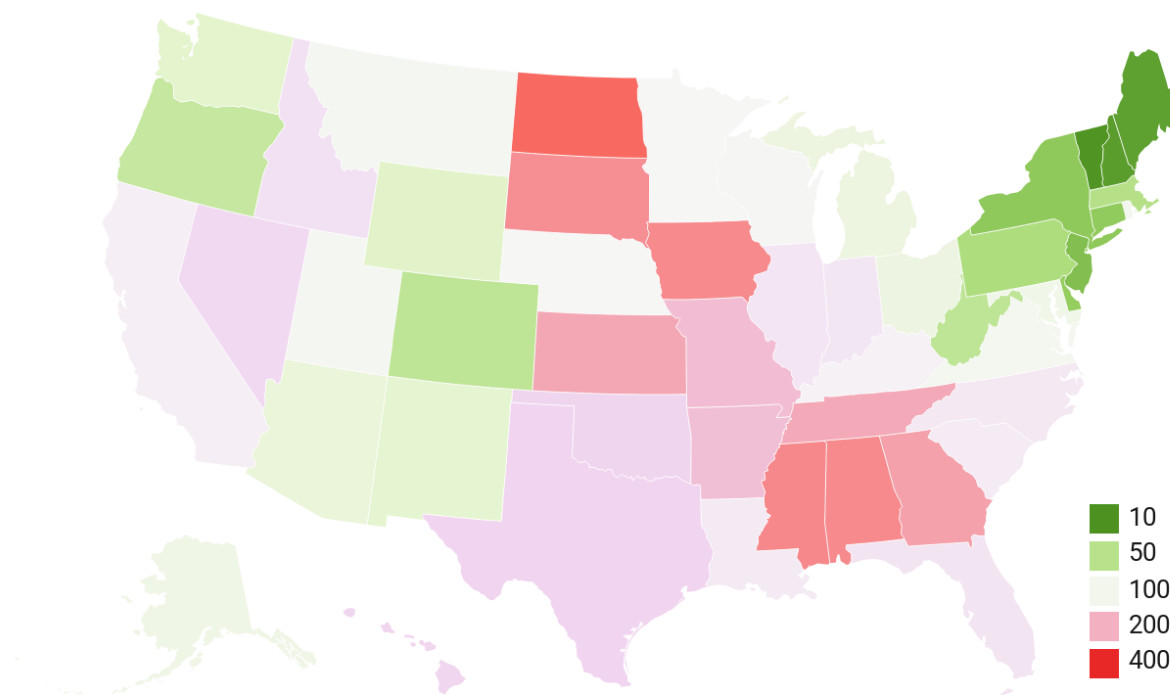
Health Industry Advisor LLC analysis

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

ng average

New Daily Infections Per 1 Million Population

Trailing 7-Day Moving Average, As of August 27



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

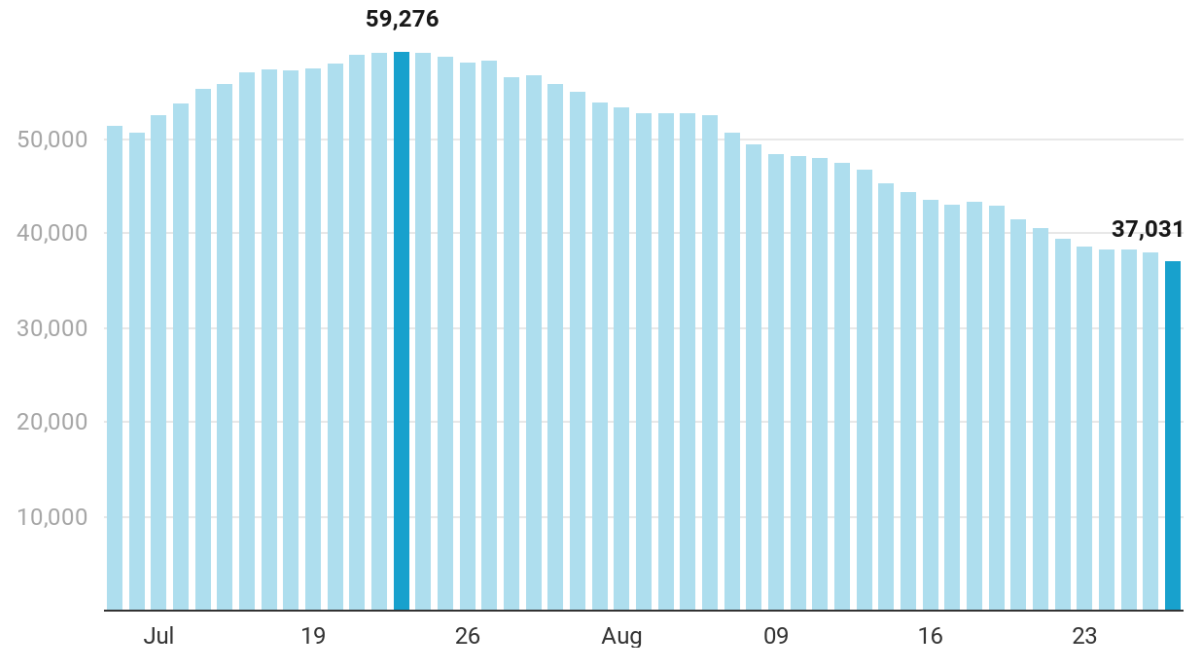
* - per million per day, trailing 7-day moving average

United States

COVID-19 inpatient declined again yesterday, continuing a trend that began more than a month ago

Hospital Census: COVID-19 Patients

As of August 26



Florida data first available on July 10

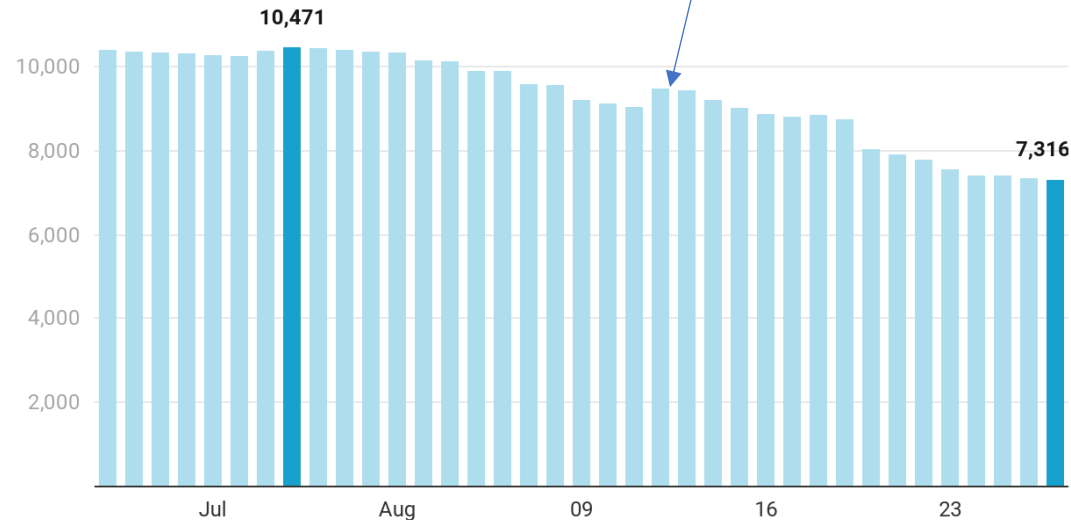
Chart: Health Industry Advisor LLC • Source: the Atlantic's Covid Tracking Project • Created with Datawrapper

Stress on ICU beds and ventilators continues to ease:

Daily ICU census has declined since mid-July

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

COVID-19 ICU Census

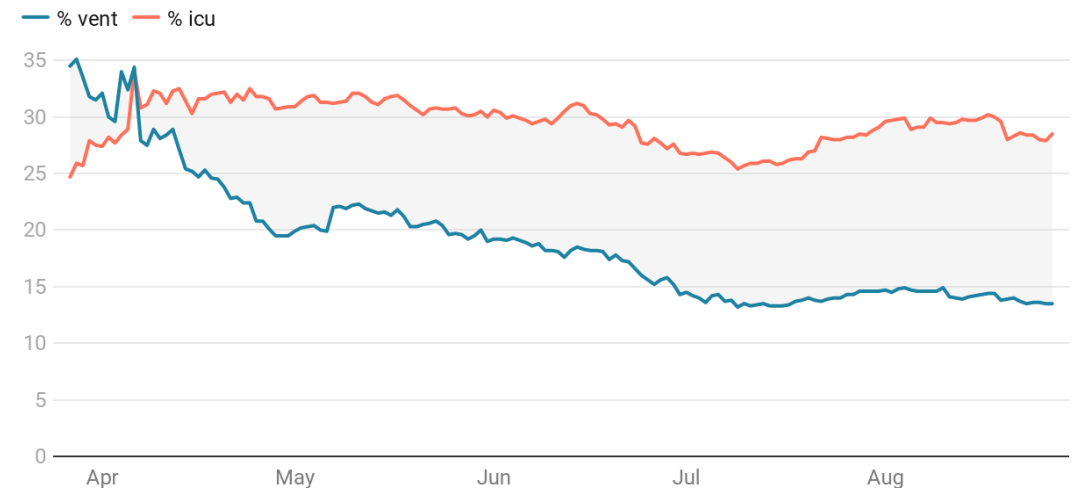


For states reporting these data: AZ, CA, ID, IL, IN, IA, KS, KY, ME, MD, MA, MI, MN, MS, NV, NJ, NY, NC, OH, OK, OR, RI, SC, TX, UT, VA, WI & WY

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 27



Health Industry Advisor LLC analysis

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

United States – Deaths with Coronavirus
7-day average deaths increased slightly yesterday

Deaths Recorded With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of August 27



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>