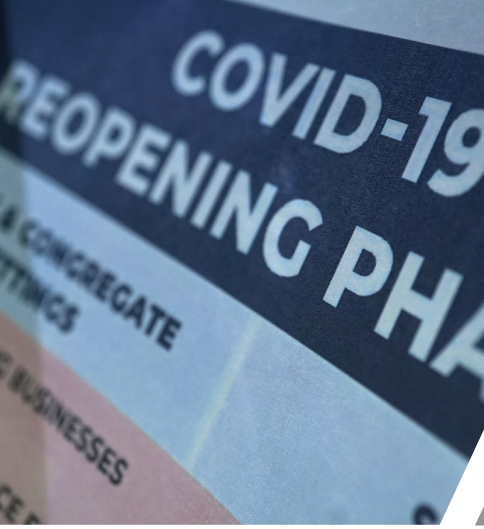

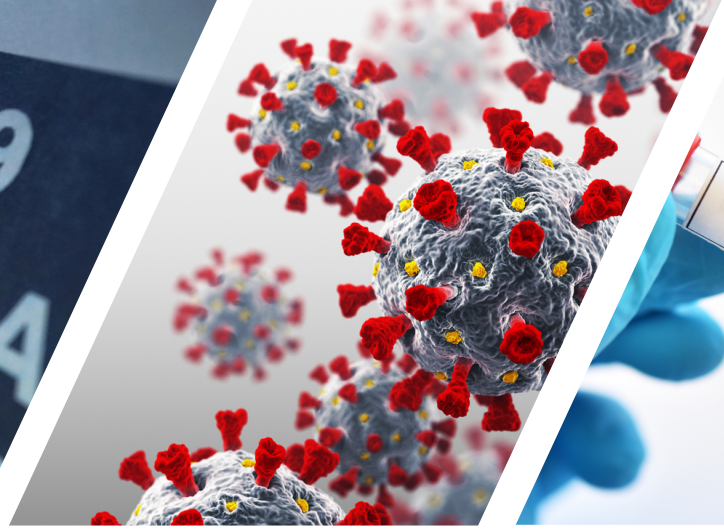

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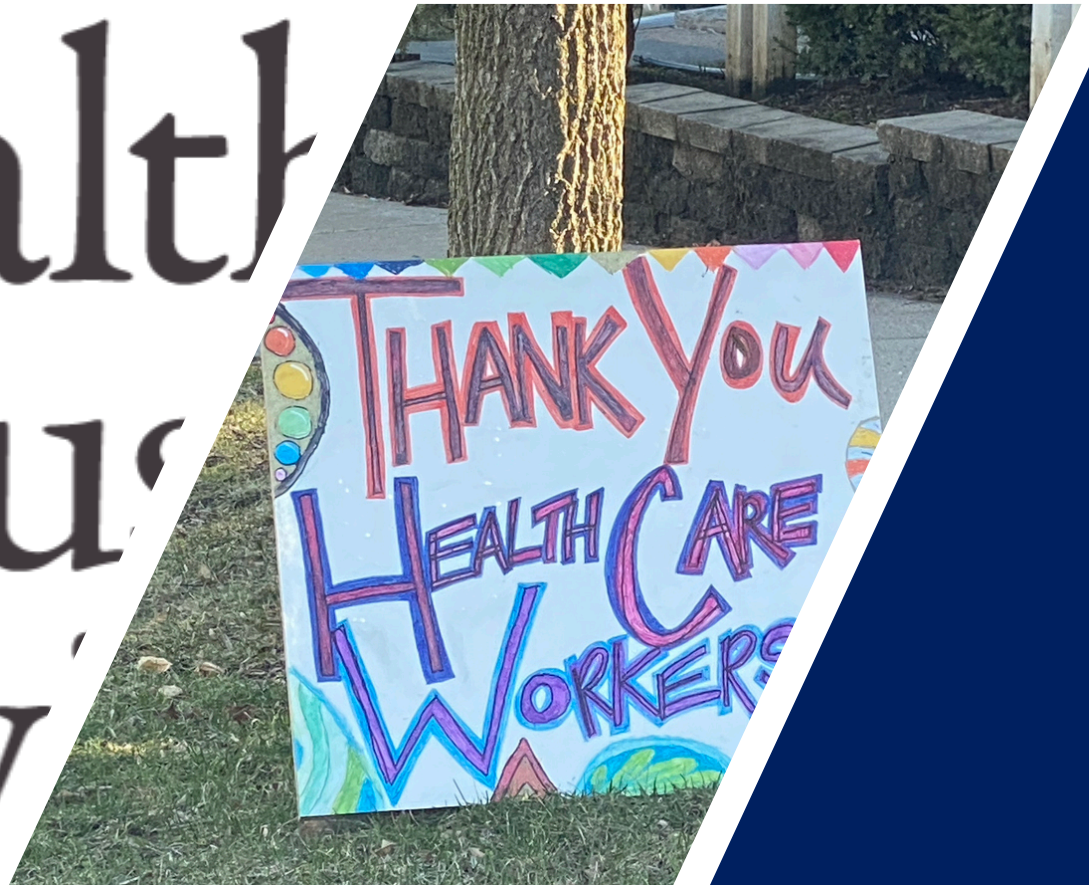


Issue # 199

Friday, October 30, 2020

COVID-19 Report

Highlights

- We track thirty-three metro areas which are home to major universities (excluding very large metros, in which the University may not be as dominant in the local economy)
  - **For at least the third consecutive week, Lubbock, Texas had the highest 7-day rate of new cases per capita among the thirty-three areas. The home of Texas Tech University, Lubbock's rate was more than double that of the second highest area, St. Joseph, Indiana (home to the University of Notre Dame)**
  - Consistent with the challenges of the University of Wisconsin's football Badgers, Dane, WI, experienced the third highest infection rate among these areas
  - Three other Big Ten university towns ranked in the top seven: Champaign, Illinois (University of Illinois), Lancaster, Nebraska (University of Nebraska) and Centre, Pennsylvania (Penn State University)
- **Southeast Wisconsin is experiencing high infection rates - four of the highest ten rates among Large Central and Large Fringe Metro Areas are in and around Milwaukee, Wisconsin**
- Testing volume has continued to climb yet, test-positive % have also increased
  - **Testing volume exceeded 1M per day over the past 7 days - the first time it has ever reached this level; testing volume has steadily increased over the past six weeks**
  - The test-positive%, however, has also been increasing since the beginning of the month; Typically, this rate should decline with increased testing
- New daily cases are growing at an increasing rate
  - **Yesterday's newly-detected cases were the highest recorded on any day since the pandemic began**
  - The 7-day new daily infection rate has now increased on twenty-six consecutive days
- Covid-19 hospital census has been increasing, coincident with the growth in new cases; However: the rate of increase in census is significantly lower than the rate of new case increase:
  - Consequently, **the ratio of Covid-19 census: new cases (both on a 7-day average basis) is lower now than it has been at any time since at least April; this rate is 40% lower than it was in mid-August and 70% than in early May**
  - The likelihood of an active Covid-19 case would be in the hospital increased marginally in October but, is 1/2 what it was in July and 1/4 what it was in early May
  - **Also encouraging, the likelihood of a Covid-19 patient would be in the ICU or on a ventilator has steadily declined throughout October (e.g., despite Covid-19 census increasing, it is increasingly likely that these cases are relatively mild)**
- Still, Covid-19 census is straining healthcare resources in certain part of the country
  - **Eighteen states are seeing as many or nearly as many Covid-19 patients as they have at any point during the pandemic**
  - Of these, Indiana, Kentucky, New Mexico, Ohio and Wisconsin are seeing an average at least 100 more patients per day than last week
  - On the other hand, **Texas and Illinois, which had the largest increases in Covid-19 census in the past week, are running at ~ 50% and 60% of peak Covid-19 census, respectively; Michigan had the 4th largest increase yet, is at 33% of peak**
- Tragically, deaths are increasing, as would be expected following the recent run-up in new cases
  - The 7-day average deaths reported per day has increased on thirteen of the past seventeen days
  - **The case death rate, however, defined here as the 7-day average deaths per 7-day newly-detected case (deaths lagging cases by 21 days), has been relatively steady for the past six weeks**
  - **This rate had declined significantly in June and July; As a result, the current case fatality rate is 40% lower than it was in early-June**

Health Industry Advisor, llc

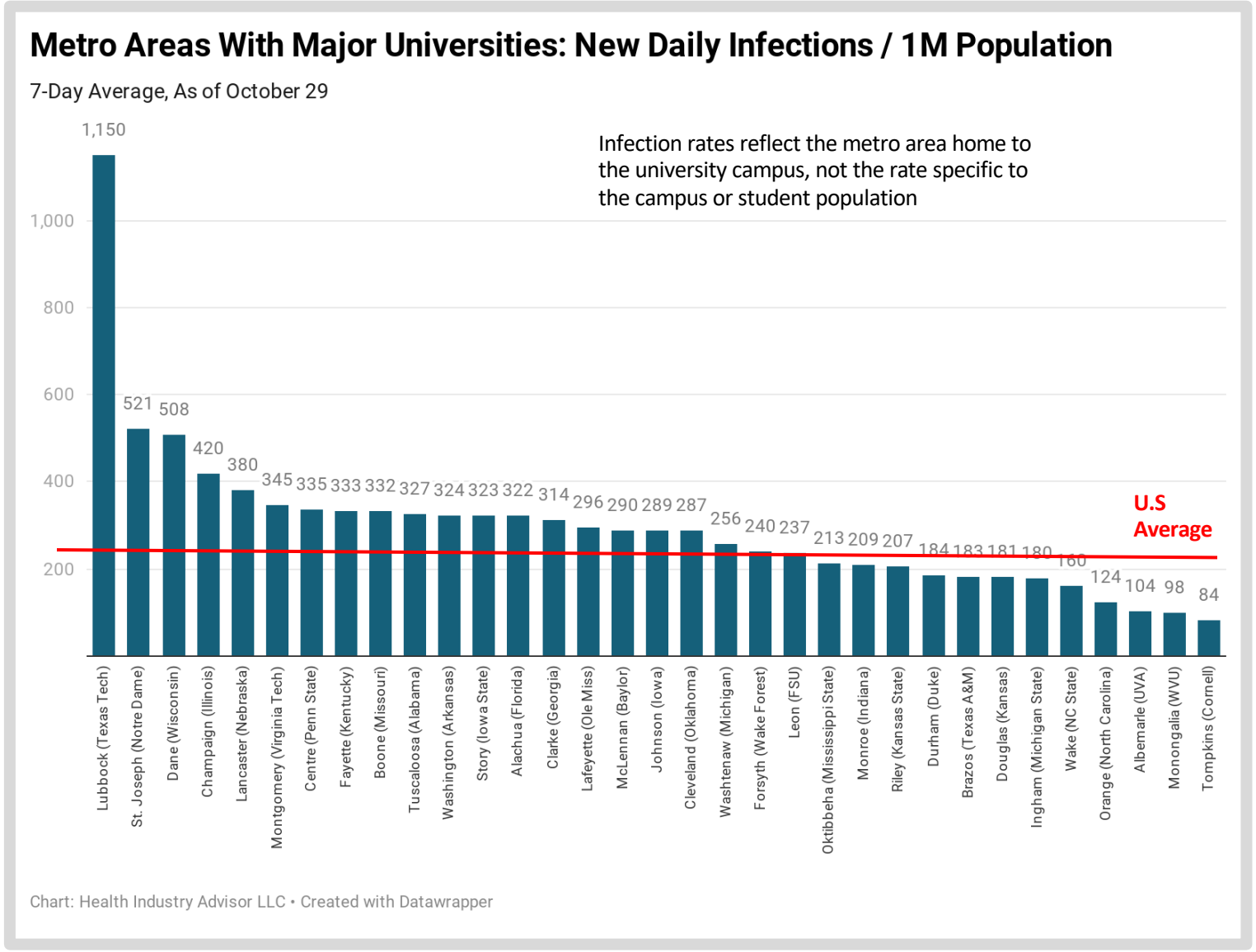
Metro Areas Home to Major Universities:

Of the 33 major areas in our sample, 20 are experiencing infection rates* higher the the national average (up from 18 last week)

For at least the third consecutive week, Lubbock, Texas, home to Texas Tech University had the highest infection rate last week, followed by St. Joseph, IN (Notre Dame), Dane, WI (Wisconsin), Champaign, IL (Illinois) and Lancaster, NE (Nebraska)

Tompkins NY) (Cornell), Monongalia, WV (West Virginia) and Albemarle, VA (University of Virginia)

* 7-day average



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Metro Areas Home to Major Universities:

For at least the second consecutive week, Lubbock, Texas home to Texas Tech University experienced a dramatic increase in 7-day new daily infections per capita compared to one week ago; Champaign, IL (University of Illinois) was next highest

Brazos, TX (home of Texas A&M) experienced the most significant decline in this rate

* 7-day average

Metro Areas With Major Universities: Week-Over-Week Change In New Daily Infections / 1M Population

7-Day Average, October 29 v. October 22

Infection rates reflect the metro area home to the university campus, not the rate specific to the campus or student population

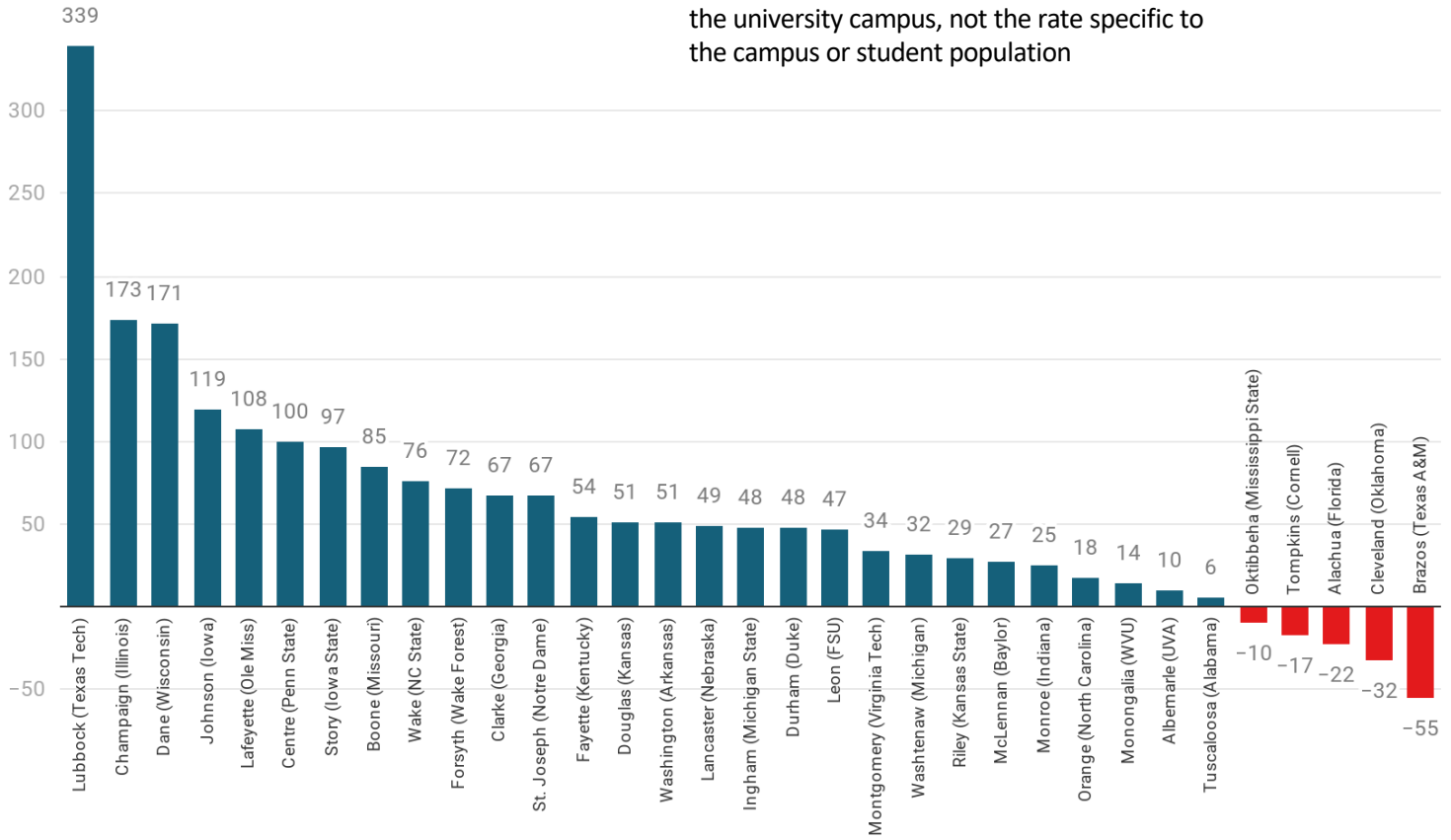

Chart: Health Industry Advisor LLC • Created with Datawrapper

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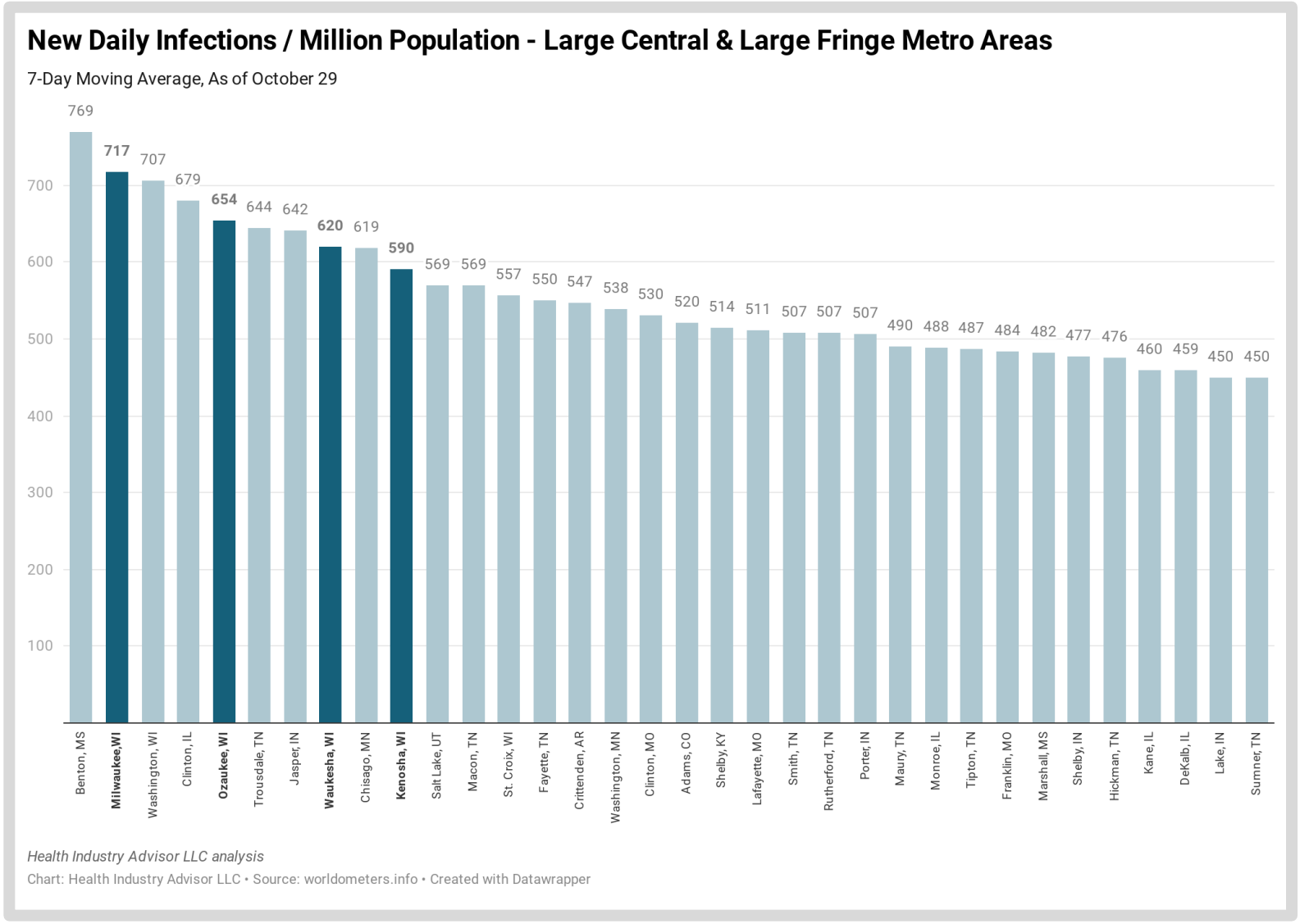
Thirty-four Large Central and Large Fringe Metro Areas experienced 7-day new daily infection rates / million > 450 for the past week

Southeast Wisconsin has been particularly hard-hit, with four of the highest ten rates among these areas



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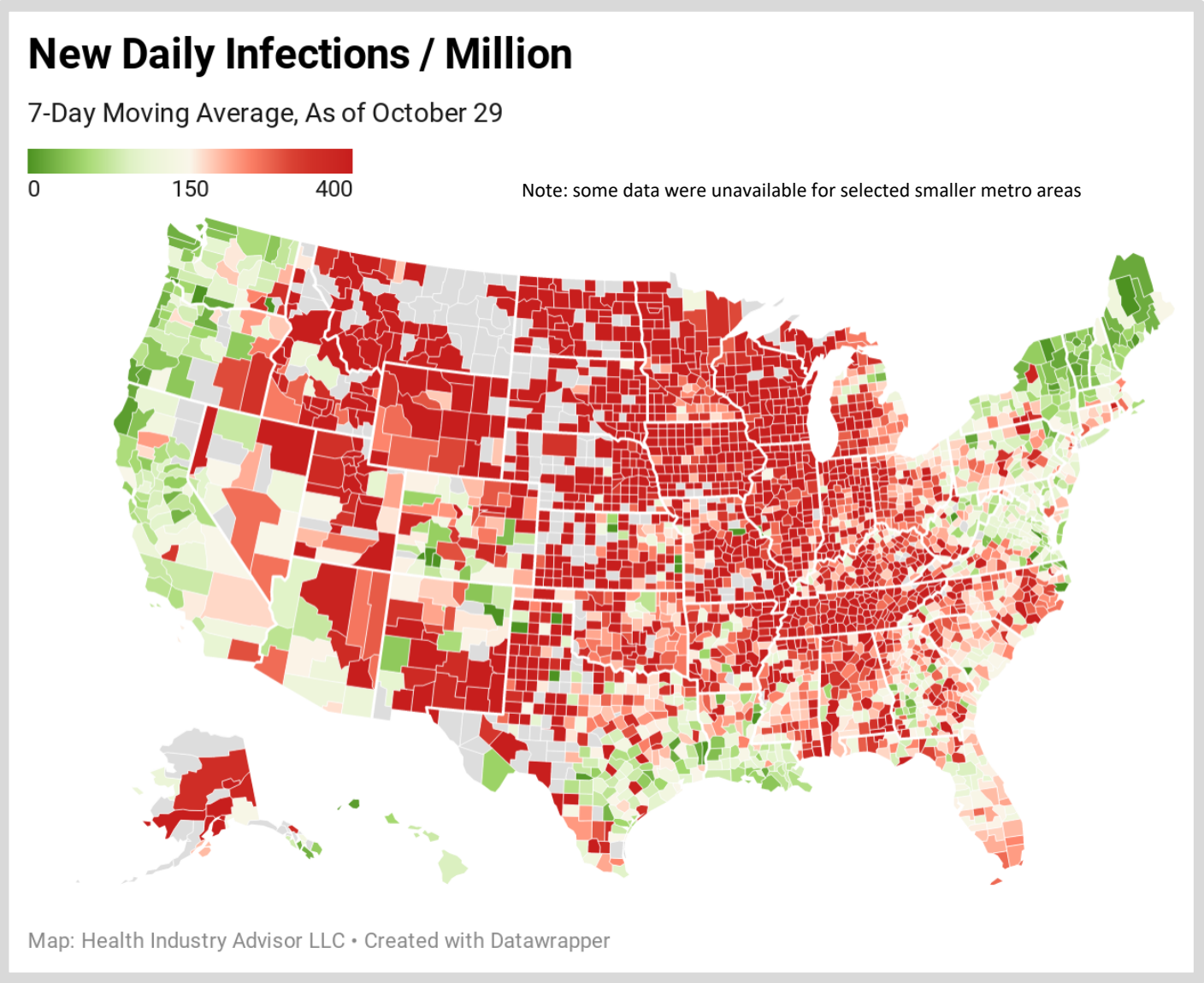
Highest rates of new daily infections* are concentrated in metro areas in the center of the country

There are other concentrations in parts of the Southeast and Mountain States

* 7-day average



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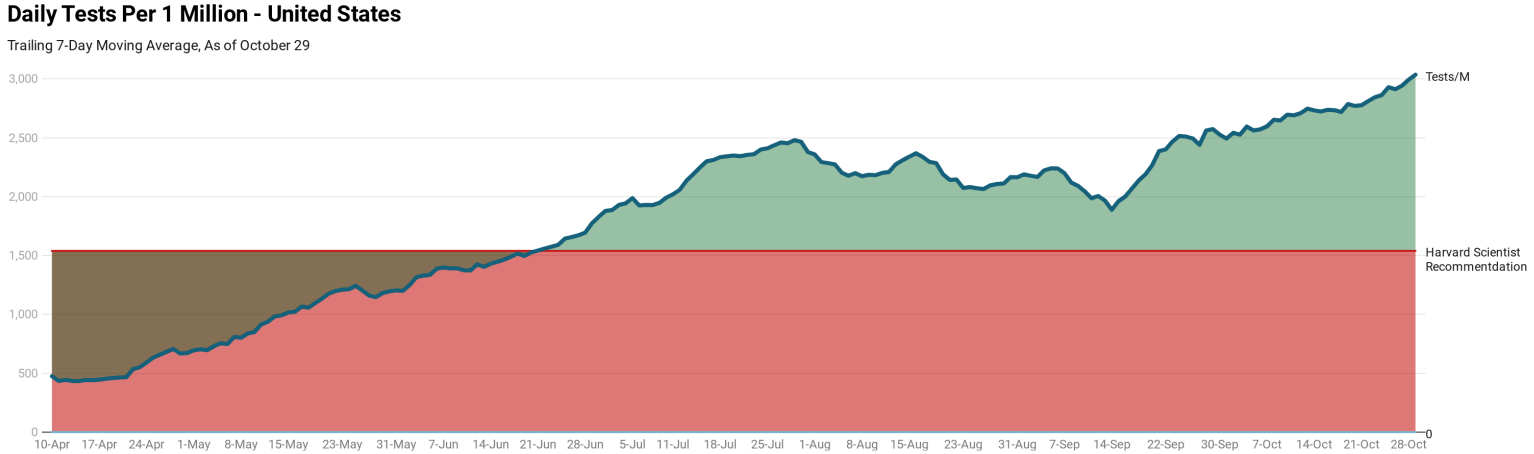
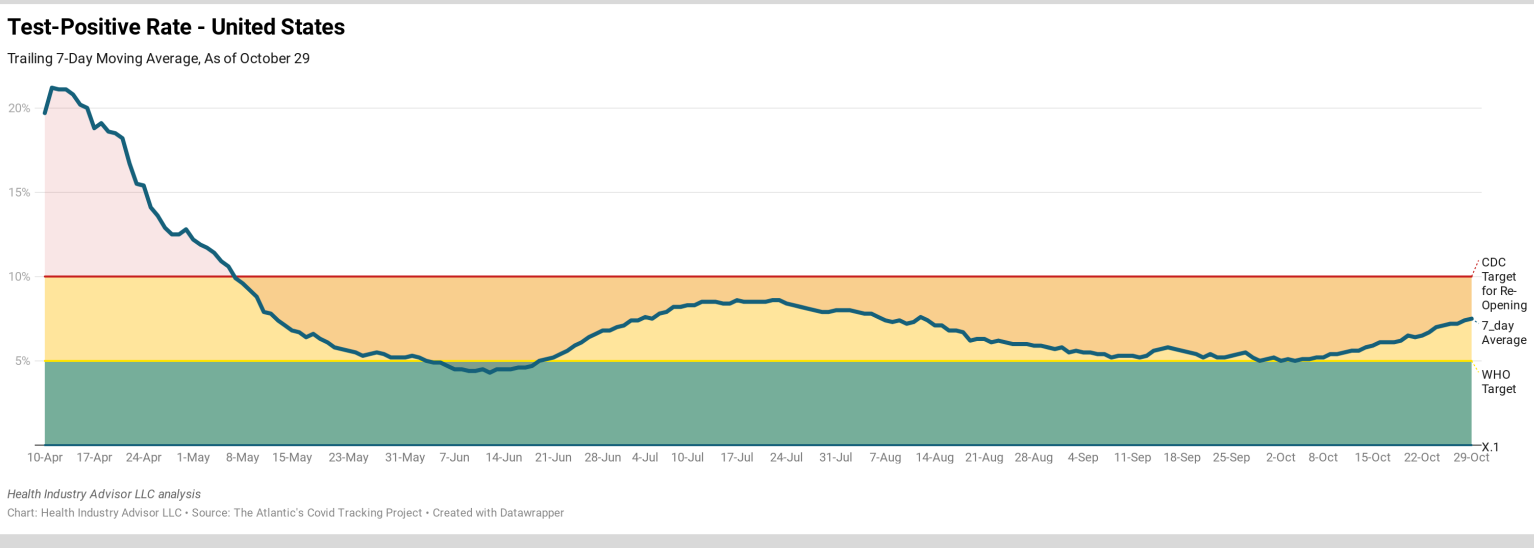
The 7-day average testing volume set a new high yesterday – a rather consistent theme over the past month

For the first time, test volume averaged > 1M per day for the past week

The 7-day test-positive rate, has been trending upward since the beginning of October





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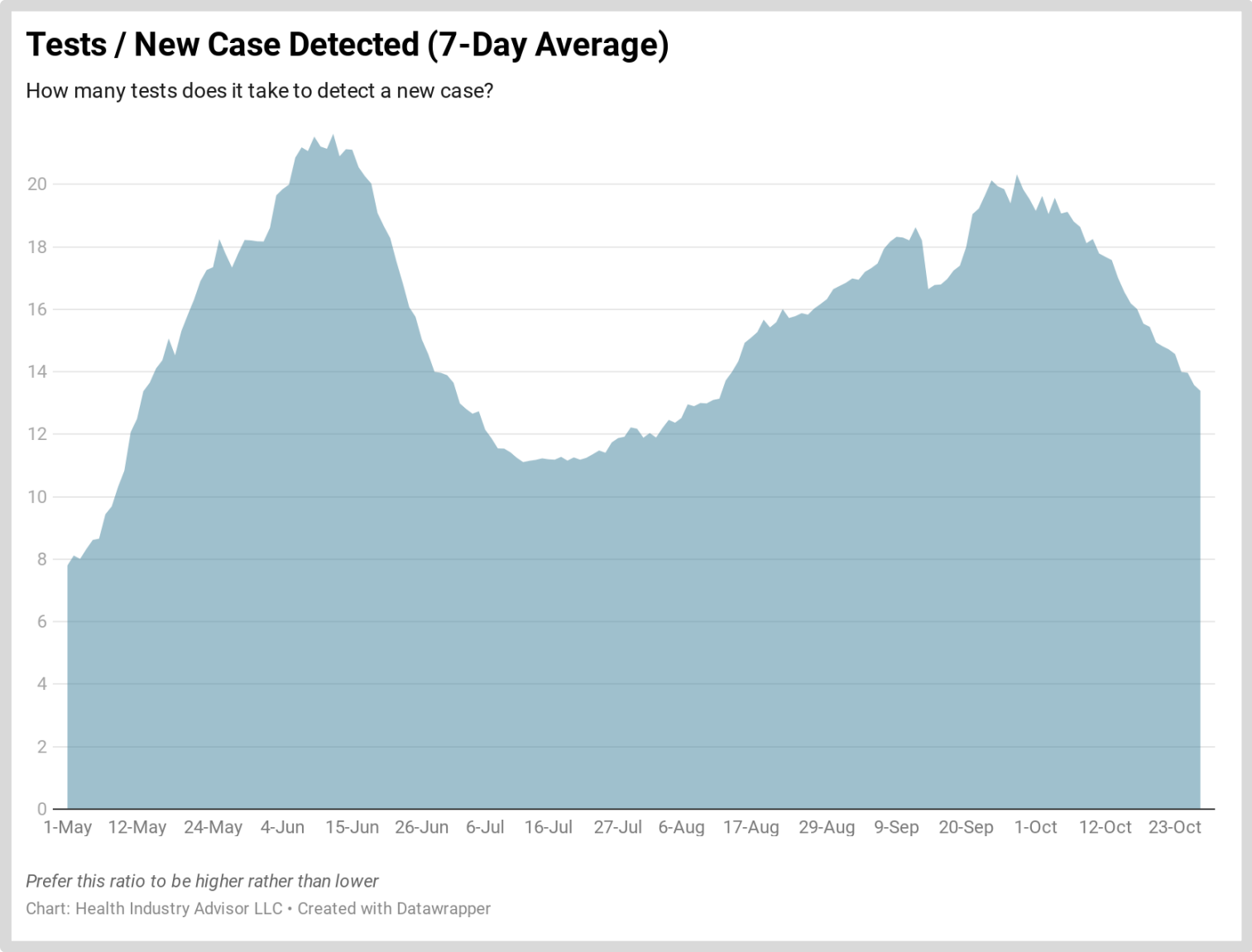
A measure of the effectiveness of testing is the ratio of tests performed to newly-detected cases

New cases are being detected every 13 tests performed; On September 28, it took > 20 tests to detect a new case

This rate is now lower than it has been at any time since August 8



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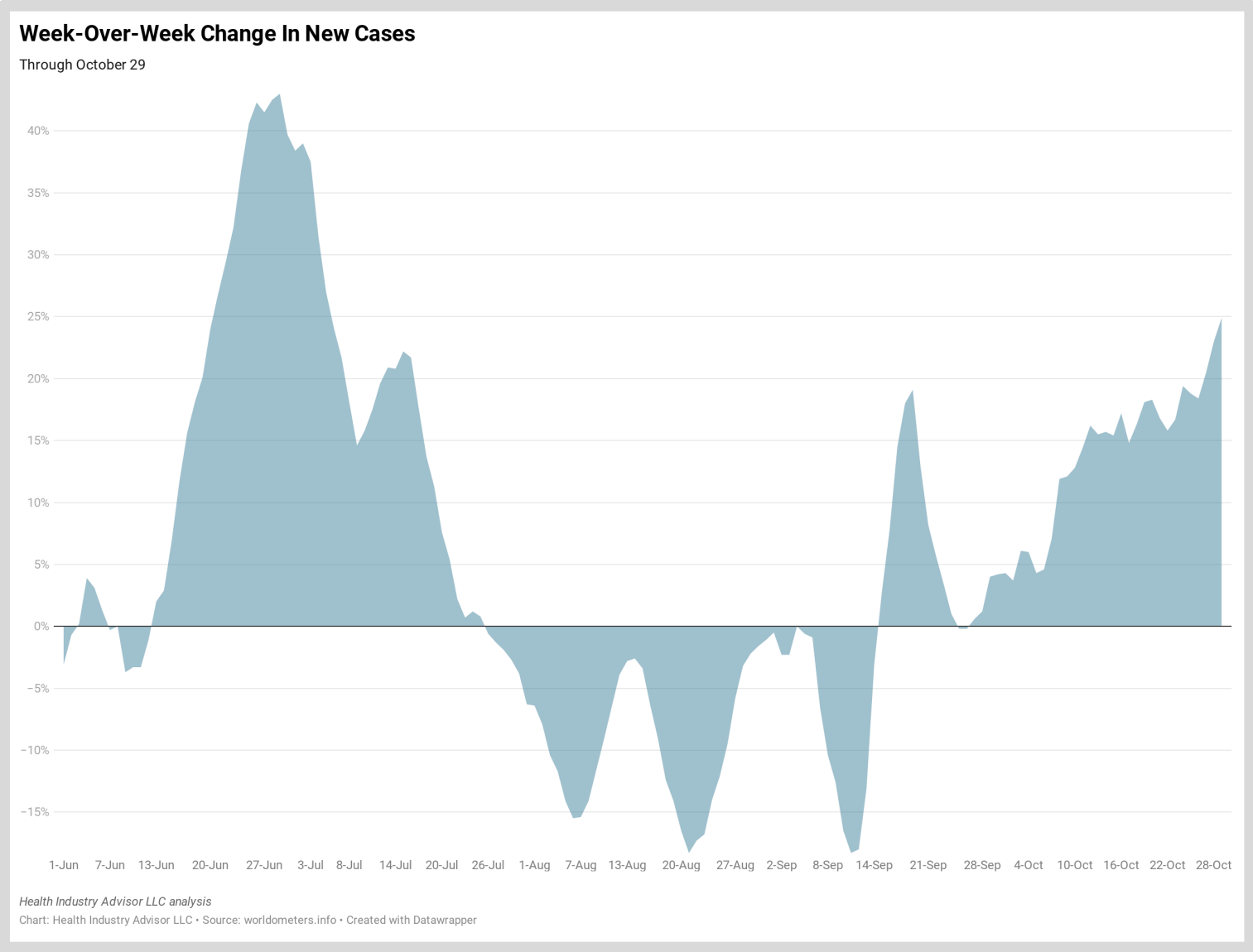
Week-over-week change in newly-detected cases increased sharply over the past three days

This rate has been trending upward since the end of September



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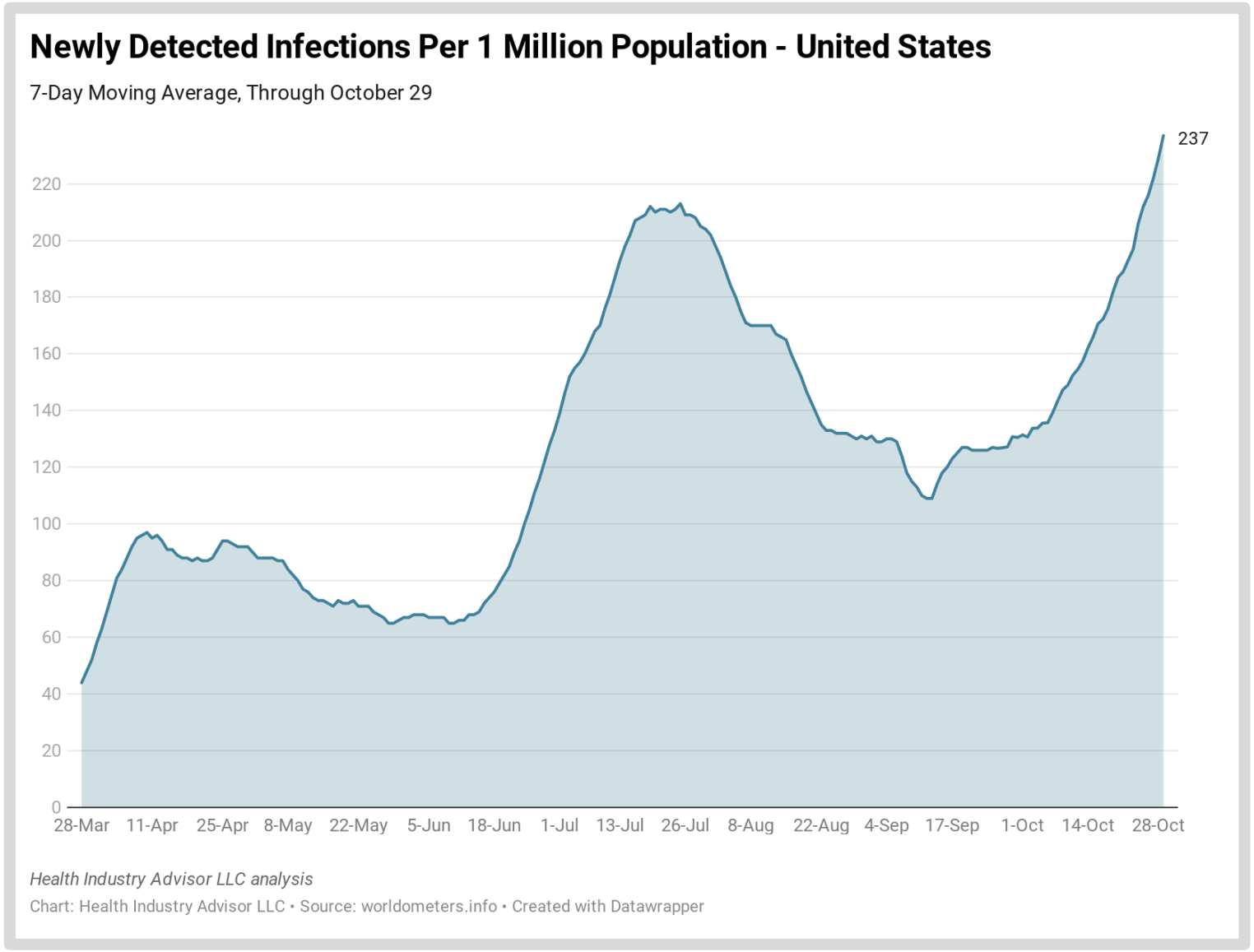
The rate of new infections per capita* in the U.S. rose for the twenty-sixth consecutive day

This rate is the highest it has ever been during this pandemic

* - 7-day moving average basis



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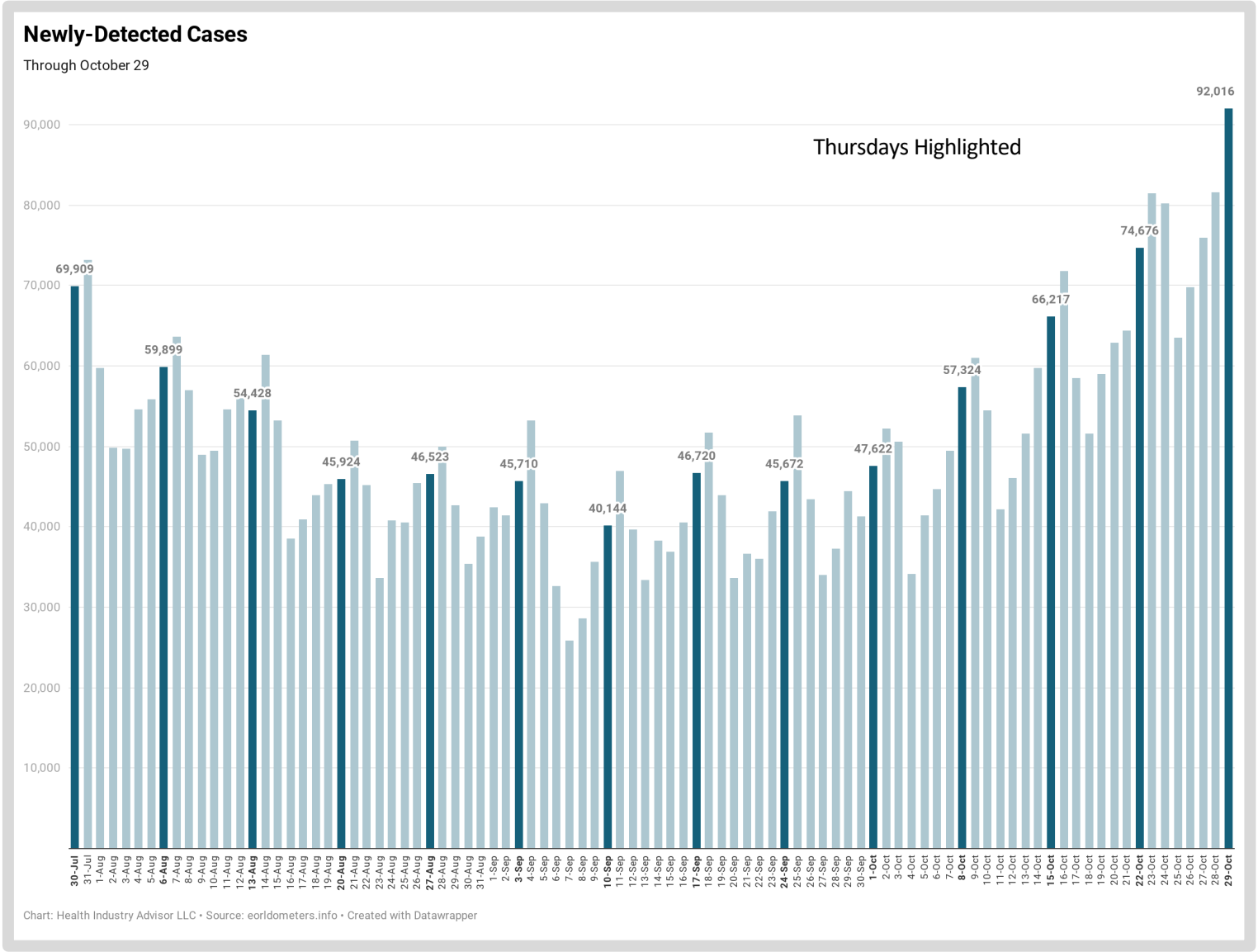
There were more newly-detected cases reported on Thursday than on any single day since the pandemic began



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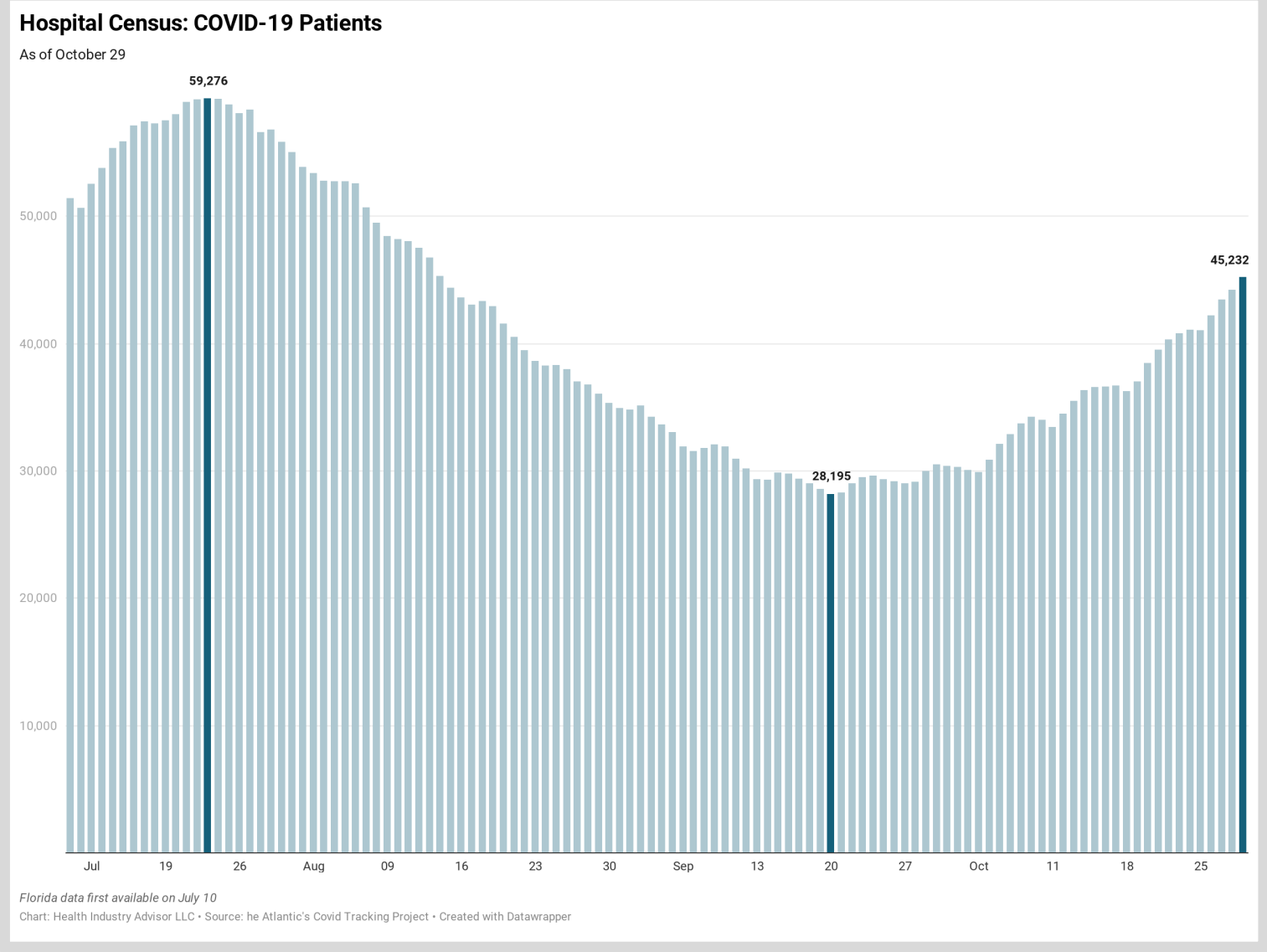
On a same-day, prior-week basis, inpatient Covid-19 census increased for the 36th consecutive day

This census is 24% lower than it was at its peak in late-July yet, is 60% higher than its low on September 20



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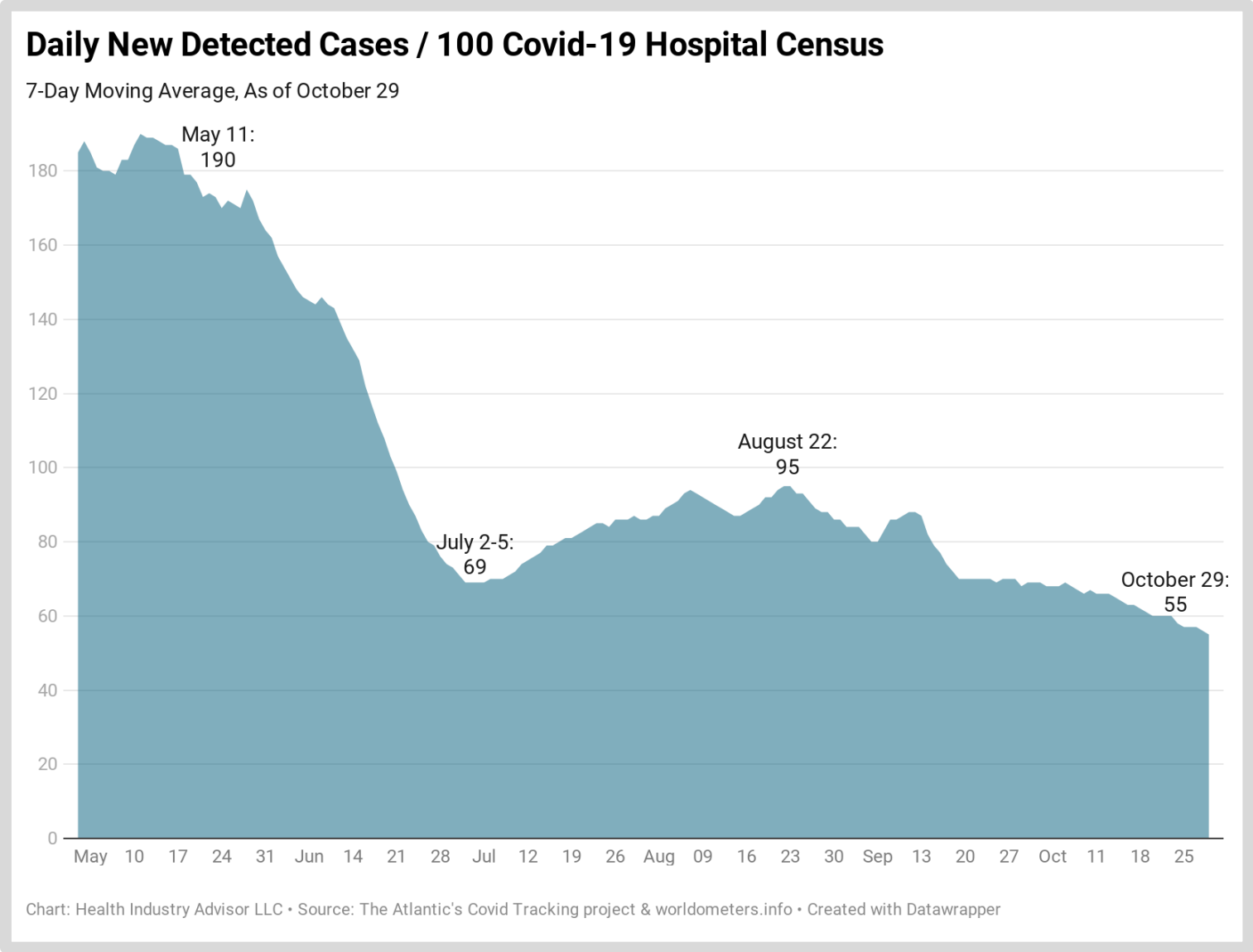
Covid-19 Hospitalizations, while increasing, have not kept pace with the increase in newly-detected cases

Indeed, the average Covid-19 census for the past week per 100 new cases is lower than it has been since at least April

This rate is 42% lower than its August 22 interim peak; 20% lower than the July 2-5 trough; and 70% lower than the May 11 peak



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Texas experienced the largest increase in Covid-19 census; however, it is just above 50% of its peak Covid-19 census

Illinois experienced the second largest increase; it is at 60% of peak Covid-19 census; Michigan had the 4th highest increase and is at 33% of peak

Of the states with the ten largest increases in Covid-19 census last week, Ohio, Wisconsin and Indiana at at peak Covid-19 census

Indiana and Kentucky also experienced increases in Covid-19 census > 100 and are at peak census

Week-Over-Week Change in Covid-19 Inpatient Days v. % of Peak in Inpatient Days Since Pandemic Start

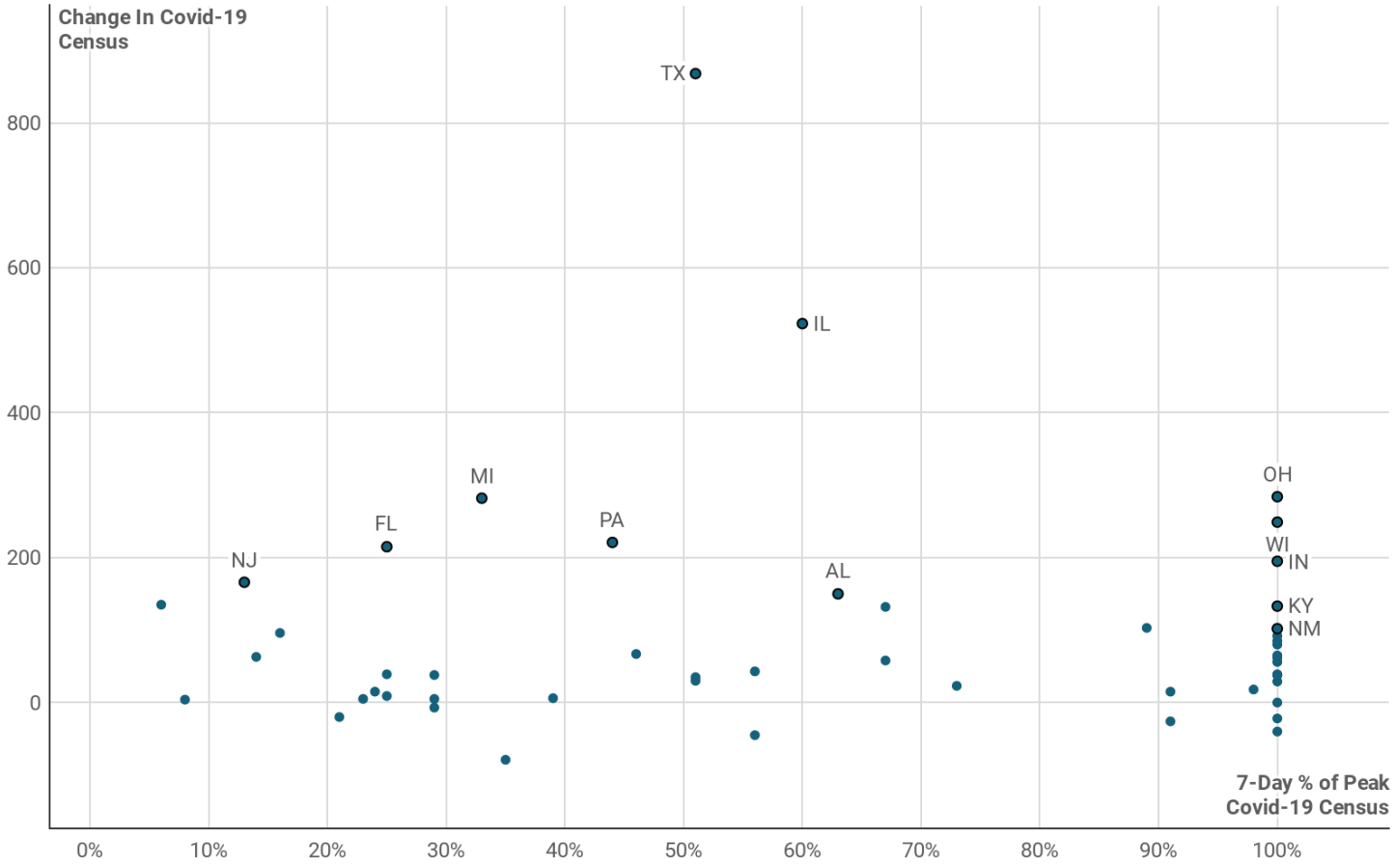

Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

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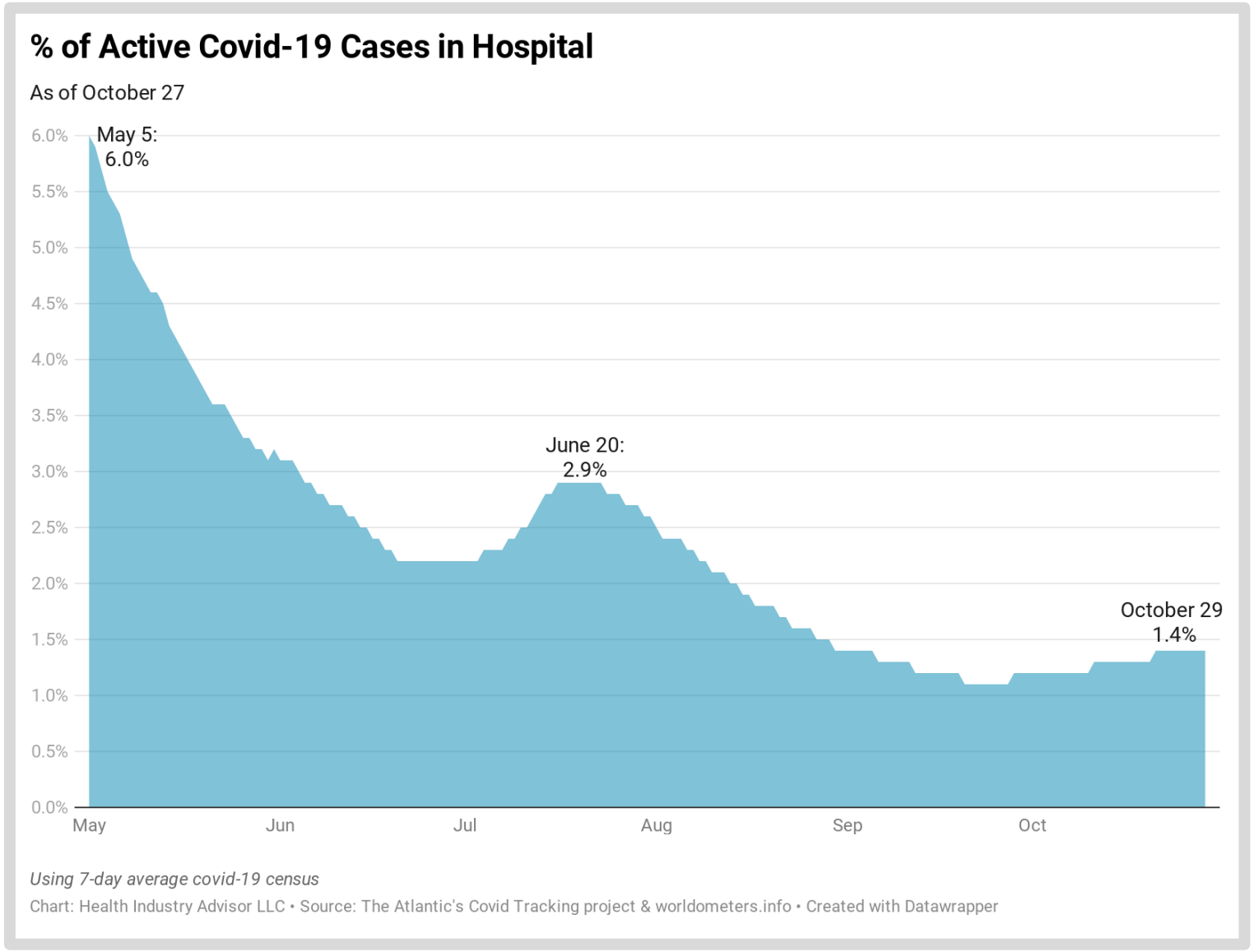
The likelihood that a person with an active Covid-19 infection would be hospitalized has increased somewhat during October

Still, it is ½ what it was during the July surge and 1/4 of what it was in May



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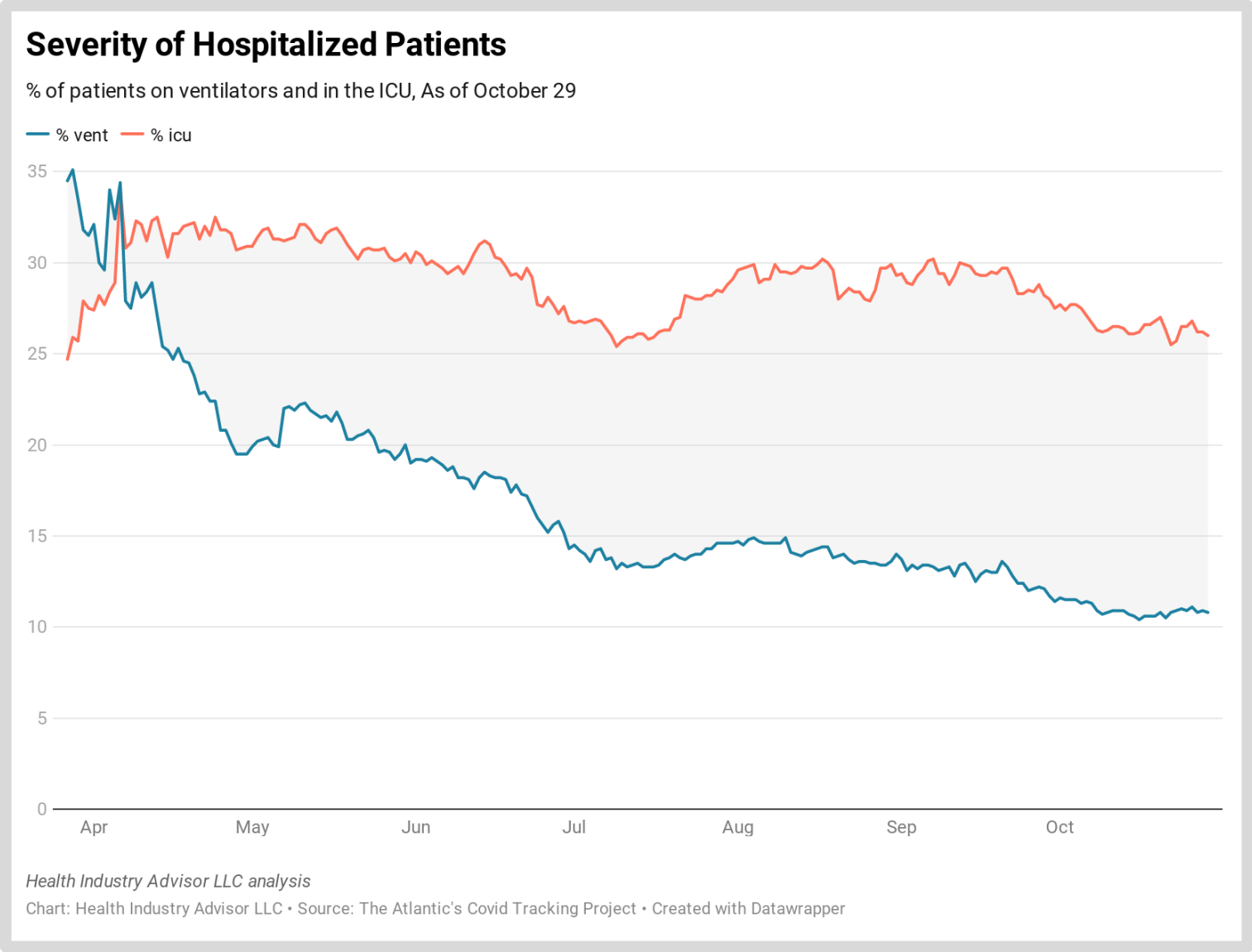
During the recent rise in Covid-19 inpatient census, the % of those inpatients requiring intensive care has declined

The % of Covid-19 inpatients requiring ventilator care has steadily declined since April



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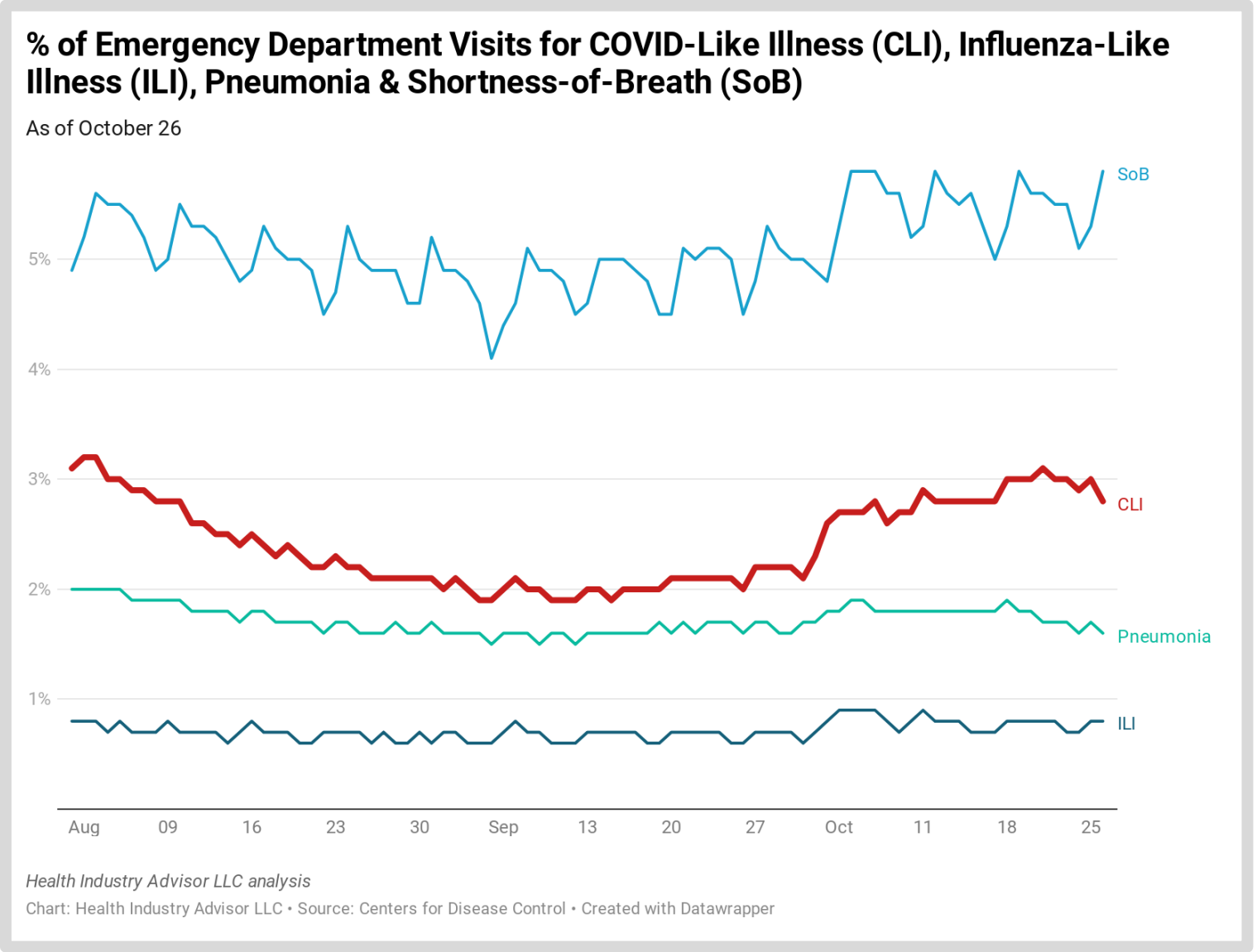
The % of ER visits for COVID-19-like illnesses (CLI) increased in the first two weeks of October, before easing slightly since (the rate was > 4% in July

Although the flu season has officially begun, we have yet to observe any impact on the rate of influenza-like illness (ILI) visits to the ER



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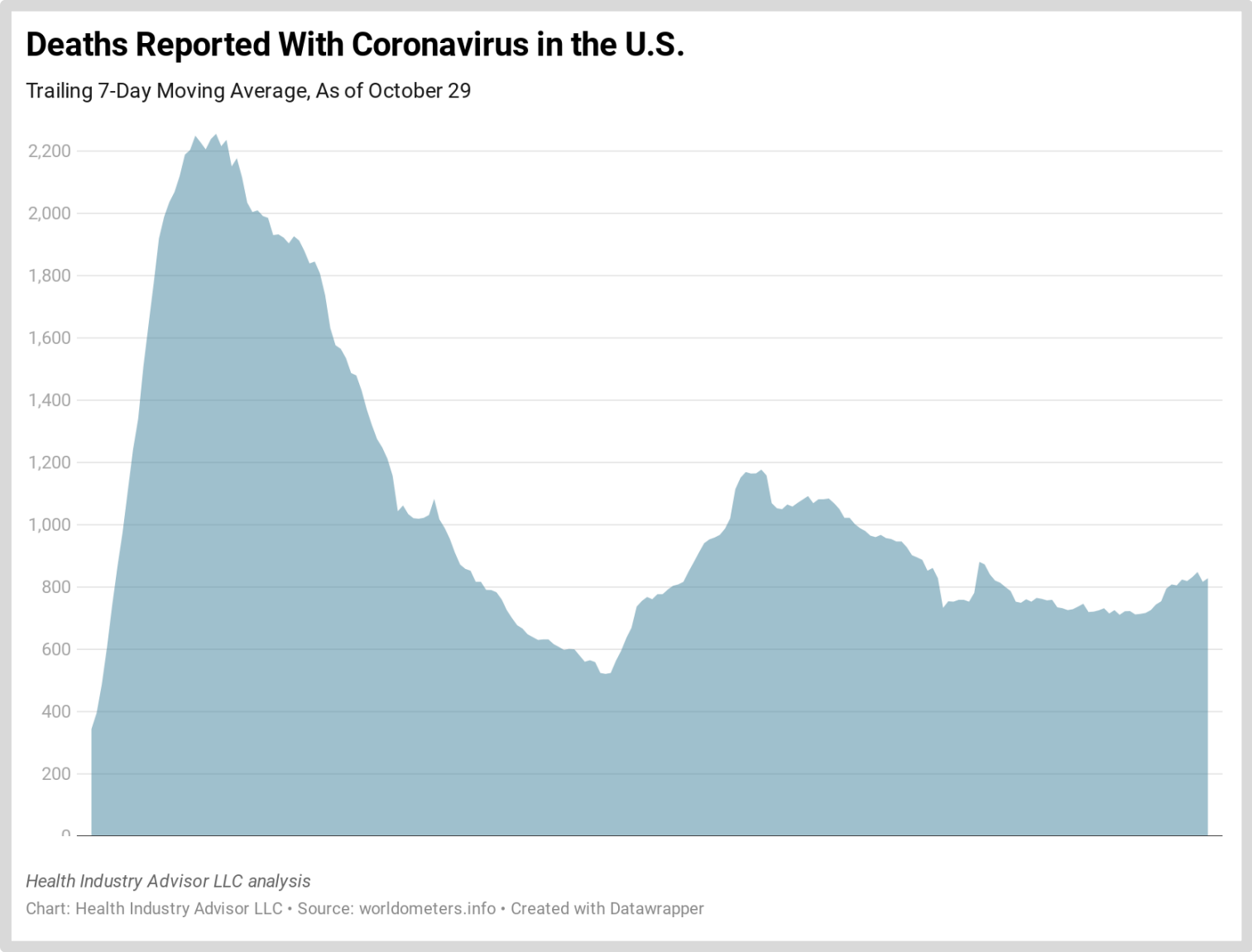
The recent uptick in newly-detected cases is beginning to effect deaths:

The 7-day average deaths per day has increased on thirteen of the past seventeen days

The current rate is higher than it has been on all except two days since September 18



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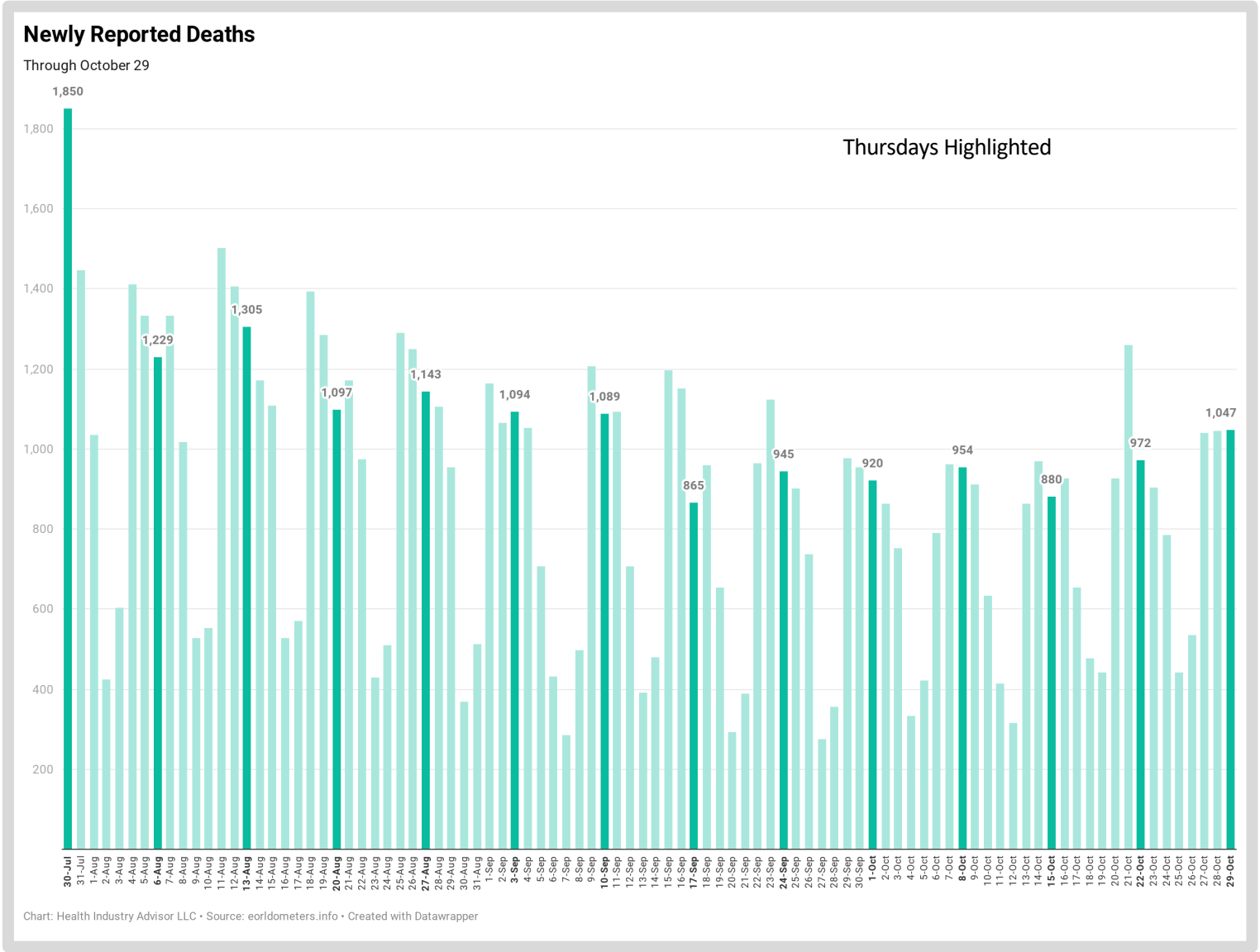
There were more deaths reported on Thursday than on any other Thursday in the past six weeks but, fewer than the preceding seven Thursdays



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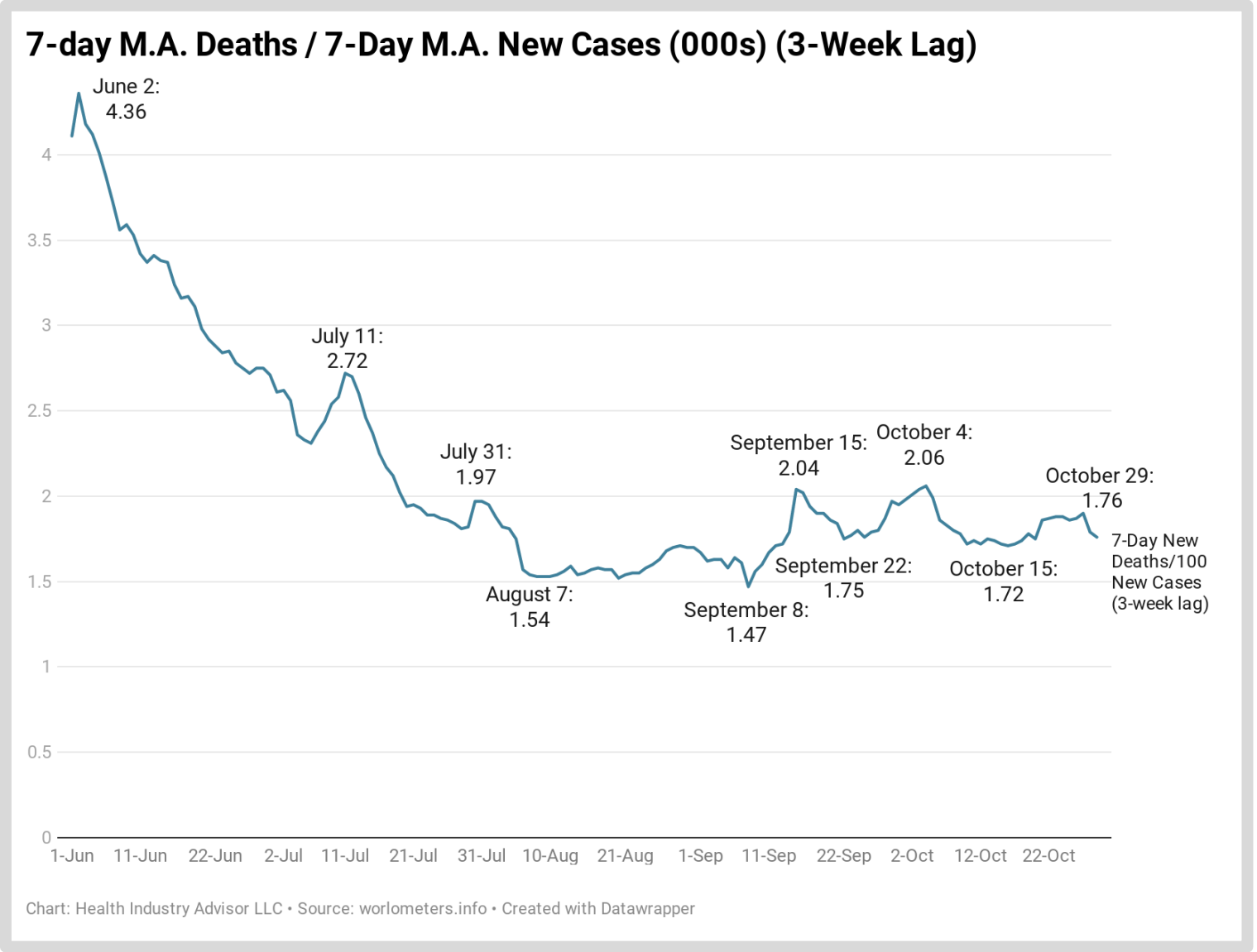
Deaths with coronavirus, relative to new cases (lagged 3 weeks) have moved within a narrow range for the past six weeks

This rate declined rapidly through June and July

The current rate is 40% of what it was in early-June



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Data Sources

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