



Health
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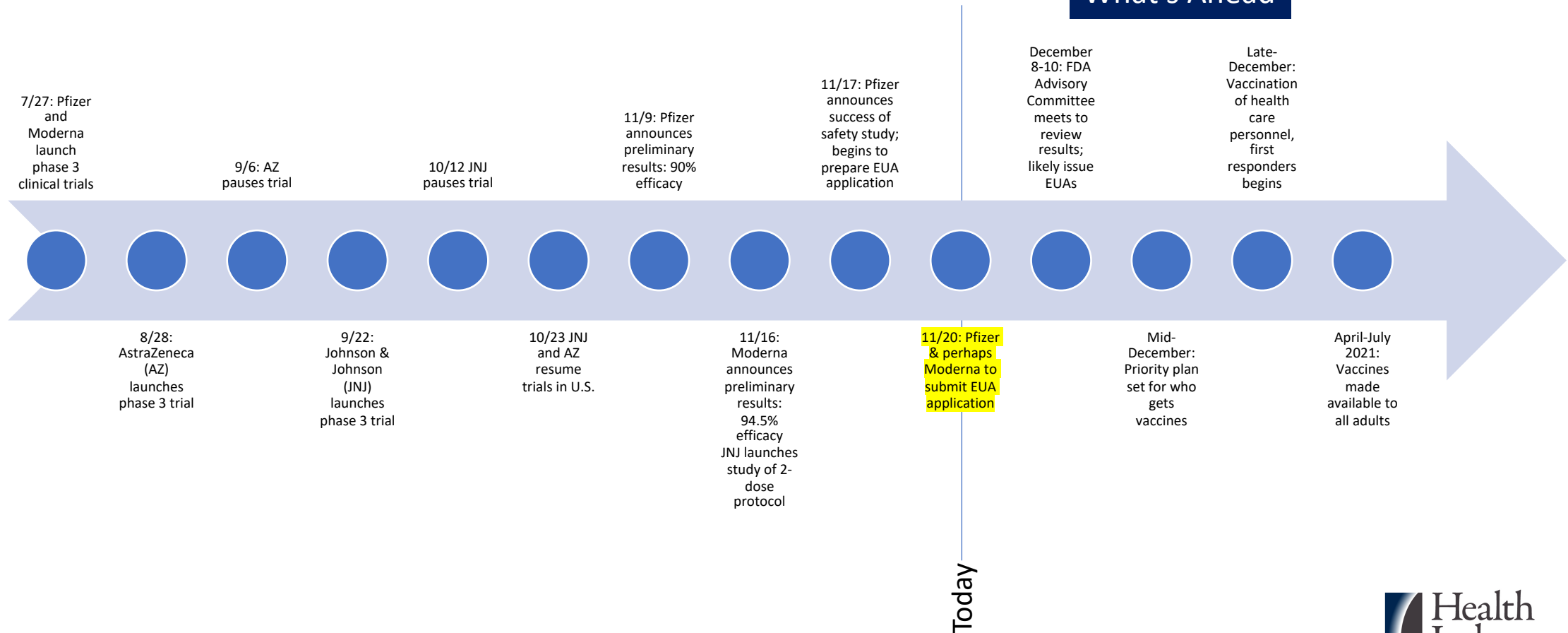
Issue # 217
Friday, November 20, 2020
COVID-19
Report

Highlights

- **Worldwide, newly-detected cases are showing signs of plateauing.** Indeed, the week-over-week change in new cases began declining three weeks ago and neared zero yesterday. **Many European countries, which had been at the epicenter of high infection spread in recent weeks, are showing definitive signs of slowing infection rates**
- **In the U.S., newly-detected cases have been increasing sharply for several weeks. However, the week-over-week change in these new cases has now declined on nine consecutive days** (following the pattern initiated earlier worldwide, as well as a similar pattern in the U.S. in June/July). **If this pattern continues (as it did in June/July), new cases could peak within the next three weeks**
- **We remain most concerned about the impact of increasing new cases on the healthcare system.** Although not as critical as in April - when Covid-19 inpatients exceeded inpatient capacity on several days in Connecticut, New Jersey and New York - **Covid-19 patients now occupy 57% of available beds in Nevada, more than 40% in Connecticut, Illinois and Wisconsin; and more than 33% in Indiana, Iowa, Michigan, Minnesota and Rhode Island**
- Fortunately, the rate at which new Covid-19 cases require hospital care continues to decline: this rate declined yesterday for the eighteenth time in the past nineteen days (and, twenty-seventh in the past twenty-nine days); the % of active Covid-19 cases in the hospital (1.6%) remains near its historical low
- **The age distribution of Covid-19 inpatients has shifted significantly since June: persons 65 years & older represent 45% of these inpatients, up from a low of 30% in June; persons 18-45 years old have declined from 40% to just more than 25%. Persons under 18 continue to represent a very small % of Covid-19 patients**
- The mix of Covid-19 inpatients requiring ICU care also has continued to decline. As of yesterday, 23% of Covid-19 inpatients were in the ICU; this rate was at or above 30% in early-September
- The % of ER visits for Covid-19-like illnesses has been stable for the past week, following a sharp increase from early-October into November; the % of ER visits for influenza-like illnesses remains low, given where we are in the official flu season
- **Deaths reported each day with the coronavirus, on a 7-day moving average basis, increased again yesterday - the sixteenth consecutive daily increase. Given the lag from case detection to death, this rate will likely continue to increase for the next month or more**
- **Test volume continues to accelerate - exceeding 4,000 tests per million people yesterday, on a 7-day moving average basis; this rate first surpassed 3,000 on October 29; and was 2,000 as recently as September 12**
- The 7-day test-positive rate finally stayed steady yesterday, after increasing twenty-two consecutive days
- In today's report, we show the metro areas with the highest new infection rates over the past seven days, categorized by Large Central, Large Fringe and Medium Metro Areas; **In the Large Fringe Metro Area category, the highest infection rates are heavily-concentrated in the Midwest and, in Illinois, Minnesota and Wisconsin in particular**
- We also show these infection rates for a sampling of "university towns"; of note, **Lubbock, Texas - home to Texas Tech University - has the highest rate among these university towns for the sixth consecutive week**

Vaccine Timeline in the U.S

What's Ahead



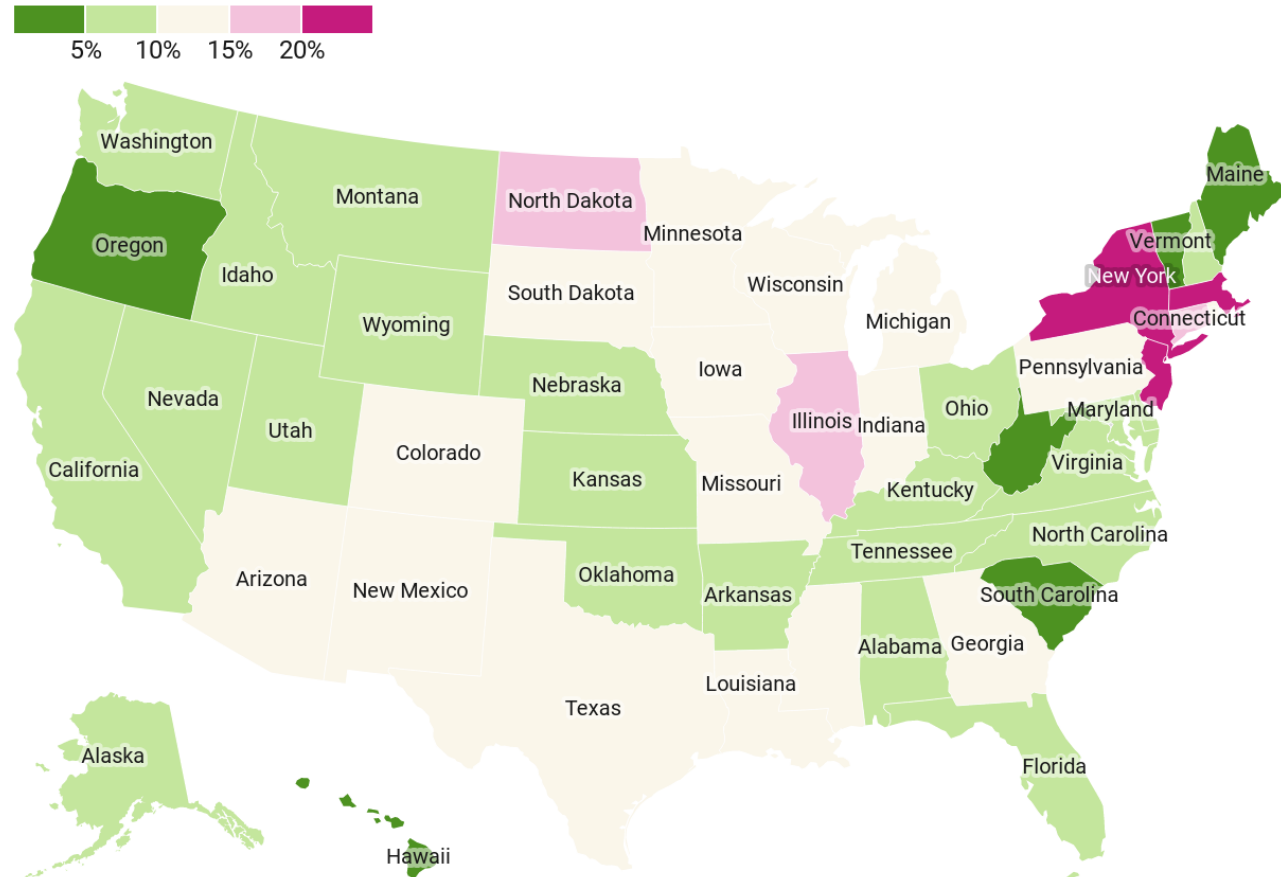
According to estimates produced by Oliver Wyman, several Northeast states may have the highest incidence of actual infection rates per capita (“infection prevalence”)

North Dakota and Illinois, states currently experiencing high case-detection rates, are approaching high actual estimated infection prevalence

Note the relatively low infection prevalence in Maine, Oregon, South Carolina, West Virginia and Vermont

What % of the population may have already been infected?

Oliver Wyman "Best Estimate", as of November 15



Map: Health Industry Advisor LLC • Source: Oliver Wyman • Created with Datawrapper

Worldwide, we are experiencing ~593k new cases each day – note that newly-detected cases appear to be plateauing worldwide

The United States is averaging ~170k new cases each day

* - 7-day moving average basis

Newly Detected Daily Cases - U.S. & Worldwide

7-Day Moving Average, As of November 19

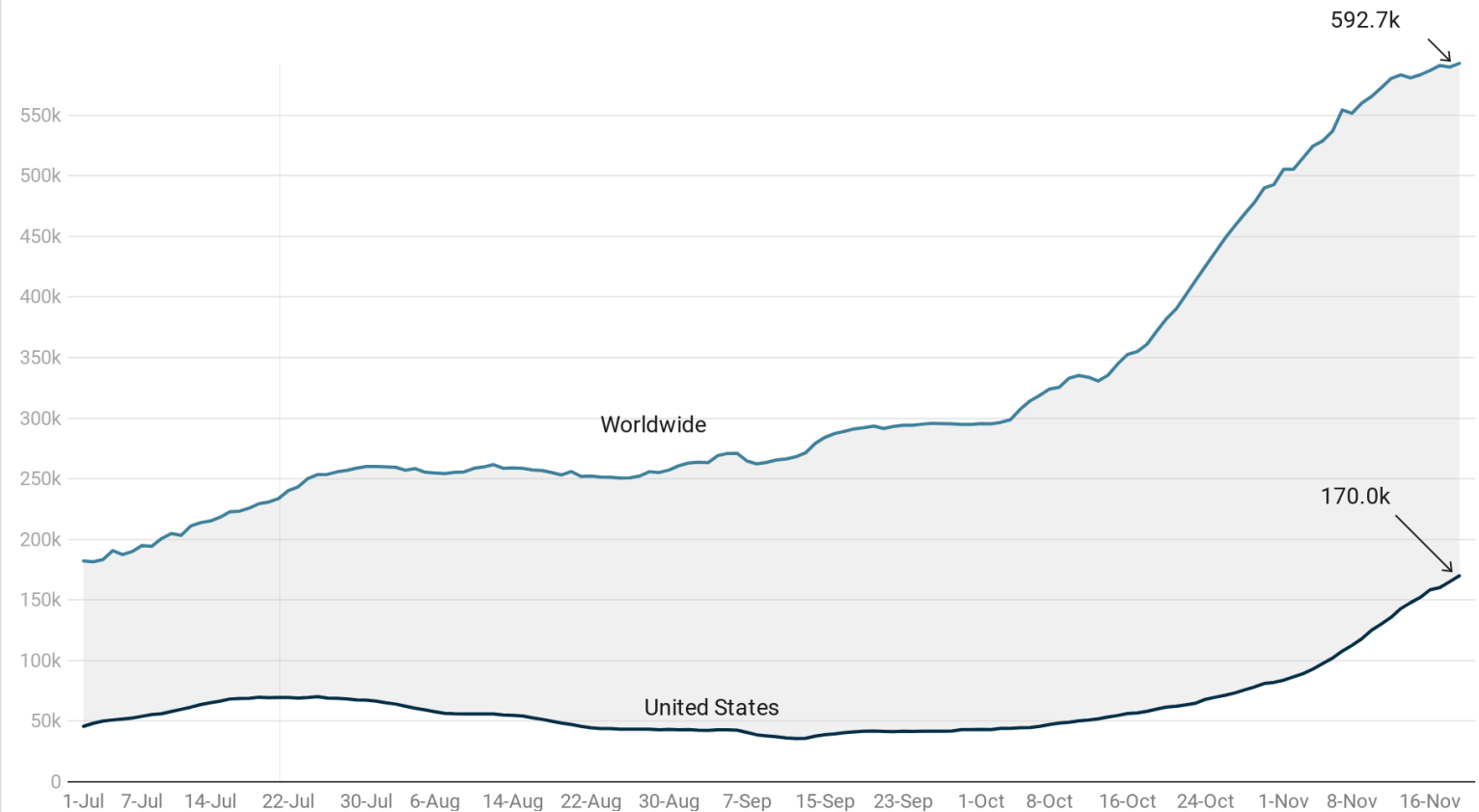


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Although new cases continue to increase in the U.S. and worldwide, the rate of increase has been easing:

Worldwide, the rate of increase has been declining for more than three weeks, and approaching zero

In the U.S., the rate of increase has now declined on nine consecutive days

Week-Over-Week Changes in Newly-Detected Cases: USA v. Worldwide

7-Day Moving Average

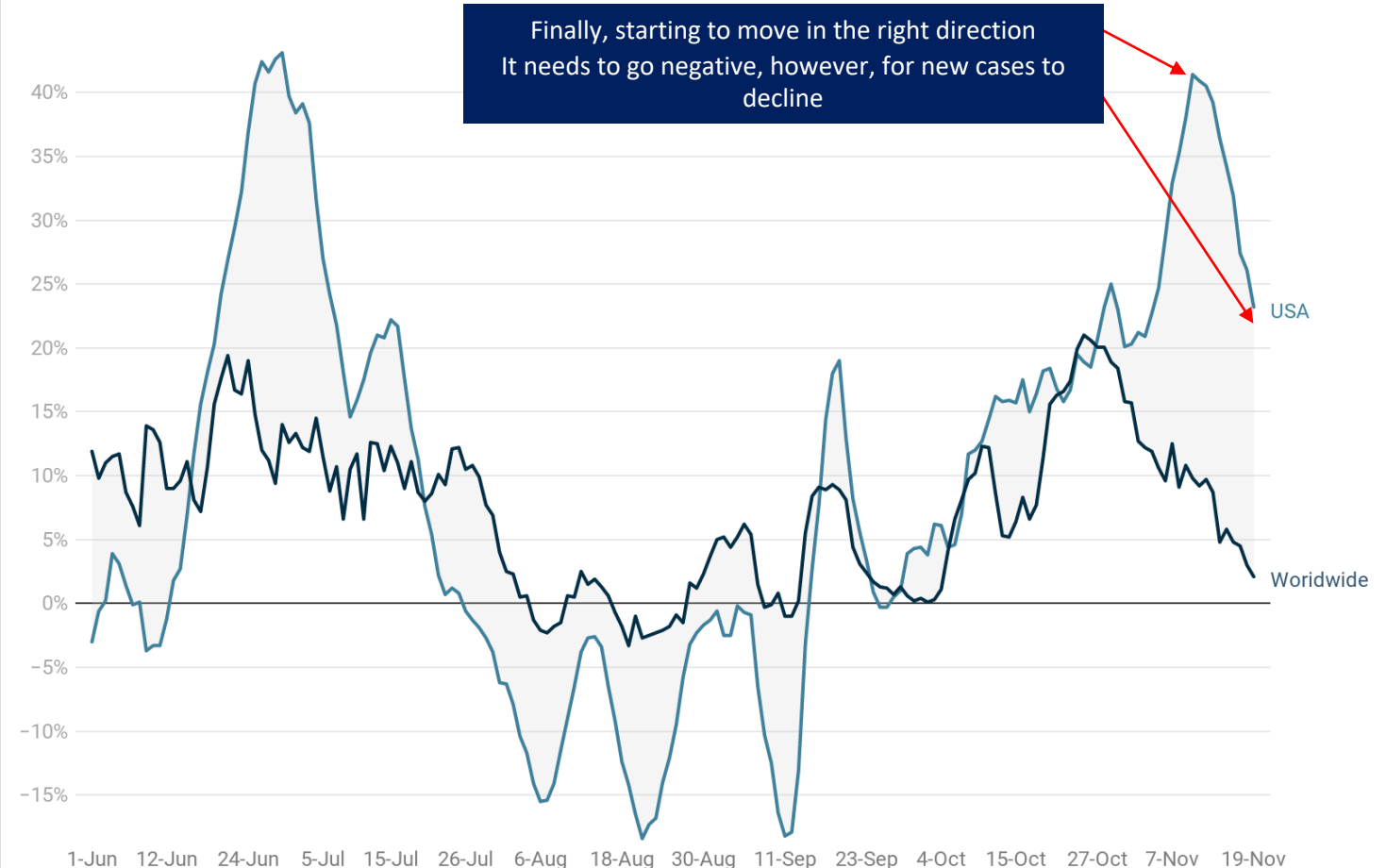


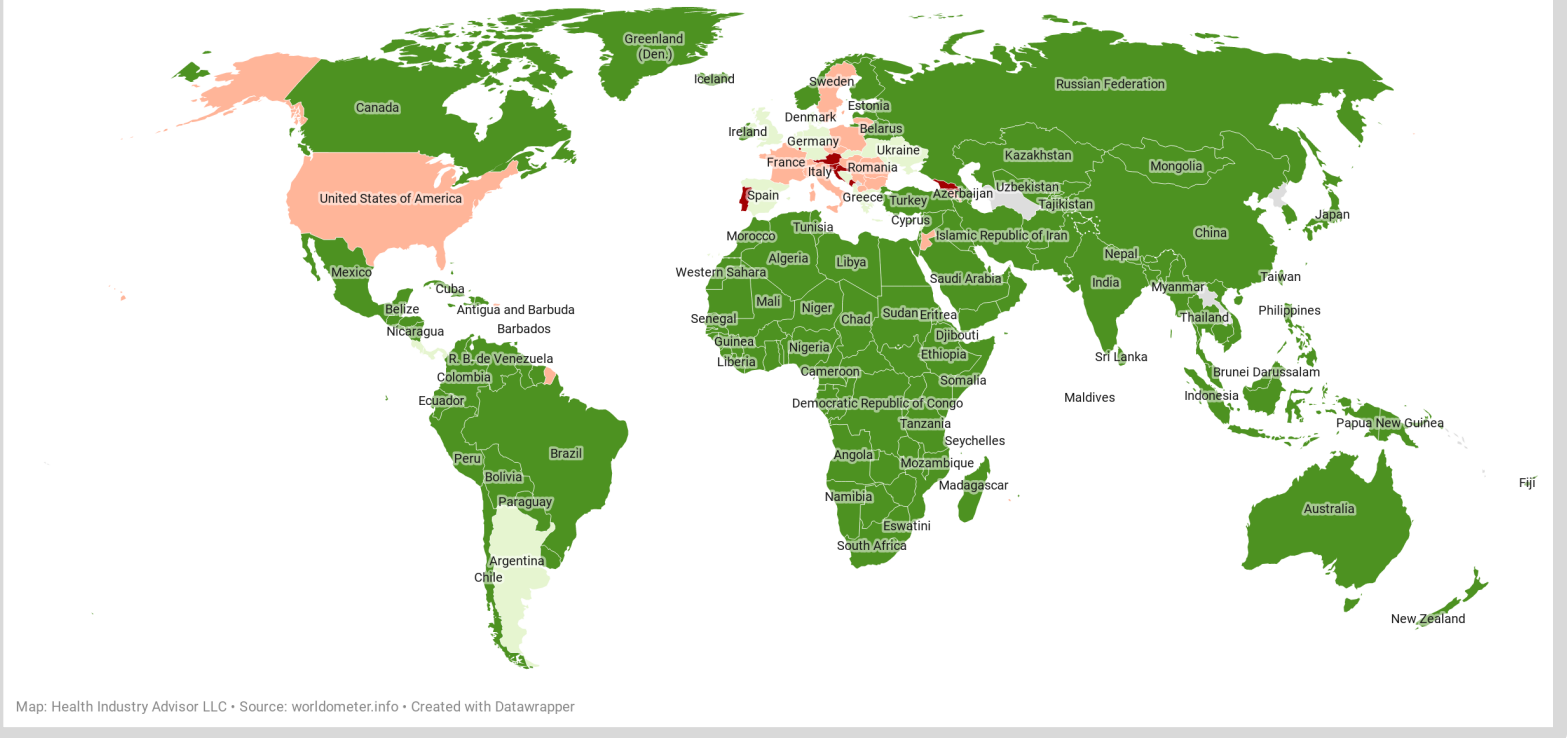
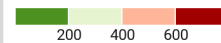
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

The infection spread continues to be a U.S. and European issue - although many parts of Europe are cooling off while the U.S. continues to see rising newly-detected cases

* - 7-day moving average basis

New Infections / Million

7-Day Moving Average, As of November 19



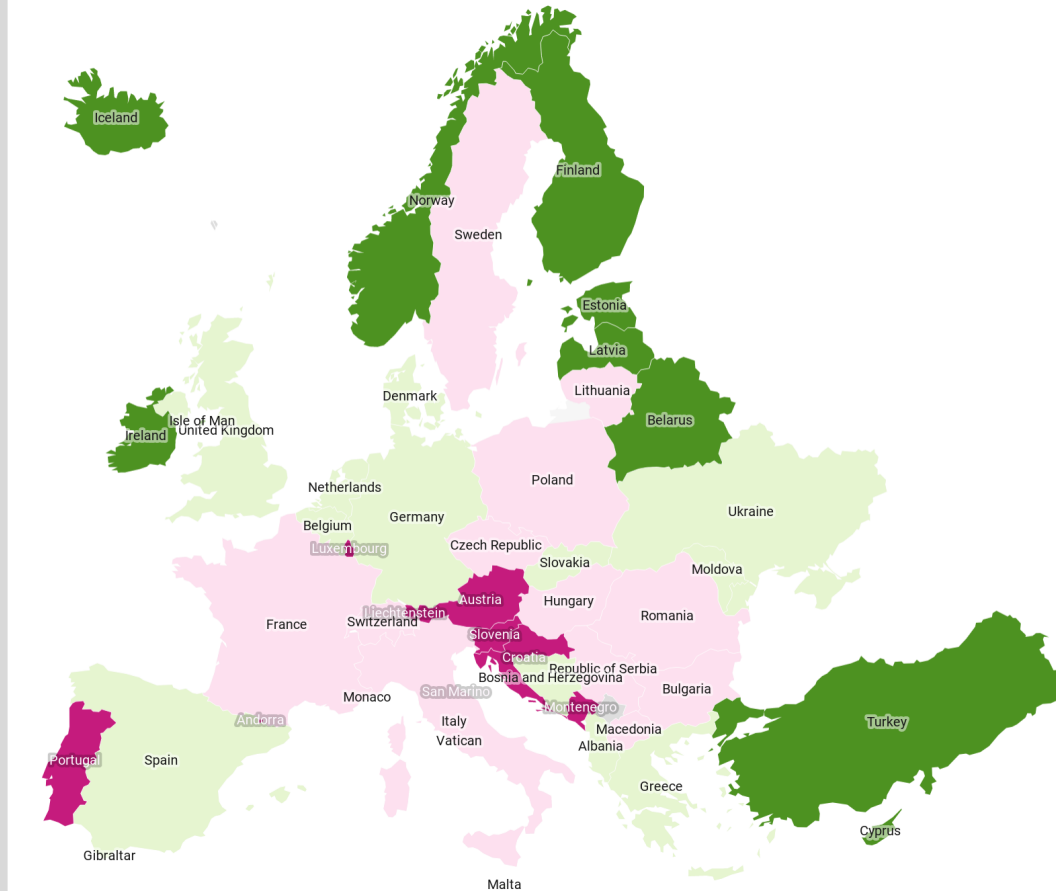
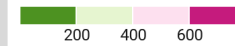
Note: Change in scale from prior reports, in order to better distinguish relative infection rates

While much of Europe “cools” somewhat, High rates of new infections in Austria, Croatia, Liechtenstein, Luxembourg, Montenegro, Portugal, San Marino and Slovenia are still experiencing high new infection rates

* - 7-day moving average basis

New Daily Infections / Million - Europe

7-Day Moving Average, As of November 19



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

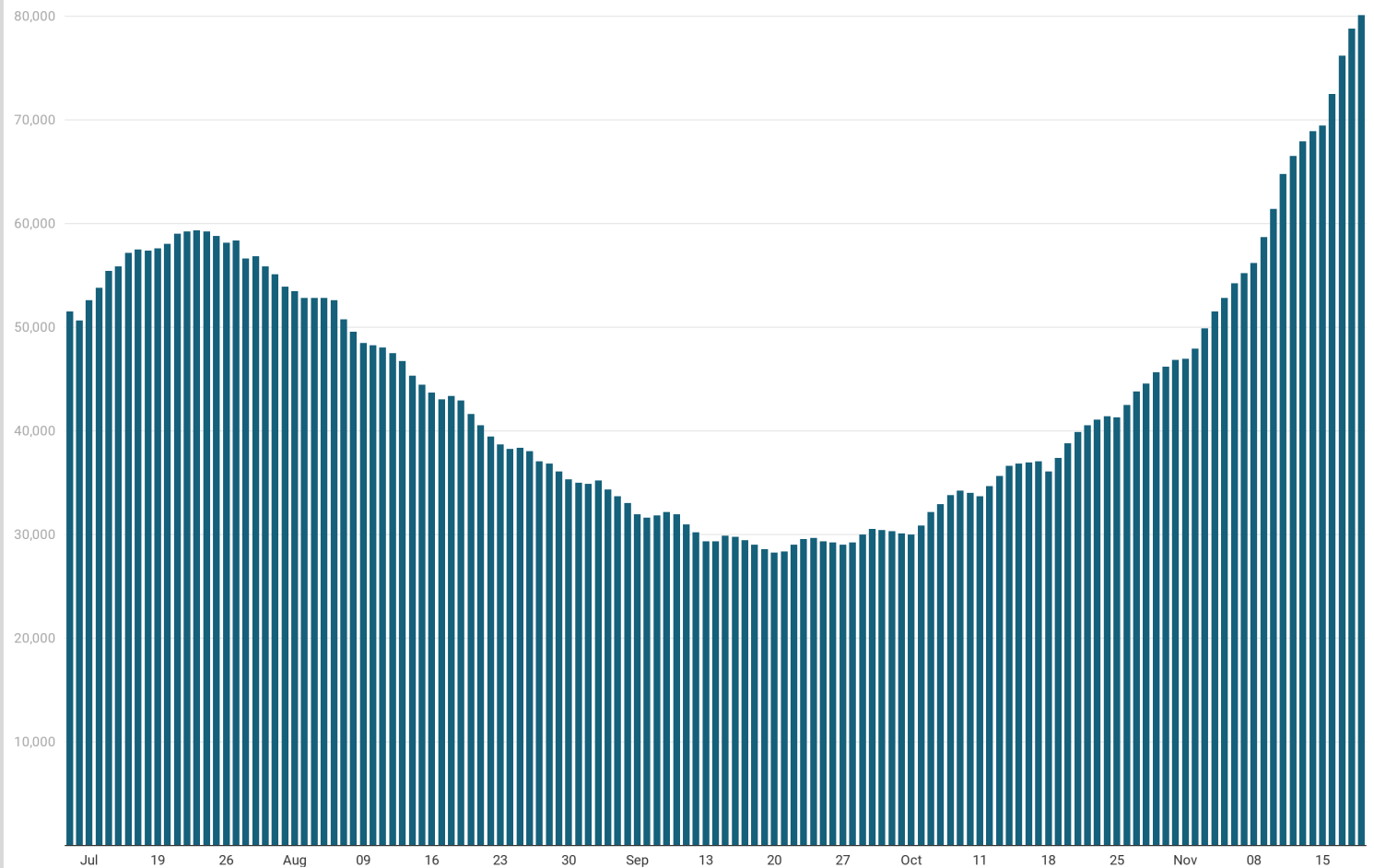
For the first time during the pandemic, inpatient Covid-19 census topped 80,000 yesterday

On a same-day, prior-week basis, inpatient Covid-19 census increased every day since September 23

Given new case trends, inpatient Covid-19 census could continue increasing for another three weeks

Hospital Census: COVID-19 Patients

As of November 19



Florida data first available on July 10

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

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

The average Covid-19 census per 100 new cases declined again yesterday, for the eighteenth time in the last nineteen days (and twenty-seventh in the past twenty-nine days)

This rate has been reduced by more than 1/2 since mid-September and by $\frac{3}{4}$ since mid-May

Covid-19 Hospital Census / 100 Daily New Detected Cases

7-Day Moving Average, As of November 19

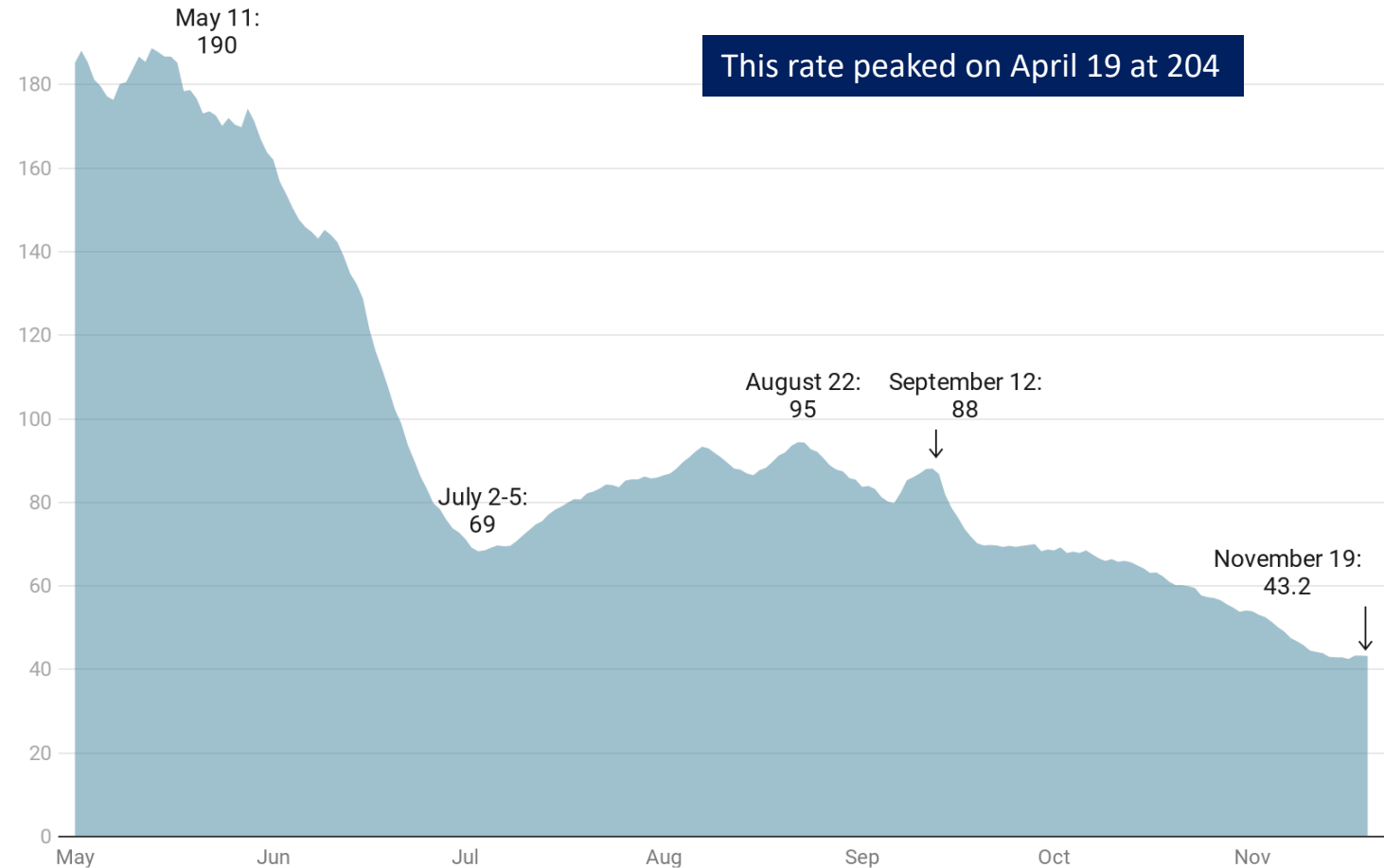


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

In Nevada, 57% of all inpatient beds are occupied by Covid-19 patients

In Connecticut, Illinois and New Mexico, its more than 40%

In Indiana, Iowa, Michigan, Minnesota, and Rhode Island its more than 1/3 of inpatient beds

For the U.S. overall, its 27%

Covid-19 Patients / Total Inpatient Beds

7-Day Moving Average, As of November 19

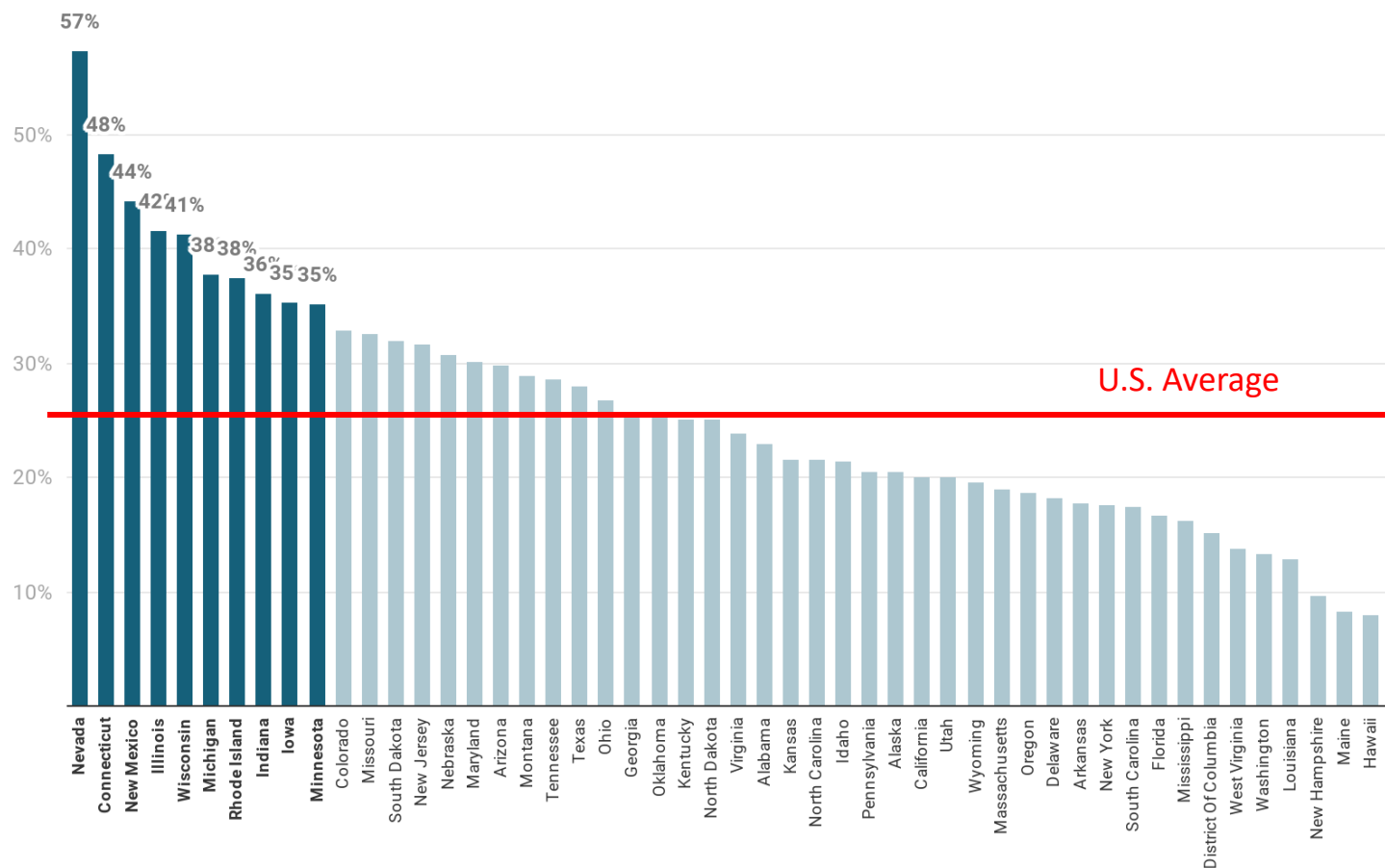


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

The highest average census per new case is currently experienced in Hawaii, the District of Columbia, Virginia, Mississippi and Georgia

The lowest rates are found in Utah, New Hampshire, Vermont, Alaska and Minnesota

Contrast these rates to those experienced in selected hard-hit states during earlier surges:

- Arizona: 305 (4/20)
- California: 416 (4/17)
- Connecticut: 293 (4/29)
- Massachusetts: 475 (6/21)
- Michigan: 422 (4/21)
- New York: 330 (5/22)

Covid-19 Census / 100 New Cases

7-Day Moving Average, As of November 19

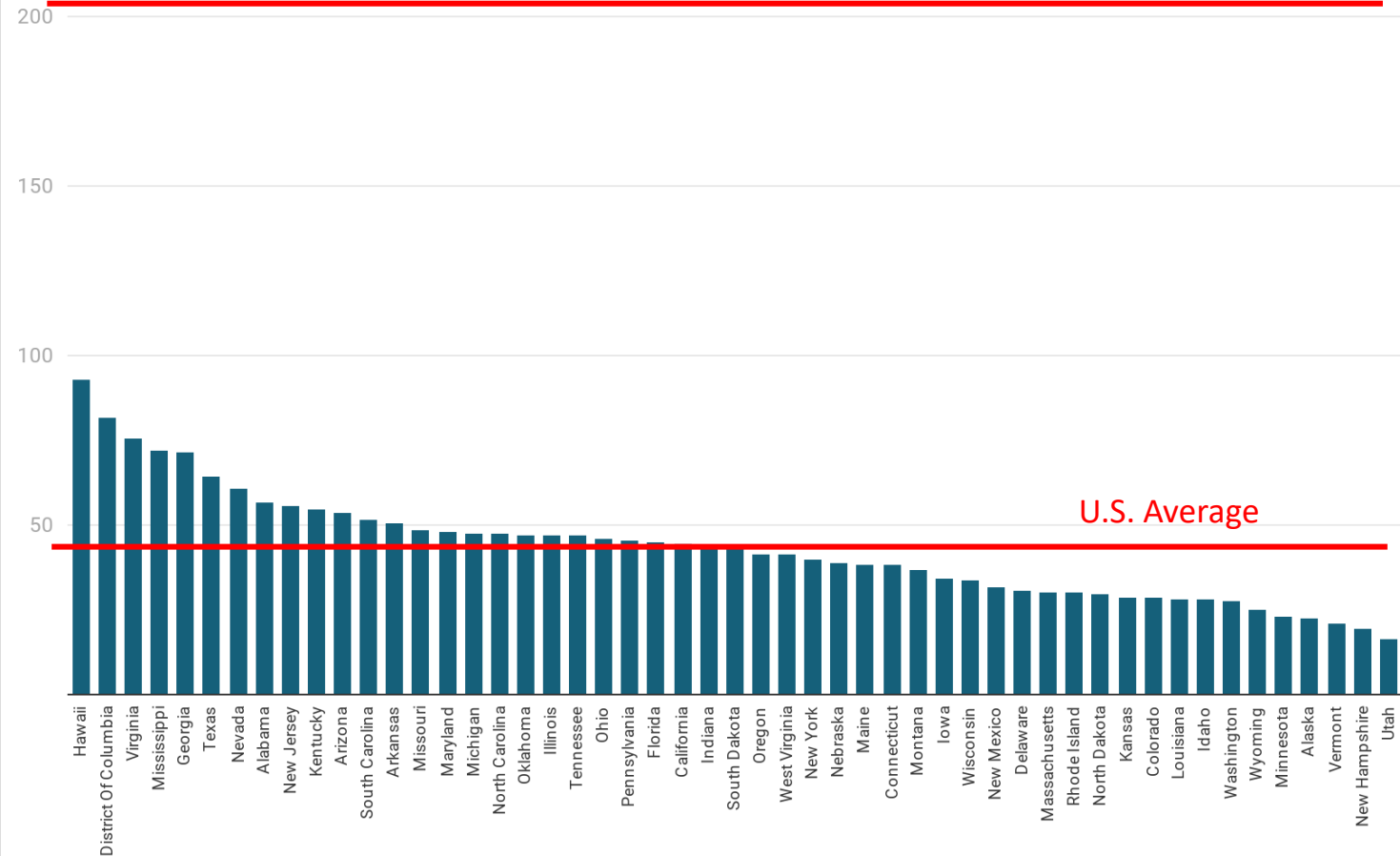


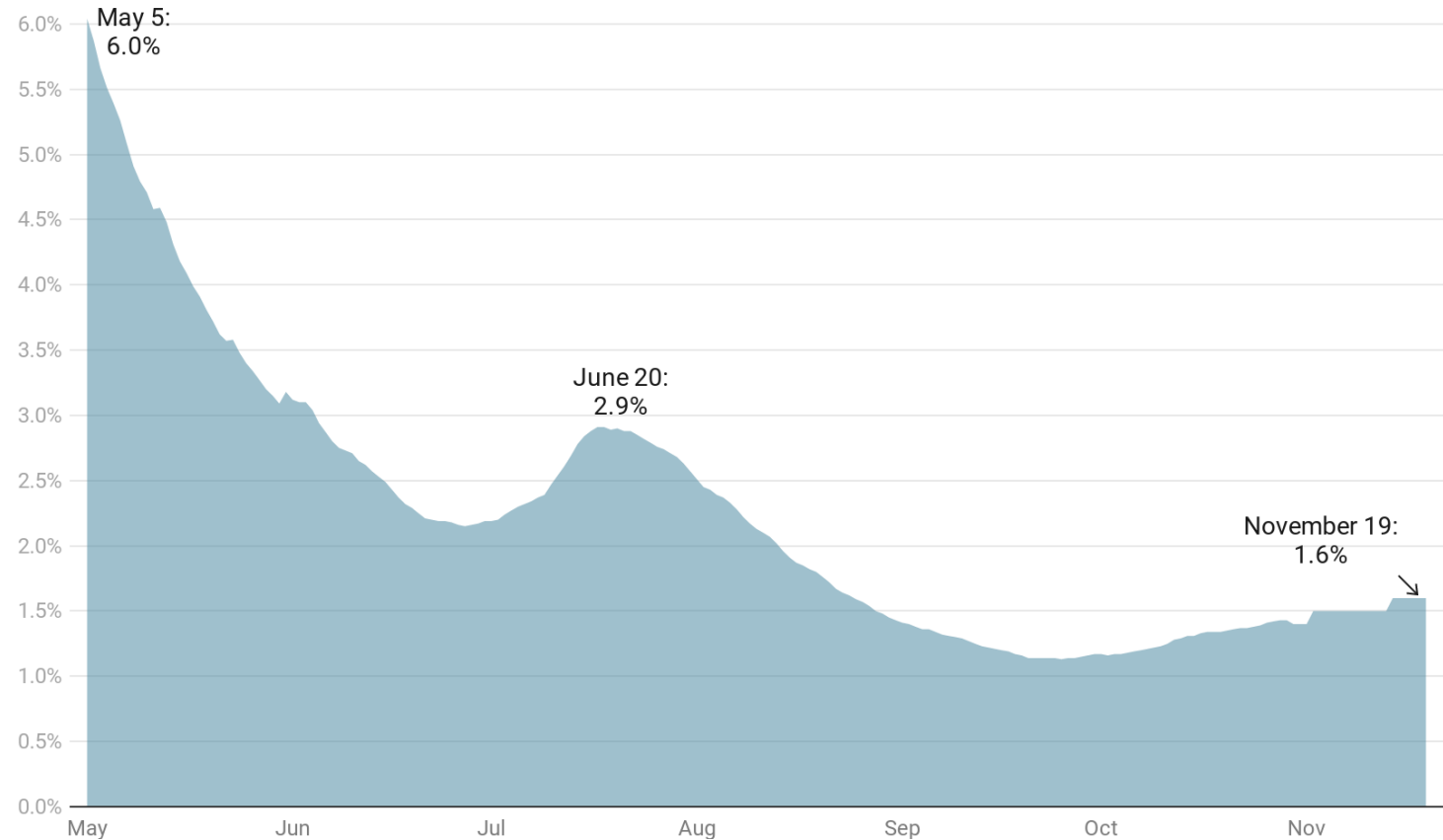
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project & worldometers.info • Created with Datawrapper

Despite the recent surge in new and active cases, the likelihood of an active Covid-19 person would be in the hospital remains low

This likelihood is $\sim\frac{1}{2}$ what it was during the June/July surge and $\sim\frac{1}{4}$ of what it was in May

% of Active Covid-19 Cases in Hospital

As of November 19



Using 7-day average covid-19 census

Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

Rates of Hospitalizations generally increase with age:

Since June, the mix of inpatients has shifted to the elderly, with a declining percentage of patients in the 18-49 year old cohort

Rate remain very low for persons > 18 years old

Covid-19 Laboratory Confirmed Hospitalizations By Age

Percentage By Age

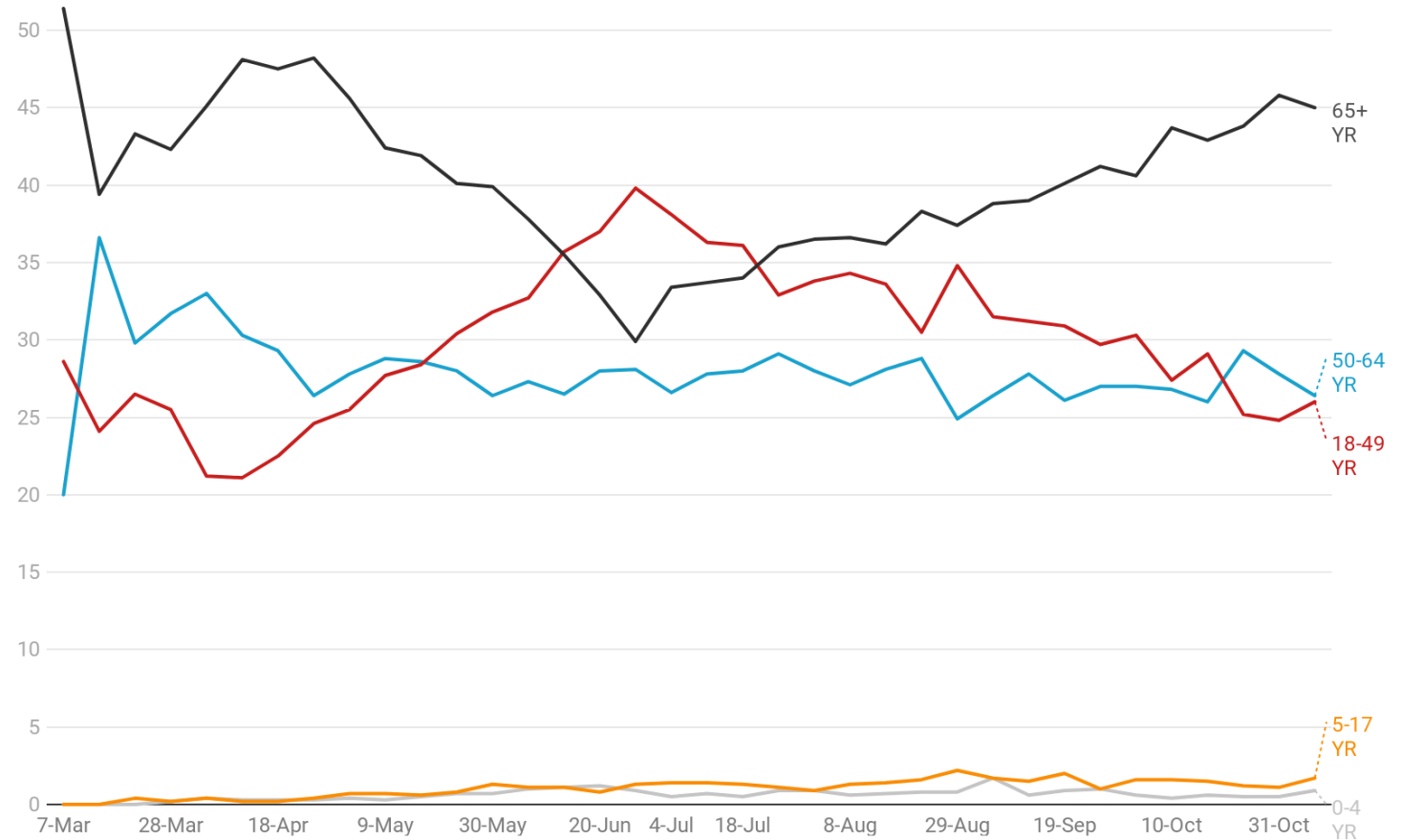


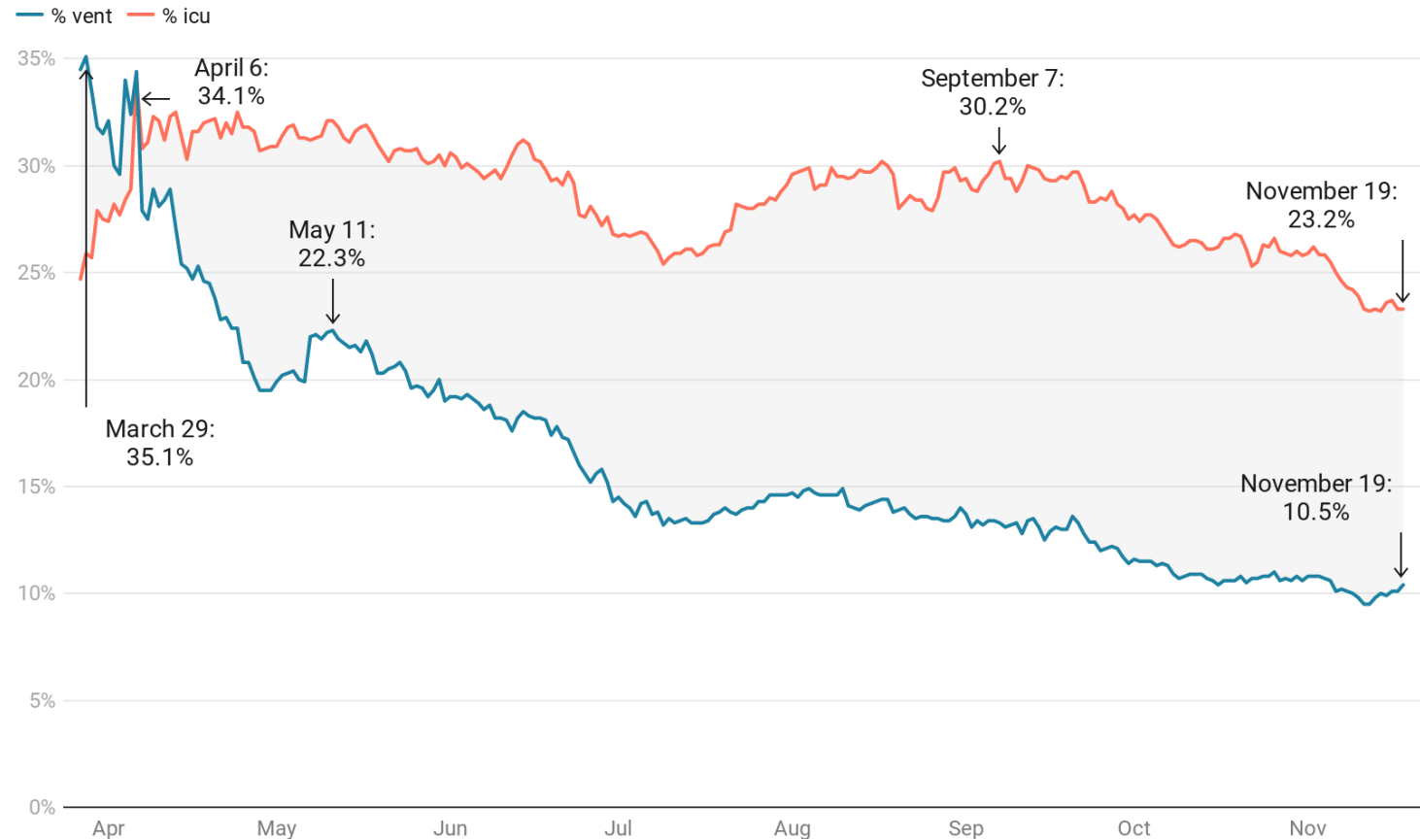
Chart: Health Industry Advisor LLC • Source: Centers For Disease Control & Prevention • Created with Datawrapper

The likelihood of a hospitalized Covid-19 patient would require ICU care has declined 21% since early-September and 32% since early-April

The likelihood of a hospitalized Covid-19 patients would be on a ventilator has reduced by nearly 60% since mid-May and by >70% since March

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of November 19



Health Industry Advisor LLC analysis

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

The % of ER visits for COVID-19-like illnesses (CLI) has generally been increasing since late-October – with a slight easing in the past week

This rate remains than it was in in March/April

The rate of influenza visits remains low given where we are in the flu season

% of ER Visits For Covid-19-Like Illnesses (CLI); Influenza-Like Illnesses (ILI); Shortness-of-Breath (SoB) and Pneumonia

As of November 16

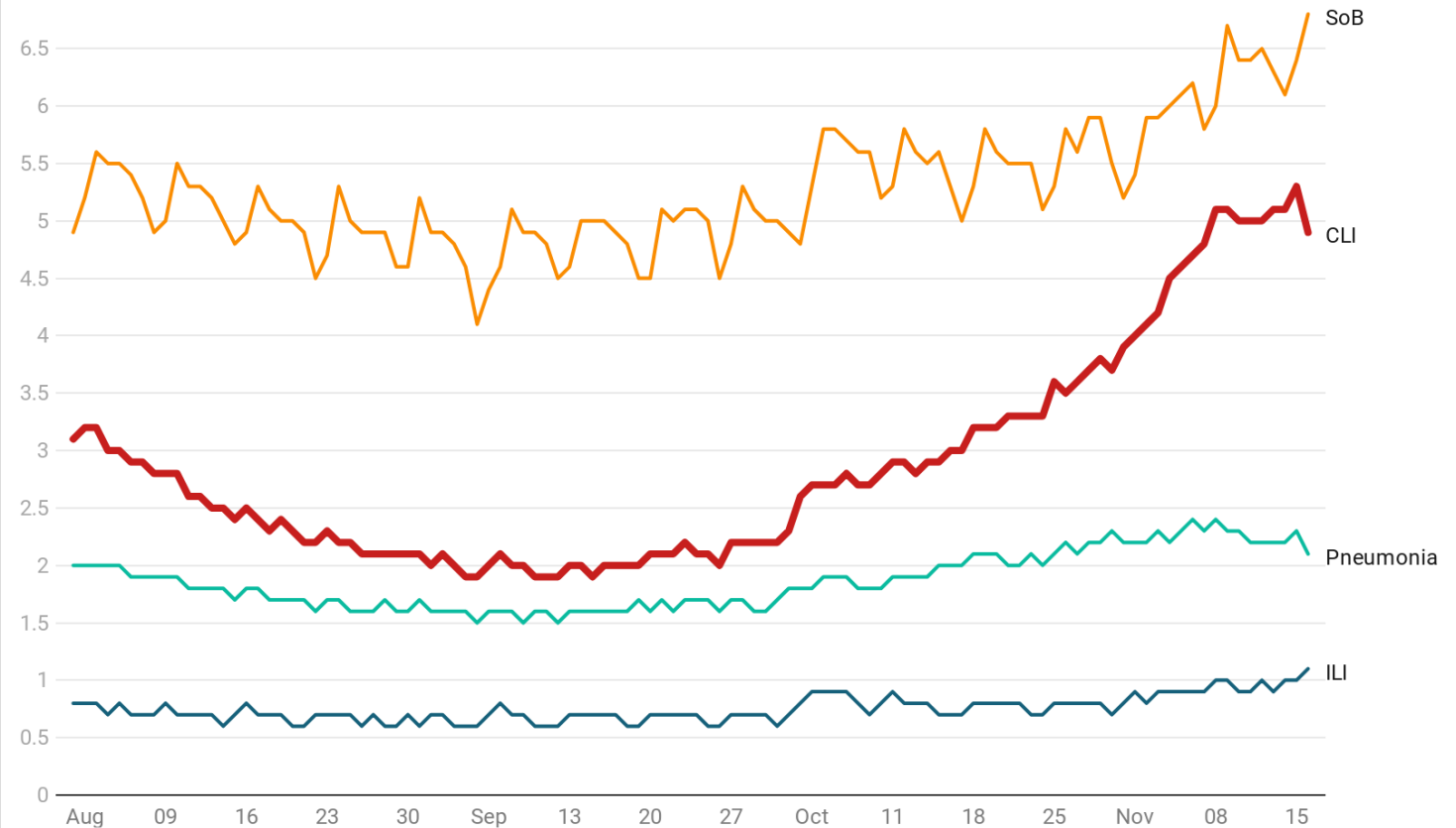


Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

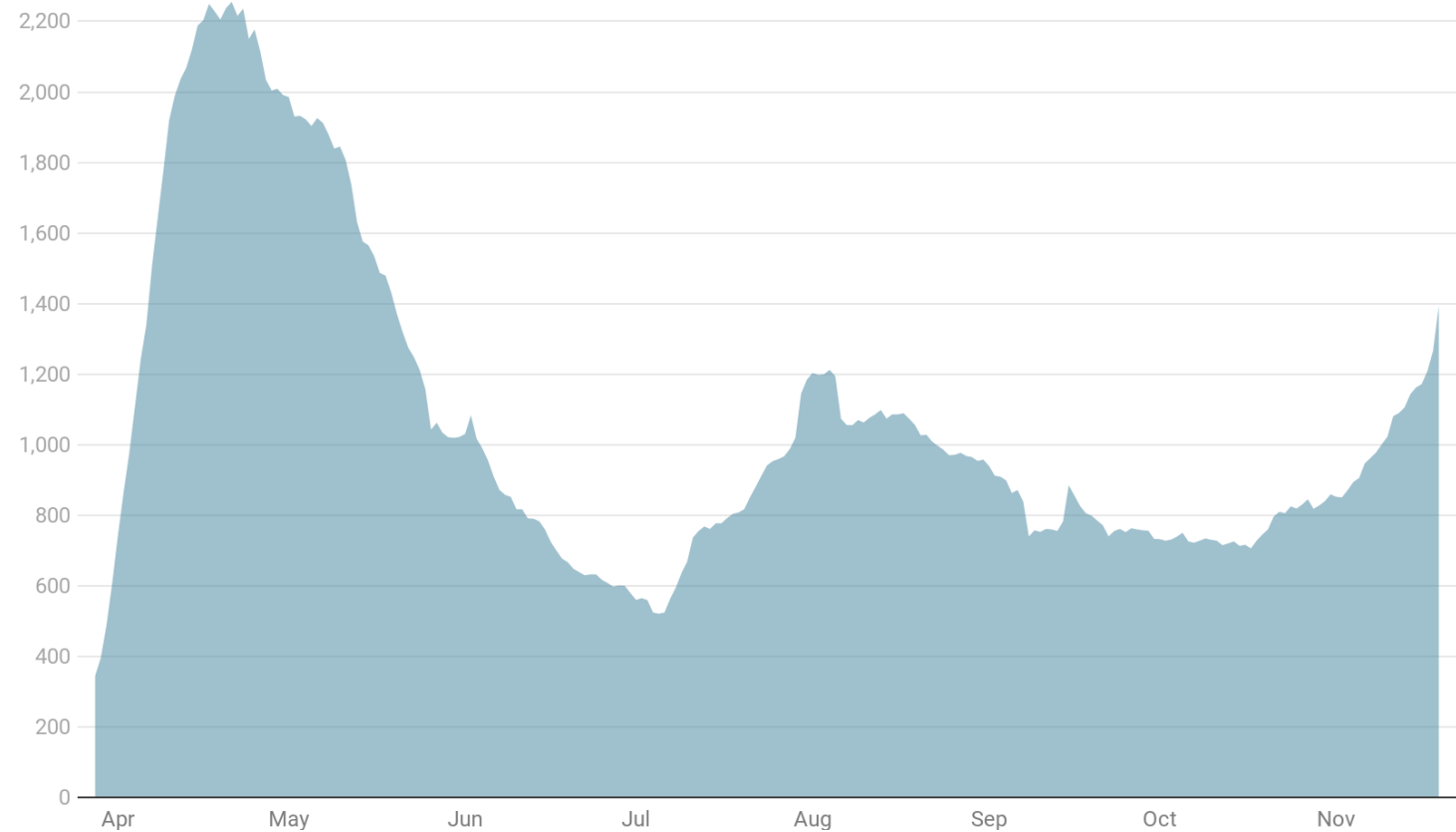
The recent uptick in newly-detected cases is resulting in increased deaths:

The 7-day average deaths per day has increased sixteen consecutive days

This rate is now higher than where it peaked in early-August

Deaths Reported With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of November 19



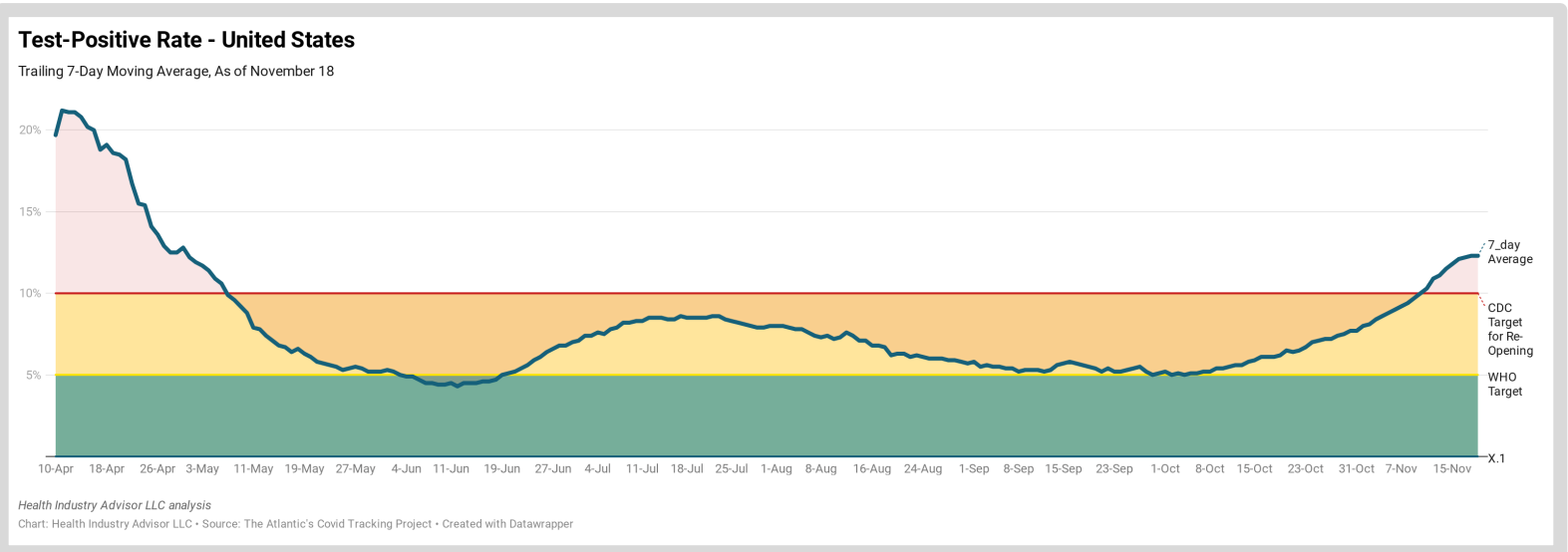
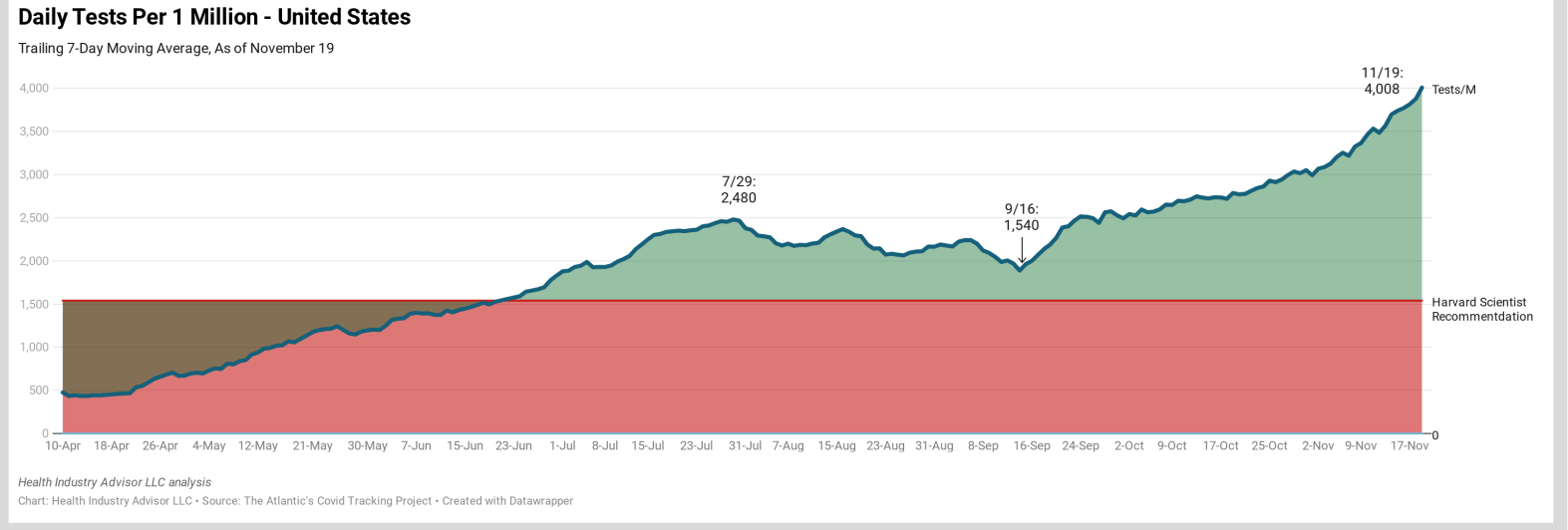
Health Industry Advisor LLC analysis

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

The 7-day average testing volume exceeded 4,000 per million per day for the first time yesterday; this rate surpassed 3,000 just three weeks ago; it was 2,000 as recently as September 12

The 7-day test-positive rate, was unchanged yesterday – the first time in twenty-two days that it did not increase

This rate is now above the target established by the CDC for Phase 3 re-openings



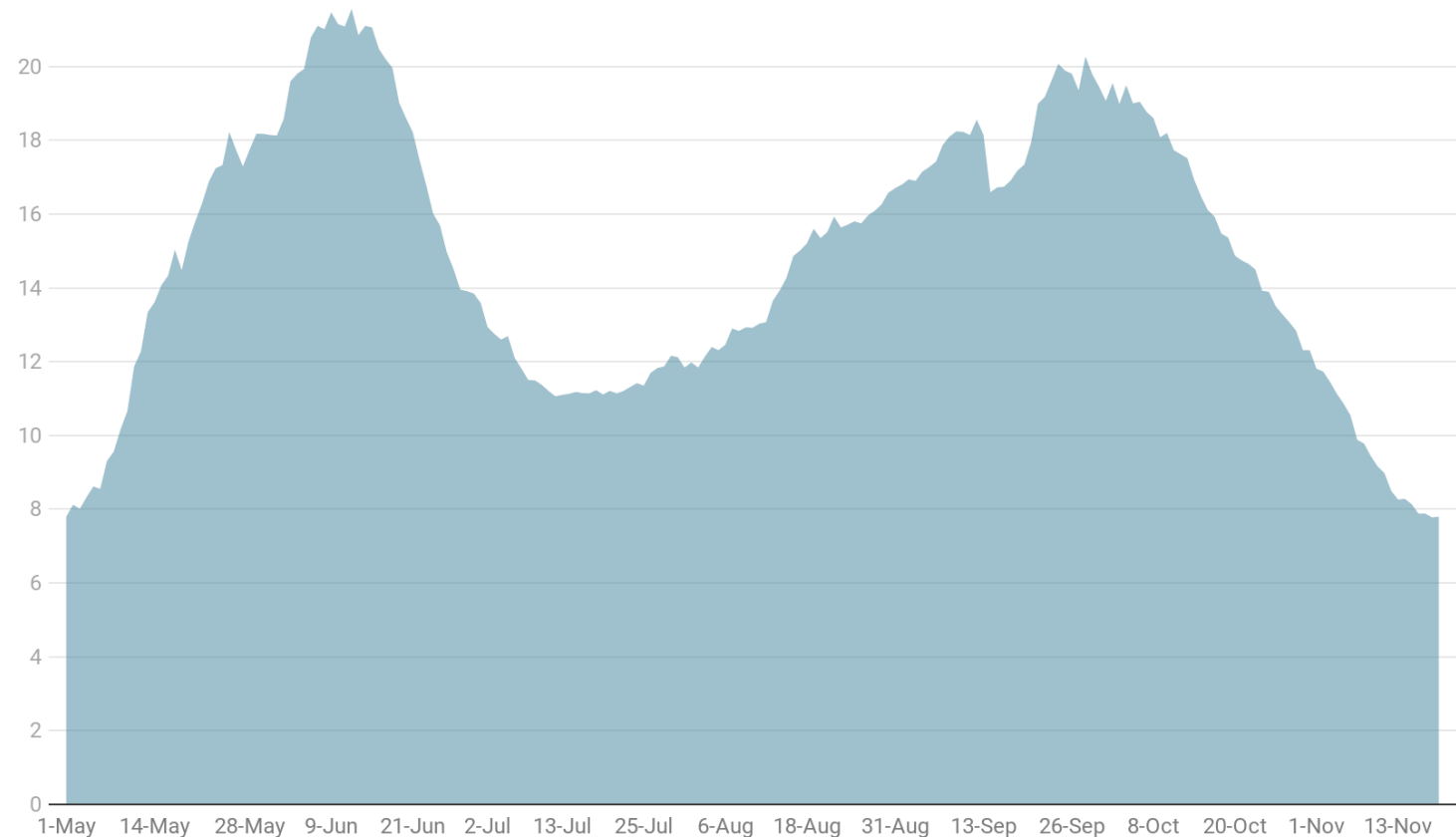
A measure of the effectiveness of testing is the ratio of tests performed to newly-detected cases

This rate had been in a free-fall since mid-September, indicating that the increasing test volumes were insufficient to keep up with rising new infections

Over the past four days, however, this rate has shown signs of stabilizing or bottoming-out

Tests / New Case Detected (7-Day Average)

How many tests does it take to detect a new case?



Prefer this ratio to be higher rather than lower

Chart: Health Industry Advisor LLC • Created with Datawrapper

Metro Areas Home to Major Universities:

Of the 33 major areas in our sample, 18 are experiencing infection rates* higher than the national average (same # as last week)

For at least the sixth consecutive week, Lubbock, Texas, home to Texas Tech University had the highest infection rate last week. Story, IA (Iowa State University); St. Joseph, IN (Notre Dame), and Boone, MO (University of Missouri) were next

Tompkins NY, (Cornell), and Albemarle, VA (University of Virginia) experienced the lowest rates

* 7-day average

Metro Areas With Major Universities: New Daily Infections / 1M Population

7-Day Average, As of November 19

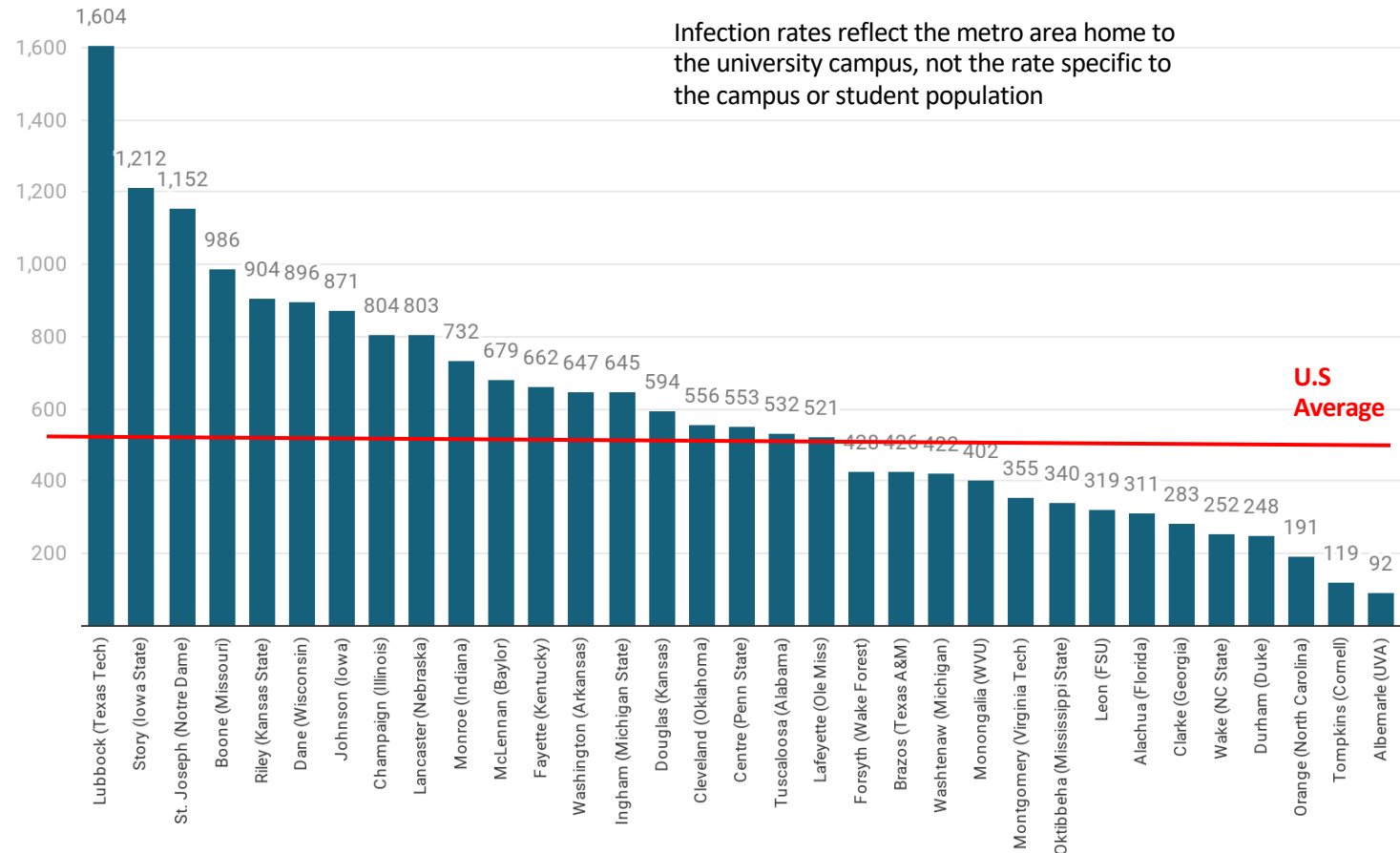


Chart: Health Industry Advisor LLC • Created with Datawrapper

Metro Areas Home to Major Universities:

Johnson, Iowa - home to the University of Iowa - experienced the largest decline in its new infection rate relative to last week, followed by Champaign, IL (University of Illinois) and Clarke, GA (University of Georgia)

Lubbock, Texas, home to Texas Tech University experienced the most significant increase in this rate, followed by Monroe, IN (Indiana University)

* 7-day average

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

7-Day Average, November 12 v. November 5

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

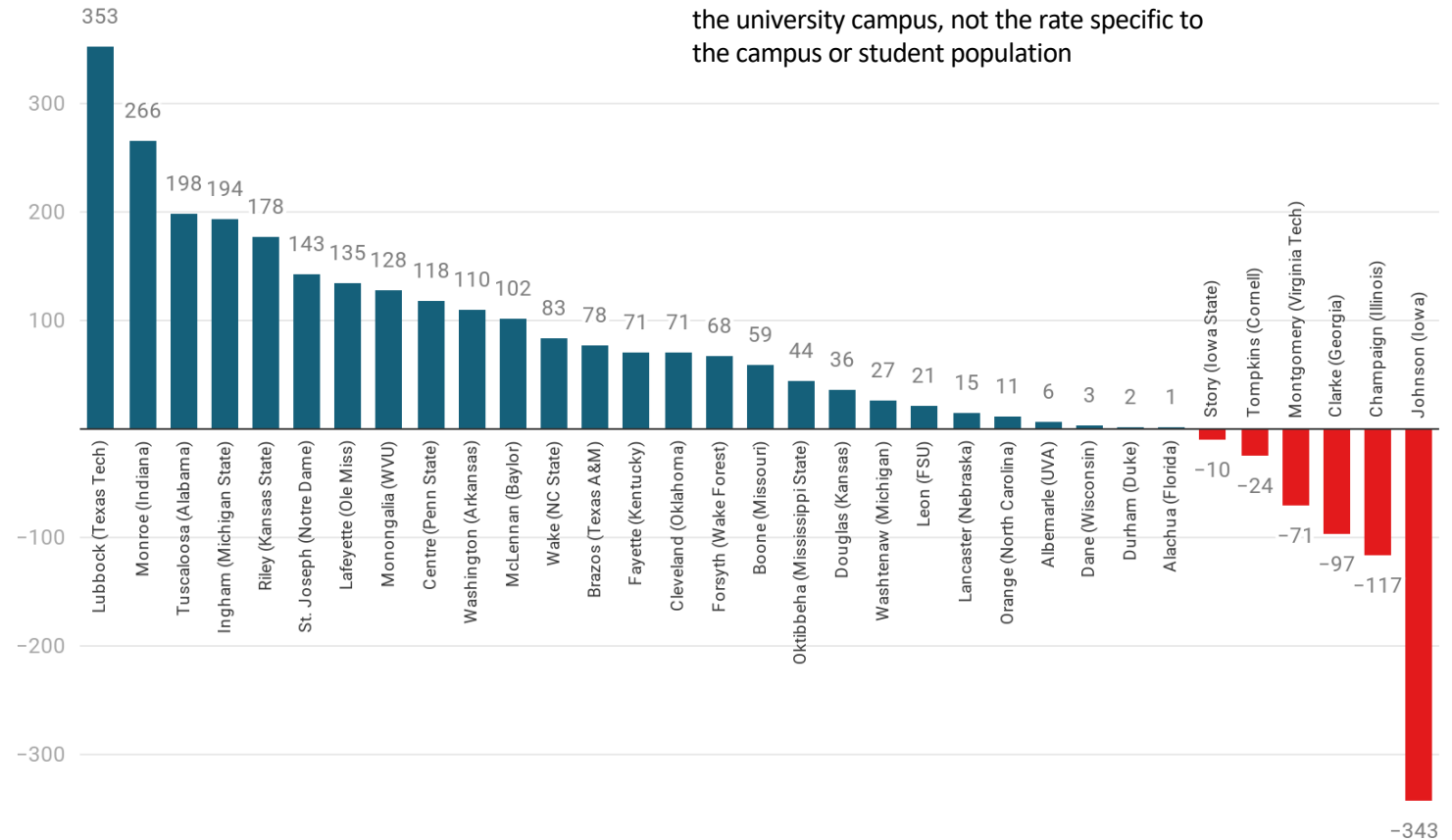
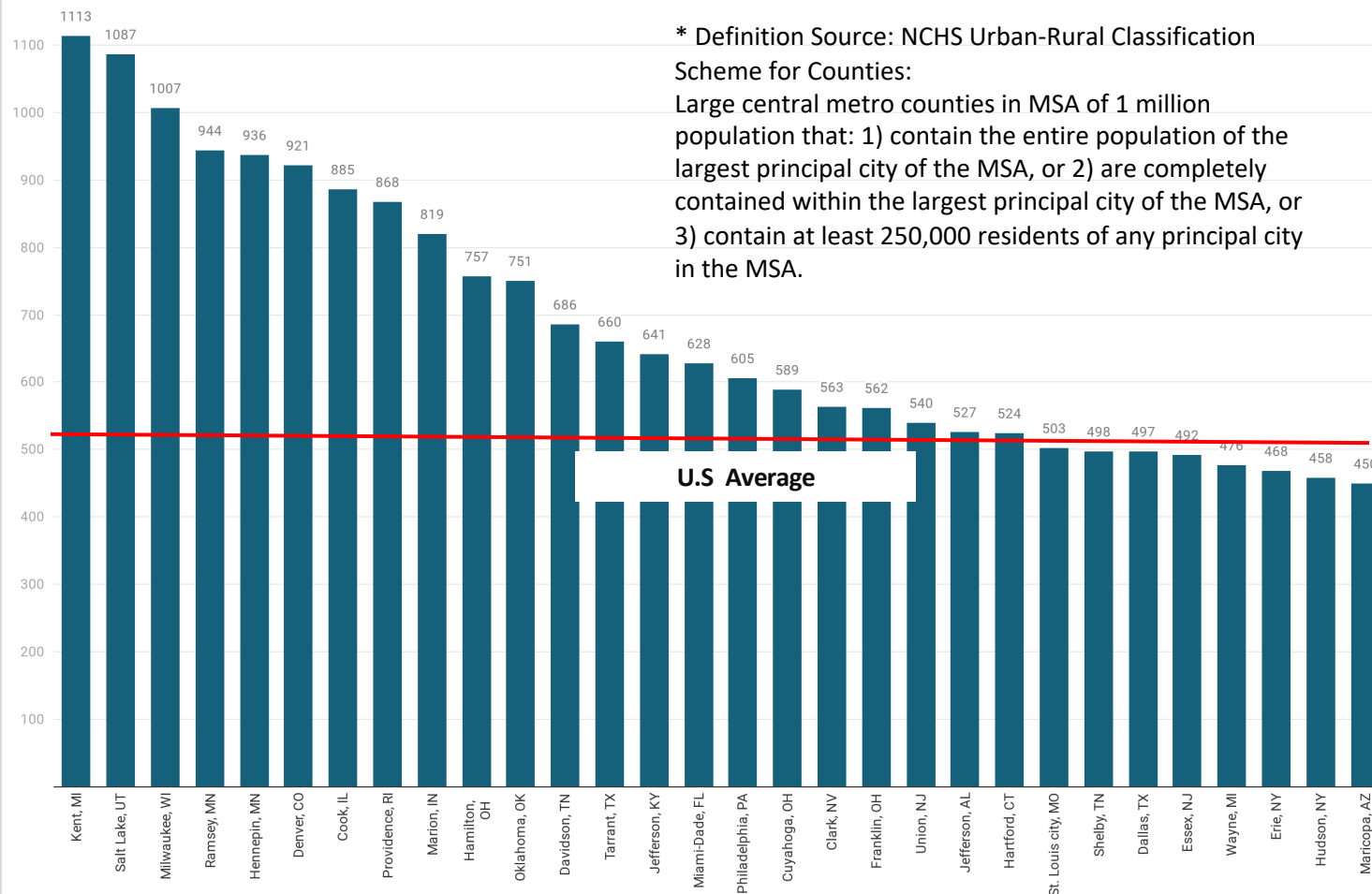


Chart: Health Industry Advisor LLC • Created with Datawrapper

Thirty Large Central Metro Areas* (out of 64) experienced new daily infections per capita > 450 per million over the past seven days

New Daily Infections / Million Population - Large Central Metro Areas

7-Day Moving Average, As of November 19



Health Industry Advisor LLC analysis

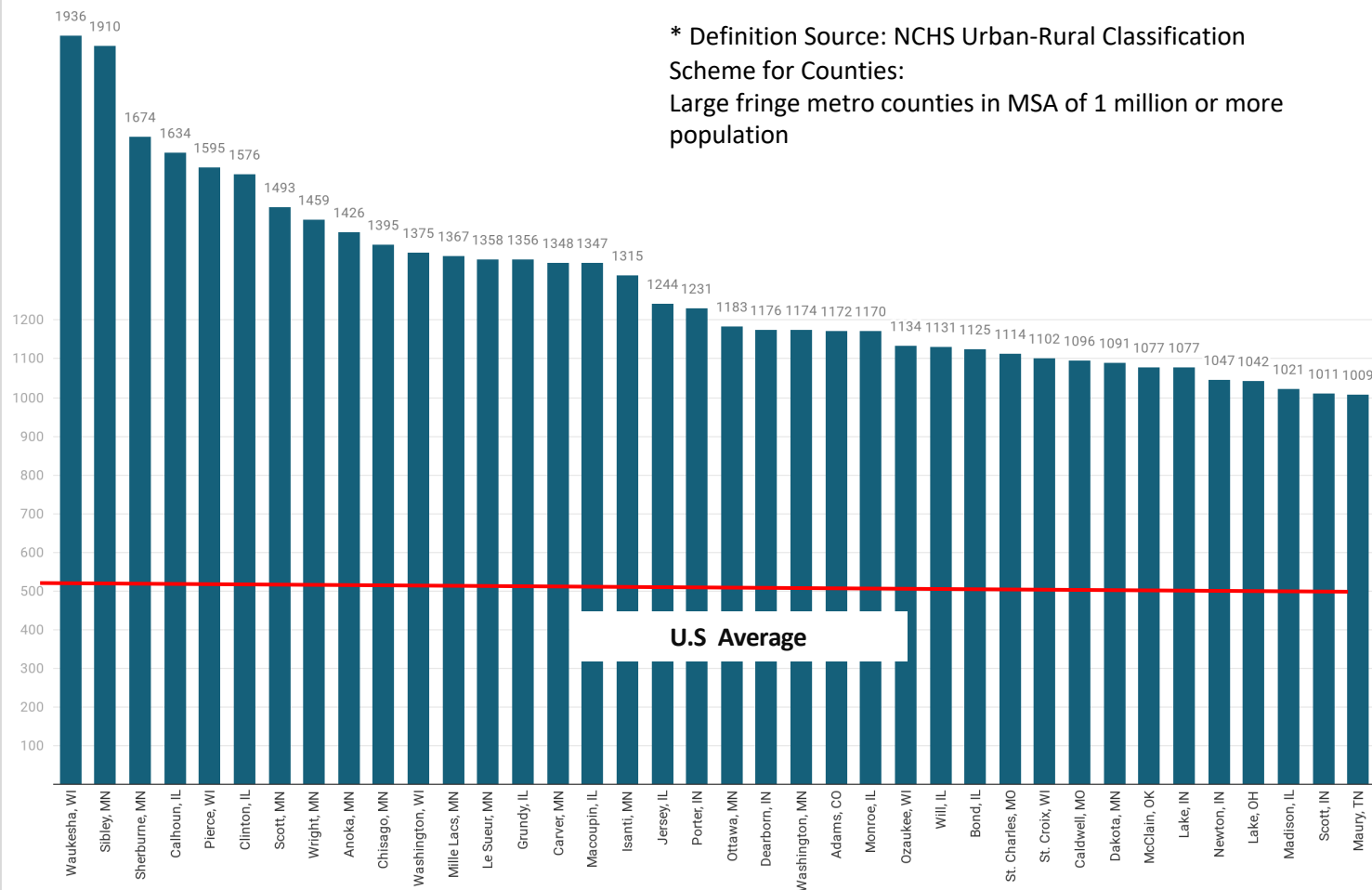
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Thirty-seven Large Fringe Metro Areas* (of 367) experienced new daily infections per capita > 1000 per million over the past seven days

These were highly concentrated in the Midwest and in Illinois, Minnesota and Wisconsin in particular

New Daily Infections / Million Population - Large Fringe Metro Areas

7-Day Moving Average, As of November 19



Health Industry Advisor LLC analysis

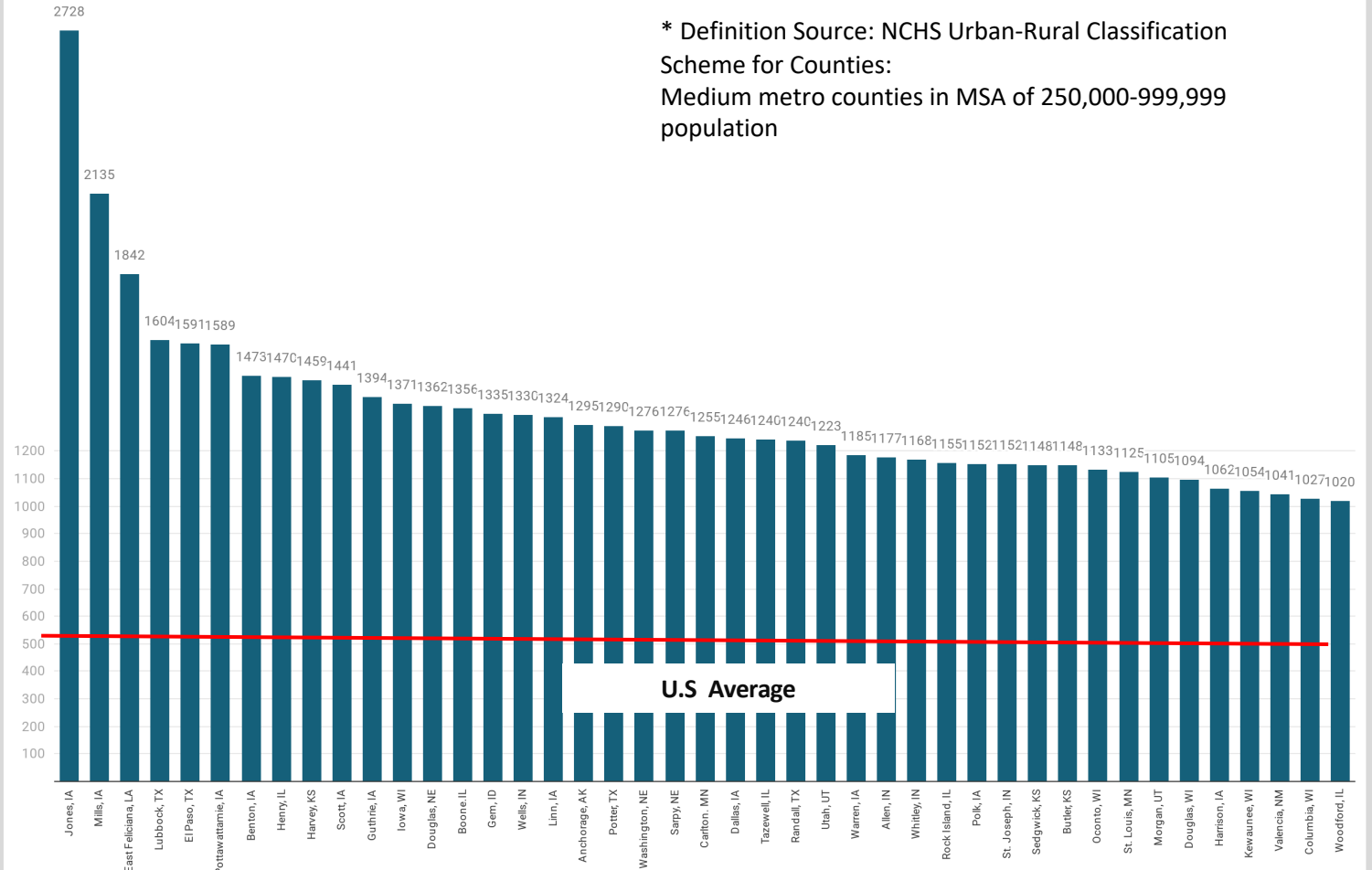
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Forty-three Medium Metro Areas* (of 368) experienced new daily infections per capita > 1000 per million over the past seven days

New Daily Infections / Million Population - Medium Metro Areas

7-Day Moving Average, As of November 19

* Definition Source: NCHS Urban-Rural Classification Scheme for Counties:
Medium metro counties in MSA of 250,000-999,999 population



Health Industry Advisor LLC analysis

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

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>
- Oliver Wyman Pandemic Navigator, <https://pandemicnavigator.oliverwyman.com/forecast?mode=country®ion=United%20States&panel=mortality>