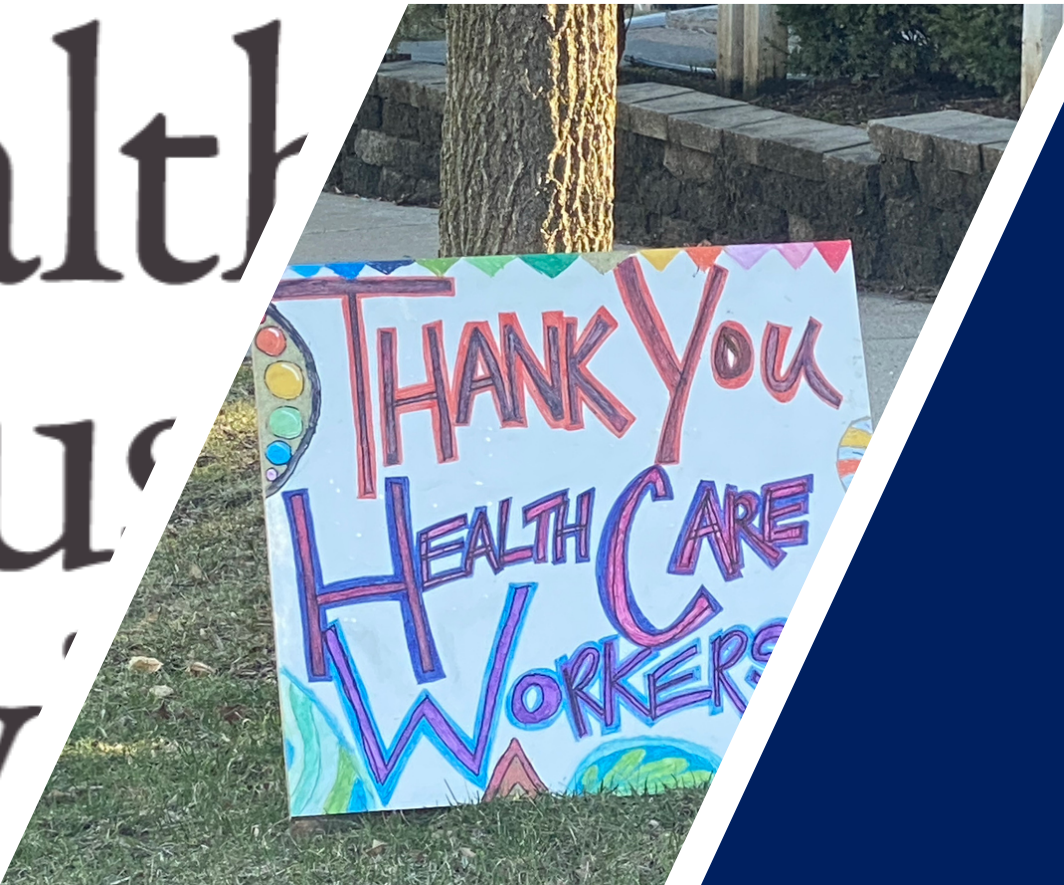




Health
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Issue # 208
Tuesday, November 10, 2020

COVID-19 Report

Highlights

- Newly-detected cases continue to rise in the United States and worldwide: these are averaging ~120k per day in the U.S. and 560k per day worldwide
 - These **new cases are increasing at an accelerating rate in the U.S., while the rate of increase worldwide is decelerating**
 - The rate of increase in the U.S., however, has not yet matched what it was during the July case surge
- **Europe continues to be the epicenter of the new cases: of the countries with >1M people, the sixteen countries with the highest 7-day infection rates per capita (and twenty-three of the top twenty-five) are all in Europe (or, Eurasia)**
 - Czechia and Switzerland now have the highest infection rates per capita among countries with >1M people
 - Czechia's rate is 2.5x higher than the U.S., which ranks twenty-second in the world
 - **Nevertheless, there are signs that infections are easing in some of these hard-hit countries:** Belgium, Czechia and the Netherlands each of experienced marked declines in infection rates since the end of October; France and Switzerland have seen declines in the past few days
 - Israel, which had been hard-hit in September, has seen a dramatic decline since that time
- Based on detected cases, 3% of the U.S population has or had the infection at some point. Of course, we know from CDC reports that this is understated
 - **Oliver Wyman is one the few sites that models actual infection rates. It estimates that >1-in-10 Americans has or had the infection, and possibly as many as 1-in-5**
- **Wyman's estimates thus suggest that the actual infection rate is 3.5x the detected rate, on a cumulative basis; It places the current ratio at 2.6x (lower than the cumulative rate, due to improved testing)**
- Covid-19 hospitalizations continue to increase, just not as fast as new cases
 - **On a same-day, prior week basis, Covid-19 hospital census has increased every day since September 23**
 - **Only Nevada (40%) and Wisconsin (37%), however, are devoting more than 1/3 of their bed capacity to Covid-19 patients.** Contrast this to April, when Connecticut (113%), New Jersey (106%) and New York (145%) exceeded inpatient bed capacity with only Covid-19 patients
 - **Covid-19 census per new case fell yesterday, for the twenty-eighth time in the past thirty-one days**
 - The likelihood of a Covid-19 patient would be in the ICU or on a ventilator each fell again yesterday; these rates are at the lowest point they have been at any time during the pandemic
- Testing volumes in the U.S. continue to rise: the 7-day testing rate per capita set a new high again yesterday, marking the sixteenth time in the past twenty days this has been accomplished
 - **The test-positive rate, however, is increasing despite the higher volume; this 7-day rate has increased on thirty-two of the past thirty-five days**
- Deaths with the coronavirus in the U.S. continue to increase each day: **on a 7-day average basis, deaths exceeded 1,000 yesterday - the first time this level has been breached since August 22**
 - The case fatality rate, however, as measured on a 4-week lag, has remained stable for the past month

Worldwide, we are experiencing ~560k new cases each day

The United States is averaging 117.7k new cases each day

* - 7-day moving average basis

Newly Detected Daily Cases - U.S. & Worldwide

7-Day Moving Average, As of November 9

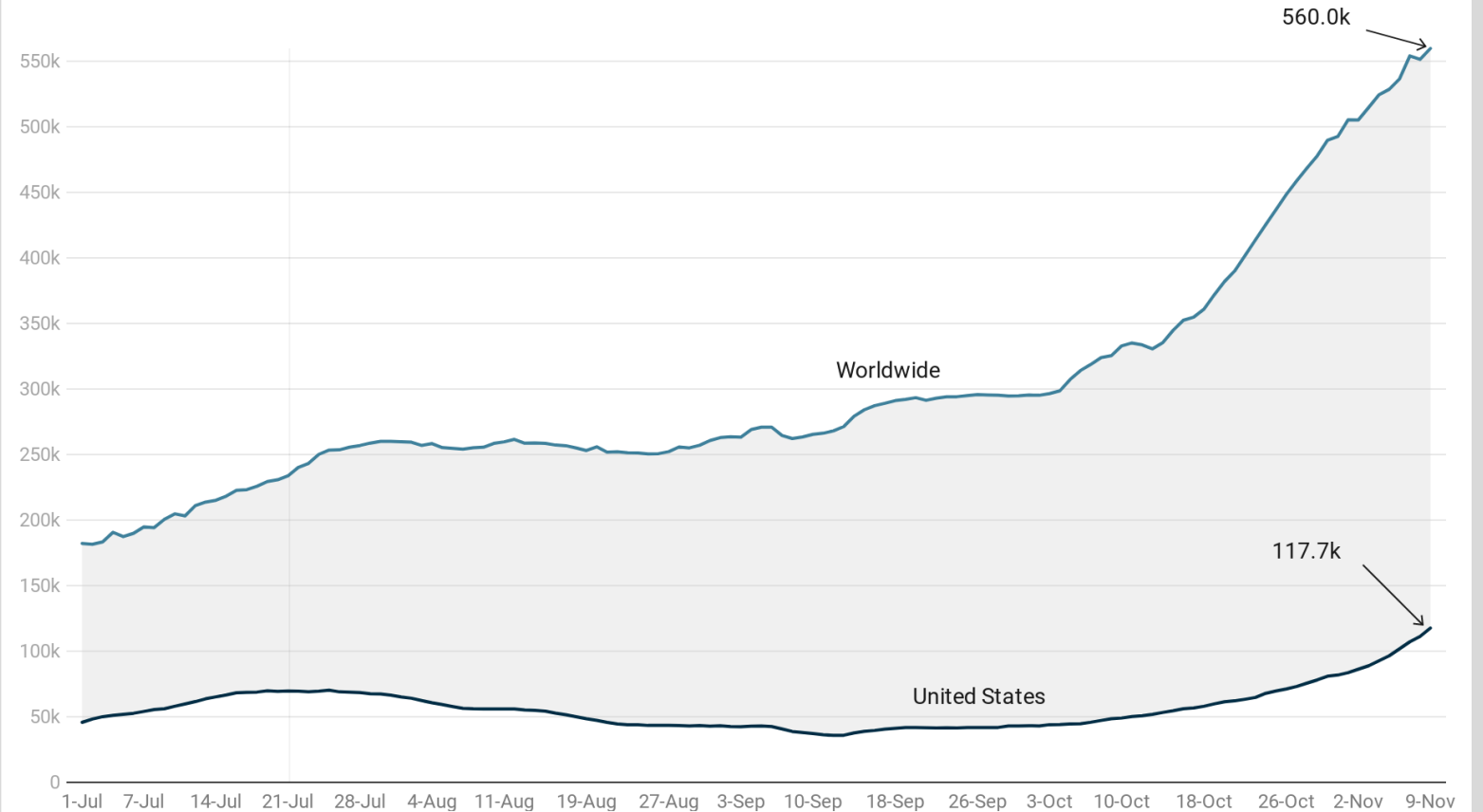


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Worldwide, the rate of growth slowed over the past two weeks

The U.S. is moving in the opposite direction, with the rate of change in new cases *increasing* throughout November (accelerating growth)

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

7-Day Moving Average

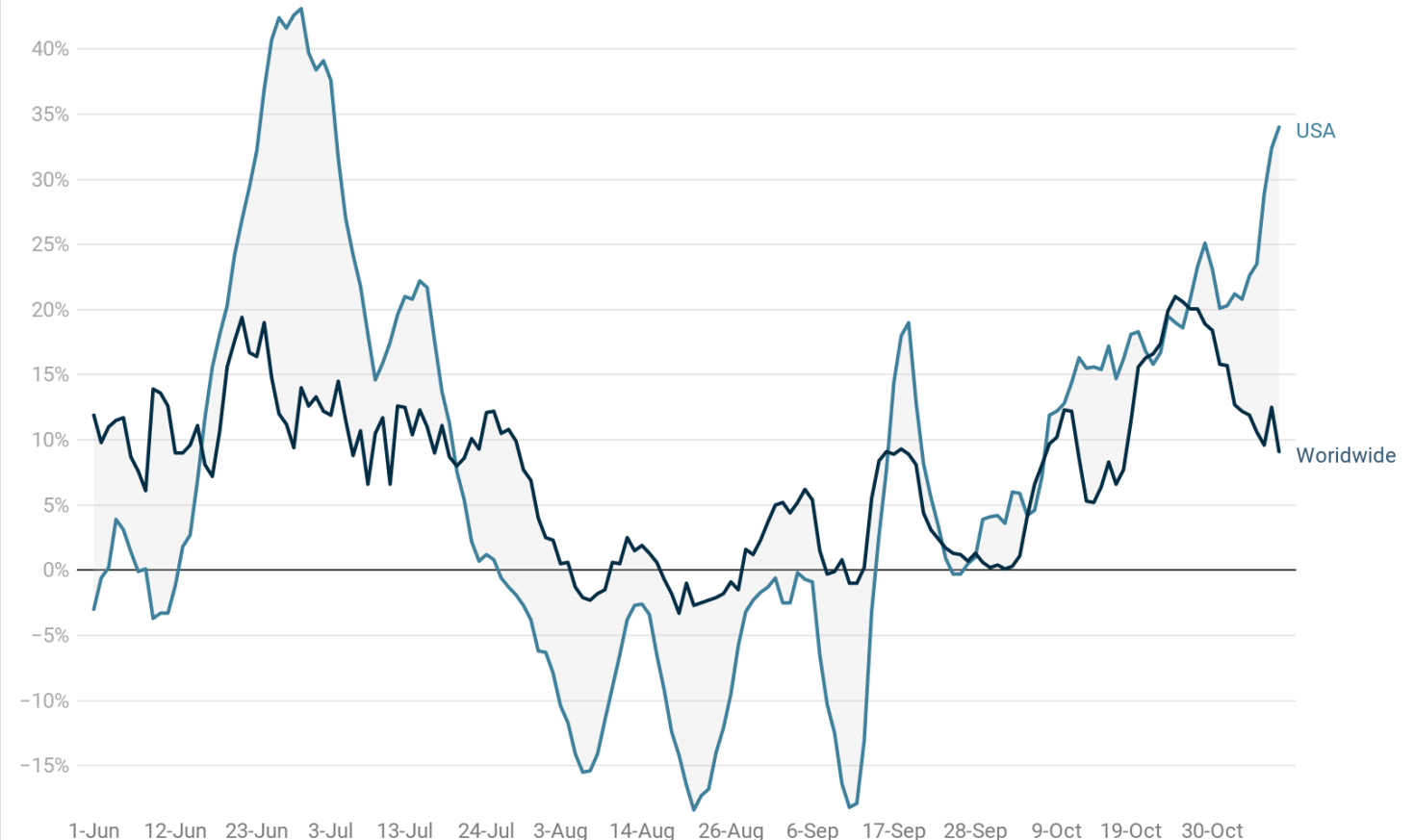


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Among countries with > 1 million population, thirty-two countries currently have new daily infection rates/1M* > 200

In order, Czechia, Switzerland, France and Belgium, and Austria have the highest rates (each >700)

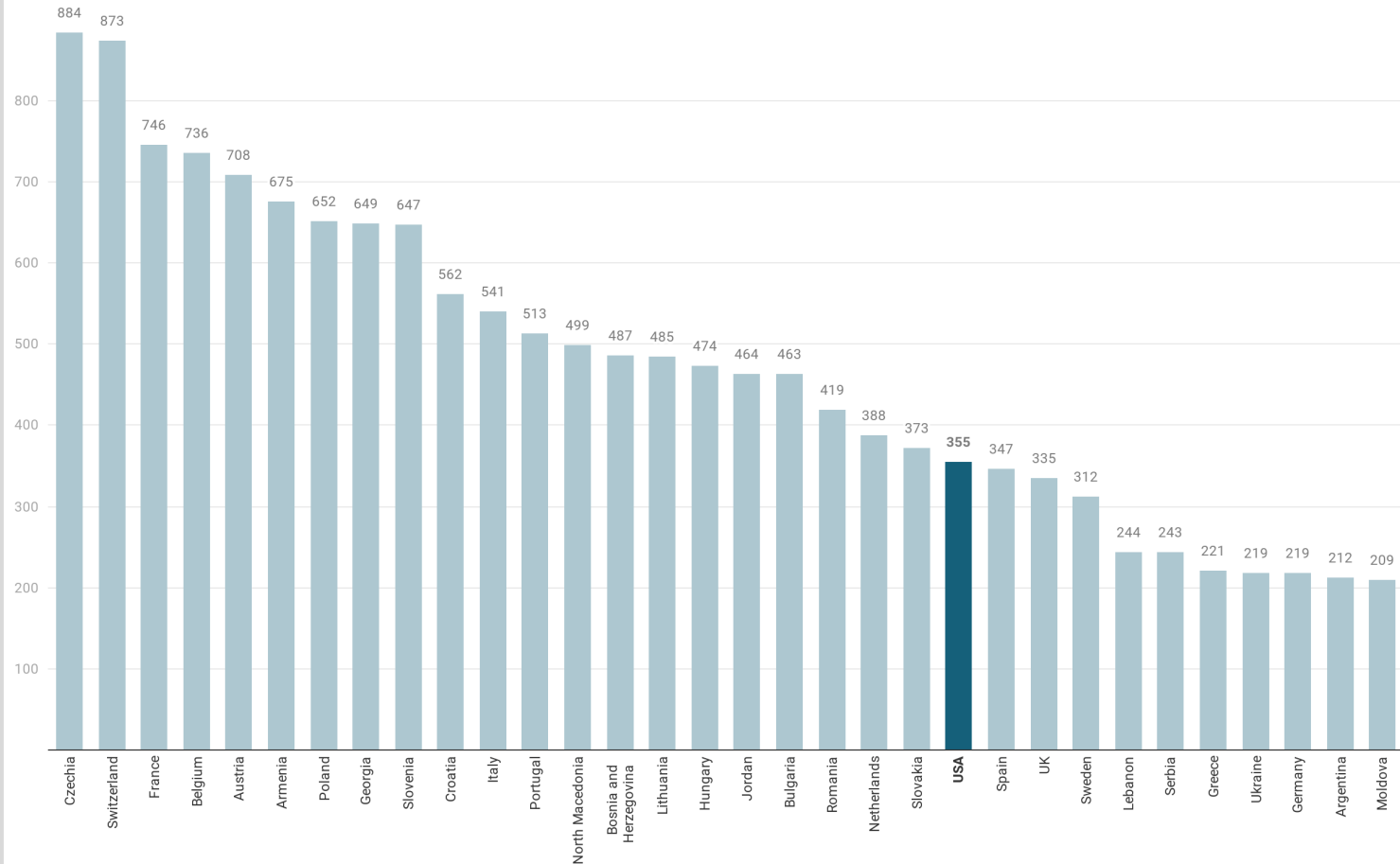
Europe (and Eurasia) is home to the sixteen countries with the highest rates and twenty-three of the top twenty-five

The United States ranks twenty-second among these countries (Czechia's rate is 2.5x higher than the U.S.'s)

* - 7-day moving average basis

New Daily Infections / Million Population

Trailing 7-Day Moving Average, As of November 9



Countries with > 1M population

Chart: Health IndustryAdvisor LLC • Source: worlridometer.info • Created with Datawrapper

Belgium, Czechia, Israel, and the Netherlands have seen infection rates decline from high rates experienced in October

Switzerland has seen a declining rate in the past few days, following a period of rapid increase

Austria, France, Italy, Poland and Portugal are seeing significant increases in rates

* - Population >1 million

** - 7-day average

USA and Selected Countries With High New Infection Rates

New Daily Infections / Million, 7-Day Moving Average, As of November 9

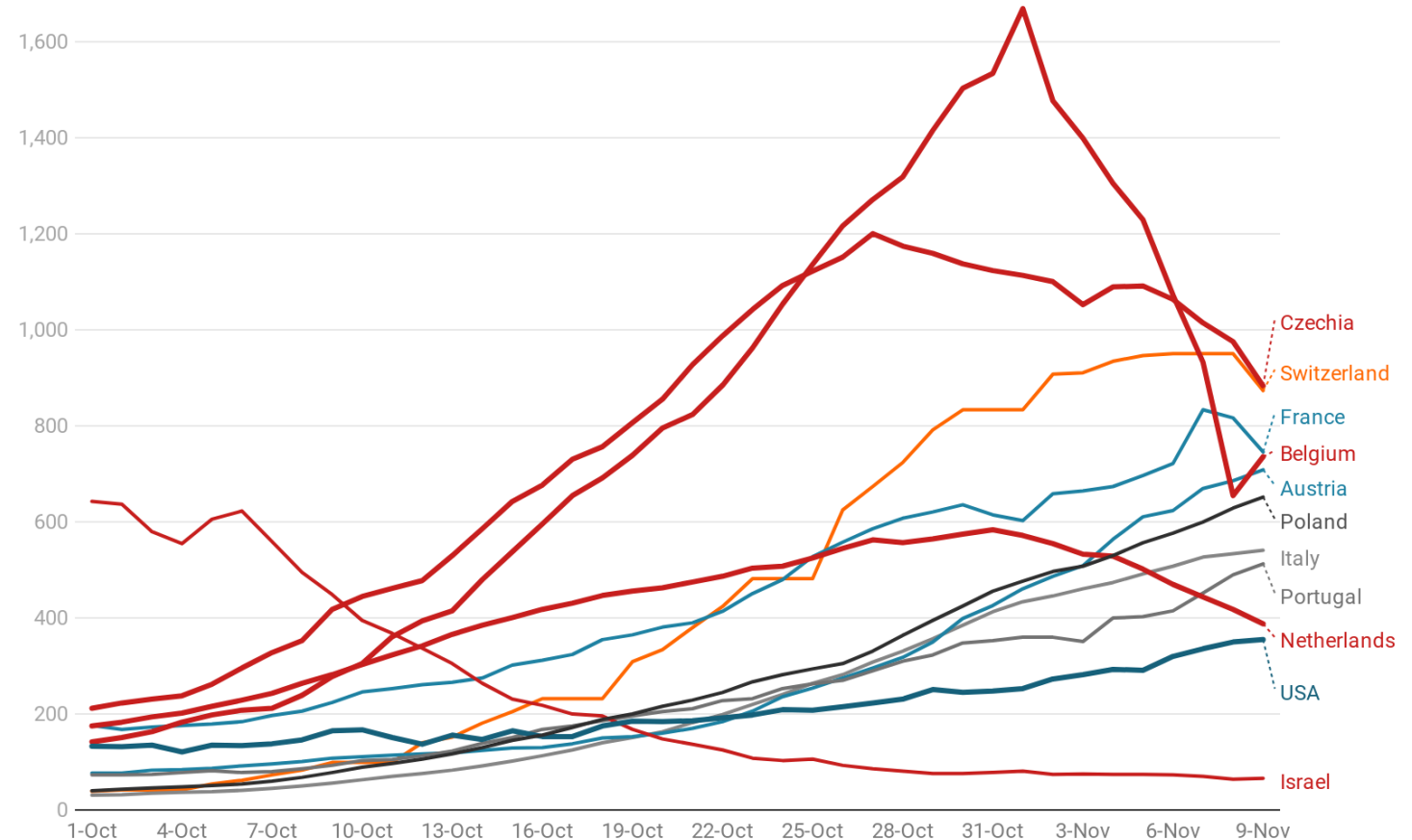


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Oliver Wyman provides estimates of actual infection rates

The latest estimates is that 1-in-10 people in the U.S. has been infected by the SARS-CoV-2 virus (with an upper limit of nearly 1-in-5)

Wyman's estimate puts actual infections at 3.5x those that have been detected and reported

U.S. Infection Rates - Detected v. Estimated Actual

Based on Oliver Wyman's Estimates, As of November 8

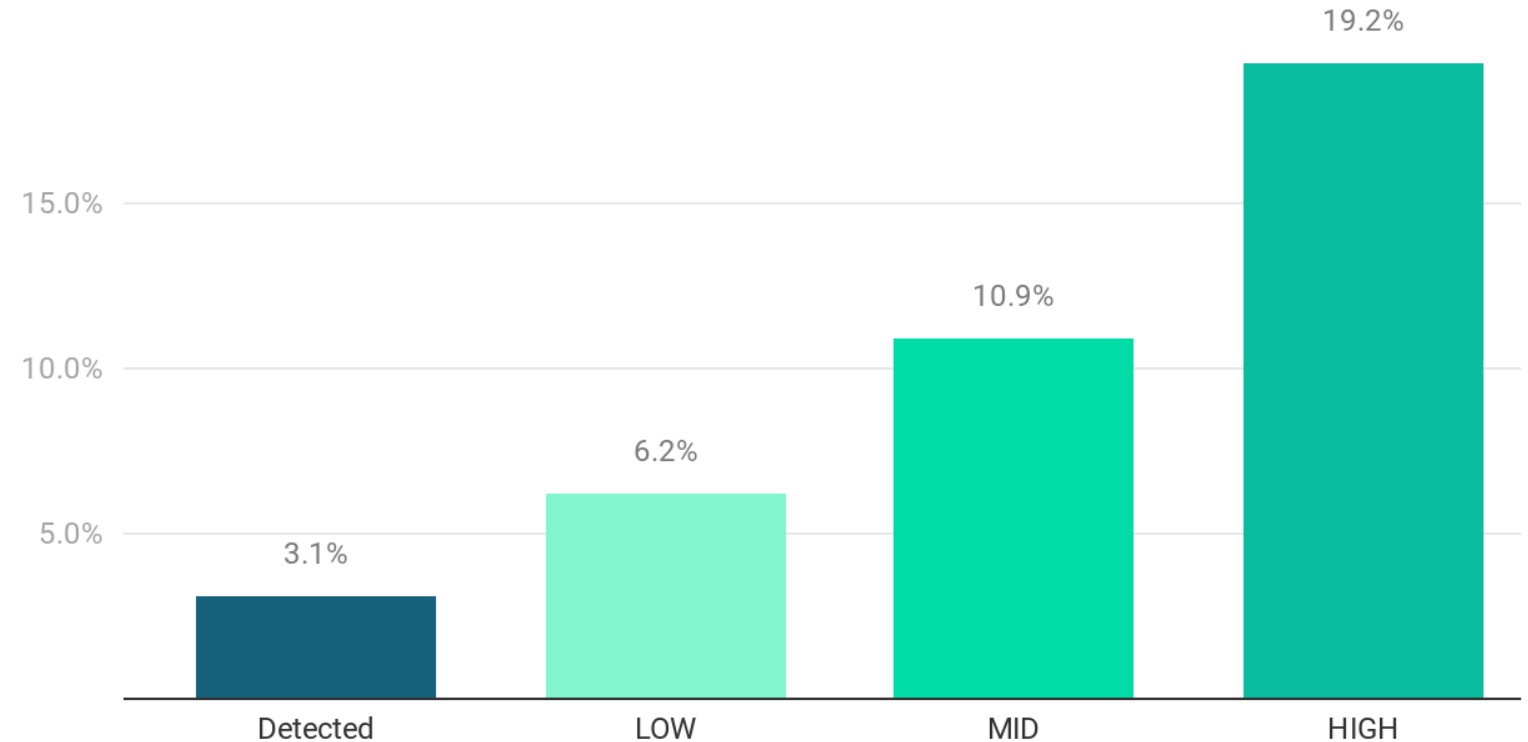
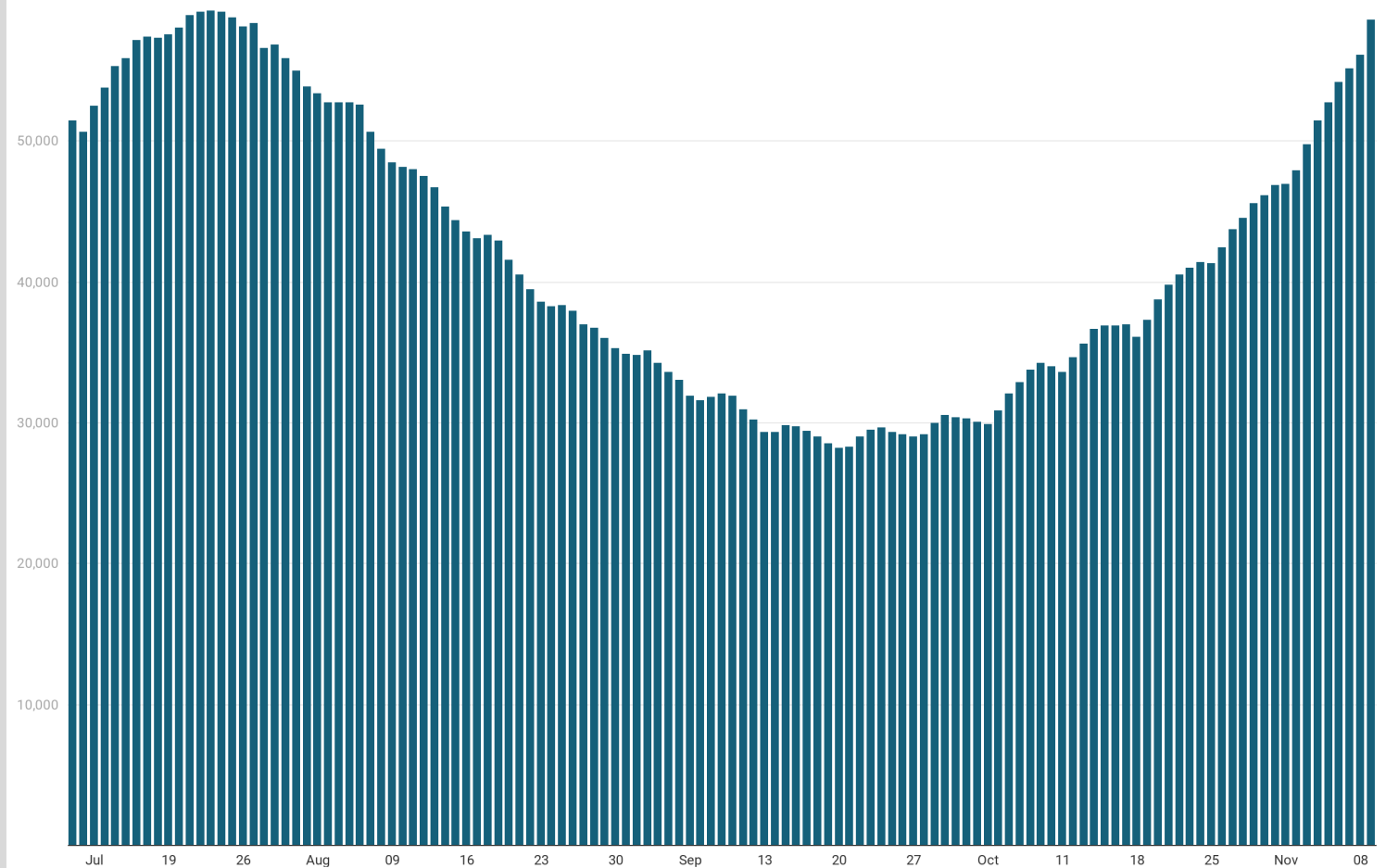


Chart: Health Industry Advisor LLC • Source: Oliver Wyman & Worldometers.info • Created with Datawrapper

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

Hospital Census: COVID-19 Patients

As of November 9



Florida data first available on July 10

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

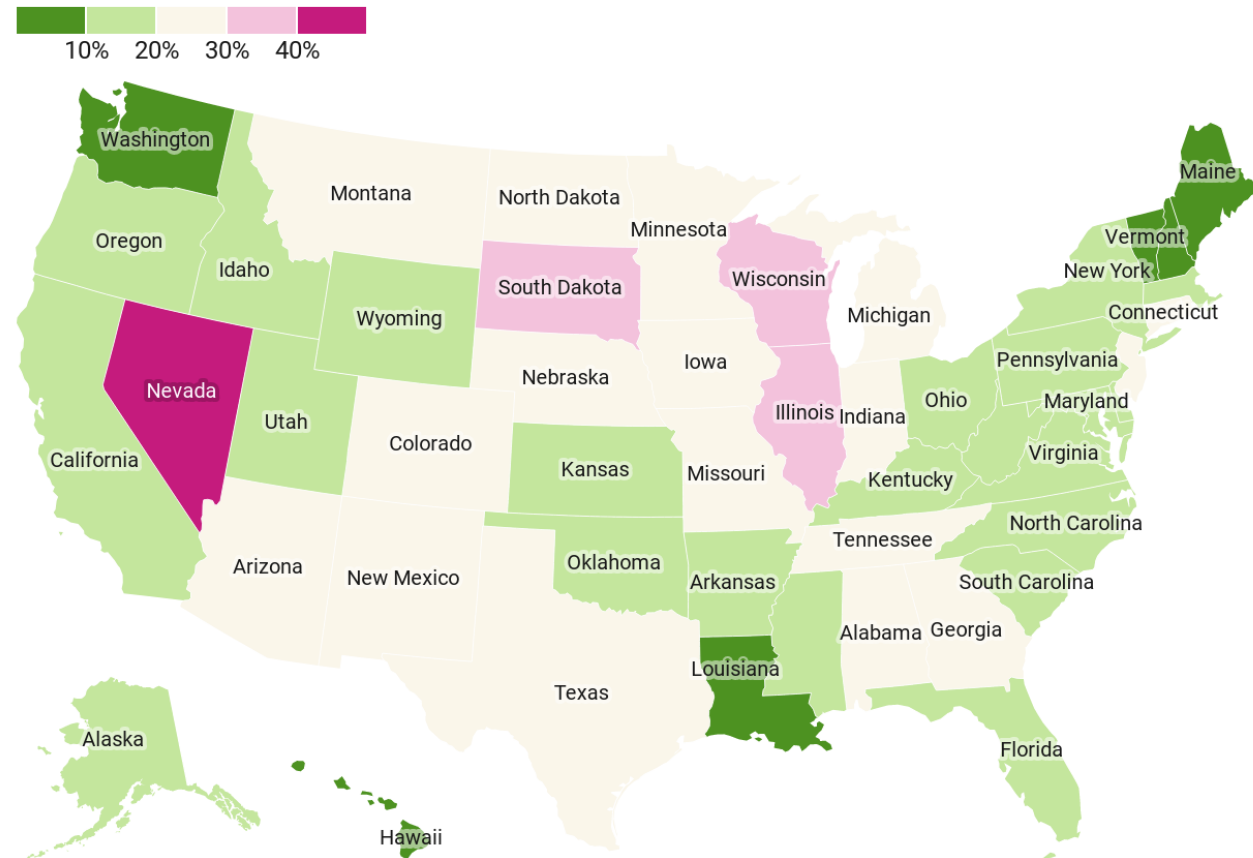
In the United States, Covid-19 patients are occupying 18% of available inpatient beds

Nevada has the highest rate at this point - 40%, followed by Wisconsin at 37%

In April, Connecticut, New Jersey and New York each experienced Covid-19 patients exceeding the inpatient bed capacity

Covid-19 Patients / Available Inpatient Beds

As of November 9



Map: Health Industry Advisor LLC •

Source: The Atlantic's Covid tracking Project & Institute for Health Metrics and Evaluation • Created with Datawrapper

Rates of Hospitalizations generally increase with age:

During the recent run-up in hospitalizations, it appears to be centered on persons 50 years old and older

Hospitalization rates among those >50 years old, however, remain lower than during previous surges

Rate remain very low for persons > 18 years old

Covid-19 Laboratory Confirmed Hospitalizations By Age

Inpatients Per 100,000, As of October 31

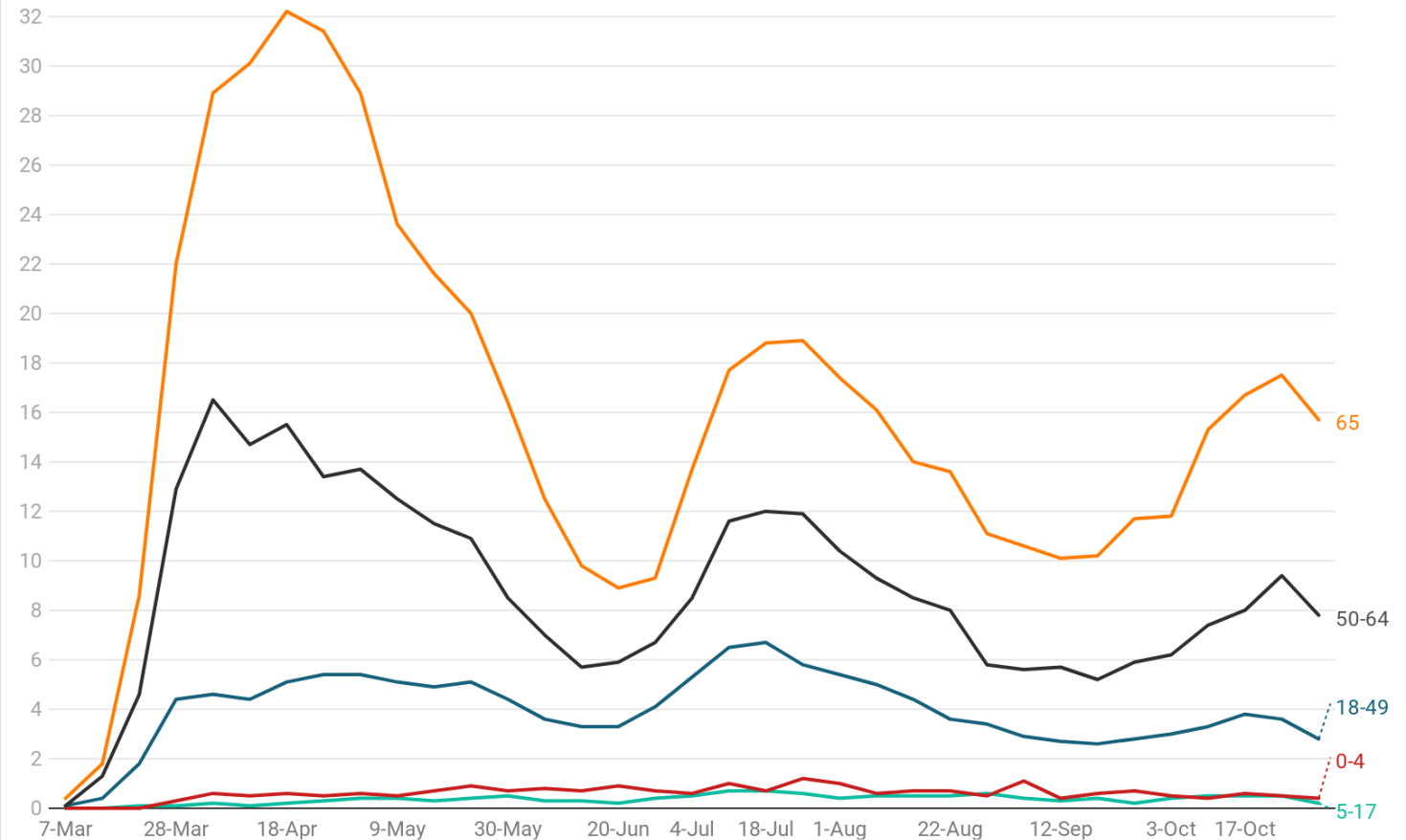


Chart: Health Industry Advisor LLC • Source: Centers For Disease Control & Prevention • Created with Datawrapper

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 has declined on twenty-eight of the past thirty-one days

This rate has been reduced by ~1/2 since mid-September and by ¾ since mid-May

Covid-19 Hospital Census / 100 Daily New Detected Cases

7-Day Moving Average, As of November 9

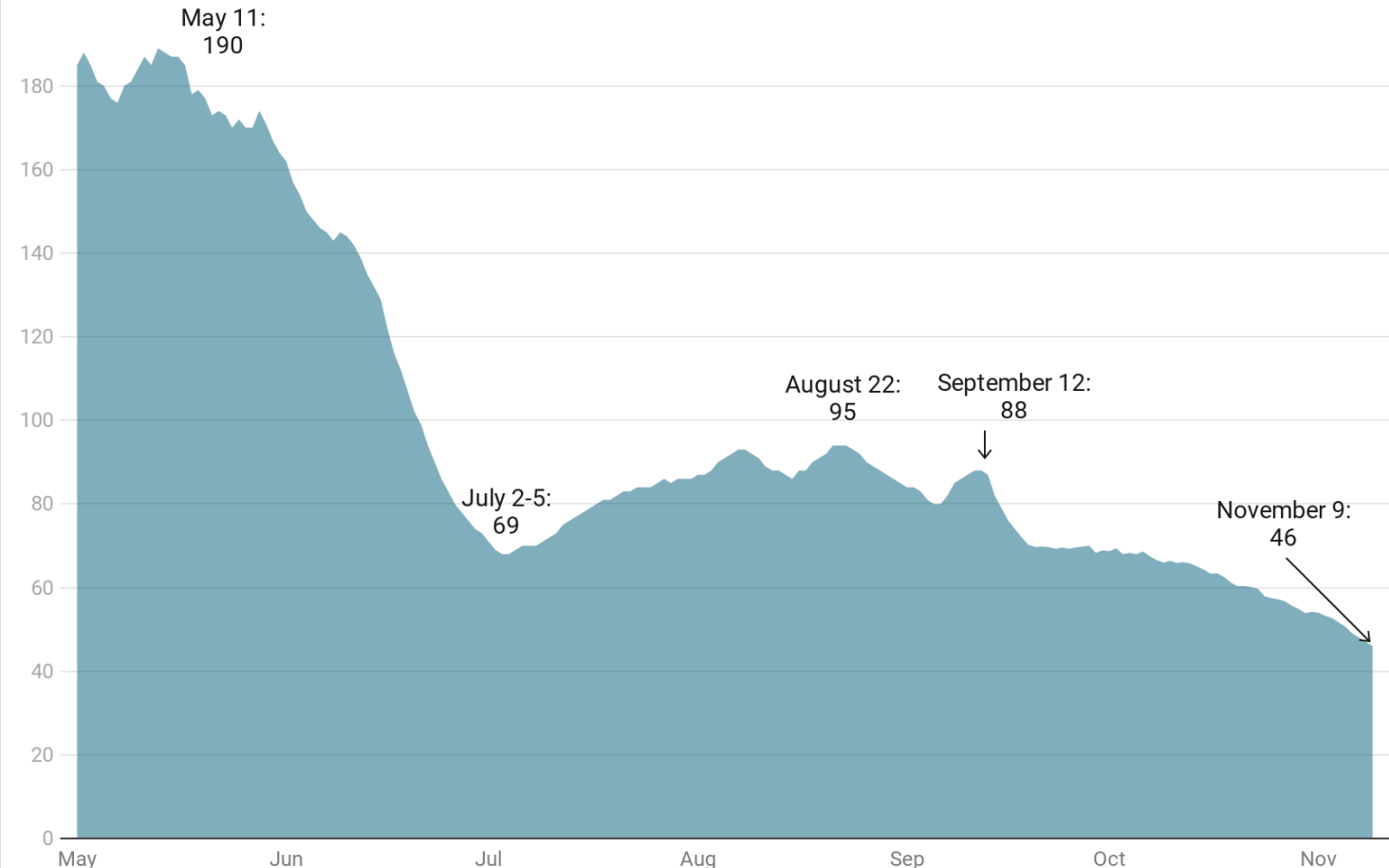


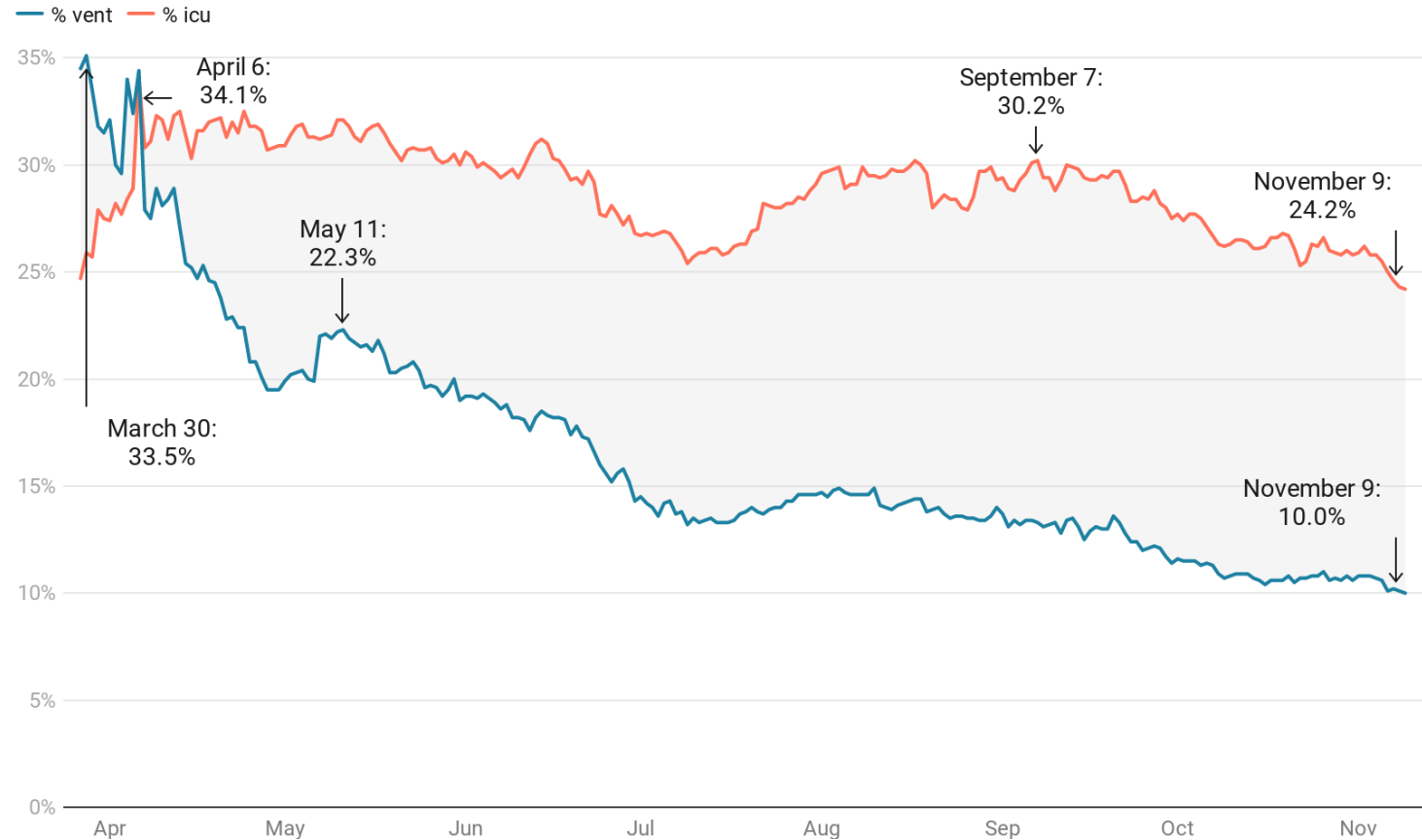
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

The likelihood of a hospitalized Covid-19 patient would require ICU care has declined 20% since early-September and nearly 30% since early-April

The likelihood of a hospitalized Covid-19 patients would be on a ventilator has reduced by >1/2 since mid-May and by >2/3 since March

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of November 9



Health Industry Advisor LLC analysis

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

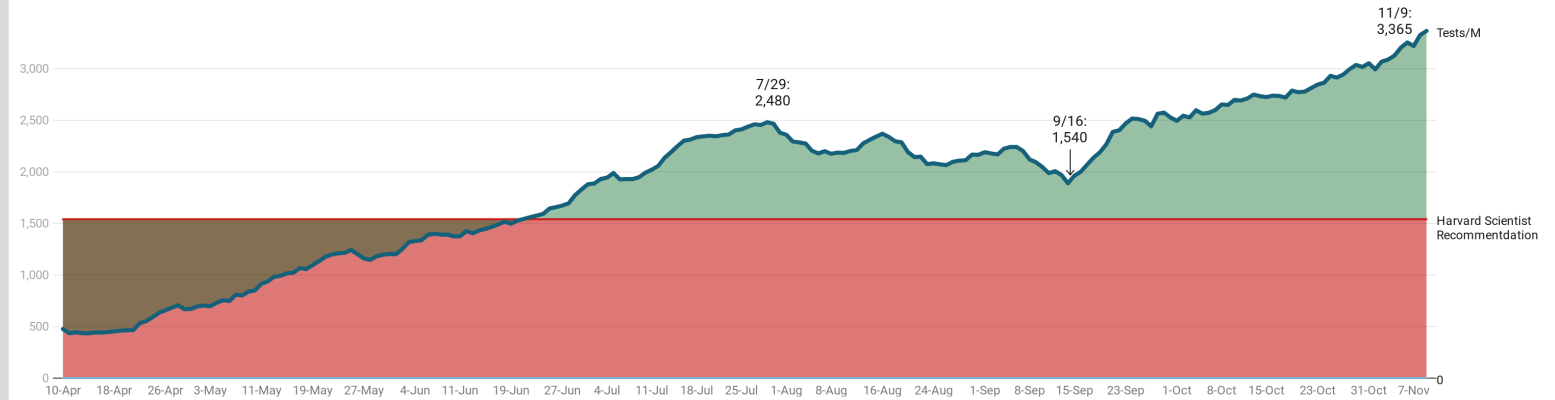
The 7-day average testing volume set another new high on Monday – the sixteen time it has accomplished this in the past twenty days

This rate has increased by 70% since mid-September

The 7-day test-positive rate, however, has been trending upward since the beginning of October - increasing on thirty-two of the past thirty-five days

Daily Tests Per 1 Million - United States

Trailing 7-Day Moving Average, As of November 9

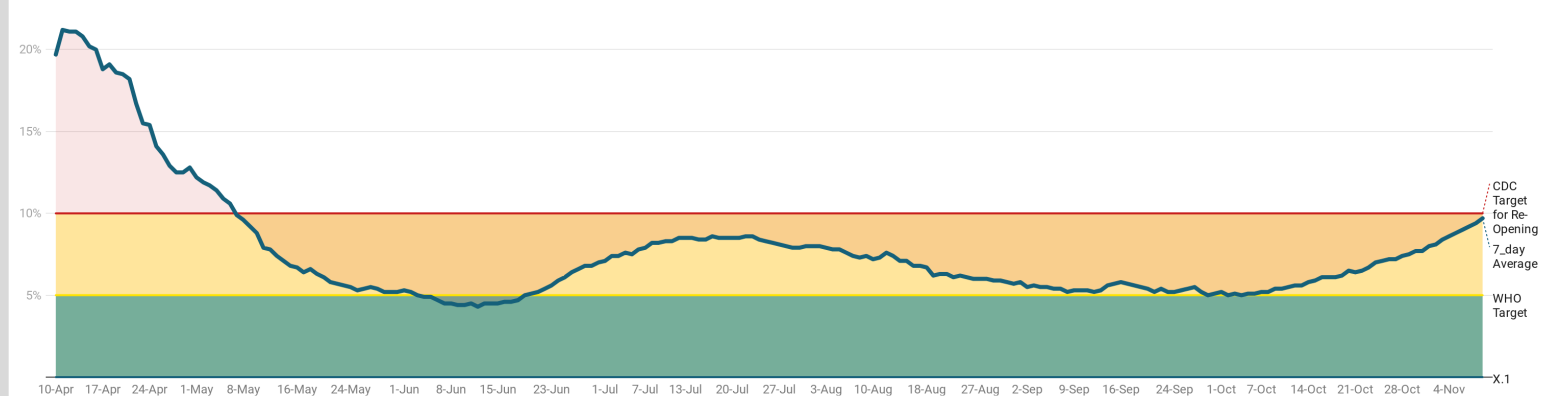


Health Industry Advisor LLC analysis

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 November 4



Health Industry Advisor LLC analysis

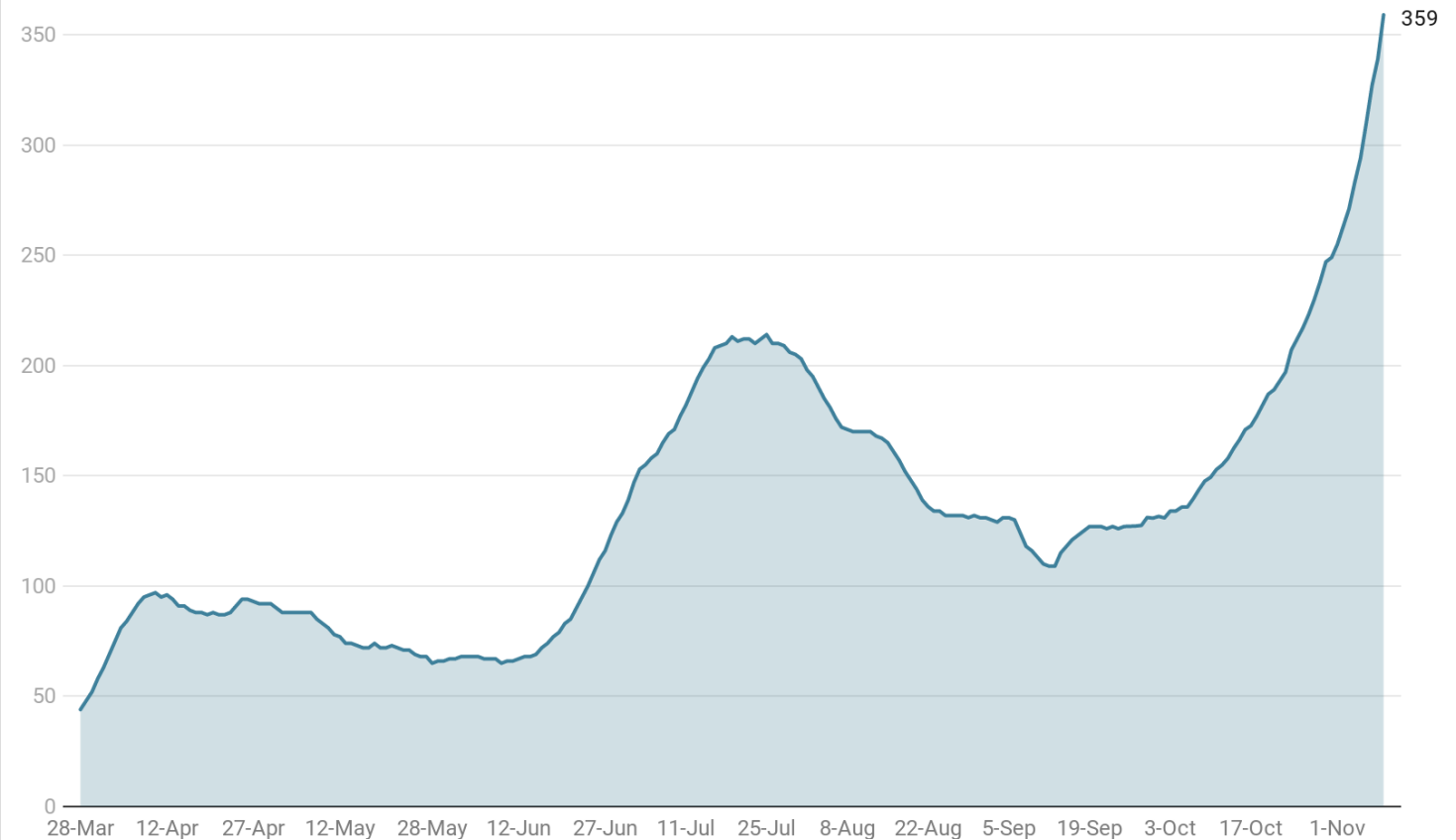
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

The rate of new infections per capita* in the U.S. has risen every day since October 2

* - 7-day moving average basis

Newly Detected Infections Per 1 Million Population - United States

7-Day Moving Average, Through November 9



Health Industry Advisor LLC analysis

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

North Dakota, South Dakota, Montana, Iowa Wisconsin and Wyoming (in order) experienced the highest new infection rate over the past seven days

Thirty-two states are experiencing the highest rates experienced at any time during the pandemic

New Daily Detected Cases Per Million - By State

November 3-9, Difference From State's Highest Rate To-Date

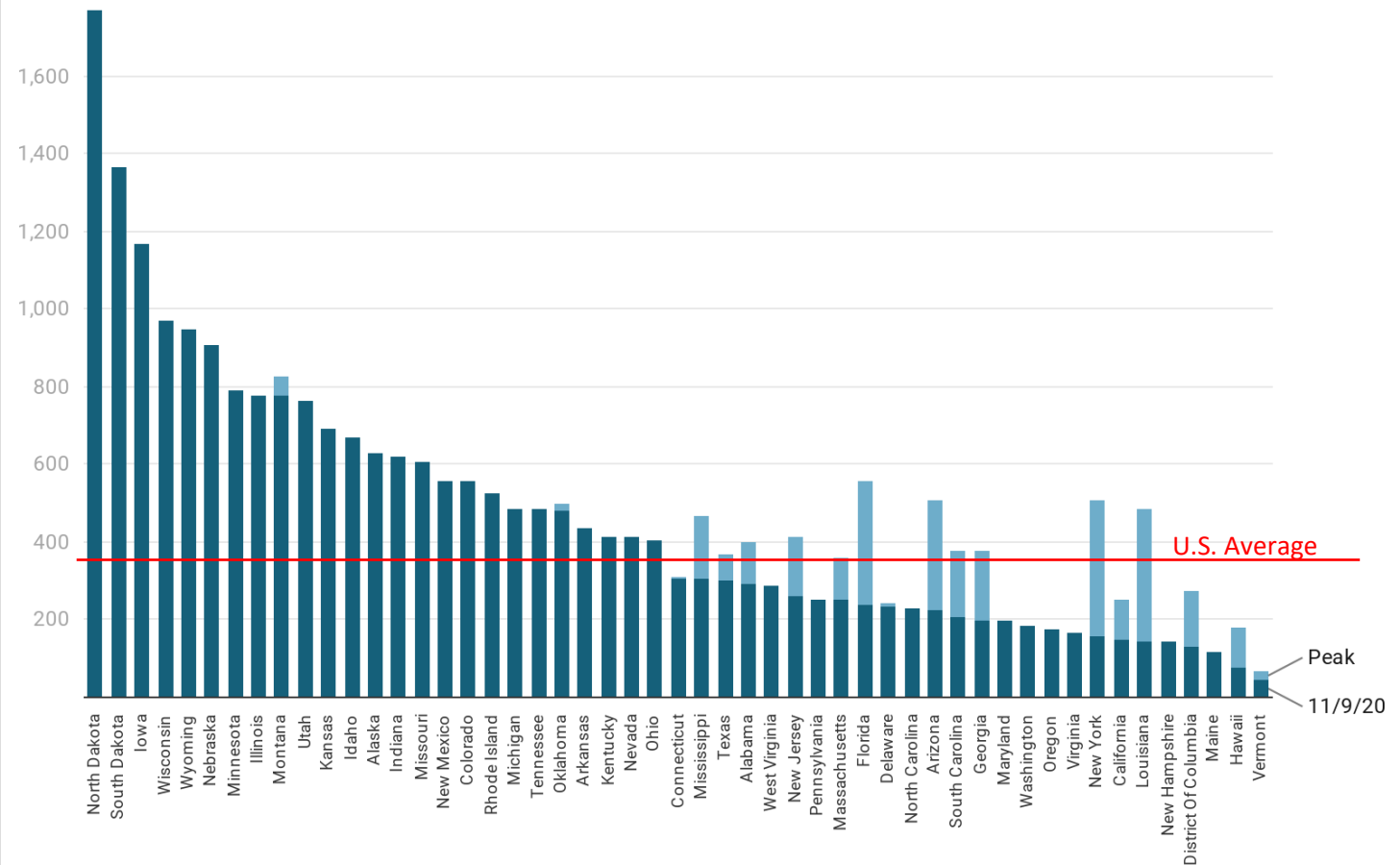


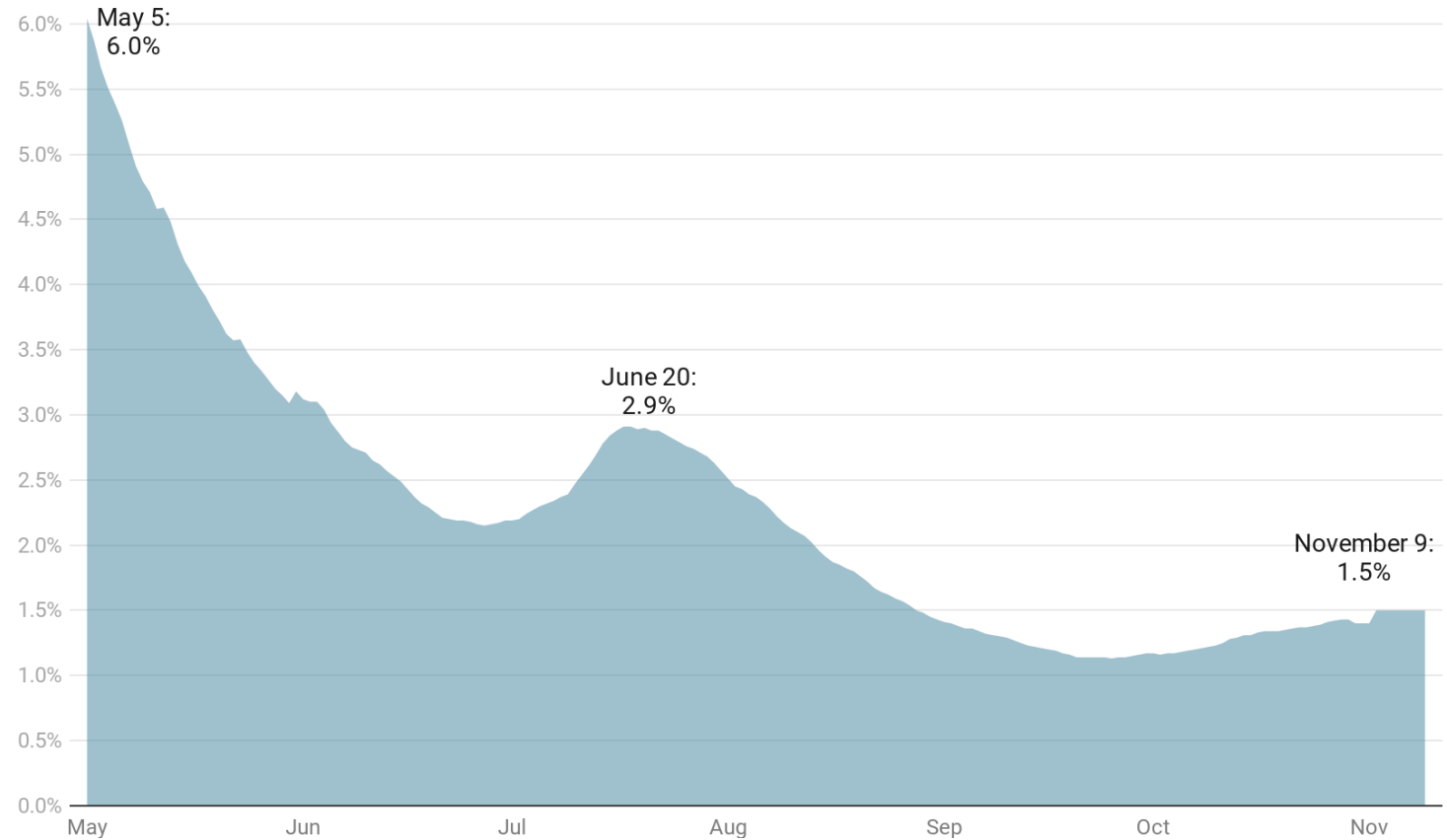
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

The likelihood that a person with an active Covid-19 infection would be hospitalized has stabilized over the past two weeks

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

% of Active Covid-19 Cases in Hospital

As of November 9



Using 7-day average covid-19 census

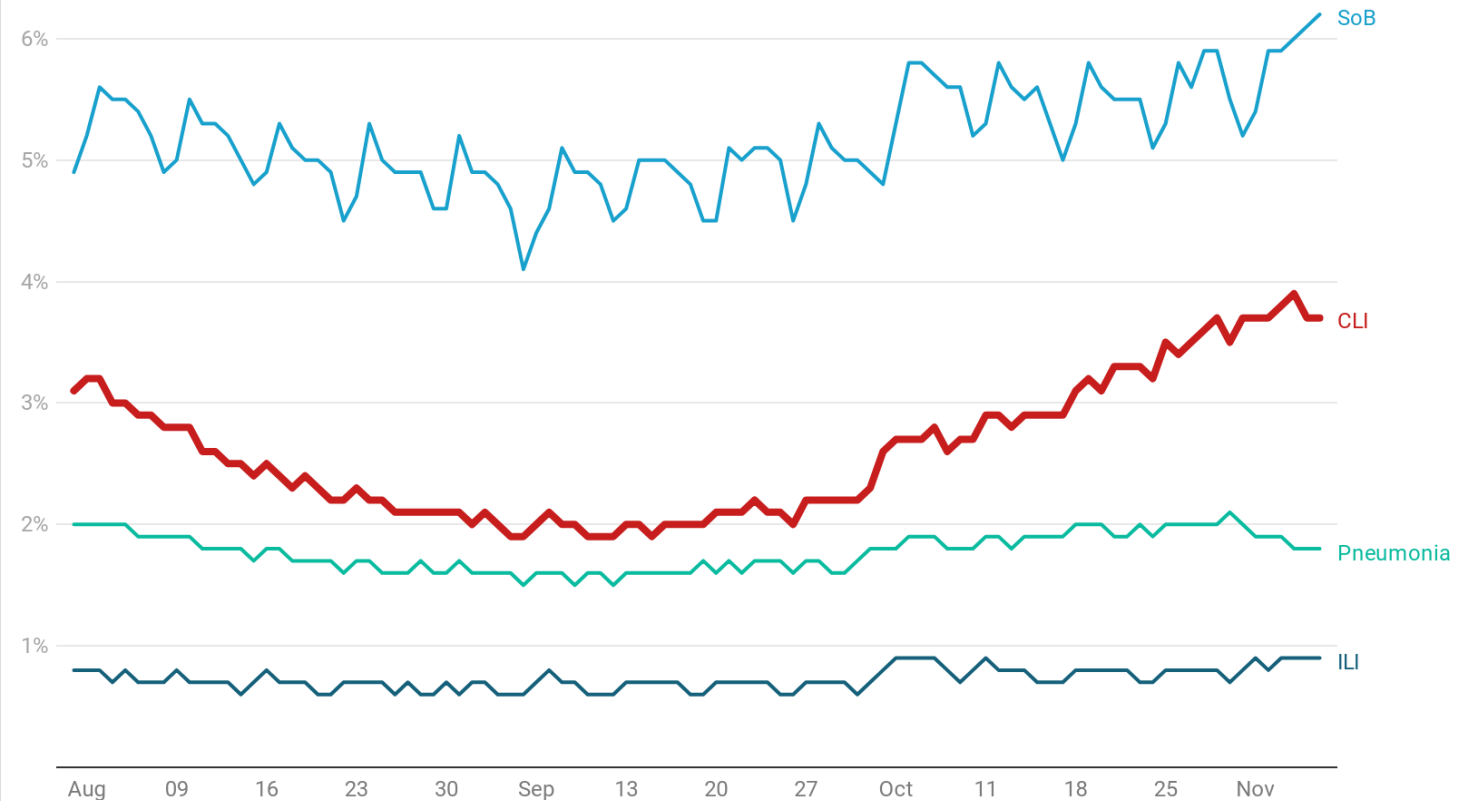
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

The % of ER visits for COVID-19-like illnesses (CLI) has increased for the past six weeks

This rate remains lower, however, than it was in July and in March/April

% of Emergency Department Visits for COVID-Like Illness (CLI), Influenza-Like Illness (ILI), Pneumonia & Shortness-of-Breath (SoB)

As of November 6



Health Industry Advisor LLC analysis

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

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

The 7-day average deaths per day exceeded 1,000 yesterday - the first time since August 22

Deaths Reported With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of November 9



Health Industry Advisor LLC analysis

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

Deaths with coronavirus, relative to new cases (lagged 4 weeks) have moved within a narrow range for the past month

This rate declined rapidly in July and August

Note: this rate tends to fall 4 weeks after new cases peak; might we expect a similar pattern down-the-road, once new case peak?

7-day Average Deaths / 7-Day Average New Cases (4-Week Lag)



Chart: Health Industry Advisor LLC • Source: worlometers.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>