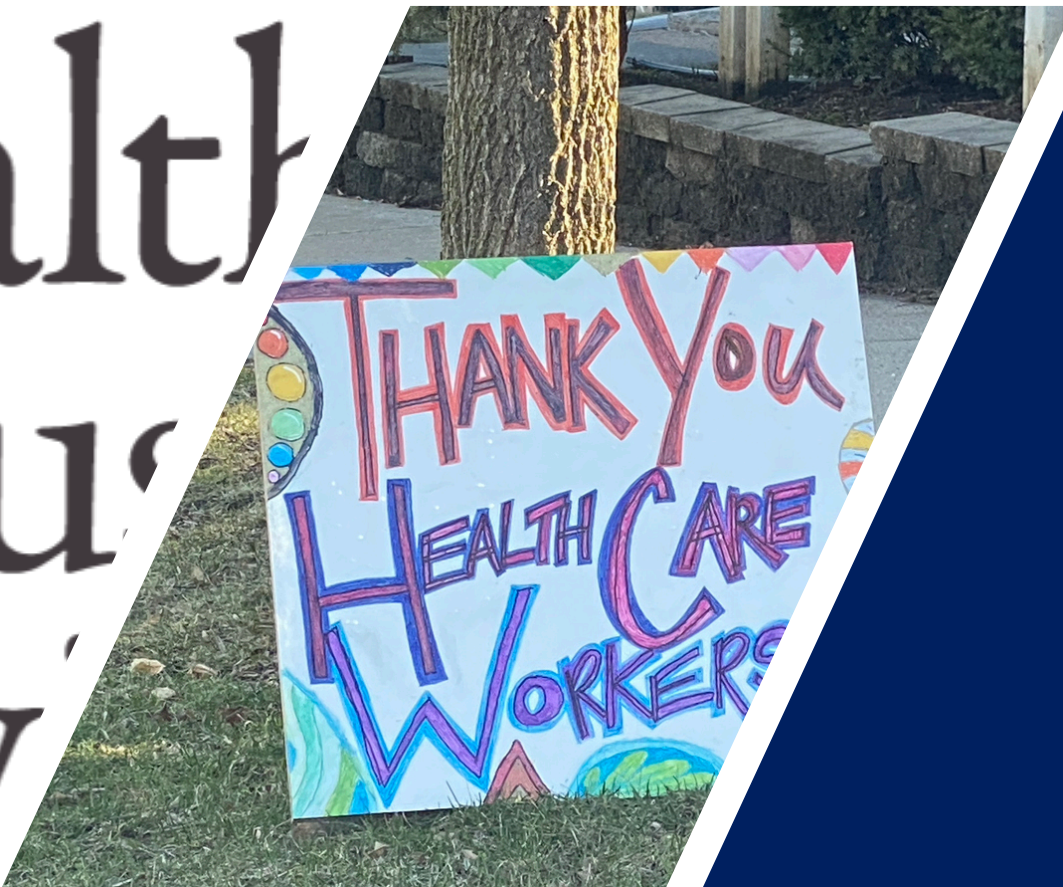




Health
Industry
Adv



Issue # 224
Monday, November 30, 2020

COVID-19 Report

Highlights

- **Moderna will file its application today for Emergency Use Authorization (EUA) of its vaccine in the U.S and Europe**
 - Moderna anticipates that it will have 20 million doses available in the U.S. by the end of December; Pfizer now anticipates 25 million. **Given the need for two doses of each vaccine, this is sufficient to vaccinate 22.5 million Americans by year-end**
 - **An FDA advisory committee is scheduled to review Moderna's vaccine on December 17; It was previously-announced that this advisory committee would review Pfizer's vaccine on December 10. Both vaccines are expected to be approved**
- **The CDC's Advisory Committee for Immunization Practices will be holding an emergency meeting tomorrow, December 1, to set guidelines for the states to follow in determining who has priority in receiving these vaccines**
 - The CDC is expected to prioritize health workers, essential workers, adults with high-risk medical conditions and persons 65 years old and older
 - **The CDC estimates that nearly 1/2 of all adults in the U.S. are in these prioritized categories**
- New cases, both worldwide and in the United States have now declined on a 7-day moving average basis. Some of this decline is due to reporting delays in the U.S. around the Thanksgiving holiday. Nonetheless, the week-over-week trends in new cases had already been moving downward
- Test volume also has declined due to the Thanksgiving holiday; the test-positive rate, however, remained stable despite this decline, as has the ratio of tests-to-newly detected cases
- **Covid-19 inpatients continue to grow in number - increasing on a same-day, prior-week basis on all except a single day since September 23.** Further, the rate of inpatient days-to-new cases has moved up in the past week, although some/much of this is likely due to slowed new case reporting around the holiday
- **Nevada continues to be of greatest concern for its Covid-19 census - Covid-19 patients now occupy 65% of all inpatient beds in that state; in Connecticut, its 59%; and in New Mexico, its 52%. Overall for the United States, Covid-19 patients now occupy 30% of all inpatient beds**
- **The % of Covid-19 inpatients requiring ICU care has been lower throughout November than at any other time during the pandemic. The % of Covid-19 patient requiring ventilator care, however, has increased over the past two weeks**
- The 7-day average deaths with coronavirus has declined over the past few days. This decline, however, is likely attributed to the Thanksgiving holiday-reporting delays at the state level



Goals

- Ensure safety and effectiveness of Covid-19 vaccines
- Reduce morbidity and mortality of Covid-19 through effective and efficient distribution of Covid-19 vaccines
- Support rapid vaccine distribution based on CDC guidance for states immunizations services
- Assist with the return to pre-pandemic quality of life

Leadership



Chief Scientific Advisor
Dr. Moncef Slaoui



Chief Operating Officer
General Gus Perna

Early Vaccine Candidates (U.S.)



Distribution Challenges:



\$200M allocated to-date
\$6-8B needed

Racial & Ethnic
Disparity

Providers: Where
will vaccine be
administered?

Training of Vaccine
Administers

Cold Storage

Existing distribution
based on childhood
vaccination

Two Doses

Accelerated
timeframe

Rollout:

Phase 1

Limited dose supply
Prioritized recipients
Limited # of providers

Phase 2

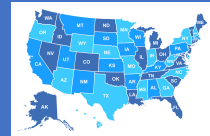
Increased dose supply
More recipients
Additional providers

Phase 3

Sufficient dose supply
Available to all recipients
Routine vaccine providers

6.4M

Initial doses prorated
to states based on
adult population



40M

Doses expected to be
available in December,
sufficient for vaccinating
20M people

Initial priority groups



Nursing Homes



Healthcare Workers



Senior Citizens

Quick facts (Updates in **Bold**):

- The CDC's Advisory Committee for Immunization Practices will meet in an emergency meeting on December 1 to establish priorities for who receives first vaccines (live-streamed)
- CDC estimates 21M healthcare personnel, 87M essential workers, 100M adults with high-risk medical conditions and 53M others 65 & older - note these groups are overlapping; combined they represent > 1/2 of all adults
- The FDA advisory committee meeting to consider approving Pfizer's will be streamed live on December 10; **a second meeting has been tentatively scheduled for December 17, to review Moderna's vaccine**
- Americans could begin receiving vaccinations as early as December 11 or 12
- **22.5 million Americans are expected to be vaccinated by the end of December**; another 25-30 million should be vaccinated each month thereafter

Providers

Where will
vaccine be
administered?



Pharmacies



Nursing Homes



Hospitals



Public Clinics



MD Offices & Mobile Clinics



Military Tx Centers

The month ahead

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 CDC Emergency Meeting: Vaccination Priorities	2	3	4	5
6	7	8 FDA Advisory Committee -Pfizer Approval?	9	10	11 Initial Vaccinations	12
13	14	15	16	17 FDA Advisory Committee -Moderna Approval?	18	19
20	21	22	23	24	25	26
27	28	29	30	31 By this date: First 22.5M Americans vaccinated?		

The Thanksgiving holiday caused a decline in new cases, both worldwide and in the United States

On a 7-day moving average basis, new cases worldwide we already plateauing prior to the Thanksgiving holiday, while they were slowing in the United States

There were ~584k new cases worldwide each day, as of Sunday

The United States is averaging ~163.6k new cases each day

* - 7-day moving average basis

Newly Detected Daily Cases - U.S. & Worldwide

7-Day Moving Average, As of November 25

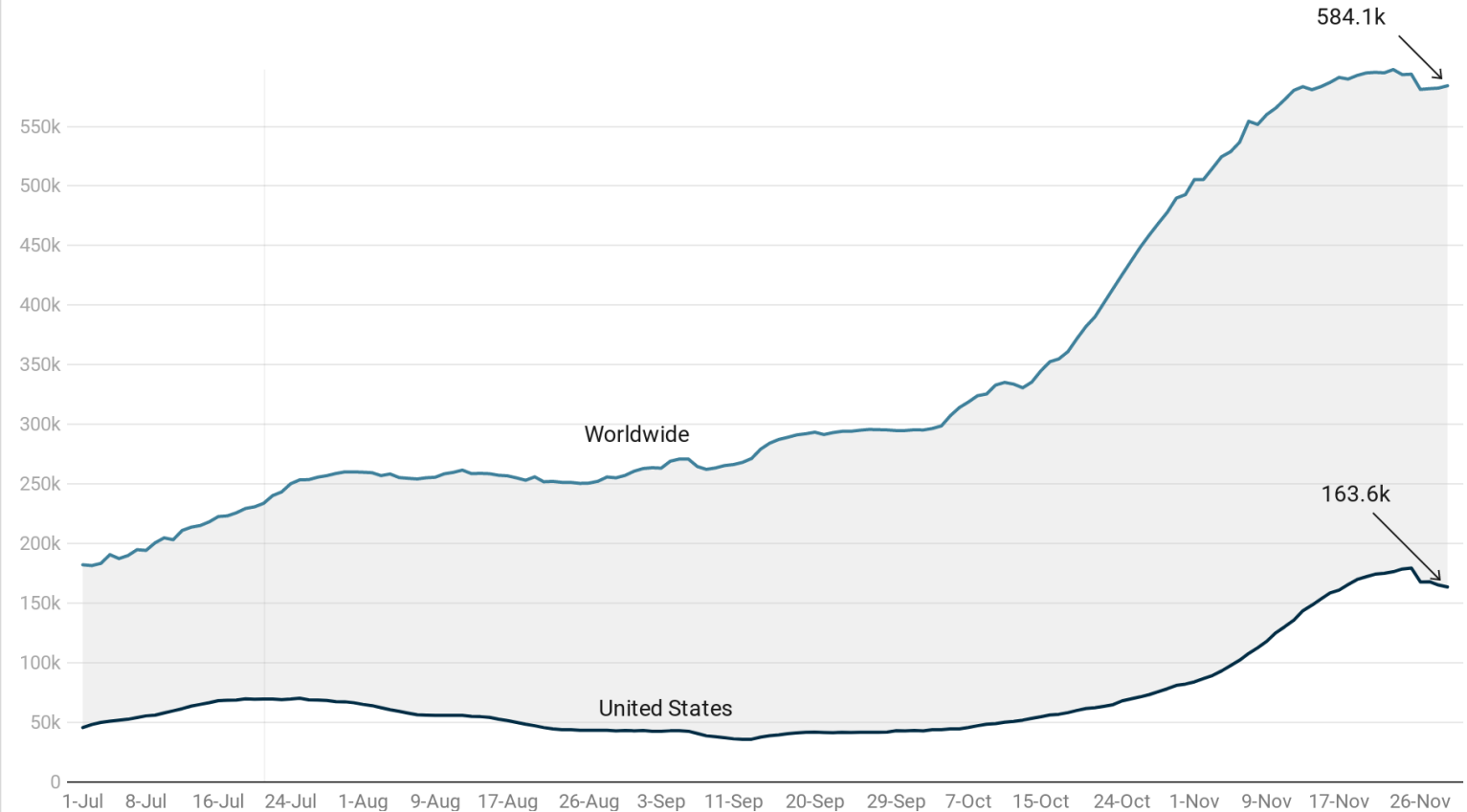


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

The rate of increase in new cases, both worldwide and in the United States, has been easing for an extended period

The Thanksgiving holiday caused this rate to go negative

This rate could turn back up starting later this week for two reasons: 1) starting on Thursday, the week-over-week comparison will be affected by the low new case count on Thanksgiving and 2) the potential uptick in cases from increased social interaction

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

7-Day Moving Average, As of November 29

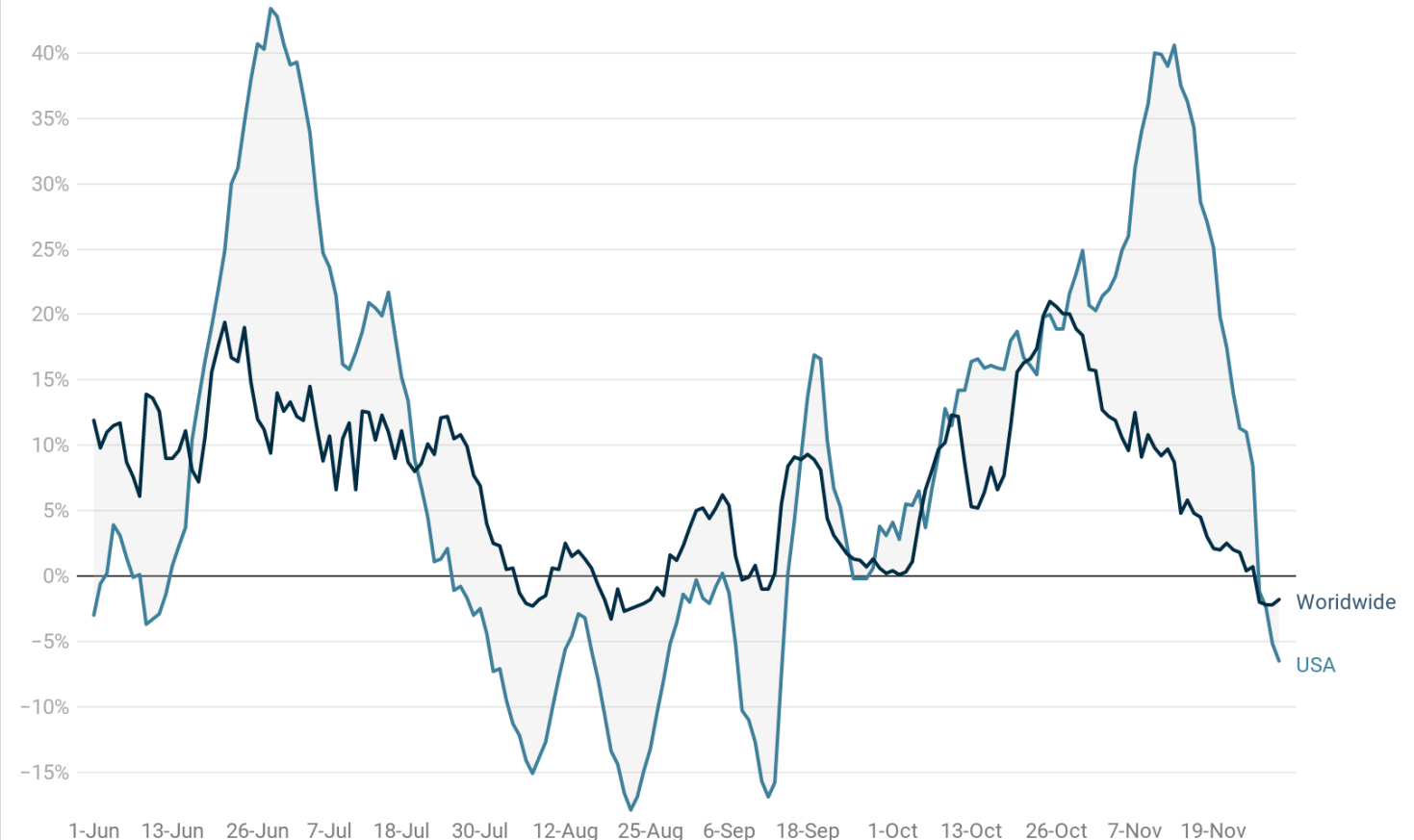


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Momentum Charts – New Cases in the U.S.:

The pattern we are experiencing now parallels what we experienced in June/July. Note that the week-over-week change in new cases peaked above 40% in both periods, before declining precipitously

If we continue this pattern, the June/July experience suggests that actual new cases could finally begin to decline in about two-three weeks (subject to the effect of holiday gatherings, state lockdowns, etc.)

New cases in the U.S. have followed definitive patterns throughout the pandemic – rising cases beget further rises (perhaps, reflective of the high transmissibility of the virus). This is evidenced by ever-increasing week-over-week changes in new cases. Yet, once this measure begins to decline, it tends to continue to decline for a period

Week-Over-Week Change in New Cases

7-Day Moving Average, Current Period v. June/July

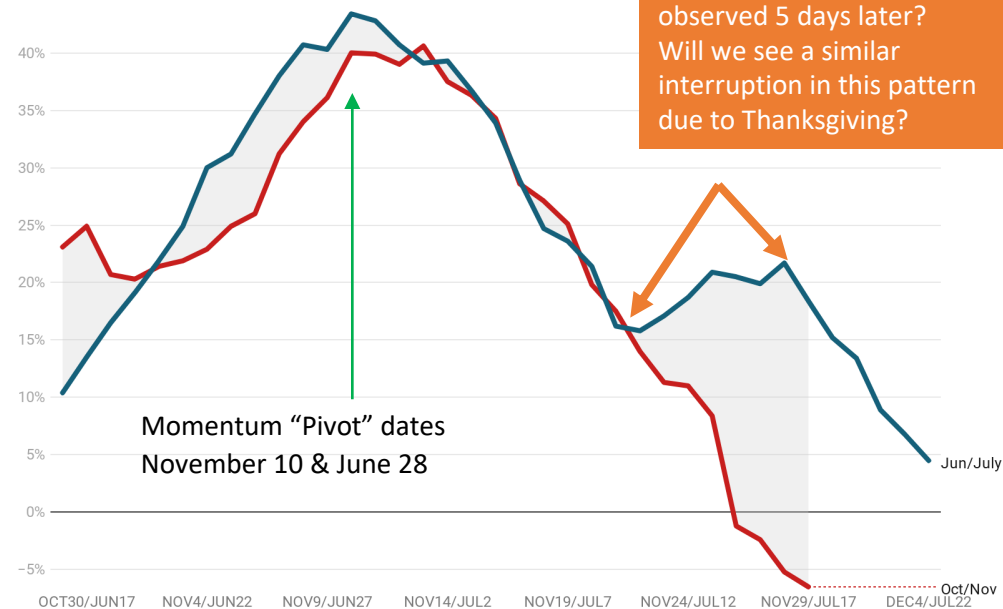


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Seeds of this change in momentum can be seen early, by observing the *rate of change* in week-over-week change in new cases: This rate-of-change-measure turns downward several days ahead of the turn observed in the week-over-week change measure

Change in Rate of Week-Over-Week Change in New Cases

7-Day Moving Average, Current Period v. June/July

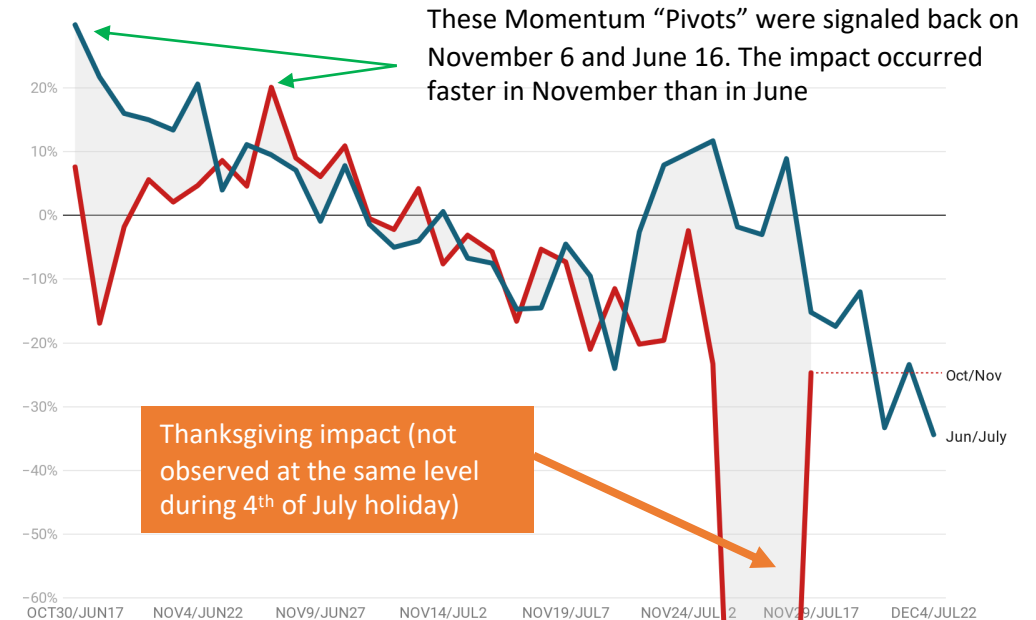


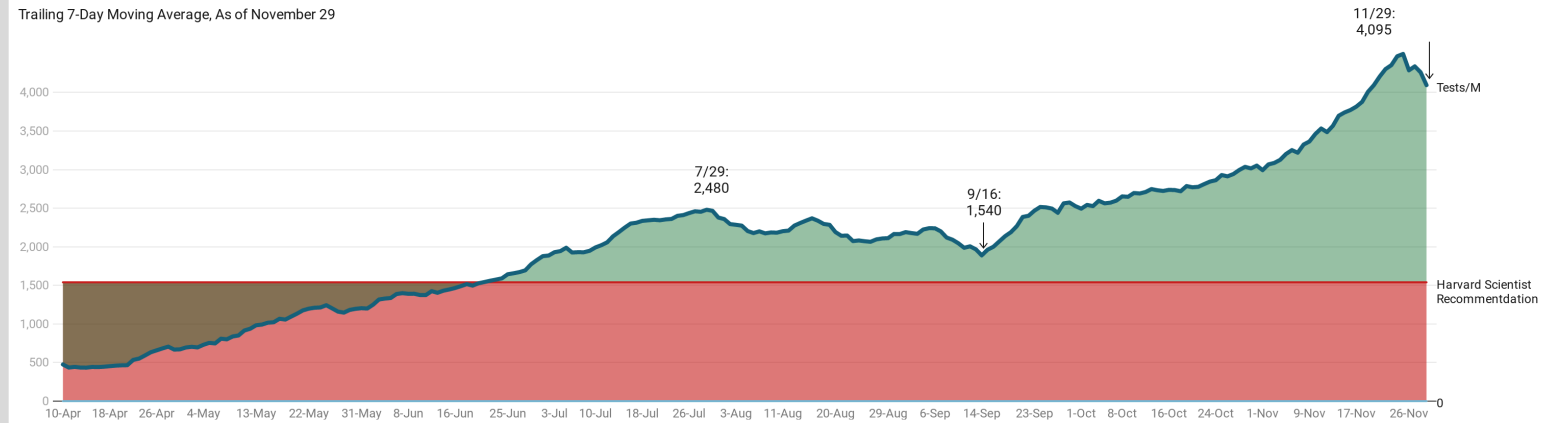
Chart: Health Industry Advisor LLC • Source: worlometer.info • Created with Datawrapper

The 7-day test volume declined over the past several days, as a result of slow testing/reporting on the Thanksgiving holiday

Coincident with (or despite) the reduced testing, the test-positive rate has been stable over the past several days

Daily Tests Per 1 Million - United States

Trailing 7-Day Moving Average, As of November 29



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

7-Day Moving Average, As of November 29

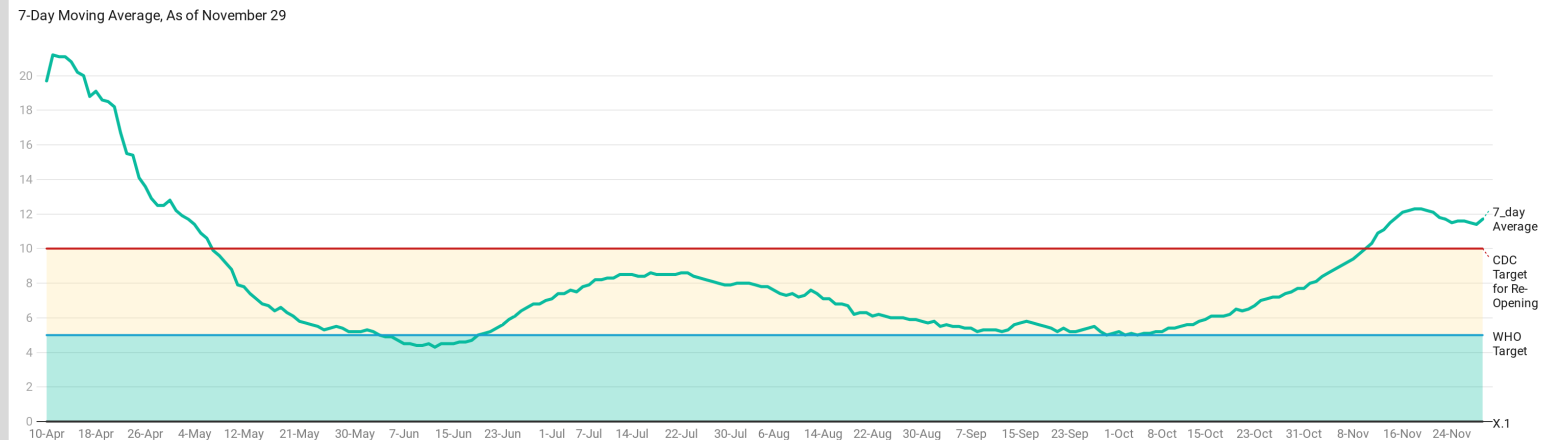


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

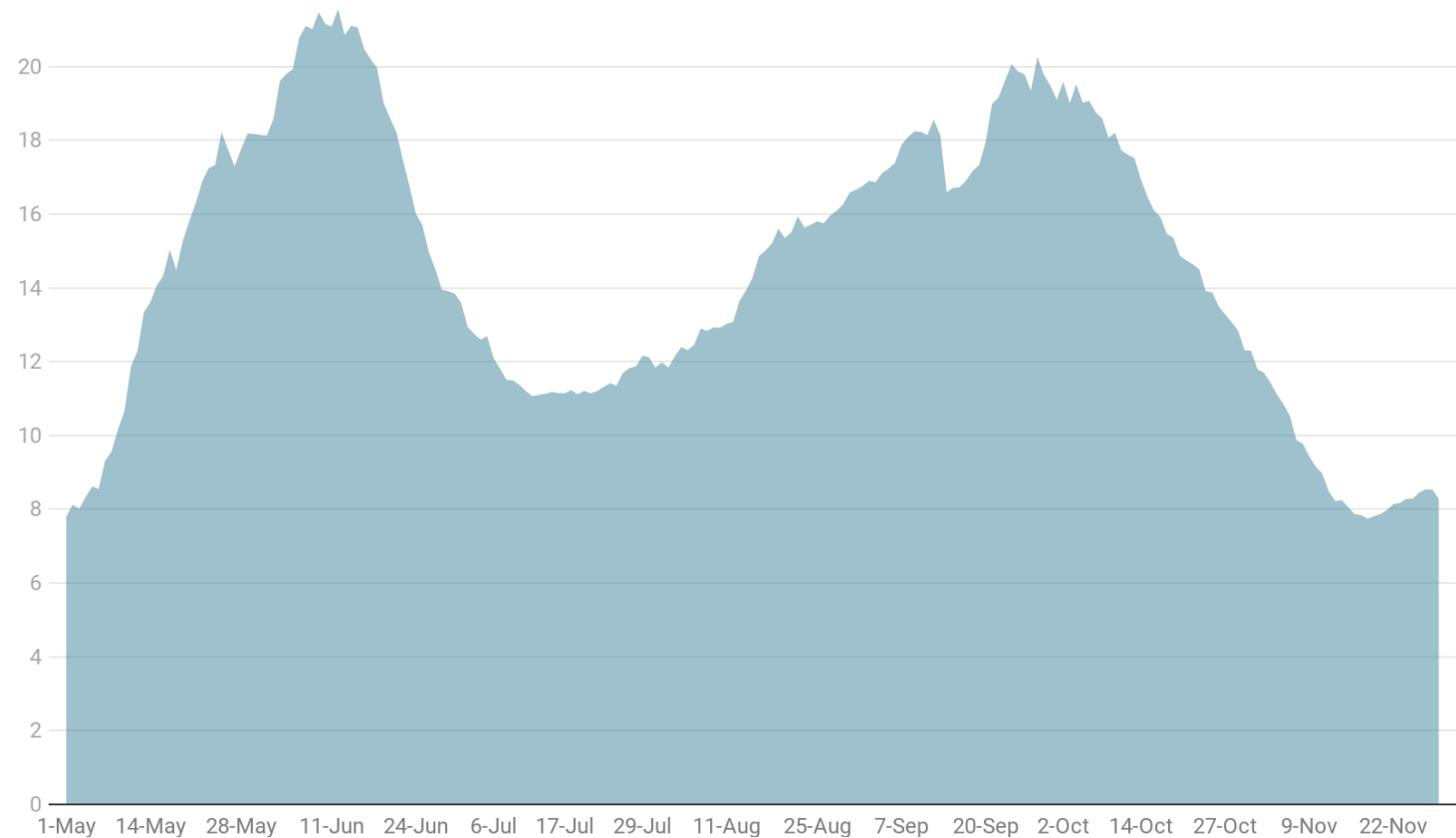
A measure of the effectiveness of testing is the ratio of tests performed to newly-detected cases

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

This rate has improved, however, over the past two weeks

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

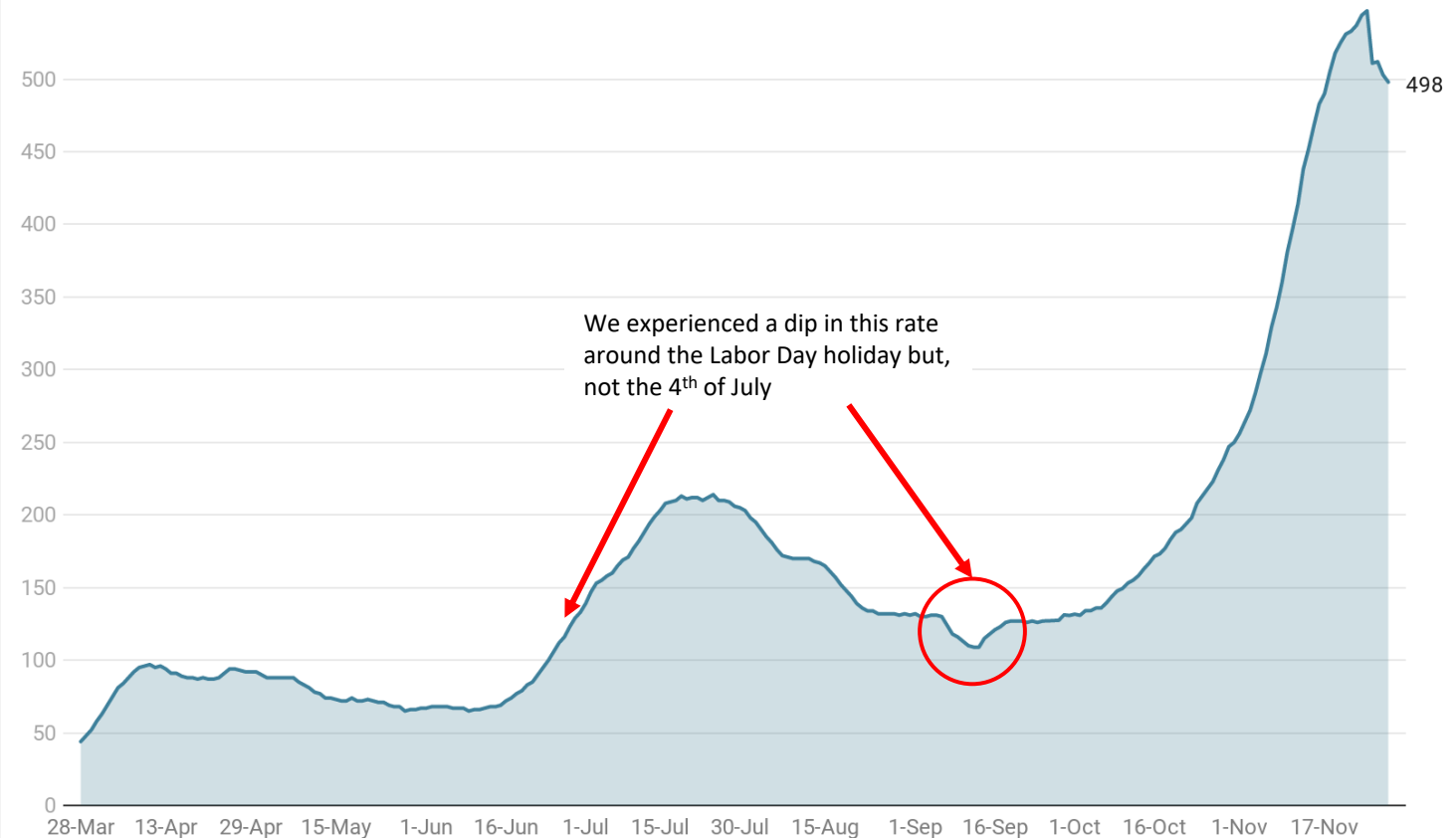
Chart: Health Industry Advisor LLC • Created with Datawrapper

The rate of new infections per capita* in the U.S. may be nearing a plateau – although increased social gathering around the Thanksgiving holiday may disrupt the current trends

* - 7-day moving average basis

Newly Detected Infections Per 1 Million Population - United States

7-Day Moving Average, Through November 29



Health Industry Advisor LLC analysis

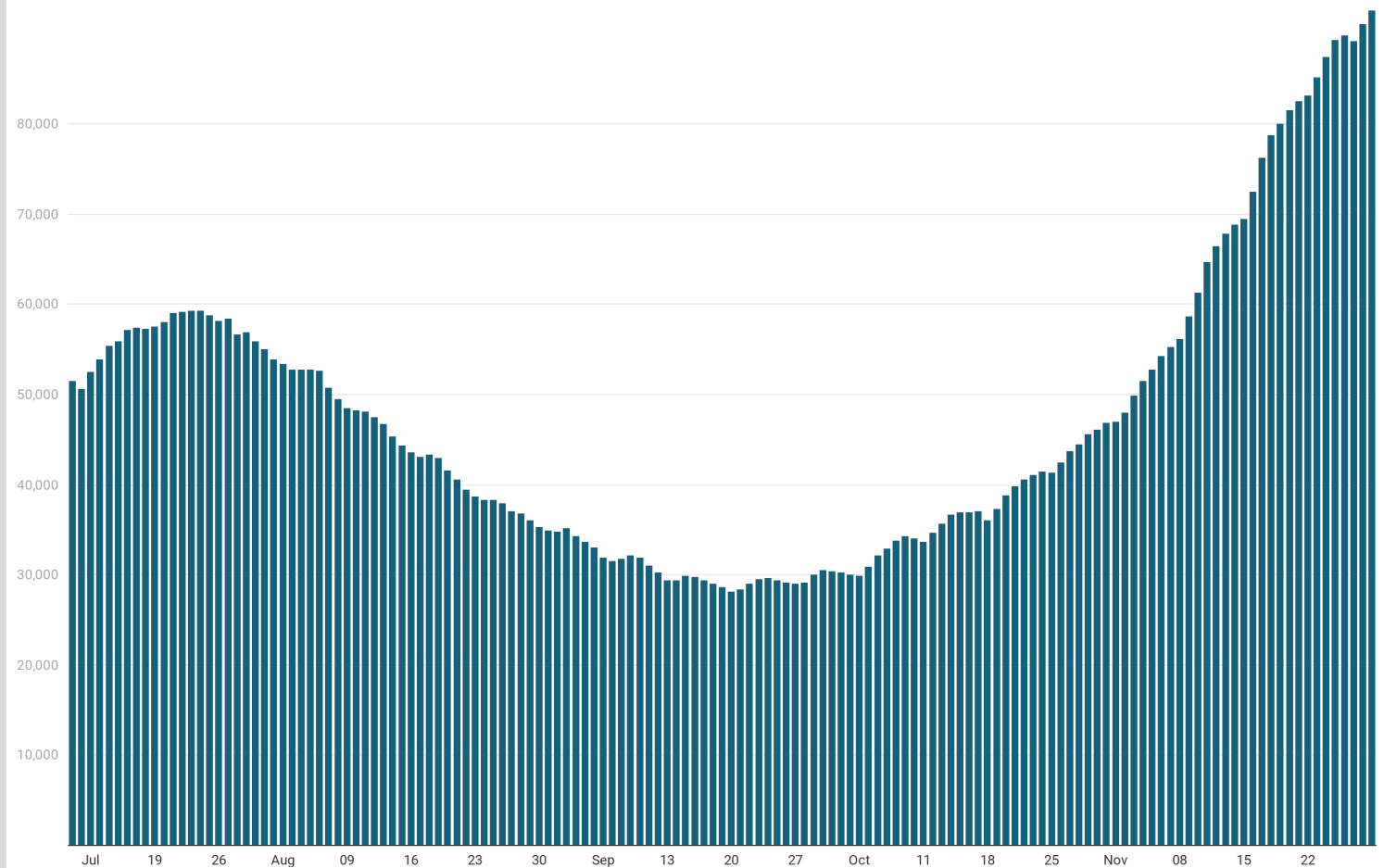
Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

On a same-day, prior-week basis, inpatient Covid-19 census increased on all except one day since September 23

Given new case trends, inpatient Covid-19 census could continue increasing, at least for the short term

Hospital Census: COVID-19 Patients

As of November 29



Florida data first available on July 10

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

The average Covid-19 census per 100 new cases increased slightly each of the past eight days; some but, not all – of this is likely due to slowed case reporting around the Thanksgiving holiday

Covid-19 Hospital Census / 100 Daily New Detected Cases

7-Day Moving Average, As of November 29

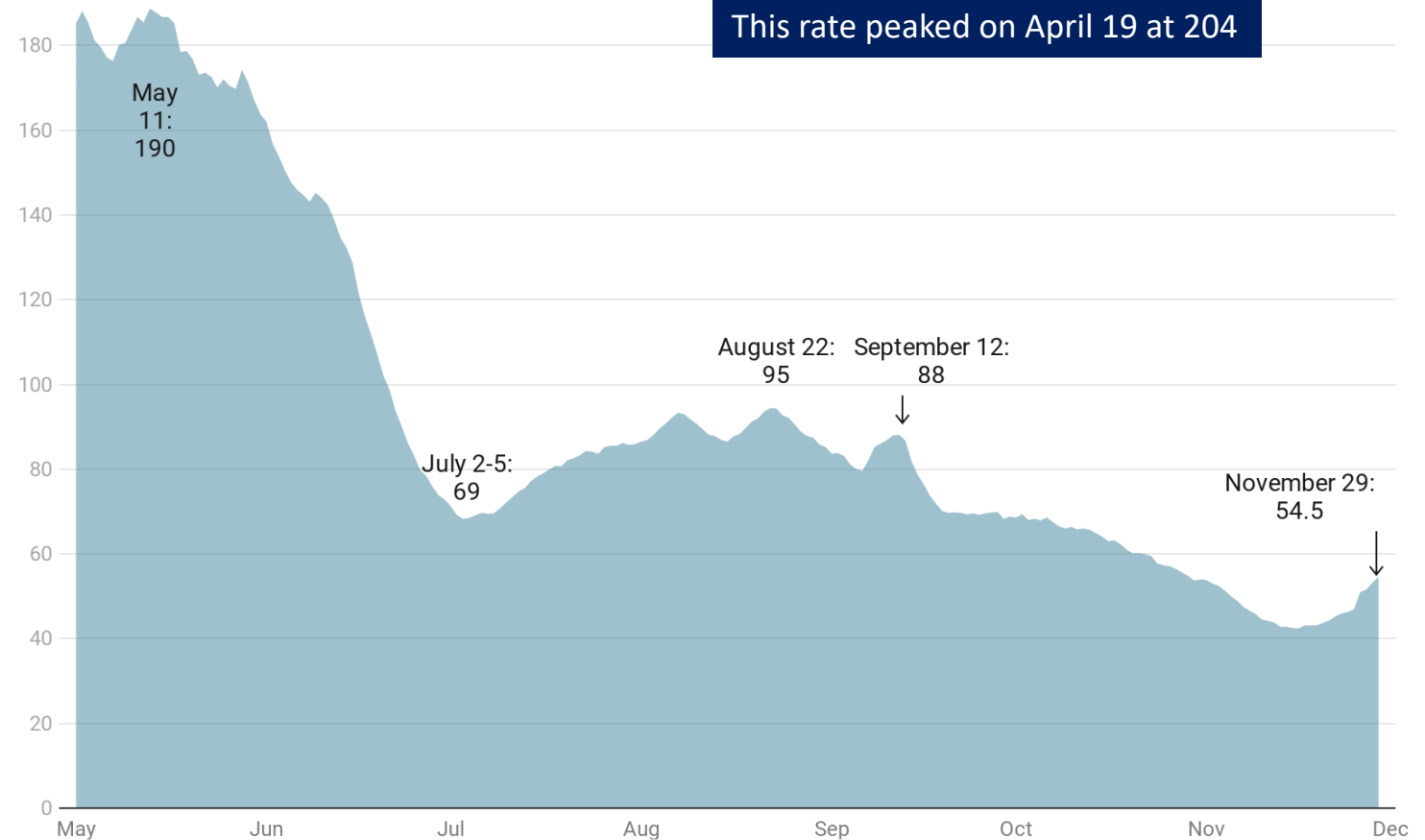


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

In Nevada, 65% of all inpatient beds are occupied by Covid-19 patients

In Connecticut and New Mexico, its more than 50%

In Arizona, Colorado, Illinois, Indiana, Maryland, Michigan, Minnesota, Missouri, New Jersey, Ohio Rhode Island and Wisconsin it is more than 1/3 of inpatient beds

For the U.S. overall, its 30%

Covid-19 Patients / Total Inpatient Beds

7-Day Moving Average, As of November 29

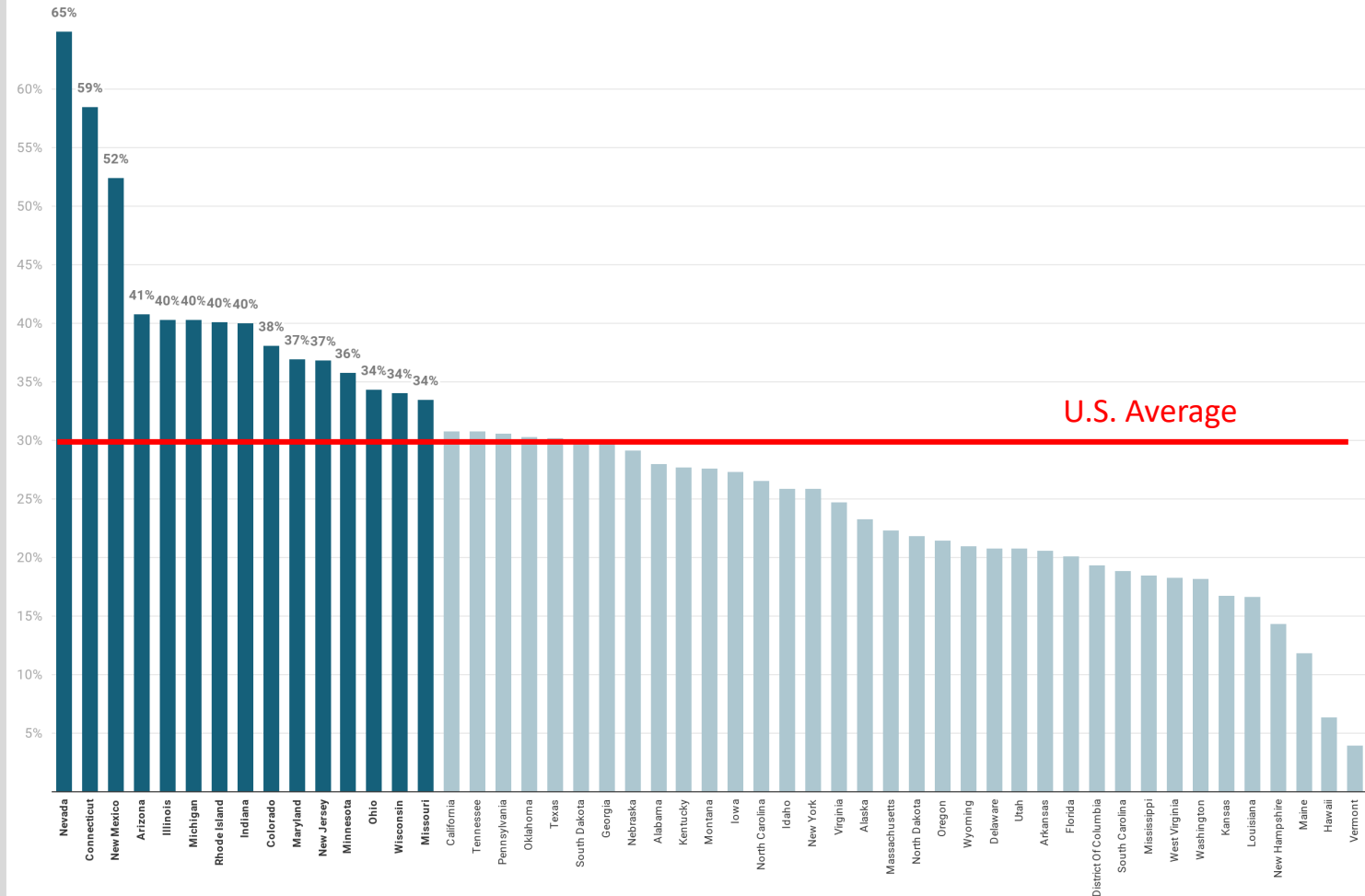


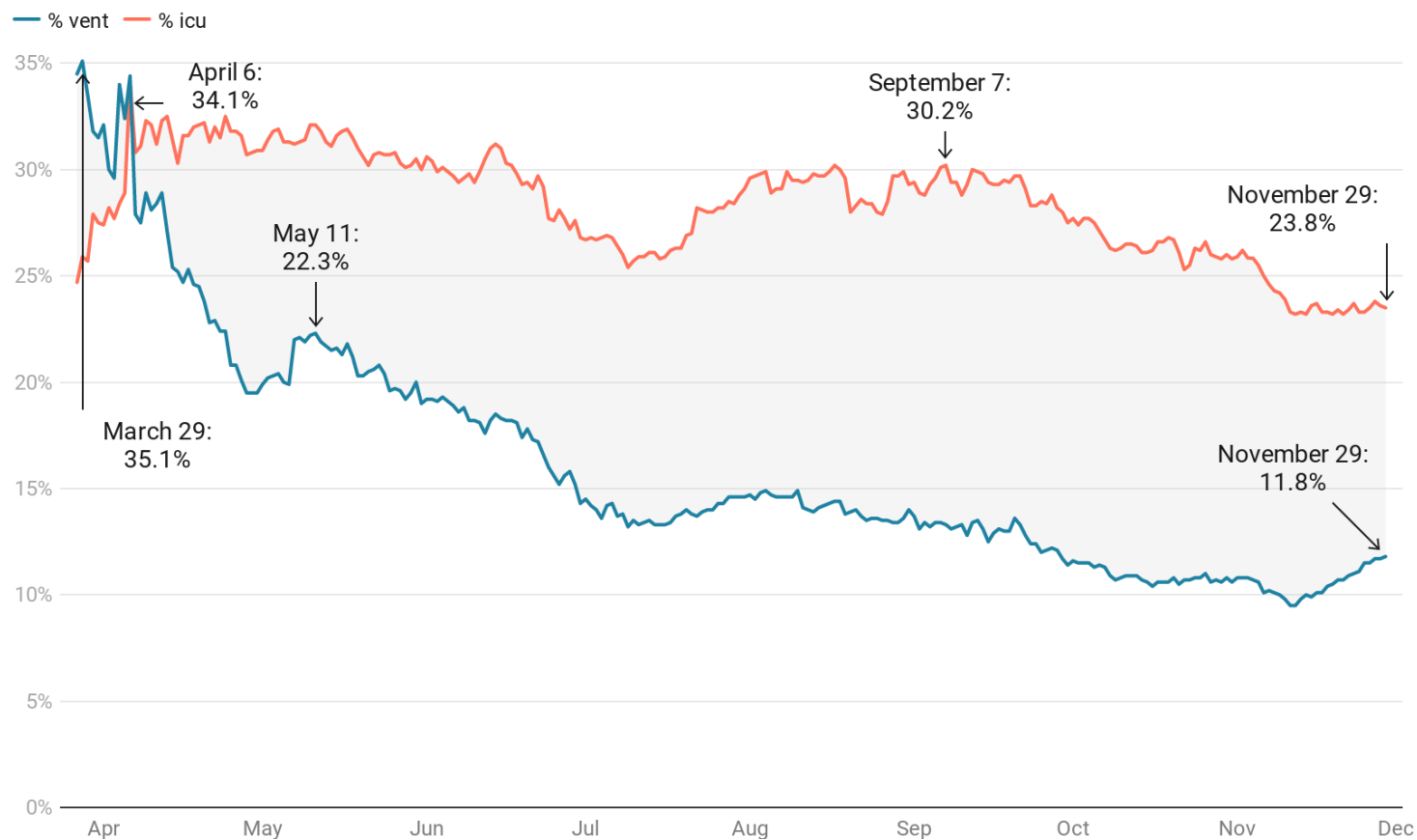
Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project & worldometers.info • Created with Datawrapper

The likelihood of a hospitalized Covid-19 patient would require ICU care has been lower throughout November than at any time during the pandemic

The likelihood of a hospitalized Covid-19 patients would be on a ventilator, however, has increased in the past two weeks

Severity of Hospitalized Patients

% of patients on ventilators and in the ICU, As of November 29



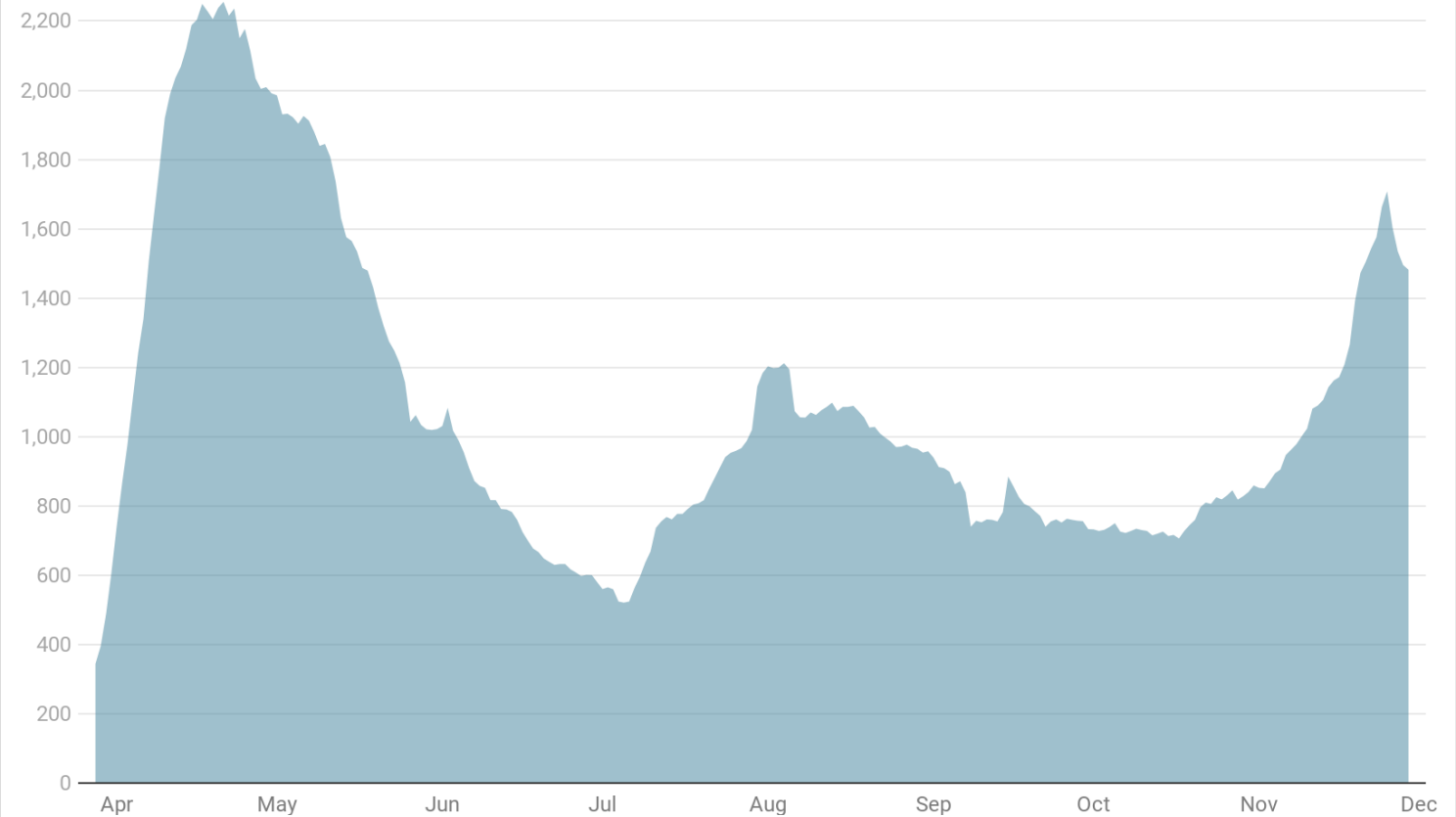
Health Industry Advisor LLC analysis

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

The 7-day average deaths per day has declined over the past several days – this is likely an artifact of slowed reporting over the Thanksgiving holiday

Deaths Reported With Coronavirus in the U.S.

Trailing 7-Day Moving Average, As of November 25



Health Industry Advisor LLC analysis

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

The % of ER visits for COVID-19-like illnesses (CLI) has generally been increasing since early-October, however, this rate has now stabilized or eased in the past week

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 26

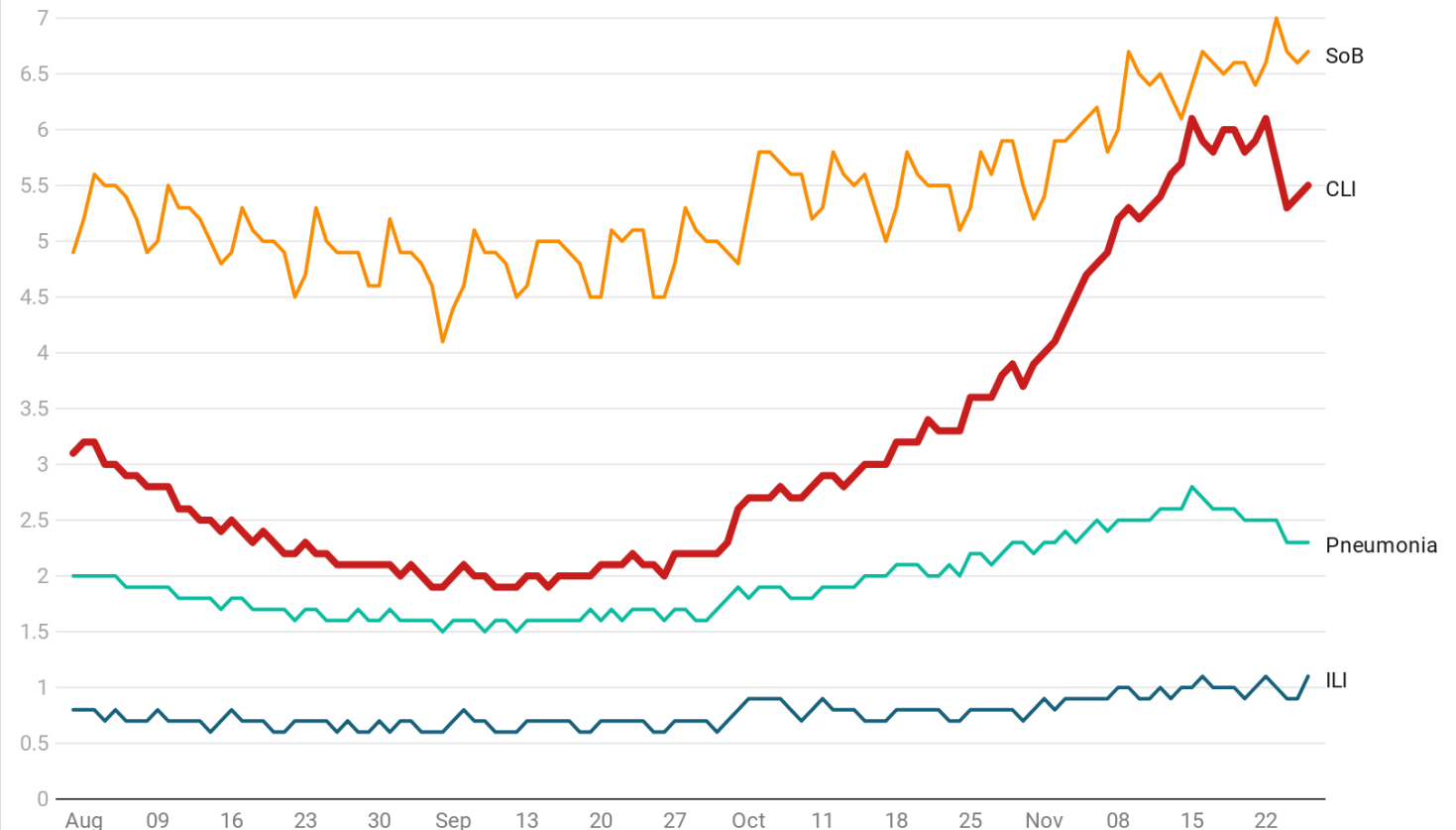


Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

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>