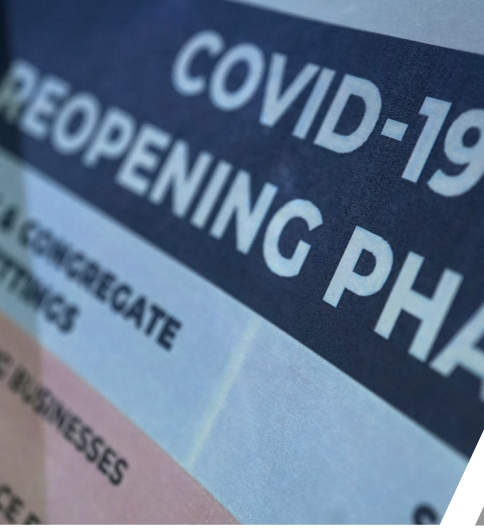

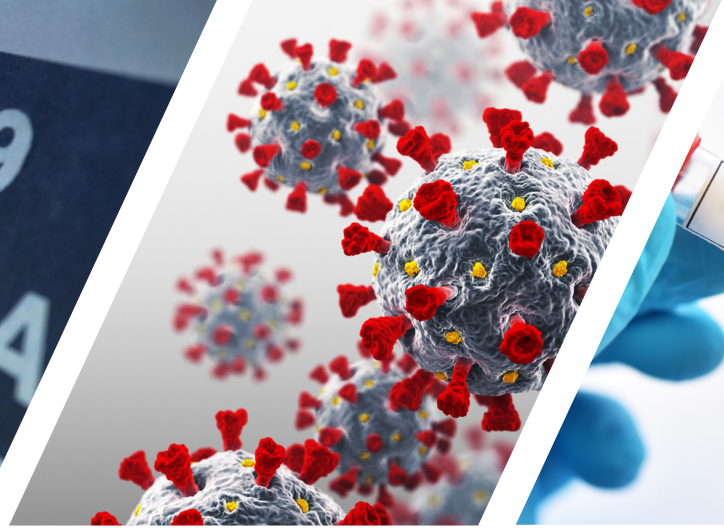

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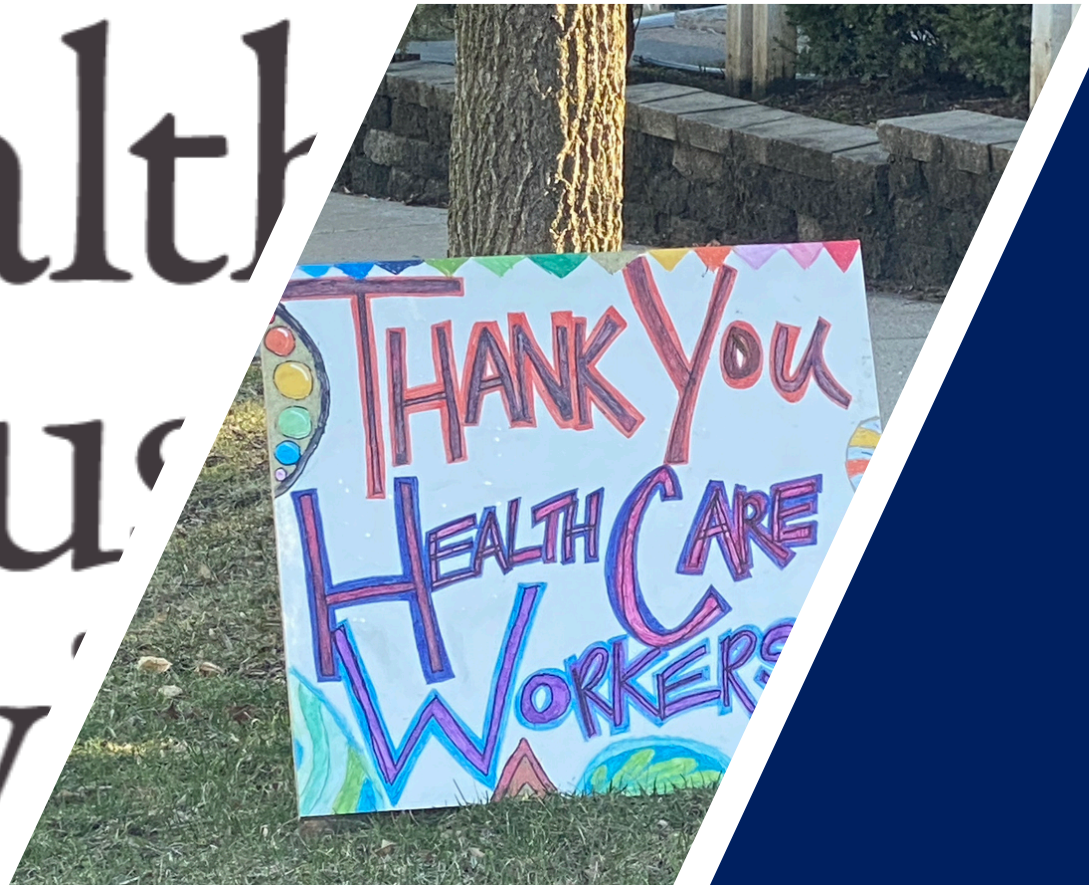


Issue # 225

Tuesday, December 1, 2020

COVID-19 Report

Highlights

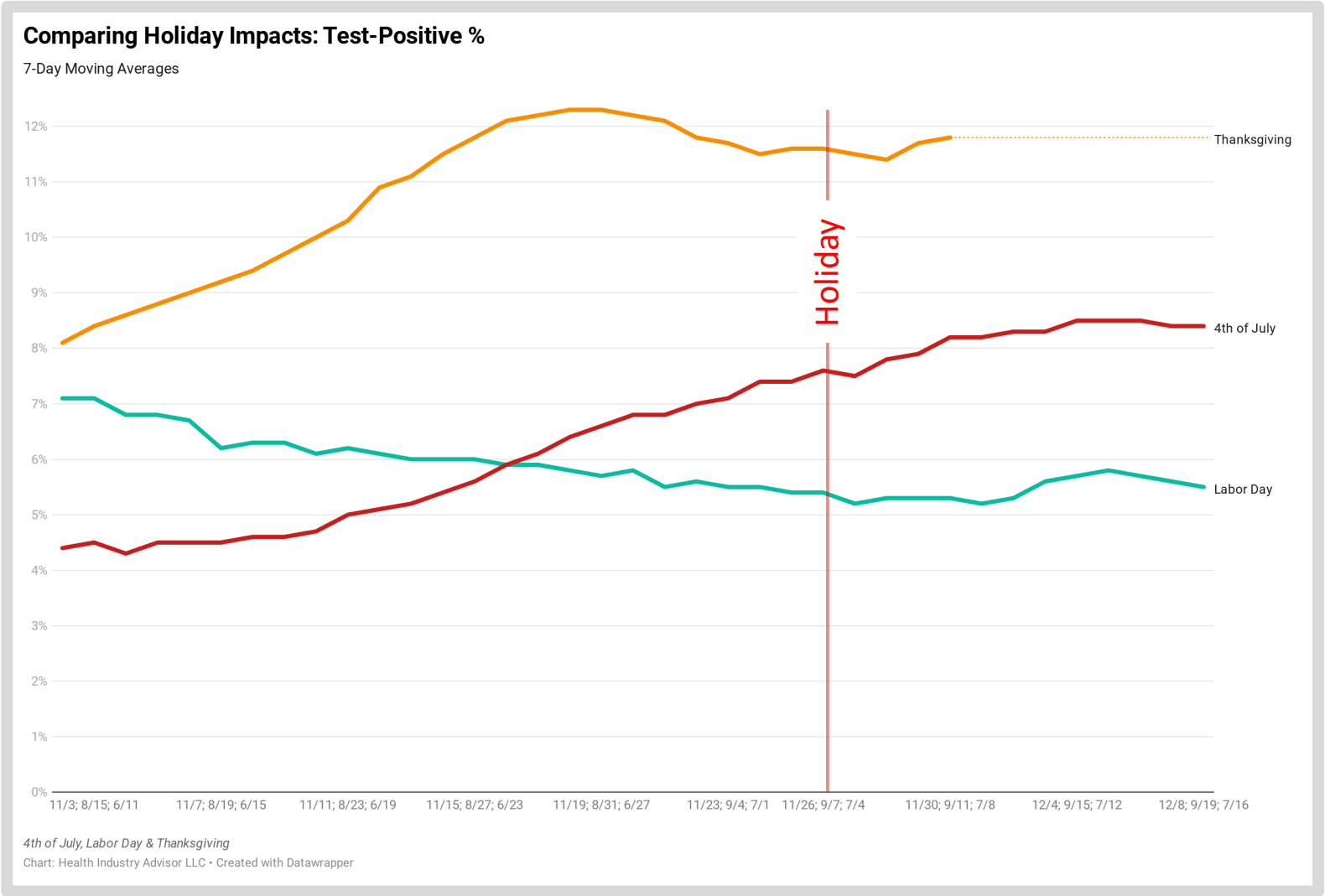
- **How do we compare going into and out of Thanksgiving, relative to earlier holidays?**
  - **The test-positive rate just prior to Thanksgiving was higher than it was prior to both the 4th of July and Labor Day. It had been declining prior to Thanksgiving, however, as it had prior to Labor Day (and continued to decline post-holiday)**. This rate was increasing prior to the 4th of July and continued to increase post-holiday
  - **New infections per million were significantly higher leading into Thanksgiving than leading into both Labor Day and the 4th of July**. **However, these detected cases seem to be, on average, less severe than during earlier holidays:**
    - The rate of hospitalizations for new Covid-19 cases was 30-40% lower leading into Thanksgiving than it was leading into Labor Day and Thanksgiving
    - The rate that hospitalized Covid-19 patients were in the ICU was 13-23% lower than it was the previous two holidays; the rate that hospitalized Covid-19 patients were on ventilators were 12-18% lower prior to Thanksgiving than these two prior holidays
    - **Leading into Thanksgiving, test volume was 2x what it was leading into Labor Day and another 33% greater than it was leading into the 4th of July**
  - **Prior to the 4th of July, new case growth had shown clear indication of easing, while prior to Labor Day, growth in new cases was increasing. These patterns continued after the holiday (there was a pause of a few days following Labor Day). Prior to Thanksgiving, new case growth had shown an even more pronounced and longer pattern of easing than it had prior to the 4th of July**
    - New case growth, on a same-day, prior week basis, showed signs of slowing during the second week of November and continued to slow right up to Thanksgiving eve
    - **Since Thanksgiving, new cases were flat on Friday compared to the previous Friday (when it might have expected to increase, due to delayed Thanksgiving case reporting). On Saturday, Sunday and Monday, new cases were lower each day than the comparable day one week earlier**

- **We remain concerned about the burden that Covid-19 is placing on healthcare resources:**
  - Covid-19 inpatient census continues to set new highs each day
  - **These patients now occupy 30.6% of all inpatient beds in the U.S. In Nevada and Connecticut, Covid-19 patients occupy 60+% of inpatients beds - in both cases, 12-13% more than one week ago**
  - **The hospitalization rate for new cases - although low compared to earlier in the pandemic - has now increased over the past eleven days**
  - **The % of hospitalized patients on ventilators - also low compared to earlier in the pandemic - has increased significantly over the past fifteen days**
  - The mild flu season (thus far) may ease some of this burden on healthcare resources. In typical years, flu cases occupy a high percentage of inpatient beds throughout the winter
- **Overall, trends in new cases in the United States and worldwide are showing improvement:**
  - **Worldwide, the week-over-week change in new cases has been declining since late-October. In the U.S., this rate has been declining for two-and-one-half weeks (preceding the impact of delayed reporting around the Thanksgiving holiday)**
  - Several European countries that had experienced high infection rates early in November, including Belgium, Czechia, France and Switzerland, have experienced significant declines in this rate over the past two weeks
- Deaths with the coronavirus in the U.S have been and will continue to be of great concern:
  - **The 7-day average deaths had been spiking from the beginning of October until Thanksgiving**. This rate eased for several days post-Thanksgiving but, more than likely due to reporting delays. It increased again yesterday
  - **This rate should be expected to continue increasing for at least the next few weeks, until some weeks after new cases are in consistent decline**

Comparing Holiday Impacts:

Heading into the Thanksgiving holiday, the U.S. was experiencing significantly higher test-positive rates than heading into the 4th of July and Labor Day holidays

This rate had been declining prior to the 4th of July and had begun to decline prior to Thansgiving



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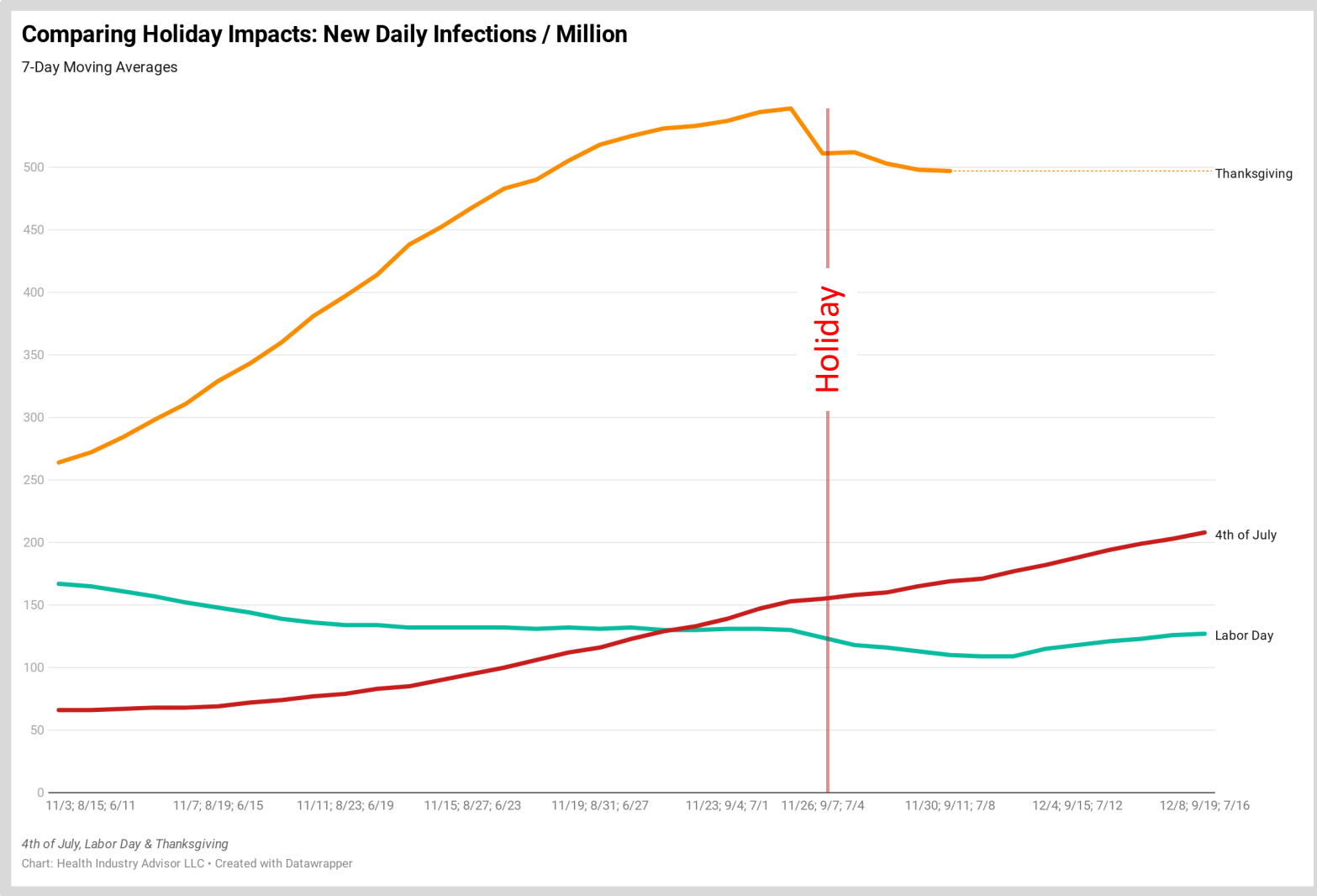
Comparing Holiday Impacts:

Entering the Thanksgiving holiday the U.S. had been experiencing dramatically higher new infection rates than leading into the 4th of July and Labor Day holidays

This rate was increasing leading into the 4th of July and continued increasing following the holiday

This rate was declining leading into Labor Day; continued to decline for a short period afterward before beginning to increase



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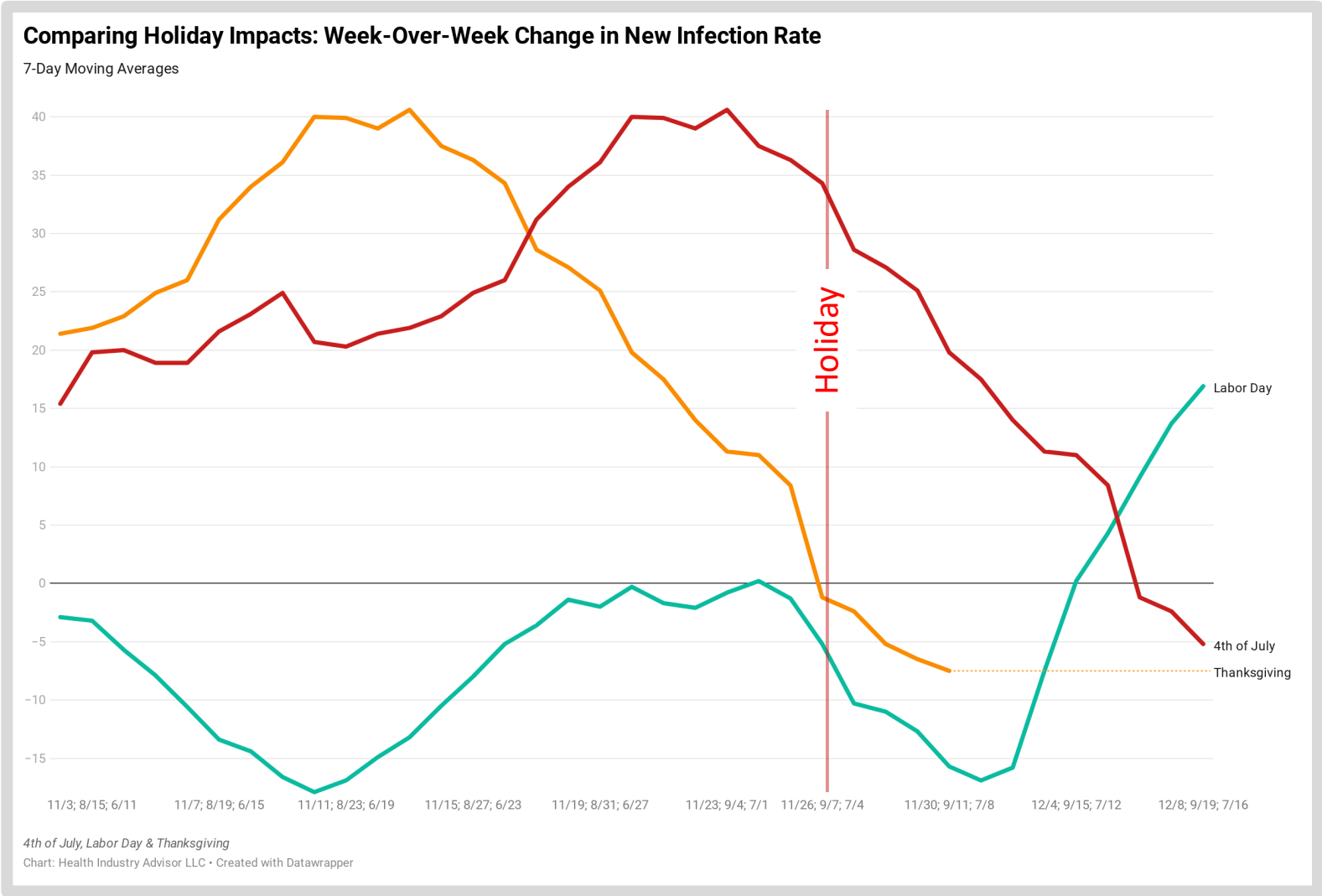
Comparing Holiday Impacts:

Prior to Labor Day new cases were beginning to increase on a week-over-week basis ; the Holiday paused this increase only temporarily

Prior to the 4th of July, new cases were beginning to decline on a week-over-week basis; the holiday did not alter this pattern

Prior to Thanksgiving, this metric was further along in the pattern shown prior to the 4th of July (Note that it was already near zero growth prior to Thanksgiving; it did not reach this point until two weeks after the 4th of July)



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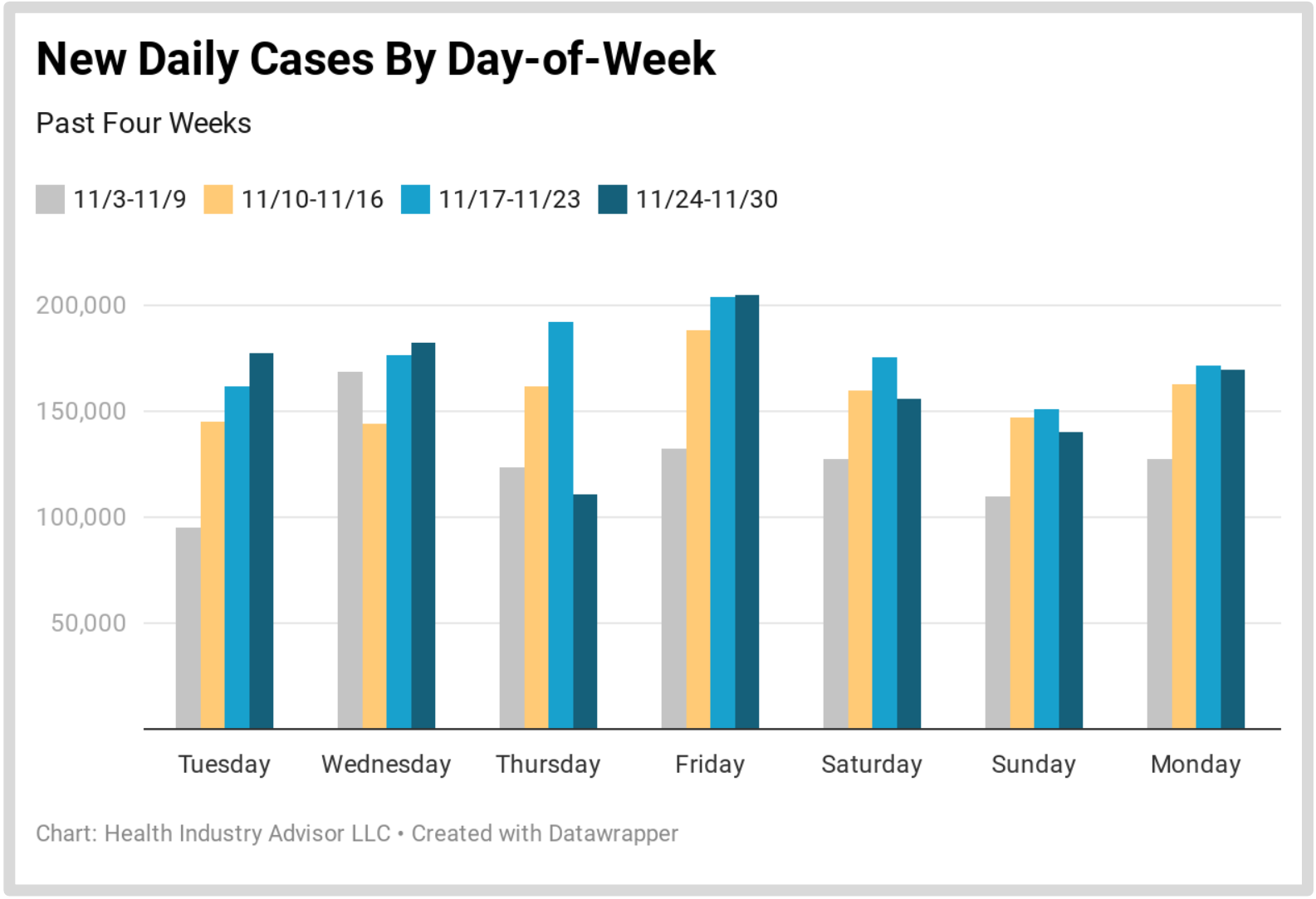
Observing the Holiday Impact on New Cases By Day-of-Week:

On a same-day, prior-week basis, new cases increased sharply from November 3-9 to November 10-16; then began to slow late during the week of November 17-23

Using this measure, growth in new cases slowed further leading up to Thanksgiving

In the past three days, new cases are lower than on the comparable day-of-week one week ago



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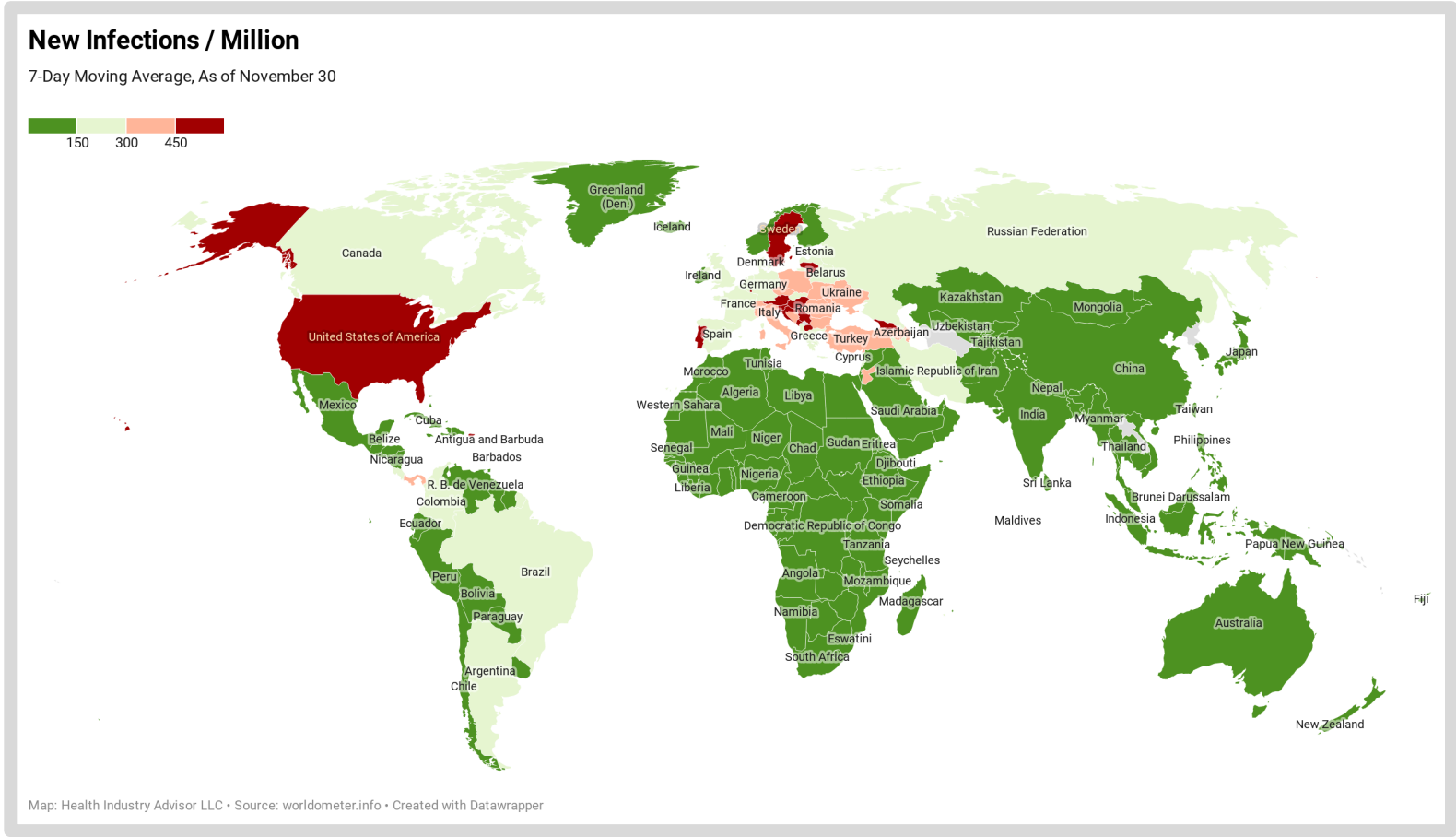
The infection spread continues to be a U.S. and European issue - although many parts of Europe are cooling off

* - 7-day moving average basis



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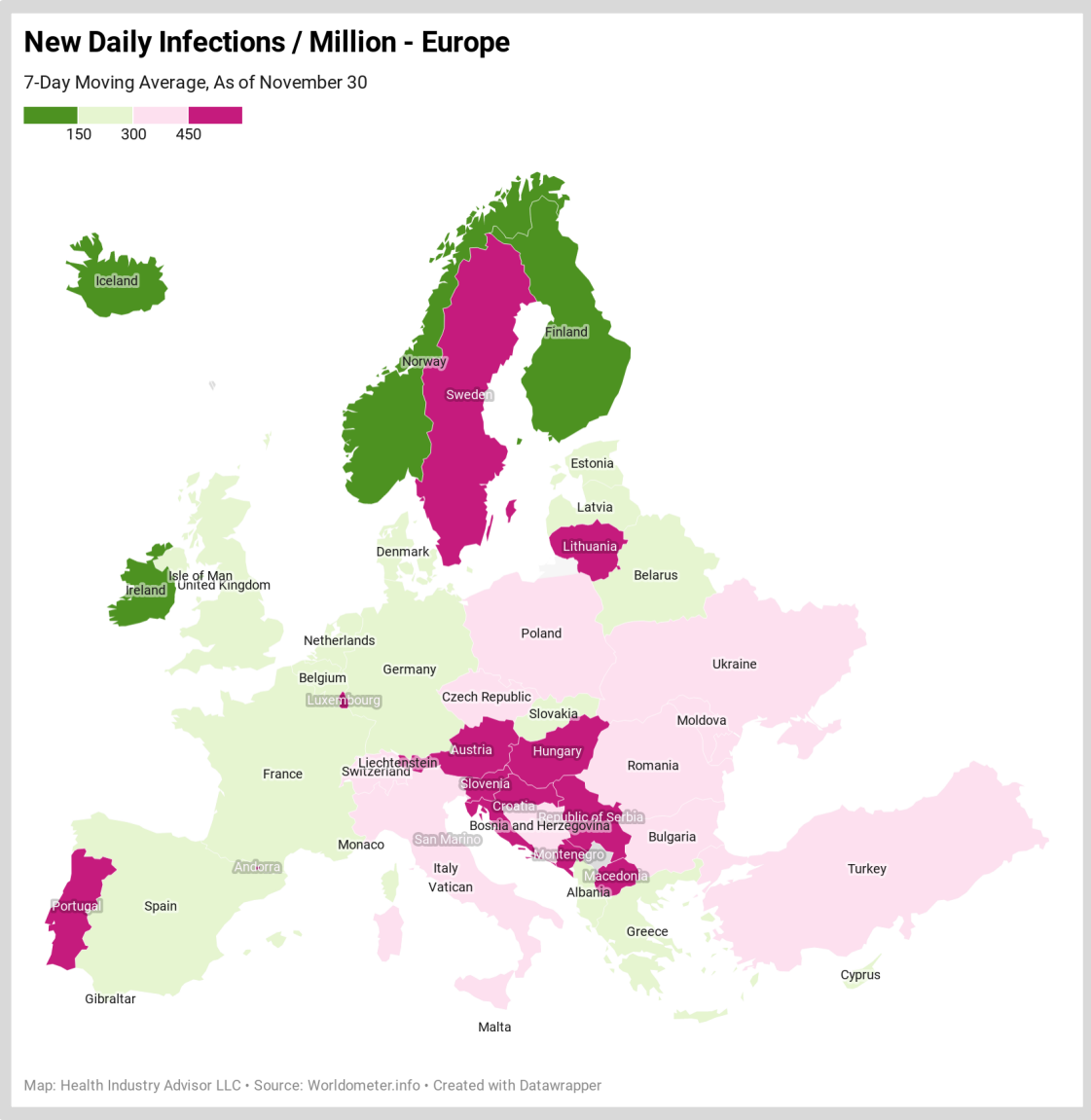
While much of Europe “cools’ somewhat, Austria, Croatia, Hungary Liechtenstein, Lithuania Luxembourg, Macedonia Montenegro, Portugal, San Marino, Serbia and Slovenia are still experiencing realtively high new infection rates

* - 7-day moving average basis



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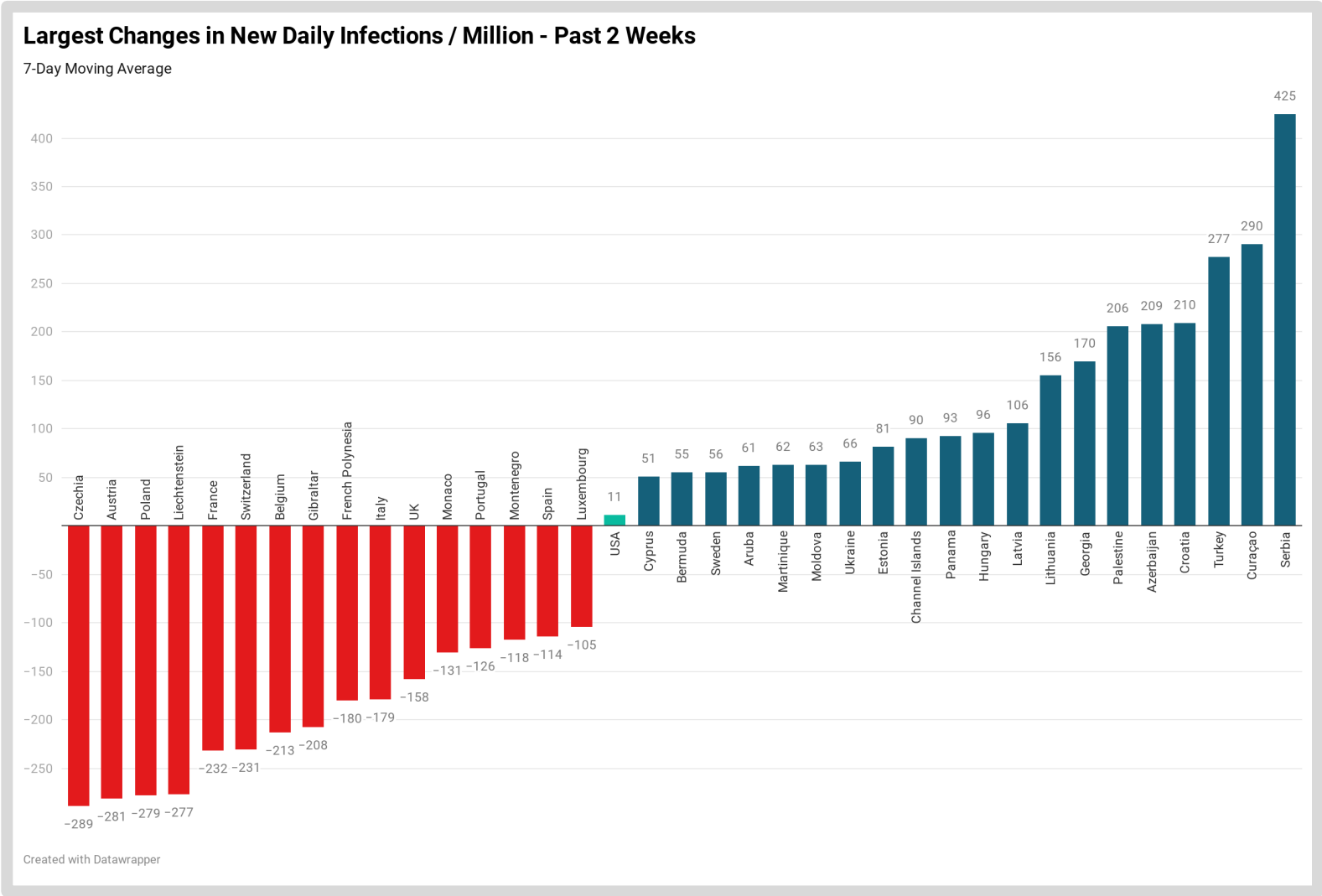
Where in the world are infection rates increasing the most? Declining the most?

Over the past two weeks, Czechia, Austria, Poland and Lichtenstein experienced the sharpest declines in infection rates

Serbia, Curacao and Turkey experienced the sharpest increases

United States experienced a modest increase during this period



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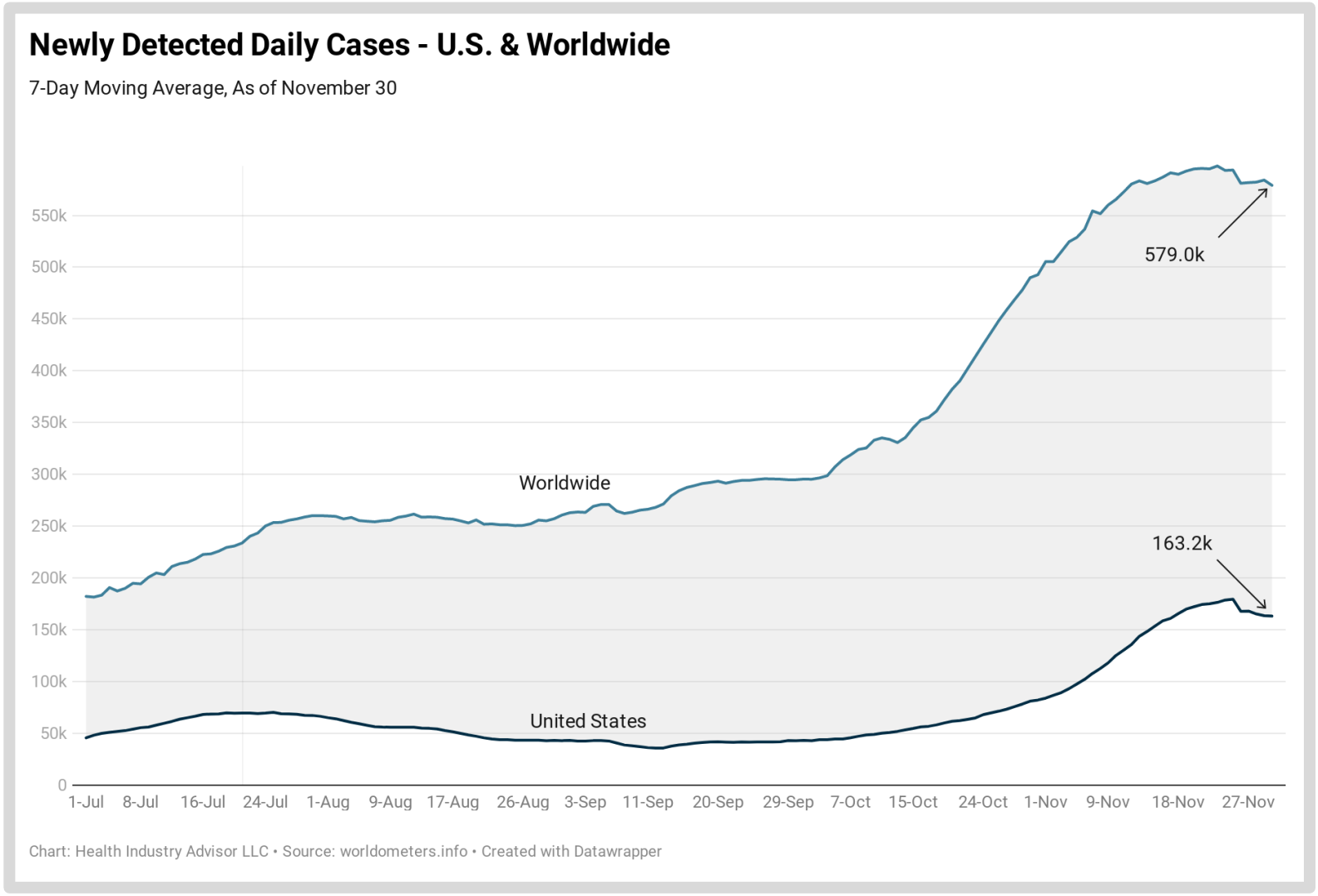
The Thanksgiving holiday caused a decline in new cases, both worldwide and in the United States

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 ~579k new cases worldwide each day, as of Monday

The United States is averaging ~163.2k new cases each day

* - 7-day moving average basis



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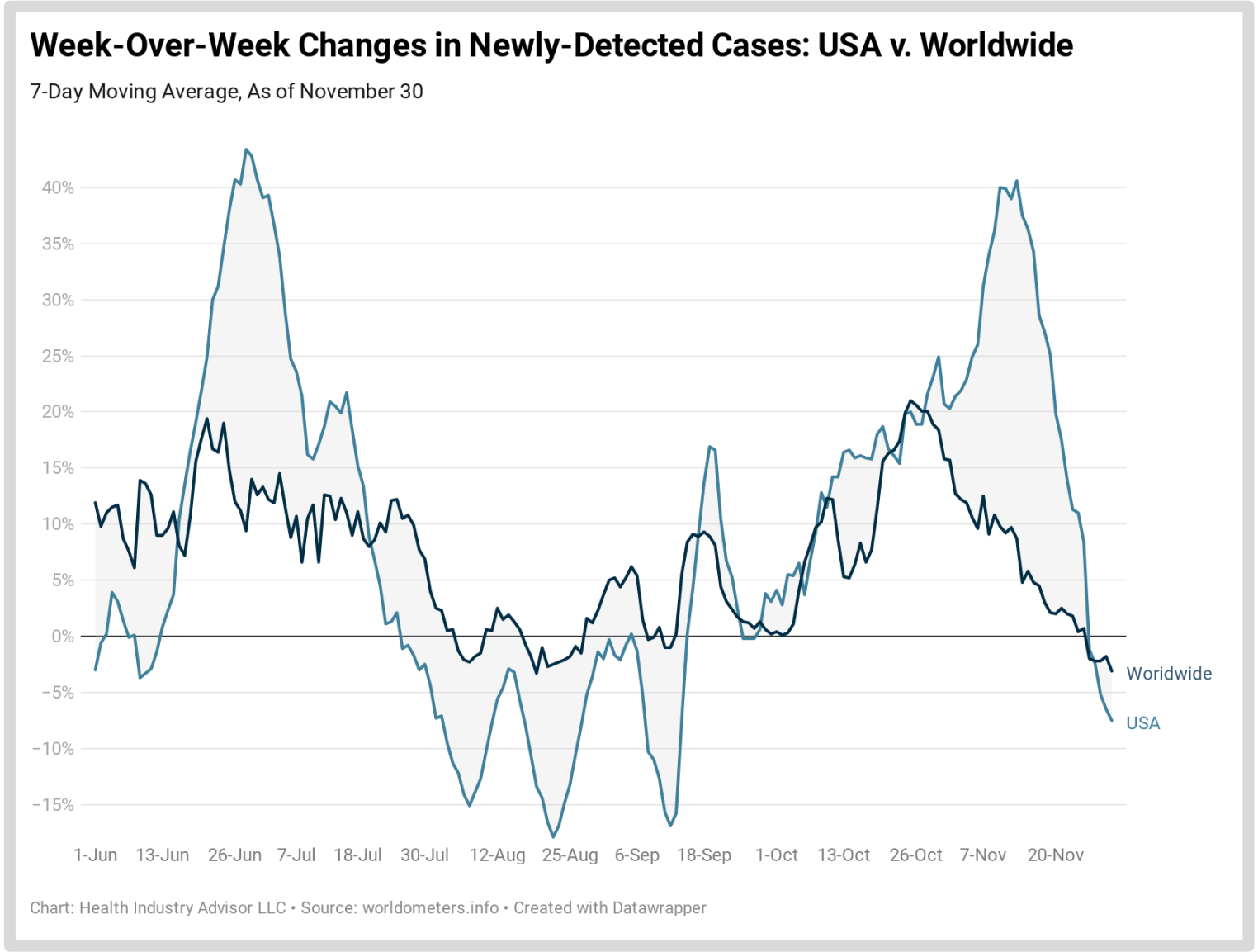
The rate of increase in new cases, both worldwide and in the United States, has been easing for an extended period

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



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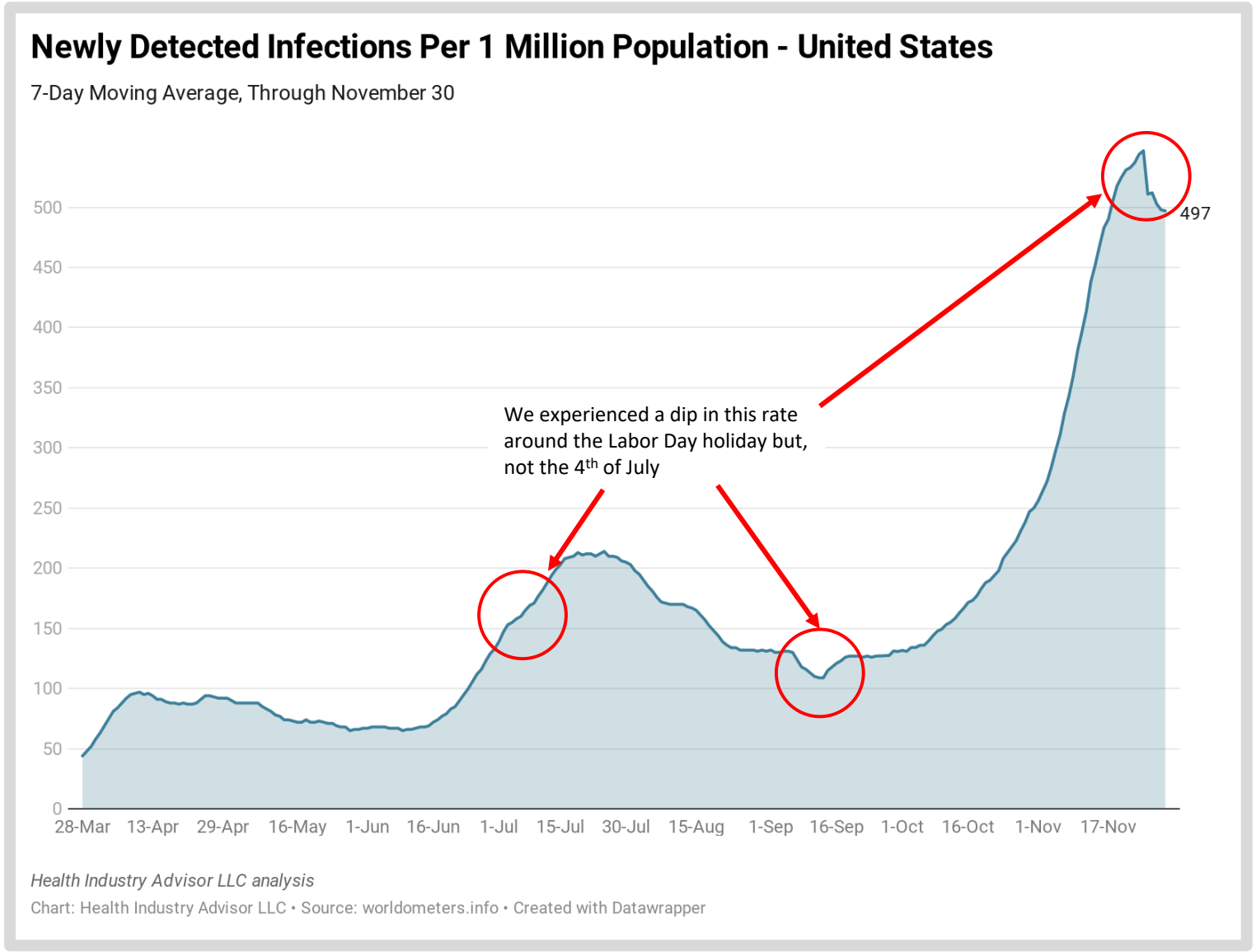
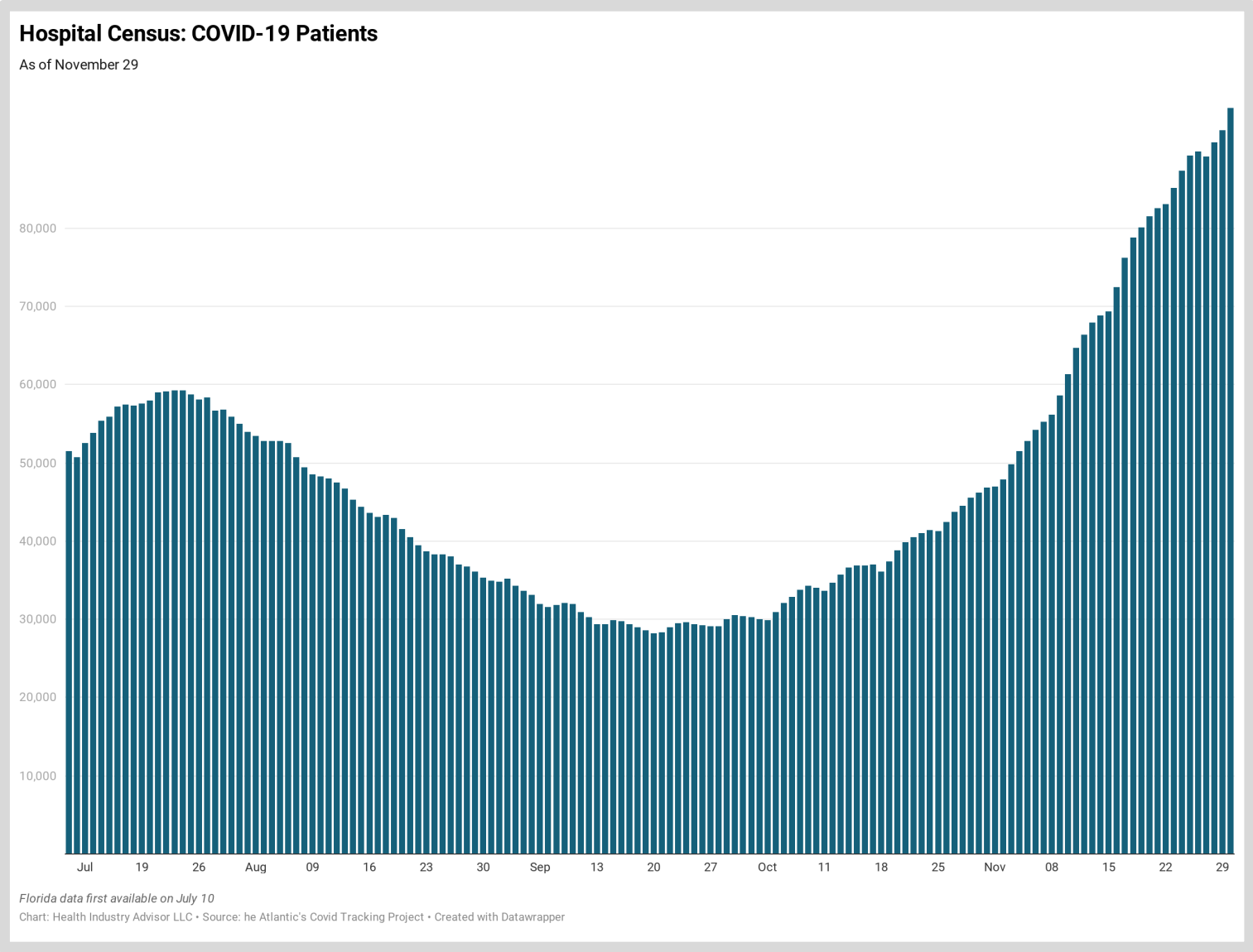
The rate of new infections per capita* in the U.S. may be nearing a plateau – although increased social gathering around the Thanksgiving holiday may disrupt the current trends

* - 7-day moving average basis



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

The mild flu season, however, may be helping somewhat. Typically flu cases place a heavy strain on hospital beds in the Winter



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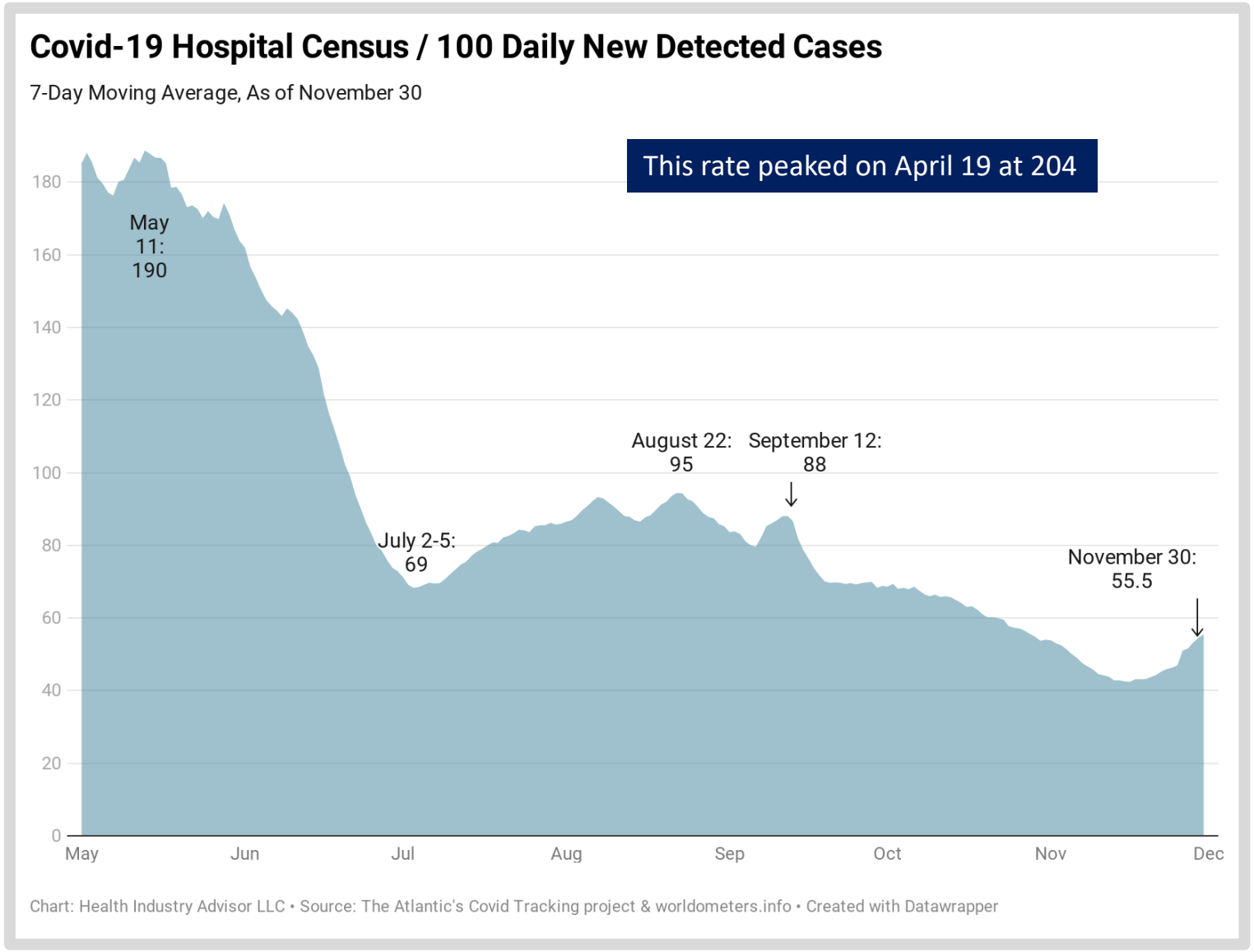
The average Covid-19 census per 100 new cases increased over the past nine days; some but, not all – of this is likely due to slowed case reporting around the Thanksgiving holiday



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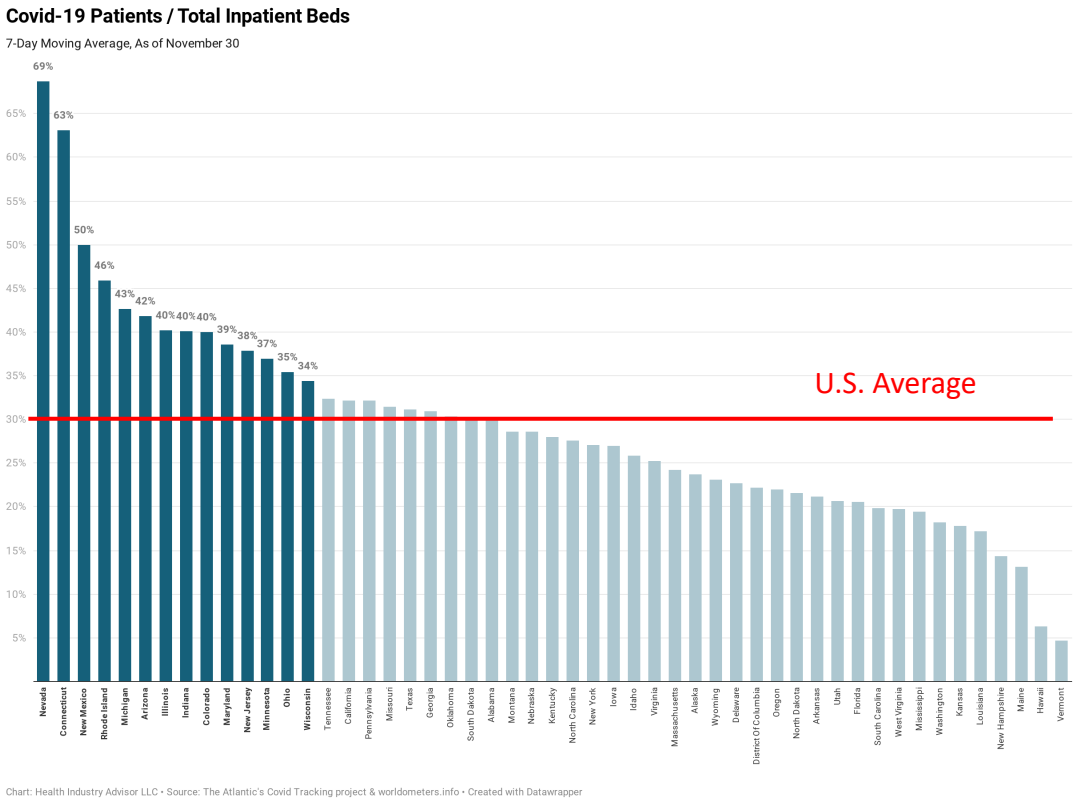
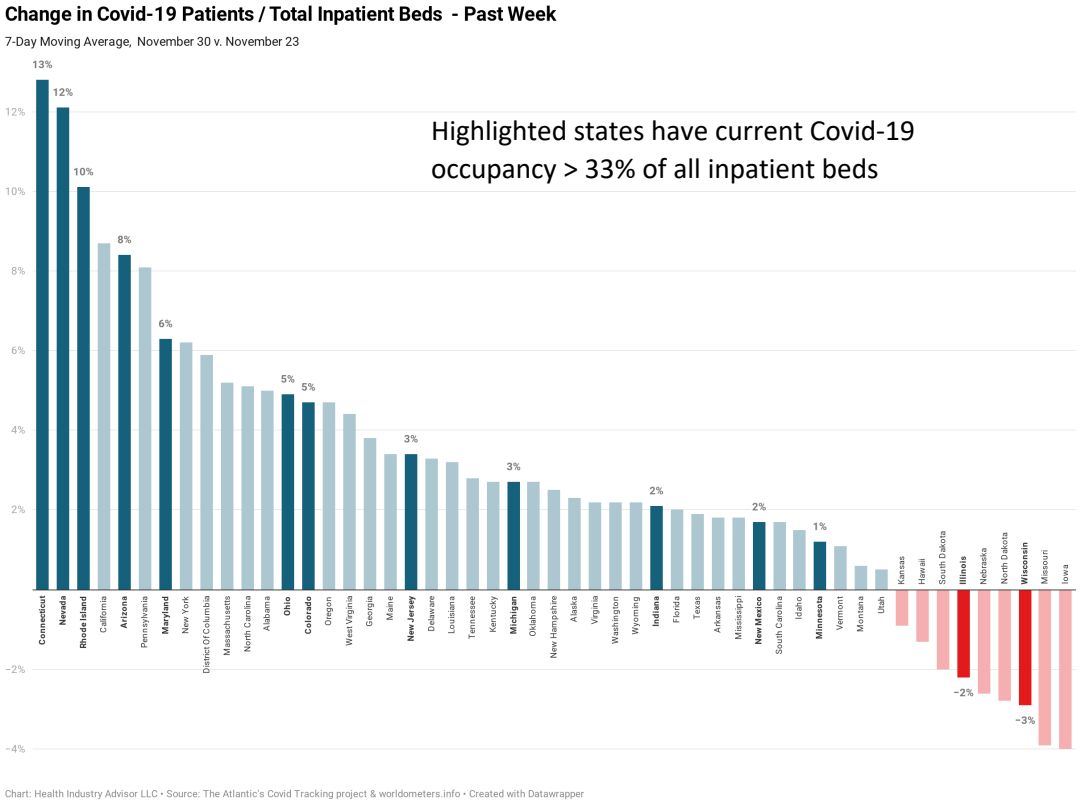
In Nevada, 69% of all inpatient beds are occupied by Covid-19 patients; In Connecticut, its 63%; and in New Mexico, its 50%
In Arizona, Colorado, Illinois, Indiana, Maryland, Michigan, Minnesota, New Jersey, Ohio Rhode Island and Wisconsin it is more than 1/3 of inpatient beds. For the U.S. overall, its 30.6%

The challenge is increasing in Connecticut, Nevada, Rhode Island and Arizona; its easing slightly in Wisconsin and Illinois



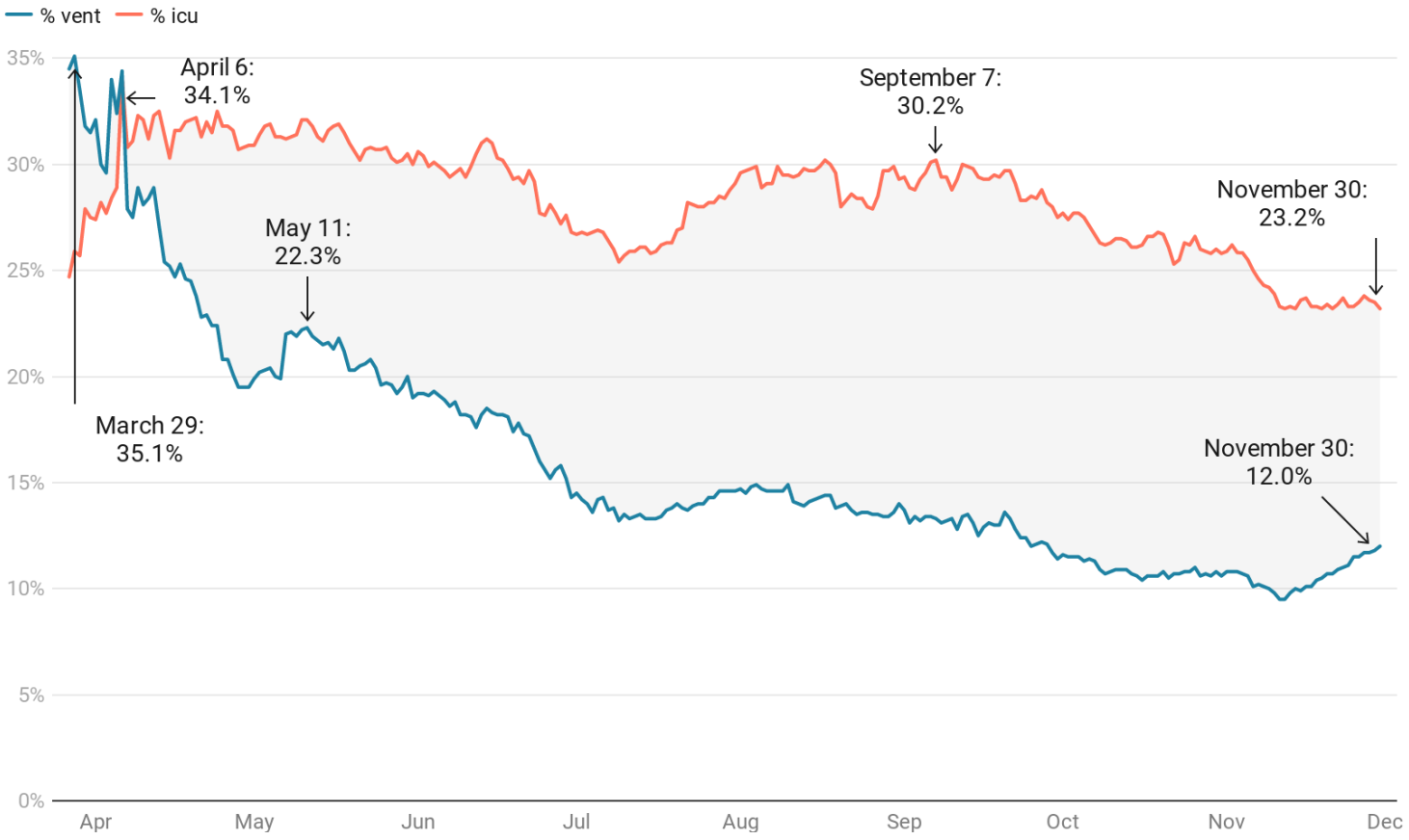


The likelihood of a hospitalized Covid-19 patient would require ICU care has been lower throughout November than at any time during the pandemic

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 30



Health Industry Advisor LLC analysis

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

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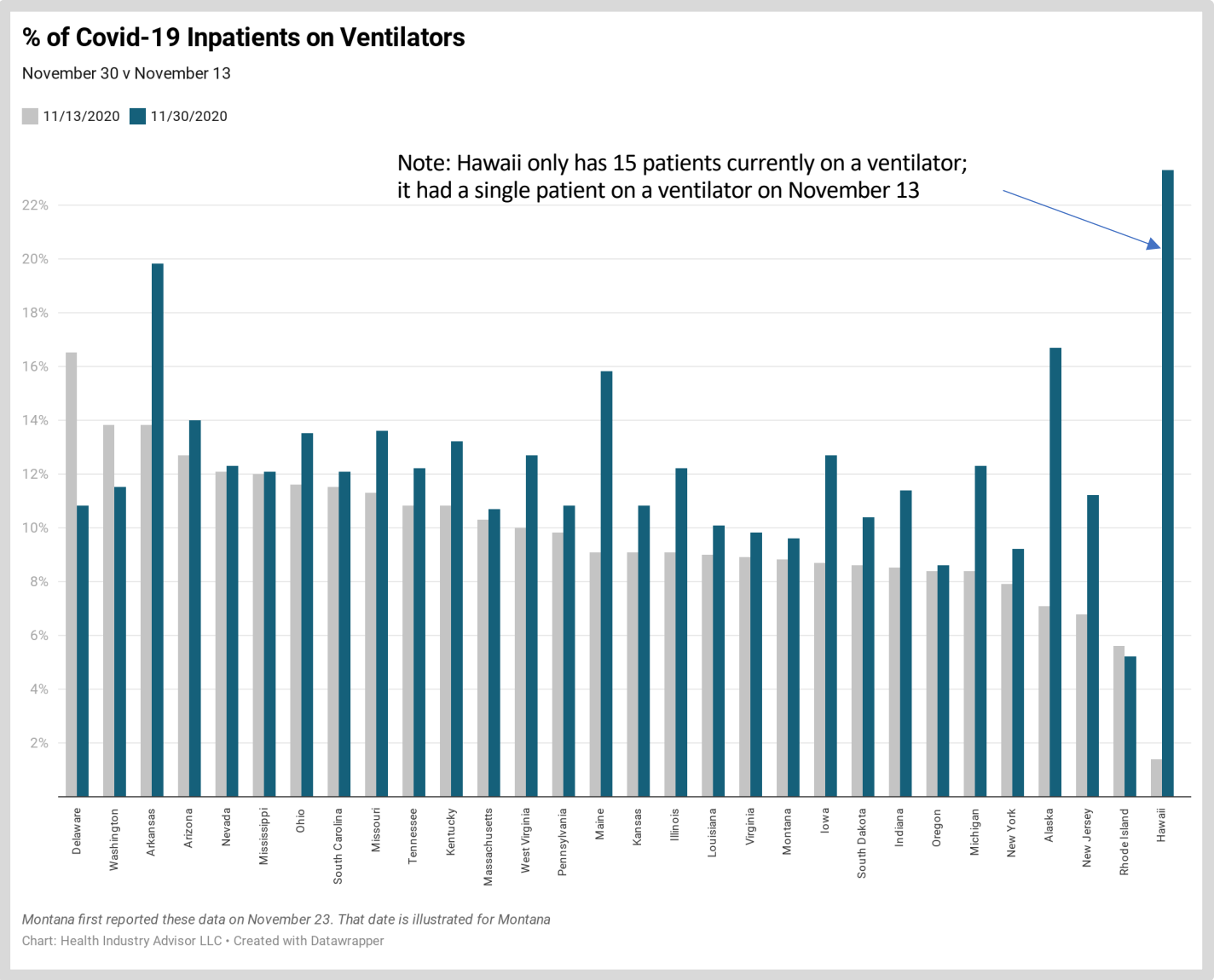
Where are we experiencing significant changes in the % of Covid-19 patients on ventilators?

Many states have experienced a modest increase since November 13 (the date of a recent low in US rate overall)

Alaska, Arkansas, Maine, Illinois, Iowa, Indiana, Michigan and New Jersey have seen significant increases in this rate during this time



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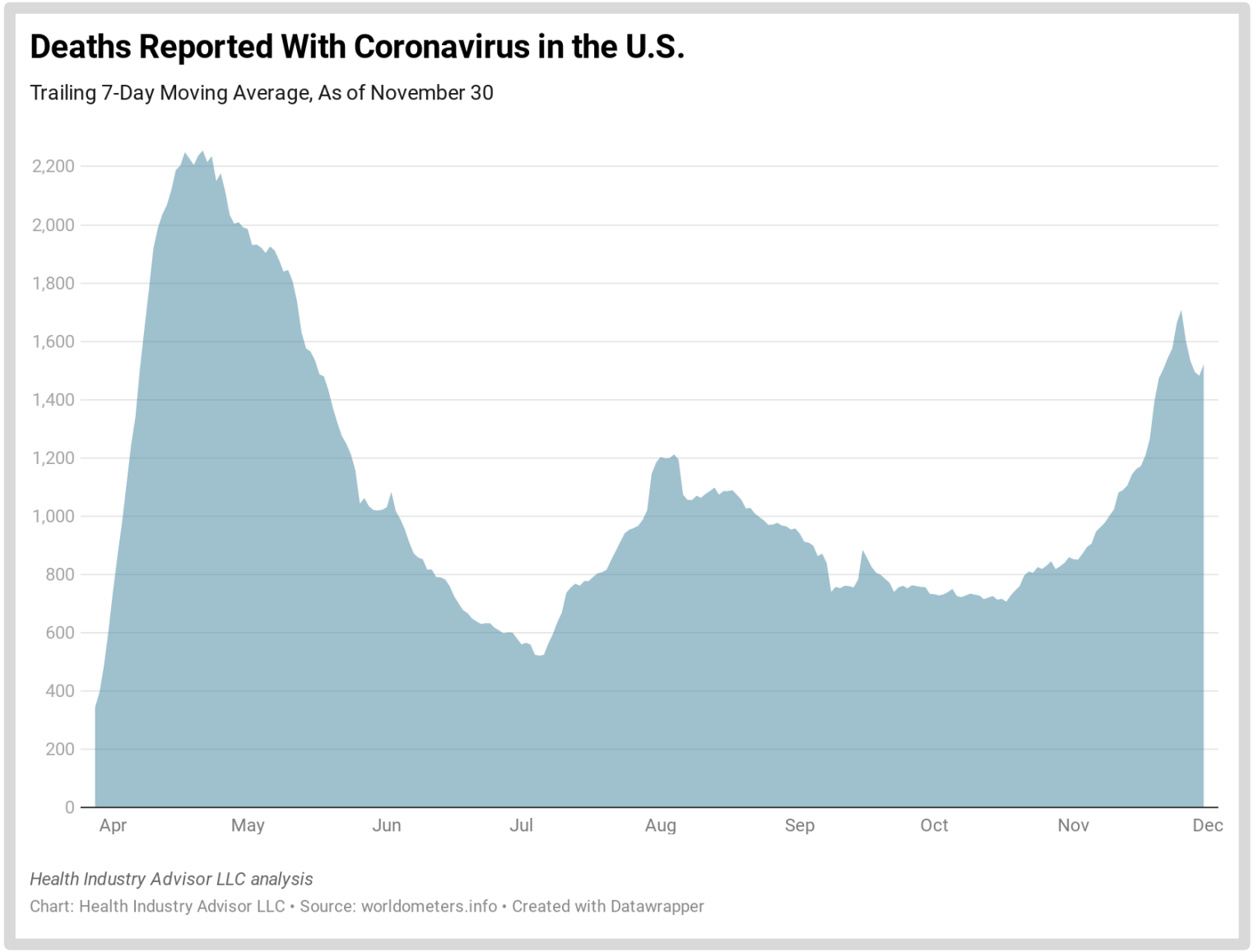
After a relative respite in the 7-day average deaths since Thanksgiving Day, these increased again on Monday



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The % of ER visits for COVID-19-like illnesses (CLI) seems to have waned since the week before Thanksgiving

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 27

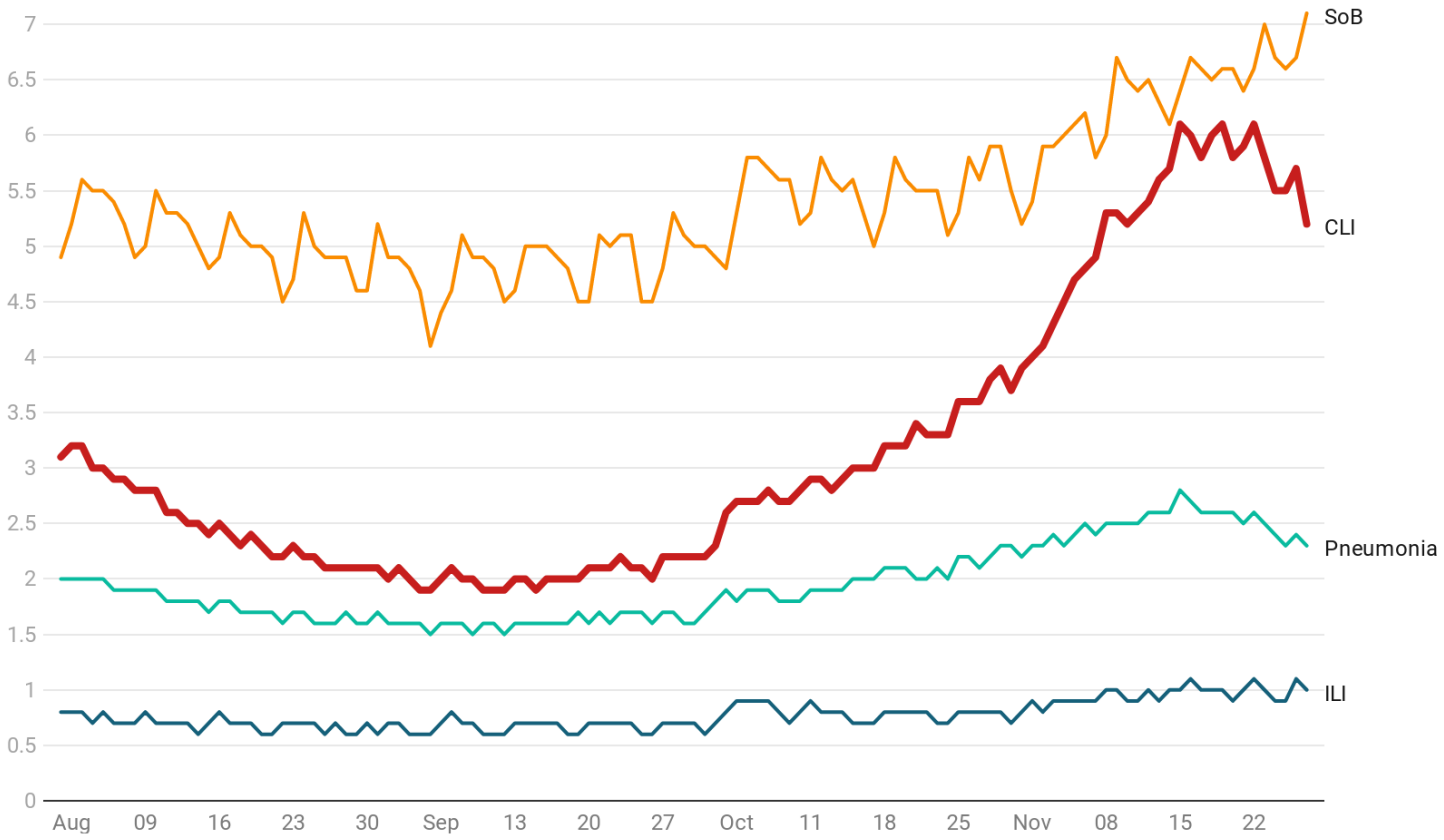

Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

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