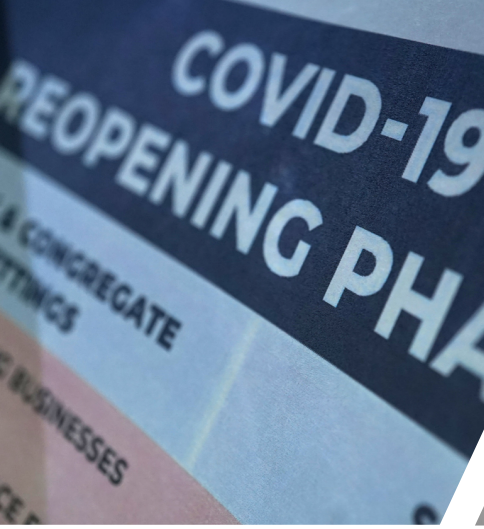

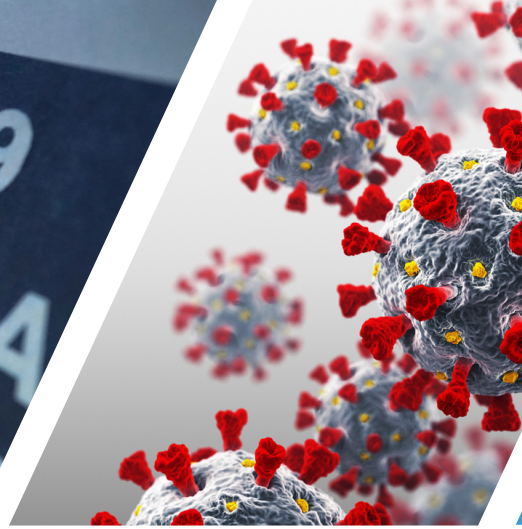

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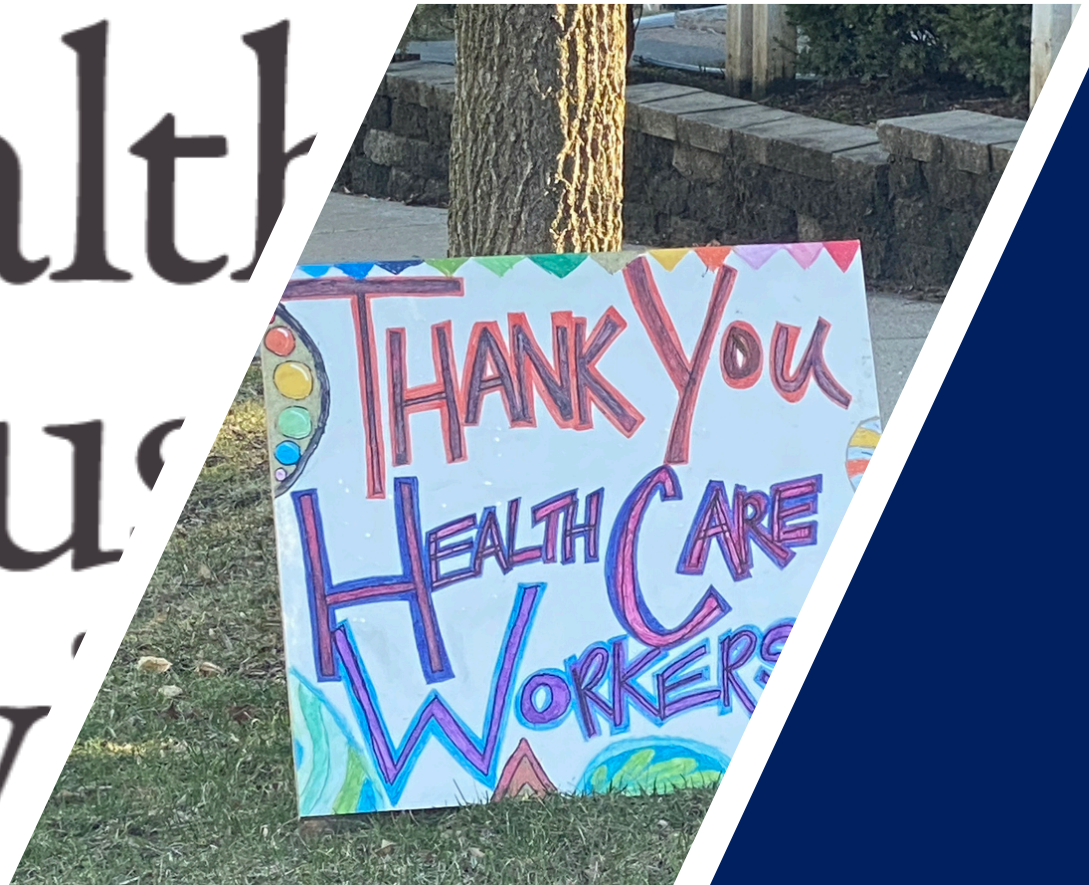


Issue # 229

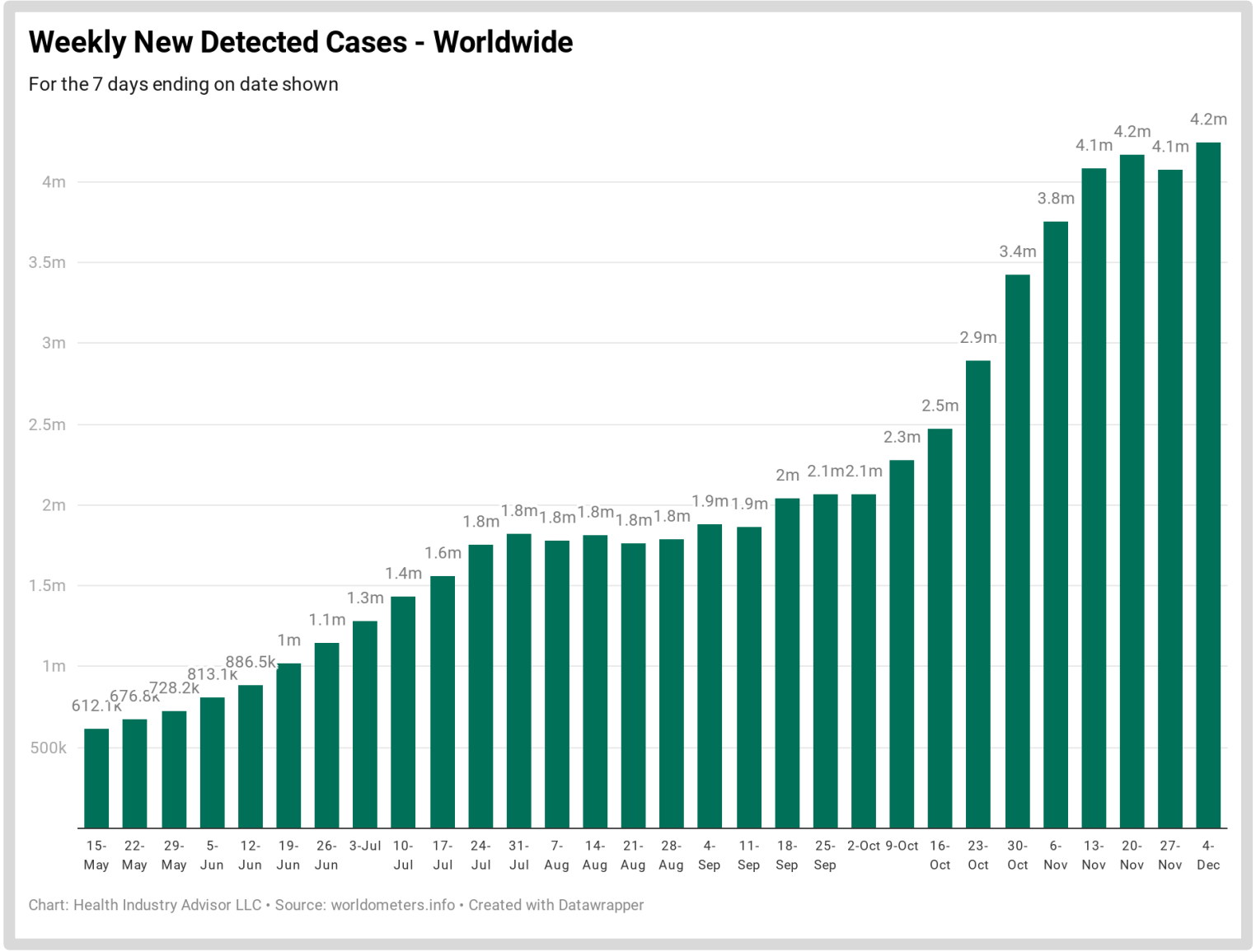
Saturday, December 5, 2020

COVID-19 Report

Highlights

- Starting with hospitalizations, as this is of significant near-term concern, and these data do not seem to be impacted by reporting interruptions
  - **Covid-19 hospitalizations continued to rise, averaging nearly 97,000 patients each day this past week and occupying 31% of all inpatient beds for the week**
  - **There were an average of nearly 19,000 Covid-19 patients in the ICU each day - this rate has increased ten consecutive weeks, tripling during that time**
  - **There were an average of 6,500 Covid-19 patients on ventilators each day - more than double the number four weeks ago**
  - Although the number of inpatients are increasing, t**he rate of growth in inpatient days has been reduced by 1/2 in the last two weeks**
  - The % of Covid-19 patients in the ICU has remained lower throughout November and December than it was at any other time during the pandemic
  - **The % of Covid-19 patients on ventilators, however, has increased each of the past three weeks**. Nevertheless, the current rate remains markedly lower than it was early in the pandemic
  - **The rate of hospital days-to-new cases was stable week-over-week - after rising each of the three prior weeks**
- Testing -both volumes and test-positive rates - show interesting pre- and post-Thanksgiving patterns:
  - **Reported test volumes were high and increasing up to the holiday, then dropped significantly until catching-up on Thursday and even more so on Friday**
  - **Yesterday's volume (2.4 million tests) far exceeded the volume reported on any day since the pandemic began (46% greater than any other single day) - suggesting that the states were finally catching-up from the reporting interruptions**
    - **the average volume from Thanksgiving through Wednesday was about 25% lower than recent averages**
    - **the average volume on Thursday was consistent with high levels reported pre-Thanksgiving**
  - **Coincident with the return to normal test volumes on Thursday and Friday, the test-positive rate for these days was lower than it was both pre-Thanksgiving and immediately post-Thanksgiving**
    - During the eight-day period starting on Thanksgiving, when test volumes were low, test-positive rates ran higher than the preceding days. Then, **with the "catch-up" reporting, this test-positive rate yesterday fell to its lowest single-day rate since the beginning of November**
    - **For the combined two-week period (attempting to filter-out any effect of these reporting interruptions), the test-positive rate dropped slightly, to 11.9% from 12.2% the week prior to Thanksgiving**
- **Growth in new cases was slowing pre-Thanksgiving; it appears that may still be true as of yesterday - although we are only now entering the period when increased holiday-social interaction could lead to a spike in new cases**
  - Ignoring reporting interruptions, new cases declined during Thanksgiving week, before rebounding this week. We know, however, that at least eighteen states did not report on Thanksgiving Day, making these week-over-week comparisons suspect
  - Prior to Thanksgiving, growth in new cases had eased since early November (new cases were increasing, but at an increasingly slower rate). This slowdown may have continued through the past two weeks, if we consider them together: **there were 285k more new cases during the 2nd week of November than the first week; 200k more the third week than the 2nd week but, an average of only 50k more each week the past two weeks**
- Deaths with the coronavirus are rising and will likely continue to do so for at least the next few weeks
  - **For the second consecutive week, more than 10,000 Americans died with coronavirus**
  - **The weekly death total has now risen for six consecutive weeks** (albeit, this week's increase was much more modest than in recent weeks)
  - The case fatality rate - deaths per new case, with a two-week lag - however, has declined since late-September and is as low as it has been at any time during the pandemic

There were 4.2 million newly detected cases worldwide last week, up slightly from Thanksgiving week and consistent with the preceding week



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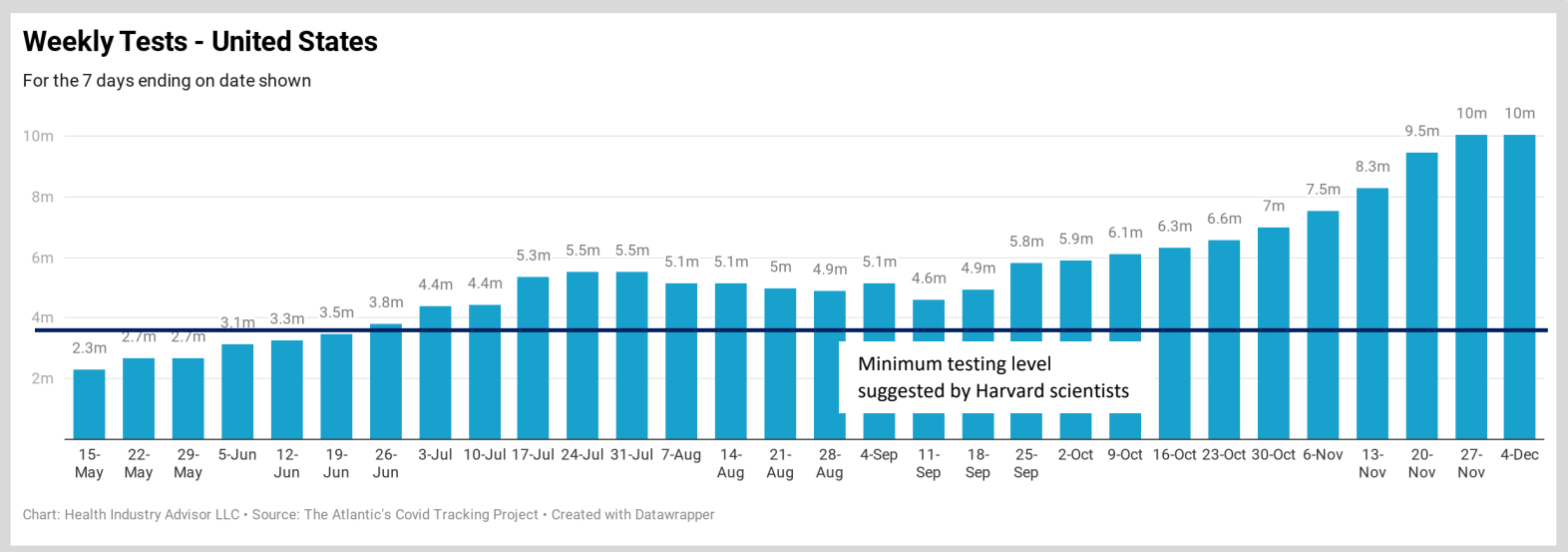
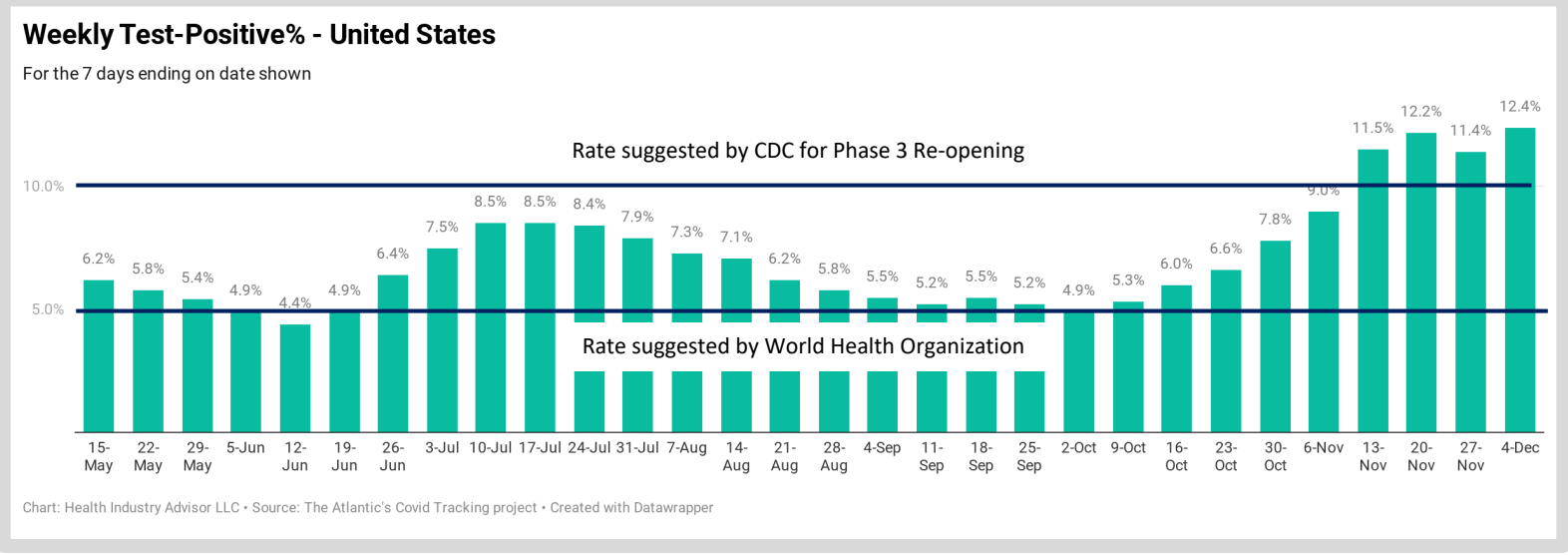
10 million tests were conducted for the second consecutive week – aided by more than 2.4M tests reported on Friday alone – have we caught up from the Thanksgiving-induced interruption?

Testing has doubled in the last eleven weeks

Test-positive rate increased again last week – after declining during Thanksgiving week





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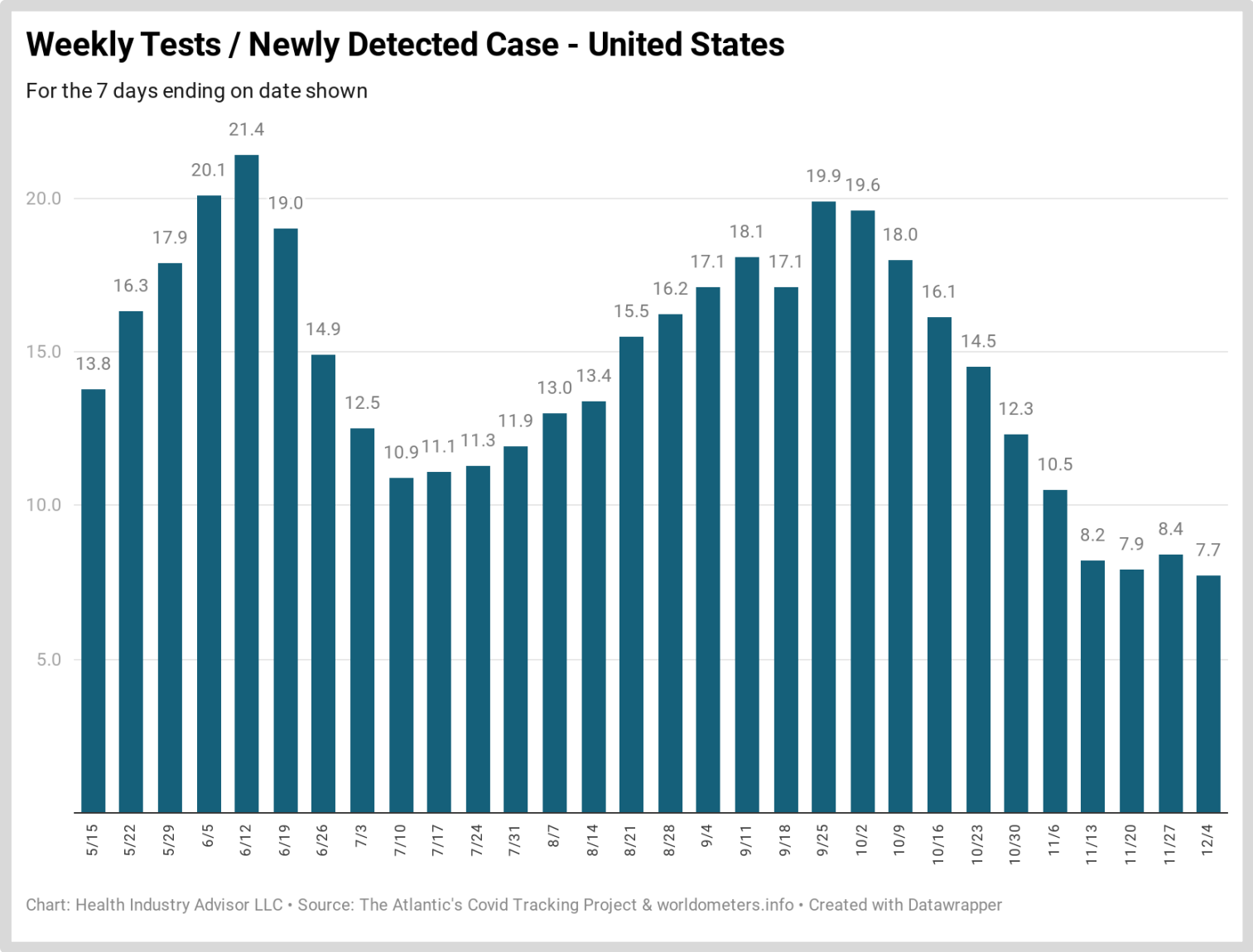
The ratio of tests performed to new cases detected declined last week - the ninth time in the last ten weeks

The higher this ratio, the more adequate testing is at identifying spread; a low measure suggests that testing isn't keeping pace



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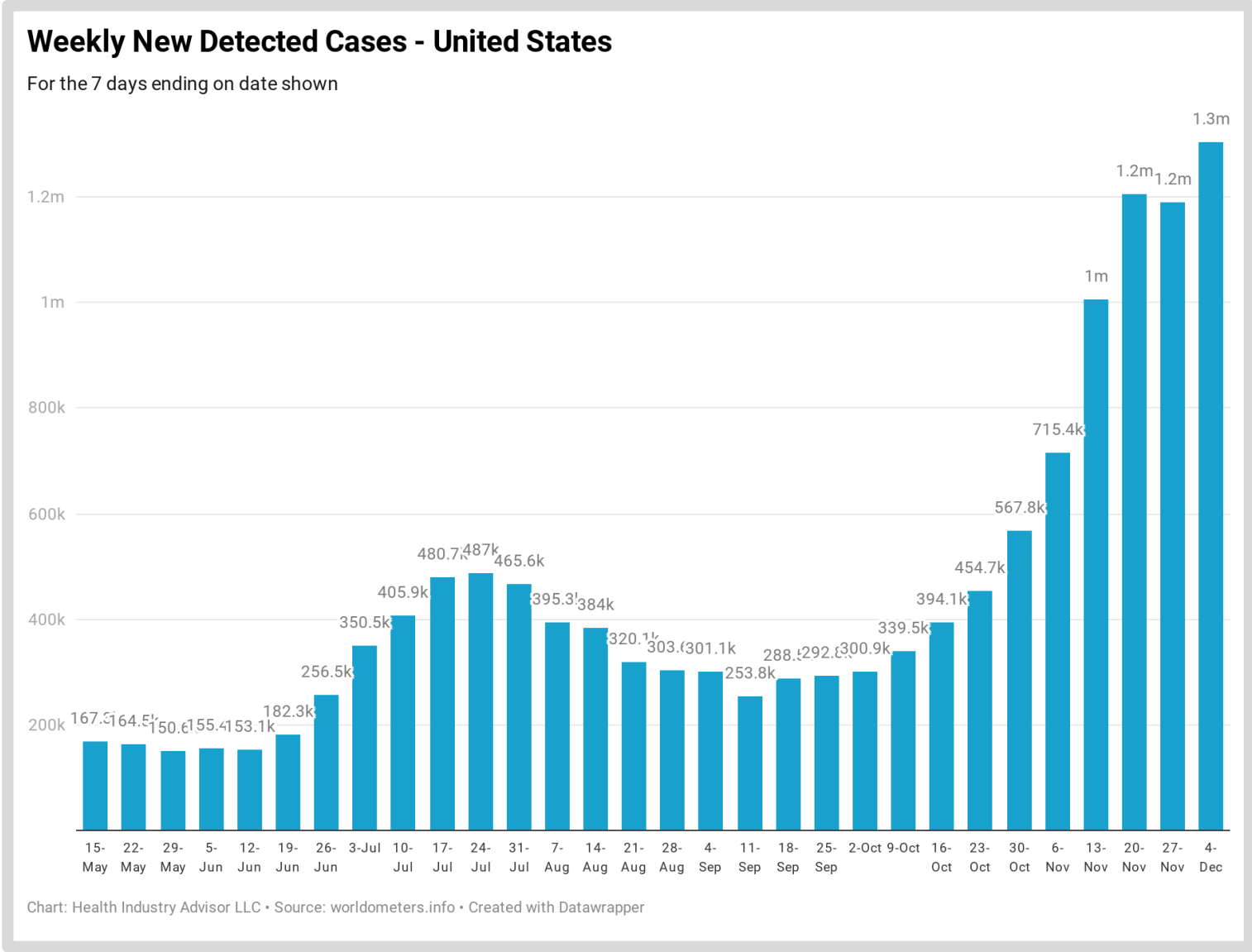
Thanksgiving reporting-interruption impact?

Newly detected cases increased again last week – the eleventh time in the past twelve weeks – Thanksgiving week being the only exception

1.3M new cases were detected in the past seven days



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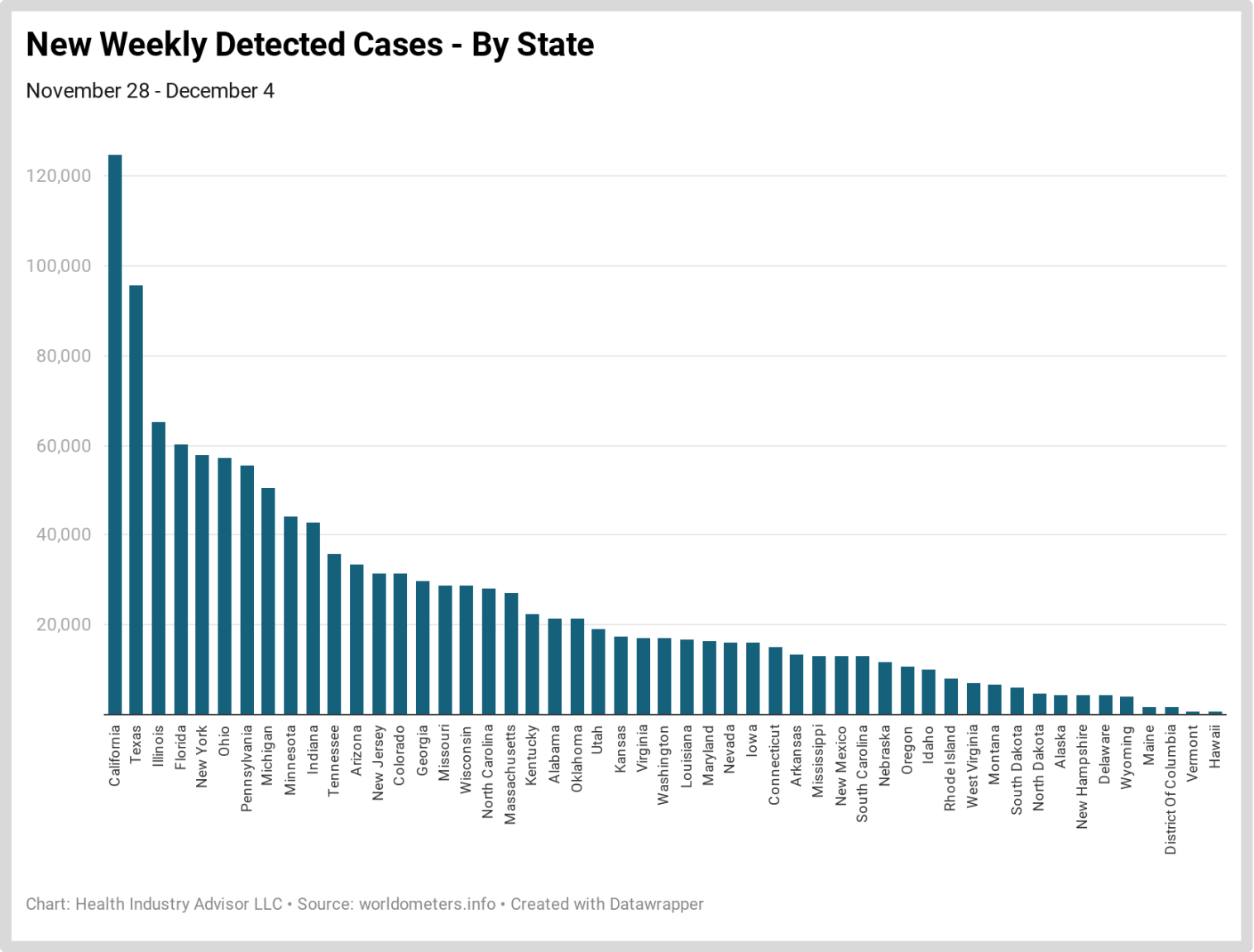
California and Texas recorded the highest number of newly detected cases over the past seven days – these two states alone accounted for 210k of the 1.3M new cases in the U.S. over the past seven days



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California experienced the largest increase in new cases relative to the prior week, followed by Texas, New York , Tennessee and Massachusetts

These five states accounted for 63% of the week-over-week increase in new cases

Week-Over-Week Change In Newly Detected Cases - By State

November 28-December 4 v. November 21-27

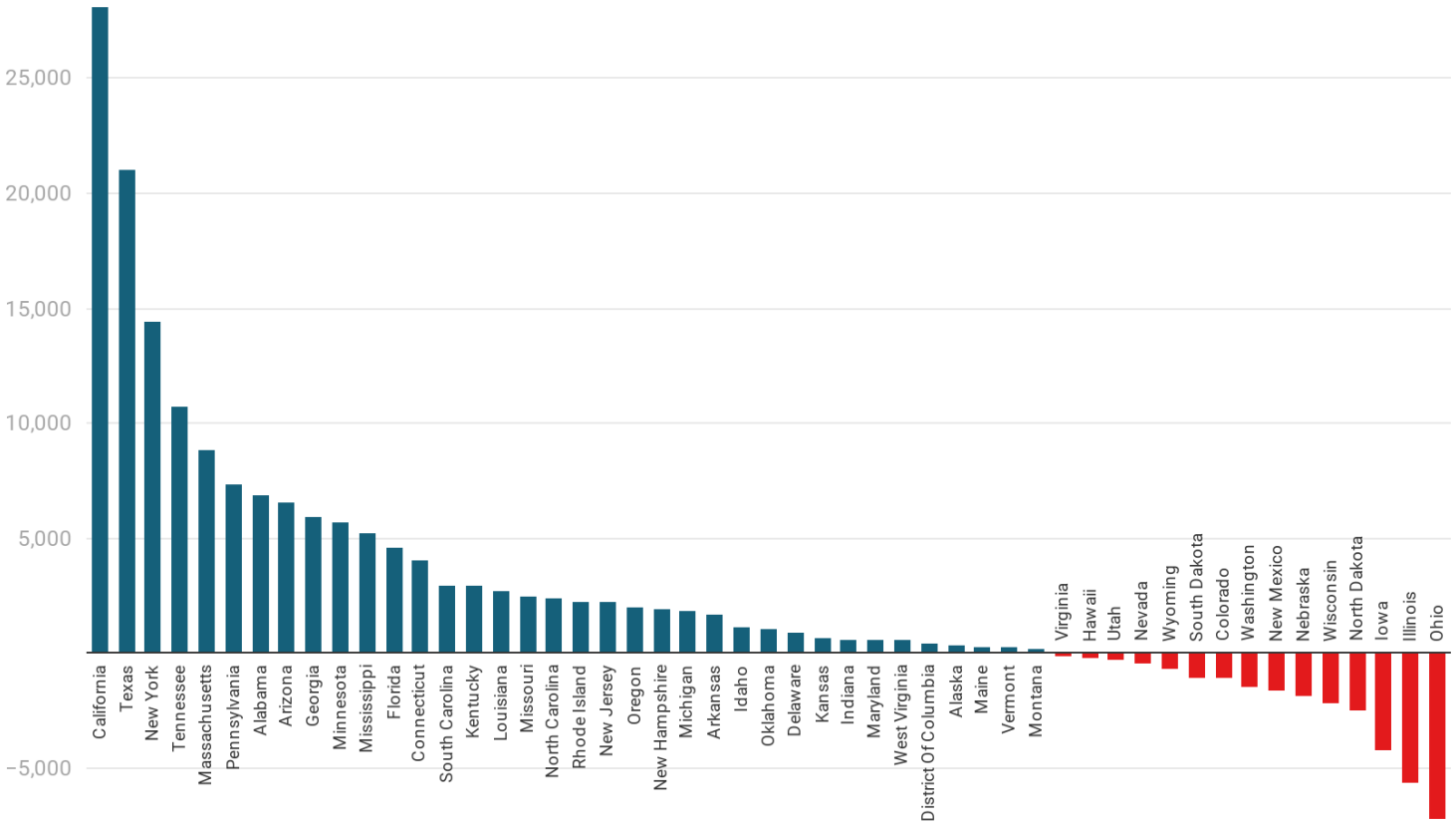

Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

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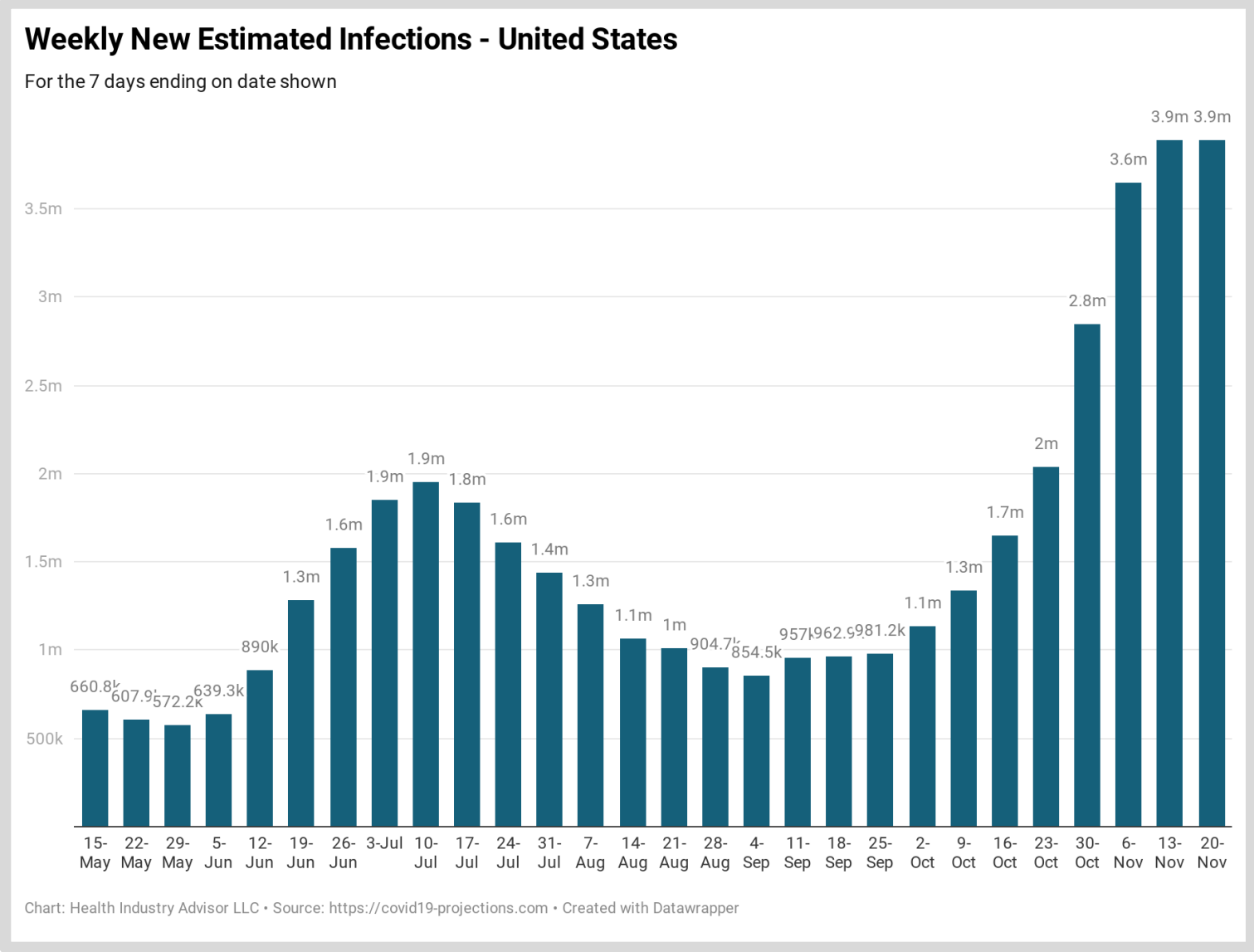
Gu* estimates there were 3.9M new infections (detected + undetected) during the week of November 14-20 – consistent with the prior week

These estimated new infections had been rising each week since the early September

Based on Youyang Gu's Covid Projection Mode
Last update: November 26



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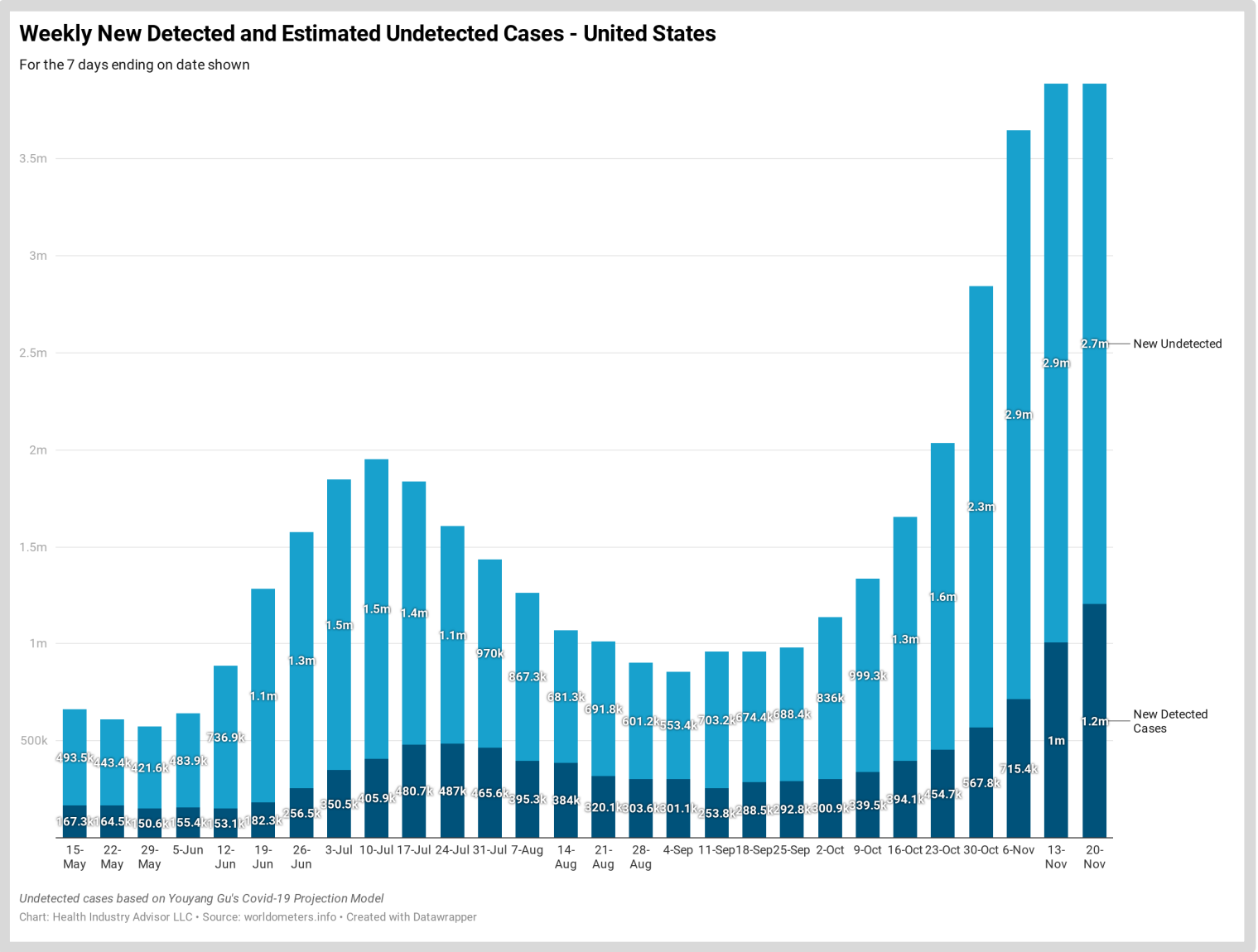
Undetected cases are significantly greater than cases detected via testing

Note: this graphic uses Youyang Gu's estimates of true infections

Interestingly, even though detected (and reported) cases increased week-over-week prior to Thanksgiving, Gu estimates that actual cases were consistent week-over-week



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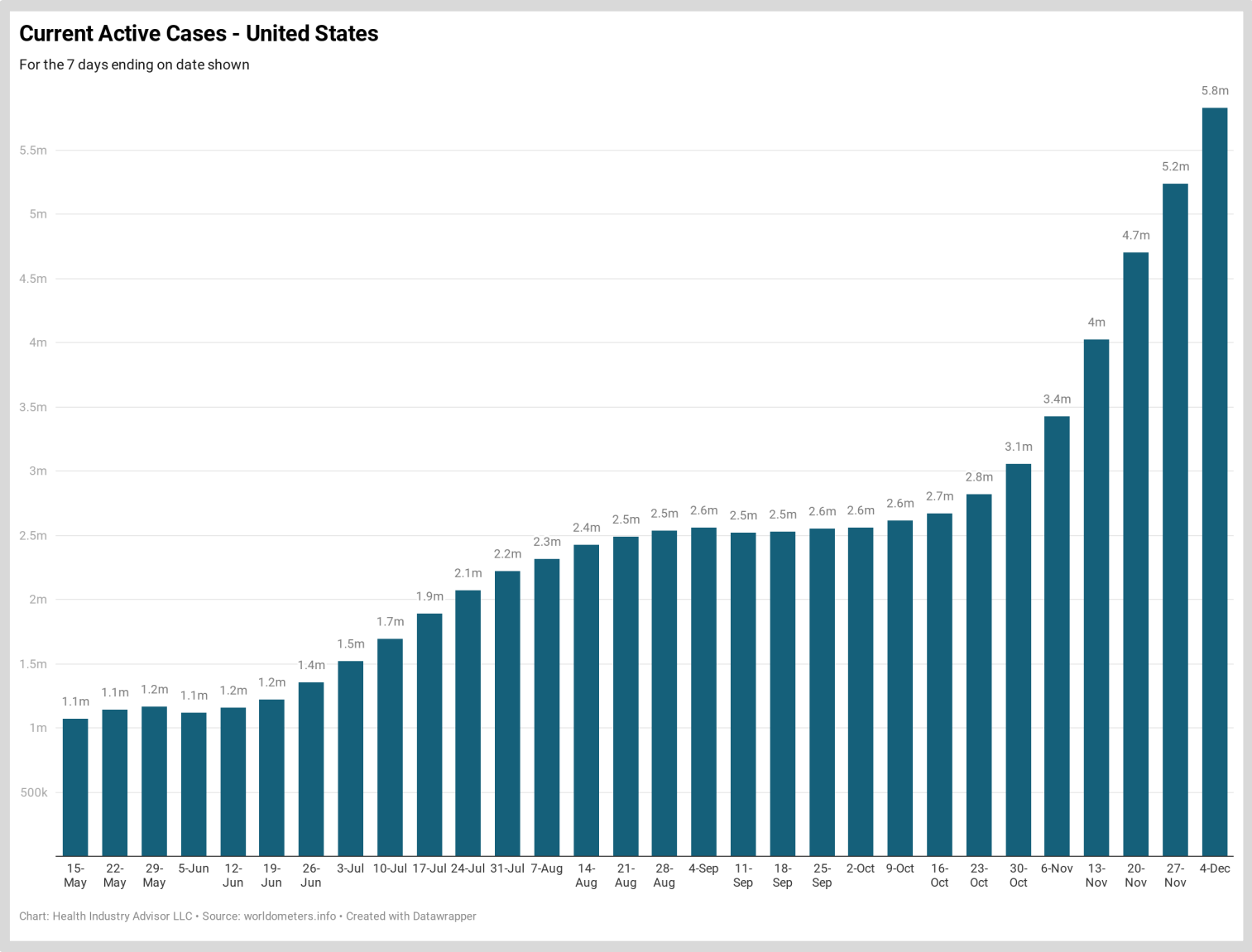
There are an estimated 5.8 million people in the U.S. currently recovering from detected Covid-19 infections

The estimated number of active, detected cases in the U.S. increased for the 9th consecutive week, following six weeks of relative stability



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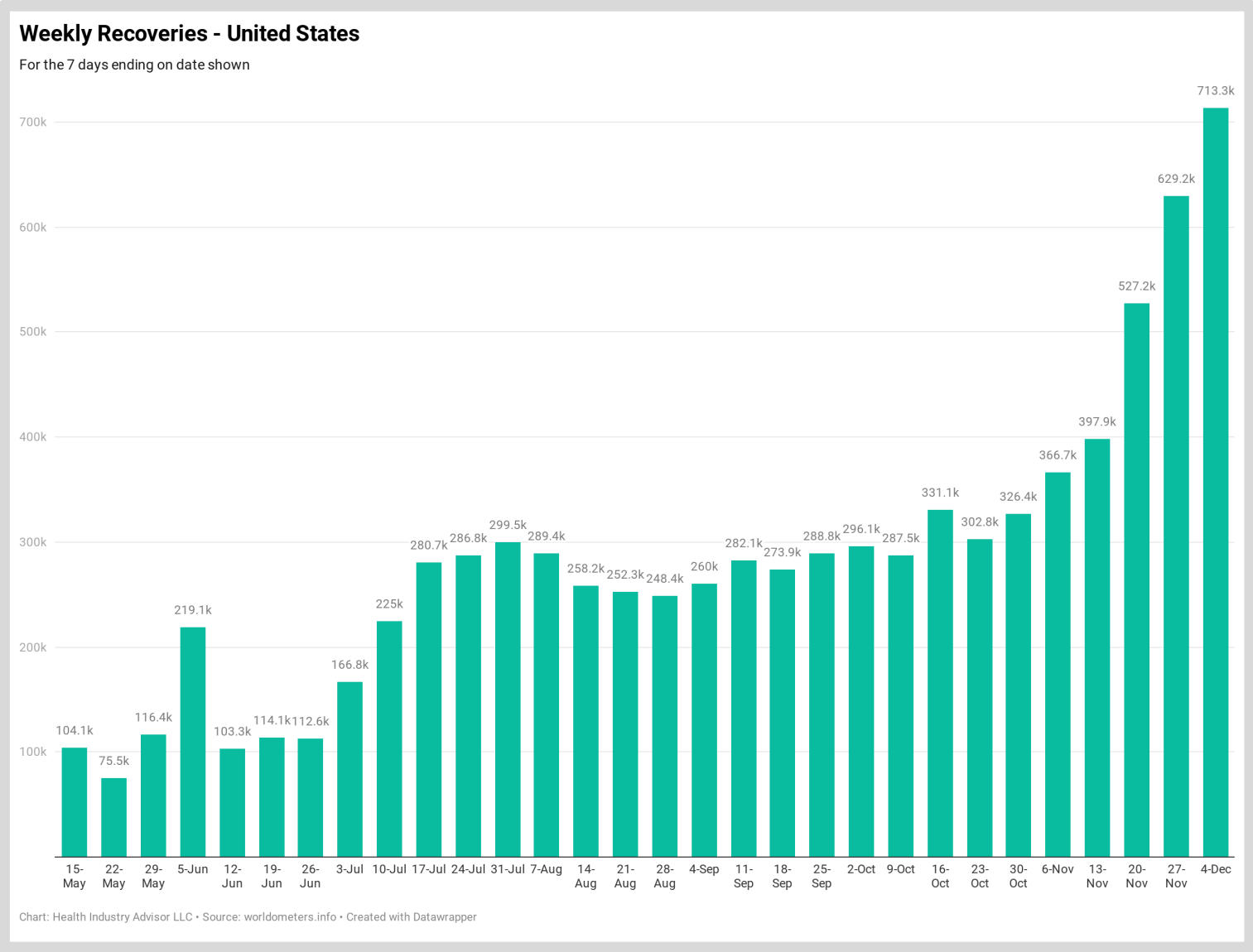
There were more than 700k people that recovered from a detected SARS-CoV-2 infection in the U.S. last week

Recoveries from detected infections in the U.S. increased each of the past six weeks

Nearly 8.7M people in the U.S. have now recovered from a detected SARS-CoV-2 infection



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Over time, more –and-more persons infected by the SARS-CoV-2 virus have successfully recovered

The number of active cases, as a % of all detected cases, have recently increased

At this time, there are an estimated 30 people recovered from the virus as have died with it; there are estimated 3 people recovered for every two people currently infected

How has the status of cases changed over time?

As of the date shown

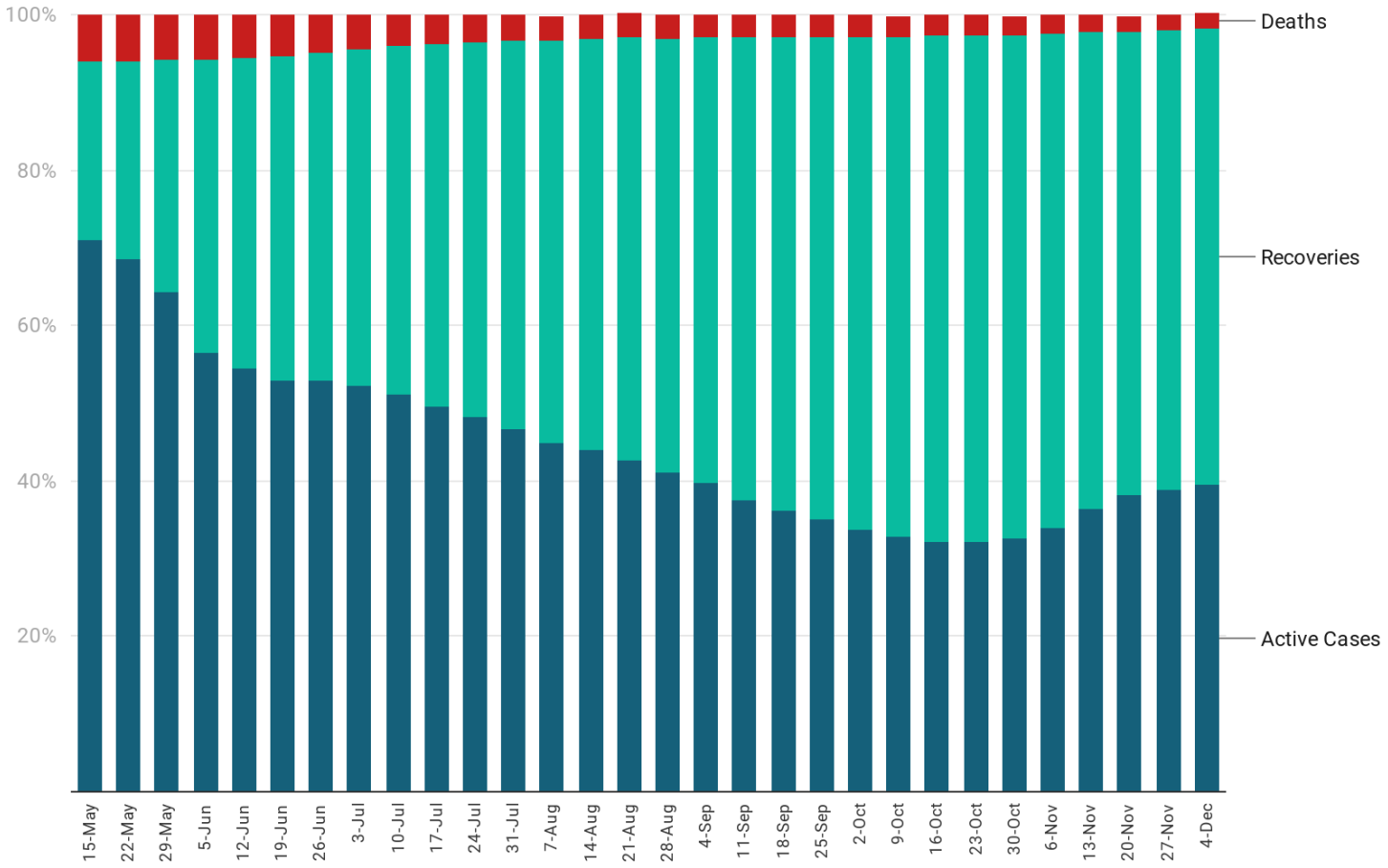

Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

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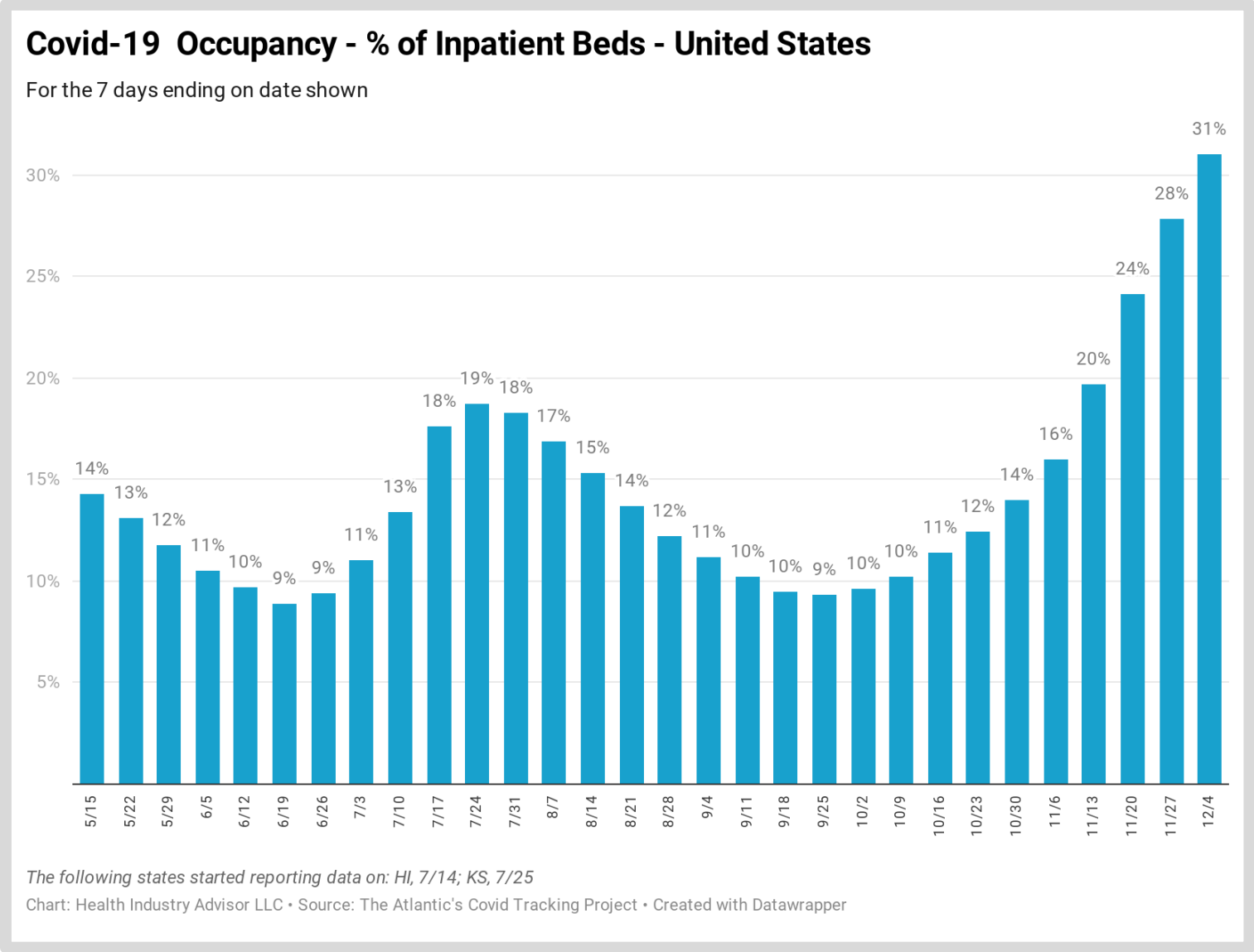
In the United States, Covid-19 patients occupied 31% of available inpatient beds last week

This occupancy rate has increased each week since the end of September

This rate has nearly doubled in just four weeks



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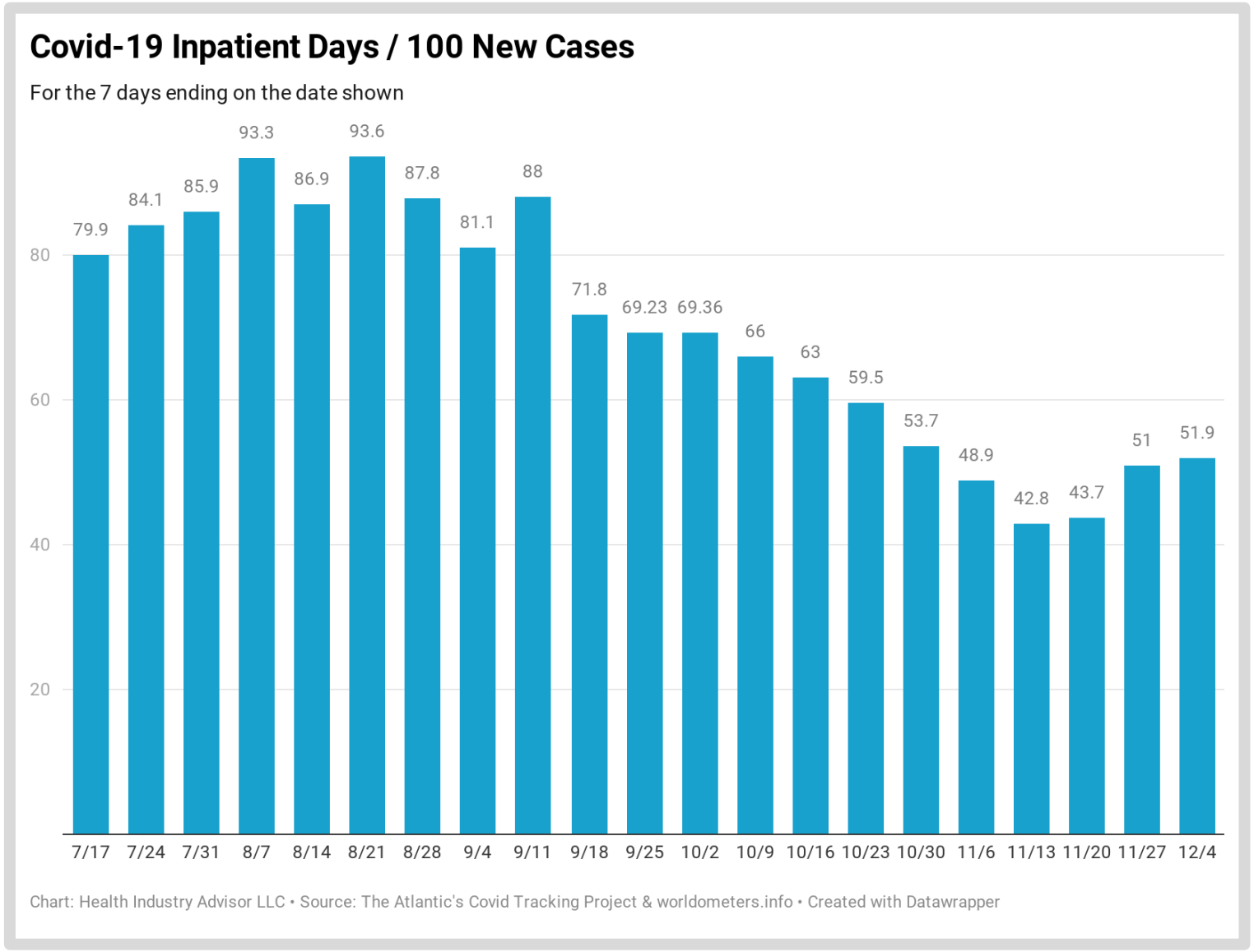
Covid-19 inpatient days per 100 new cases increased slightly last week, after increasing sharply the prior week



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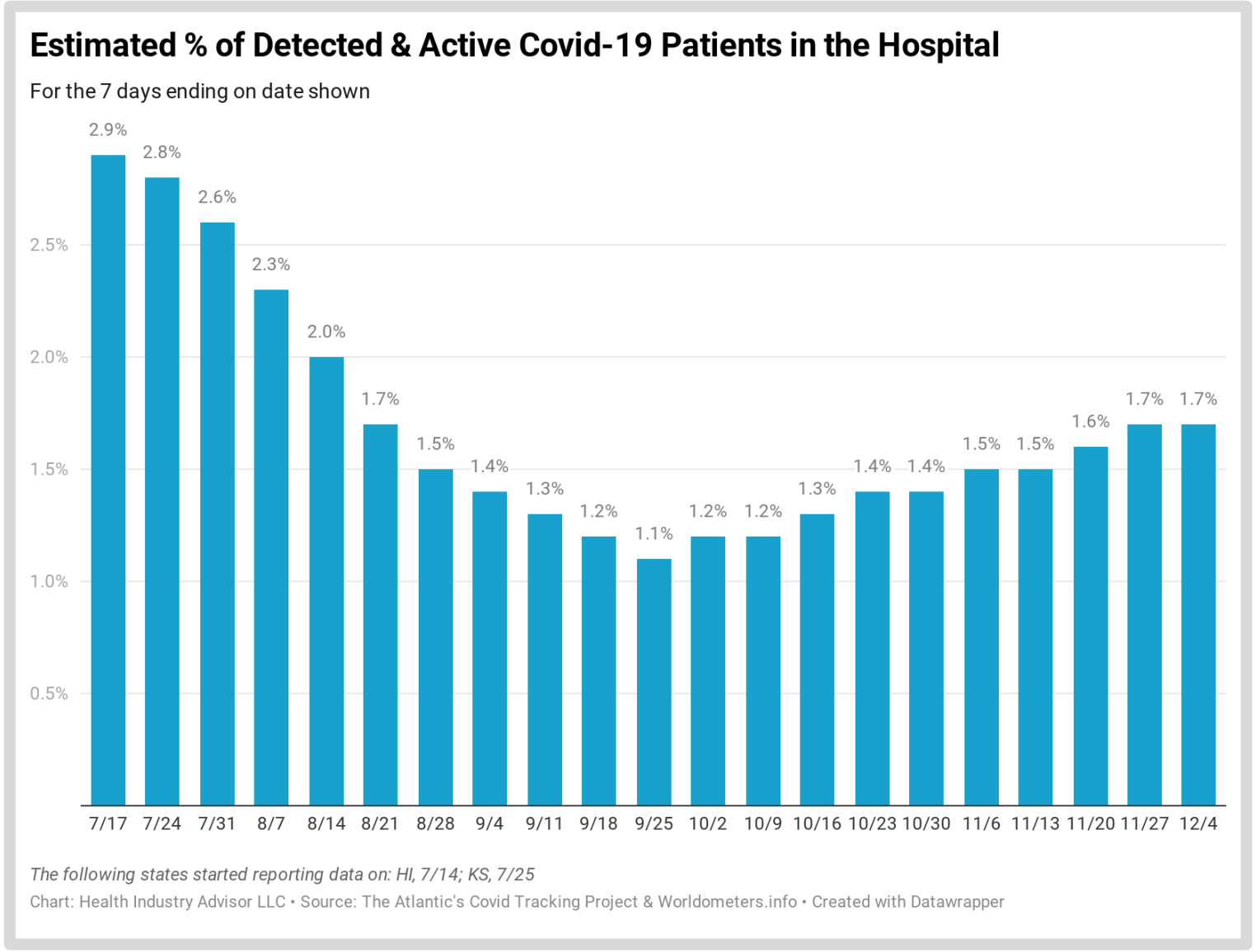
Only about 1.7% of actively-infected persons are in the hospital – holding steady with recent week's experience

Despite the recent increase in Covid-19 inpatients, the likelihood of a detected & actively-infected person being in the hospital is significantly lower than what it was in mid-July



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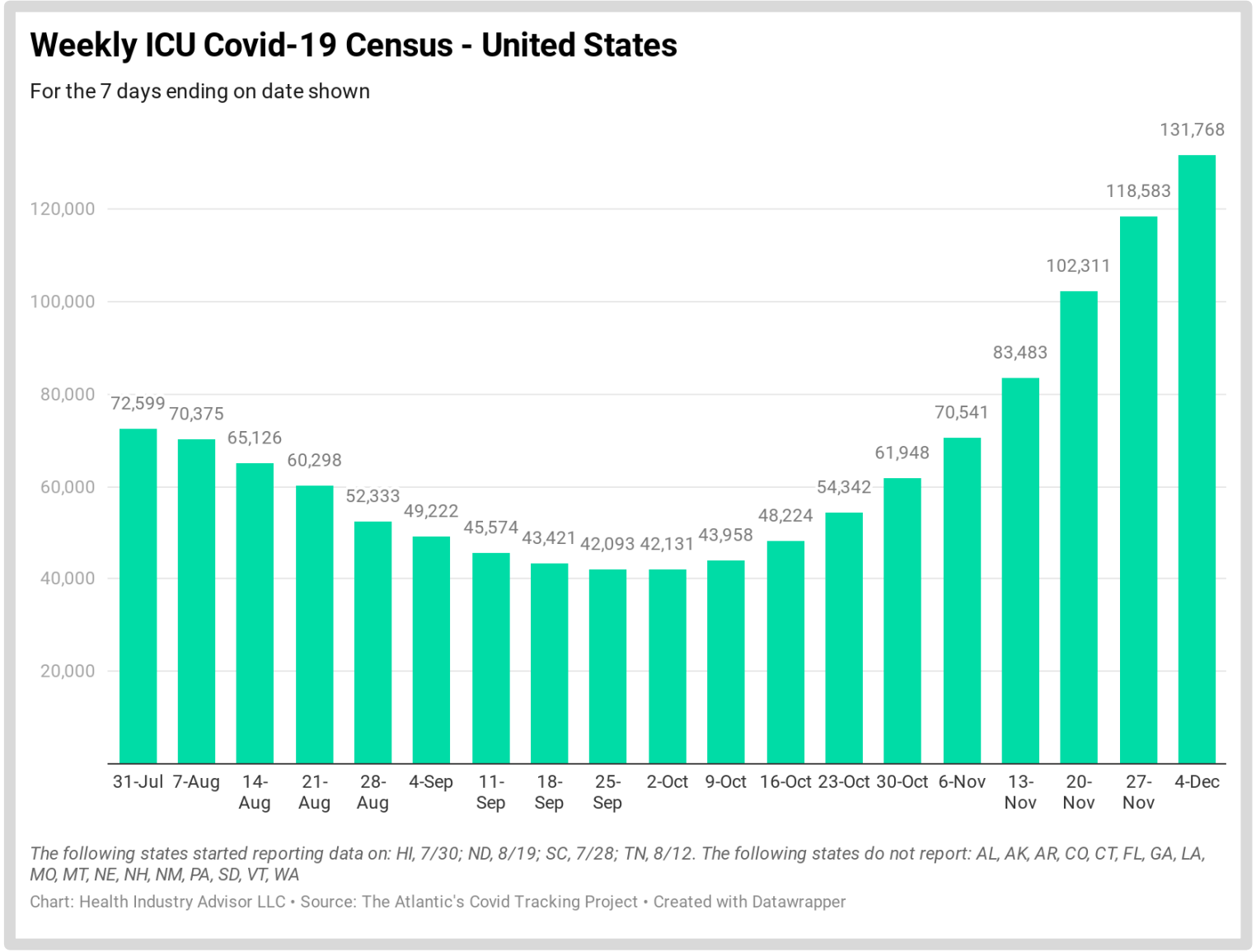
Covid-19 patients collectively spent nearly 132,000 days in the ICU last week

Covid-19 ICU census has now increased ten consecutive weeks – increasing by more than 3x in that time



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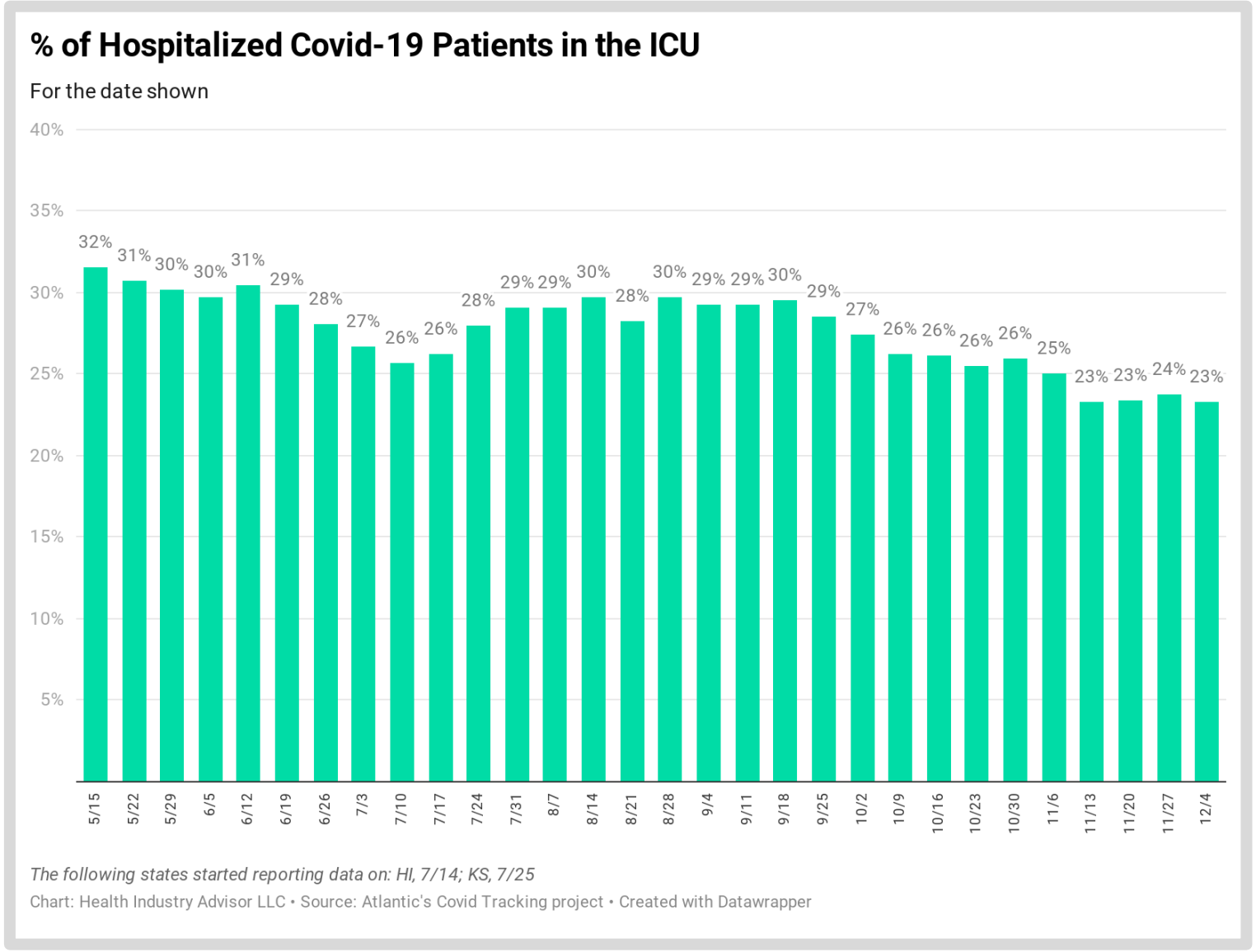
Fewer than a ¼ of Covid-19 inpatients were in the ICU last week

Throughout November and December, the % of Covid-19 patients requiring ICU care is lower than it had been at any time during the pandemic



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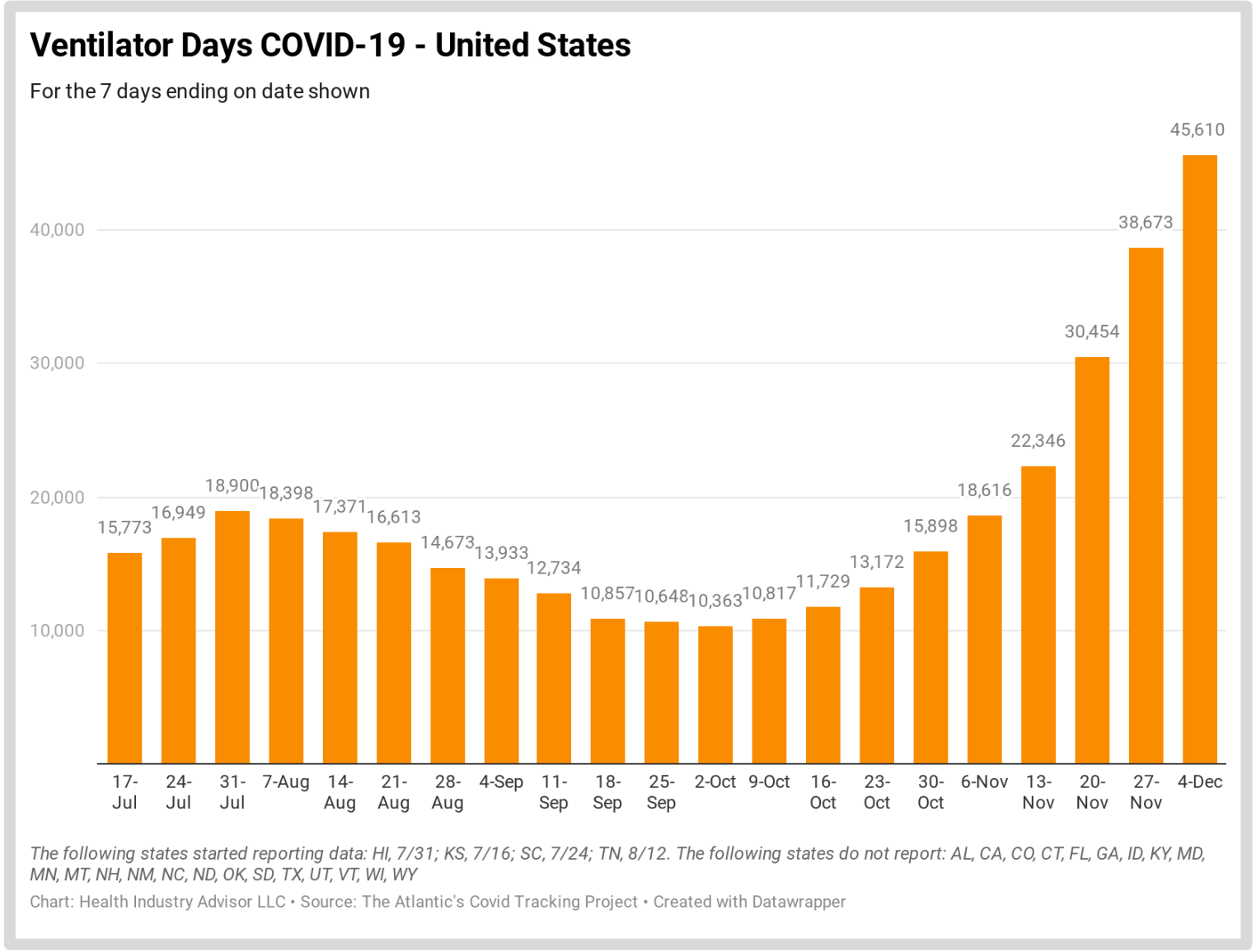
Covid-19 patients on ventilators increased sharply again last week, totaling more than 45,000 days on ventilators last week

This census of COVID-19 patients on ventilators has now increased nine consecutive weeks – more than doubling in the last four weeks



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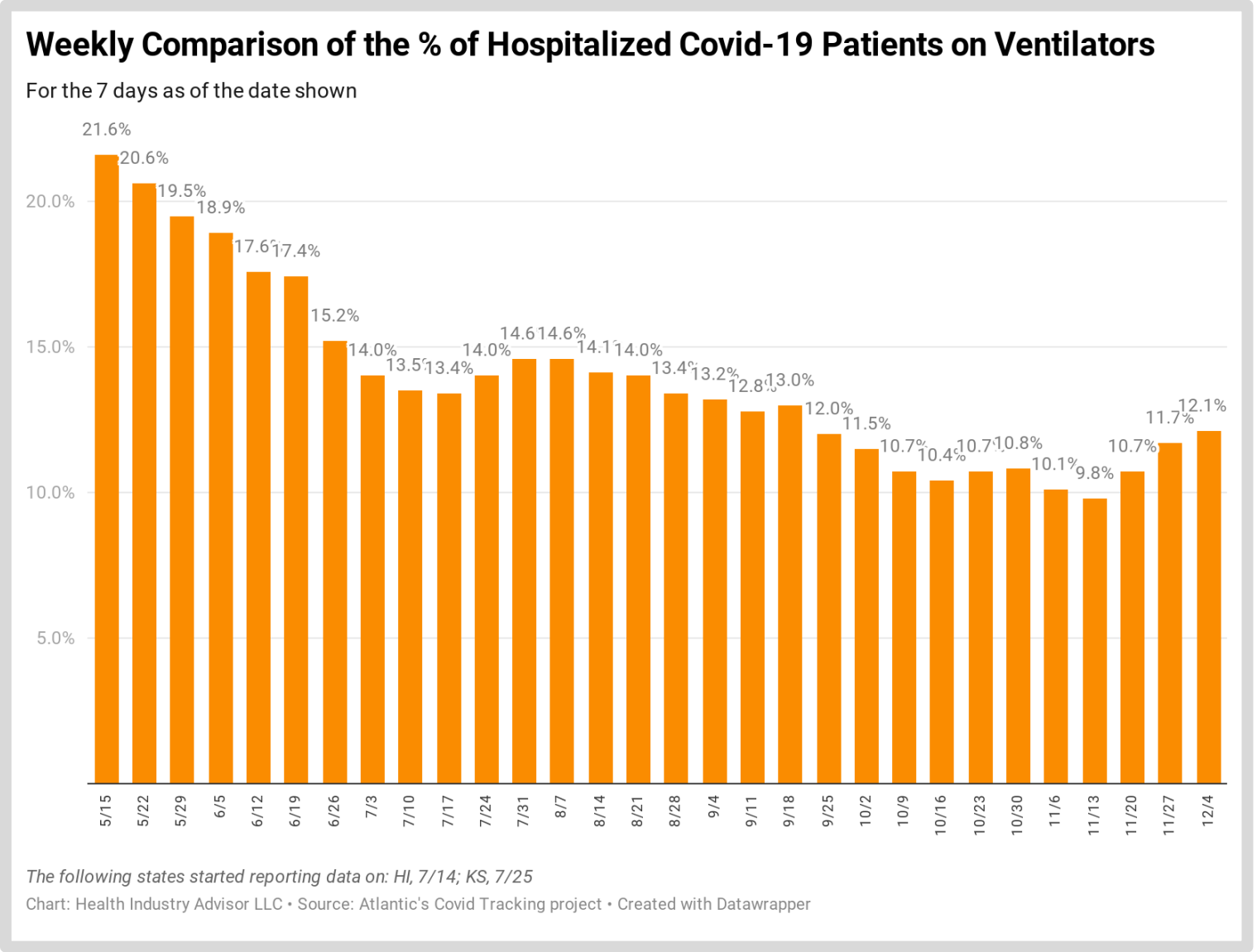
The likelihood of a hospitalized Covid-19 patient would be on a ventilator increased slightly each of the past three weeks

Slightly more than 12% of Covid-19 inpatients were on a ventilator last week

A reflection of changing treatment protocols, the likelihood of a person hospitalized with a SARS-CoV-2 infection has been cut nearly in ½ since mid-May



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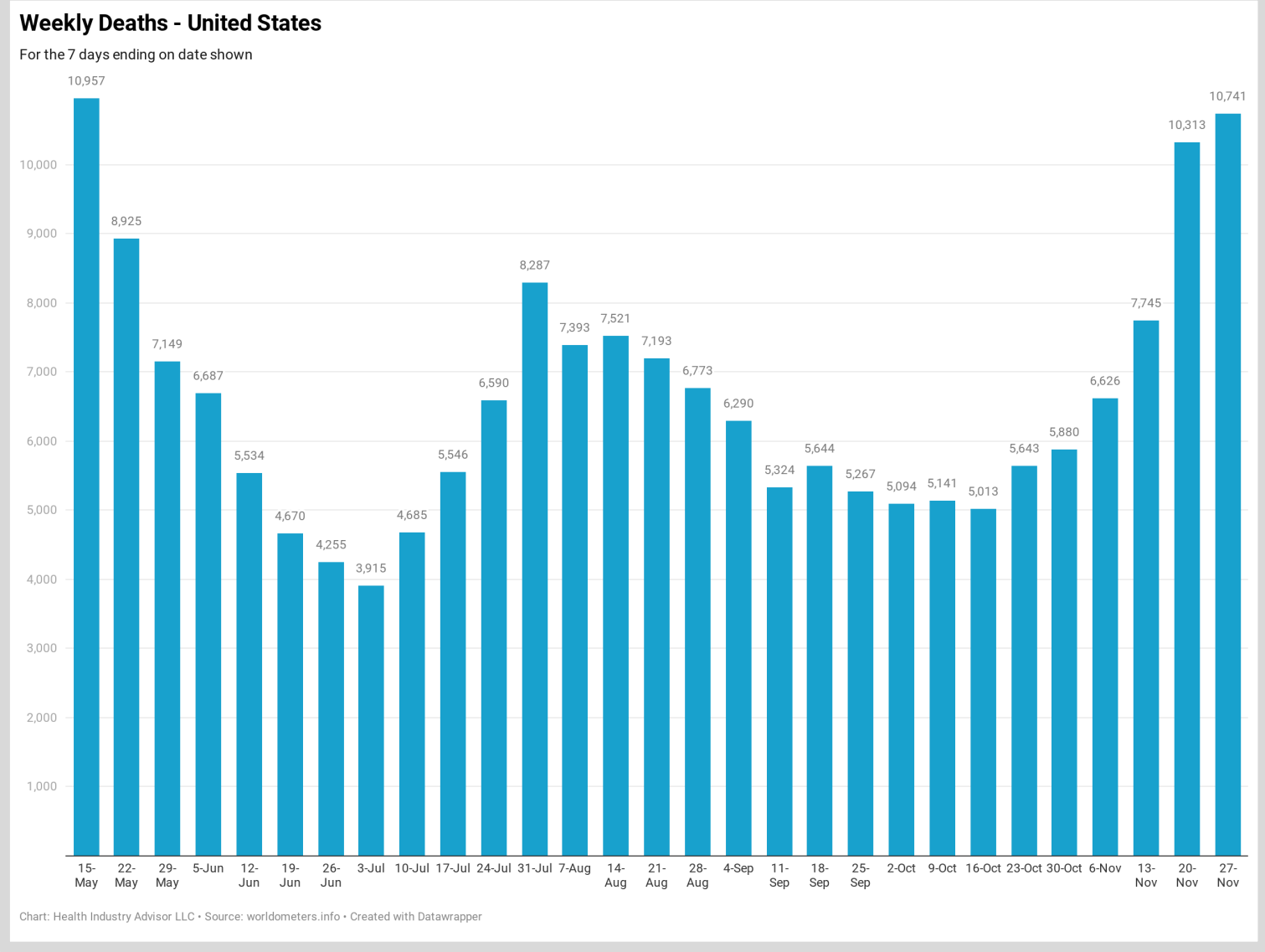
Tragically, more than 10,000 people died with the coronavirus in the U.S. for the second consecutive week

Deaths reported with the coronavirus in the U.S. increased for the sixth consecutive week– likely a result of the recent case surge

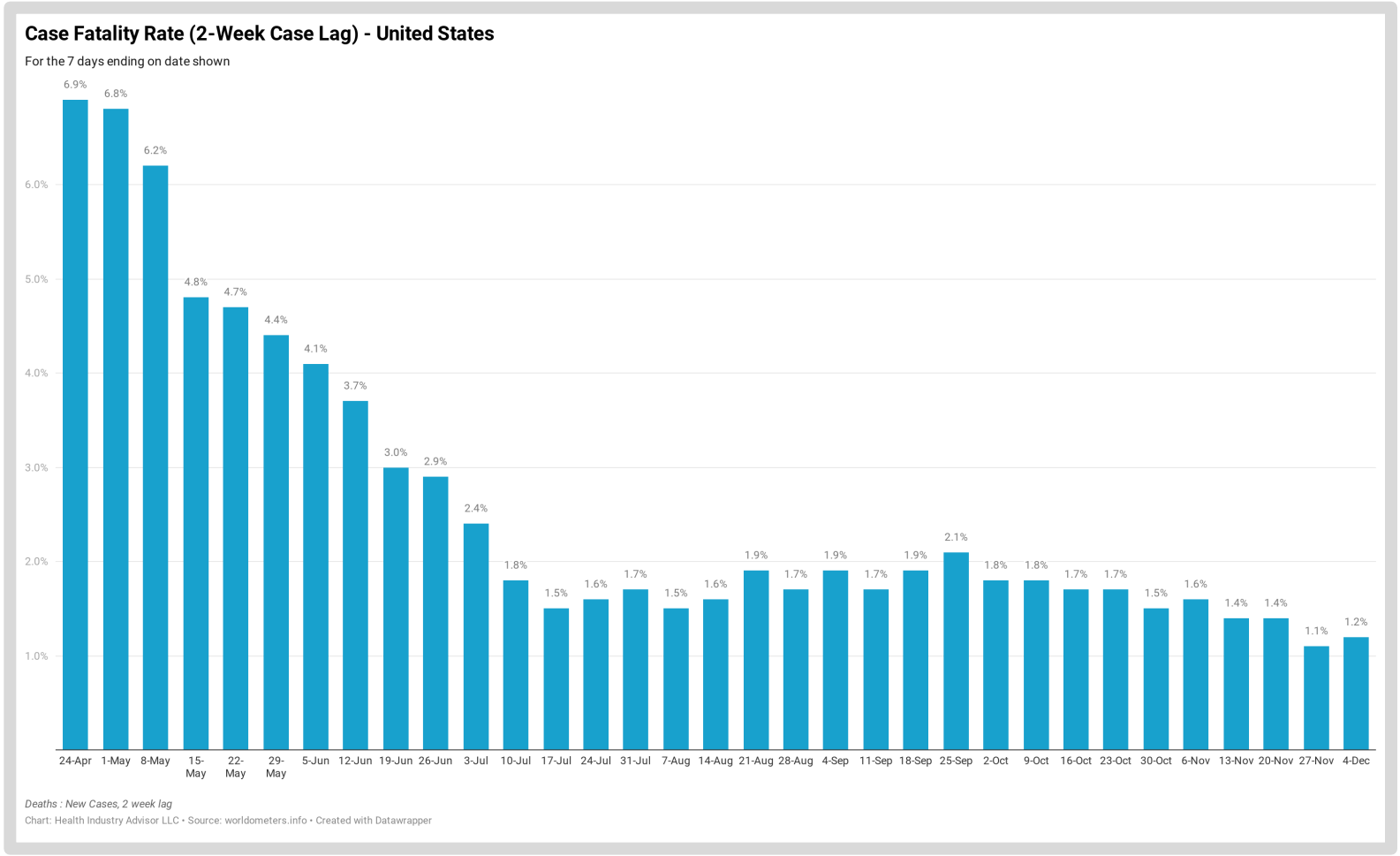
There were more deaths last week than any week since May 9-15



Health Industry Advisor, llc

The case fatality rate has declined since late-September

Last week's slight increase is likely due to delays in state reporting of deaths the prior week (the Thanksgiving holiday)



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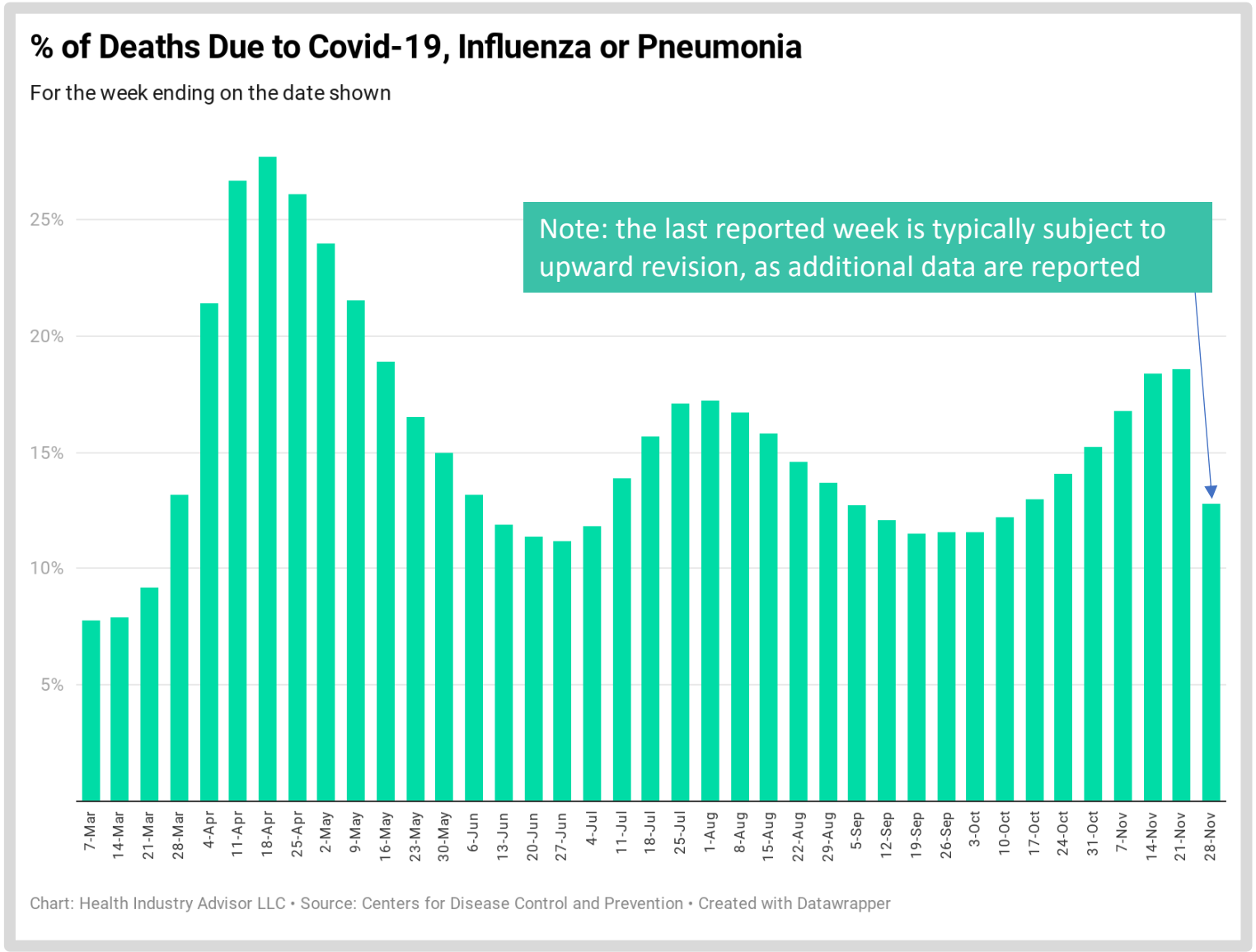
The % of deaths due to Covi-19, influenza and pneumonia remain lower than March/April but, higher than in June/July



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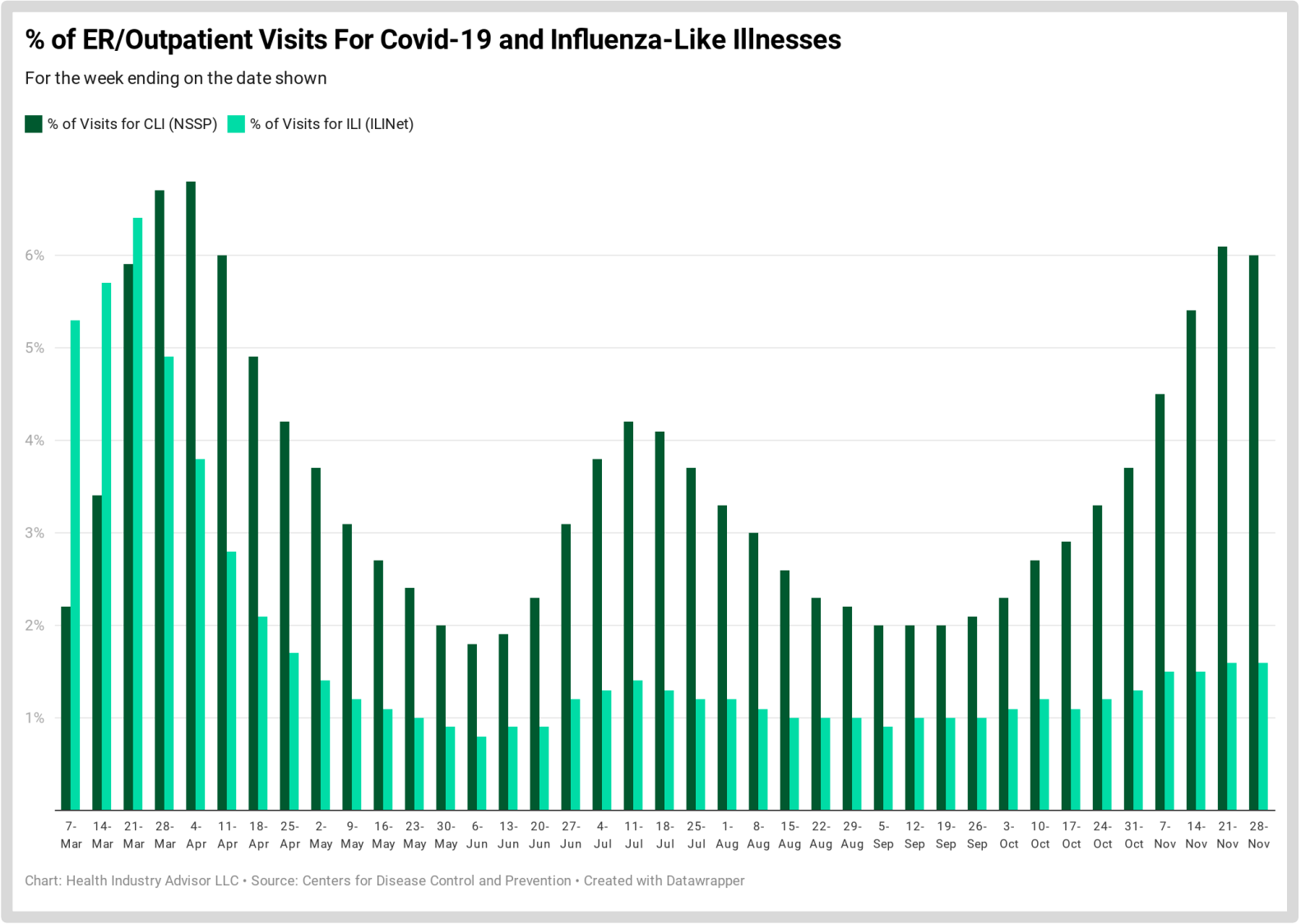
Covid-19 visits have increased in recent weeks, following a similar pattern as cases and hospitalizations – these remain lower than in during the March/April, however, higher than during the July surge in cases

Eight weeks into the 2020-21 flu season, flu visits are trending lower than each of the past eight years (but its still early)



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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