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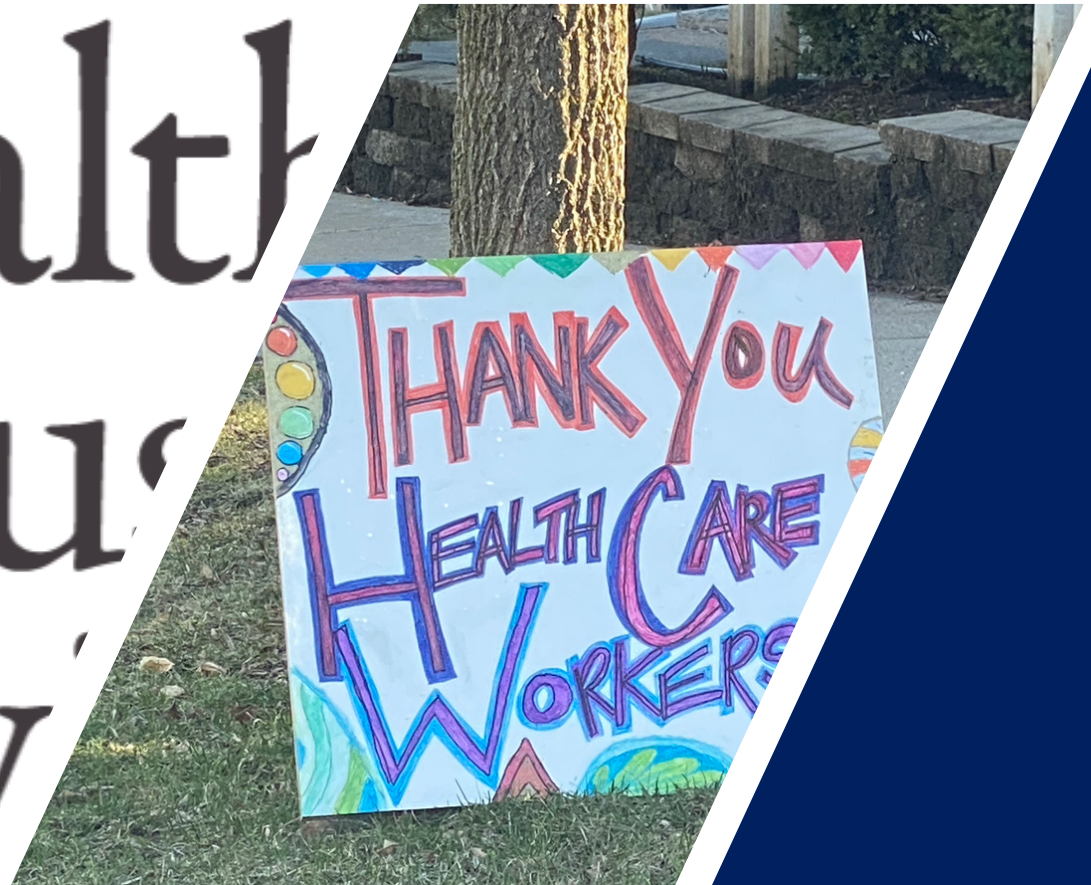

Issue # 189

Saturday, October 17, 2020

COVID-19 Report

Highlights

- New cases are being detected at a rapid rate worldwide
  - There were about 2.5 million new cases detected worldwide in the last seven days
  - **Newly detected cases worldwide increased sharply for the 2nd consecutive week; this follows a three-week period during which these were relatively stable week-to-week**
- Testing results in the U.S. raise some concerns
  - Test volume set a record high for the fourth consecutive week
  - Despite the increased testing, the test-positive rate increased for the third consecutive week
  - **The ratio of tests performed: newly detected cases declined for the third consecutive week; a decline in the rate suggests that testing may not be keeping pace with the increased infections**
- Newly Detected Cases are on the rise across the U.S.
  - **Newly detected cases increased for the fifth consecutive week; there were more new detected last week than for any Saturday-Friday period since August 1-7**
  - Detected cases are only a fraction of true new infections. Two sources have provided estimates of total infections: Oliver Wyman estimates total infections to-date are 3.9x reported cases (estimated range of 2.3x-6.9x); Youyang Gu's estimates translate to a 6.9x factor (range of 4.9x-9.6x). We presume that the undetected cases would largely be asymptomatic, as they didn't lead to testing or hospitalization
  - **The largest increases in newly detected cases week-over-week were experienced in five Midwestern states - in order, Illinois, Wisconsin, Michigan, Indiana and Ohio - plus, Texas**
  - Only eight states – in order, Missouri, California, New York, Kentucky, Kansas, Hawaii, Tennessee and Vermont – experienced fewer newly detected cases this past week than the prior week
- The ultimate outcome of new infections improved last week
  - In line with the recent increase in newly detected cases, active cases increased for the 2nd consecutive week; these had been relatively stable for the preceding six weeks
  - Nevertheless, **recoveries increased significantly on a week-over-week basis; indeed, recoveries reported last were set a new high to-date. There are now 2x the number of persons recovered from an infection as are currently considered an active case**
  - **Deaths with the coronavirus declined last week - the 8th week-over-week decline in the past eleven weeks**; deaths reported last week were less than 1/2 what were reported for the week of May 9-15
- **Healthcare resource use for Covid-19 patients is on the rise but, it is declining on a relative basis**
  - **Inpatient Covid-19 census increased for the third consecutive week**; still, this census was 40% lower than it was during the week of July 18-24
  - Only ~1.3% of active cases are being treated in a hospital. **An actively-infected person was 2x as likely to be in the hospital in mid-July as they were last week**
  - **ICU census of Covid-19 patients increased for the third consecutive week**; **nevertheless, this census is ~ 1/3 lower than it was in late-July**
  - Just more than 1/4 of Covid-19 inpatients are in the ICU. This rate was unchanged from the prior week; it had declined each of the preceding three weeks. This rate has only been lower during a single week since at least mid-May
  - **Covid-19 patients on ventilators increased for the second consecutive week**; this had declined for the none preceding weeks. There were 38% fewer ventilator patients last week than in late-July
  - **Only about 1-in-10 Covid-19 patients were on a ventilator last week. This rate has declined on nineteen of the past twenty-three weeks. In mid-May, 1-in-5 Covid-19 patients were on a ventilator**
  - **Neither Covid-19 nor flu infections are straining emergency rooms**: The % of ER visits associated with Covid-19-like illnesses declined the past six days and is less than 1/2 what it was in July. The % of ER visits associated with influenza-like illnesses remains low, despite the official start of flu season

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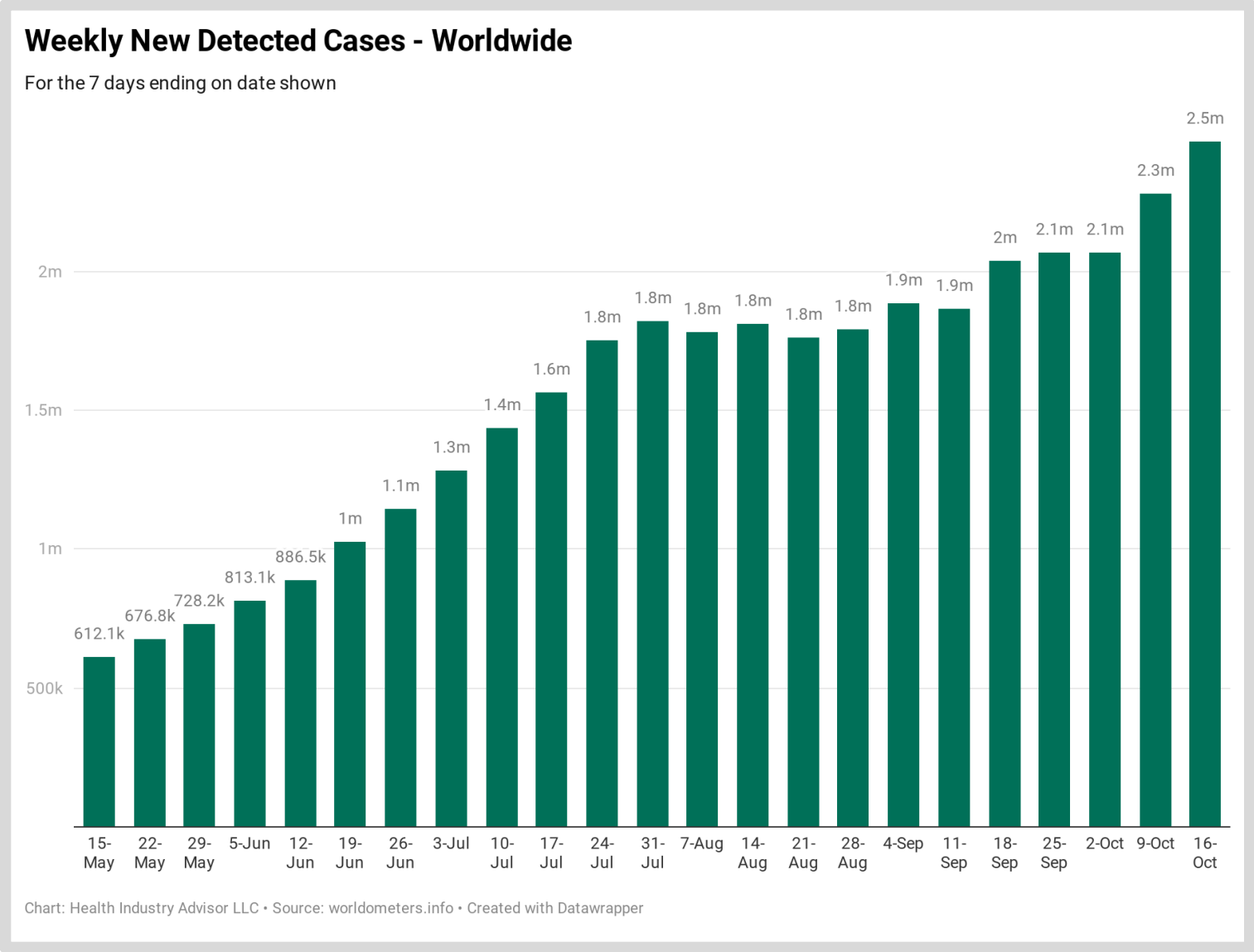
~ 2.5 million newly detected cases worldwide last week

There has been a sharp increase in newly-detected cases worldwide each of the past two weeks



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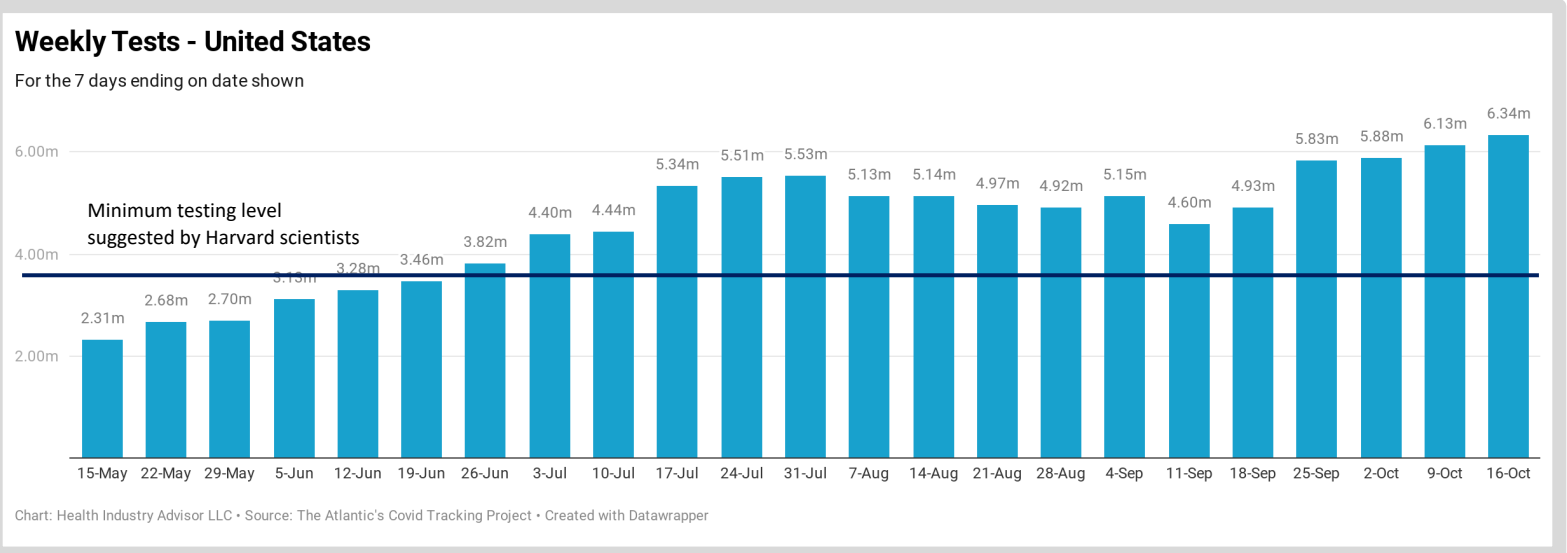
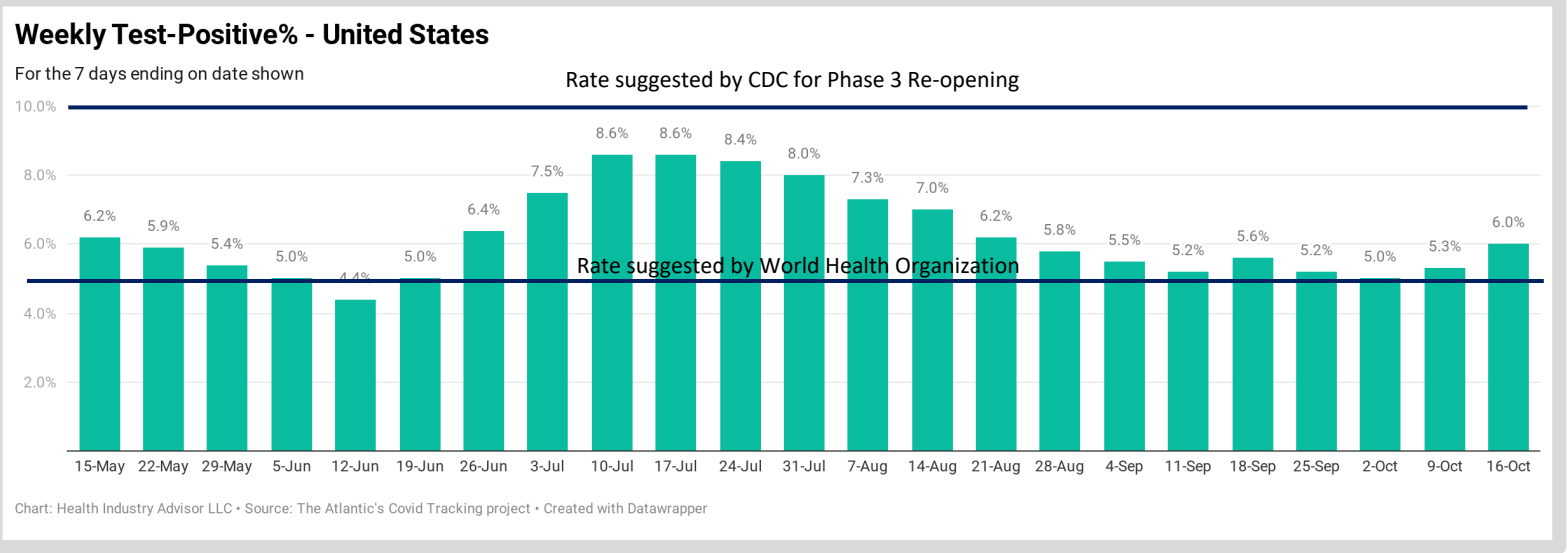
Test volume set a record high for the fourth consecutive week

Test-positive rate has increased three consecutive weeks; it is above the WHO target and well below the CDC target for Phase 3 re-openings





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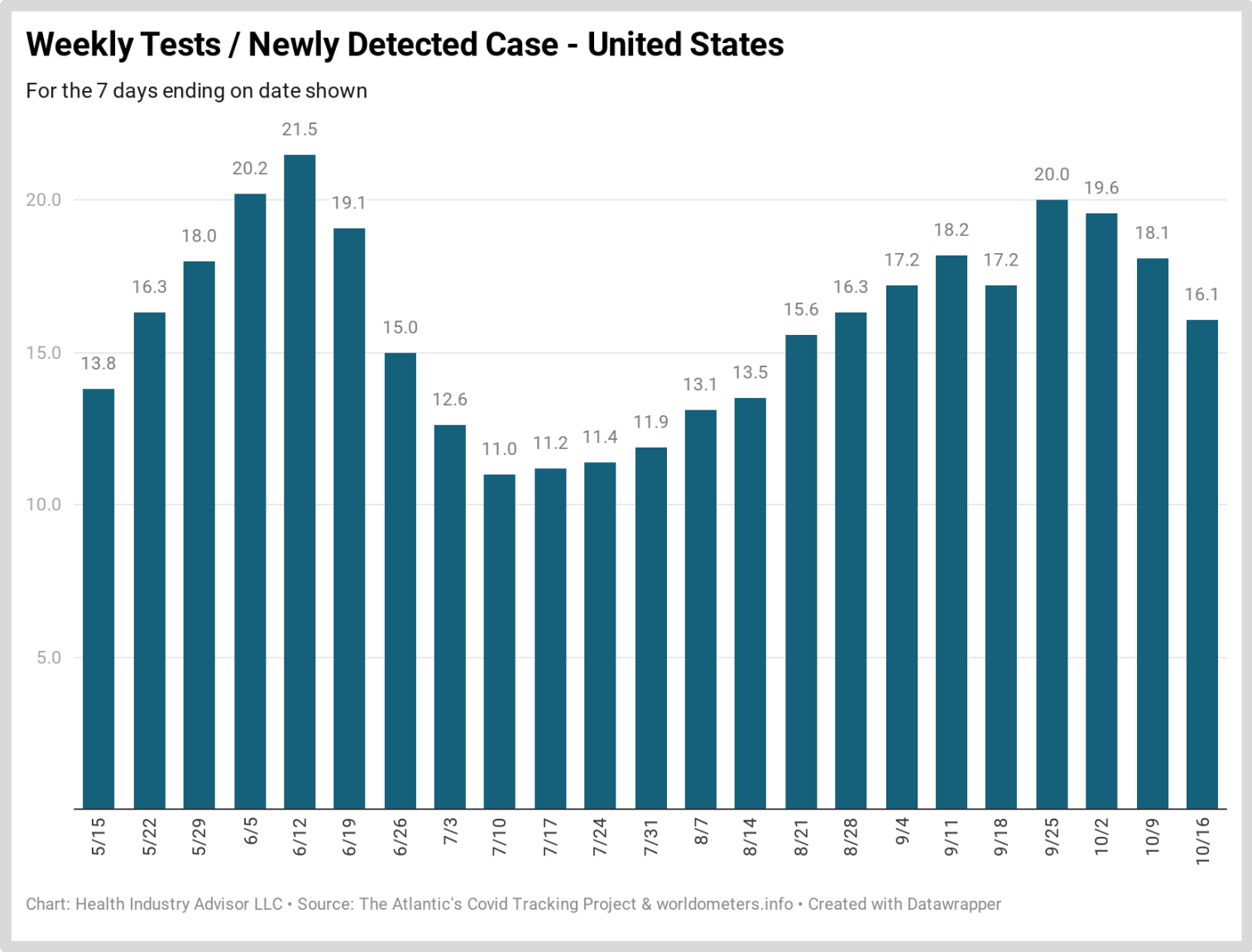
The ratio of tests performed to new cases detected is a fair measure of the adequacy of testing and spread of the virus

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

This ratio has dropped three consecutive weeks



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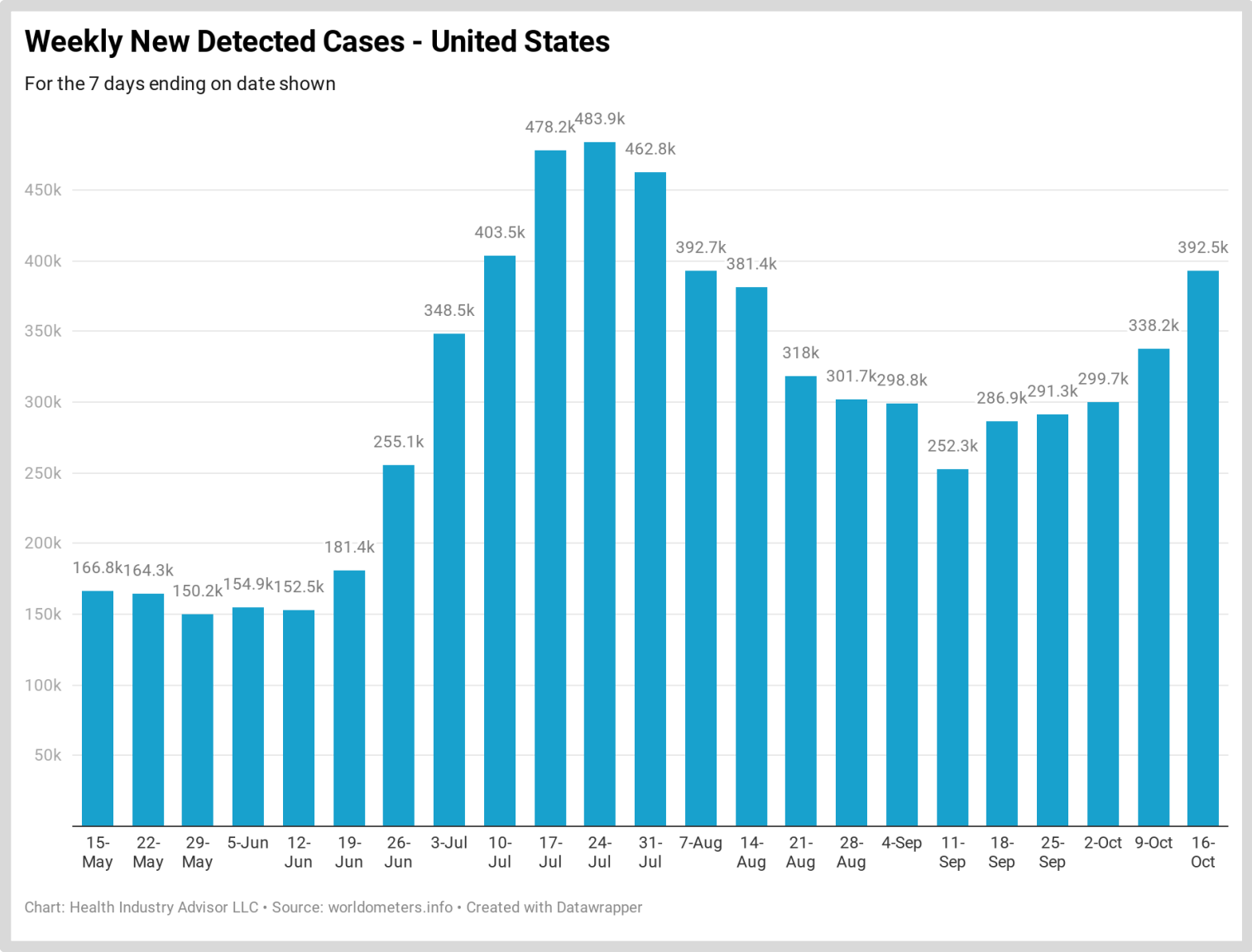
Newly detected cases* increased for the fifth consecutive week (Saturday – Friday)

New cases were higher during this 7-day period than any comparable period since August 1-7

*Newly detected cases are based on test results. These could be underreporting actual infections by 4x (Oliver Wyman current estimate) – 5.7x (based on Youyang Gu estimates)



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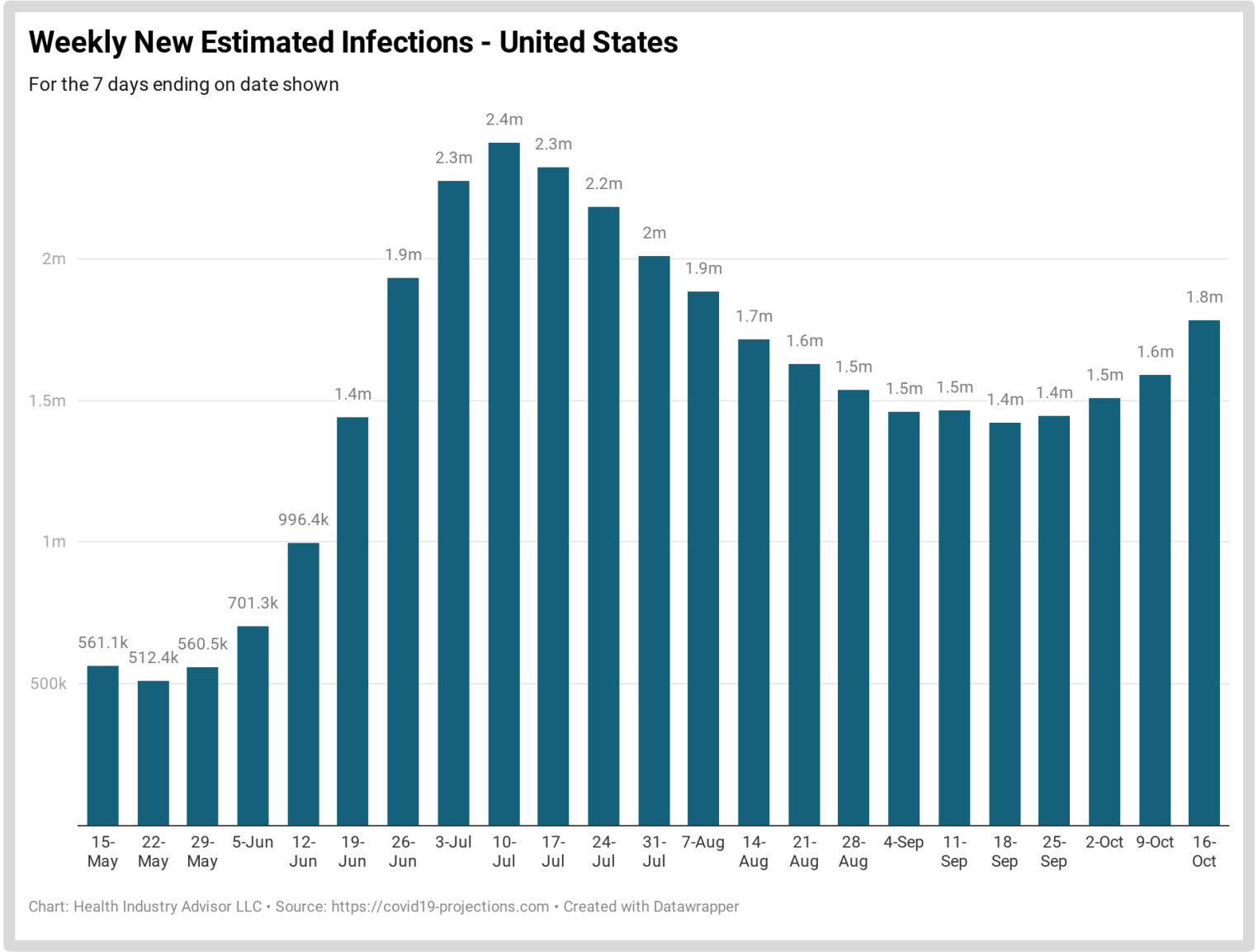
Estimated new infections* (detected + undetected) rose for the fourth consecutive week

These weekly estimated infections remain below the level reached from June 20-26 to August 1-7 but, are approaching levels reached during the late-March surge in the Northeast

Based on Youyang Gu's Covid Projection Mode
Last update: October 4



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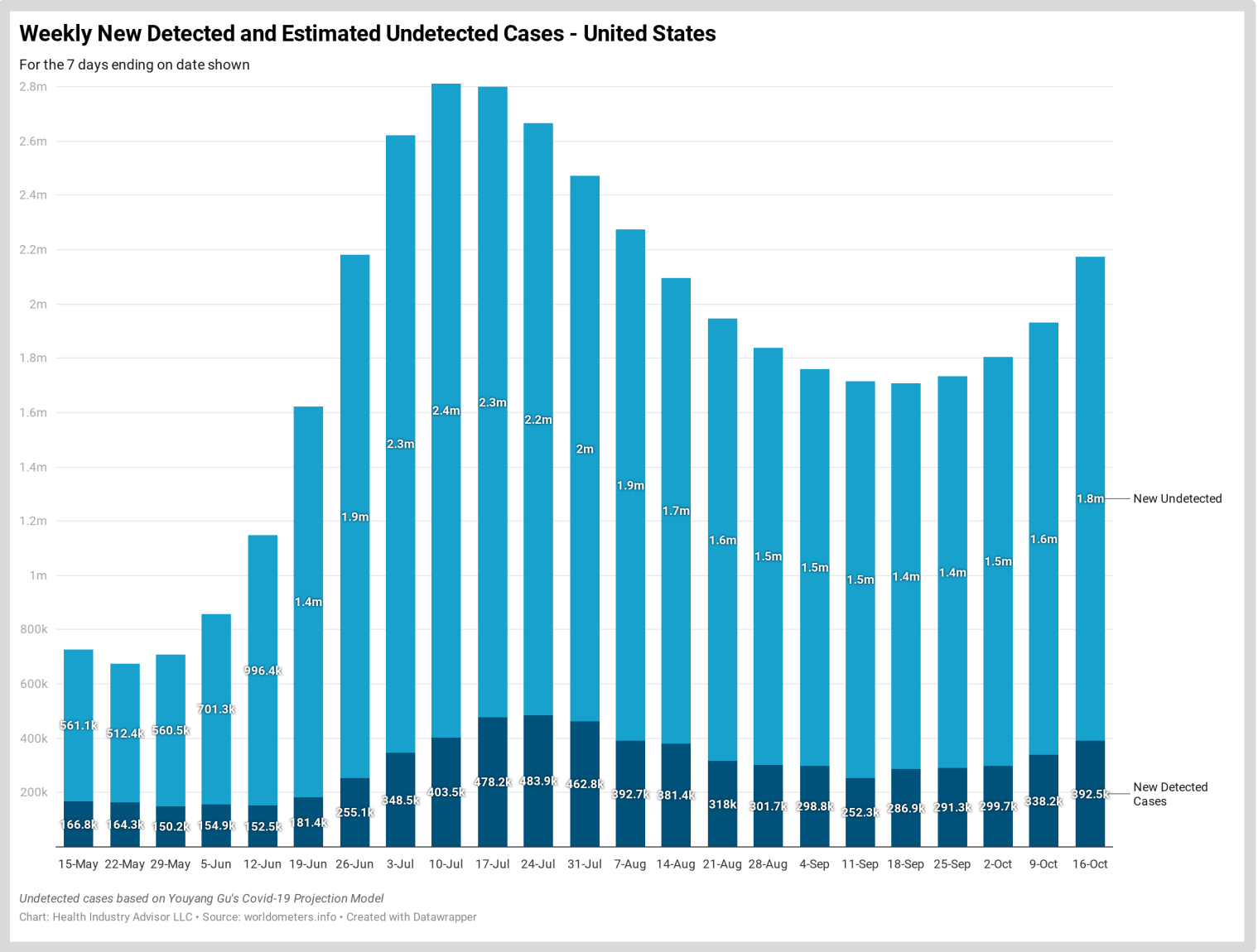
Undetected cases are significantly greater than cases detected via testing

Note: this graphic uses Youyang Gu's estimates of true infections; alternate estimates are produced by Oliver Wyman

Gu's estimates suggest that true infections are 6.9x reported cases (range: 4.9x-9.6x); Oliver Wyman estimates 3.9x (range of 2.3x-6.9x)



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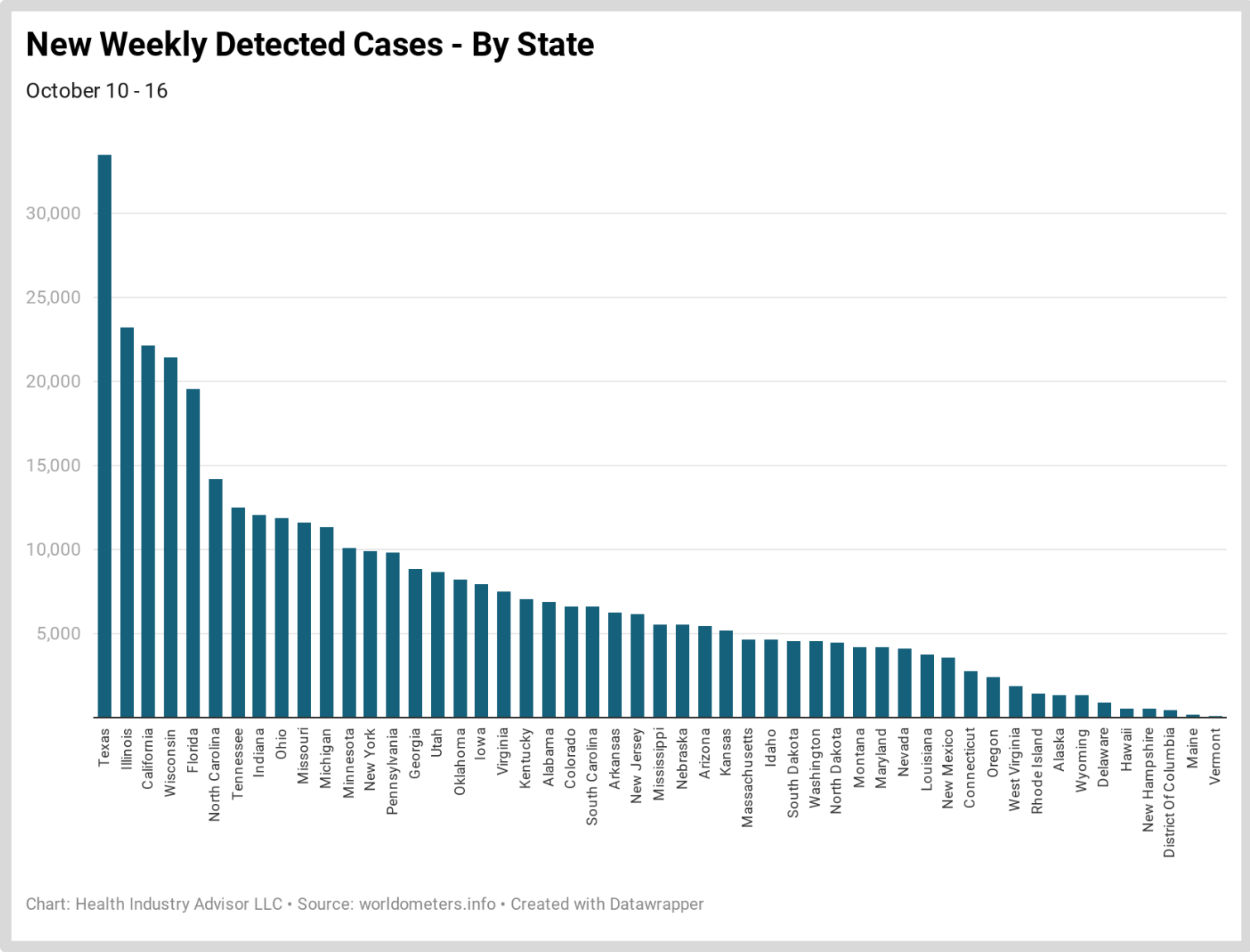
Texas, Illinois, California, Wisconsin and Florida, in order, recorded the highest number of newly detected cases over the past seven days

Of the ten states with the most newly-detected cases, seven rank in the top ten by population

Wisconsin stands out on this list, given its relatively low population



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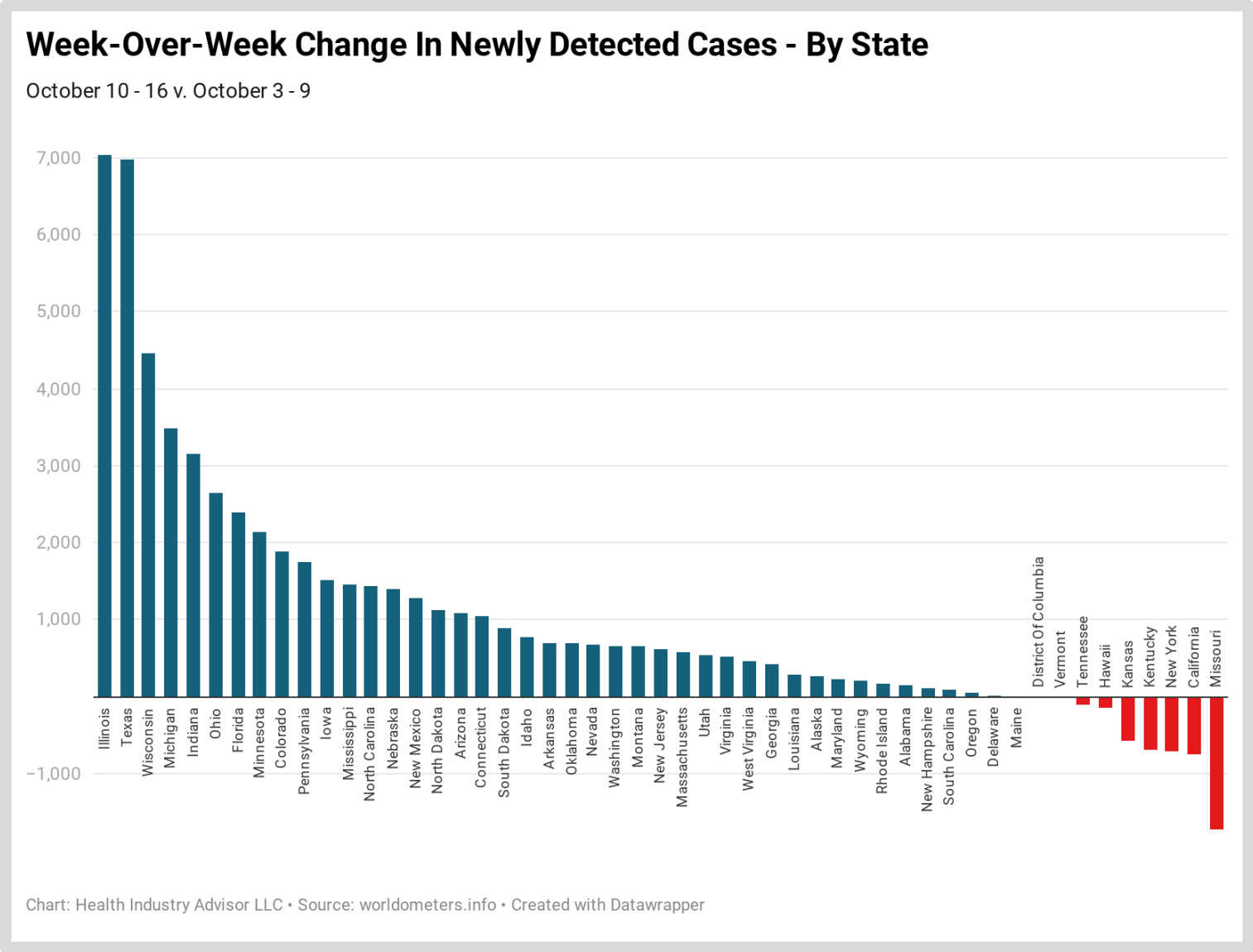
Five Midwestern states – Illinois, Wisconsin, Michigan, Indiana and Ohio – plus Texas experienced the largest week-over-week increases in newly-detected cases

Only eight states – Missouri, California, New York, Kentucky, Kansas, Hawaii, Tennessee and Vermont – experienced fewer newly detected cases this past week v. the prior week



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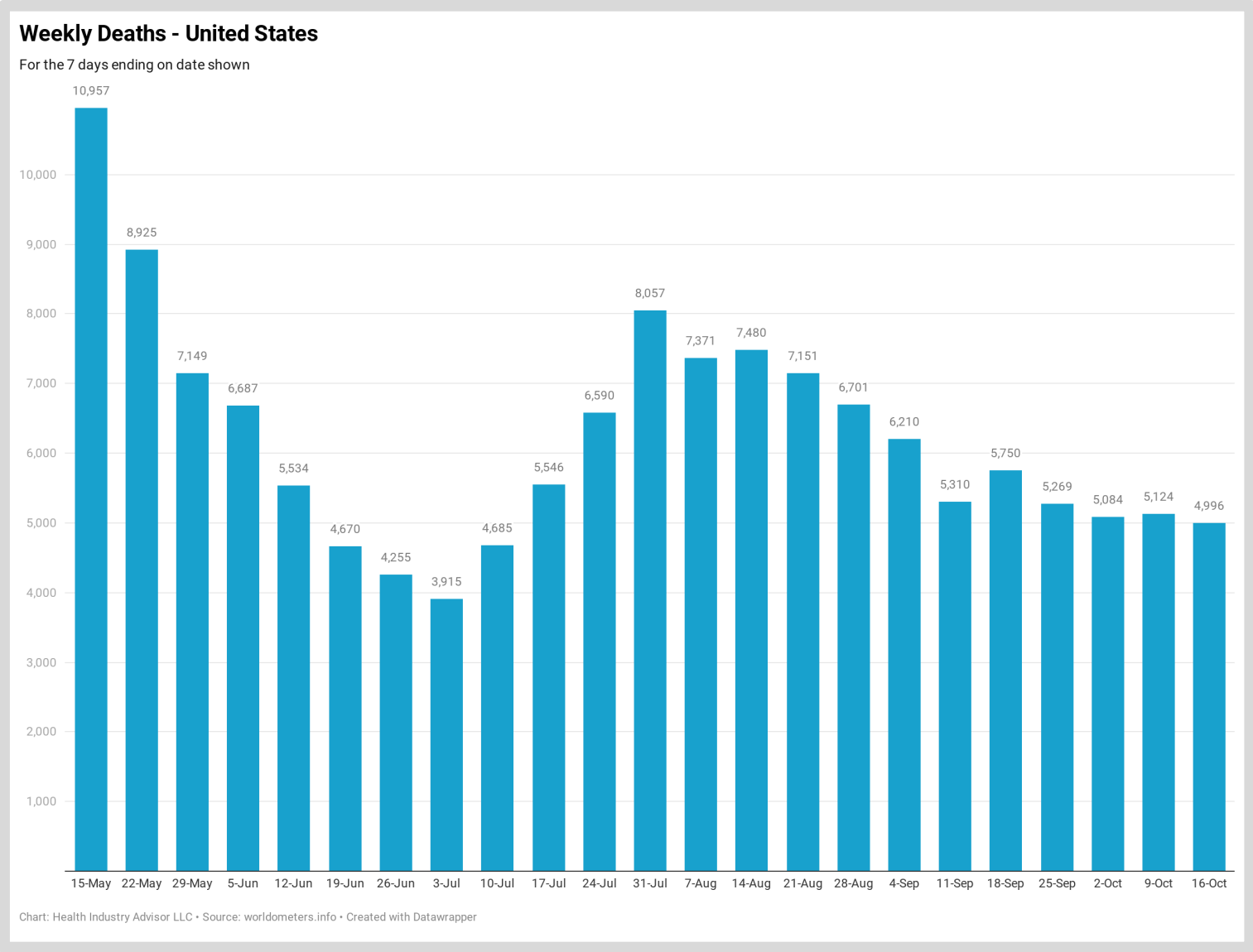
Deaths reported with the coronavirus in the U.S. declined last week; this was the 8th decline in the past 11 weeks

Since reaching a secondary peak on July 25-31, reported deaths were down 38% last week; these are down 54% since a primary peak on May 9-15)



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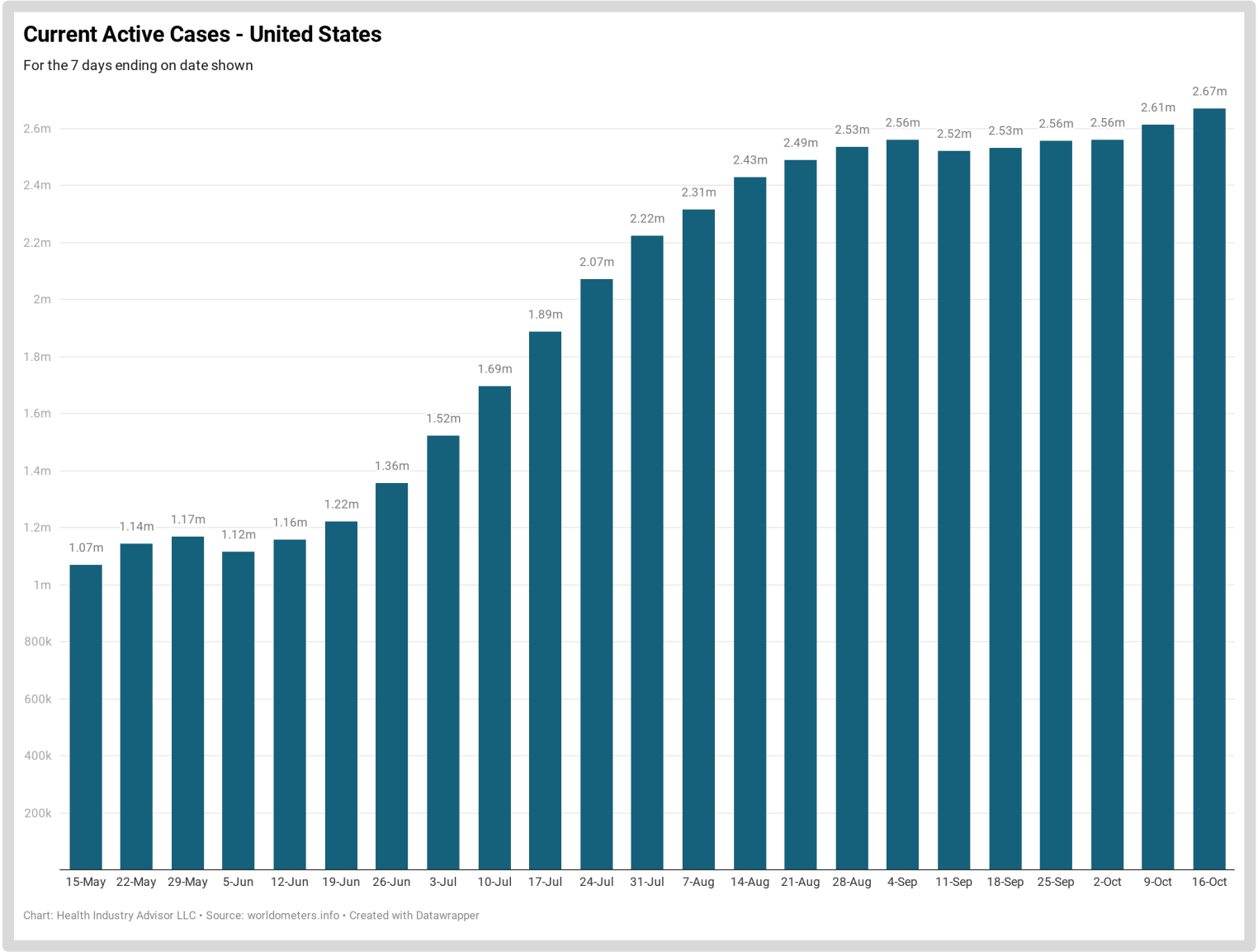
The estimated number of active, detected cases in the U.S. increased for the 2nd consecutive week, following six weeks of relative stability



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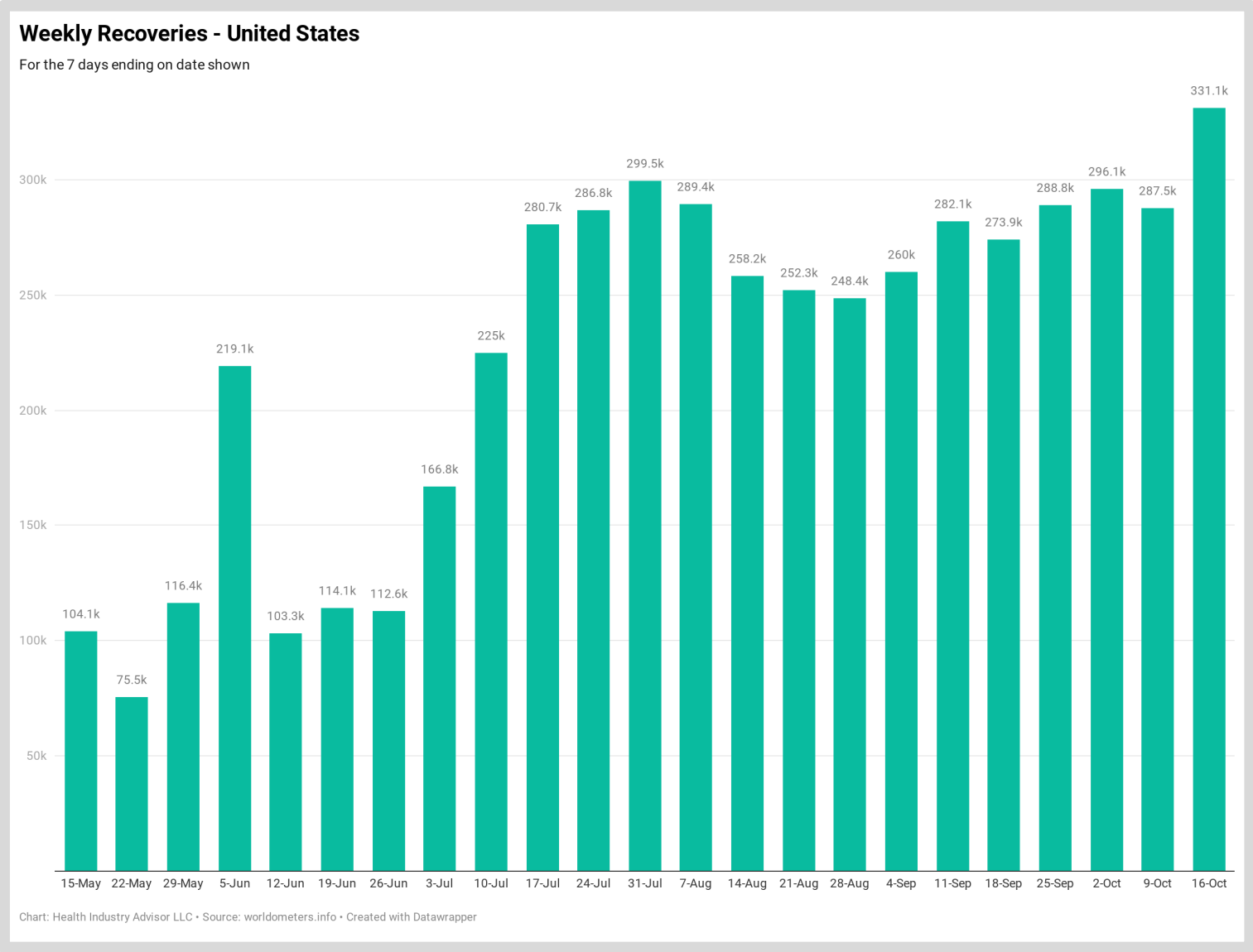
Recoveries from detected infections in the U.S. increased significantly from the prior week

More than 5.4M people in the U.S. have recovered from a detected SARS-CoV-2 infection

There are 2x as many persons recovered from the virus as those that have an active infection



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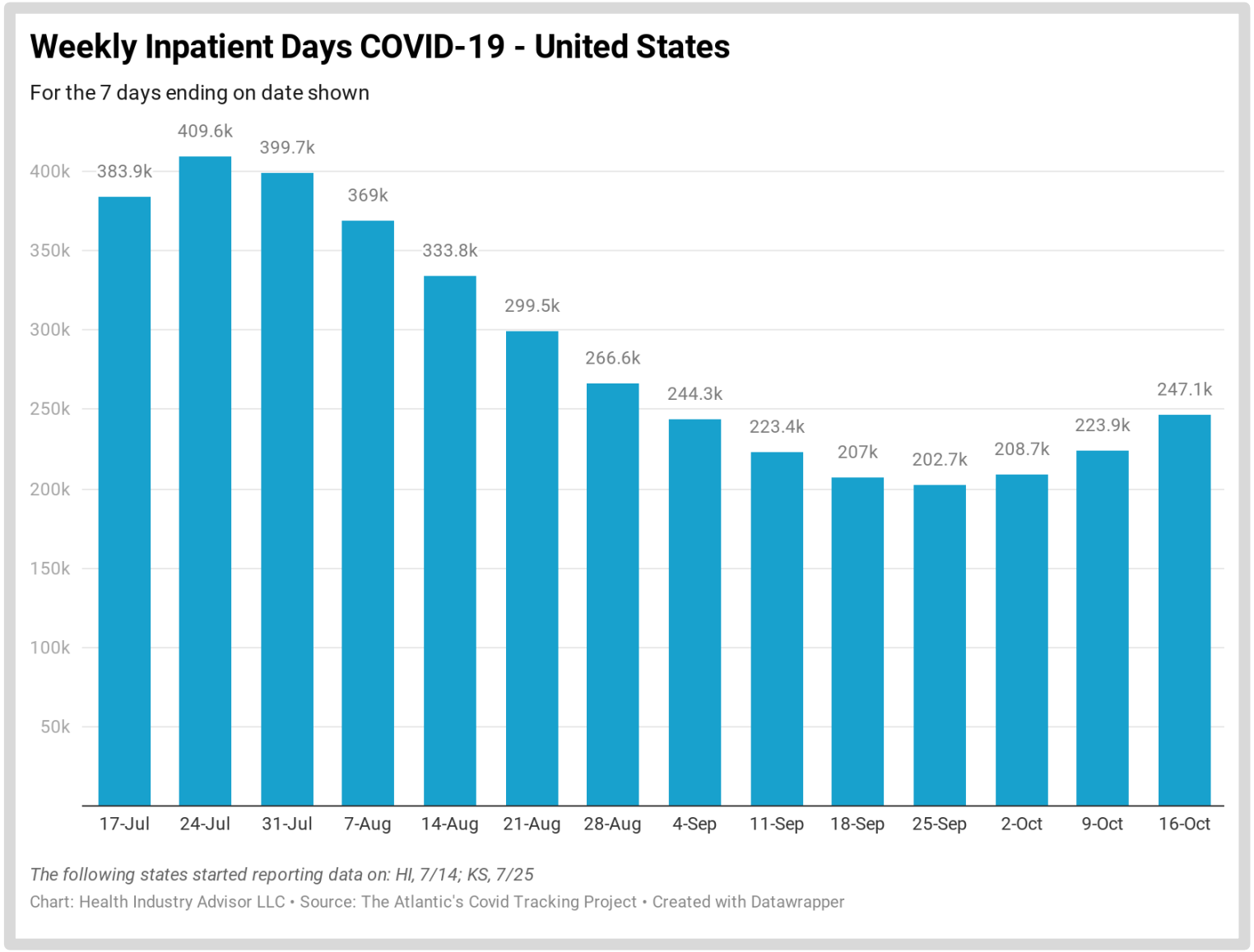
Inpatient COVID-19 census increased last week, for the third consecutive week

This census remains 40% lower than its July 18-24 level



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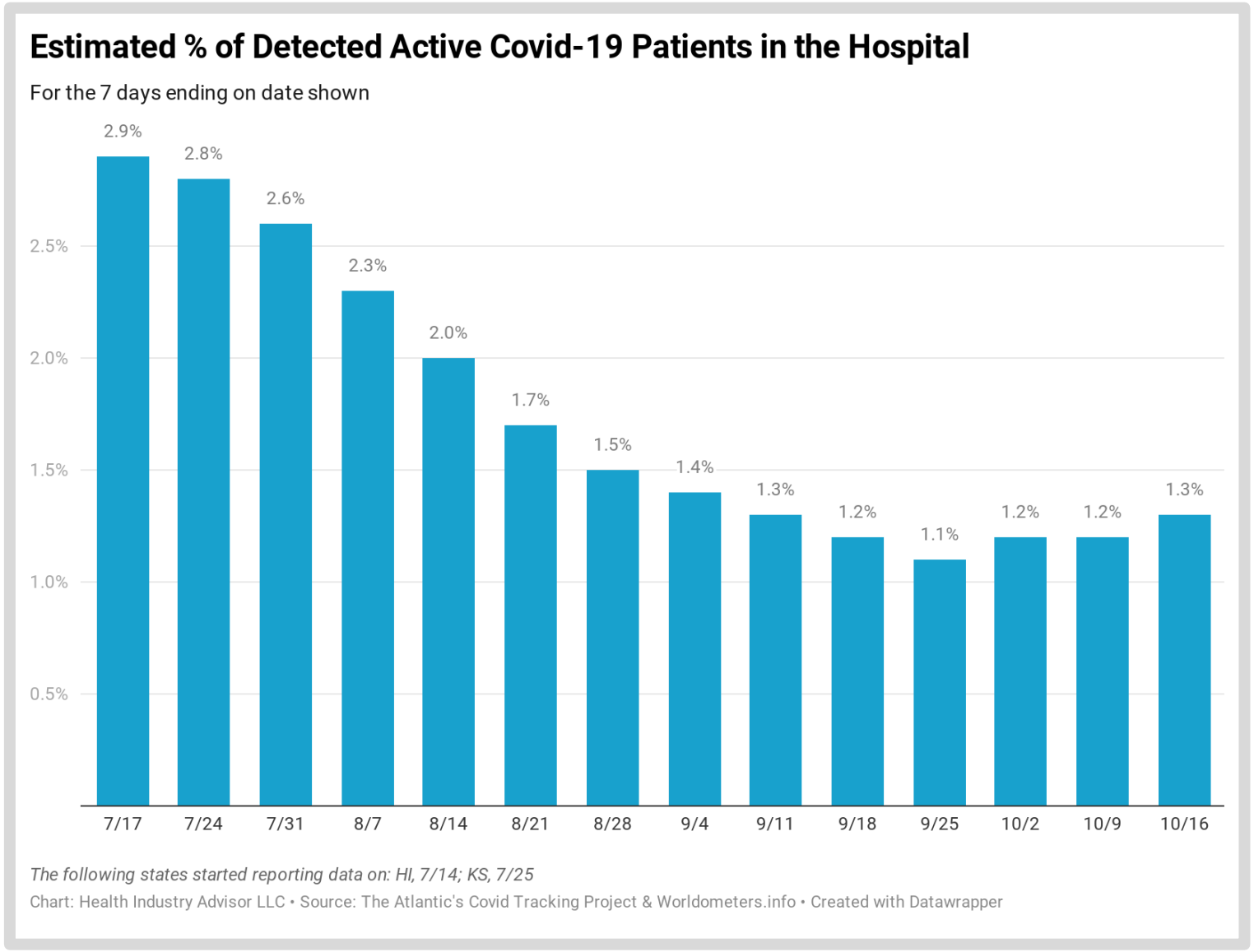
Only about 1.3% of actively-infected persons are in the hospital

Despite the recent increase in Covid-19 inpatients, the likelihood of a detected & actively-infected person being in the hospital has been stable for the past several weeks

Further, this likelihood is less than 1/2 what it was in mid-July



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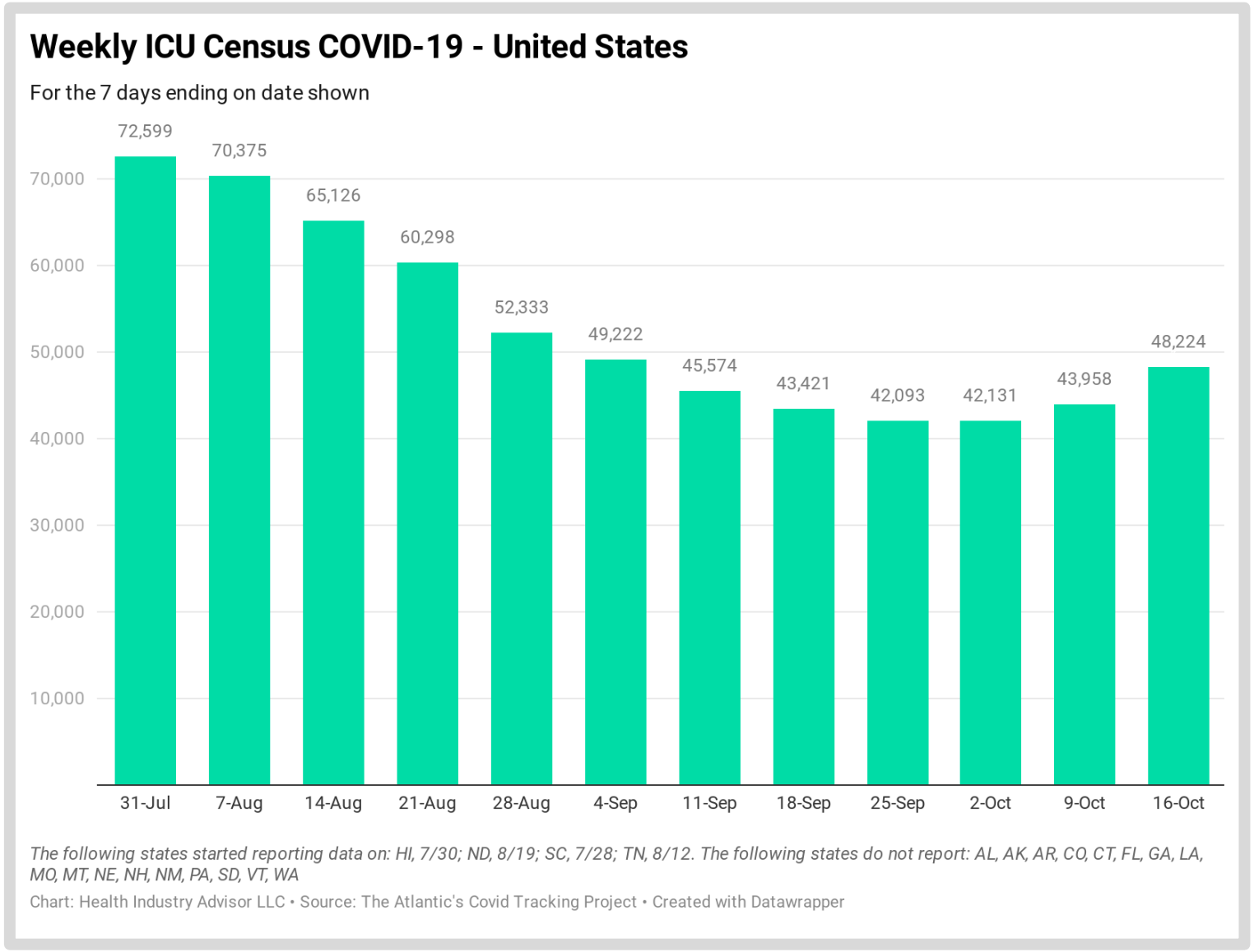
ICU census of COVID-19 patients increased on three consecutive weeks

This census has returned to early-September levels

Still, this census is ~1/3 lower than the week of July 25-31



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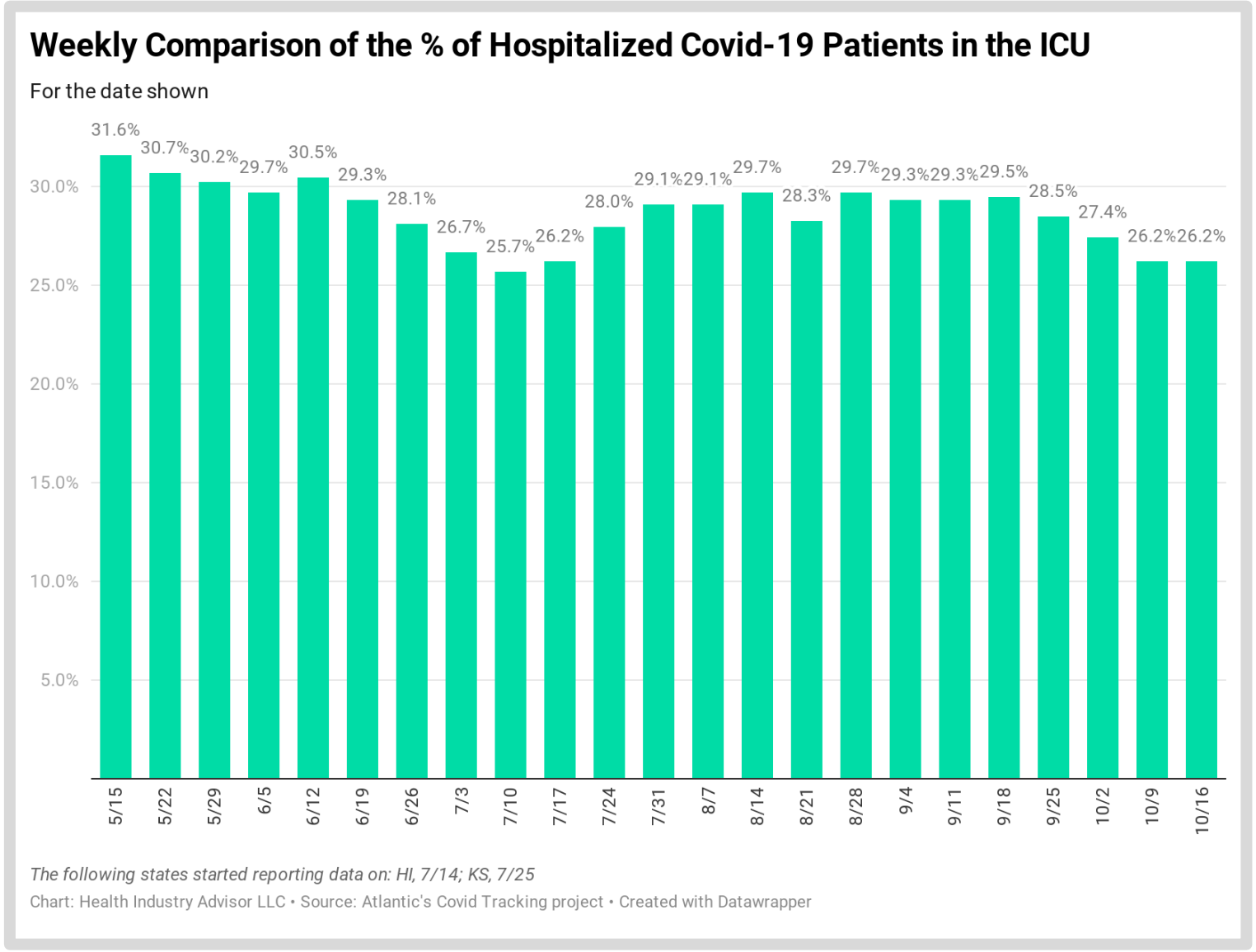
About a ¼ of Covid-19 inpatients were in the hospital last week, consistent with the prior week

The likelihood that a patient hospitalized with a SARS-CoV-2 infection would be in the ICU has only been lower during a single week since mid-May



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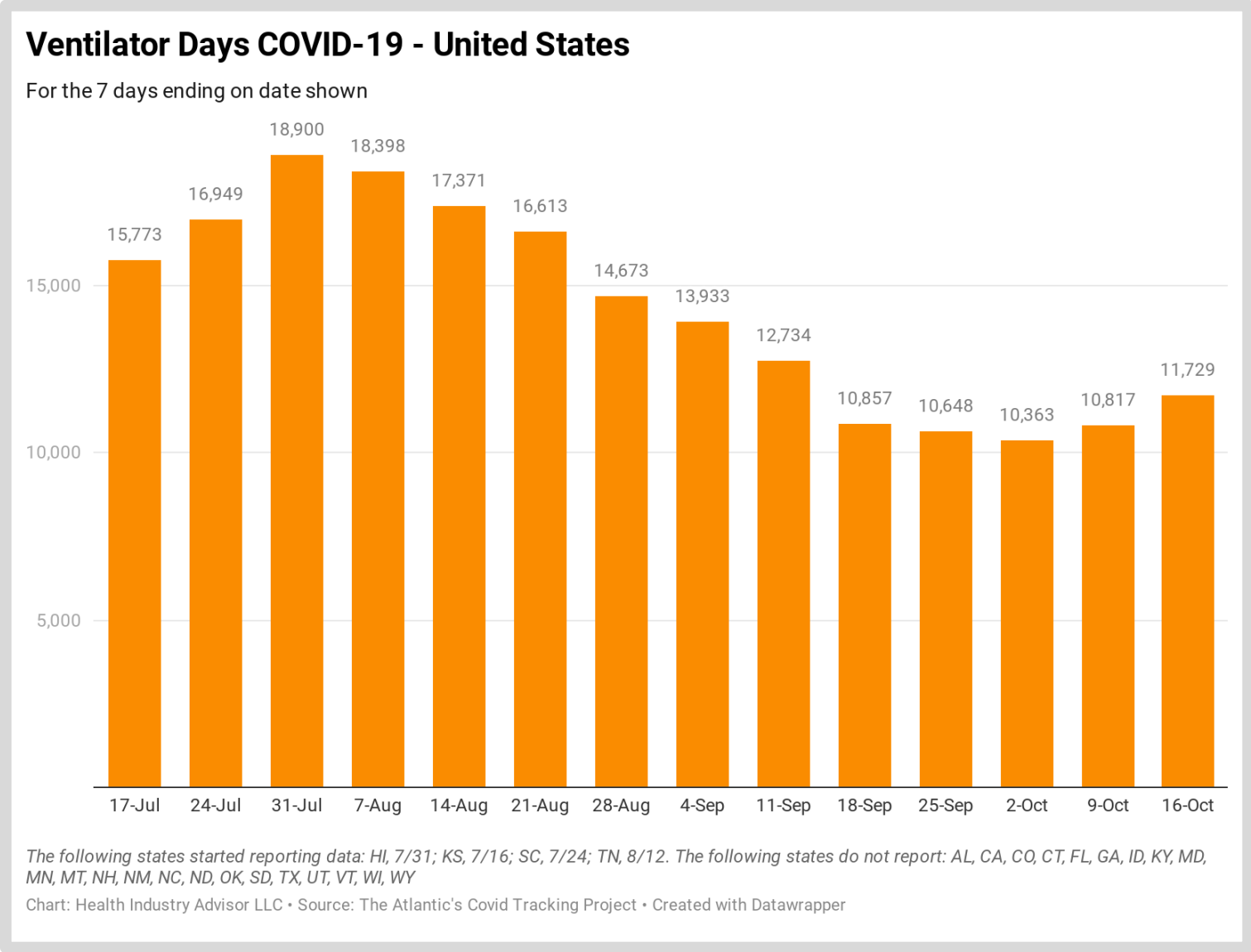
Census of COVID-19 patients on ventilators increased last week – the second consecutive week-over-week increase

This census had declined for the preceding nine weeks

This census is 38% lower than during it's late-July peak



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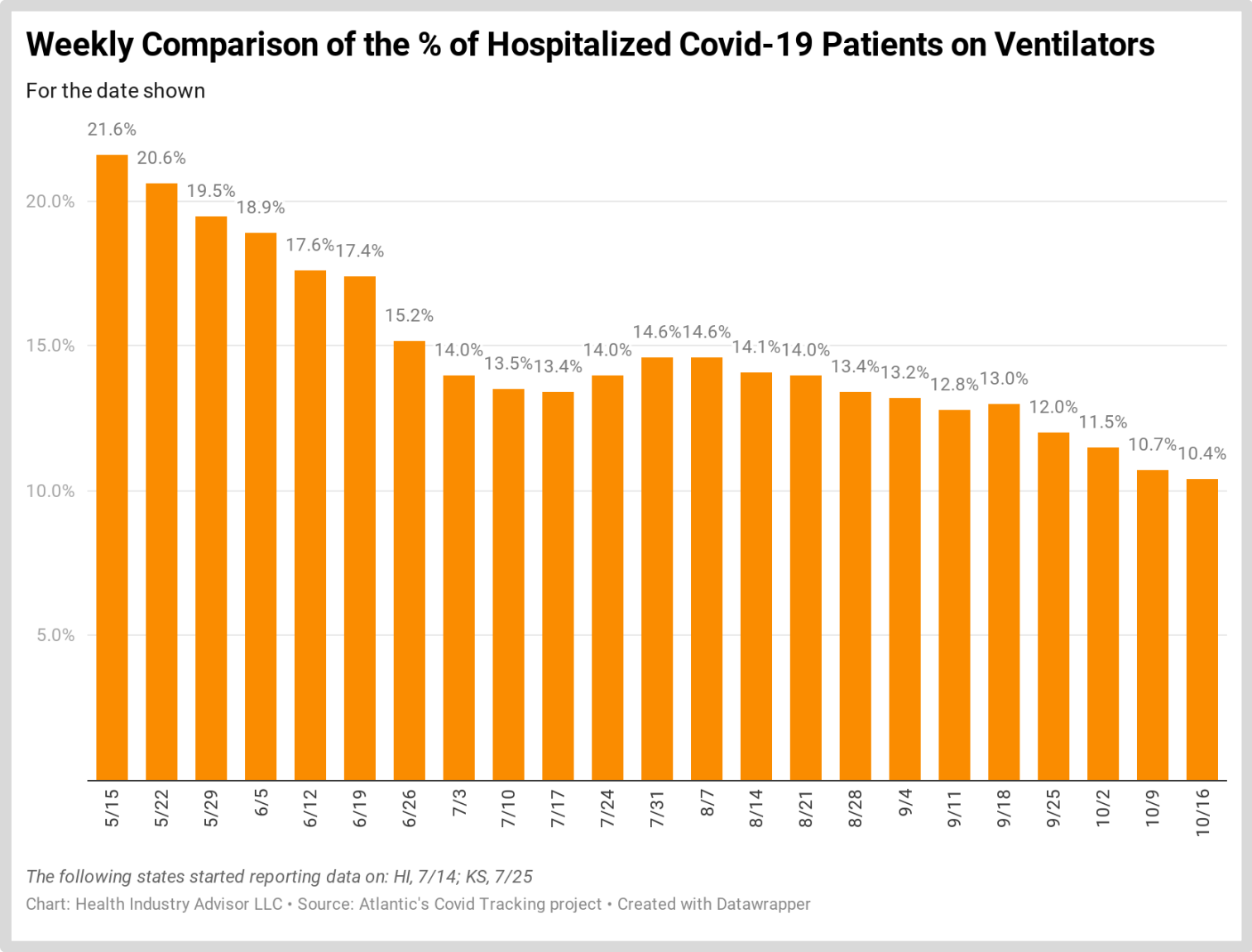
About 10% of Covid-19 inpatients were on a ventilator last week

A reflection of changing treatment protocols, the likelihood of a person hospitalized with a SARS-CoV-2 infection was on a ventilator declined again last week – the 19th decline in the past 23 weeks

During these twenty-three weeks, the likelihood of COVID patient requiring a ventilator has been cut by more than 1/2



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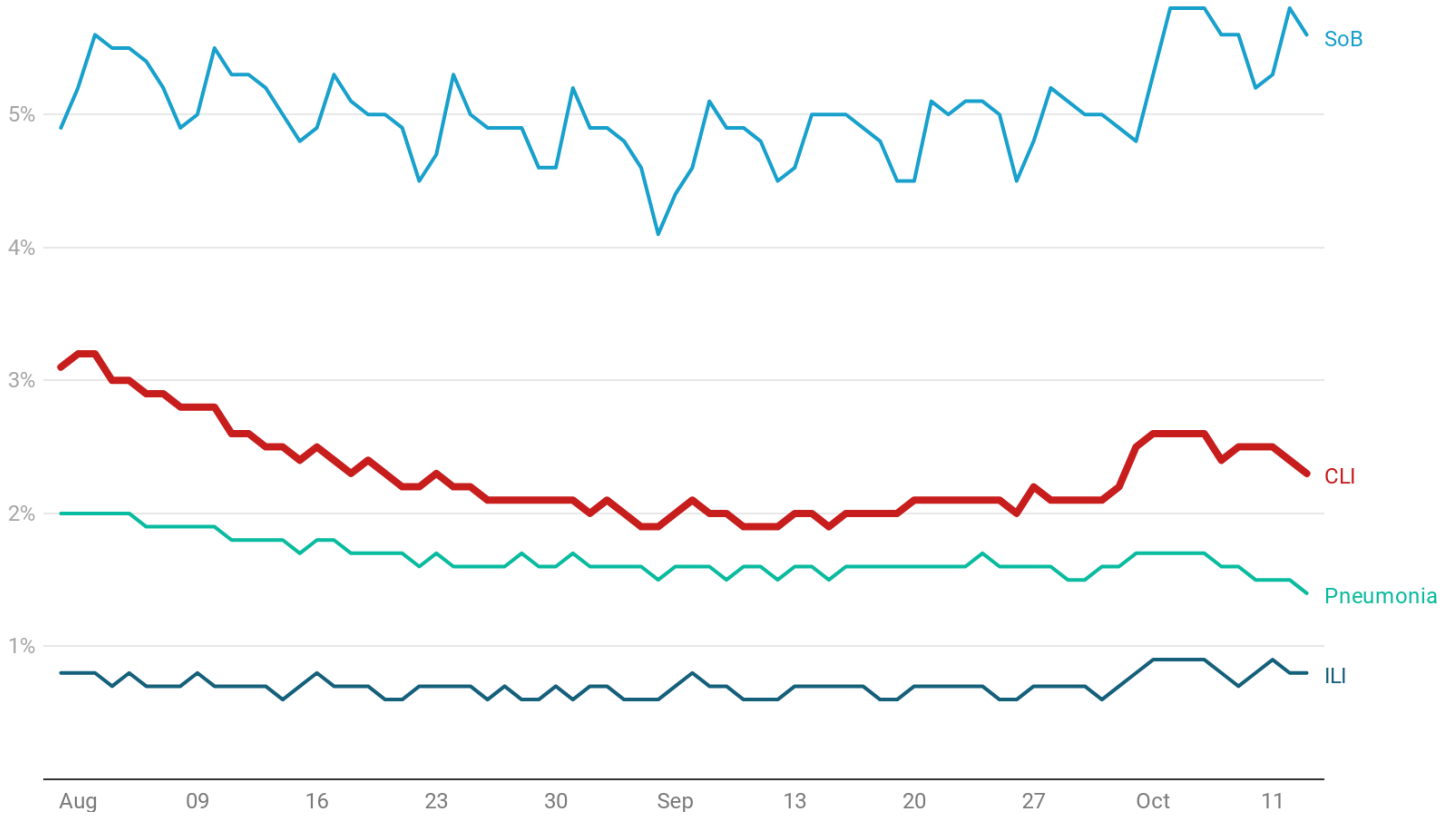
The % of ER visits for COVID-19-like illnesses (CLI) has eased over the past six days; this rate remains less than ½ of what it was in mid-July

Although the flu season has officially begun, we have yet to observe any impact on the rate of influenza-like illness (ILI) visits to the ER

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

As of October 13



Health Industry Advisor LLC analysis

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