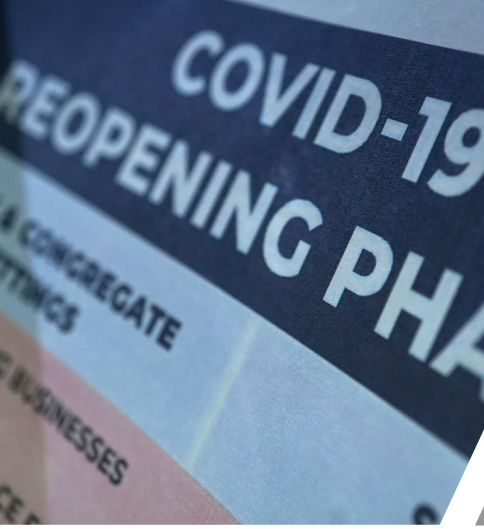

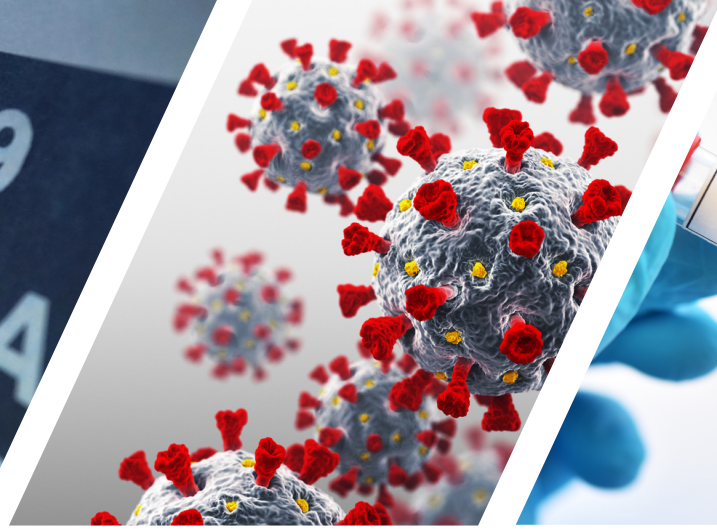

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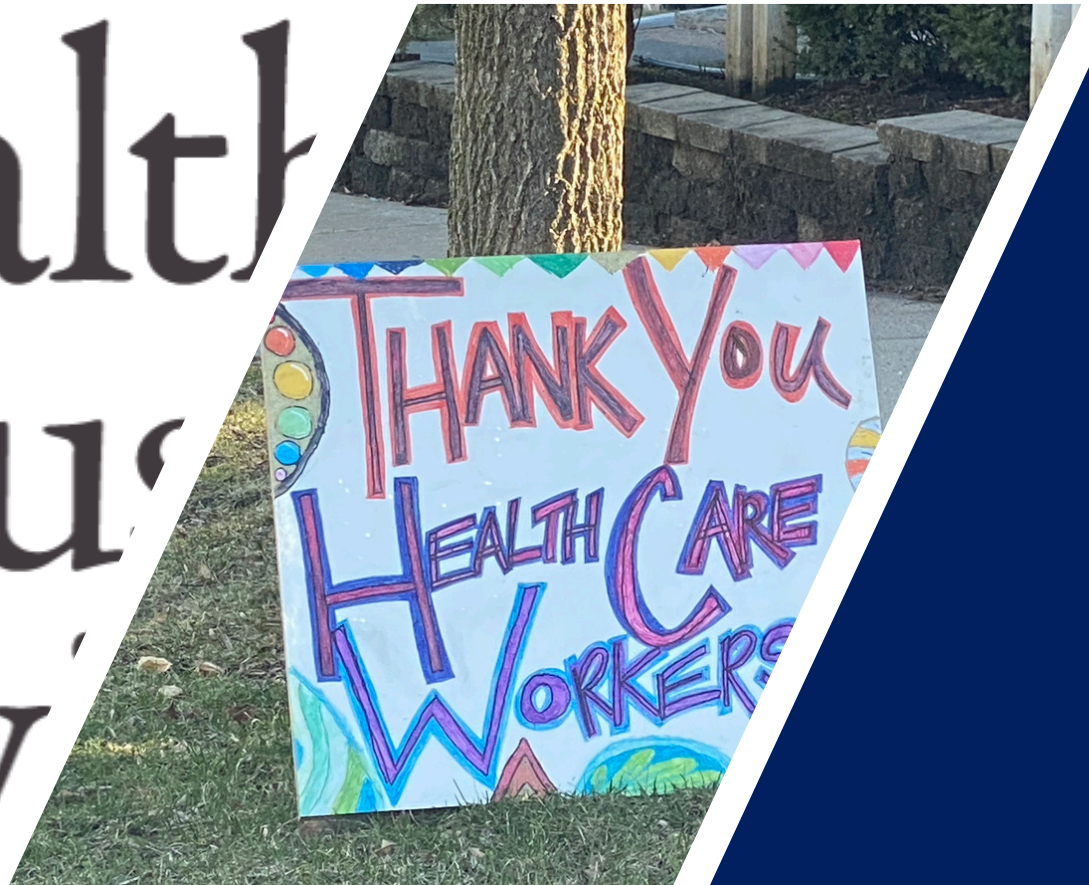


Issue # 213

Monday, November 16, 2020

COVID-19 Report

Highlights

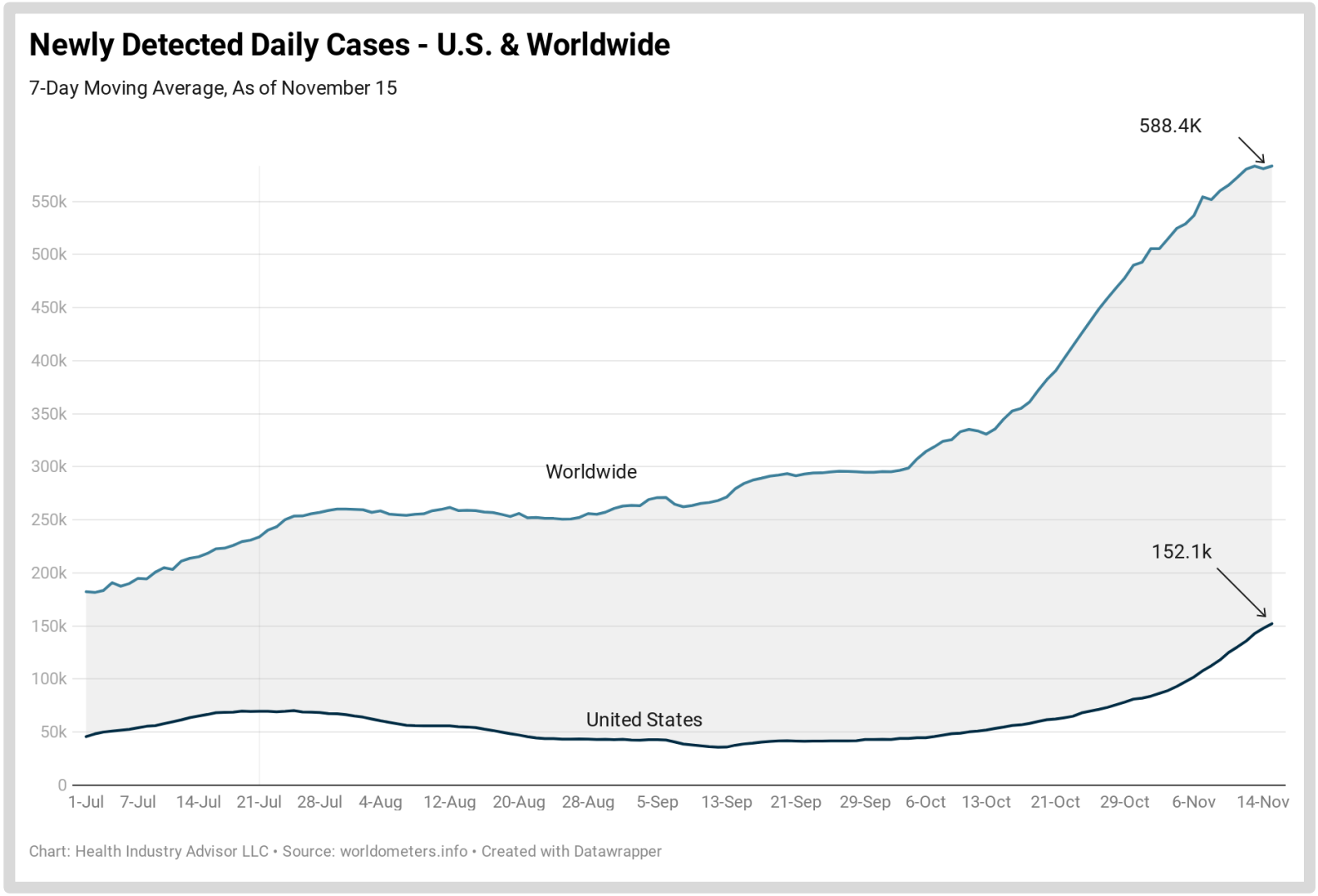
- The virus is taking an ever-greater toll in the U.S.:
  - **The U.S. continues to be plagued with high counts of new cases each day, with new cases increasing on a week-over-week basis**
  - These new cases continue to stress the healthcare system, as Covid-19 census has increased on a same-day, prior week basis every day since September 23
  - **In ten states - Connecticut, Illinois, Indiana, Iowa, Michigan, Missouri, Nevada, Rhode Island, South Dakota and Wisconsin - Covid-19 patients are occupying >30% of all available inpatient beds**
  - This surge in new cases, which began in early October, also has led to increasing deaths reported with the coronavirus. Tragically, **the 7-day average death count has been increasing since mid-October.** Given the continued case increases and the latency between case detection and death, this rate will likely continue increasing for at least another month
- As bad as it is, it could be worse, if not for **improved treatment and lessened severity of newly-detected case**s:
  - Fewer Covid-19 cases require hospitalization: **the hospitalization rate has now declined on fifteen consecutive days and thirty-one of the past thirty-four days**
  - Even hospitalized Covid-19 patients aren't requiring the same level of care: The % of Covid-19 inpatients in the ICU has declined 20% in the past two months; the % of the patients requiring a mechanical ventilator has declined 10% in the last month and 60% in the past six months

- Several European countries have begun to recover from extremely high infection rates in the past month:
  - **Belgium, which on November 2 had the highest infection rate in the world, among countries with > 1 million population; Since that date, this infection rate has fallen more than 70%**
  - Czechia, France, Switzerland and Spain also have experienced significant declines in infection rates in the past few weeks
  - Each of these countries had experienced infection rates significantly higher than where the U.S. is today
- Despite the rising Covid-19 case count in the U.S., there are **preliminary** signs of easing (like these European countries experienced ahead of their recent declining infection rates):
  - Since an infected person typically can infect more than one additional person, a characteristic of the virus spread is an ever-increasing rate of new cases - such as measured by the week-over-week change in new cases
  - Worldwide, and in Belgium specifically, this rate began to decline about three weeks ago - indicating that the rate of the spread was slowing
  - **This rate (week-over-week change in new cases) for the U.S. has now declined on five consecutive days - a possible indication of slowing spread of the virus** (this rate had increased on ten of the preceding eleven days - underlying the recent spike in new cases)
  - **Additionally, the % of ER visits for Covid-19 like illnesses has declined for five consecutive days, following a six-week long pattern of increases**

Worldwide, we are experiencing ~588k new cases each day

The United States is averaging ~152k new cases each day

* - 7-day moving average basis



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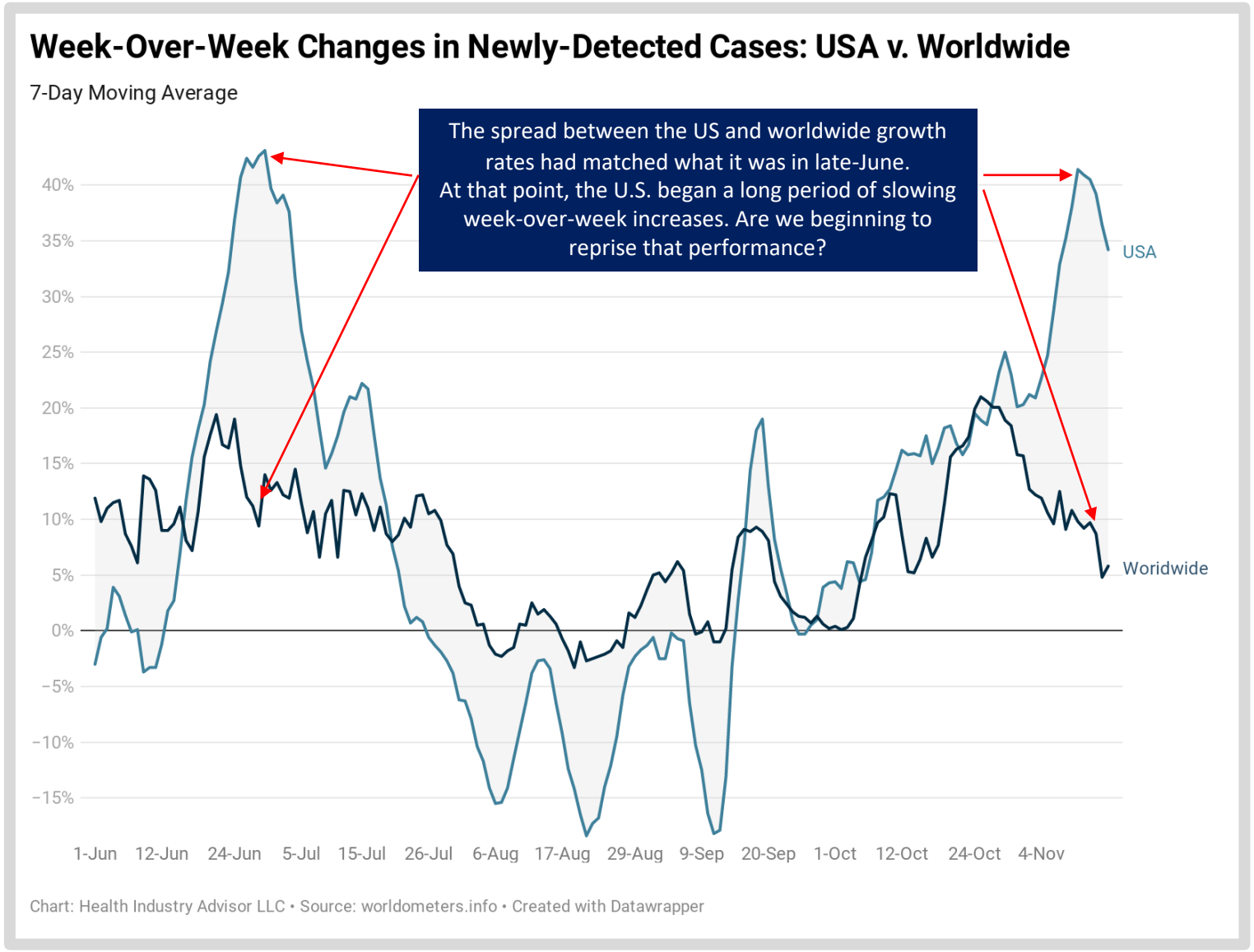
Worldwide, the rate of growth slowed over the past three weeks

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

The good news – the week-over-week rate of increase has now declined on five consecutive days



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Belgium, Czechia, France, Israel, the Netherlands and Spain continue to experience infection rates decline from high rates experienced in October or early November

On November 2, Belgium had the highest infection rate among countries with at least 1 million population; as of yesterday, their rate has since declined 73%

* - Population >1 million
** - 7-day average

USA and Selected Countries With Recent High New Infection Rates

New Daily Infections / Million, 7-Day Moving Average, As of November 15

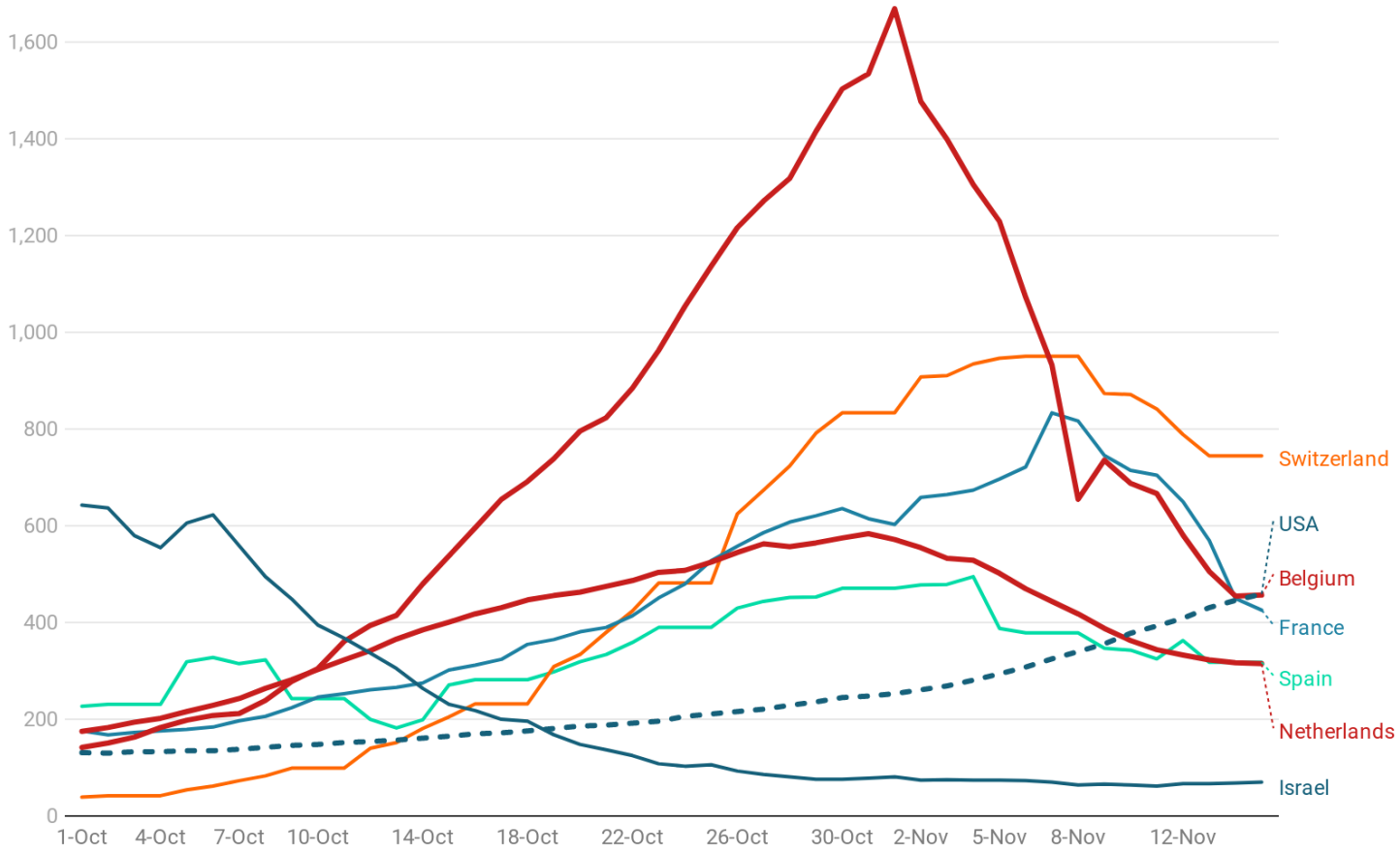

Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

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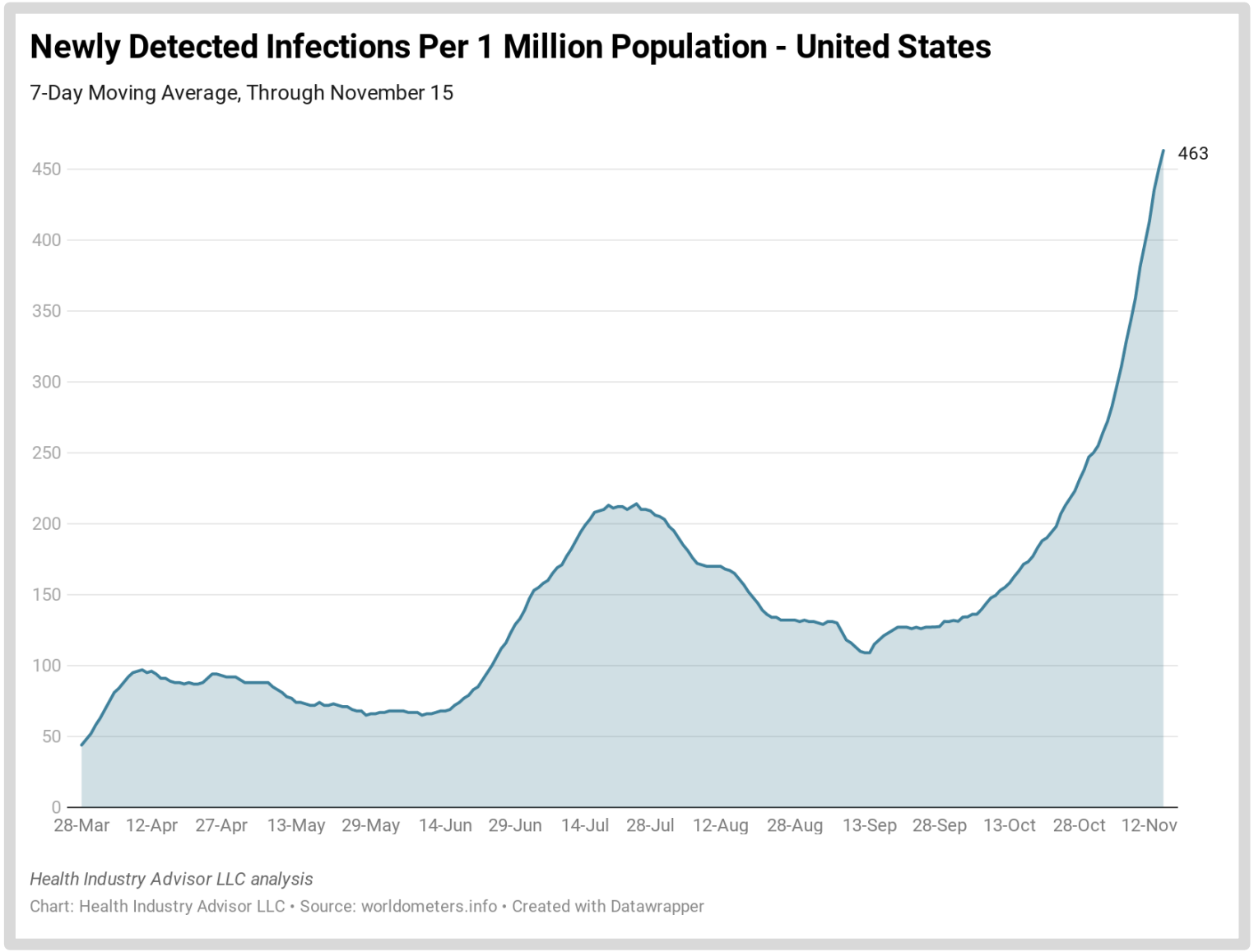
The rate of new infections per capita* in the U.S. has risen every day since October 2

* - 7-day moving average basis



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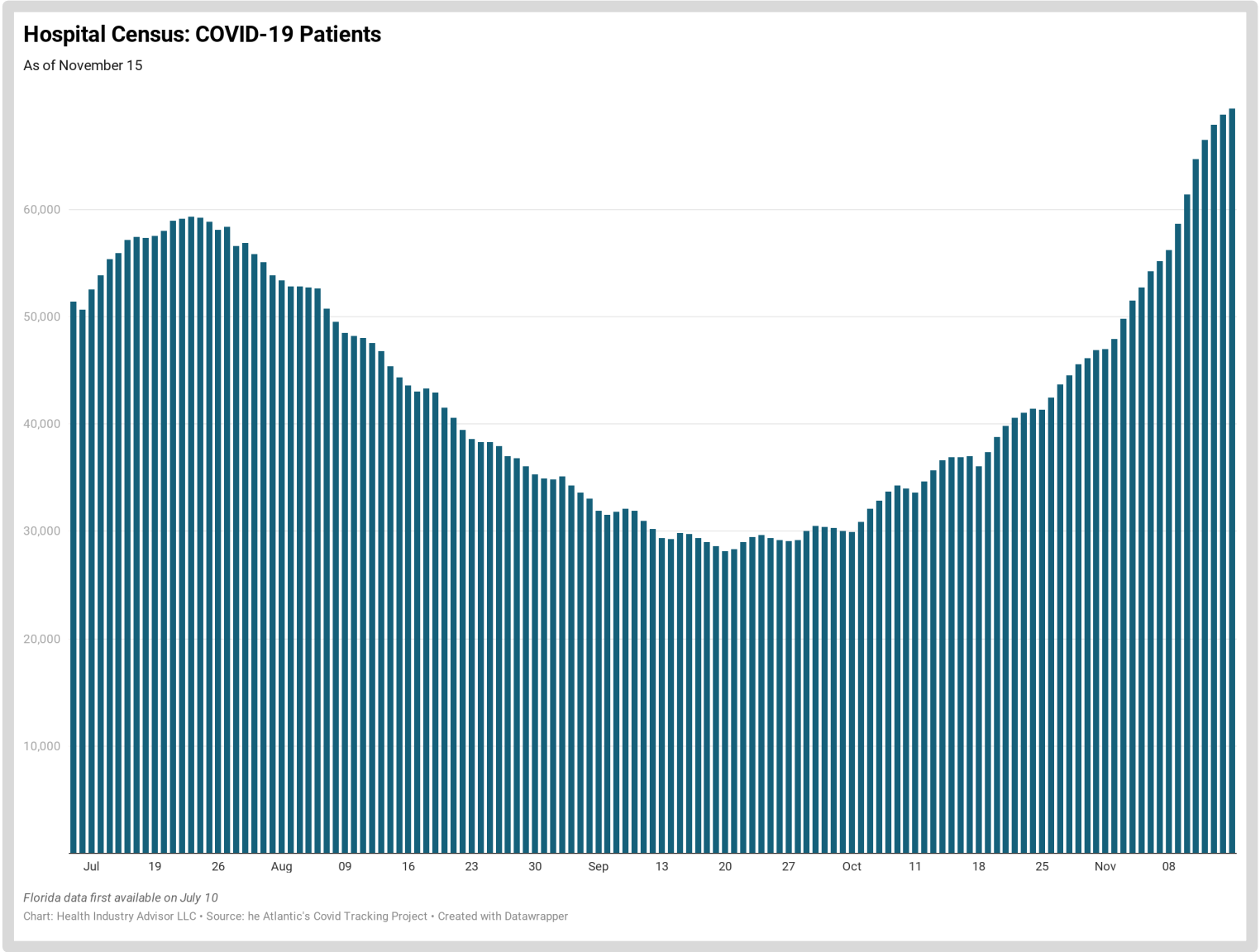
On a same-day, prior-week basis, inpatient Covid-19 census increased every day since September 23



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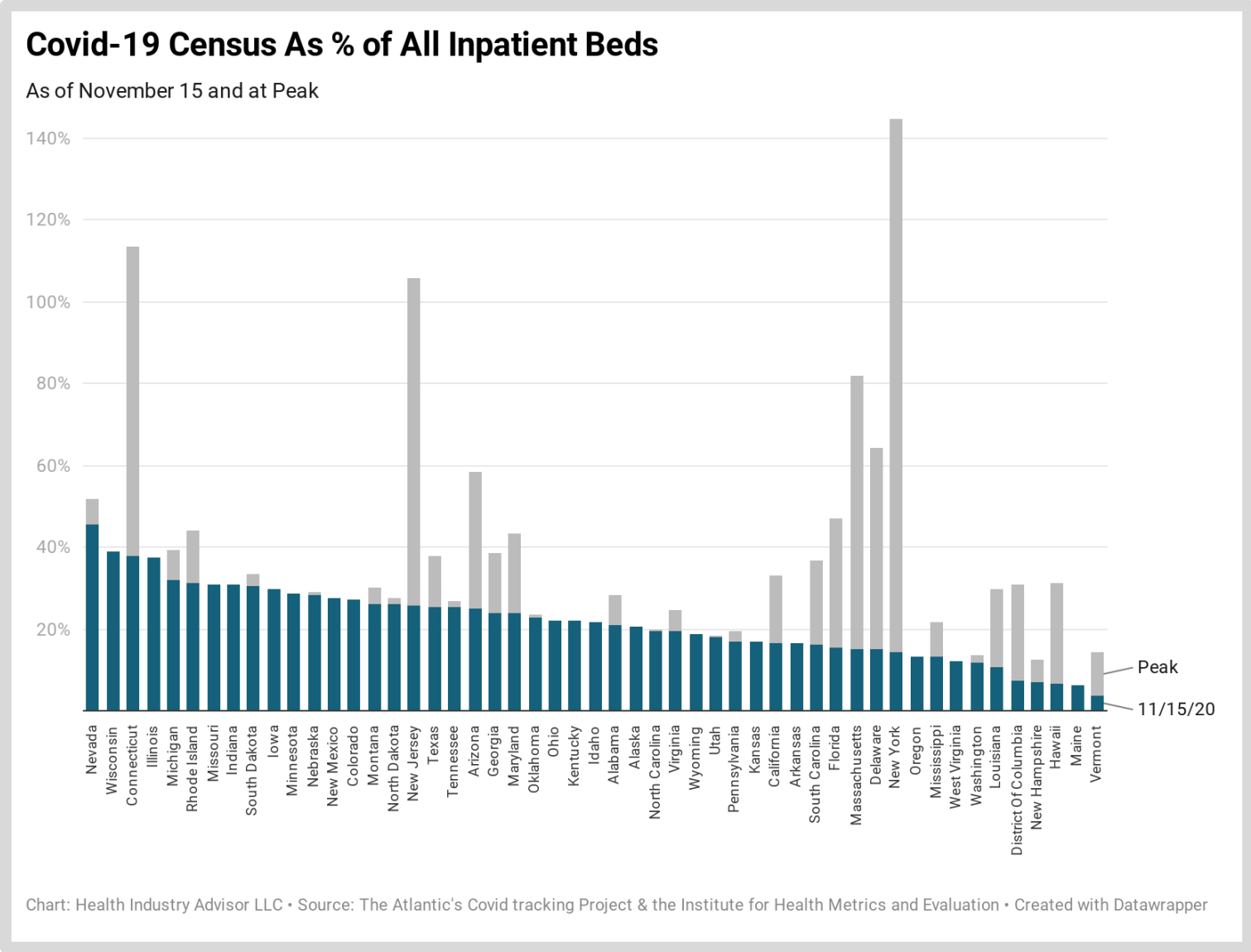
Despite the recent rise in new cases, Covid-19 is not straining the U.S. healthcare system as it had in April and, to a lesser degree in July:

In April, Covid-19 patients exceeded the normal inpatient bed capacity in three states: Connecticut, New Jersey and New York, and peaked at 82% of bed capacity in Massachusetts

In July, Covid-19 patients occupied >1/2 the available beds in Arizona and Nevada

As of yesterday, in only four states are Covid-19 patients occupying >33% of available inpatient beds – Connecticut, Nevada, Illinois and Wisconsin



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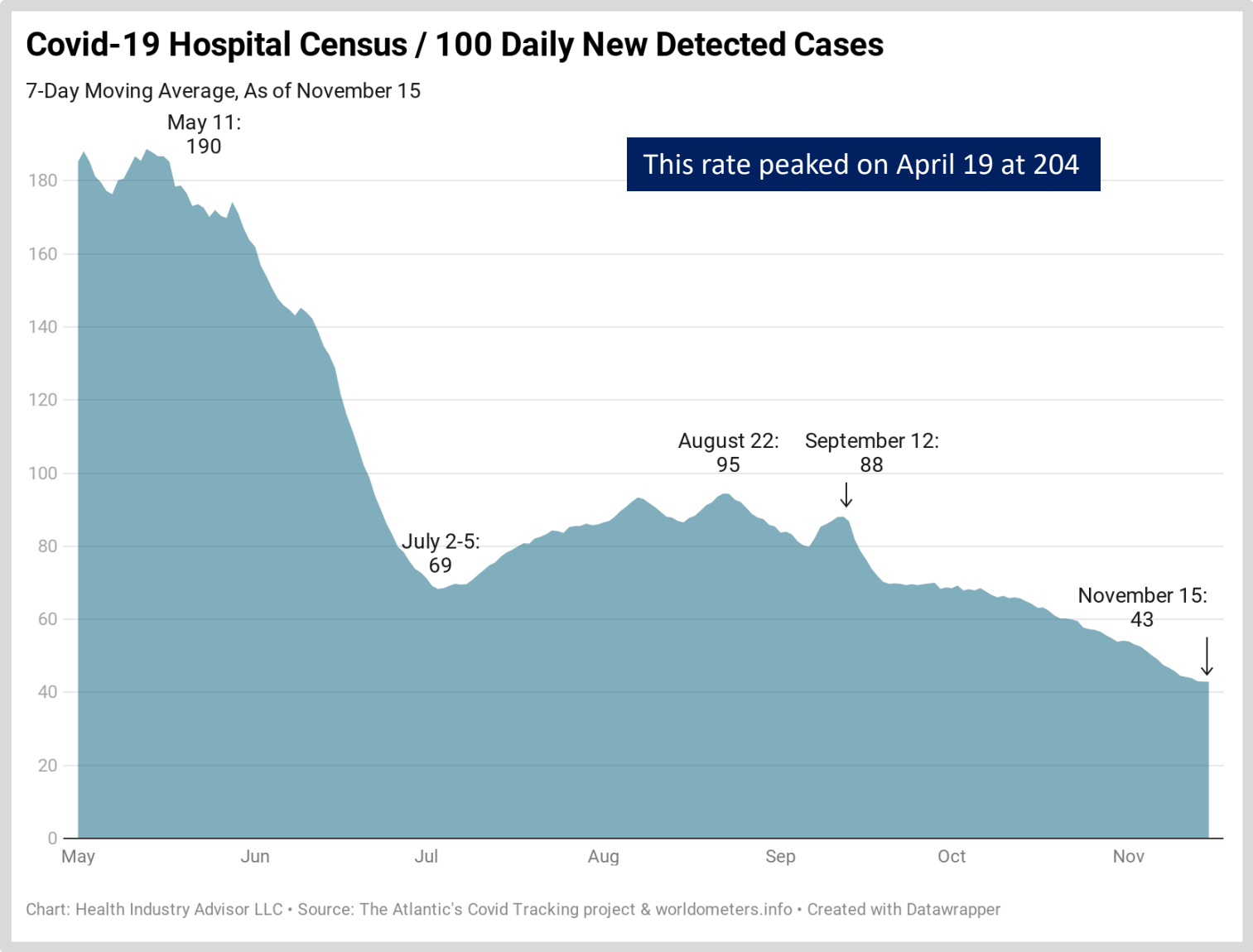
Covid-19 Hospitalizations, while increasing, have not kept pace with the increase in newly-detected cases:

The average Covid-19 census per 100 new cases has declined on fifteen consecutive days and thirty-one of the past thirty-four days

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



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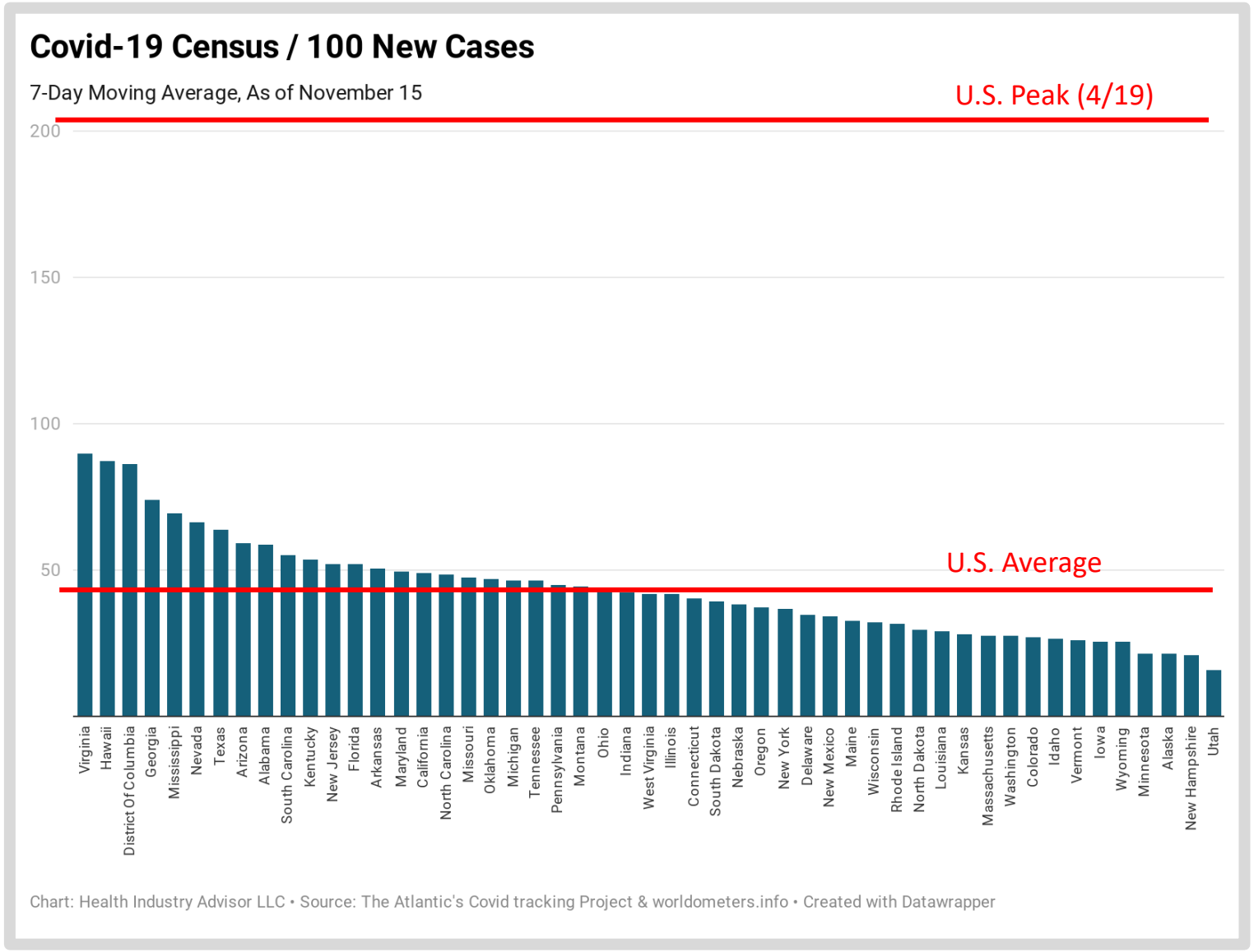
The highest average census per new case is currently experienced in Virginia, Hawaii and the District of Columbia

The lowest rates are found in Utah, New Hampshire, Alaska and Minnesota

Contrast these rates to those experienced in selected hard-hit states during earlier surges:

- Arizona: 305 (4/20)
- California: 416 (4/17)
- Connecticut: 293 (4/29)
- Massachusetts: 475 (6/21)
- Michigan: 422 (4/21)
- New York: 330 (5/22)



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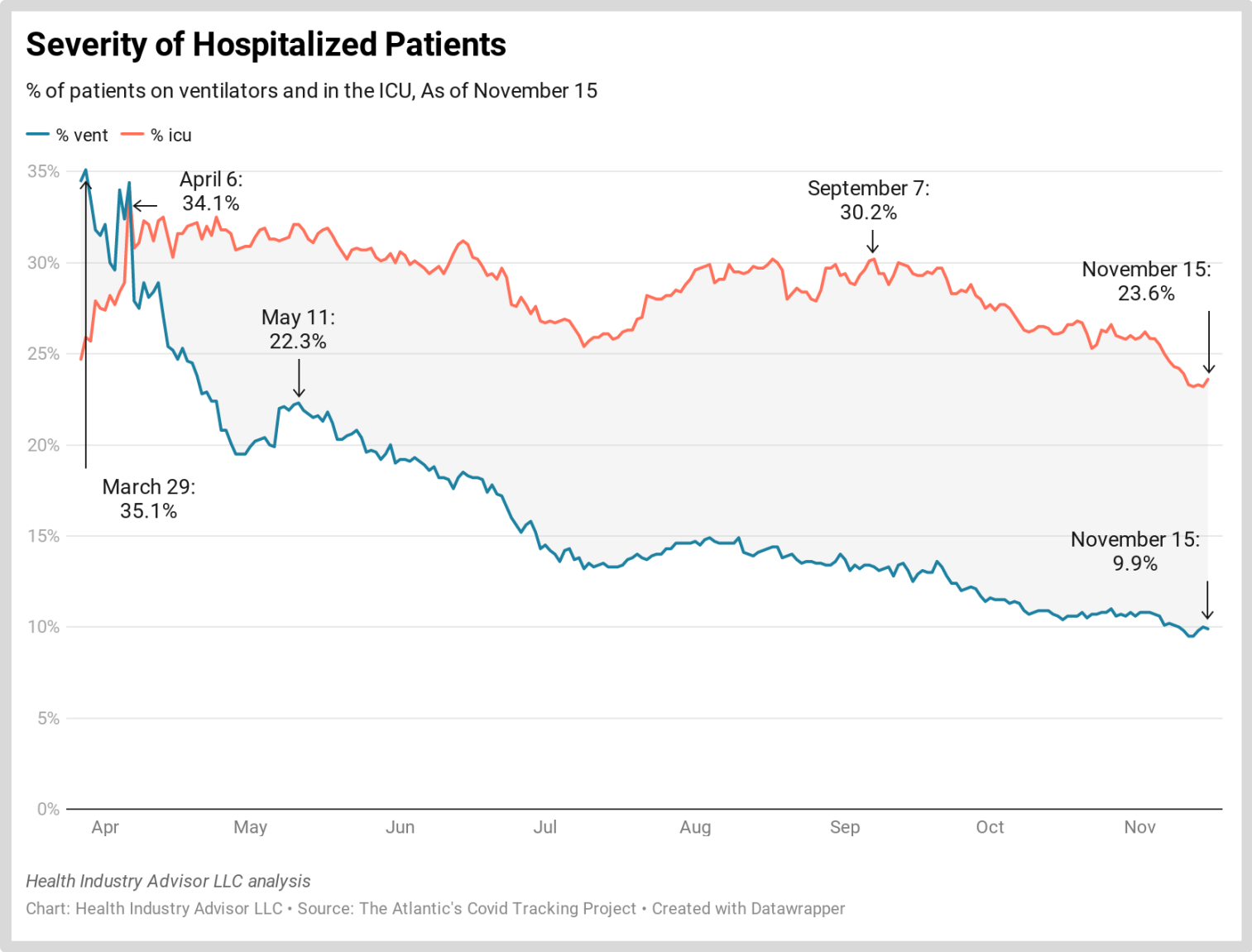
The likelihood of a hospitalized Covid-19 patient would require ICU care has declined 21% since early-September and 32% since early-April

The likelihood of a hospitalized Covid-19 patients would be on a ventilator has reduced by nearly 60% since mid-May and by >70% since March



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The % of ER visits for COVID-19-like illnesses (CLI) has declined for four consecutive days, after increasing the preceding six weeks

This rate remains than it was in in March/April, and the rate of influenza visits remains low

% of ER Visits For Covid-19-Like Illnesses (CLI); Influenza-Like Illnesses (ILI; Shortness-of-Breath (SoB) and Pneumonia

As of November 9

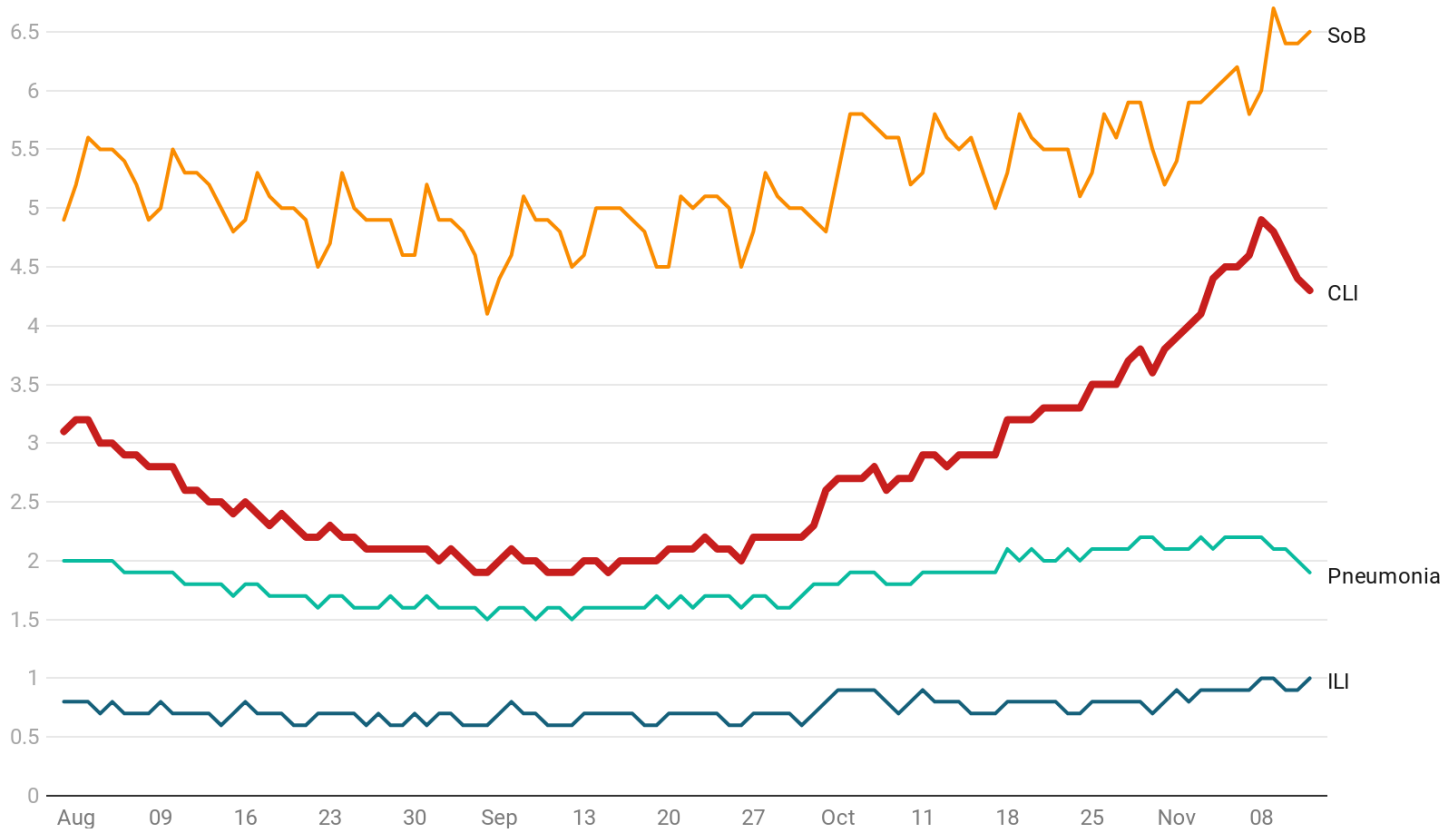

Chart: Health Industry Advisor LLC • Source: CDC • Created with Datawrapper

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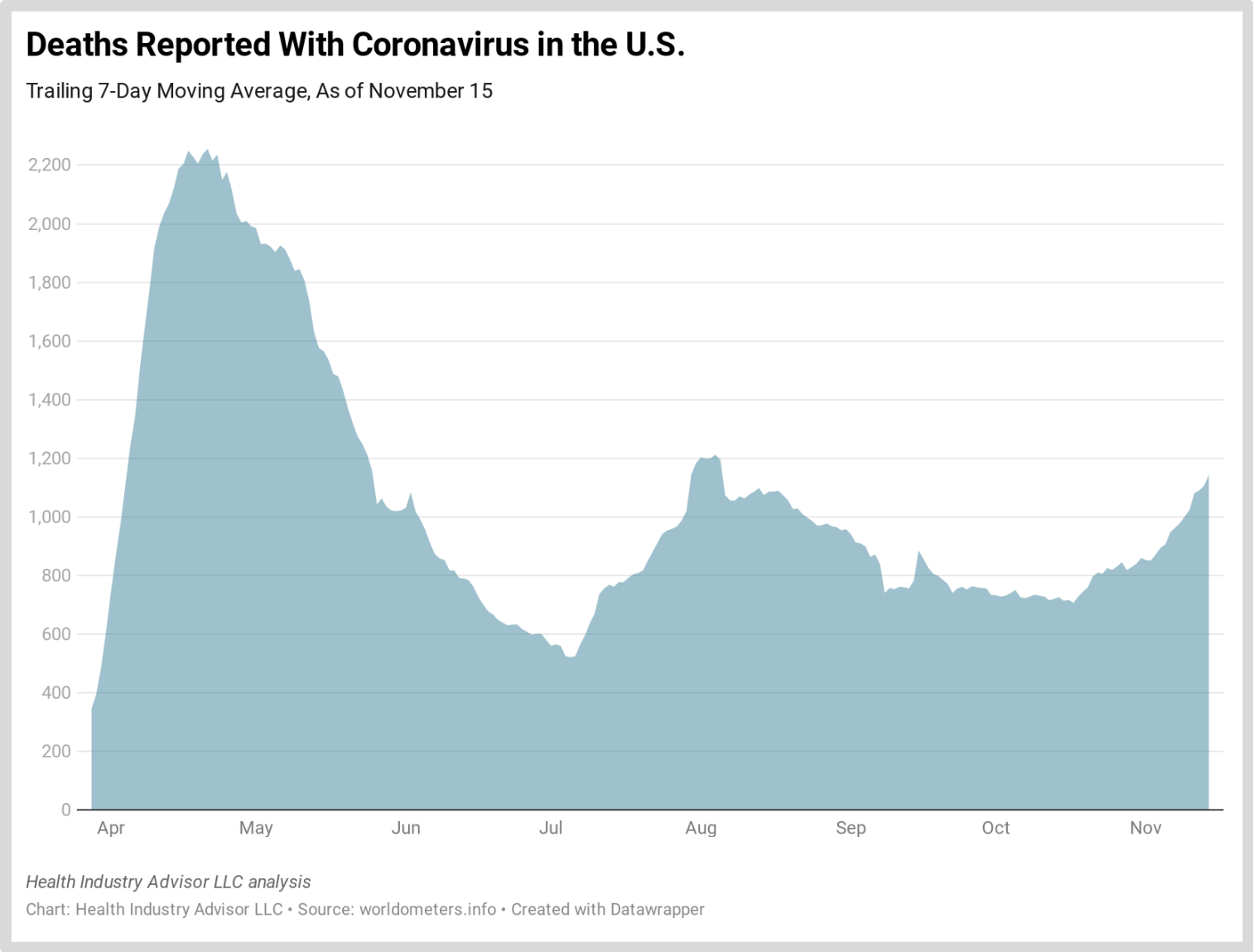
The recent uptick in newly-detected cases is is resulting in increased deaths:

The 7-day average deaths per day has been increasing since mid-October



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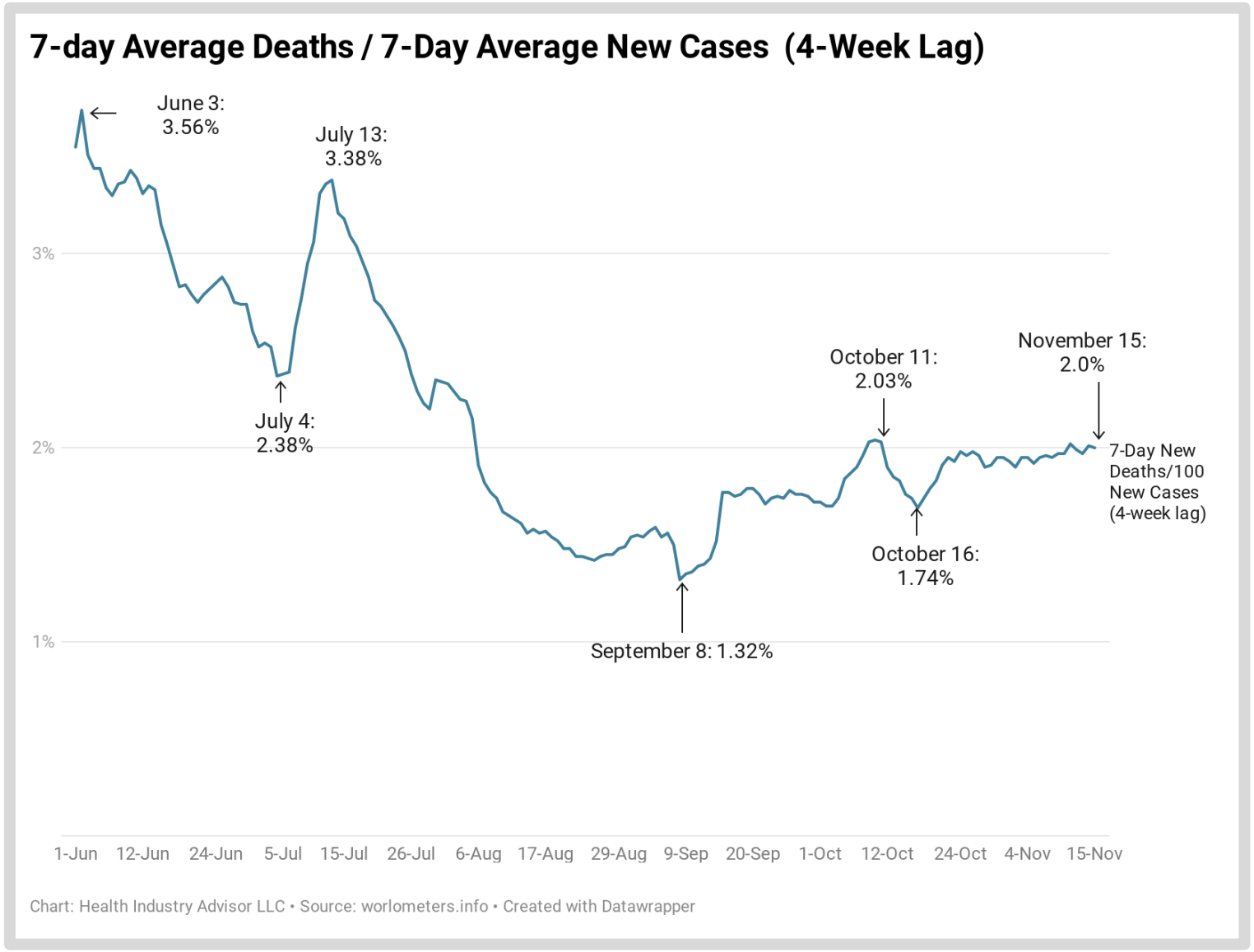
Deaths with coronavirus, relative to new cases (lagged 4 weeks) have moved within a narrow range for the past month

This rate declined rapidly in July and August



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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