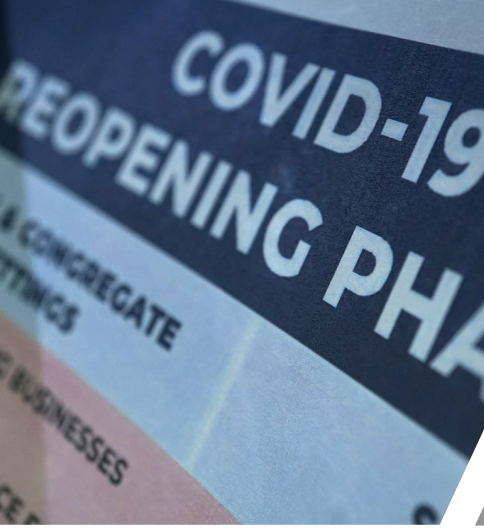

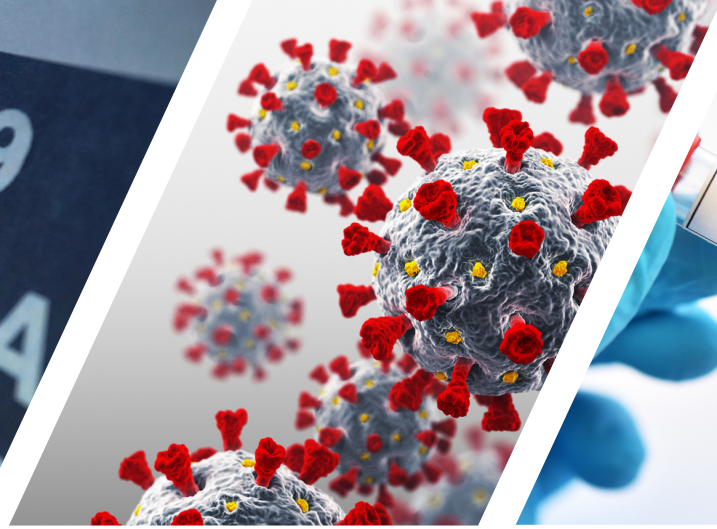

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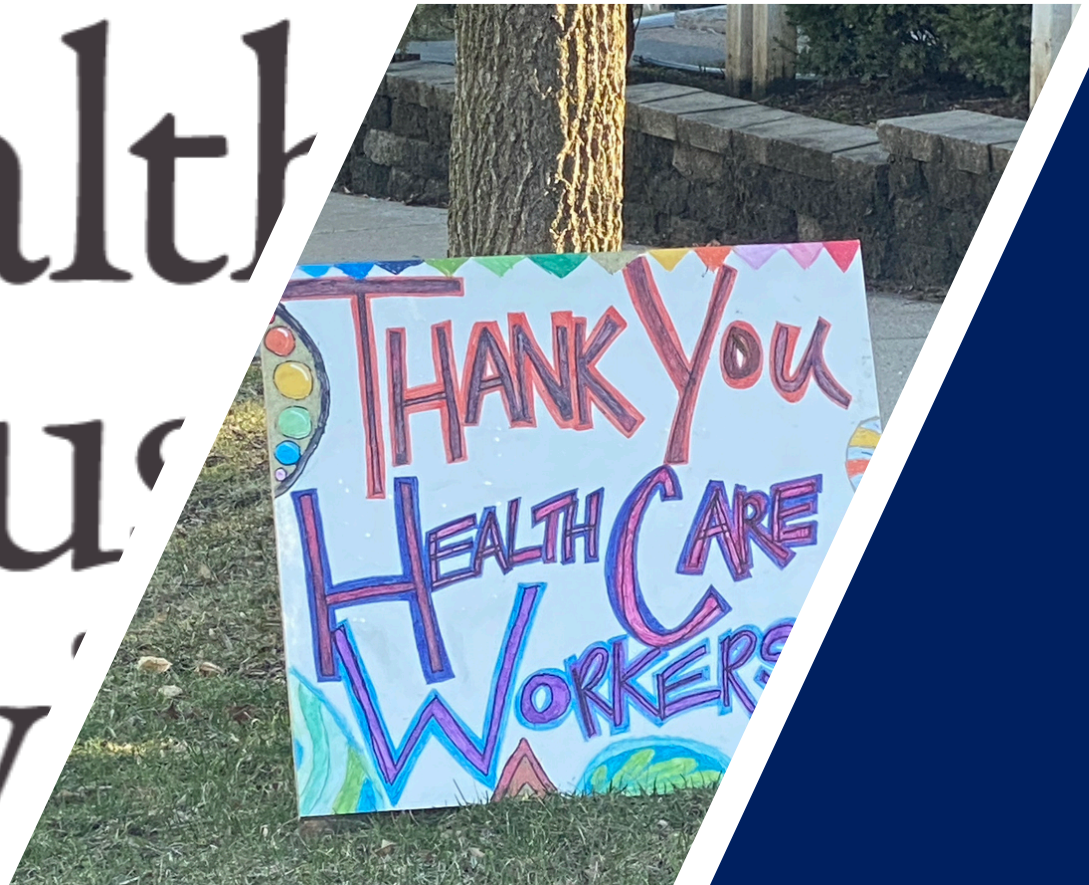

Issue # 180

Wednesday, October 7, 2020

COVID-19 Report

Highlights

- One of the most-encouraging trends over the past several months was the sharp decline in the demand placed by COVID-19 infections on critical healthcare resources. That trend has stalled and even begun to change course:
  - Inpatient census of COVID-19 patients has increased on a same-day, prior week basis for thirteen consecutive days; Previously, this measure had declined for fifty-eight consecutive days. Nevertheless, yesterday's census was 43% lower than it was on July 28, when the downward trend began
  - ICU census of COVID-19 patients increased sharply for the second consecutive day; This measure had declined for fifty-eight consecutive days, from August 3 - September 25. Yesterday's ICU census was 37% lower than it was when the downward trend began
  - Hospitalized COVID-19 patients on ventilators increased sharply yesterday on a same-day, prior-week basis, after declining for thirteen of the preceding fourteen days
  - The % of ER visits for both COVID-19-like illnesses (CLI) and influenza-like illnesses (ILI) increased on two consecutive days. The CLI-rate remains significantly lower than it was from July-September; The ILI-rate remains low
- Deaths with the novel coronavirus continue trending downward:
  - The 7-day average daily rate yesterday dropped by 26 deaths from Monday's 7-day average; This rate is now as low as it has been since July 4-10
  - Except for Labor Day week, there were fewer deaths reported yesterday than on any other Tuesday in the past fifteen weeks (since June 23)
- Reports of new cases provided a slight respite yesterday, following recent increases:
  - On a same-day, prior week basis, new cases were lower yesterday, following three consecutive days of increases
  - There was a slight drop in new daily infections per capita yesterday, after increasing on five of the preceding seven days
  - Despite a slight decline in new cases yesterday compared to last Tuesday, these were higher than for any of the preceding seven Tuesdays
- More evidence of the mitigating effect on infections of mask-wearing, limited public events and selective business closing
  - The Centers for Disease Control and Prevention (CDC) published a report on Tuesday showing the impact of these mitigating factors on infection rates in Arizona
  - This study found that infection rates increased 151% after these mitigating measures were lifted then, declined 75% after the measures were reenacted
  - Source: CDC, Morbidity and Mortality Weekly Report, "Trends in COVID-19 Incidence After Implementation of Mitigation Measures" — Arizona, January 22–August 7, 2020", Early Release October 6, 2020. https://www.cdc.gov/mmwr/volumes/69/wr/mm6940e3.htm
- Changes in infection rates worldwide:
  - In our report, we provide a summary table of cases, deaths and tests, in total and per capita for the thirty-one countries that have > 200,000 case to-date
  - Israel, Peru and Chile have experienced the most cases per capita
  - Italy, Mexico and the United Kingdom have experienced the most deaths per capita
  - Israel, United Kingdom and the United States have the highest recent 7-day rate of tests per capita
  - Israel, Spain and Argentina have the highest recent 7-day rate of new infections per capita

Of the twenty-five countries that have recorded >200,000 cases to-date:

United States has the most cases and deaths

Israel, Peru and Chile have experienced the most cases per capita

Italy, Mexico and the United Kingdom rank highest on deaths per capita; United States is relatively low on this measure

Israel, United Kingdom and United States rank high on recent 7-day tests per capita

Israel, Spain and Argentina rank highest on recent 7-day new infections per capita; these rates have increased in each of the countries over the past two weeks

Countries With >200,000 Cases

As of October 6

Country	Total Cases	Cases per 1M Population	Deaths	Death Rate	Deaths per 1 Million Population	Tests per 1M Population - Past 7 Days	New Daily Infections Per 1M Population (7-Day M.A.)	New Daily Infections - 1 week ago	New Inf/1 M 2 Weeks Ago	Test / New Inf
USA	7.7m	23.3k	215.8k	2.8%	651	3,074	134	135	133	23
India	6.8m	4.9k	104....	1.5%	76	821	55	60	64	15
Brazil	5m	23.3k	147.6k	3.0%	693	-2	128	124	142	0
Russia	1.2m	8.5k	21.7k	1.8%	148	2,680	68	51	41	39
Colombia	869.8k	17k	27k	3.1%	529	741	128	130	137	6
Spain	865.6k	18.5k	32.5k	3.8%	695	2,950	328	232	242	9
Peru	832.9k	25.2k	32.9k	4.0%	995	413	91	152	166	5
Argentina	824.5k	18.2k	21.8k	2.6%	482	501	277	266	236	2
Mexico	789.8k	6.1k	81.9k	10.4%	633	97	62	37	32	2
South Africa	683.2k	11.5k	17.1k	2.5%	287	311	26	22	28	12
France	634.8k	9.7k	32.4k	5.1%	496	1,952	184	181	160	11
UK	530.1k	7.8k	42.4k	8.0%	624	3,983	176	90	62	23
Iran	479.8k	5.7k	27.4k	5.7%	325	325	44	41	37	7
Chile	473.3k	24.7k	13.1k	2.8%	682	1,743	90	95	79	19
Iraq	387.1k	9.6k	9.5k	2.5%	236	531	102	108	102	5
Bangladesh	371.6k	2.3k	5.4k	1.5%	33	68	8	9	10	8
Saudi Arabia	337.2k	9.6k	4.9k	1.5%	141	1,348	12	14	16	108
Italy	330.3k	5.5k	36k	10.9%	596	1,693	41	29	26	42
Turkey	327.6k	3.9k	8.6k	2.6%	101	1,307	17	19	20	75
Philippines	326.8k	3k	5.9k	1.8%	53	344	23	23	29	15
Pakistan	315.7k	1.4k	6.5k	2.1%	29	141	3	3	3	52
Indonesia	311.2k	1.1k	11.4k	3.7%	41	143	15	16	15	10
Germany	307.1k	3.7k	9.6k	3.1%	115	2,309	28	23	21	81
Israel	277k	30.1k	1.8k	0.6%	195	5,580	623	676	450	9
Ukraine	234.6k	5.4k	4.5k	1.9%	104	565	97	78	70	6

Table: Health Industry Advisor LLC • Created with Datawrapper

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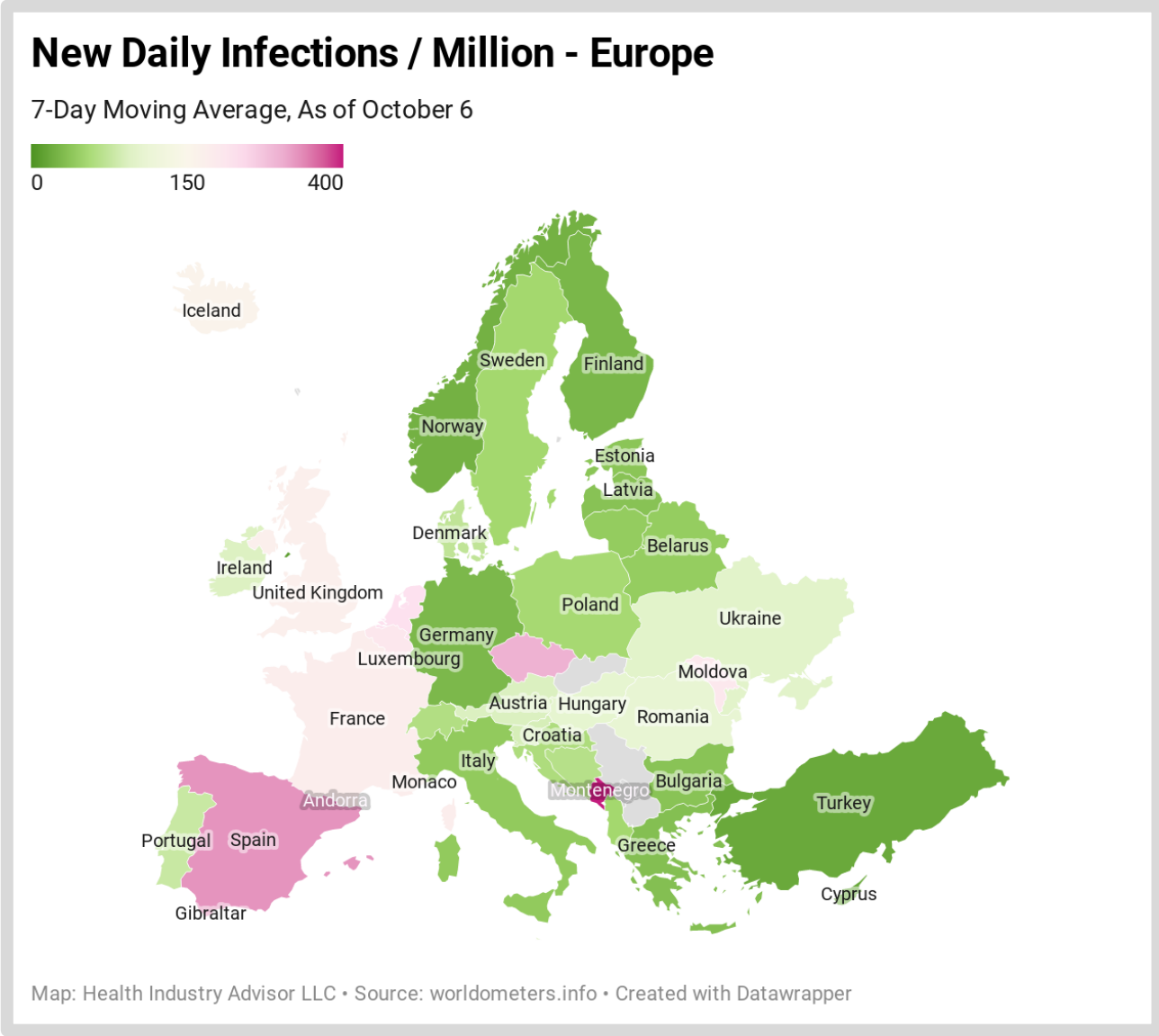
Europe:

Montenegro, Spain and Czech Republic experienced the highest rates of new infections per capita over the past seven days

France, Germany, Moldovia, the Netherlands and the United Kingdom also experienced relatively high rates



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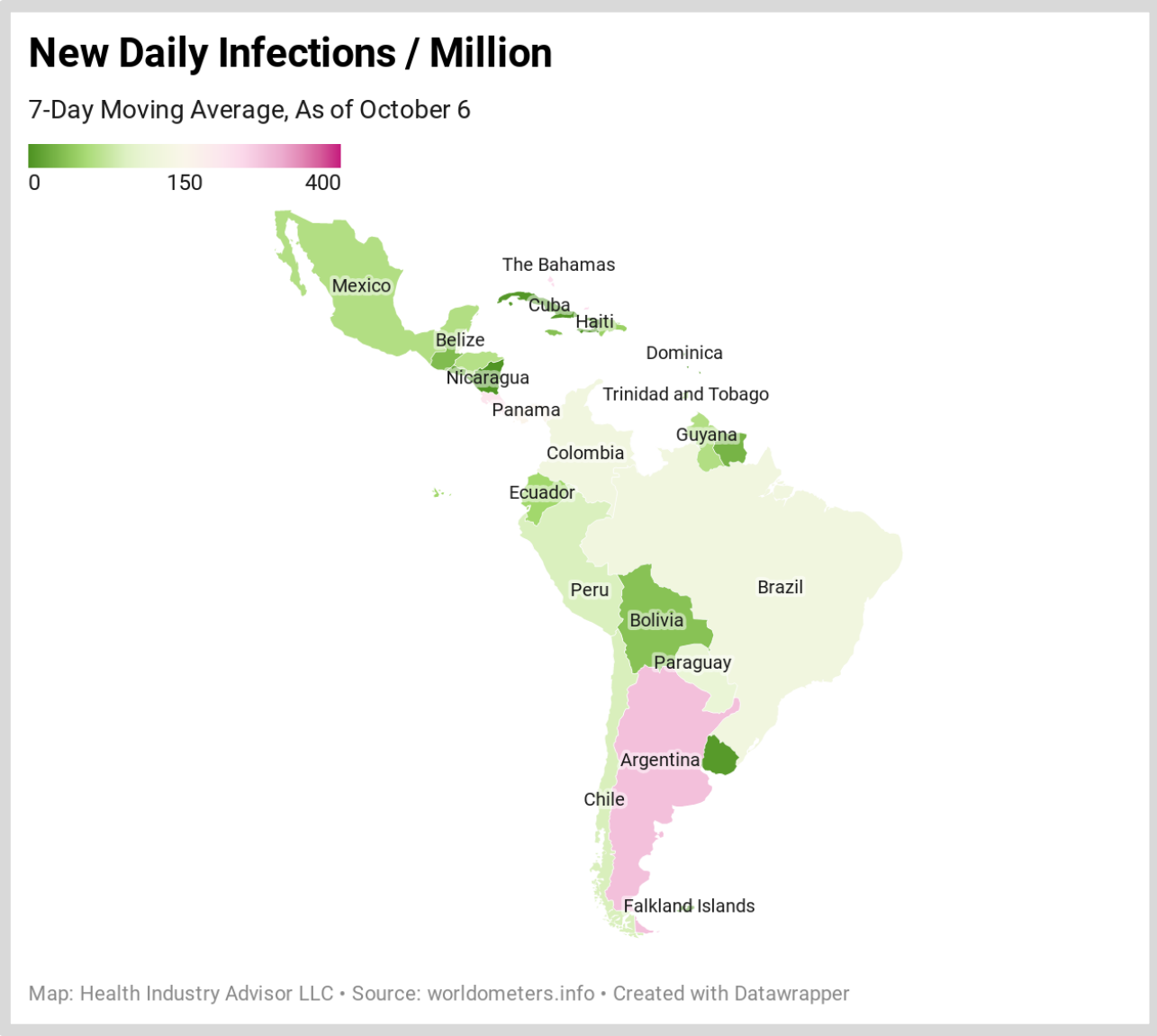
Latin America:

Latin America has mostly improved over the past several weeks

Argentina and Panama, however, continued to experienced high rates of new infections per capita over the past seven days



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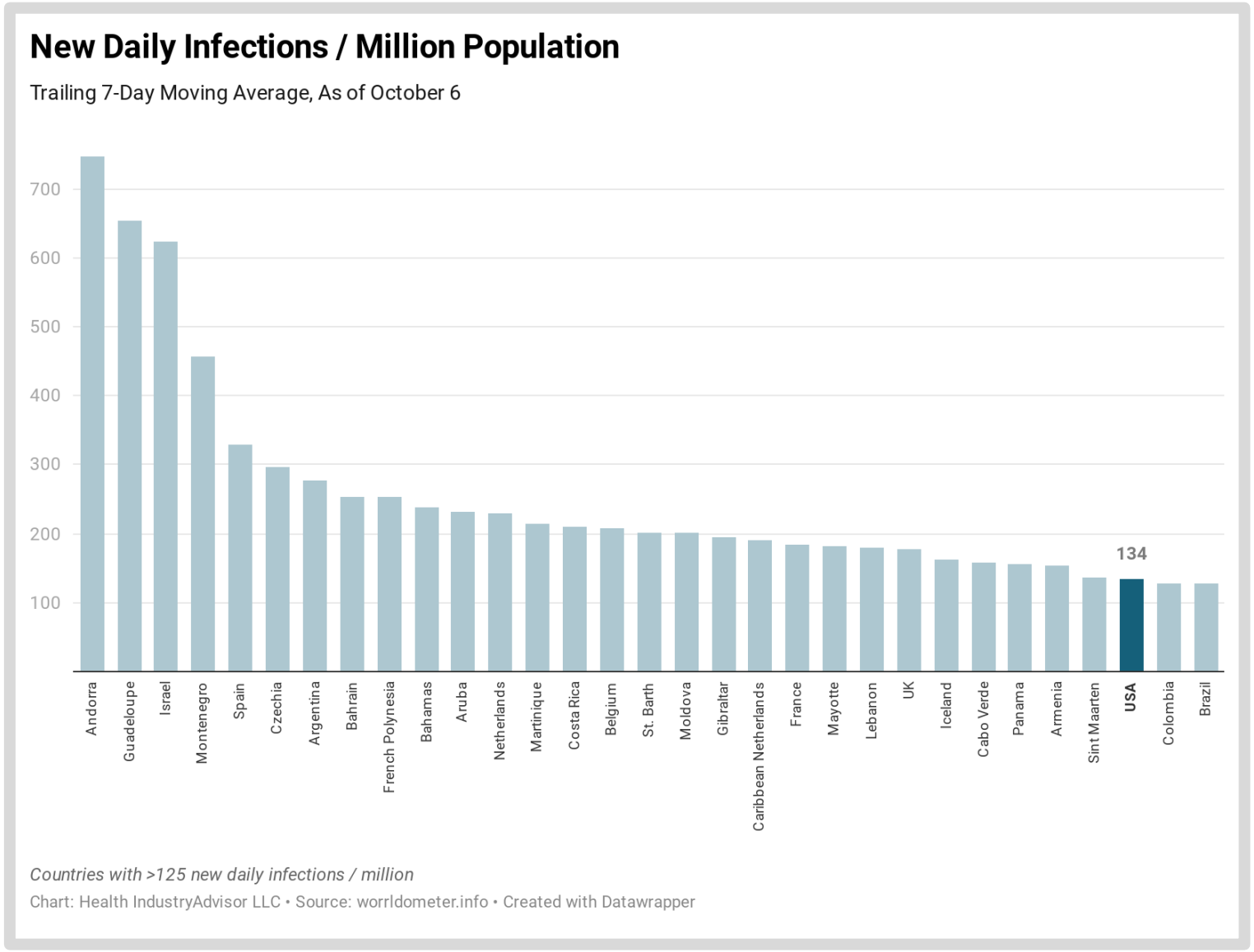
Thirty-one countries experienced new daily infections per million > 125 over the past seven days

Among large countries, Israel, Spain, the Czech Republic, Argentinian and Bahrain experienced the highest infection rates



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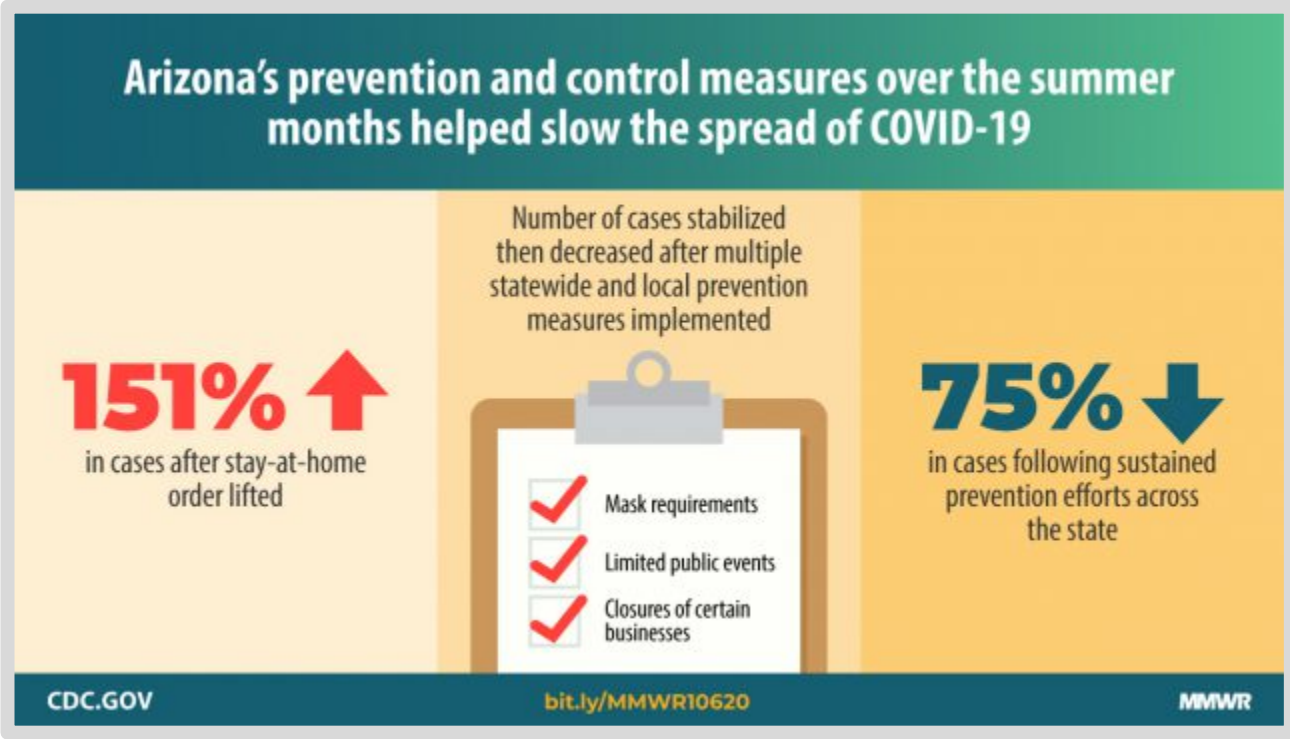
On Tuesday, the Centers for Disease Control and Prevention (CDC), in its Morbidity and Mortality Weekly Report (MMWR), reported on a study of the impact of mitigation measures on infection rates in Arizona

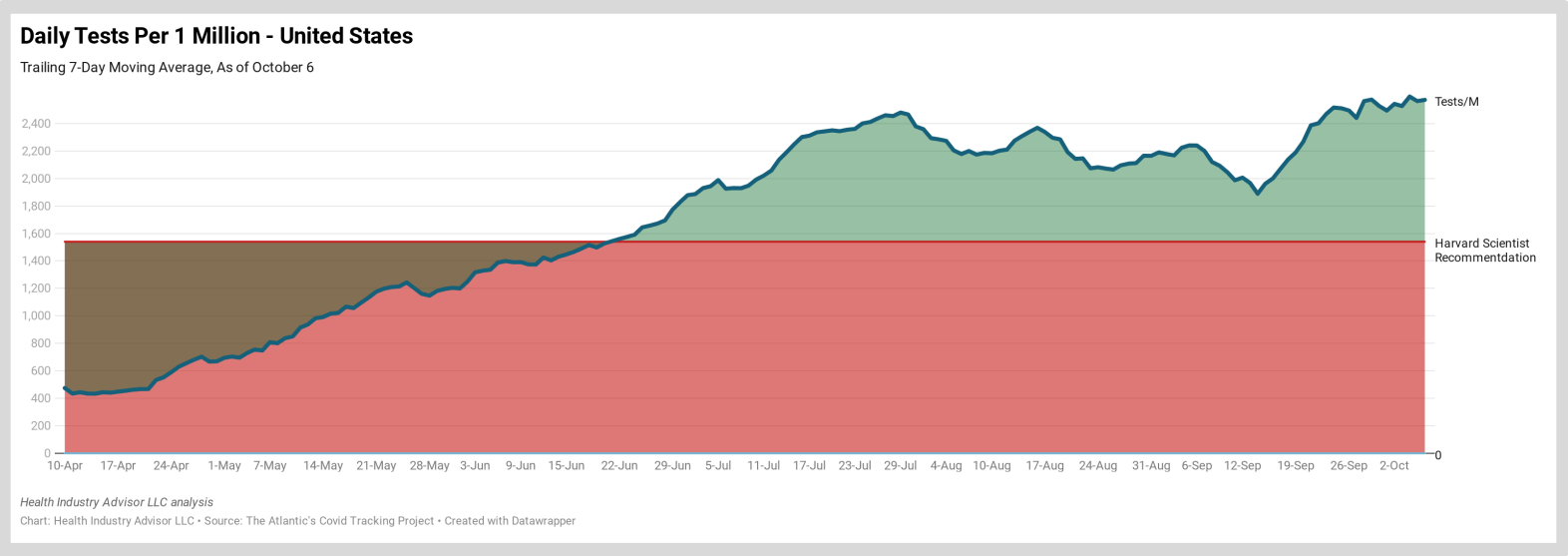
The study concluded that the relaxation and subsequent re-imposition of mitigation measures – mask requirements, limited public events, closure of certain businesses) had a significant impact on infection spread

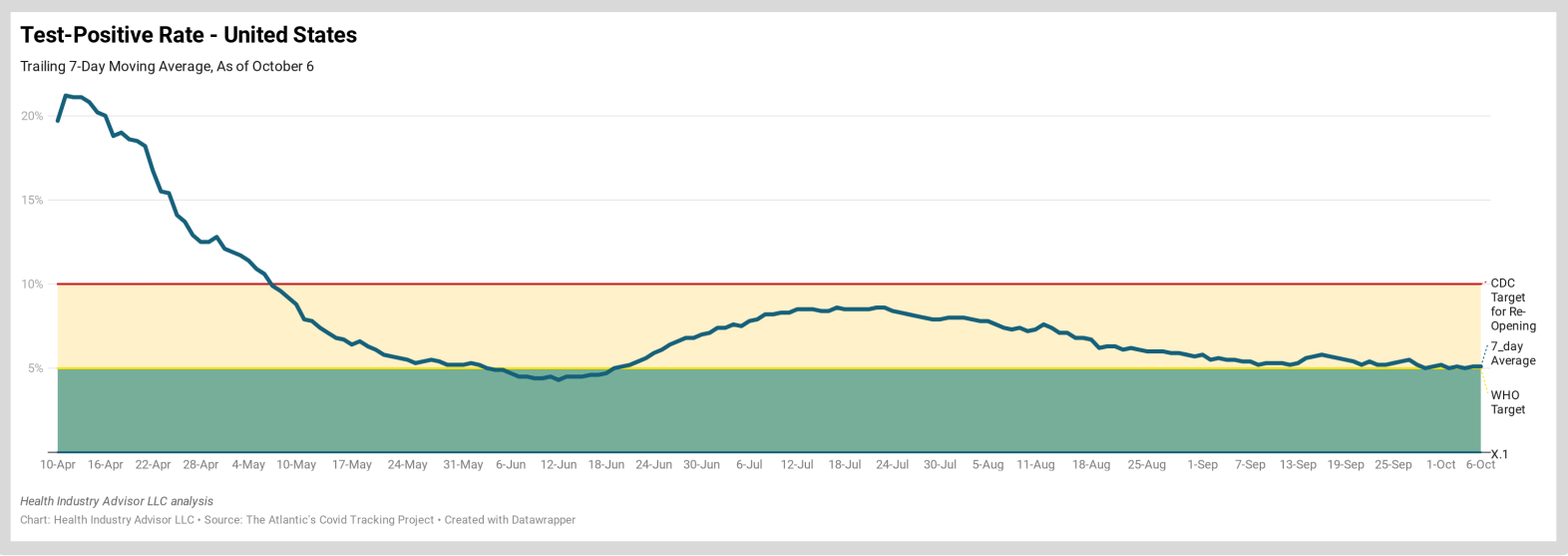


Source: CDC, Morbidity and Mortality Weekly Report, "Trends in COVID-19 Incidence After Implementation of Mitigation Measures" — Arizona, January 22–August 7, 2020", Early Release October 6, 2020. https://www.cdc.gov/mmwr/volumes/69/wr/mm6940e3.htm

The 7-day average testing volume remains well in the “green“ zone – above minimum targeted levels . . . As well as at historically high levels

The 7-day test-positive rate is just outside the “green” zone – just above WHO target yet, well-below the CDC target for Phase 3 re-opening





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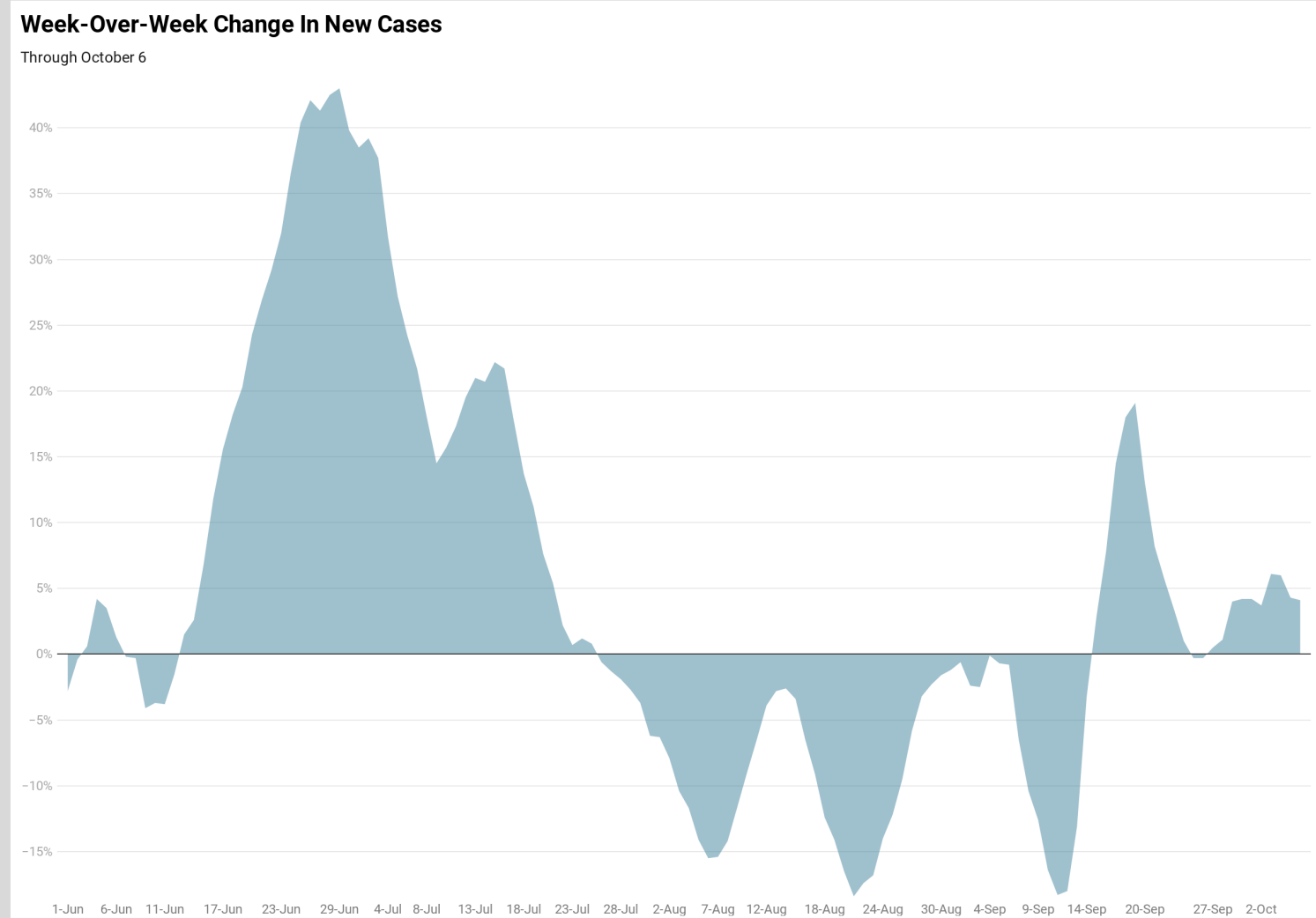
Following a seven-week period of decline, new cases began increasing on a week-over-week basis on September 15

Yesterday, this rate was up 4.1% on a week-over-week basis (this rat has declined on three consecutive days)



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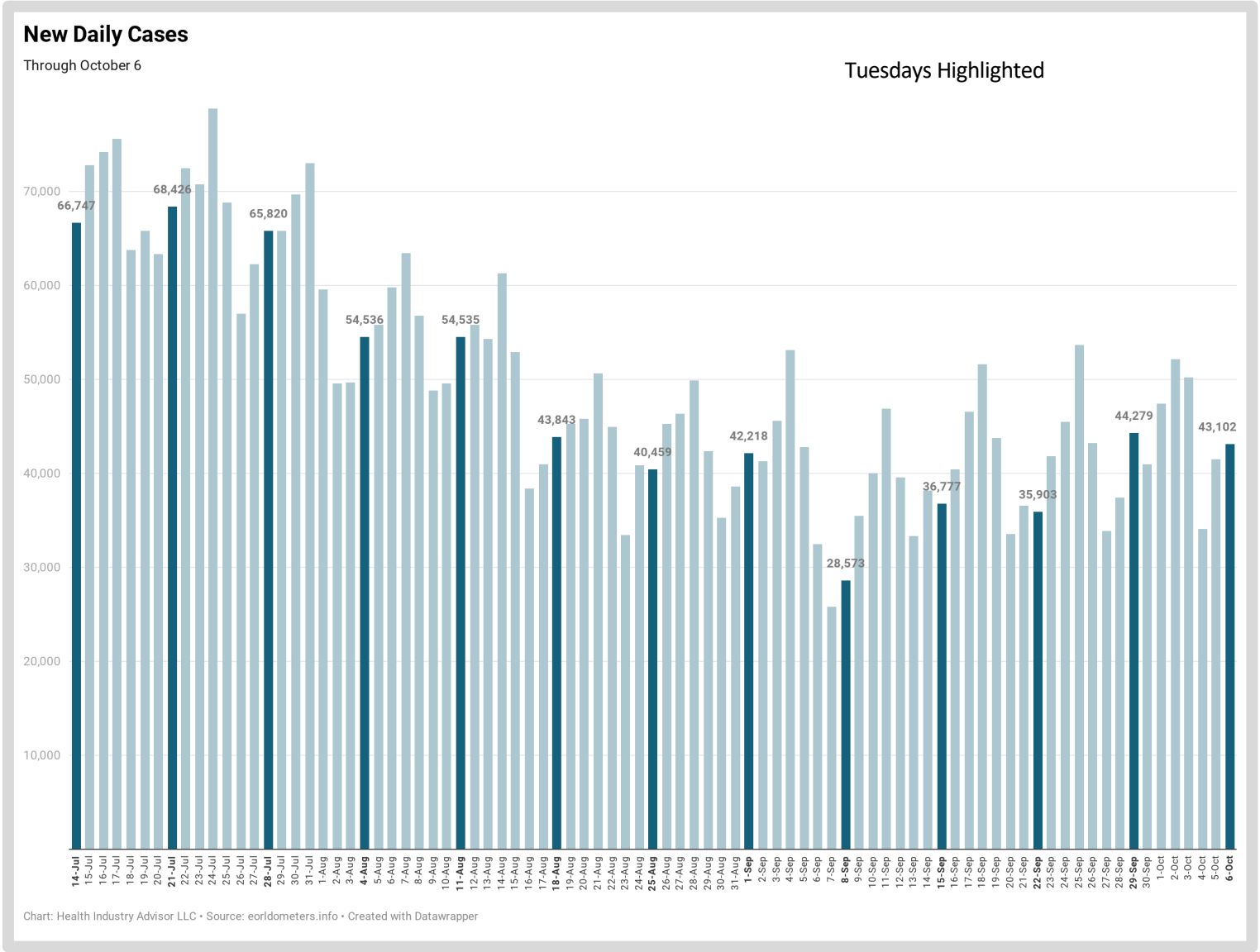
New cases on Tuesday were slightly lower than last Tuesday but, were higher than the preceding six Tuesdays



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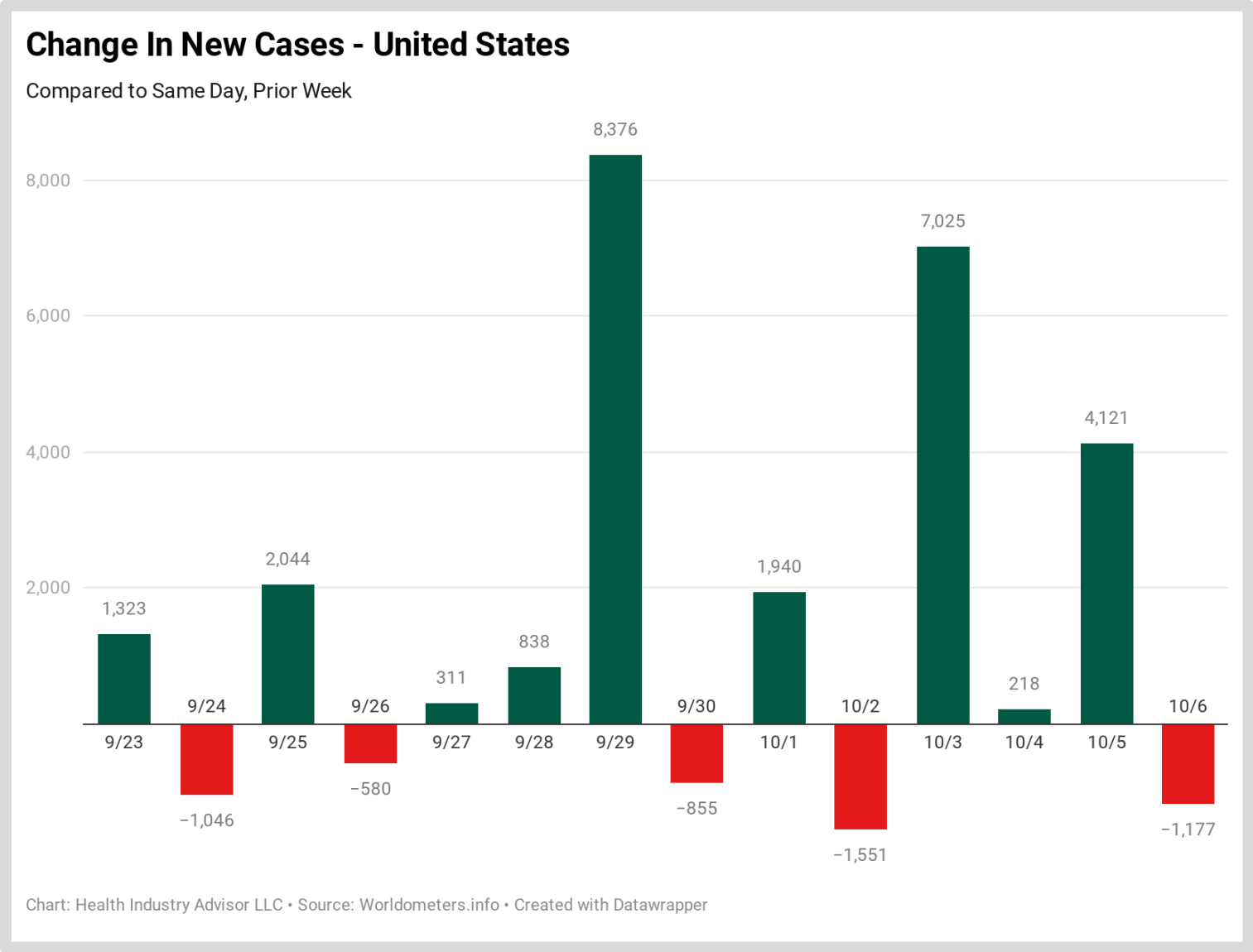
New cases were lower yesterday than for same-day, previous week, halting a three-day upward trend in this measure

Nonetheless, new cases are showing signs of moving upward – with more, and larger, up days than down in the past two weeks



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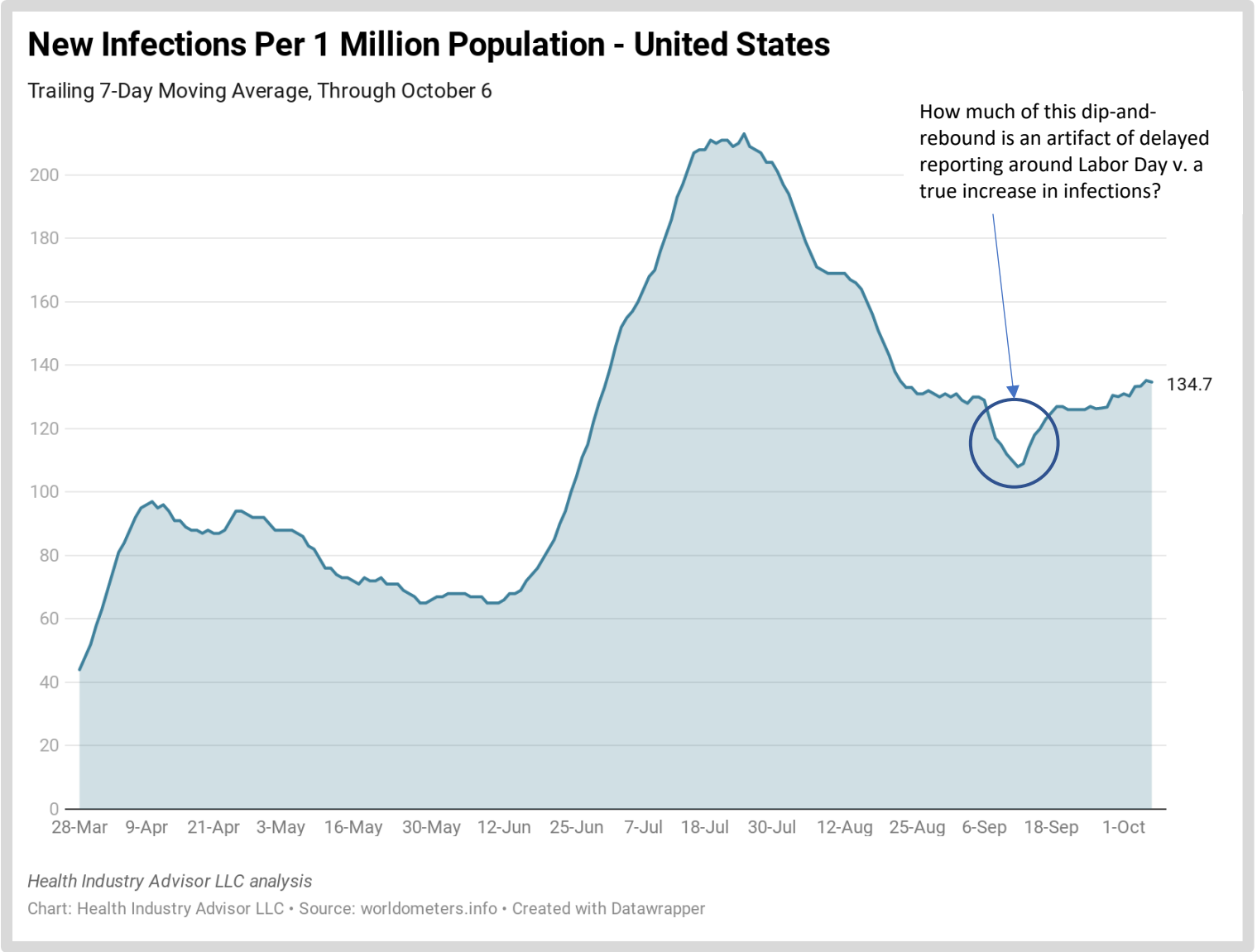
After increasing on five of the preceding seven days, the rate of new infections per capita* in the U.S. Dropped slightly yesterday

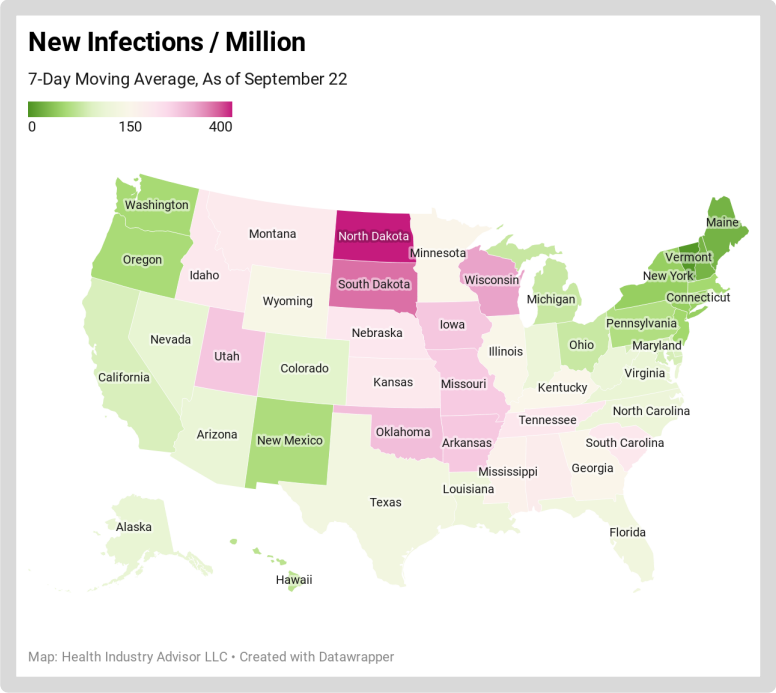
* - 7-day moving average basis



7-Day new daily infection rates are highest, and have have intensified in over the past two weeks in Idaho, Montana, Nebraska, North Dakota, South Dakota, Utah and Wisconsin

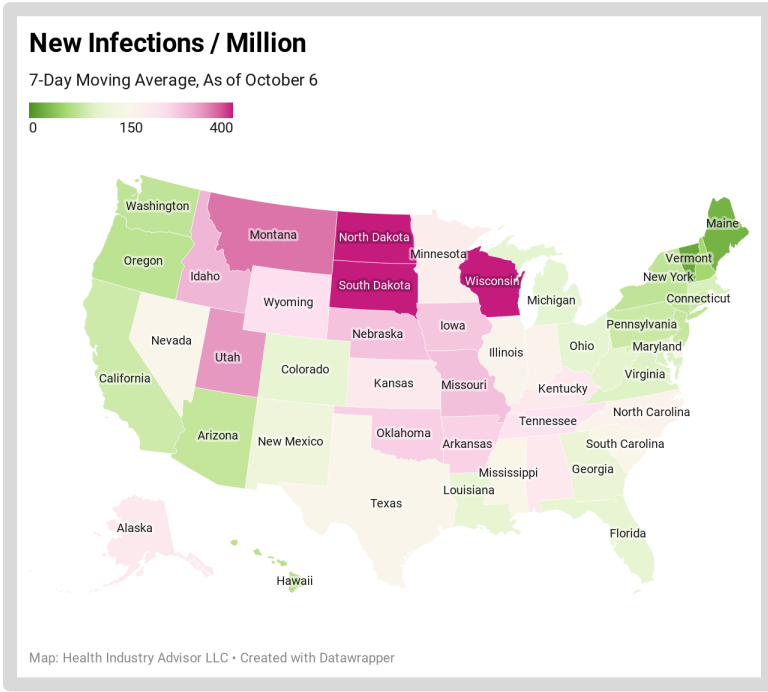
Note the relatively low rates in states hit hardest in June/July: Arizona, California, Florida, Georgia and Texas

* - 7-day moving average basis



September 22

October 6



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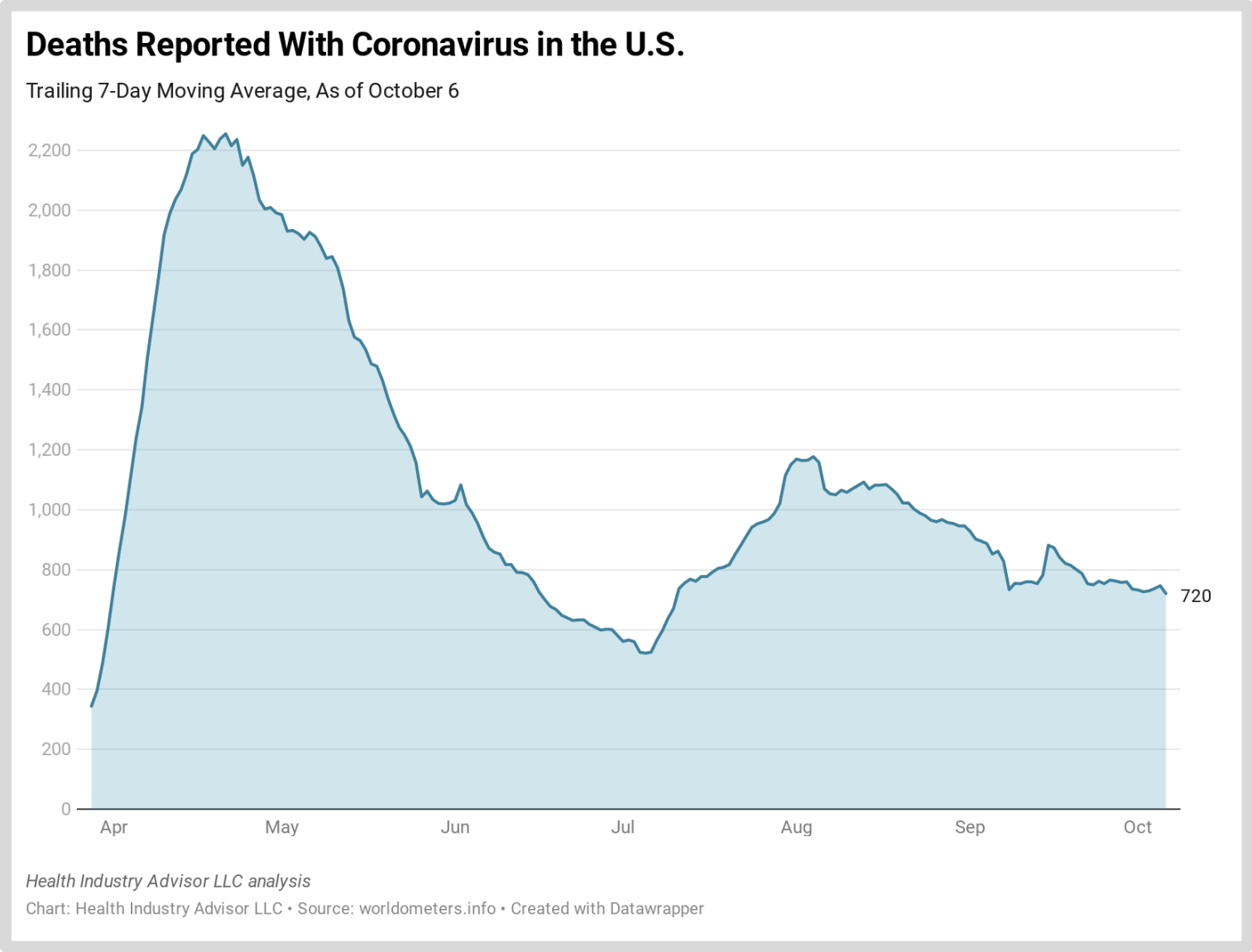
The 7-day average deaths per day dropped significantly yesterday (by 26 deaths per day)

This rate is now lower than for any 7-day period since July 4-10



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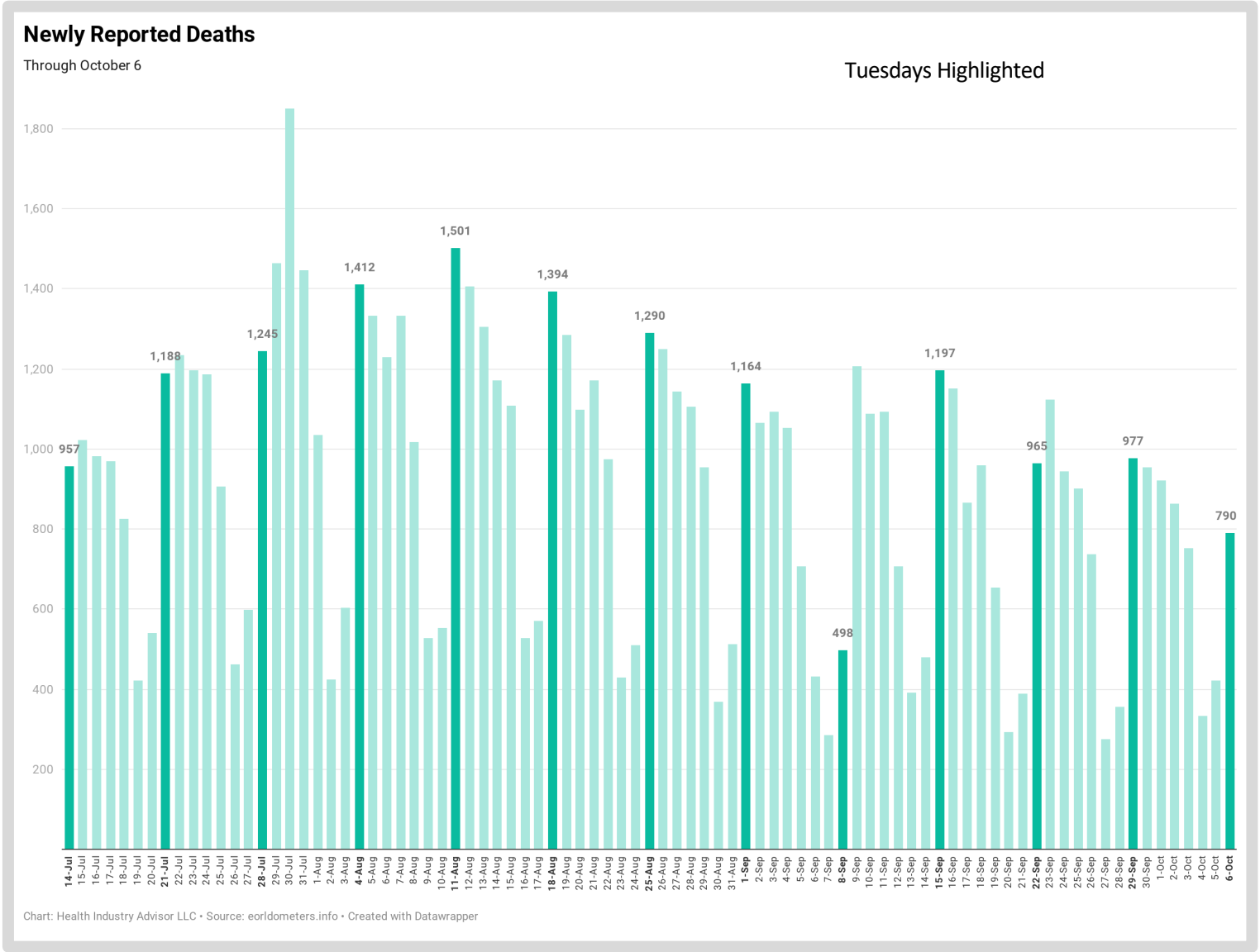
Except for Labor Day week, there were fewer deaths reported yesterday than on any other Tuesday in fifteen weeks (since June 23)



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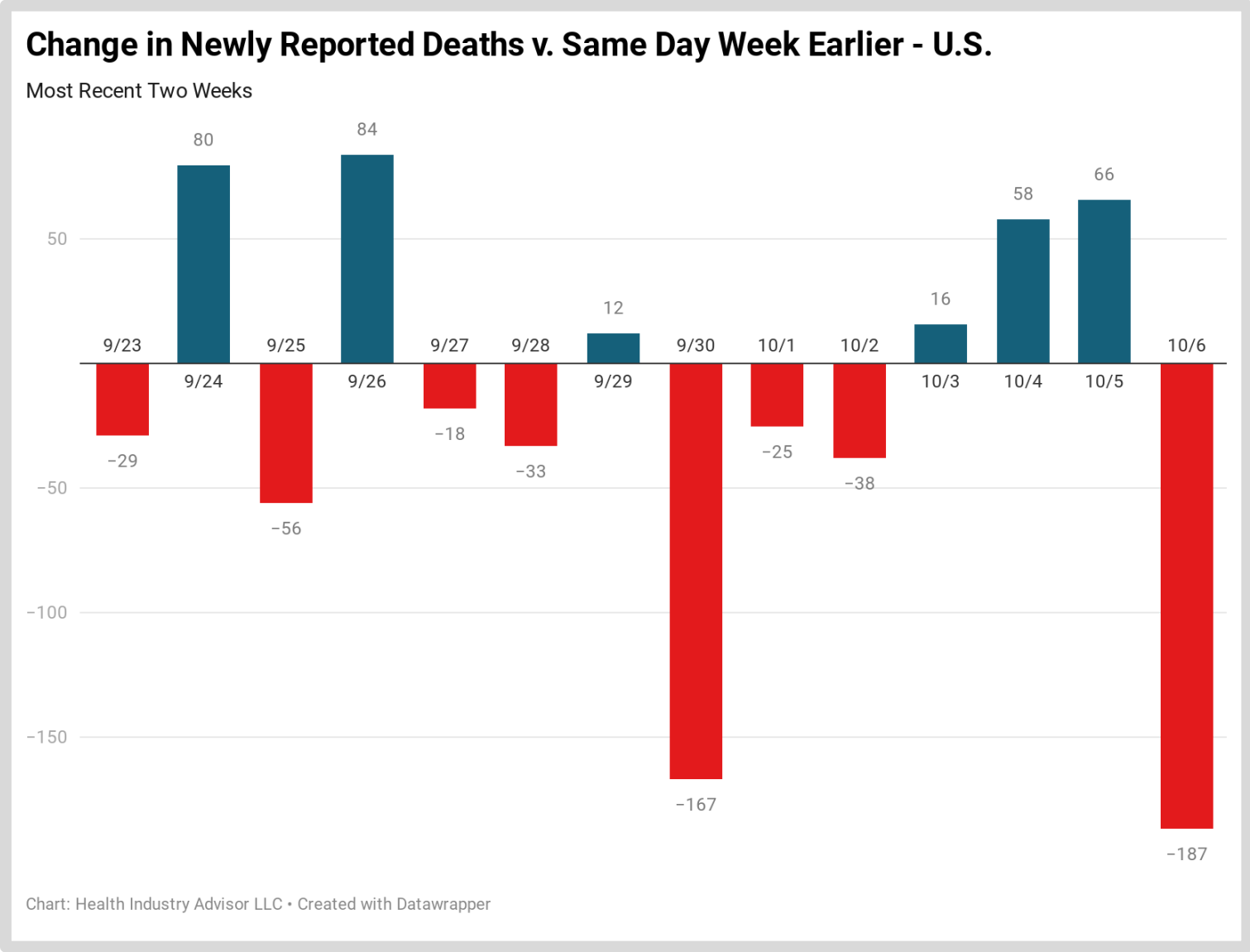
Newly reported deaths, on a same-day, prior-week basis, dropped sharply yesterday, out-numbering the three consecutive days of increases

Overall trend, however, remains negative:
- fifteen of past twenty-one days show fewer new deaths than same-day, prior week
- amplitude of declines were greater than for increases



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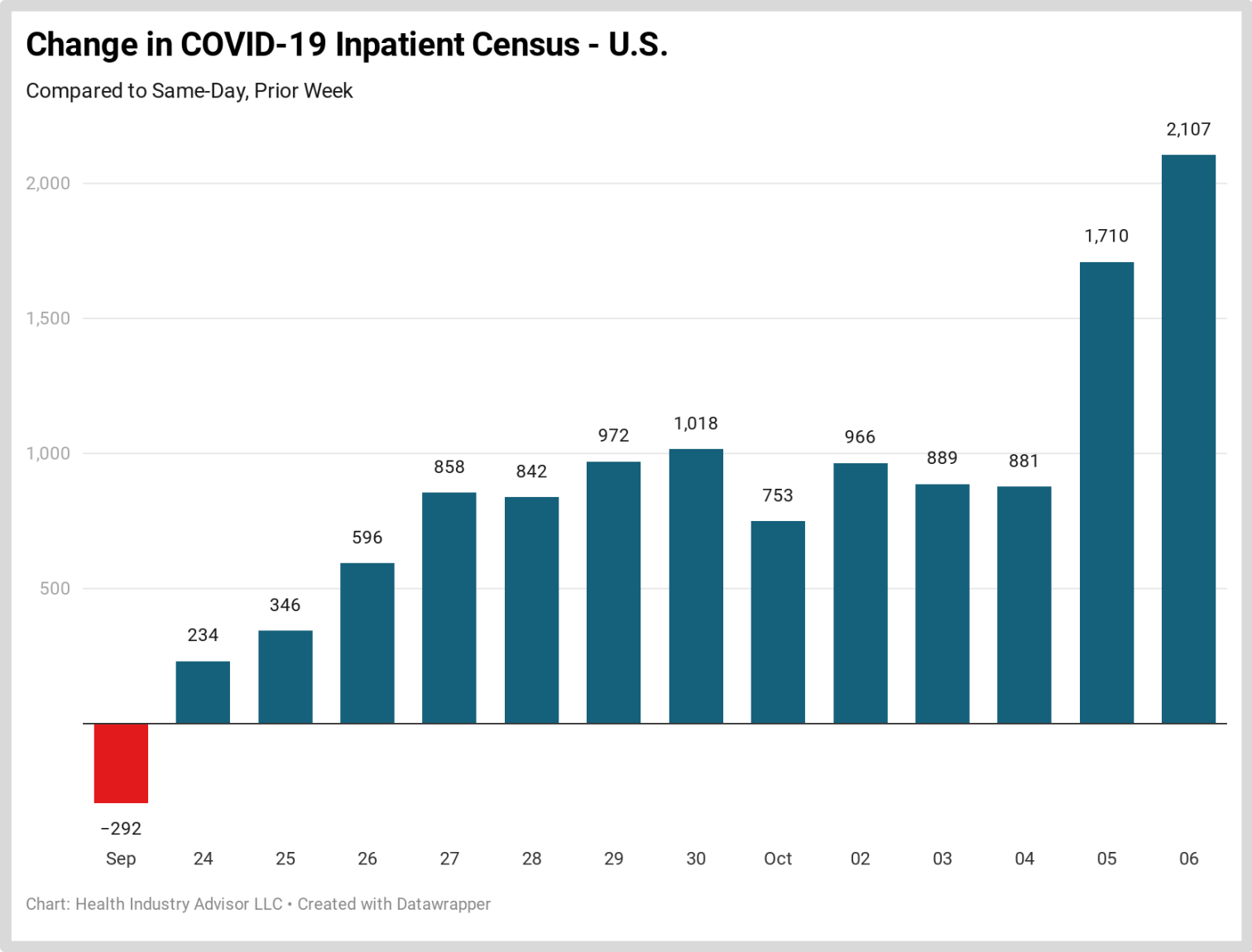
Inpatient COVID-19 census has increased relative to same-day, prior week on thirteen consecutive days

Prior to this upward trend, same-day, prior-week census had declined on fifty-eight consecutive days (starting on July 28)

Census yesterday was 43% lower than it was on July 28, when the downward pattern began



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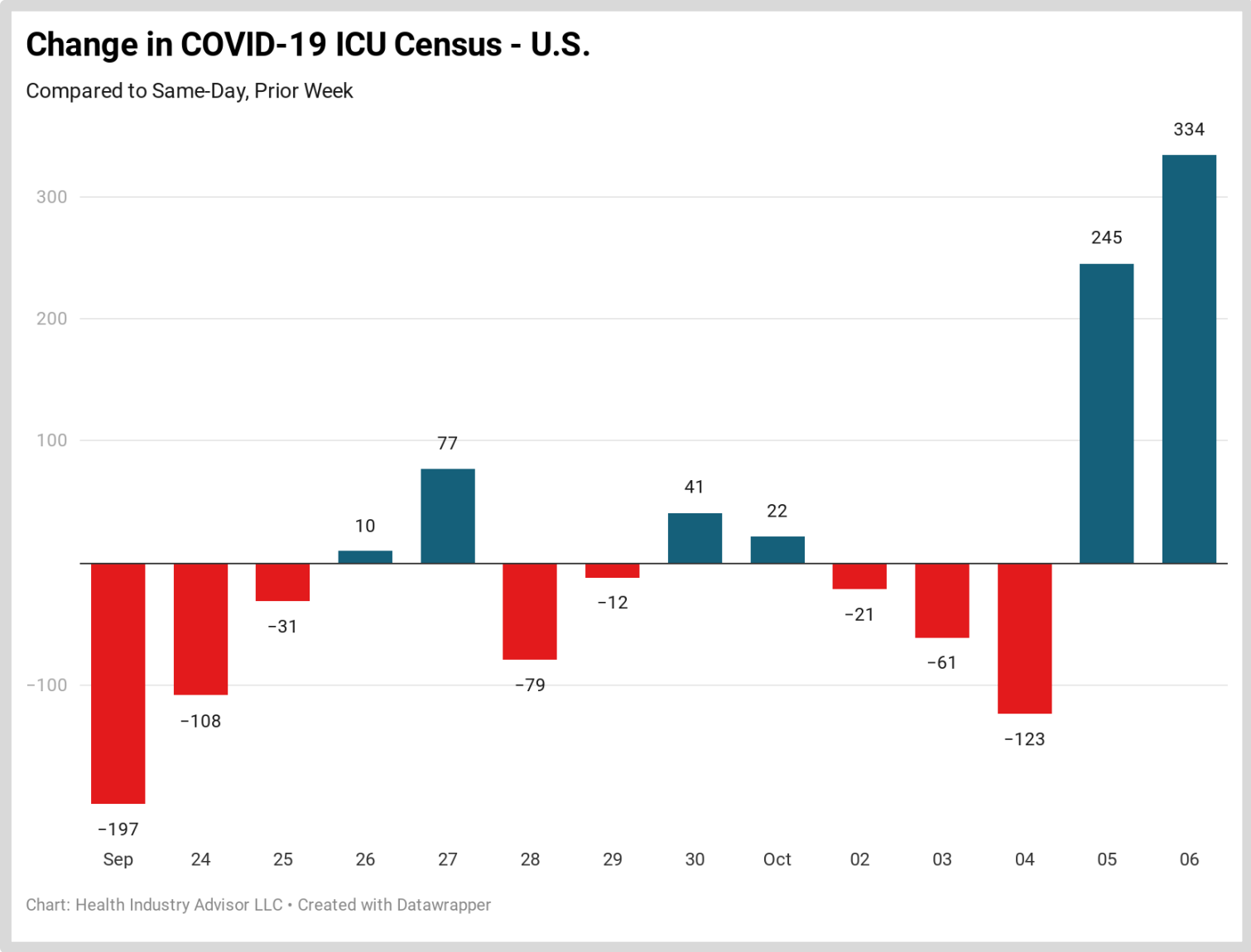
On a same-day, prior week basis, ICU census of COVID-19 patients increased Sharply for the second consecutive day

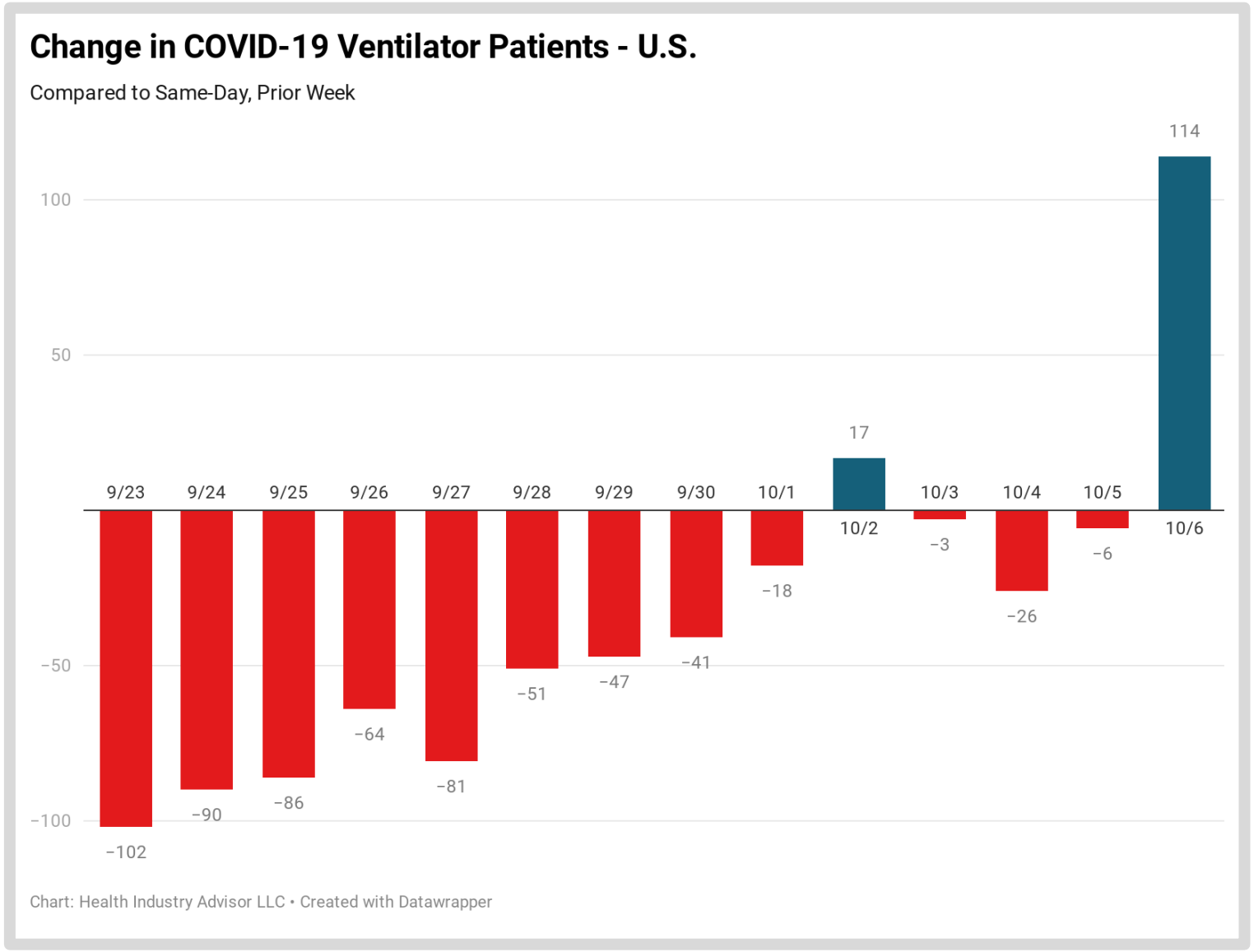
This measure had declined on fifty-four consecutive days, from August 3 - September 25

ICU census yesterday was 37% lower than it was on August 3, when the downward pattern began



Health Industry Advisor, llc

Covid-19 patients on ventilators increased sharply yesterday on a same-day, prior week basis; this had previously declined on thirteen of the previous fourteen days



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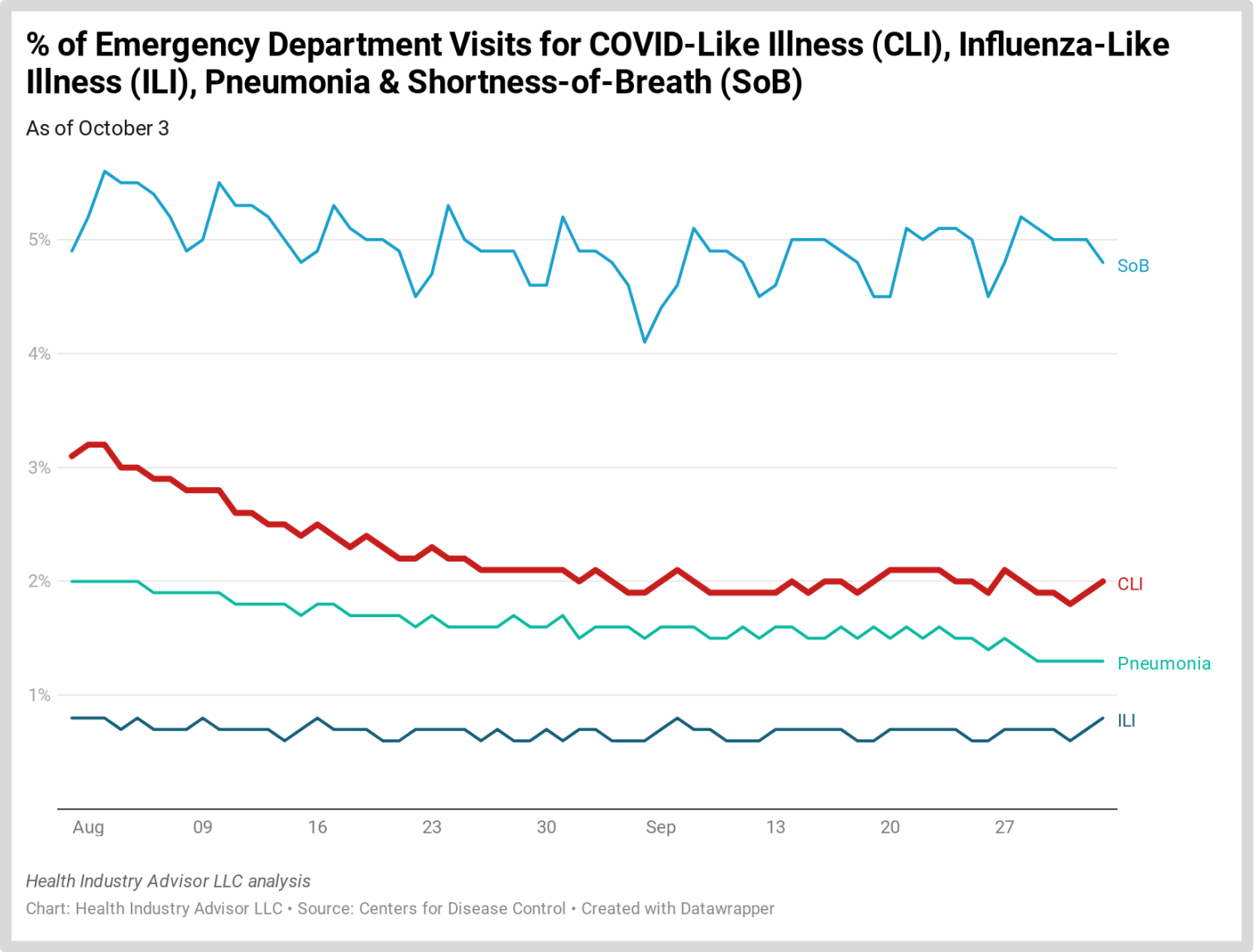
The % of ER visits for both COVID-19-like illnesses (CLI) and influenza-like illnesses (ILI) increased on consecutive days

The CLI-rate remains sharply lower than it was from July-September

The ILI-rate remains low



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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