Health Industry Advisor, llc

"Strategic Advice in an Era of Unprecedented Change"

Covid-19 "Vital Signs"

Issue # 268

January 23, 2021

Covid-19 "Vital Signs"

Highlights

- **Test volume was at its highest level ever.** With this more significant testing, the test-positive rate fell sharply. **Last week's test-positive% was the lowest recorded since October 31-November 6**;
- New cases also fell sharply last week. **These were the fewest new cases since November 28-December 4 - including the recent holiday weeks**;
  - **Only three states - New Hampshire, South Carolina, and Virginia - recorded more new cases this past week than the prior week;**
  - The week-over-week increases in these three states were relatively small and dwarfed by the drop in new cases week-over-week in California, Florida, and Texas.
- Testing efficiency - the ratio of tests performed-to-newly detected case - increased sharply week-over-week. Last week's rate was better than any week since October 31-November 6.
- **Estimated true infections, using the Yale/Harvard model, fell sharply and was lower than for any week since November 12-20.**
- **Covid-19 hospital occupancy dropped week-over-week, something that had not occurred since September 19-25;**
  - The number of hospitalized Covid-19 patients continues to stress hospitals in Arizona, California, Connecticut, Georgia, Nevada, and New York, in particular;
  - **Given the lag from case detection to hospital discharge, the recent drop in new cases should drive Covid-19 hospital days down further in the next week;**
  - **For the first time since September 19-25, there were fewer Covid-19 ICU days last week than the prior week; the number of Covid-19 ventilator days declined for the second successive week.**
- **There were fewer deaths reported with coronavirus last week than the prior week; still, these remain too high**. Hopefully, with the recent drop in new cases, we will see reported deaths decline further in the coming weeks.
- Even though the vaccine supply is woefully short of demand, **vaccinations neared 20 million as of yesterday, up from 13 million a week earlier. About 14% of these were second doses.**
- Today, we introduce an improved method of estimating immunity levels achieved in the US:
  - With the distinction between first and second doses now available from the CDC, we estimate immunity via vaccination, based on a presumed 14-day lag from second dose-to-full immunity;
  - We also now presume a 14-day lag from infection-to-immunity; we use the Gu model of estimated true infections;
  - To avoid double-counting, we presume that the same proportion of vaccinated persons already have been infected as the total population and make an appropriate adjustment to our calculated immunity estimate;
  - In the revised model, **we estimate that nearly 1-in-4 Americans have immunity from Covid-19; this immunity is overwhelmingly due to prior infection, as relatively few people had received a second vaccine dose as of the requisite two weeks ago.**

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Testing

Testing set a new high for the second successive week;
Test-positive% rate improved significantly, and was lower than any week since October 31-November 6

Weekly Tests - United States

For the 7 days ending on date shown

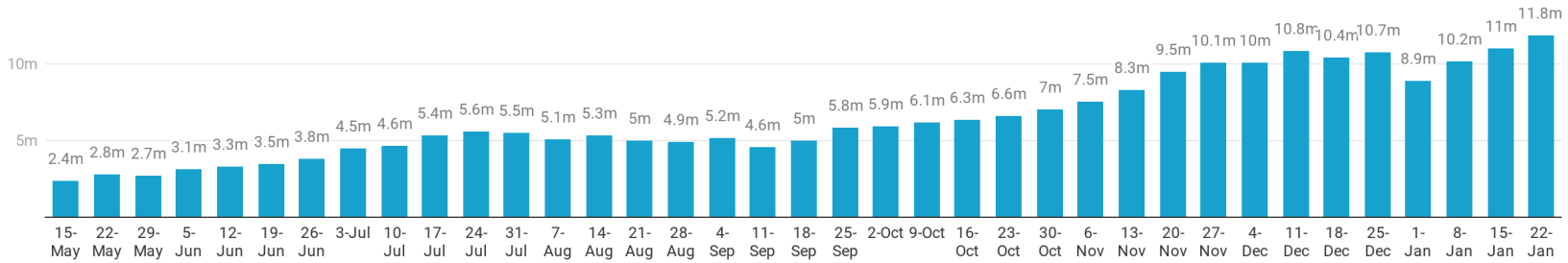

Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Weekly Test-Positive% - United States

For the 7 days ending on date shown

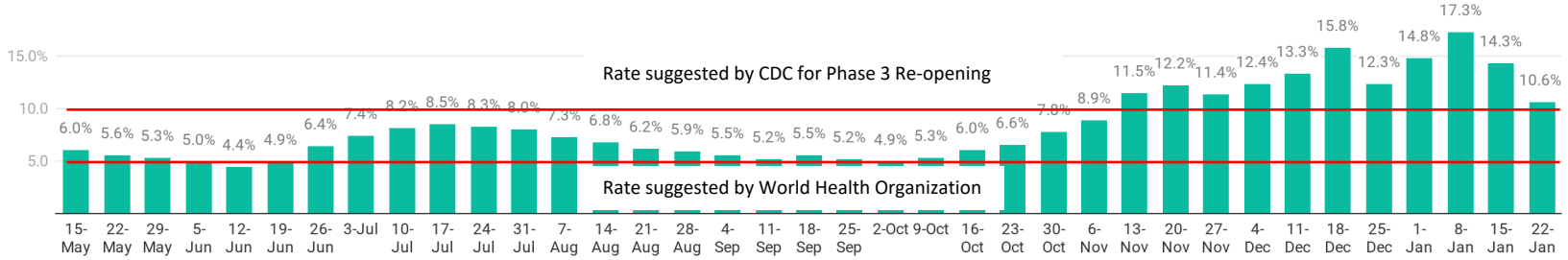

Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project • Created with Datawrapper

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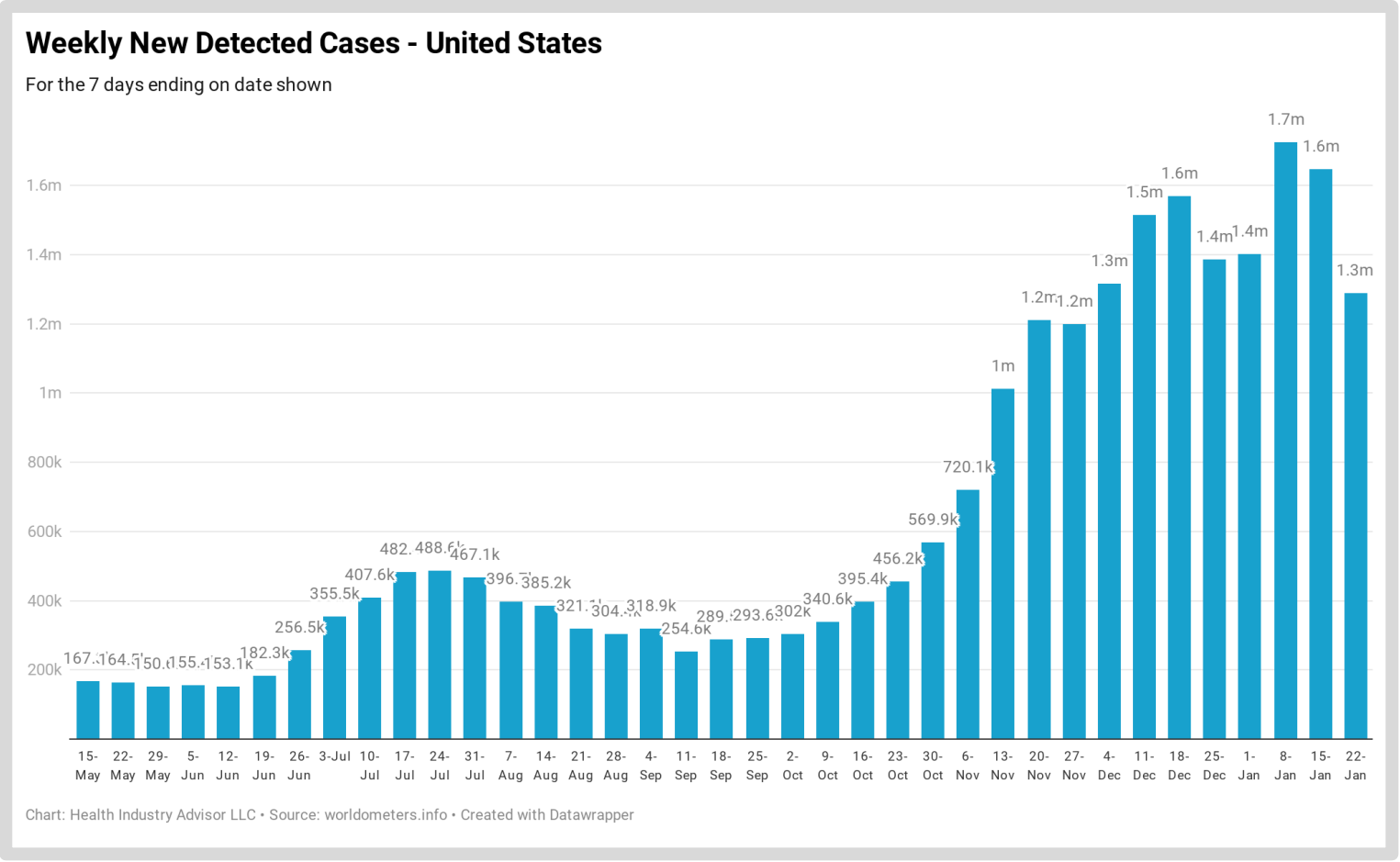
Newly Detected Cases

New cases last week were lower than any week since November 28-December 4, including the recent holiday weeks



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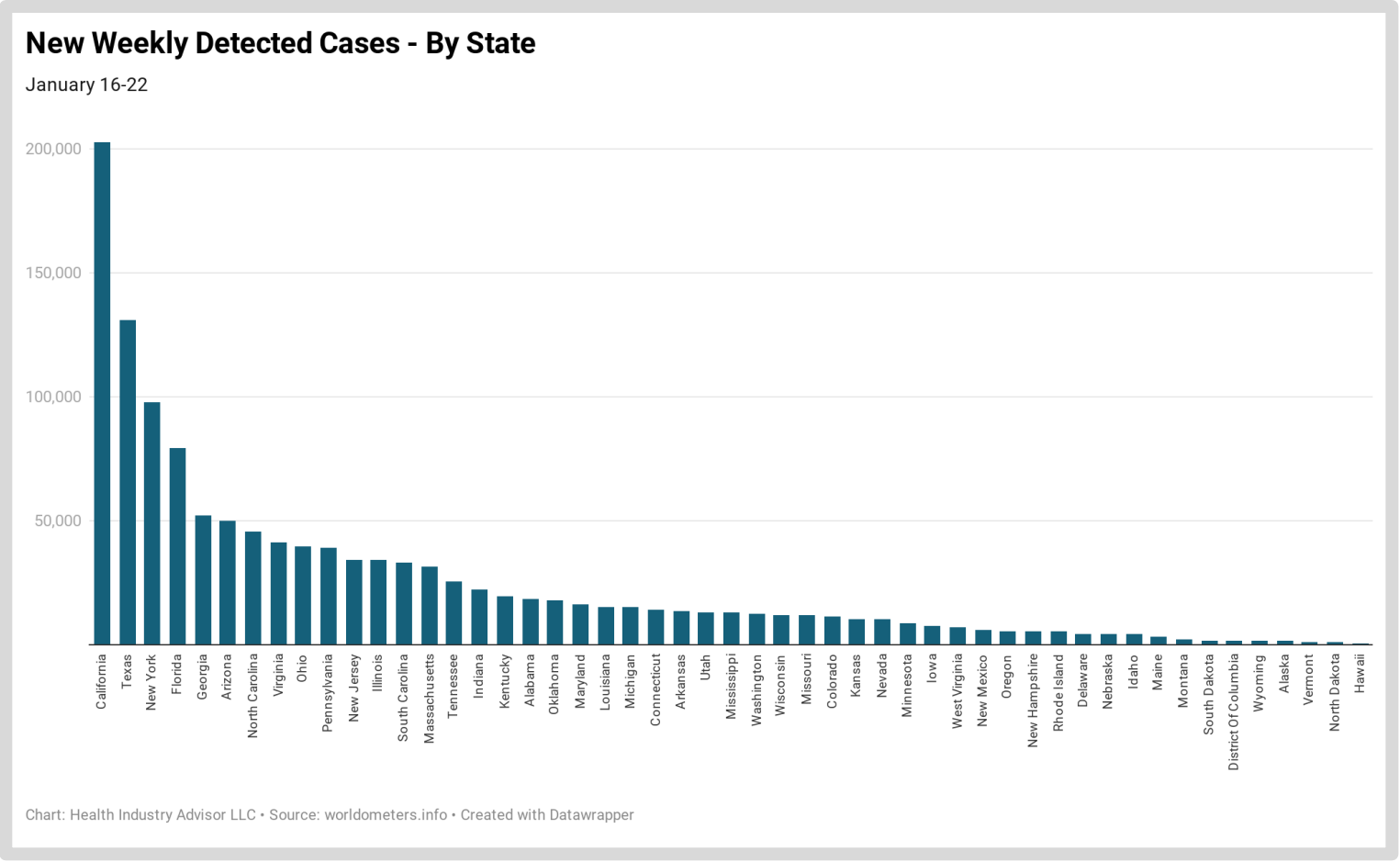
Newly Detected Cases - By State

California was most-heavily impacted by newly detected cases over the past 7 days, followed in order by Texas, Florida and New York. Collectively, these states accounted for 40% of new cases in the US last week; California accounted for 17% of new cases



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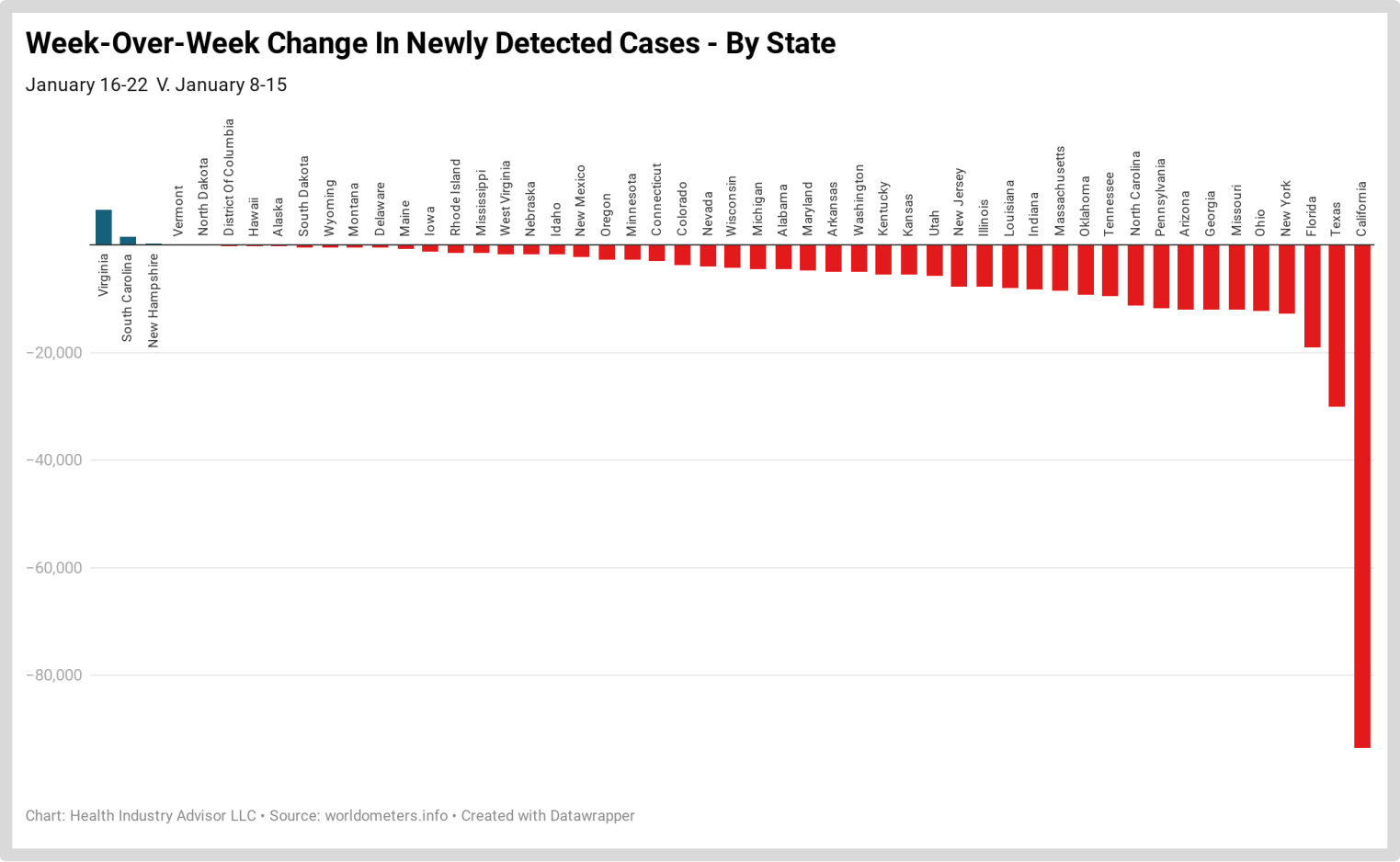
Week-Over-Week Change in Newly Detected Cases

Virginia, South Carolina, and New Hampshire were the only states to experience more new cases the past week than the prior week



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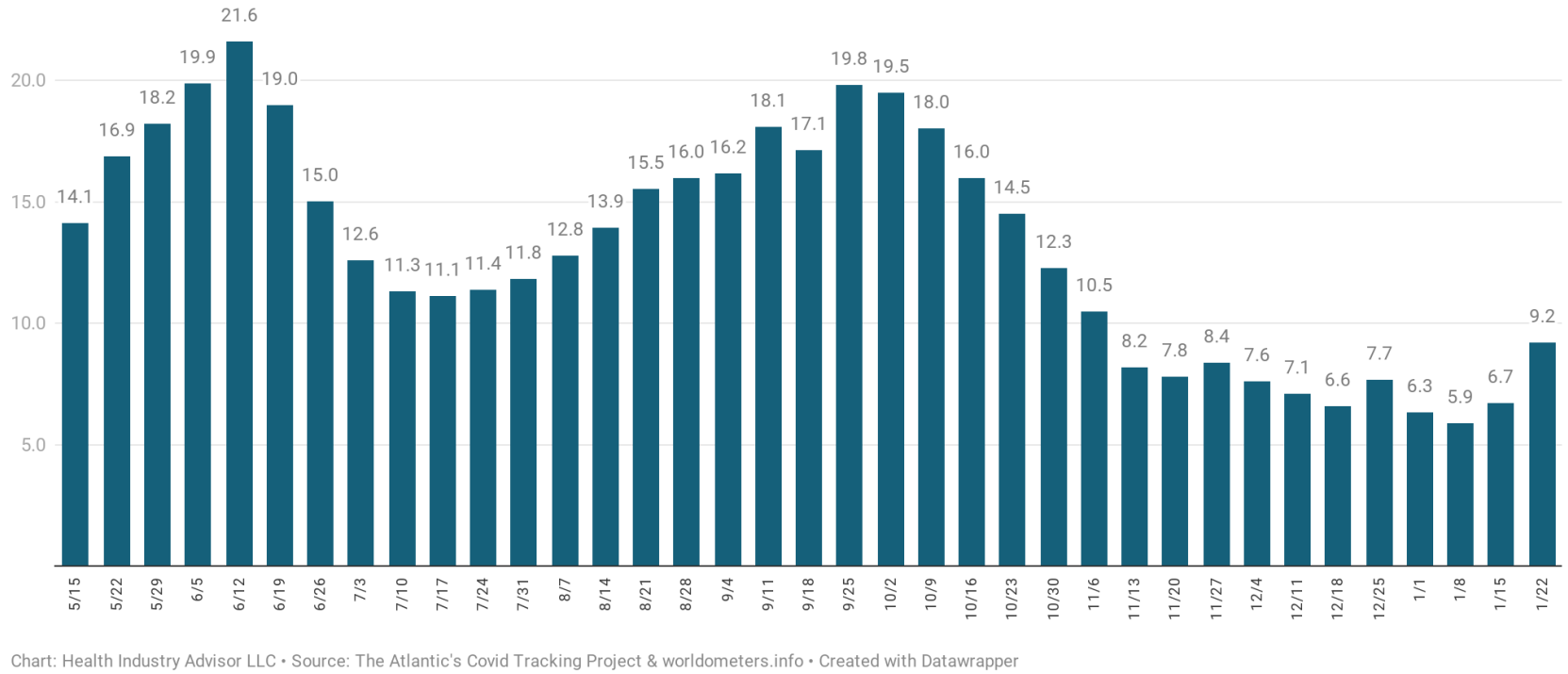
Test Efficiency: Tests Per Case Detected

Test efficiency improved dramatically last week, as the test-positive rate improved and newly-detected cases fell. Last week's rate was better than on any week since October 31-November 6



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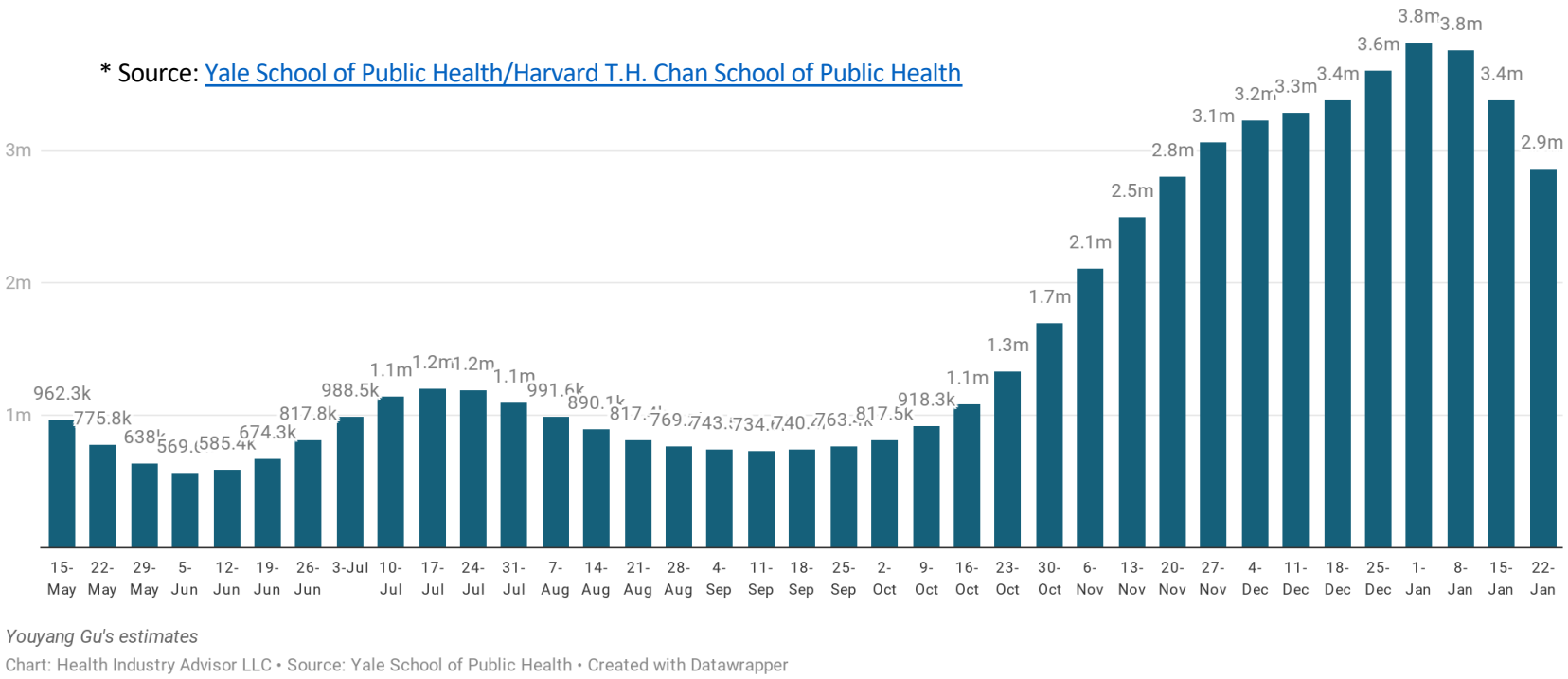
Estimated True Infections – Yale/Harvard Model

Estimated true infections dropped for the second successive week, per the Yale/Harvard model. There were fewer estimated actual infections last week than any week since November 14-20*



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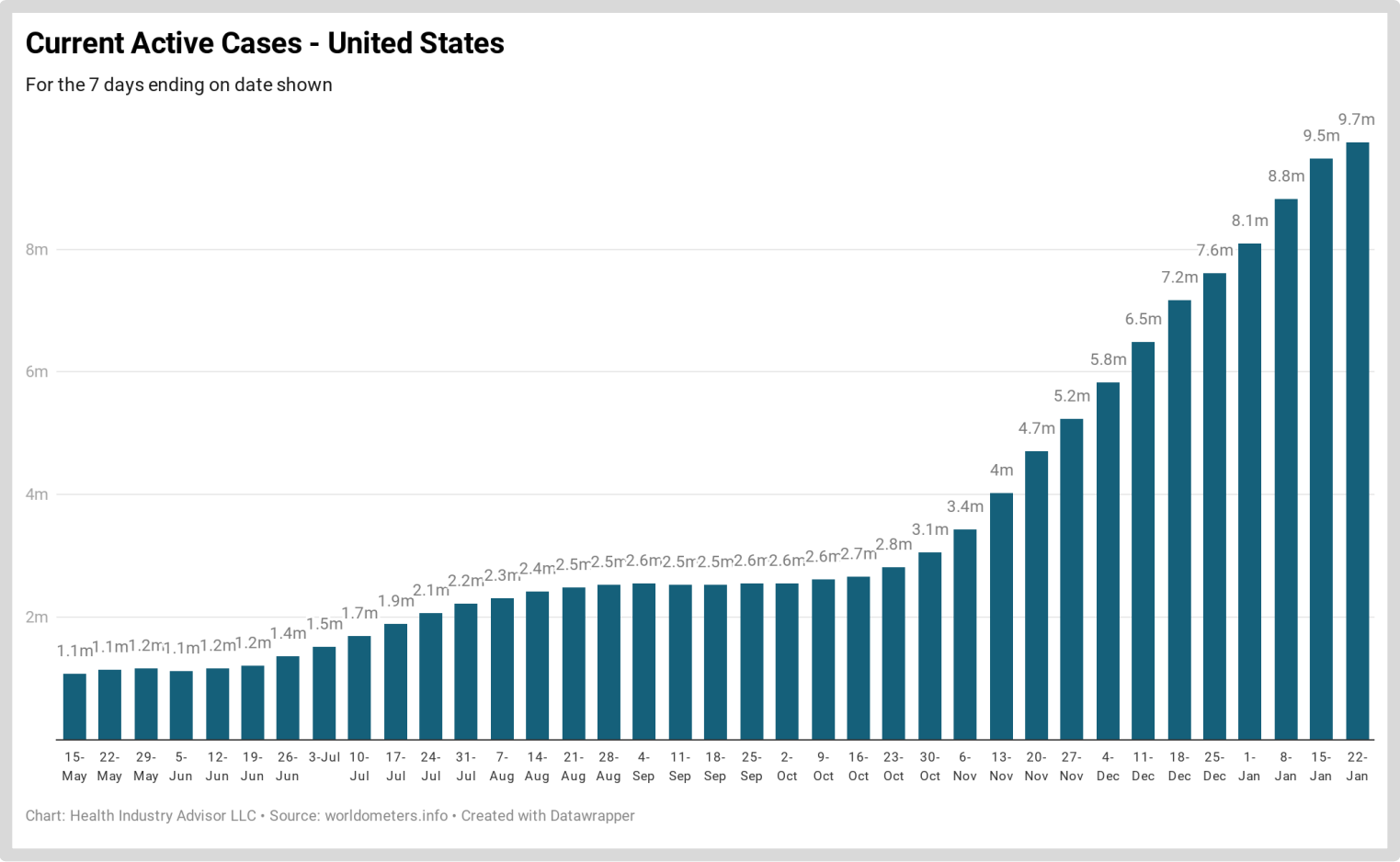
Active Cases

There are an estimated 9.7 million people in the US currently dealing with Covid-19 symptoms (known, detected cases)



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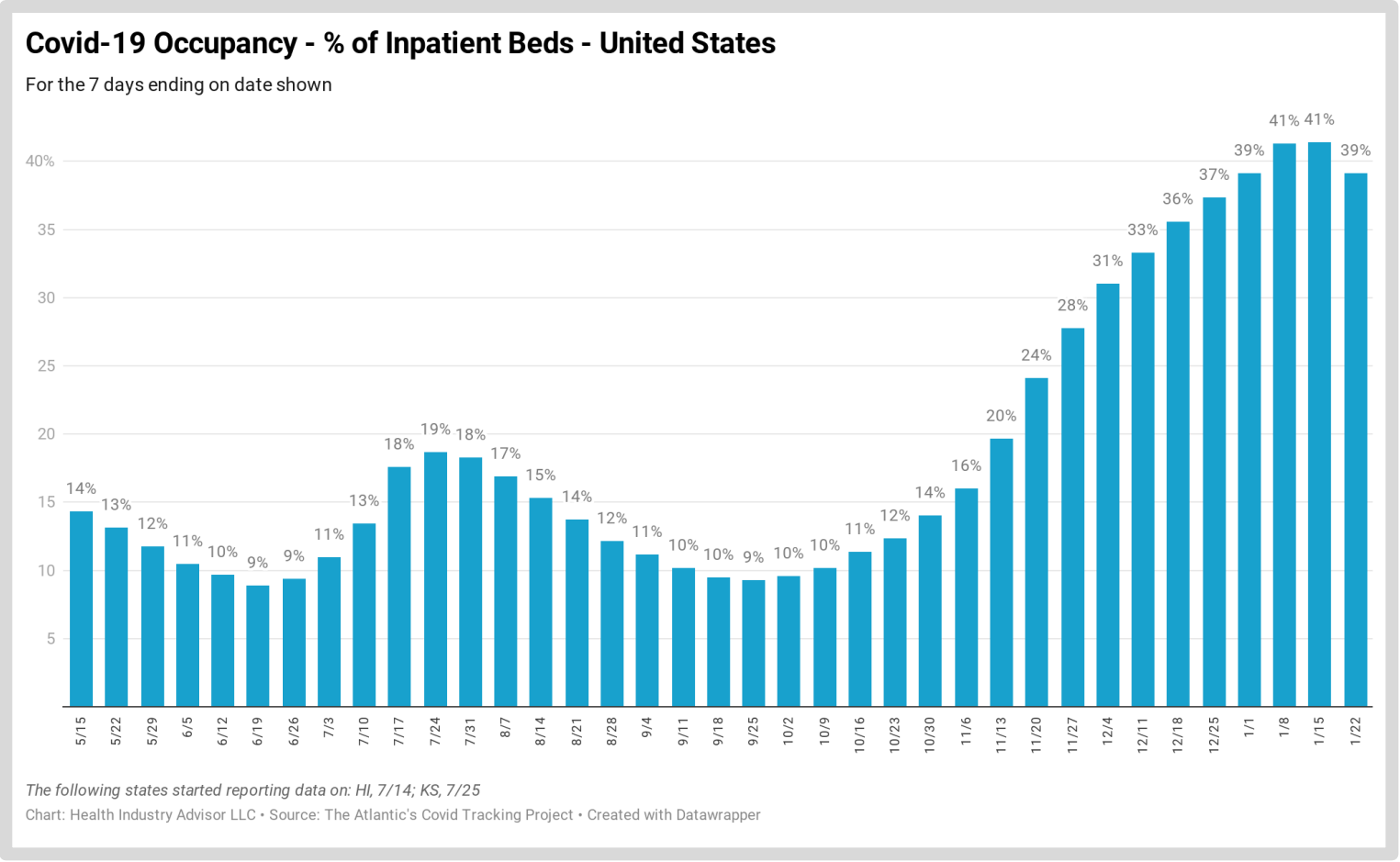
Covid-19 Hospital Occupancy

The number of Covid-19 patients dropped last week, the first time since September 19-25. Occupancy rates remain high



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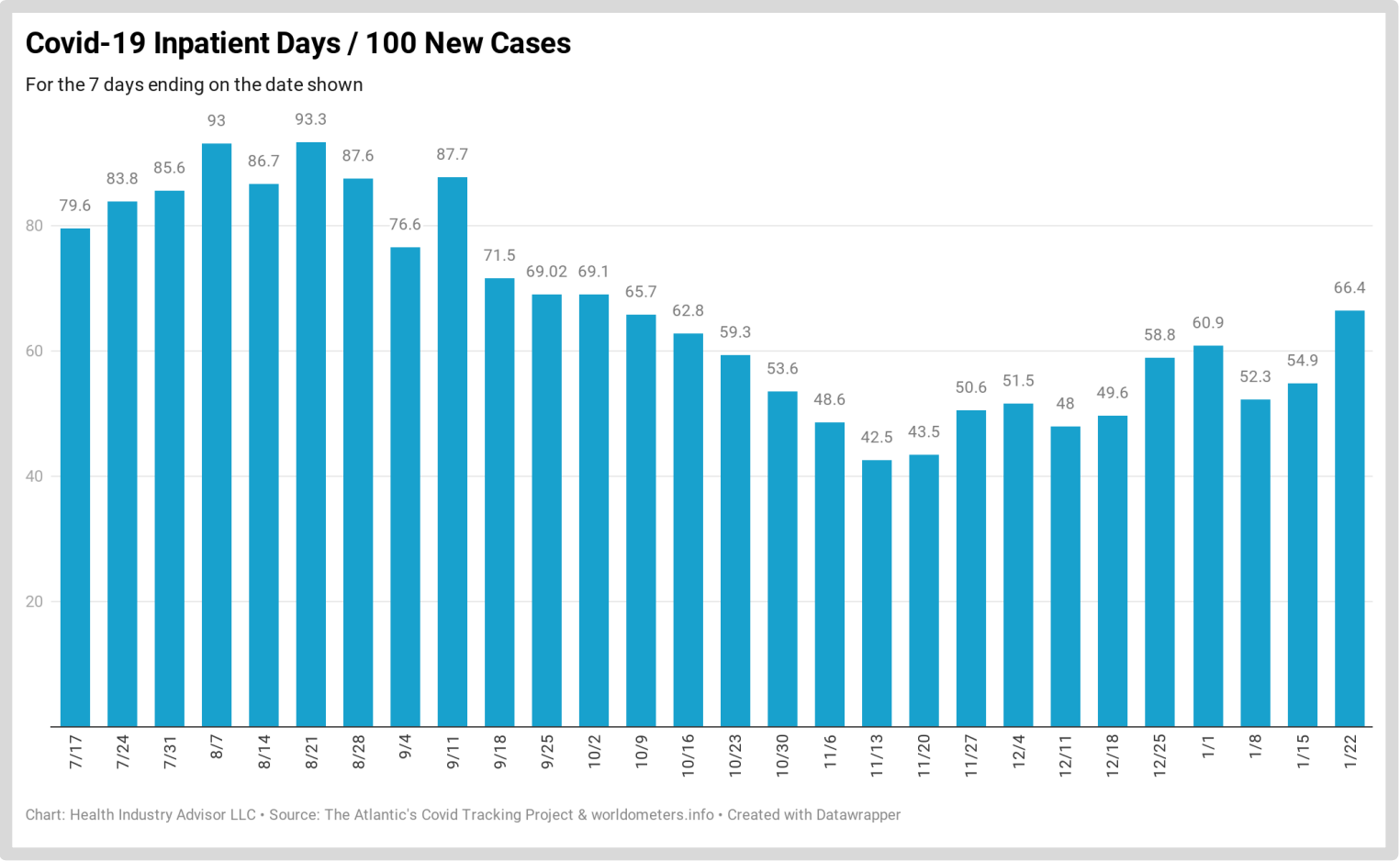
Covid-19 Patient Days / 100 New Cases

The ratio of patient days per new case increased last week. Given the lag from new case detection to hospital discharge, we should expect Covid-19 census to further decline next week



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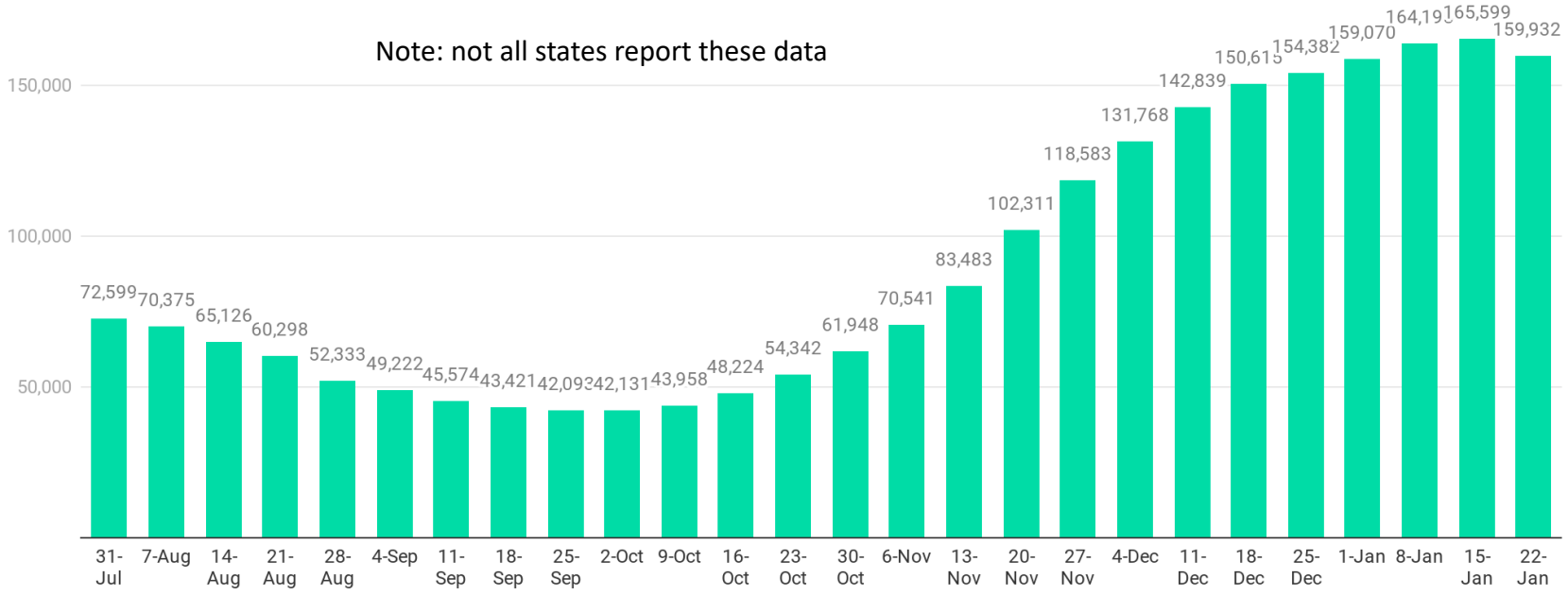
Covid-19 ICU Patient Days

The number of days that Covid-19 patients spent in the ICU dropped modestly last week, the first time since September 19-25

Weekly ICU Covid-19 Census - United States

For the 7 days ending on date shown



The following states started reporting data on: HI, 7/30; ND, 8/19; SC, 7/28; TN, 8/12. The following states do not report: AL, AK, AR, CO, CT, FL, GA, LA, MO, MT, NE, NH, NM, PA, SD, VT, WA

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

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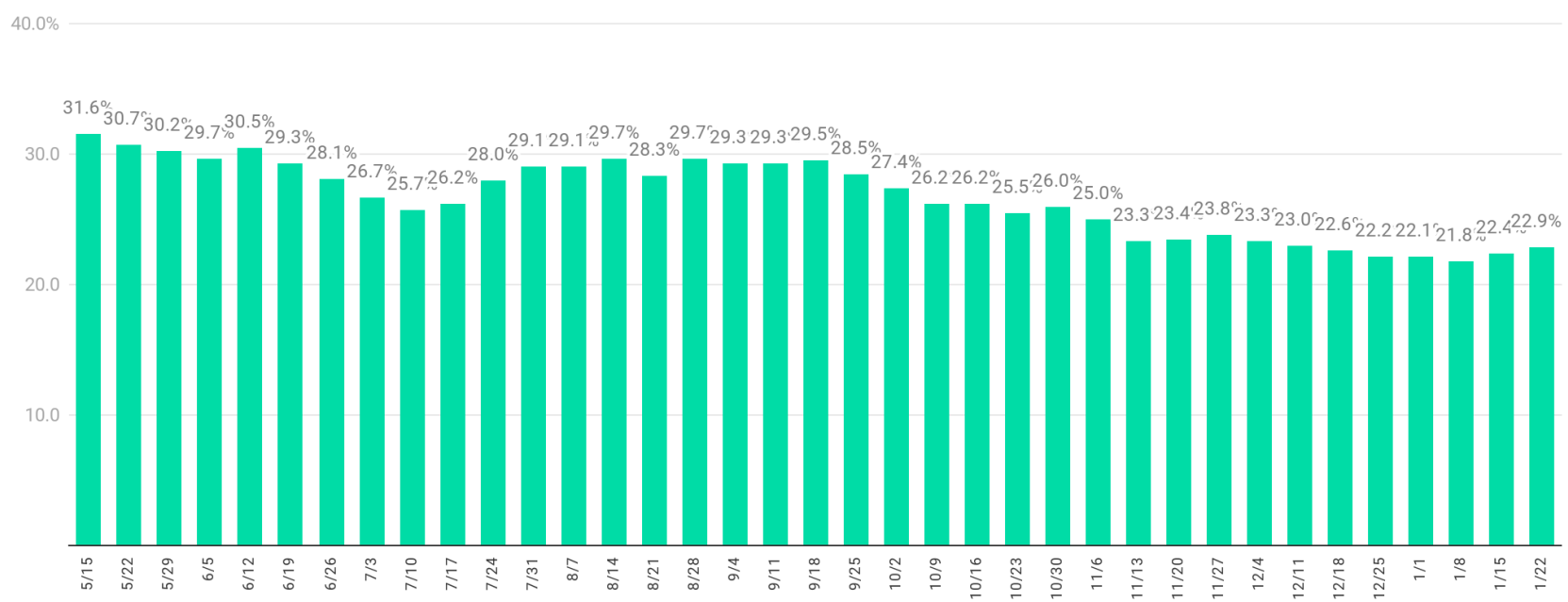
Mix of Covid-19 Patients: % in ICU

The % of Covid-19 patients requiring intensive care last week was in-line with where it has been for the past few months



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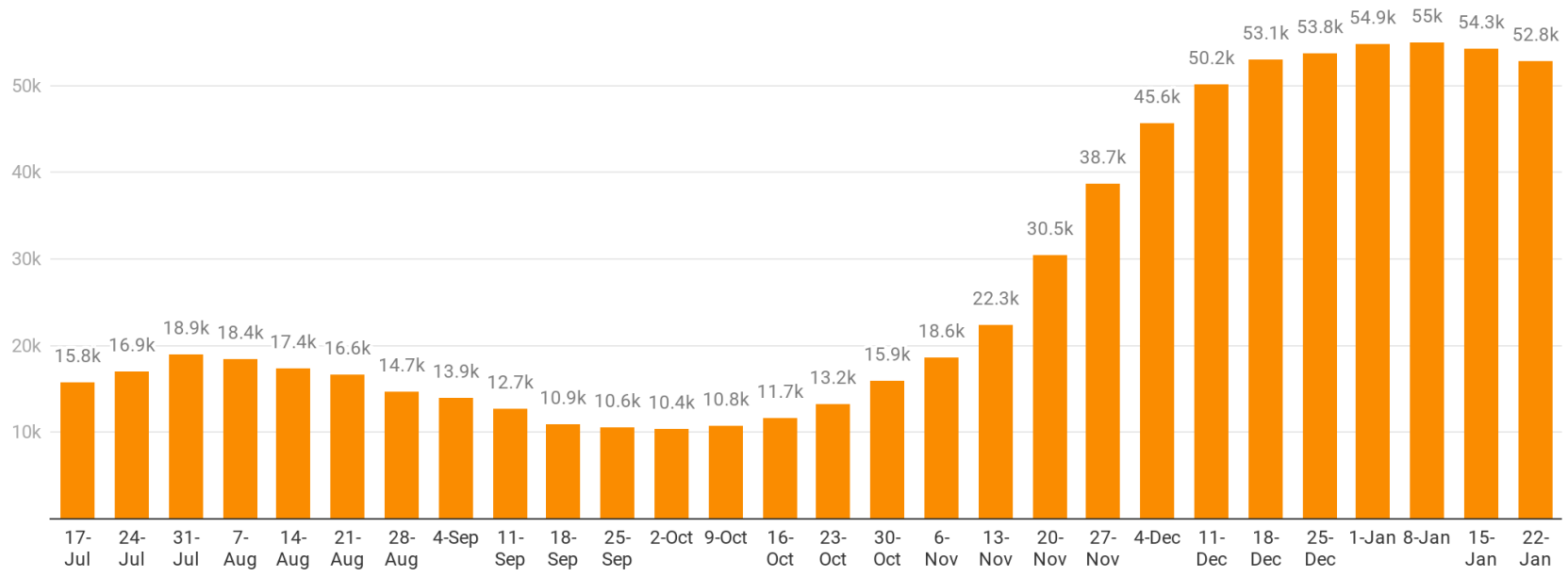
Covid-19 Ventilator Days

The number of days that Covid-19 patients spent on ventilators dropped for the second successive week. This metric remains high level, however, relative to historical levels



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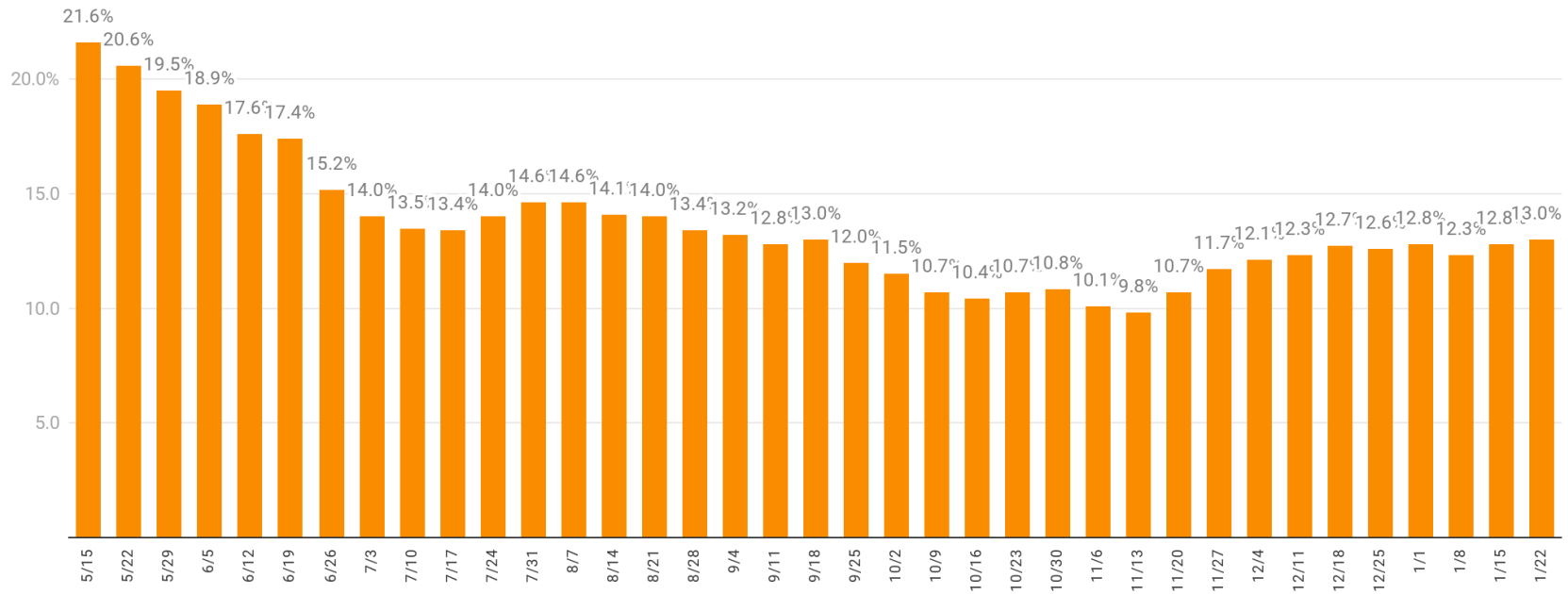
Mix of Covid-19 Patients: % on Ventilators

The % of Covid-19 patients requiring ventilator care was slightly higher than in recent weeks



The following states started reporting data on: HI, 7/14; KS, 7/25

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

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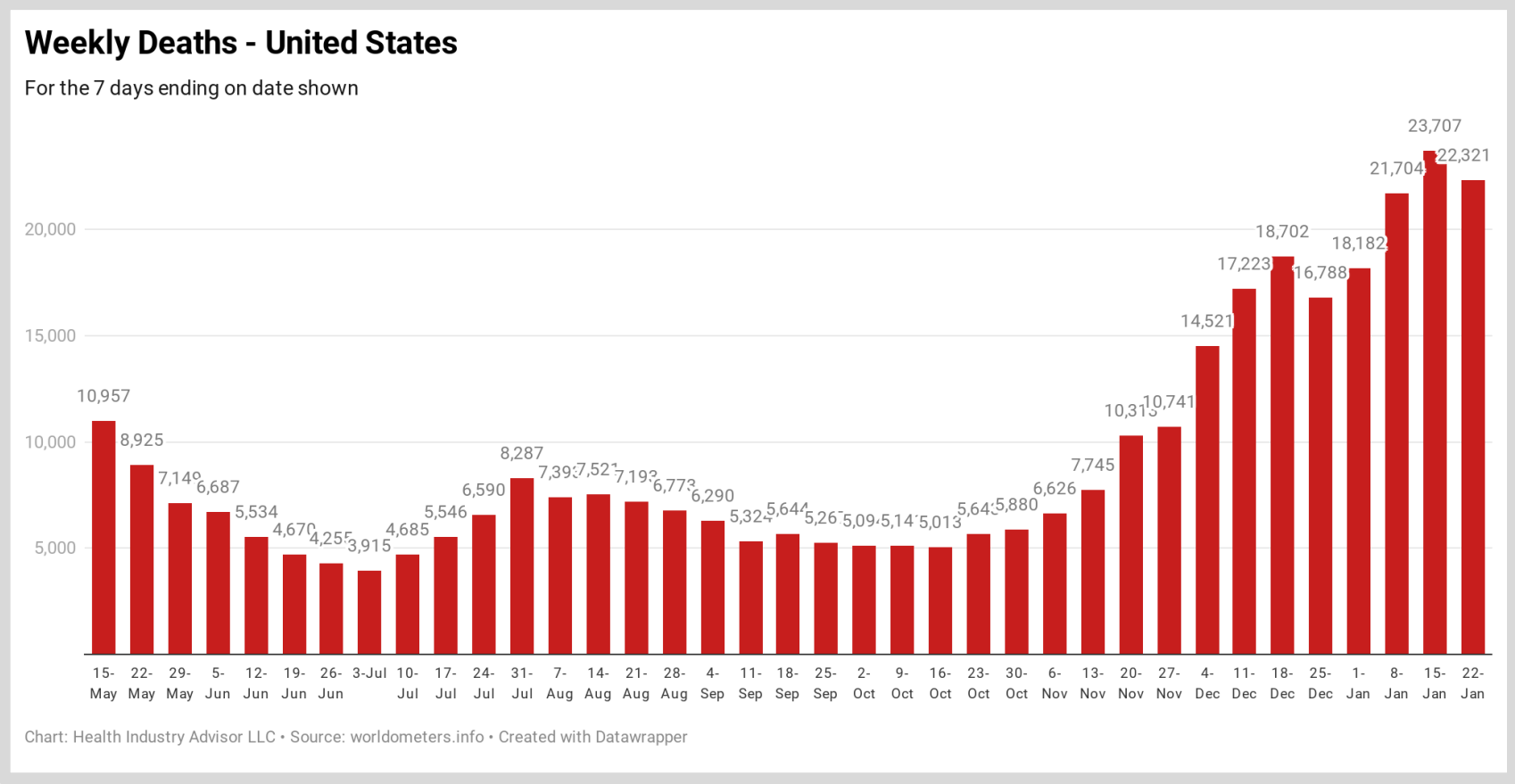
Deaths With Coronavirus

Tragically, too many people died with coronavirus last week, though the umber was lower than the prior week



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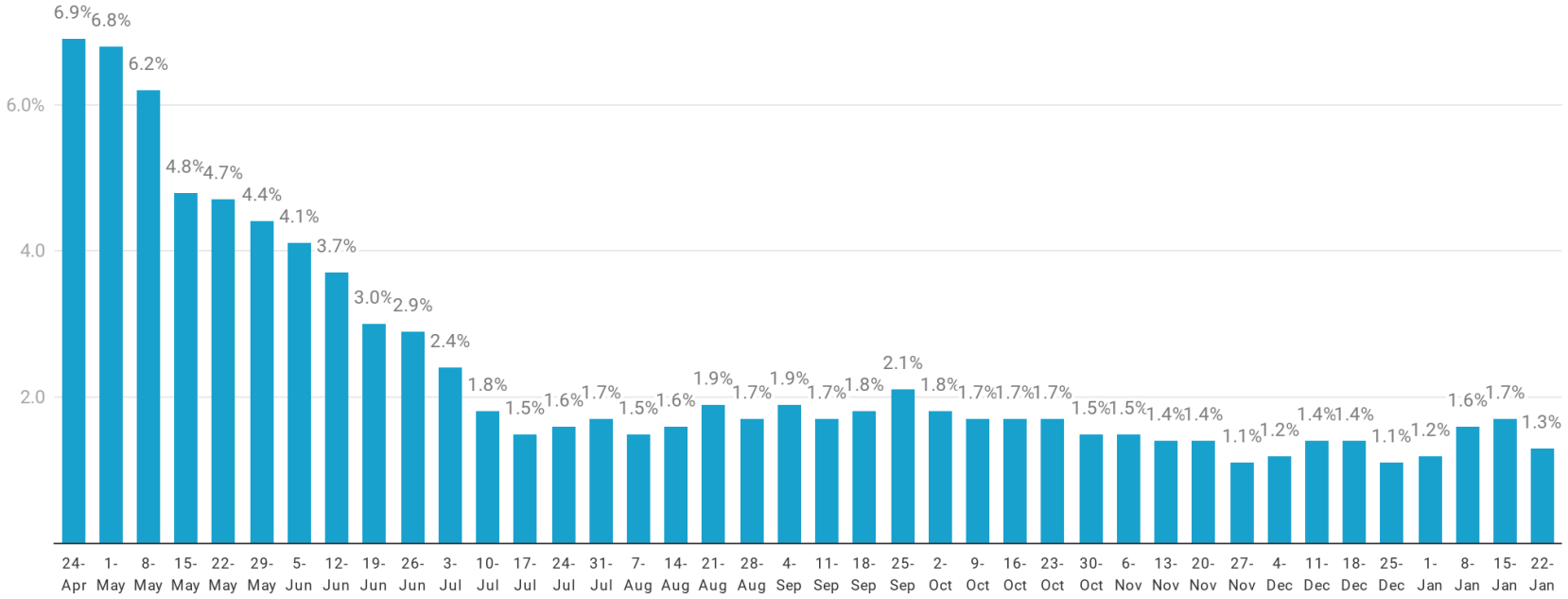
Case Fatality Rate: 2-Week Lag From Case Detection

The case fatality rate improved this week; it has been lower only twice during the pandemic.

Case Fatality Rate (2-Week Case Lag) - United States

For the 7 days ending on date shown



Deaths : New Cases, 2 week lag

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

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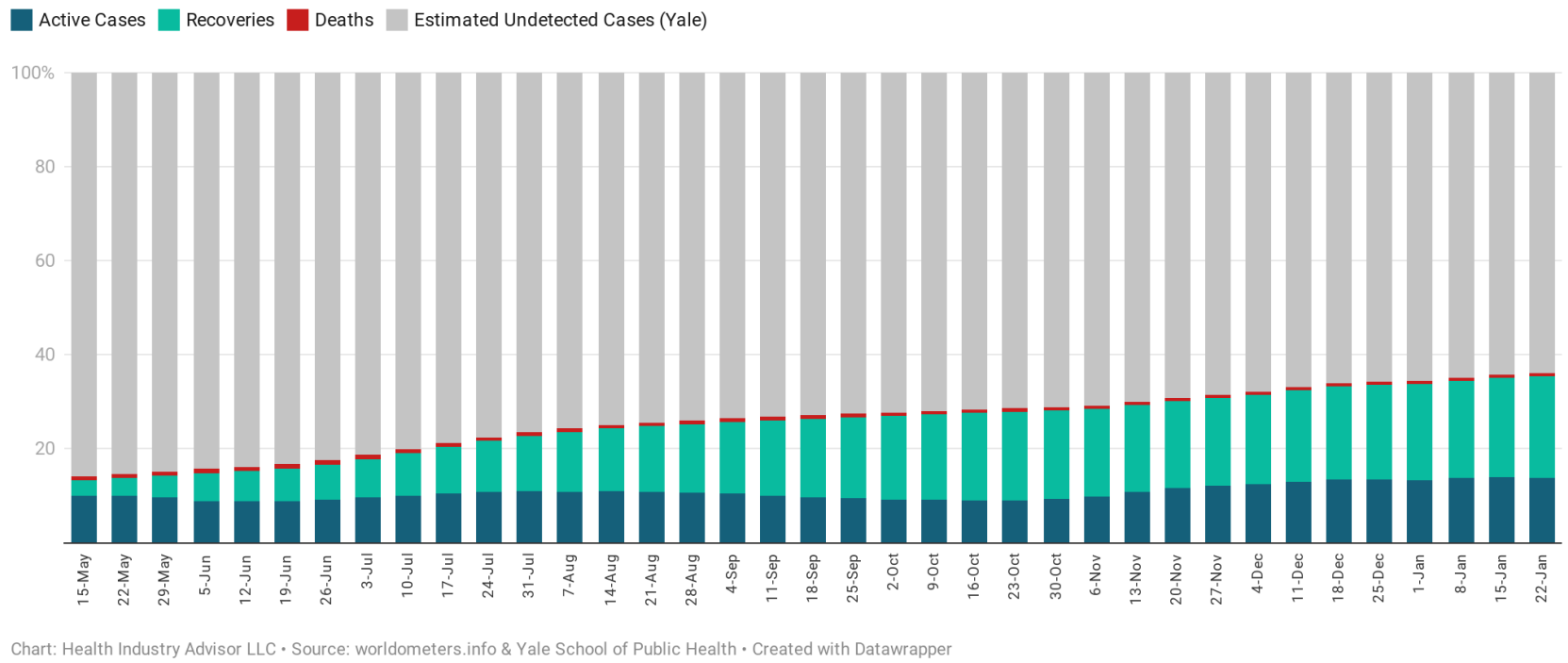
Mix of Cases – Active, Recovered, Death & Undetected

Although improving over time, most cases still go undetected



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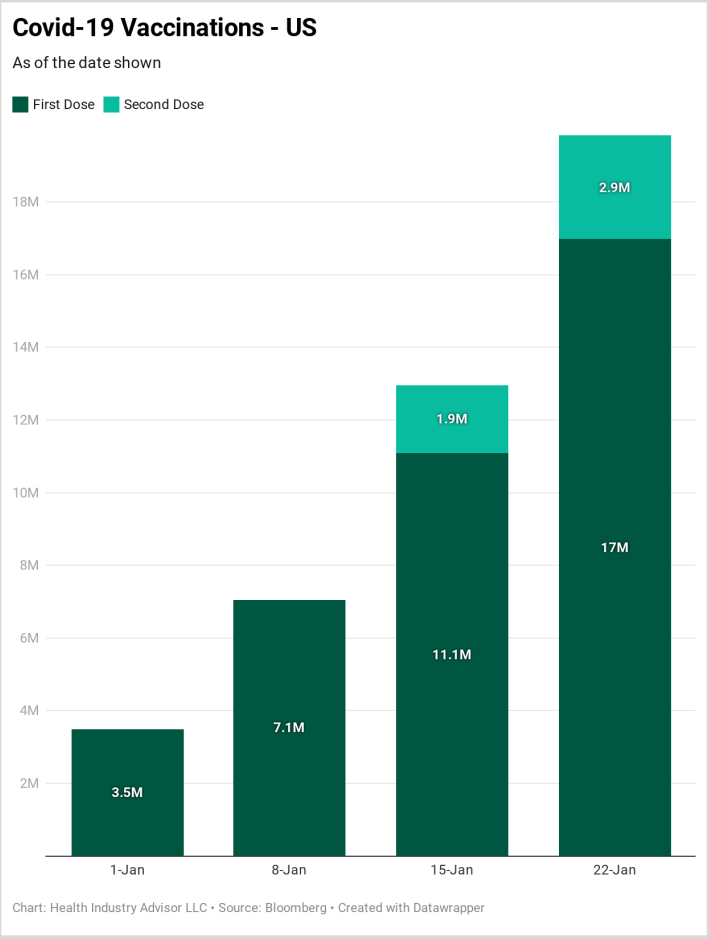
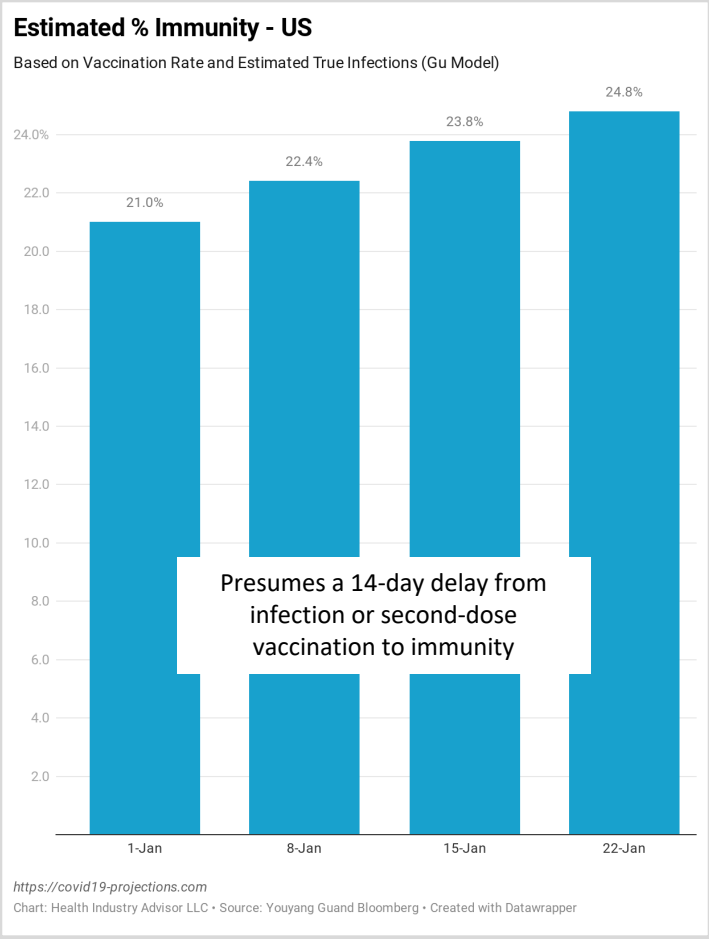
Vaccination and Immunity Status - US

Vaccinations are picking up yet, significant availability issues remain. Supply is well behind demand. Immunity is increasing slowly, though to-date it is mostly from infections not vaccinations





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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 and Prevention, National, Regional, and State Level Outpatient Illness and Viral Surveillance https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html
- Centers for Disease Control and Prevention, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control and Prevention, COVID Data Tracker https://www.cdc.gov/covid-data-tracker/index.html#mobility
- Centers for Disease Control and Prevention, Vaccines, https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html
- 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
- Covid-19 Forecast Hub, https://viz.covid19forecasthub.org
- Oliver Wyman Pandemic Navigator, https://pandemicnavigator.oliverwyman.com/forecast?mode=country&region=United%20States&panel=mortality
- Rt.live
- Yale School of Public Health & Harvard TH Chan School of Public Health, https://covidestim.org
- Bloomberg Vaccine Trackers, https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmHW

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