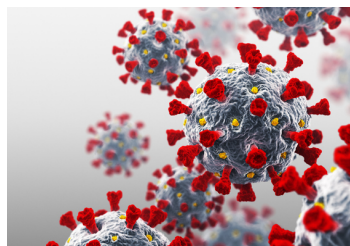


Covid-19 "Vital Signs"

Issue # 280

February 6, 2021



- **More Americans were vaccinated yesterday than on any single day since the process began in mid-December, 2.1 million:**
 - 8.2 million Americans have received both required doses of the Pfizer/BioNTech or Moderna vaccines;
 - **1.4 million people have been vaccinated daily over the last seven days**, despite a snowstorm-induced slowdown on Monday and Tuesday; in our vaccination/immunity model, **we project that 1.2 million doses per day now, and 1.8 million beginning on March 1 are necessary to reach herd immunity by mid-July**;
 - An estimated 29% of Americans may be immune to Covid-19 at this time, from prior infections and vaccinations.
- Covid-19 testing reflected the challenge we faced during December and January and the progress made in January and so far in February:
 - Test volumes accelerated from Labor Day to Christmas but did not keep up with surging infections in the US. **Test-positivity tripled from mid-October to early-January, signaling that infections were raging faster than we could detect**;
 - **Test volumes have tapered since mid-January, hinting that fewer people fear a recent exposure**;
 - **Test-positivity has plunged by nearly one-half in the past four weeks, reinforcing the notion of declining exposures**.
- Detected cases and estimated actual cases surged in the Fall and early-Winter and have retreated since early-January:
 - Estimated actual infections exploded by more than 5x from the first week of Fall to Christmas week; Detected cases followed a similar trajectory;
 - **Already this year, estimated actual cases and detected cases have shrunk by one-half**. With each measure, last week's number reverted to its late-October/early-November level.
- Covid-19 hospital occupancy alarmed healthcare professionals in November and December but has pulled back since early-January:
 - **Covid-19 patients occupied 4x as many inpatient beds in late-December than in October**; In December, nearly all available beds in southern California, Arizona, and several other places were filled by Covid-19 patients;
 - **Covid-19 patient days have dropped each of the past four weeks; hospital occupancy fell by 25% during this time**;
 - Covid-19 patients on ventilators and those in the ICU rode a similar roller coaster ride: increasing sharply in the Fall and early Winter and receding over the last four weeks.
- Deaths with coronavirus have been slower to follow the pattern of cases, infections, and hospitalizations:
 - **Deaths naturally lag new cases and infections by several weeks; for example, new cases started surging in mid-September; patient days in early-October; and deaths, in mid-October**;
 - **By mid-January, deaths reported with Covid-19 spiked by nearly 5x over its mid-October level**;
 - **The death counts last week, however, were lower than for each of the previous four weeks**
- A mild flu season has provided us with a healthy measure of relief:
 - **In a typical year, we would be at or near peak in flu cases and related hospitalizations**;
 - Last year and the 2017-2018 flu seasons were particularly severe, straining hospital resources;
 - This flu season has been mild by comparison, with the flu infecting fewer people each week than during the corresponding week for each of the past five years;
 - **During the severe 2019-2020 and 2017-2018 seasons, flu visits were at least 6x greater at this peak time-of-year than they were last week**.

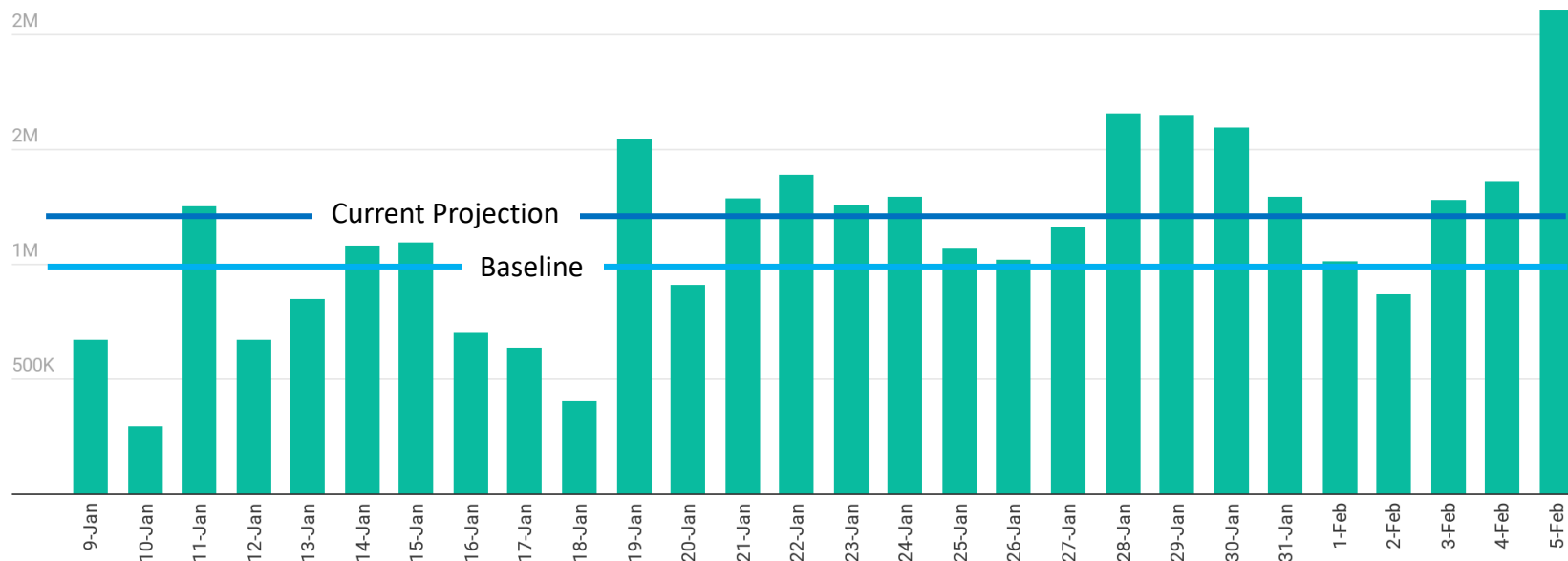
Covid-19 "Vital Signs"

Pace of Vaccinations

More than 2 million Americans were vaccinated yesterday, perhaps catching up from earlier this week when the widespread snowstorm inhibited vaccine efforts. The pace has improved over the past ten days

Pace of Vaccinations - Daily

in Millions of Doses



Baseline: 100 Million Doses in 100 Days Current Projection: Ramped-Up Vaccinations; Additional 100M Pfizer and Moderna doses; and JNJ vaccine available on 3/1

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

“Current projection” is from Health Industry Advisor’s vaccination model, reflecting recent developments: increase pace of vaccinations; increase in Pfizer and Moderna doses to 300 million each; and anticipated availability of JNJ vaccine

Covid-19 "Vital Signs"

Vaccine Tracking

To date, the US has administered 38.5 million doses, with 8.2 million people receiving two doses.

Vaccination Progress

■ First Doses ■ Second Doses

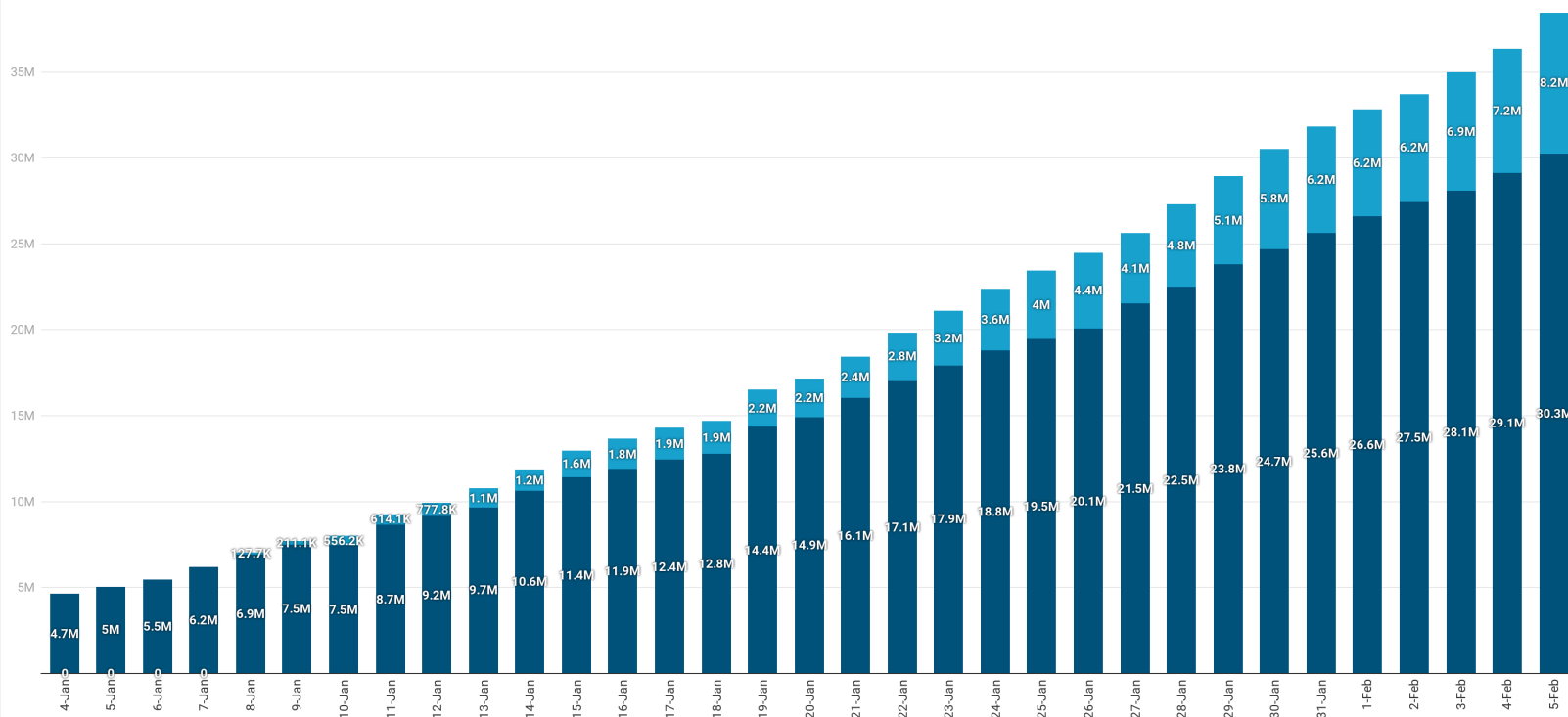


Chart: Health Industry Advisor LLC • Source: CDC, Bloomberg • Created with Datawrapper

Vaccine data from: [Centers for Disease Control and Prevention](#) and [Bloomberg Vaccine Tracker](#)

Covid-19 "Vital Signs"

Vaccination and Immunity Status - US

More people were vaccinated this past week than any previous week, driven by a leap in second doses. An estimated three-in-ten Americans are immune from Covid-19, mostly via prior infections

Covid-19 Vaccinations - US

For the week shown

First Dose Second Dose

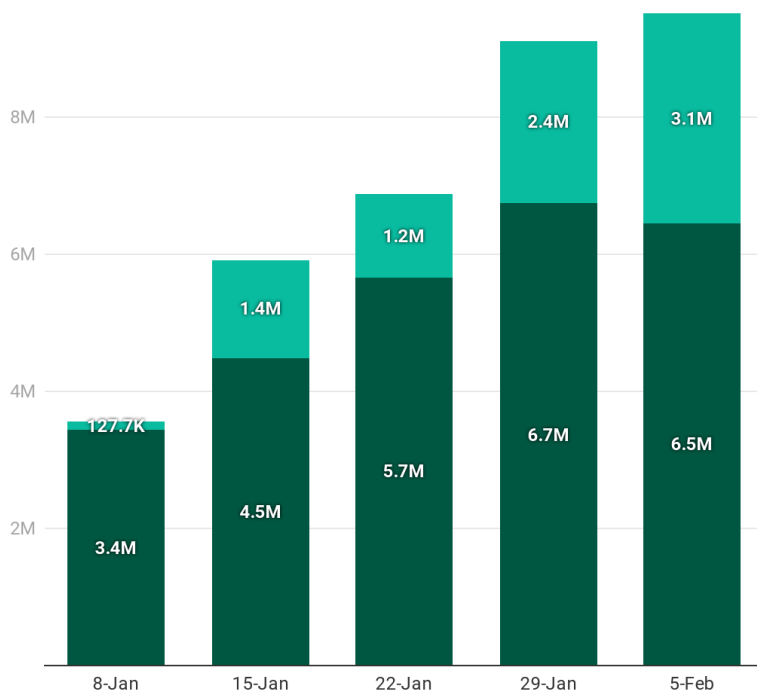
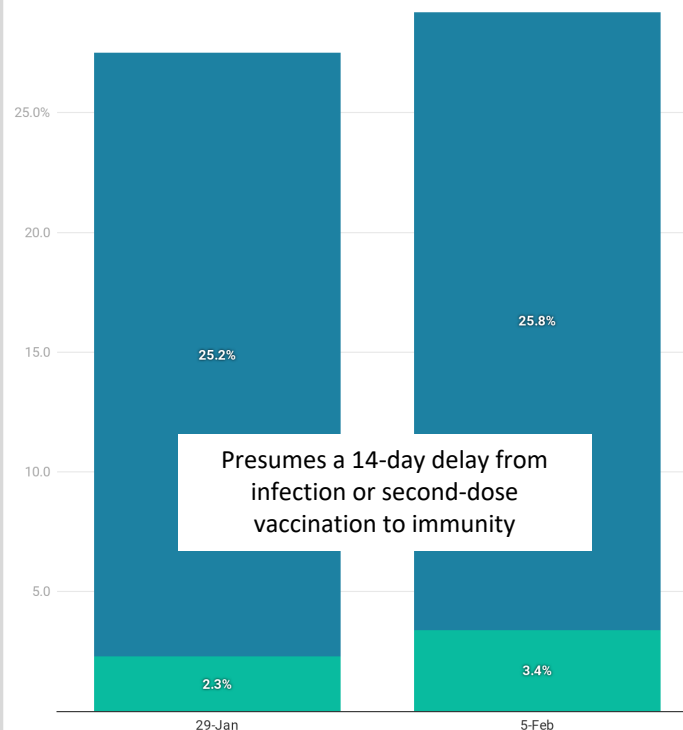


Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

Estimated % Immunity - US

Based on Vaccination Rate and Estimated True Infections (Gu Model)

Via Vaccination Via Infection



<https://covid19-projections.com>

Chart: Health Industry Advisor LLC • Source: Youyang Guand Bloomberg • Created with Datawrapper

Covid-19 "Vital Signs"

Covid-19 Testing

Testing declined for the third successive week; suggesting that fewer people are concerned about a recent exposure. Test-positivity improved for the fourth successive week, and was lower than any week since the first week of November

Weekly Tests - United States

For the 7 days ending on date shown

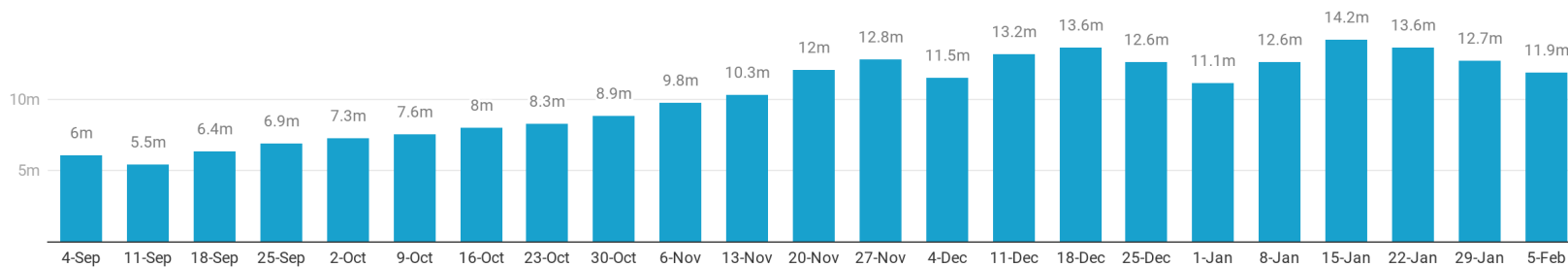


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project • Created with Datawrapper

Weekly Test-Positive% - United States

For the 7 days ending on date shown

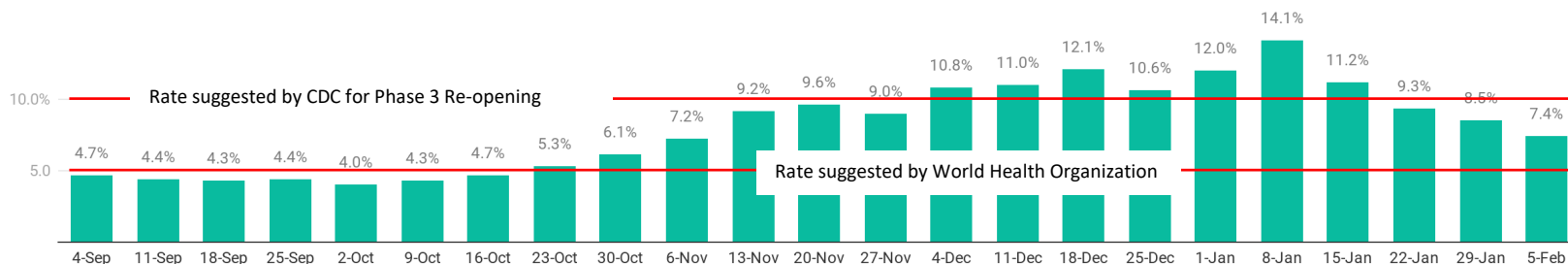


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking project • Created with Datawrapper

Covid-19 "Vital Signs"

Estimated True Infections – Yale/Harvard Model

Estimated true infections dropped for the fourth successive week, based on the Yale/Harvard model. There were fewer estimated actual infections last week than any week since October 24-30*

Weekly New Estimated Infections - Yale/Harvard Model

For the 7 days ending on date shown

* Source: [Yale School of Public Health/Harvard T.H. Chan School of Public Health](#)

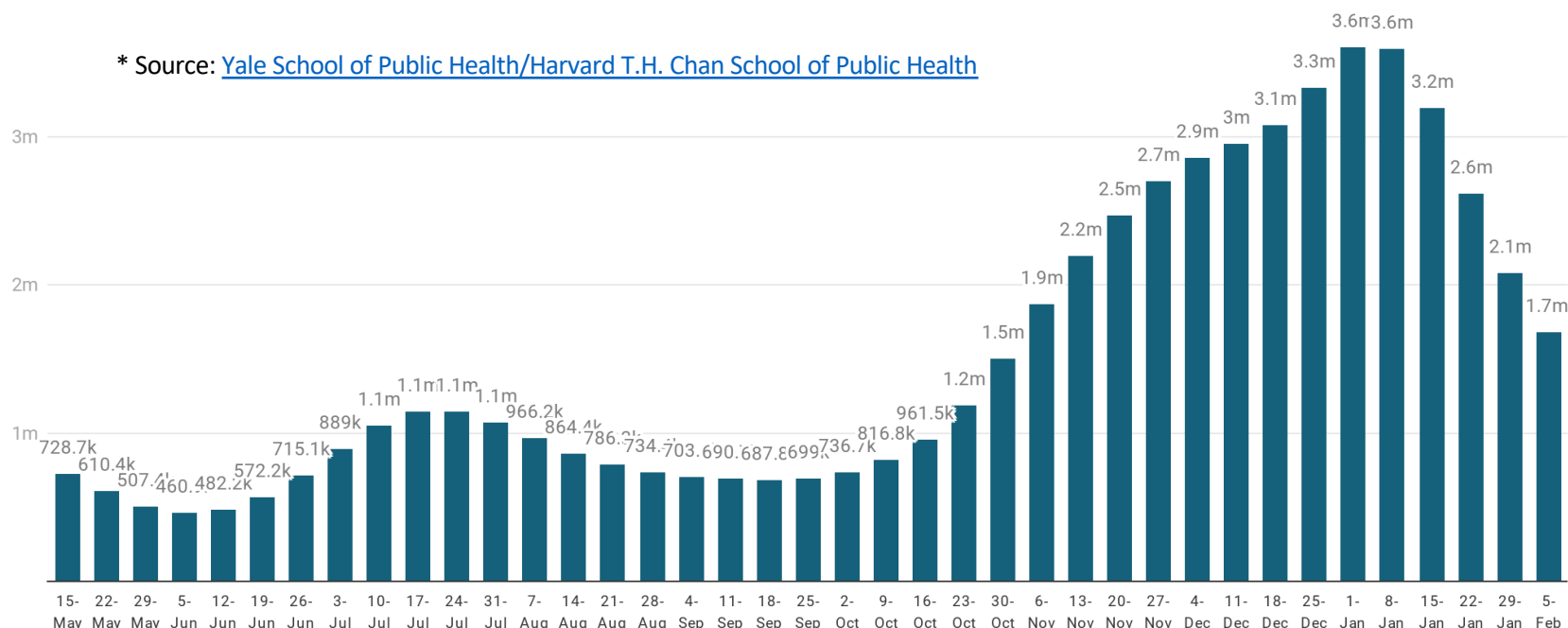


Chart: Health Industry Advisor LLC • Source: Yale and Harvard Schools of Public Health • Created with Datawrapper

Newly Detected Cases

New cases dropped last week for the fourth successive week, and were lower than any week since November 7-13

Weekly New Detected Cases - United States

For the 7 days ending on date shown

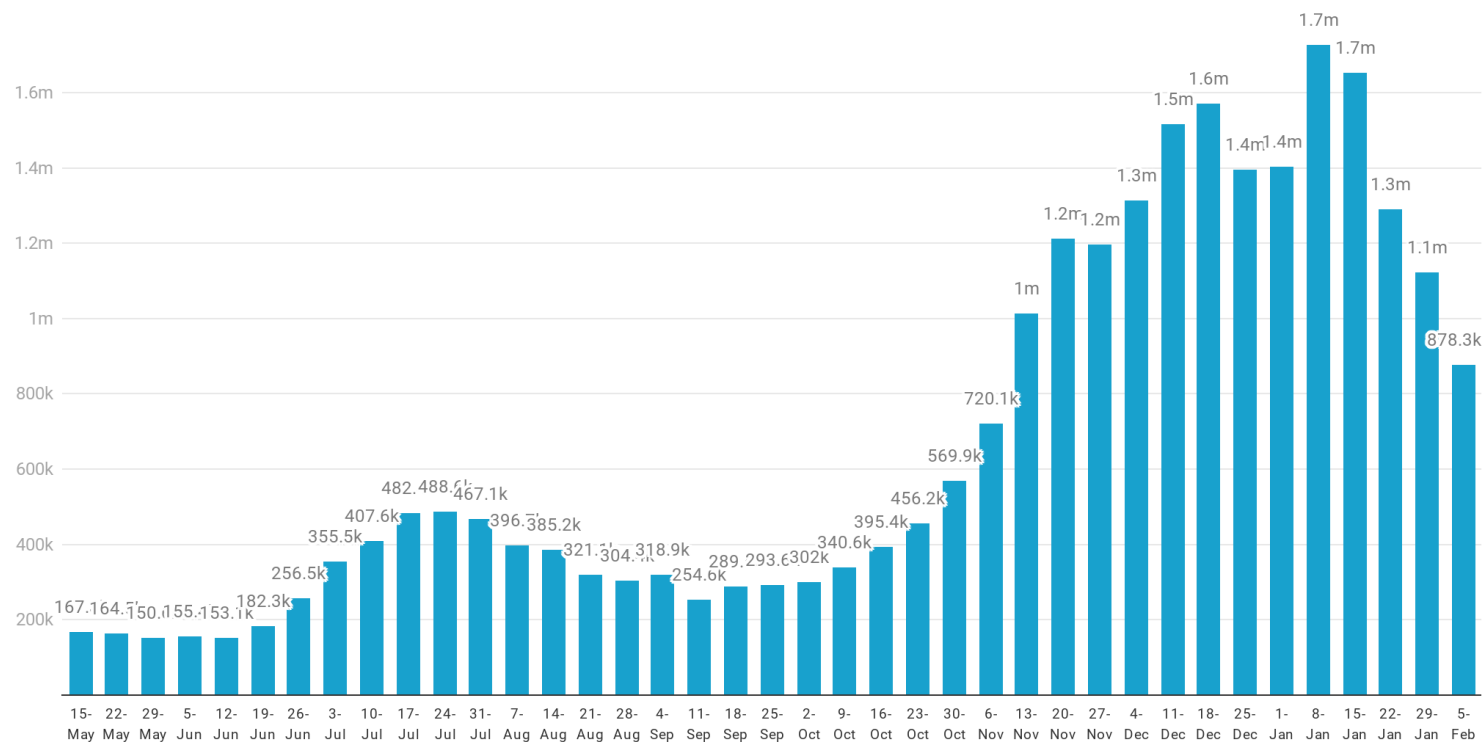


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Newly Detected Cases - By State

Texas posted the most newly-detected cases over the past 7 days, surpassing California. Florida and New York recorded the third- and fourth-most new cases.

New Weekly Detected Cases - By State

January 30 - February 5

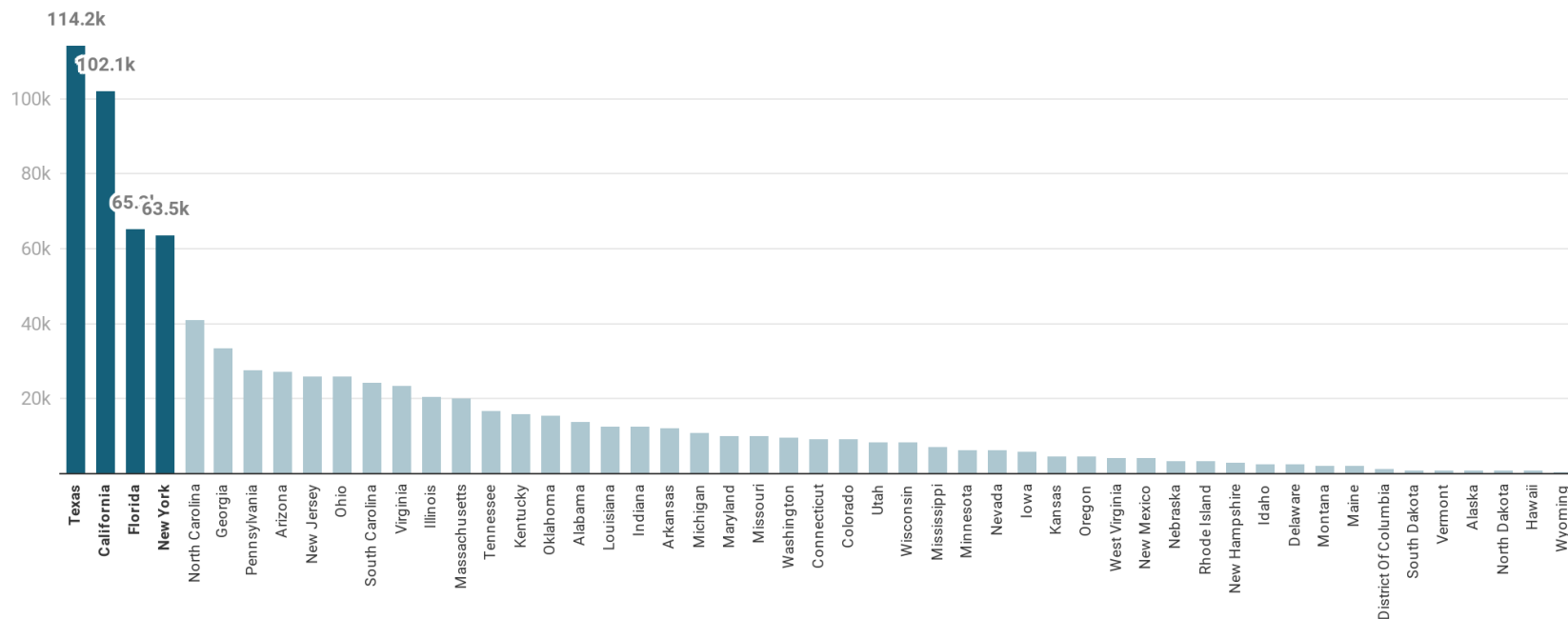


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Covid-19 "Vital Signs"

Week-Over-Week Change in Newly Detected Cases

California had 49,000 fewer cases last week than the prior week, and nearly 200,000 fewer new cases than just three weeks ago. Only three states recorded more new cases the past week than one week earlier; these were minor increases.

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

January 30 - February 5 v. January 17-29

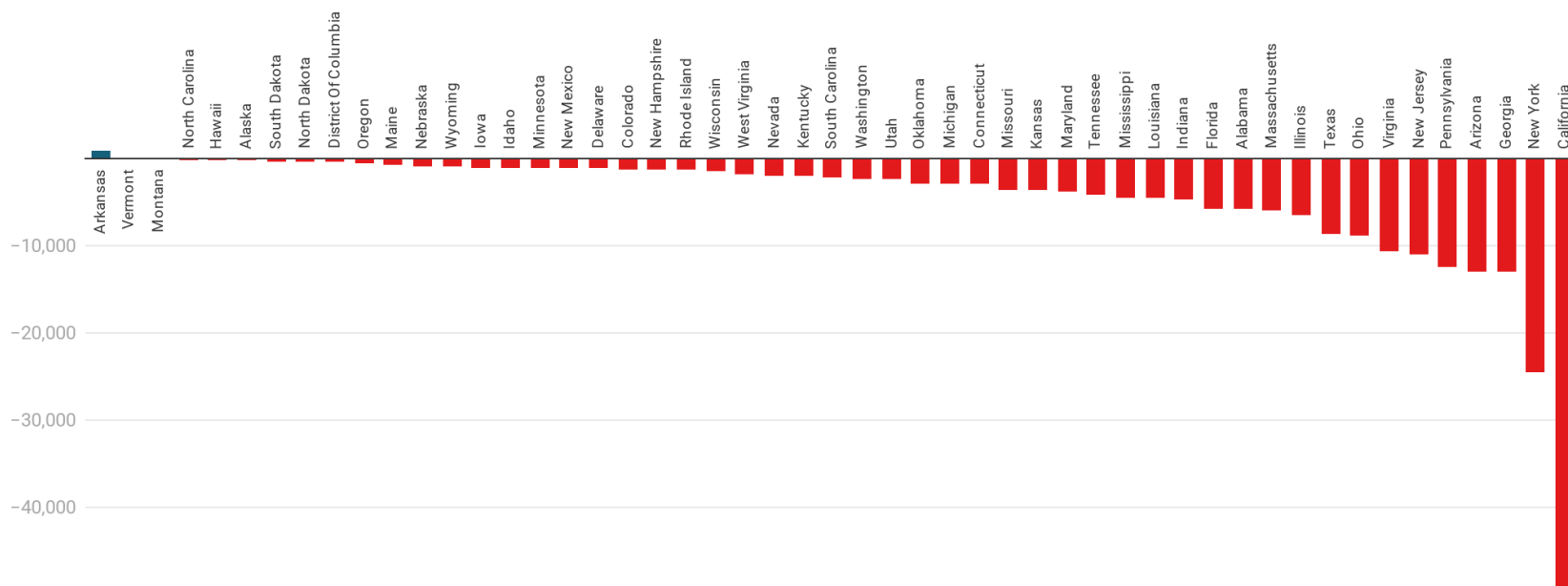


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

Test Efficiency: Tests Per Case Detected

Test efficiency improved for the fourth successive week, as the test-positive rate improved and newly-detected cases fell. Last week's rate was better than on any week since July 25-31.

Weekly Tests / Newly Detected Case - United States

For the 7 days ending on date shown

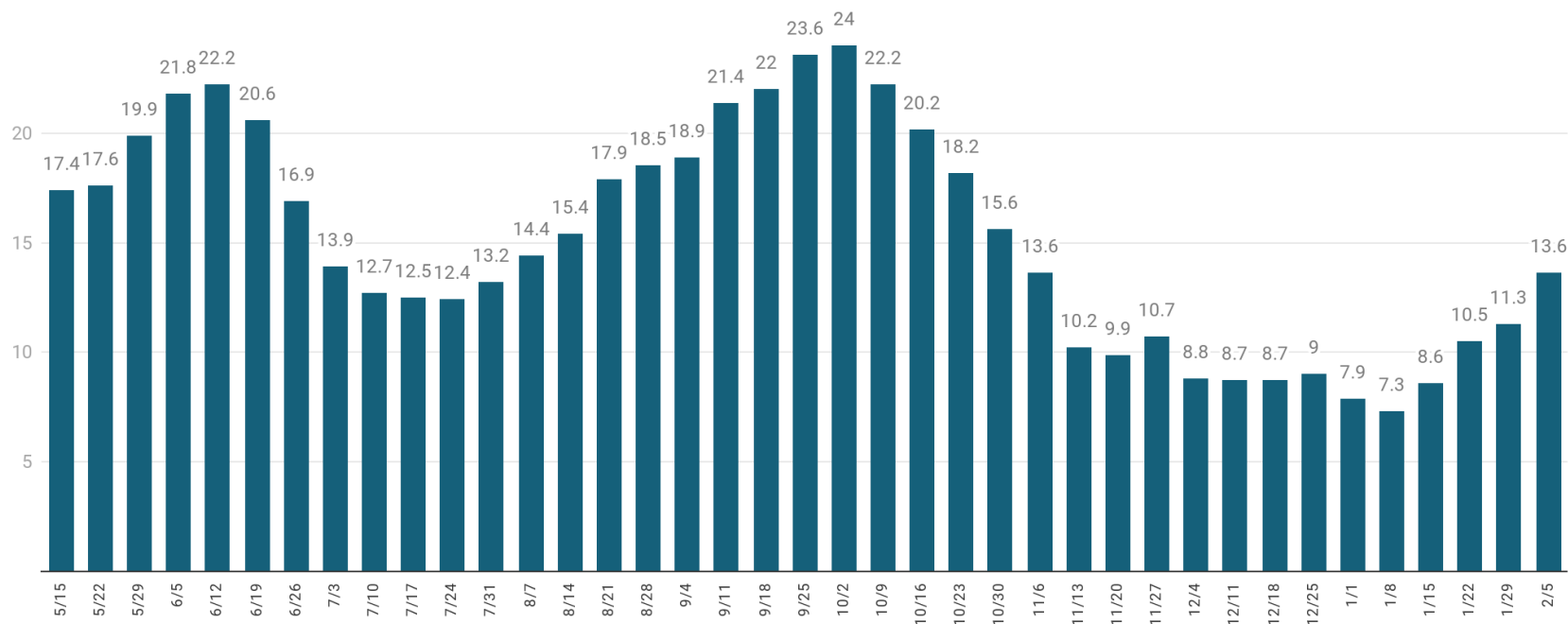


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project & worldometers.info • Created with Datawrapper



Active Cases

The number of Active Cases eased last week, something that had not occurred since early-September.

Current Active Cases - United States

For the 7 days ending on date shown

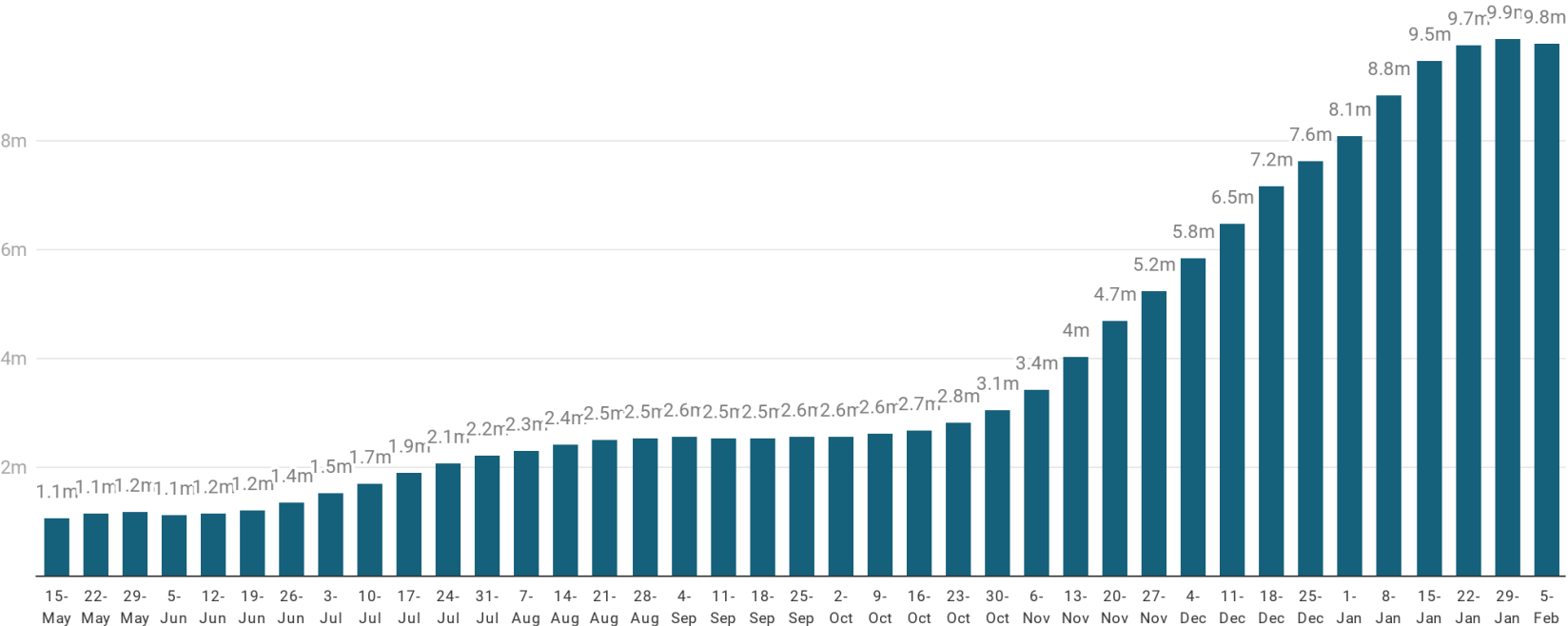


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper

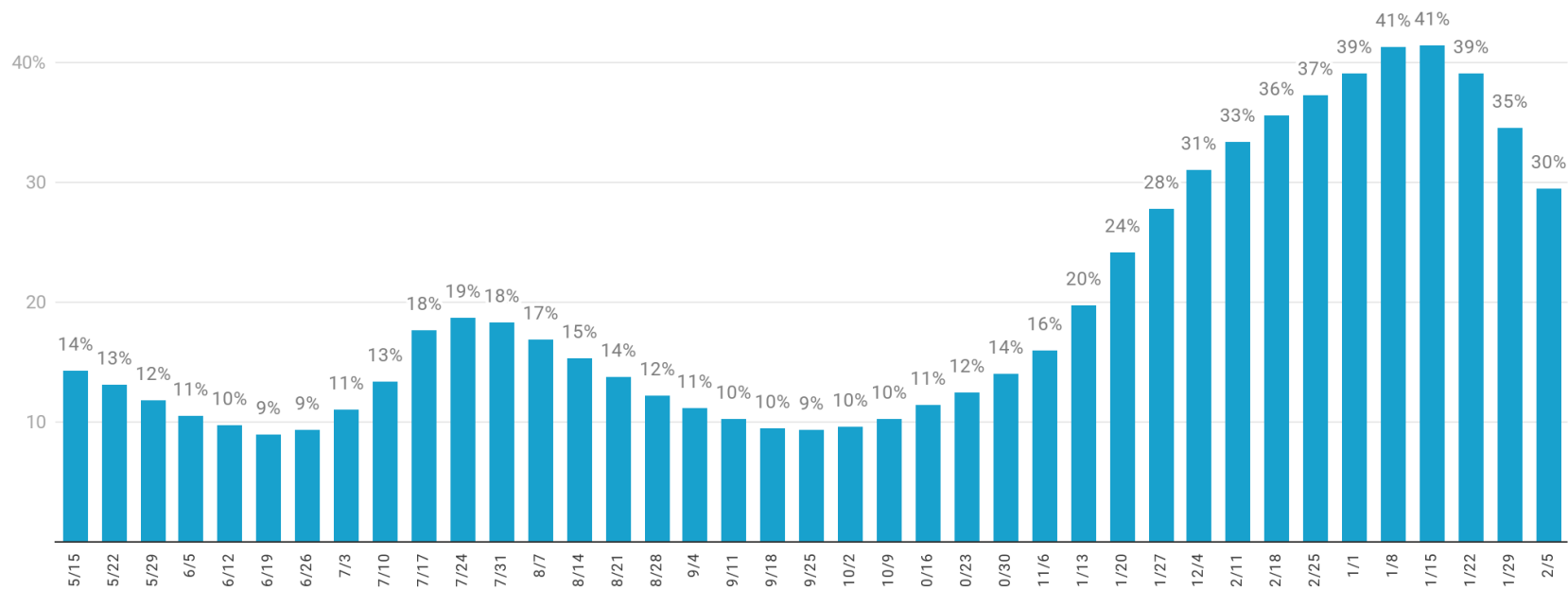
Covid-19 "Vital Signs"

Covid-19 Hospital Occupancy

The number of Covid-19 patients throttled back for the fourth straight week. Covid-19 occupancy was lower than at any time since Thanksgiving week.

Covid-19 Occupancy - % of Inpatient Beds - United States

For the 7 days ending on date shown



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

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

Covid-19 "Vital Signs"

Covid-19 Patient Days / 100 New Cases

Covid-19 census has not declined as quickly as newly-detected cases. Given the lag from new case detection to hospital discharge, we should expect Covid-19 census to decline further in coming weeks

Covid-19 Inpatient Days / 100 New Cases

For the 7 days ending on the date shown

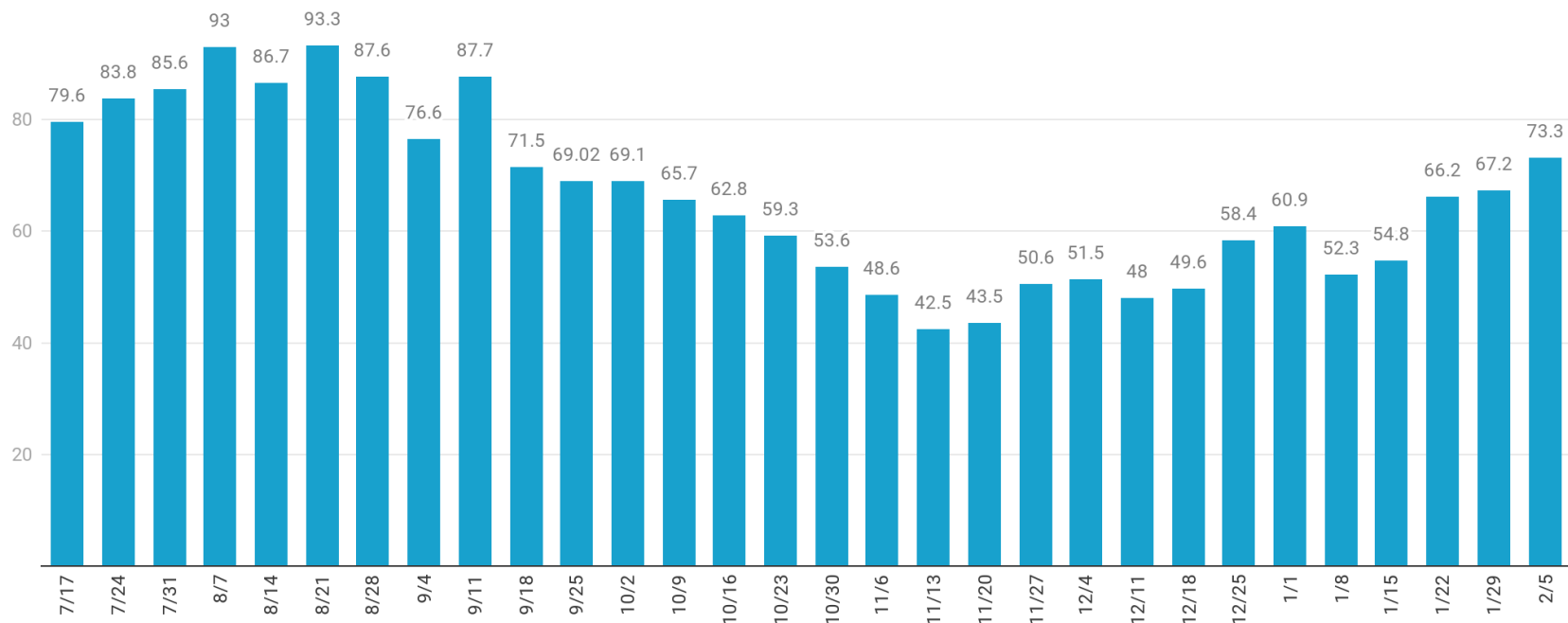


Chart: Health Industry Advisor LLC • Source: The Atlantic's Covid Tracking Project & worldometers.info • Created with Datawrapper

Covid-19 "Vital Signs"

Hospitalized Covid-19 Patients / Active Cases

The likelihood of someone with an active Covid-19 cases being in the hospital dropped last week to its lowest point of the pandemic.

% of Active Cases in the Hospital

For the week shown

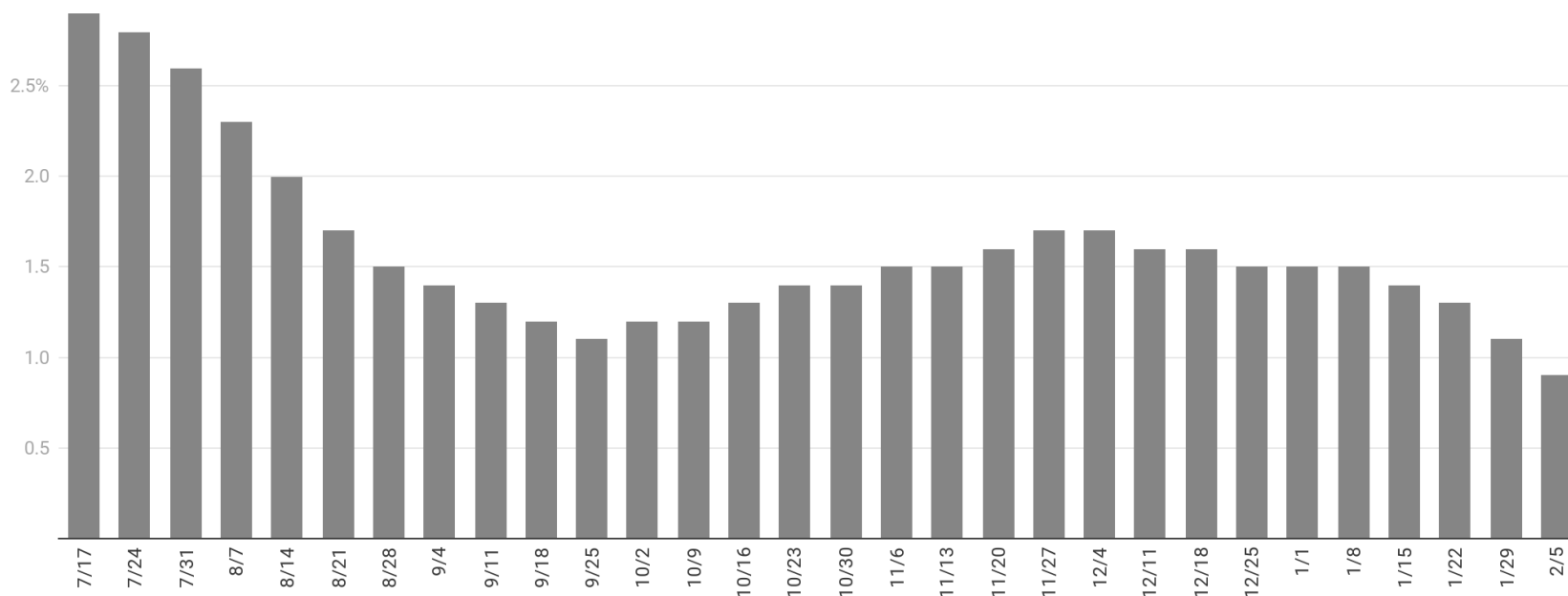


Chart: Health Industry Advisor LLC • Source: The Atlantic and worldometers.info • Created with Datawrapper

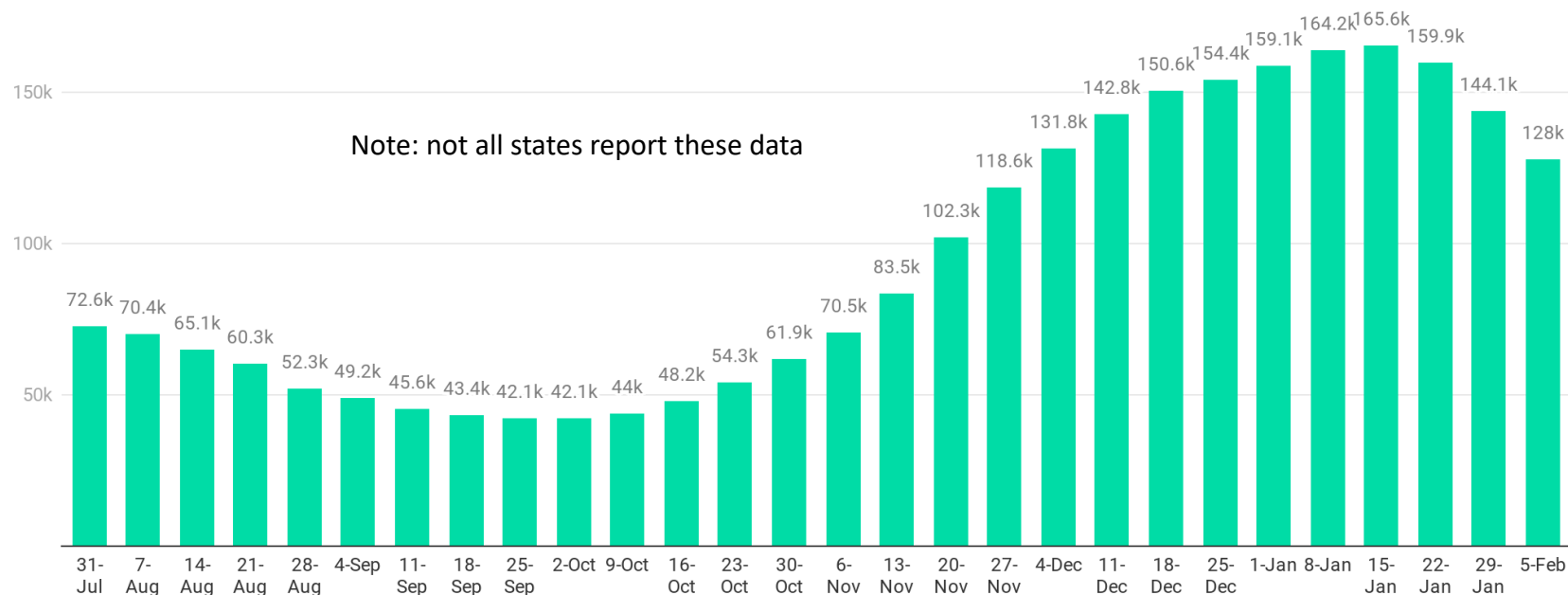
Covid-19 "Vital Signs"

Covid-19 ICU Patient Days

Covid-19 ICU patient days decreased for the fourth straight week,. There were fewer Covid-19 patients in the ICU last week than any week since November 21-27

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

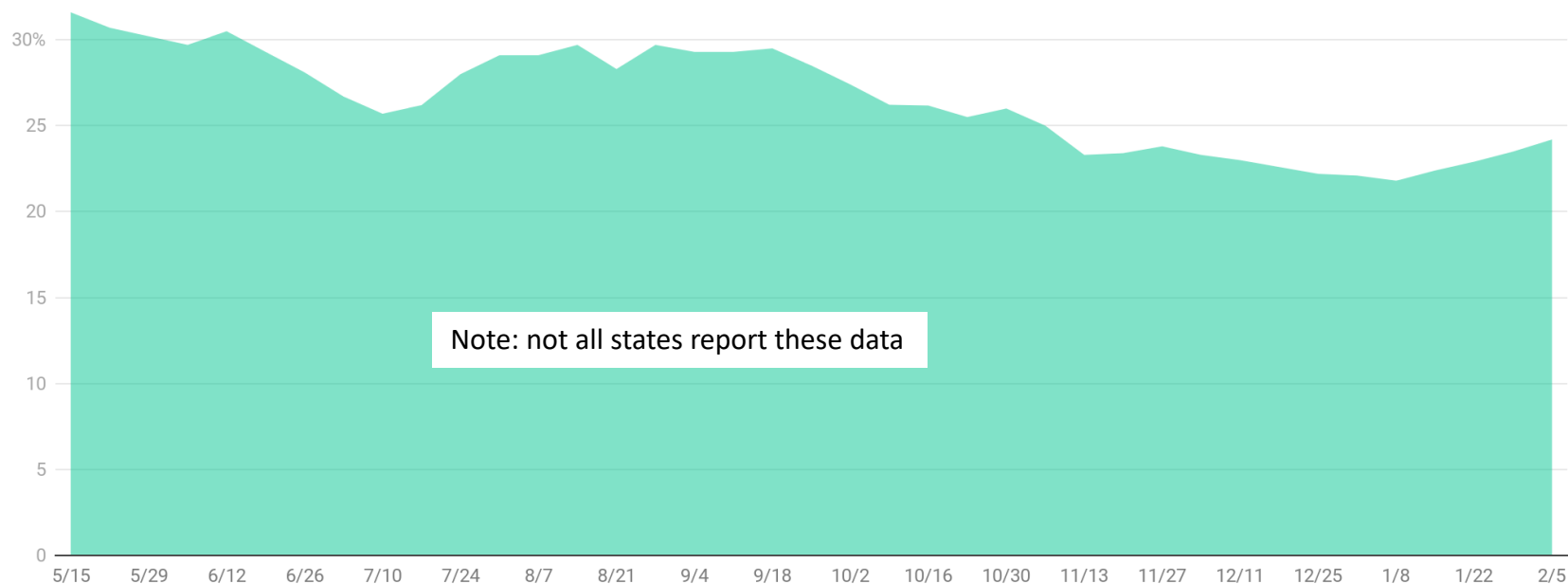
Covid-19 "Vital Signs"

Mix of Covid-19 Patients: % in ICU

The % of Covid-19 patients requiring intensive care increased each of the past few weeks

% of Hospitalized Covid-19 Patients in the ICU

For the date shown



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

Covid-19 "Vital Signs"

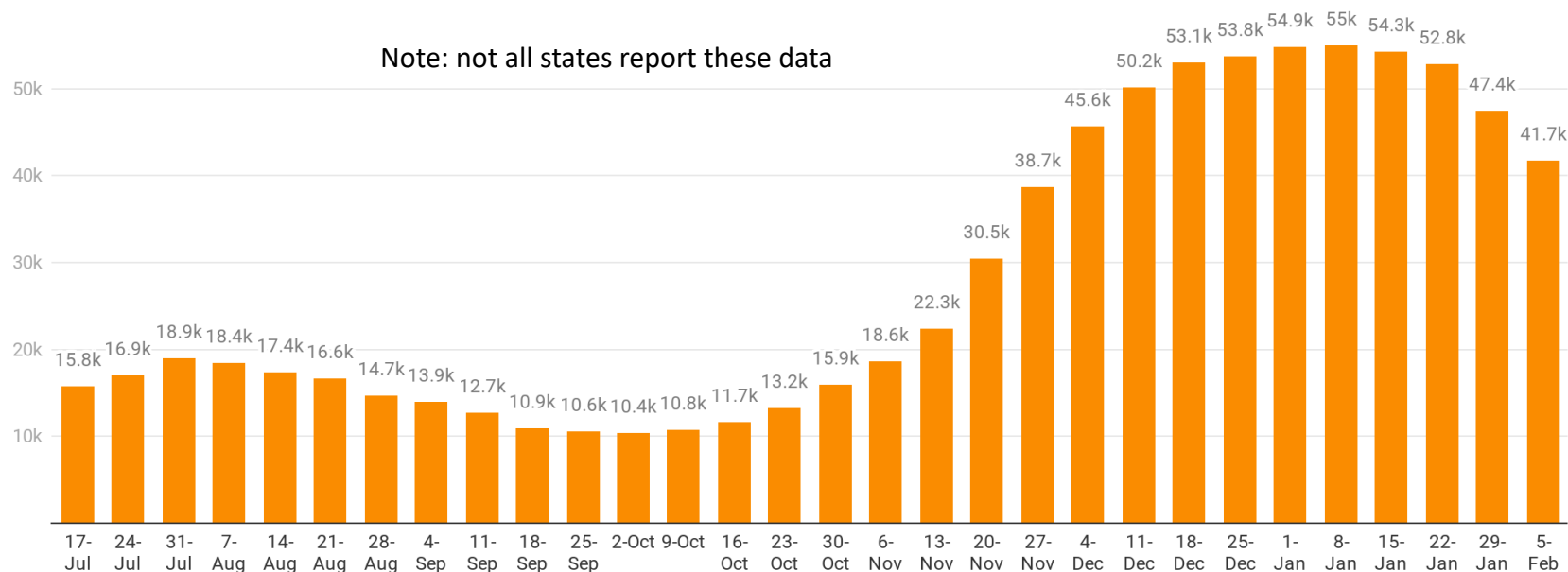
Covid-19 Ventilator Days

The number Covid-19 ventilator days dropped for the fourth straight week. There were 13,300 fewer Covid-19 ventilator days last week than the week of January 1-8

Ventilator Days COVID-19 - United States

For the 7 days ending on date shown

Note: not all states report these data



The following states started reporting data: HI, 7/31; KS, 7/16; SC, 7/24; TN, 8/12. The following states do not report: AL, CA, CO, CT, FL, GA, ID, KY, MD, MN, MT, NH, NM, NC, ND, OK, SD, TX, UT, VT, WI, WY

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

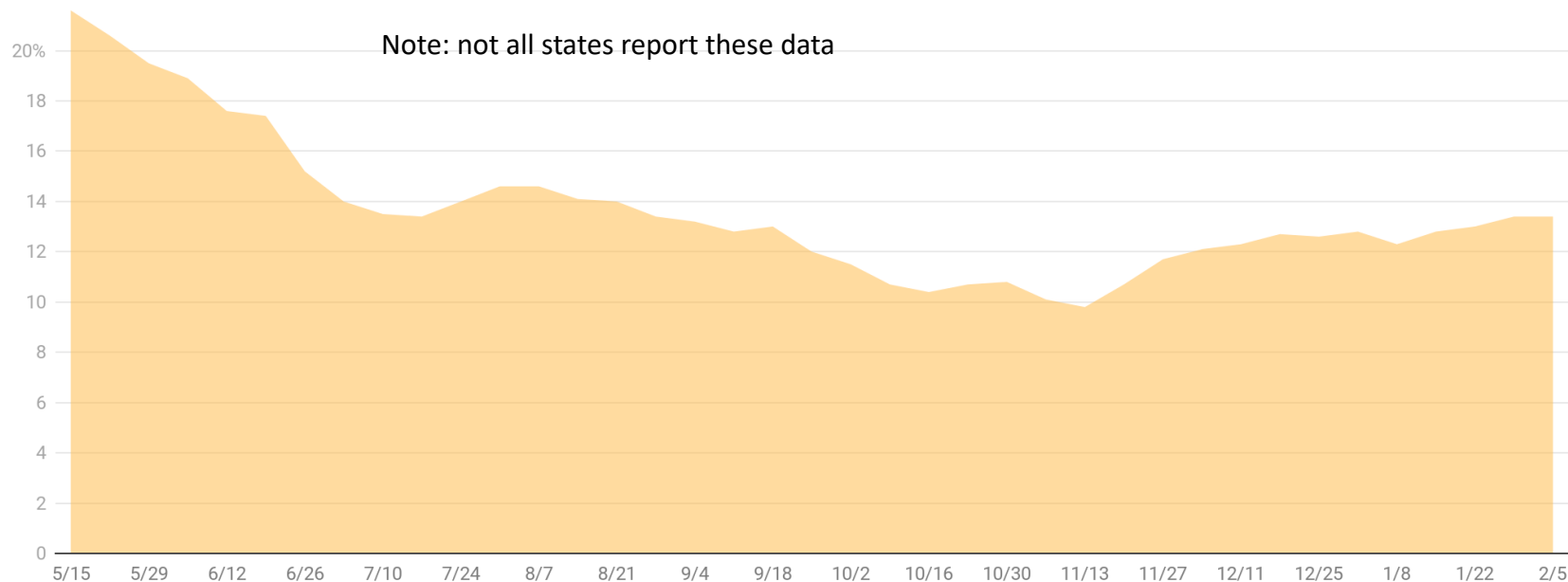
Covid-19 "Vital Signs"

Mix of Covid-19 Patients: % on Ventilators

The % of Covid-19 patients requiring ventilator care has inched upward since the beginning of the year

Weekly Comparison of the % of Hospitalized Covid-19 Patients on Ventilators

For the 7 days as of the date shown



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

% of Visits Relating to Influenza

The US is experiencing its mildest flu season in at least five years; Visits during the comparable week last year and during the 2017-2018 seasons were at least 6x higher than this year

% of Visits For Influenza-Like Illnesses, National Summary

By Week & Flu Season

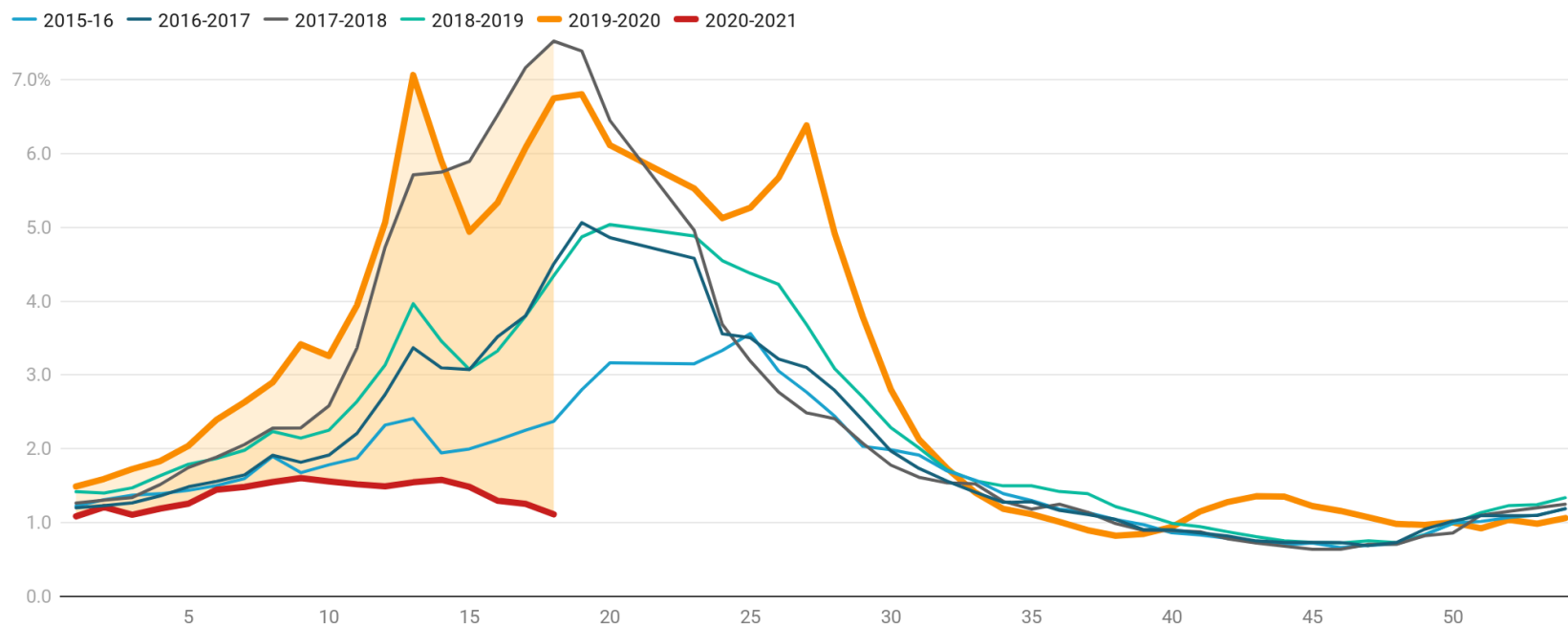


Chart: Health Industry Advisor LLC • Source: Centers for Disease Control & Prevention • Created with Datawrapper

Covid-19 "Vital Signs"

Deaths With Coronavirus

Tragically, too many people died with coronavirus last week. Still, there were fewer deaths with coronavirus last week than during each of the previous four weeks.

Weekly Deaths - United States

For the 7 days ending on date shown

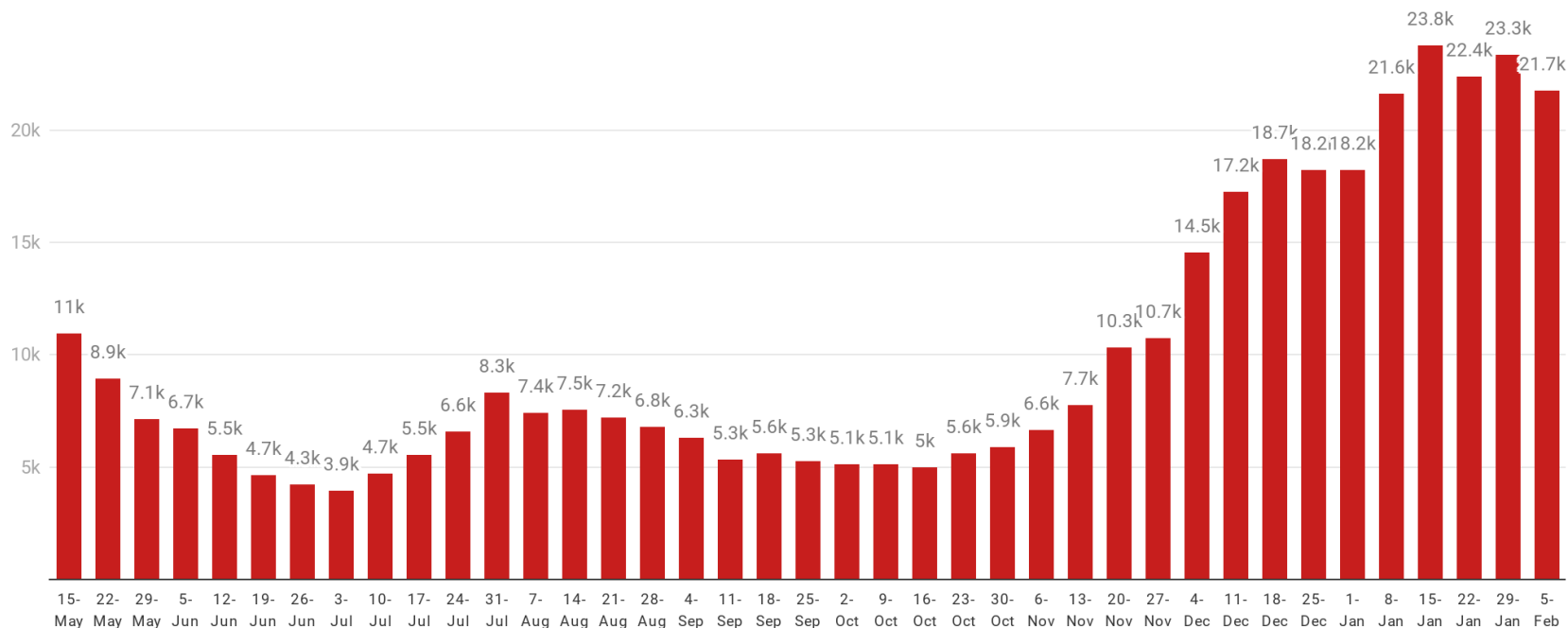


Chart: Health Industry Advisor LLC • Source: worldometers.info • Created with Datawrapper



Mix of Cases – Active, Recovered, Death & Undetected

Although improving over time, most cases still go undetected

How has the mix of cases changed over time?

As of the date shown

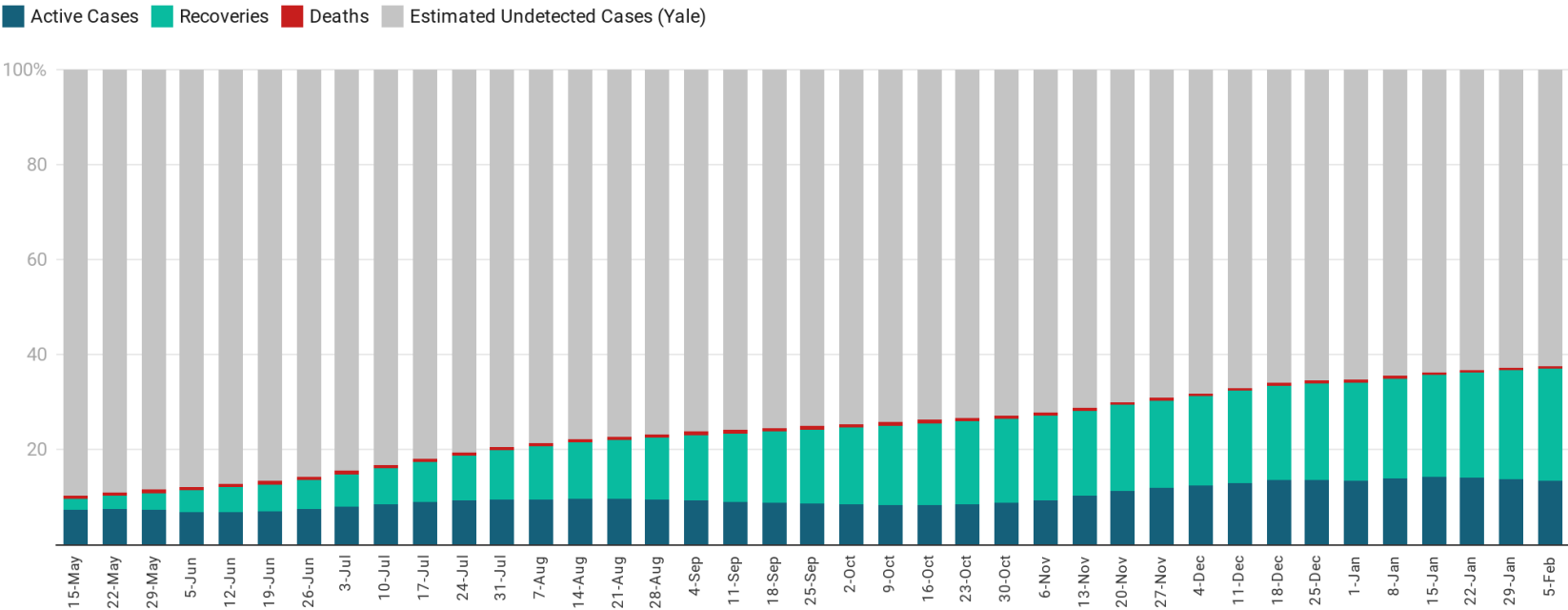


Chart: Health Industry Advisor LLC • Source: worldometers.info & Yale School of Public Health • Created with Datawrapper

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®ion=United%20States&panel=mortality>
- [Rt.live](https://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>