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"Strategic Advice in an Era of Unprecedented Change"

Covid-19 "Vital Signs"

Issue # 263

January 18, 2021

Covid-19 "Vital Signs"

Highlights

- Vaccinations
  - Communication and availability issues continue to plague this effort. **Many states are not receiving the anticipated number of doses, due to miscommunication last week and to reserves for nursing home vaccinations**
  - **On an encouraging note, Dr. Anthony Fauci suggested last week that the US was just weeks, not months, from authorizing possible two additional Covid-19 vaccines - those from JNJ and AstraZeneca**
  - **More than 14 million (first and second) doses were administered in the US, according to reports as of yesterday**. These totals are likely understated due to natural delays in reporting (the CDC suggests that this could be up to 72 hours, if not more) and limited reporting on weekends - half of the states did not report vaccinations on one or both days this weekend
  - Using vaccination reports and estimated infections (Gu), we attempt a (crude) estimation of immunity prevalence by state (we say crude, as the infection rates are reported on a two-week lag; the vaccination rates currently combine first and second doses and, we have not yet accounted for the lag from dose-to-immunity)
    - **For the US, about one-quarter of the population may now have immunity**
    - In North and South Dakota, the rate may be 4-in-10
    - In Arizona, Arkansas, Mississippi, Nebraska, New Jersey, New York, Oklahoma, Rhode Island, Tennessee, and Wisconsin, it may be 1-in-3
- Tests
  - **A remarkable 2.4 million tests were recorded on Sunday in the US, just shy of the record set on December 2** (didn't anyone stay home to watch the NFL games?). **The 7-day average did set a record for the US**
  - With the higher volume, **the test-positive rate for the day was as low as it has been since November 2; the 7-day average was as low as it has been since Christmas Day and, otherwise since December 2**

- Cases, Infections and the Reproduction Rate (R_t)
  - Despite reports of the new variants in several states across the US, **the 7-day rate of newly detected cases per capita has now dropped on six consecutive days**
  - **This rate declined in forty-one states on a week-over-week basis**; notable exceptions are South Carolina, Texas, Connecticut, New Jersey, and Virginia
  - Virginia is the only state to record a new high in the rate over the weekend; Maine, New Jersey, and Texas are the only other states to record a new high rate in the past four days
  - **Ireland, the UK, and even Israel have seen this rate decline recently**: In Ireland, the rate is down each of the past seven days; the UK, the past eight days; and Israel, two of the past three days. Portugal, unfortunately, has seen its rate rise twenty consecutive days
  - **Youyang Gu's model now indicates that new infections may have peaked on December 27 and fallen more than 10% in the week that followed**
  - **Gu's estimate of the Reproduction Rate (R_t) suggests that it declined from December 22 through January 3** (the latest date for which his model provides this estimate, as it calculates it on a two-week lag). **Gu's estimate has R_t below 1.0 since December 29**
- Hospitalizations
  - **Covid-19 hospitalizations have declined on nine of the past eleven days** (falling on weekends is not unusual; falling during the week is)
  - **Covid-19 hospitalizations declined in forty-two states on a week-over-week basis. This includes five of the six states with the highest Covid-19 hospital occupancy rates** - dropping in Arizona, California, Connecticut, Georgia, and Nevada but not in New York
- Deaths
  - Fewer deaths were reported yesterday with coronavirus, although these are typically low on Sundays. On a seven-day average basis, these deaths were slightly higher than reported one week earlier

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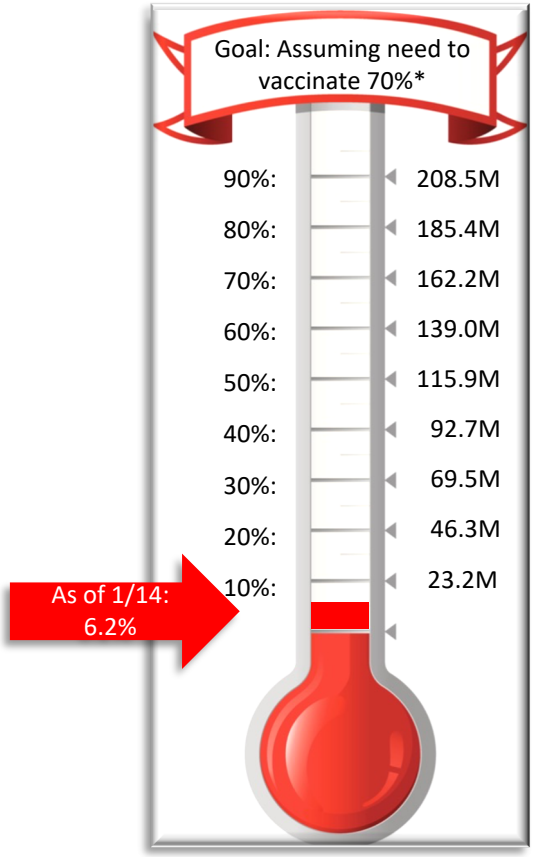
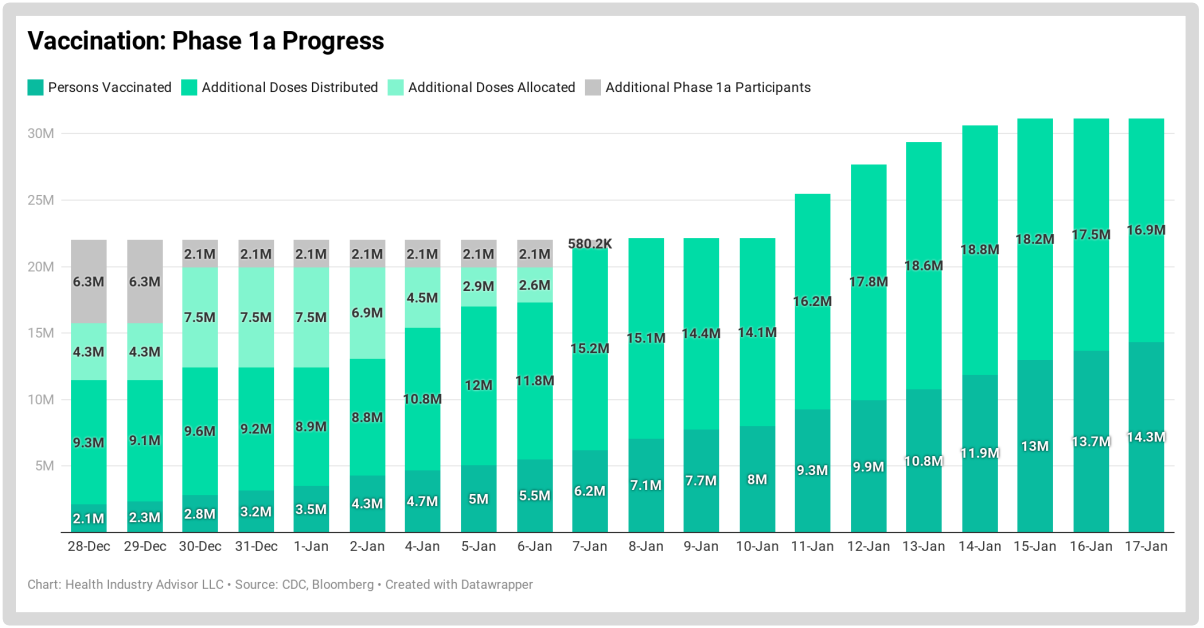
Vaccine Tracking

The vaccination process has rolled out slowly across the US but, started to ramp-up in the last week; As of yesterday, more than 14 million doses were reportedly administered





From the CDC vaccine webpage: "Healthcare providers report doses to state, territorial, and local public health agencies up to 72 hours after administration. There may be additional reporting lag for data to be transmitted from the state, territorial, or local public health agency to CDC."

Vaccine data from: Centers for Disease Control and Prevention and Bloomberg Vaccine Tracker

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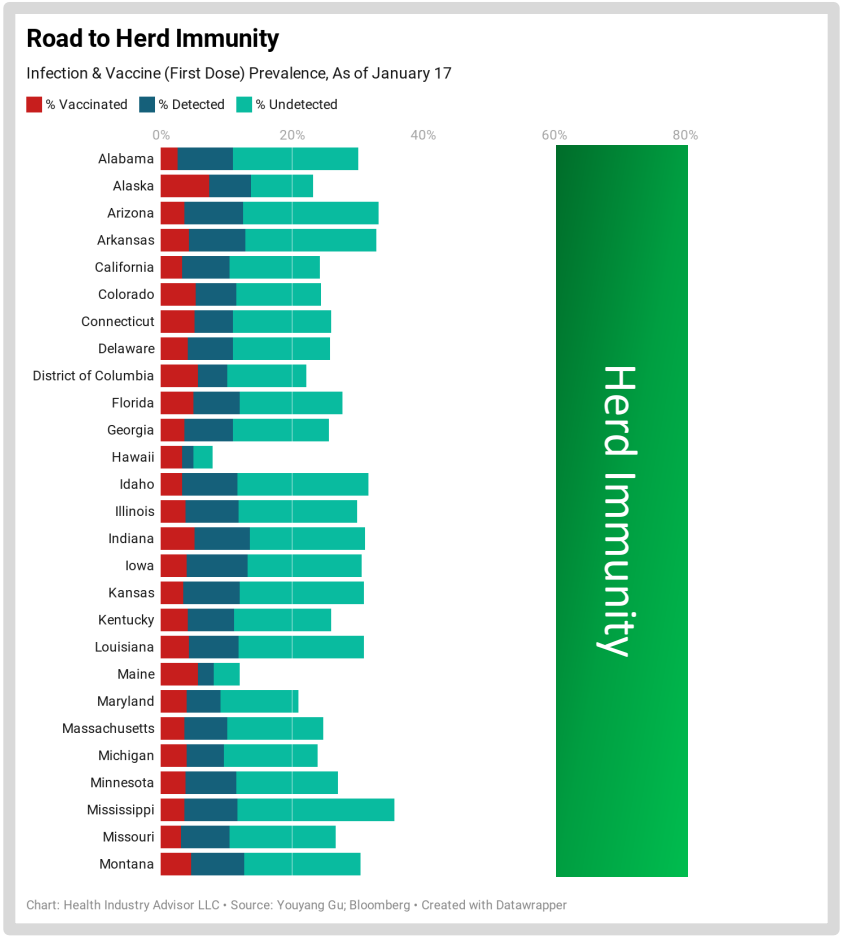
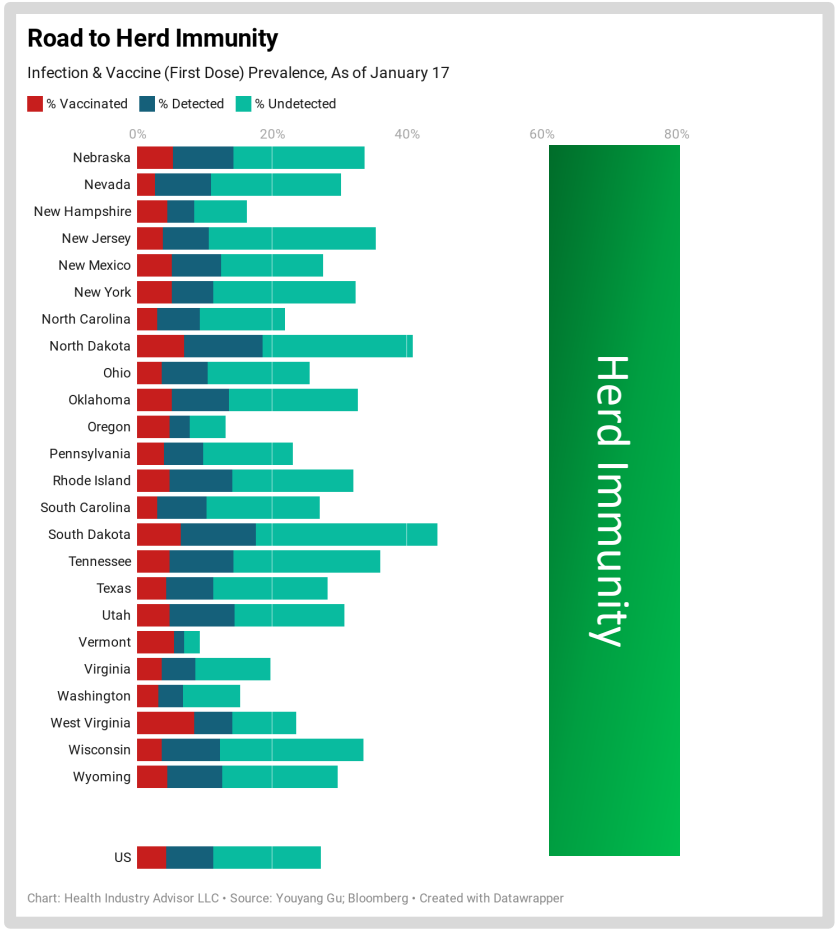
Road To Herd Immunity

More than one-fourth of Americans may now have immunity. In North Dakota and South Dakota, more than four-in-ten residents may have gained immunity, as well as one-third of residents of Arizona, Arkansas, Mississippi, Nebraska, New Jersey, New York, Oklahoma, Rhode Island, Tennessee and Wisconsin





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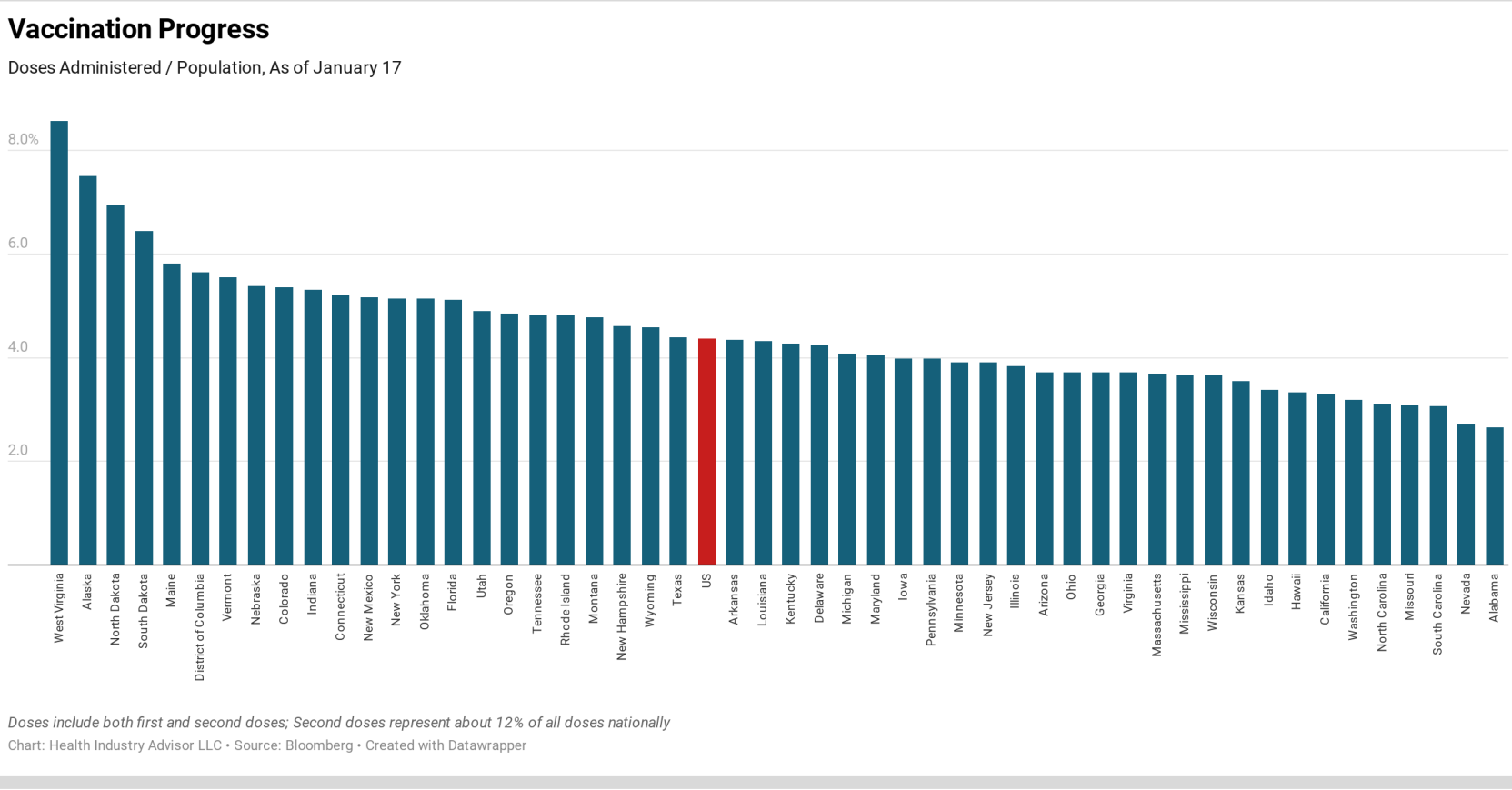
Vaccination Progress By State

West Virginia, Alaska and the Dakotas have administered the highest number of doses per capita; Alabama and Nevada, the lowest.



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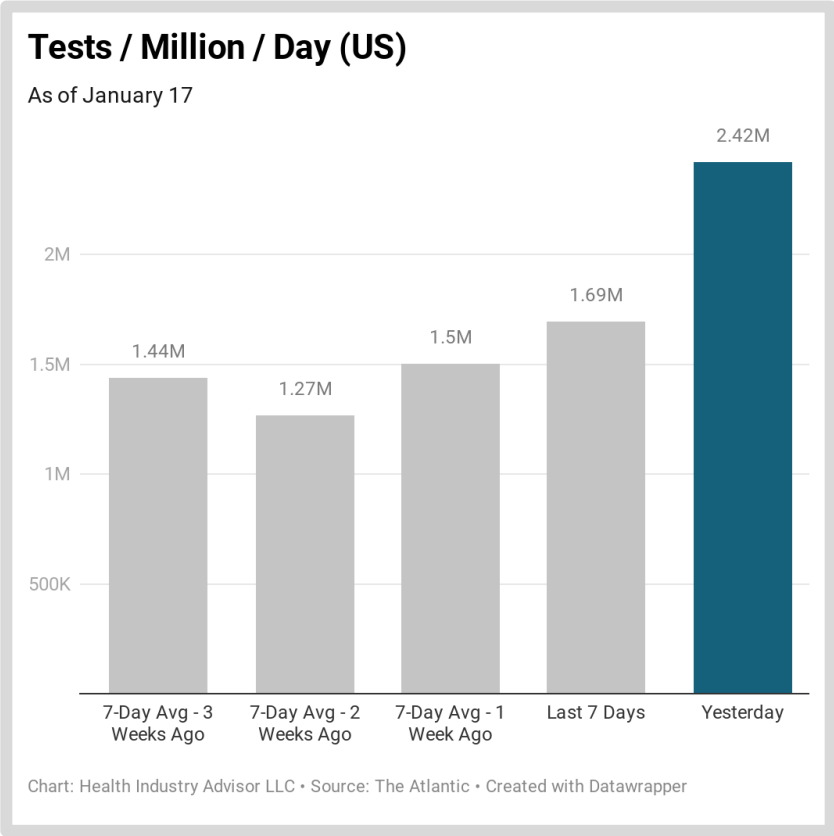
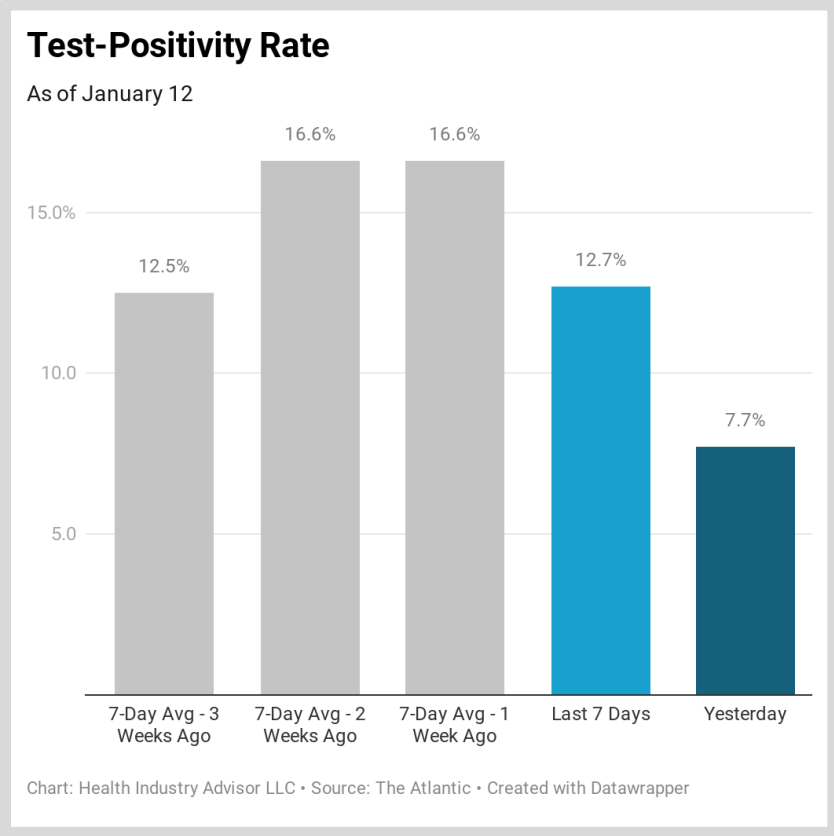
Testing Results - US

A remarkable 2.4 million tests were recorded in the US yesterday, bringing the 7-day average to its highest level ever achieved. With this high volume , the test-positive rate for the day and the past week showed solid improvement





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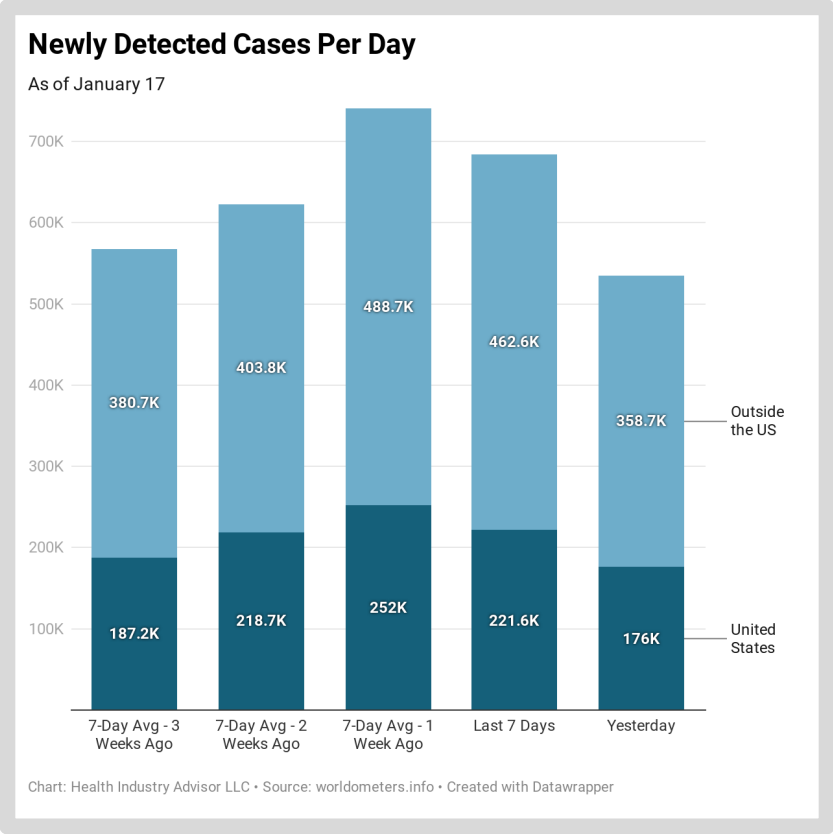
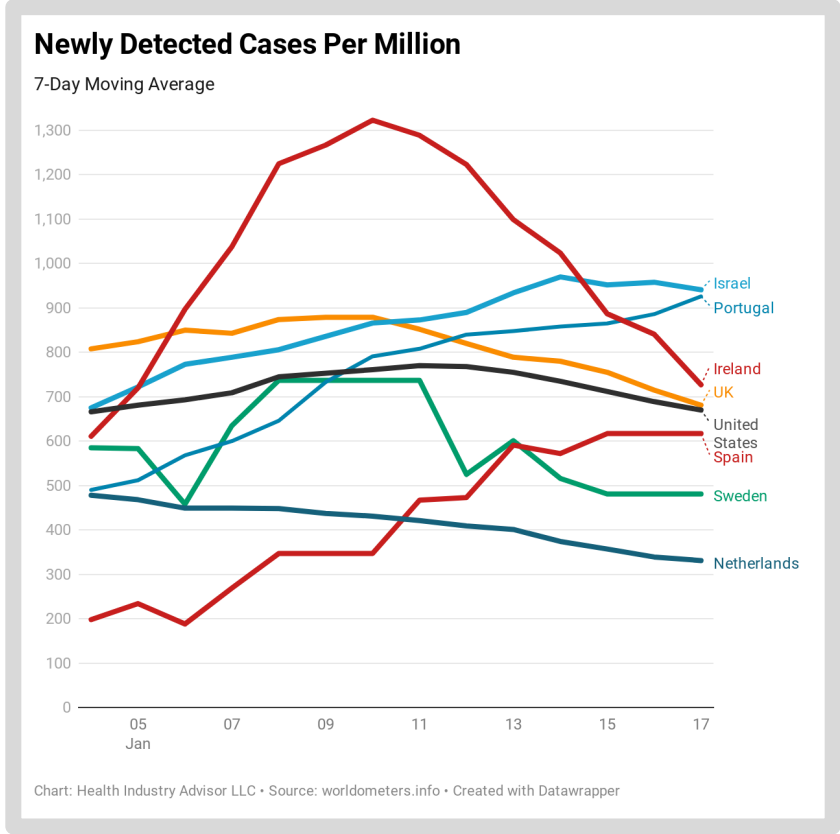
Newly Detected Cases – US and Worldwide

New case rates in the US and outside the US declined week-over-week and compare with rates posted during the week including New Year's Day. Rates in Ireland, the UK, US and even Israel to a lessor degree, have dropped recently ; Portugal and Sprain are still seeing increasing rates





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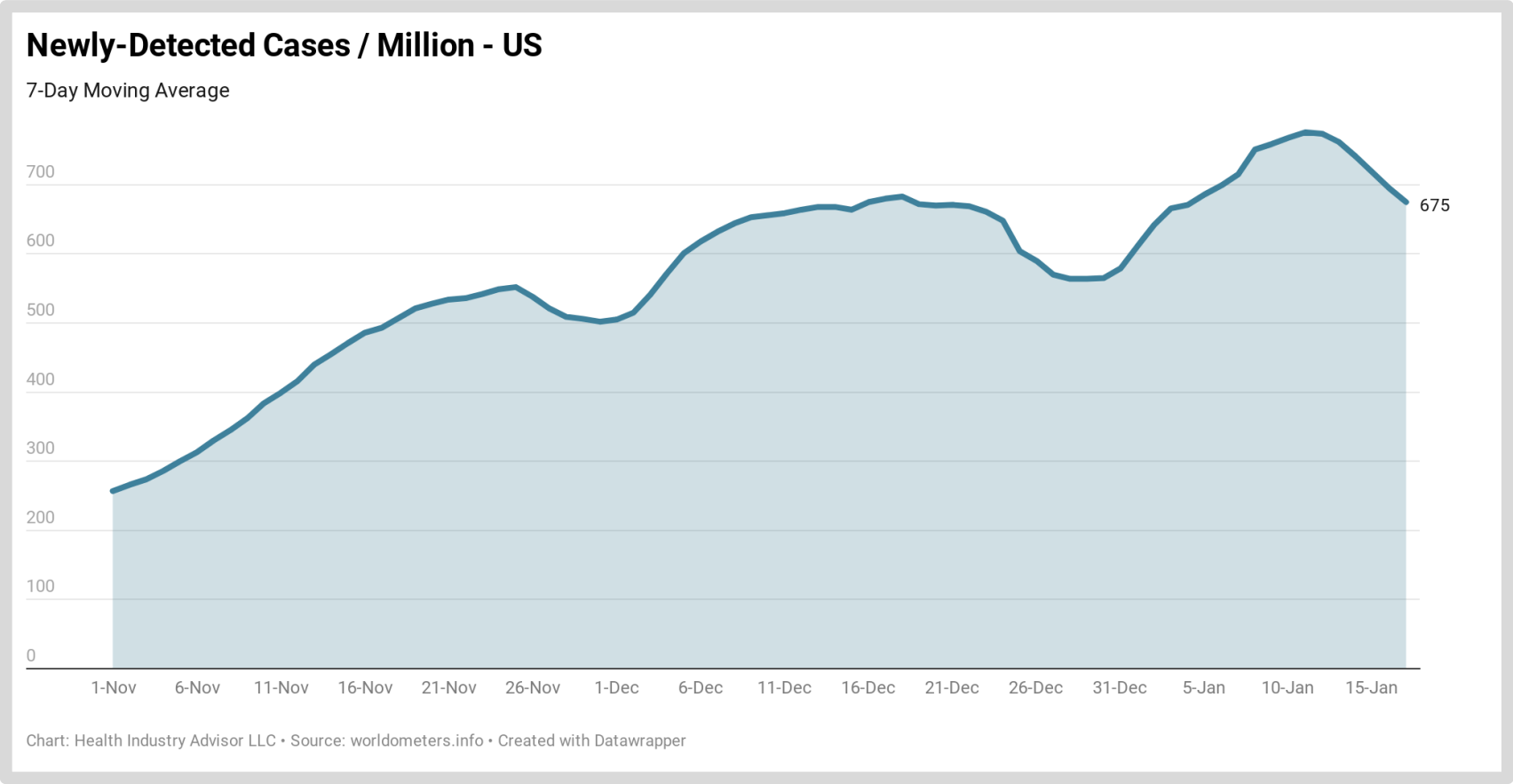
Newly Detected Cases / Million - US

Newly detected cases (7-day average)in the US have now declined on six successive days



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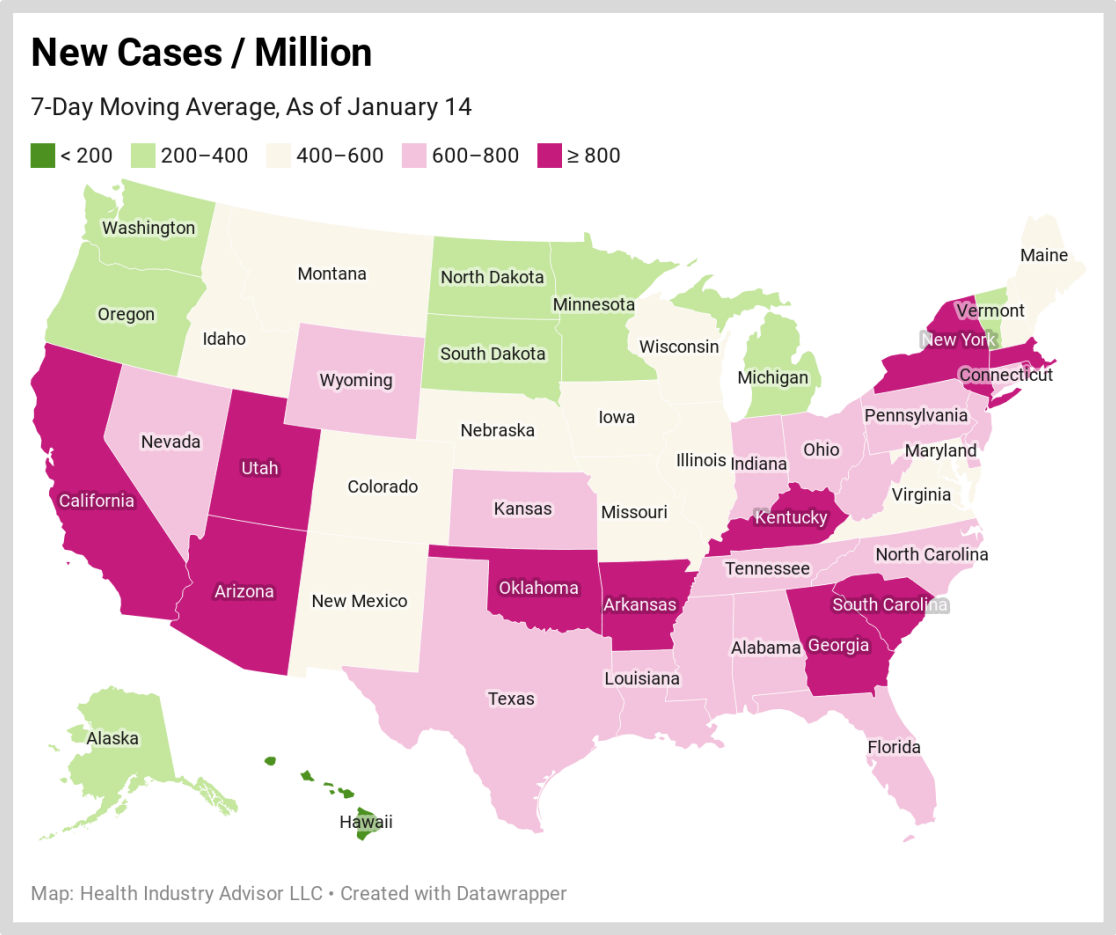
New Case Rate By State

New case rates are highest in Arizona, Arkansas, California, Connecticut, Georgia, Kentucky, New York, Oklahoma, South Carolina and Utah



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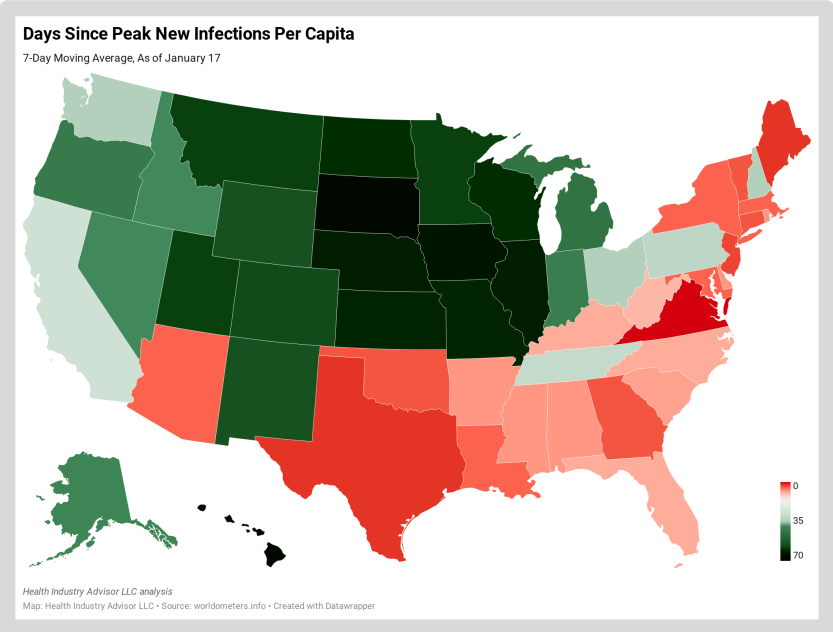
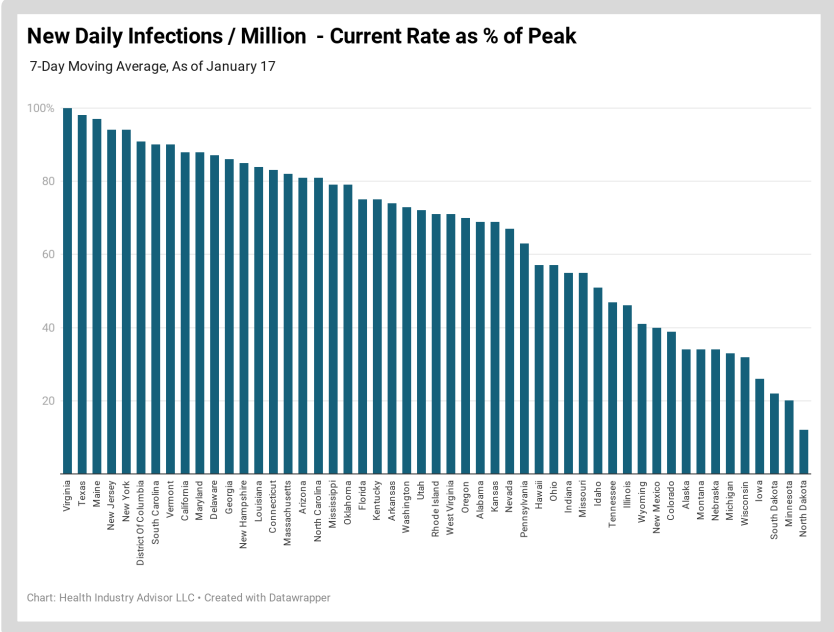
New Case Rate v. Peak Rates

Virginia is the only state to record a new high case rate on the weekend; Maine, New Jersey, and Texas are the only other states to do so in the past four days. Rates in fourteen states are less than half the peak level set in the state





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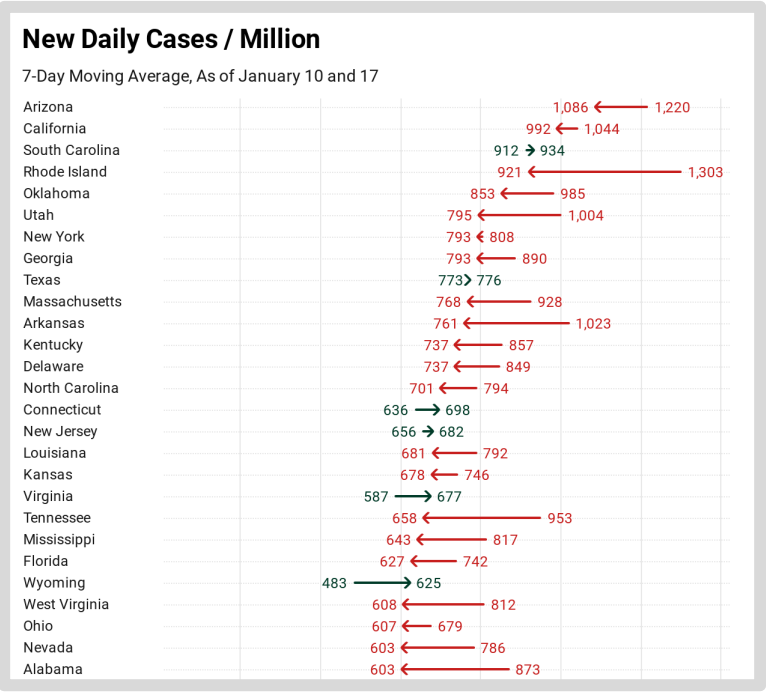
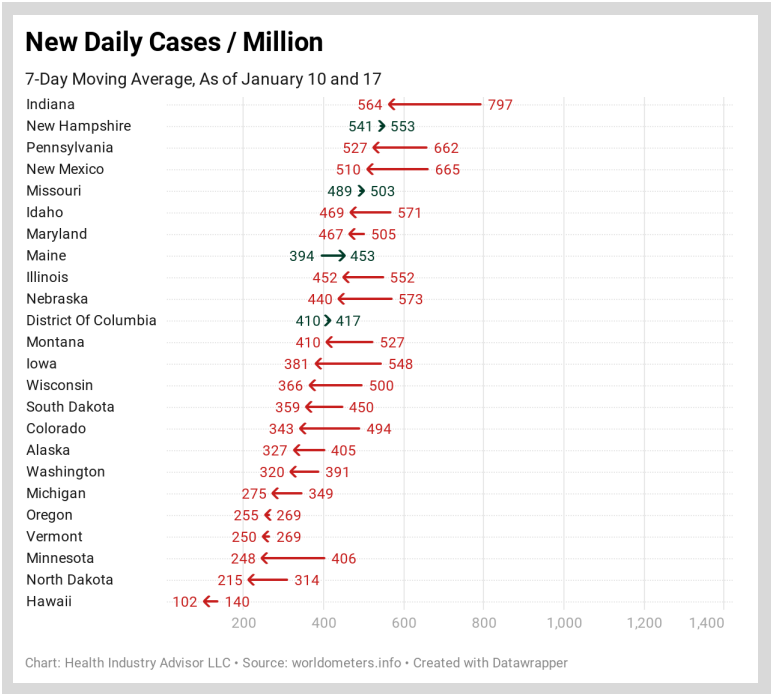
Newly Detected Cases / Million

New cases rates have declined week-over-week in forty-one states; notable exceptions are South Carolina, Texas, Connecticut, New Jersey and Virginia





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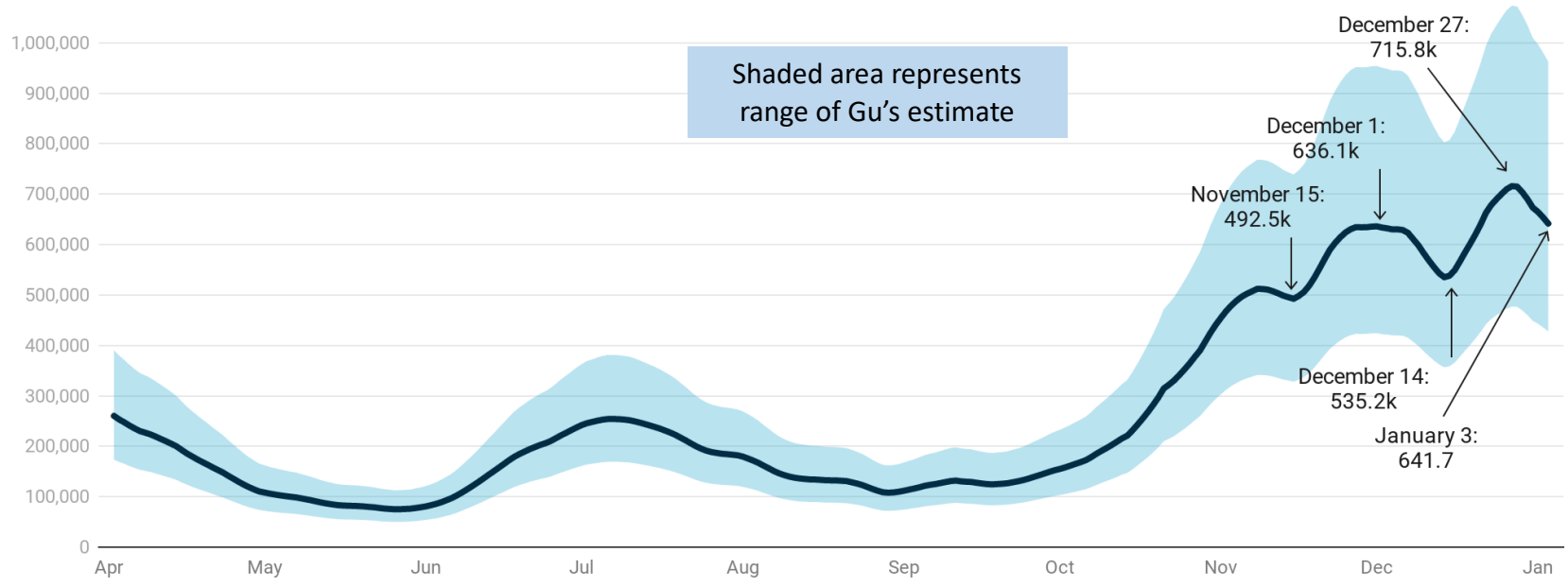
Estimated New Daily Infections – Gu* Model

Estimated new infections have declined on seven consecutive days, and are comparable to early-December levels



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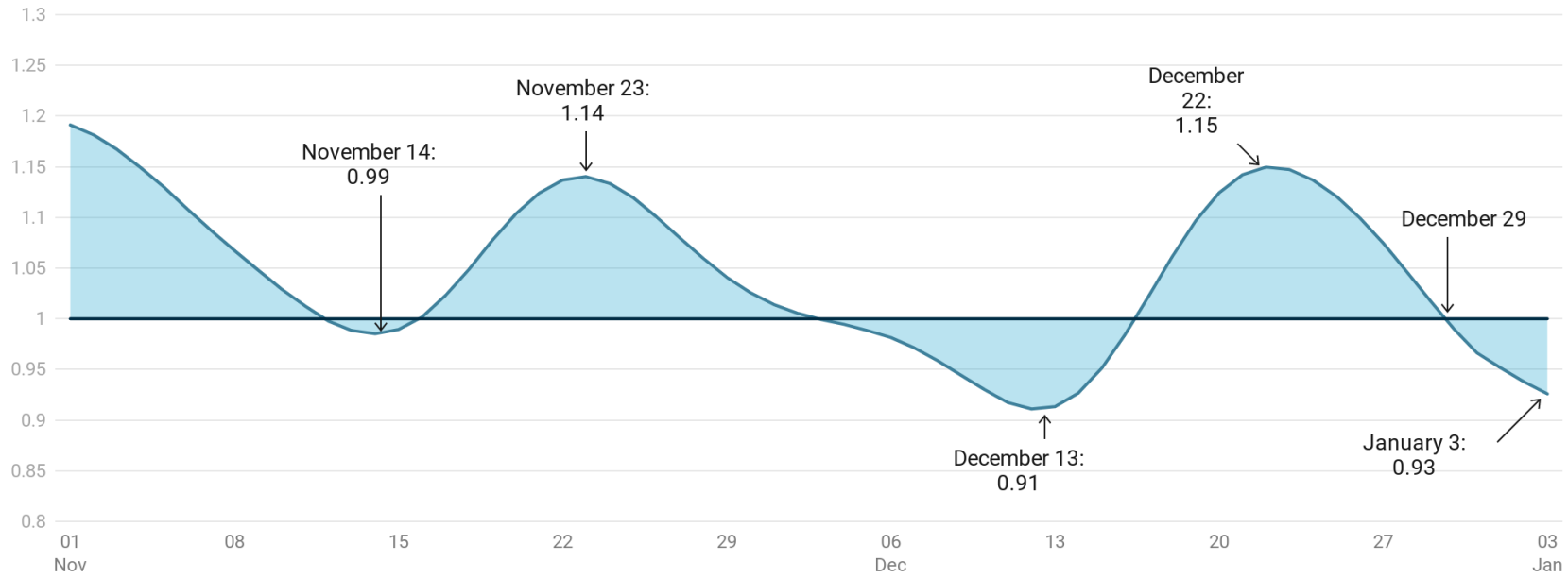
Reproduction Rate (R_t) – Gu* Model

Gu's estimate of R_t reached an intermediate peak on December 22 before declining the next twelve days; it has been below 1.0for five successive days



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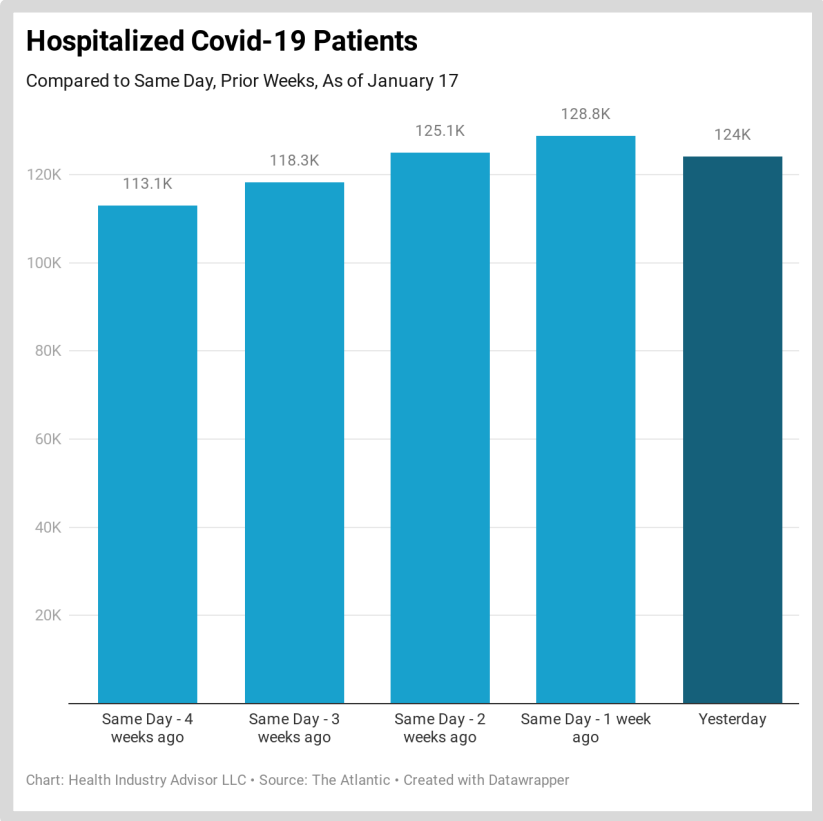
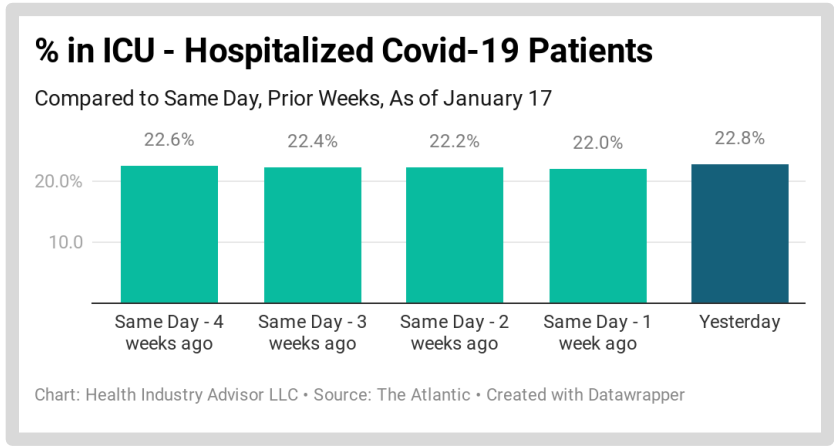
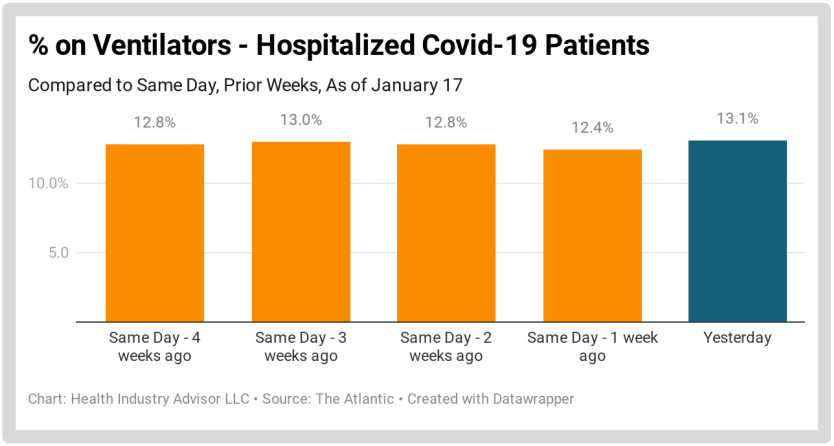
Covid-19 Hospitalizations

While hospitalizations typically decline on the weekends, it is still encouraging that Covid-19 hospitalizations have declined nine of the past eleven days







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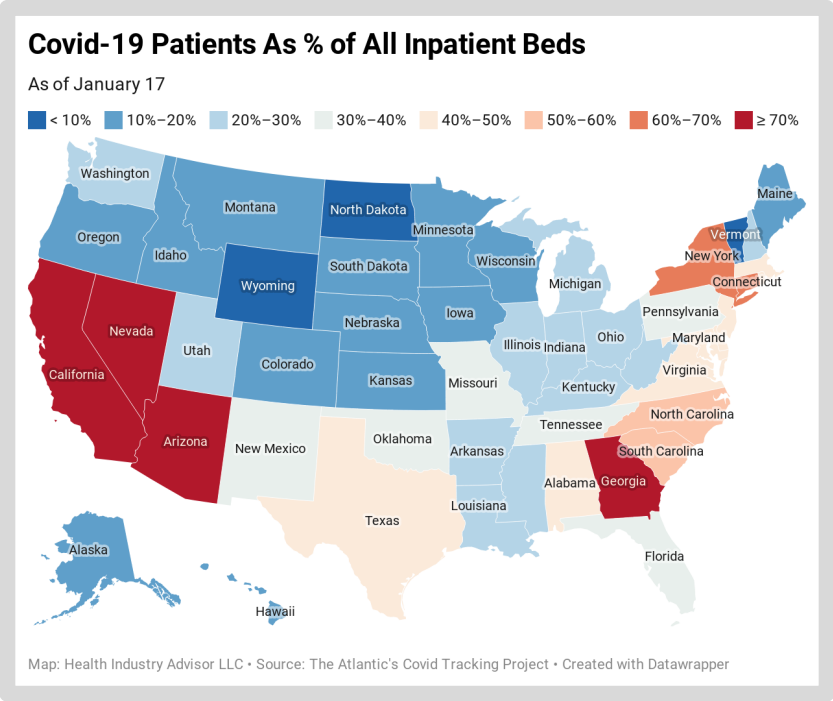
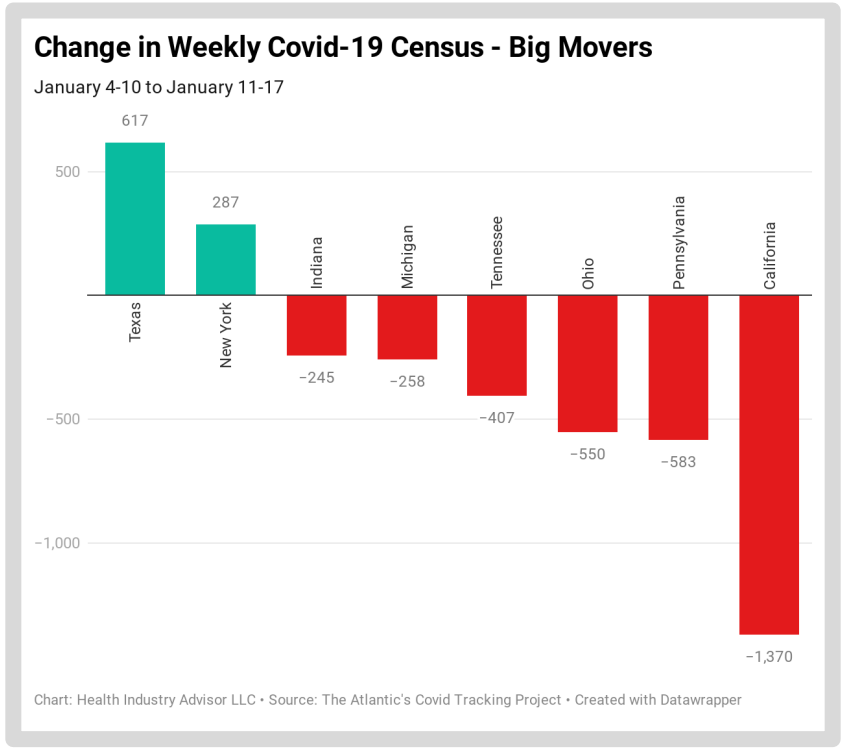
Covid-19 Hospitalizations

The hospitalization rate remains high in Arizona, California, Georgia and Nevada; however, California saw the largest drop in census relative to a week ago. Texas and New York had the largest week-over-week increase in census





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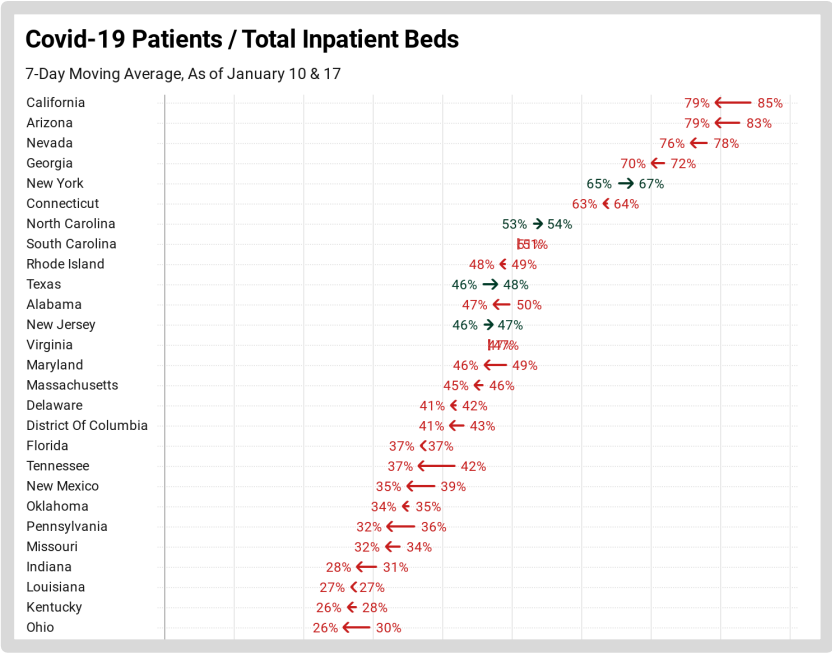
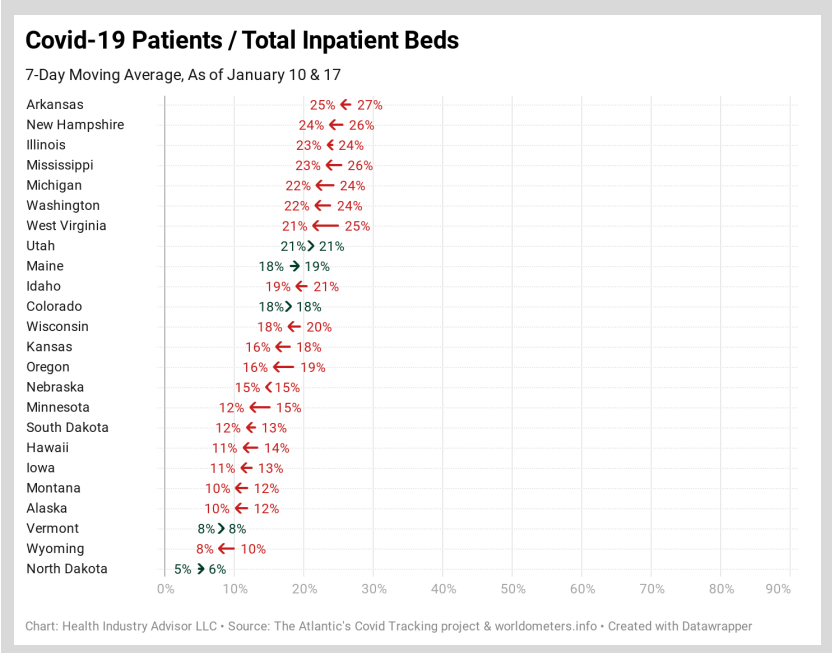
Hospitalized Covid-19 Patients

Covid-19 hospital census declined week-over-week in forty-two states; notable exceptions were New Jersey, New York and North Carolina





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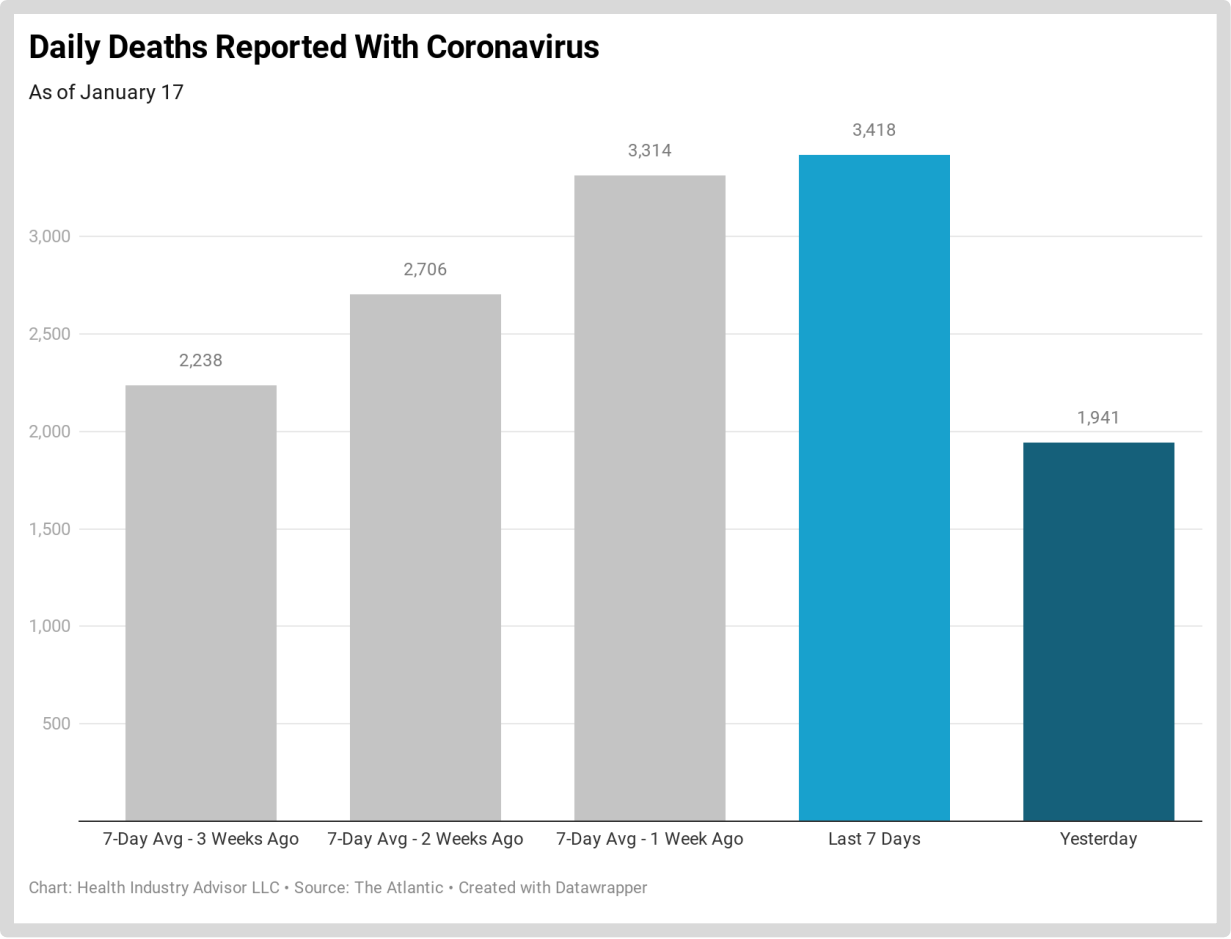
Deaths Reported With Coronavirus

Tragically, there were more deaths with coronavirus over the past seven days than any other week during the pandemic



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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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