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THE COVID STATES PROJECT:
A 50-STATE COVID-19 SURVEY
REPORT #79: AT-HOME COVID TESTS

USA, January 2022

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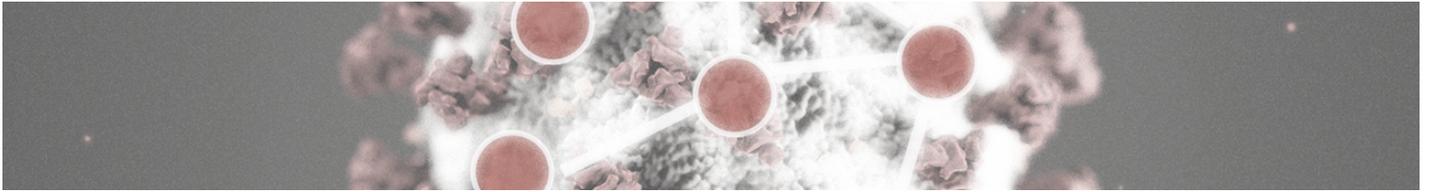
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Report of January 20, 2022, v.1

The COVID States Project

From: The COVID-19 Consortium for Understanding the Public's Policy Preferences Across States

A joint project of:

Northeastern University, Harvard University, Rutgers University, and Northwestern University

Authors: David Lazer (Northeastern University); Katherine Ognyanova (Rutgers University); Roy H. Perlis (Harvard Medical School); Matthew A. Baum (Harvard University); Alauna C. Safarpour (Harvard University); Kristin Lunz Trujillo (Northeastern University); Hong Qu (Northeastern University); Ata Uslu (Northeastern University); James Druckman (Northwestern University); Mauricio Santillana (Harvard Medical School); Alexi Quintana (Northeastern University); Jon Green (Northeastern University); Caroline Pippert (Northwestern University); Jennifer Lin (Northwestern University)

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COVER MEMO

Summary Memo — January 20, 2022

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Note on methods:

Between December 27, 2021, and January 15, 2022, we surveyed 10,759 individuals across all 50 states and the District of Columbia. The survey was conducted by PureSpectrum via an online, nonprobability sample, with state-level representative quotas for race/ethnicity, age, and gender (for methodological details on the other waves, see [covidstates.org](https://www.covidstates.org)). In addition to balancing on these dimensions, we reweighted our data using demographic characteristics to match the U.S. population with respect to race/ethnicity, age, gender, education, and living in urban, suburban, or rural areas. This was the latest in a series of surveys we have been conducting since April 2020, examining attitudes and behaviors regarding COVID-19 in the United States.

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Or visit us at www.covidstates.org.

How many COVID cases are missing from official counts due to at-home tests?

The availability of home antigen testing alongside continued challenges in pursuing PCR and antigen tests outside of the home means it is likely that some positive cases are not represented in official counts of cases or positivity rates. Community survey methods could prove helpful in evaluating the extent to which such cases may be missing from official COVID-19 tracking statistics. In this brief report, we assess the extent to which positive results on home antigen tests are not reflected in the number of official cases in the United States. In our current survey, we asked individuals if they had tested positive, and then whether they had ever tested positive using an “at-home” test.

Key statistics

In our most recent wave, out of 10,759 respondents:

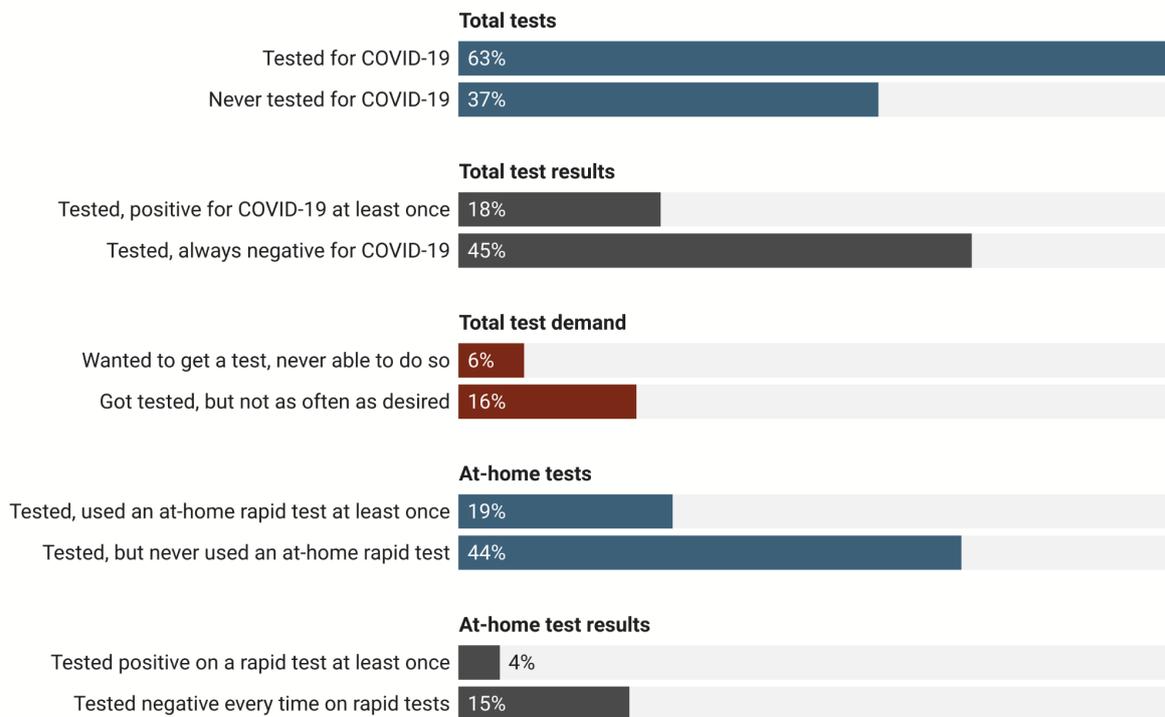
- 63% reported ever having been tested for COVID-19.
- 18% reported ever having tested positive using any type of test.
- 4% reported testing positive using an at-home test.
- 31% of individuals who had a positive test at home did not follow up with a test at their doctor’s office or a testing facility, and thus are likely not captured in official data.
- We estimate that cases have been undercounted by about 6% on average among adults, and likely more so for demographics that use at-home tests more heavily (younger individuals, those with higher income and education, Democrats).

Overall, 37% of respondents reported never taking a coronavirus test – 31% did not seek one, and 6% wanted to test but were unable to get one. Another 16% of respondents were tested, but not as often as they would prefer because a test was not always available to them.

We also examined how many of the individuals who tested positive using at-home tests were subsequently tested by their healthcare provider or some official site. Not everyone who tested positive at home was able to follow up, given the waiting times for testing and the fact that some healthcare providers are discouraging patients who have tested positive from coming in to be tested.¹

COVID-19 testing in the United States

All numbers are presented as percent of all survey respondents.



National sample, N = 10,759, Time period: 12/27/2021-01/15/2022

Source: The COVID-19 Consortium for Understanding the Public's Policy Preferences Across States (A joint project of: Northeastern University, Harvard University, Rutgers University, and Northwestern University) www.covidstates.org • Created with Datawrapper

Figure 1.

¹ Massachusetts General Hospital is typical, advising: "If you use a home testing kit and test positive, you have COVID-19. You do not need a PCR test for confirmation." Accessed January 18, 2022 from <https://www.massgeneralbrigham.org/covid19/about-testing>

Among those with a positive test at home, nearly a third (31%) reported they did not follow up their most recent positive home test with a test at their doctor's office or a testing facility. Among those who did get a follow-up test, 88% received a confirmatory positive test and 12% a negative result. (We did not distinguish between antigen or PCR testing in follow-up. Hence, we cannot estimate what proportion of the 12% might have indicated that the original test was a false positive, since depending on the interval between the original and follow-up test, it is possible that both results could be correct.)

Out of people who tested positive at least once, 20% tested positive on their most recent at-home rapid test (note this omits earlier cases where someone tested positive), and about a third of individuals who tested positive at home (31%) but did not test at an external facility are unlikely to be counted in the official COVID-19 case data. **This suggests that official counts may underestimate positive COVID-19 cases by about 6%.²** This partially allays the concern that official cases are only "[capturing the tip of the iceberg of positive tests](#)," due to at-home testing.

Unsurprisingly, given that at-home tests were not widely available until recently, the amount of missing positives has likely been increasing. Out of the people who reported testing positive with an at-home test, 28% tested positive between December 1 and January 15.

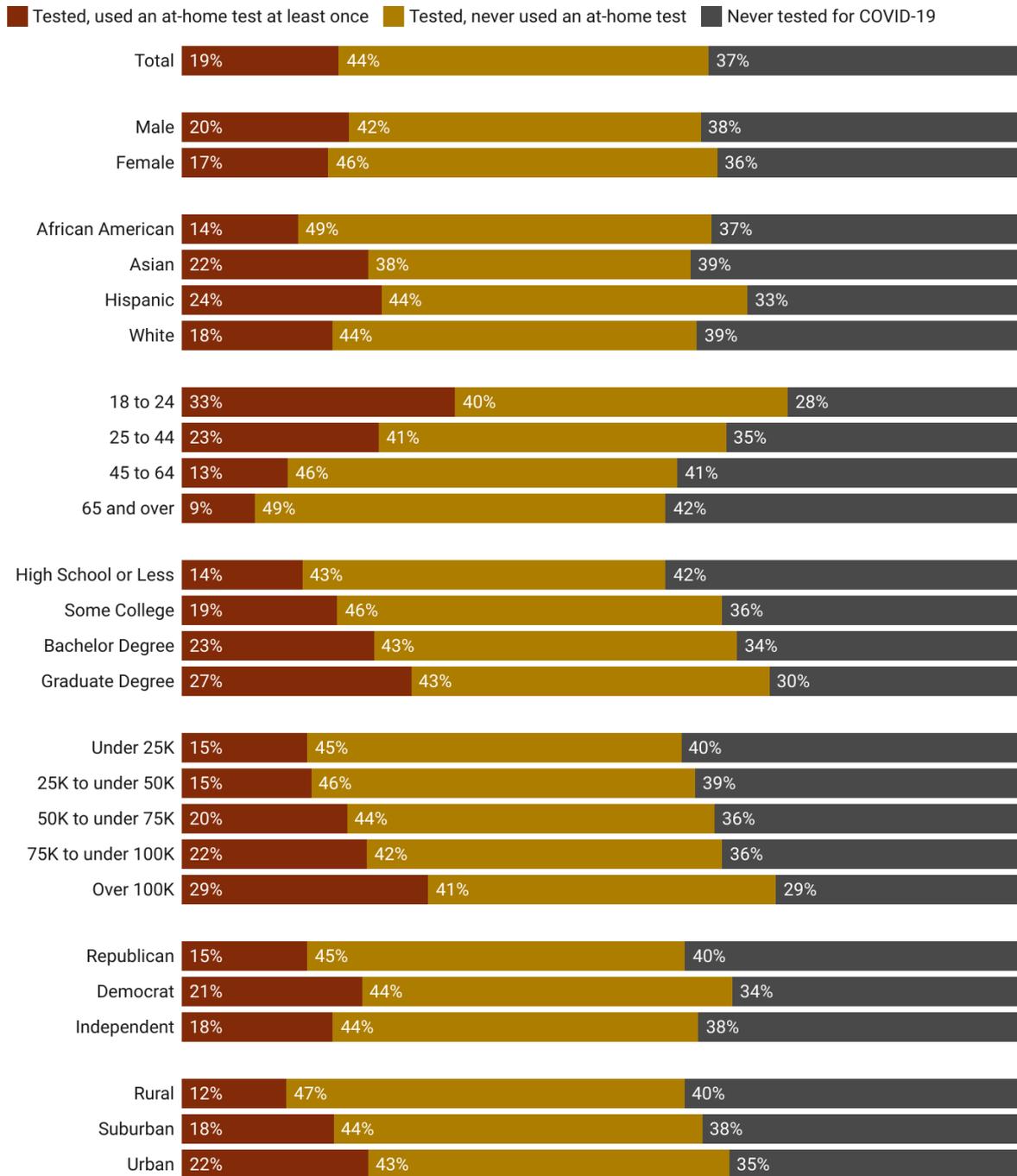
Notably, the use of rapid tests exhibits differences by age and other sociodemographic features - meaning that the impact of home testing in deflating true case rates likely also differs by group. Rapid tests are particularly used by younger individuals (33% of 18-to-24-year-olds versus 9% for those 65 plus), more affluent (29% of respondents making over \$100,000 vs. 15% of those with incomes under \$25,000) and educated (27% among respondents with graduate degrees, compared to 14% for those with a high school education or less), urban (22% of urban residents, 12% of rural) and by more Democrats (22%) than Republicans (15%).

Since some of the same features associated with home testing are also associated with lower risk for more severe illness, these effects may be even stronger than has been assumed. (For example: more home testing among younger individuals suggests case rates are even higher than reported, so hospitalization rates in this group are likely to be proportionally even lower than for older adults.)

² This is a ceiling, in the sense that some people may report their positive test to their PCP, and that this report may subsequently be included in official statistics.

Demographics of COVID-19 testing in the United States

Numbers are presented as percent of all survey respondents.



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Figure 2.

Appendix

Question wording

[cov_test] Have you been tested for coronavirus (COVID-19)?

- Yes, and I tested positive for COVID-19 at least once
- Yes, and I tested negative for COVID-19 every time
- No, I wanted to but was not able to get a test
- No, I never tried to get tested

[test_no] Have you ever been unable to get a COVID-19 test when you wanted one?

[shown to respondents who have been tested: those who answered "Yes" to cov_test]

- Yes
- No

[test_home] Have you ever used an "at-home" or "rapid" test for COVID-19? That would be a test that did not require you to go to a doctor's office or send samples to a testing facility. *[shown to respondents who have been tested: those who answered "Yes" to cov_test]*

- No
- Yes, and I always tested negative
- Yes, and I tested positive at least once

[test_fol] The most recent time you tested positive using an at-home rapid test, did you follow up with a test at your doctor's office or another testing facility?

[shown to respondents who tested positive on an at-home test, based on test_home]

- No
- Yes, and I tested positive there
- Yes, and I tested negative there

[test_mo] In what months did you test positive on the rapid at-home test? (Please select all that apply) *[shown to respondents to tested positive on an at-home test, based on test_home]*

- December 2020 or earlier
- January 2021
- February 2021
- March 2021
- April 2021
- May 2021
- June 2021
- July 2021
- August 2021
- September 2021
- October 2021
- November 2021
- December 2021
- January 2022