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**THE COVID STATES PROJECT:
A 50-STATE COVID-19 SURVEY**
**REPORT #50: UPDATE ON THE JOHNSON & JOHNSON
VACCINE PAUSE IMPACT ON PUBLIC VACCINATION INTENT**

USA, April 2021

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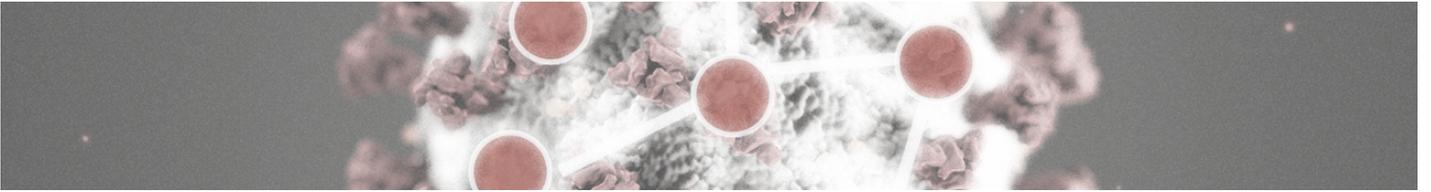
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Report of May 7, 2021, v.1

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: Jon Green (Northeastern University); David Lazer (Northeastern University); Matthew A. Baum (Harvard University); Katherine Ognyanova (Rutgers University); Roy H. Perlis (Harvard Medical School); James Druckman (Northwestern University); Adina Gitomer (Northeastern University); Matthew Simonson (Northeastern University); Mauricio Santillana (Harvard Medical School); Jennifer Lin (Northwestern University); Ata Uslu (Northeastern University), and Alexi Quintana (Northeastern University)

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Northeastern University
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COVER MEMO

Summary Memo — May 7, 2020

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From April 2020 through April 2021, we conducted multiple waves of a large, 50-state survey, some results of which are presented here. You can find previous reports online at covidstates.org.

Note on methods:

From April 1 to 26, 2021, we surveyed 18,752 individuals across all 50 states plus the District of Columbia. We recontacted 1,143 non-vaccinated respondents on April 17 to 19 after the Johnson & Johnson vaccine pause. 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). 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.

Update on the Johnson & Johnson vaccine pause and its impact on COVID-19 vaccination intent in the U.S.

Summary: We evaluate whether the temporary pause of the Johnson & Johnson vaccine on April 13 negatively affected vaccine attitudes. We find no evidence that the pause affected vaccine intentions. However, the rapid rate of vaccinations has largely exhausted the number of vaccine enthusiastic people, likely driving the current slow down in vaccination rates.

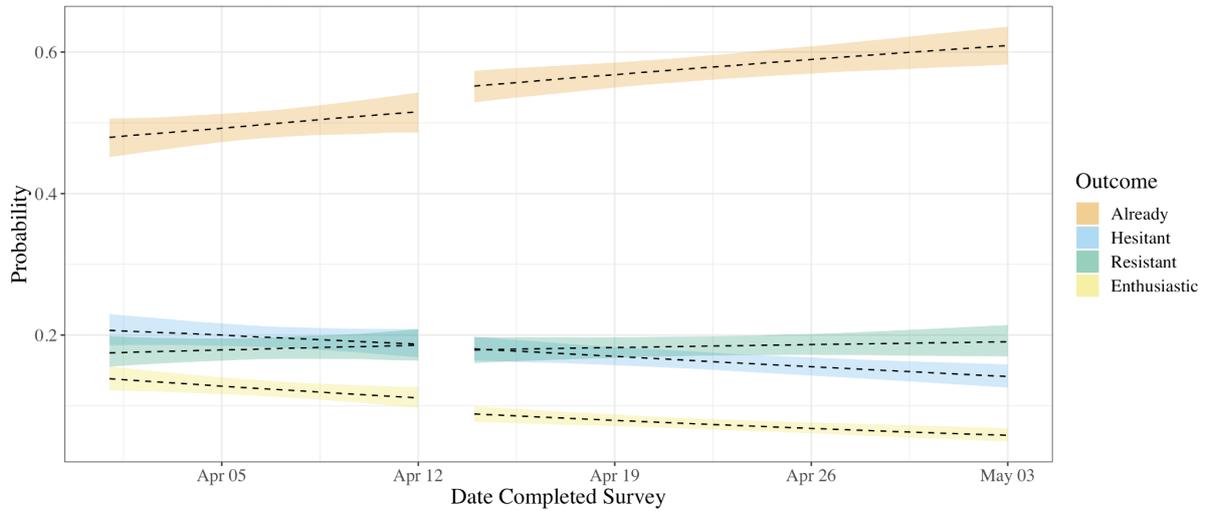
In our [Report #48 from April 2021](#), we showed findings from our most recent survey indicating that the FDA and CDC's recommendation to temporarily pause the Johnson & Johnson vaccine did not affect overall trends in intentions to vaccinate in the United States, despite a majority of respondents indicating that they were aware of the decision. Here, we briefly elaborate on those findings using a multivariate regression.

Specifically, we model vaccine intentions as a four-category outcome: an individual can be vaccine resistant, vaccine hesitant, vaccine enthusiastic, or already vaccinated. To test for possible effects the Johnson & Johnson pause could have had on vaccine intentions, we model the probability that a given respondent is in any of these categories as a function of the date they took our survey and whether that date was before or after April 13th, the day of the pause (excluding respondents who took our survey on April 13th itself). We also interact these two variables to allow for the slope of the relationship between survey date and vaccine intentions to vary between the pre- and post-pause periods. In addition, we adjust for factors we know are associated with vaccine intentions: age group, race, gender, education, income, partisanship, and ideological identification.

The figure below plots the predicted probabilities from this model for each outcome at each survey date, holding the other variables at their most typical levels (the median or mode, depending on variable type). The probability of this hypothetical respondent reporting vaccine resistance (as in, saying they would not take the vaccine if it was offered to them) is essentially the same at every day in the period, including immediately before and after the pause. The probabilities of reporting both vaccine enthusiasm and hesitance decline throughout the period, attributable to steady increases in reporting having already been vaccinated. The slight intercept shift in reported vaccination between the pre- and post-pause periods is not itself statistically significant.

Trends in Vaccine Intentions Pre/Post Johnson & Johnson Pause

Predictions for non-college white woman at medians of age group, income group, and party/ideology
Estimates and bootstrapped 95% uncertainty intervals for four-category vaccine intention



Taken together, these findings contribute to a growing lack of evidence that the Johnson & Johnson pause negatively affected vaccine intentions in the United States. The rapid decline of vaccine enthusiasm (as the vaccine enthusiastic and some of the vaccine hesitant are vaccinated) also highlights why daily vaccinations have been declining since the J&J pause on April 13.

Appendix A: Bootstrapped Coefficient Estimates

Estimates reflect the median coefficients from 1000 multinomial logistic regressions specified on the most recent wave of our survey, resampling the data with replacement (blocking on whether responses were recorded before or after April 13th). Already vaccinated is taken as the reference category. Coefficient estimates from the 2.5th and 97.5th percentile are also shown in parentheses to form 95% uncertainty intervals. Intervals containing zero indicate that the variable's coefficient for that categorical outcome is not statistically significant.

Variable	Enthusiastic	Hesitant	Resistant
Intercept	0.219 (-0.111, 0.562)	0.705 (0.437, 0.998)	0.297 (-0.014, 0.627)
Survey Date	0.027 (0.008, 0.046)	0.016 (-0.003, 0.034)	0.001 (-0.02, 0.022)
After Pause	-0.248 (-0.421, -0.052)	-0.072 (-0.234, 0.104)	-0.106 (-0.287, 0.066)
Female	-0.511 (-0.603, -0.412)	-0.115 (-0.197, -0.027)	0.278 (0.174, 0.375)
Latino	-0.083 (-0.268, 0.092)	0.065 (-0.092, 0.219)	-0.087 (-0.29, 0.116)
Black	-0.081 (-0.269, 0.101)	0.596 (0.459, 0.733)	0.822 (0.673, 0.985)
Asian	-0.163 (-0.351, 0.017)	-0.151 (-0.347, 0.035)	-0.826 (-1.118, -0.58)
Other Race	-0.266 (-0.598, 0.043)	0.396 (0.132, 0.626)	0.45 (0.193, 0.678)
Age: 25-44	-0.064 (-0.209, 0.095)	-0.1 (-0.227, 0.031)	0.402 (0.256, 0.557)
Age: 45-64	-1.029 (-1.18, -0.868)	-1.101 (-1.24, -0.967)	-0.583 (-0.759, -0.42)
Age: 65+	-2.524 (-2.743, -2.314)	-2.395 (-2.564, -2.233)	-1.821 (-2.024, -1.637)
Party ID	0.056 (0.026, 0.087)	-0.101 (-0.125, -0.078)	-0.29 (-0.317, -0.264)
Ideology	0.021 (-0.016, 0.06)	0.158 (0.127, 0.19)	0.326 (0.292, 0.366)
College	-0.186 (-0.286, -0.086)	-0.457 (-0.545, -0.362)	-0.847 (-0.96, -0.747)
Household Income	-0.108 (-0.131, -0.086)	-0.149 (-0.168, -0.129)	-0.232 (-0.254, -0.209)
Survey Date x After Pause	0 (-0.022, 0.022)	0.003 (-0.018, 0.024)	0.001 (-0.023, 0.024)