



U.S. Healthcare Workers: COVID-19 Vaccine Uptake and Attitudes

Follow-up Survey Summary

About this Survey:

From December 17 to 30, 2020, Surgo Ventures conducted the first comprehensive survey of U.S. healthcare workers—2,504 in all—to better understand healthcare workers’ perceptions and concerns about approved COVID-19 vaccines. Survey respondents were categorized in three ways:

- “Healthcare Professionals” (i.e., physicians, nurses, dentists)
- “Allied health professionals” (i.e., health technicians, EMS personnel, physician therapists, home health workers)
- “Health Management and Support personnel.” (i.e., administrative staff, operations staff)

From January 28 to February 3, 2021, Surgo Ventures conducted a follow-up survey of U.S. healthcare workers—specifically, those people Surgo [surveyed in December](#) who had been offered the COVID-19 vaccine, but had not yet taken it (a total of 590 people).

The survey was conducted through Dynata, a marketing research firm used to conduct the first round of the survey, to recontact the original respondents. Respondents were given a small financial incentive for their time. The recontact rate was 80%.

On the following page is a list of all questions asked of survey respondents in the survey conducted January 28 to February 3, 2021.

For more information about this survey, contact Bethany Hardy at BethanyHardy@SurgoVentures.org or at 1-202-277-3848.



SUMMARY OF RESPONSES

[1]: Did your employer recommend that you (as in, people in your job role) get the COVID-19 vaccine?		
	Count	Percent
No	35	6%
Yes	555	94%

ASK IF respondent has been offered vaccine (n = 587)

[2]: Have you now taken at least one dose of the COVID-19 vaccine?		
	Count	Percent
No, and I do not intend to get the vaccine soon.	8	1%
No, and I am not sure whether I will get it soon.	24	4%
No, but I intend to get the vaccine soon.	63	11%
Yes	492	84%

Frequency of Respondents Vaccinated in each survey			
	Total Offered	Total Vaccinated	Percent Vaccinated
January 2021 Survey	1208 *	996	82%

* Represents the number of healthcare workers that were offered a COVID-19 vaccine in both surveys



Breakdown of those in follow-up survey who were offered vaccine and those vaccinated by different professional subgroups

Vaccination Breakdown by Subgroup (HCP's , AHP's, and HMSP's)			
	Number offered COVID vaccine	Number who have been vaccinated	Percent vaccinated
Healthcare Professionals	397	350	88%
Allied Health Professionals	167	130	78%
Health Management and Support Personnel	19	12	63%

Breakdown of those offered vaccine and those vaccinated by perception of sufficiency of employer information

Received enough information from workplace to make vaccine decision (all HCWs)			
	Number offered COVID vaccine	Number who have been vaccinated	Percent vaccinated
Received enough information from employer	513	443	86%
Did not receive enough information from employer	70	49	70%



ASK IF respondent has been vaccinated:

[3]: How sure were you of taking the COVID-19 vaccine?		
	Count	Percent
Extremely Unsure 0	4	< 1%
1	1	< 1%
2	1	< 1%
Unsure 3	9	2%
4	7	1%
5	14	3%
6	15	3%
Sure 7	58	12%
8	63	13%
9	93	19%
Extremely Sure 10	227	36%

ASK IF respondent has been vaccinated:

[4]: Did you experience serious negative side effects from the vaccine?		
	Count	Percent
No	425	86%
Yes	67	14%



ASK IF respondent has been vaccinated:

[5]: Do you regret taking the vaccine?		
	Count	Percent
No, not at all	430	87%
No, not much	54	11%
Yes, a moderate amount	7	1%
Yes, a great deal	1	< 1%

ASK if respondent has not been vaccinated and answered “No but I intend to get the vaccine soon” (n = 63)

[6]: How sure are you about your decision to get the vaccine?		
	Count	Percent
Extremely Unsure 0	1	2%
1	0	0%
2	0	0%
Unsure 3	3	5%
4	0	0%
5	5	8%
6	6	9%
Sure 7	9	14%
8	13	21%
9	7	11%
Extremely Sure 10	19	30%



ASK IF respondent has been offered the vaccine, but is not yet vaccinated (n = 95)

[7]: How likely are you to take a COVID-19 vaccine in the next three months?		
	Count	Percent
Extremely Unlikely 0	5	5%
1	3	3%
2	0	0%
Unlikely 3	11	12%
4	5	5%
5	5	5%
6	11	12%
Likely 7	11	12%
8	4	4%
9	13	14%
Extremely Likely 10	27	28%

Findings from the predictive model Surgo Ventures used to analyze these results:

A linear regression model was used to estimate the effects of possible determinants of vaccine likelihood for healthcare workers (from data collected from the first vaccine hesitancy survey of healthcare workers). The dependent variable of the model is the self-reported vaccine likelihood score with a scale of 0 (extremely unlikely to get vaccinated) to 10 (extremely likely to get vaccinated). Various potential enablers and barriers of vaccine likelihood were included in the model, including those that are related to the structural barriers/enablers of COVID-19 vaccination, beliefs and perceptions about COVID-19 pandemic and COVID-19 vaccines, socio-demographic factors, influencers and sources of information of the respondents, outcome expectation of COVID-19 and COVID-19 vaccines, social norms on COVID-19 vaccination, health-seeking and flu-vaccination behaviours, and knowledge about COVID-19 vaccine and the COVID-19 pandemic.

The full set of OLS estimates are presented in Tables 1 through 8 below. Heteroskedastic-robust errors were used, and the variance inflation factor (VIF) of the regressors in the model suggest low level of multicollinearity (all VIFs are below 3).

Table 1: The estimated effects of beliefs and perceptions, demographic factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (1 of 8)

COVID-19 vaccine likelihood	(1)
taken flu vaccine: Yes	-0.499** (0.208)
expected chance of getting seriously ill from COVID-19	0.185*** (0.046)
expected chance of getting side-effects from COVID vaccine	-0.329*** (0.054)
worries about COVID	0.448*** (0.081)
amount of control over getting COVID	-0.016 (0.068)
perceived cost of COVID: Not free	-0.060 (0.097)
felt depressed in the past 5 days	0.141** (0.072)
has health insurance: Yes	-0.609** (0.297)
has at least one comorbidity: Yes	-0.359*** (0.111)
COVID-19 knowledge	-0.059 (0.104)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 2: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (2 of 8)

COVID-19 vaccine likelihood	(1)
conspiratorial thinking	0.043 (0.093)
covid status: positive	-0.438*** (0.164)
health seeking behavior	-0.069 (0.085)
perceived health status	-0.063 (0.105)
believes in the importance of mask-wearing	0.328*** (0.087)
believes childhood vaccine is beneficial	-0.067 (0.089)
believes childhood vaccine is harmful	0.091 (0.061)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 3: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (3 of 8)

COVID-19 vaccine likelihood	(1)
trust in vaccine development process of pharmaceutical firms	0.091 (0.076)
believes schools and daycares should require vaccination	0.108 (0.083)
believes general vaccine is tested for the safety of my race	0.147 (0.104)
believes in COVID-19 info from Trump	0.075 (0.057)
believes in COVID-19 info from public health officials	0.041 (0.069)
believes in COVID-19 info from public health orgs	0.011 (0.030)
believes in COVID-19 info from my physican	-0.029 (0.082)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 4: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (4 of 8)

COVID-19 vaccine likelihood	(1)
believes in COVID-19 info from my preferred news channel	-0.058 (0.073)
believes in COVID-19 info from my local community	0.057 (0.079)
believes in COVID-19 info from my social media contacts	0.176*** (0.060)
believes COVID vaccine will be unsafe	-0.779*** (0.080)
believes vaccine will not prevent COVID-19	0.009 (0.049)
believes natural immunity is stronger than vaccine immunity	-0.022 (0.048)
believes vaccines do more harm than good	0.074 (0.060)
work environment: long-term healthcare facility	-0.194 (0.160)
work environment: non-hospital health facility	0.071 (0.133)
work environment: other	0.204 (0.159)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 5: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (5 of 8)

COVID-19 vaccine likelihood	(1)
number of PPE in workplace	0.064** (0.030)
flu vaccine likelihood	0.251*** (0.036)
received training about vaccine in general: Not sure	0.029 (0.249)
received training about vaccine in general: Yes	-0.051 (0.125)
believes right choice to recommend vaccines to patients	0.267*** (0.103)
co-workers support vaccine	-0.154* (0.092)
believes vaccines should be mandatory for my org	0.363*** (0.076)
political affiliation: Democrat	0.214 (0.144)
political affiliation: Independent	0.071 (0.132)
political affiliation: Other	0.434 (0.317)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 6: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (6 of 8)

COVID-19 vaccine likelihood	(1)
generation: Silent	2.276*** (0.855)
generation: Gen X	-0.116 (0.110)
generation: Millennial	-0.313** (0.142)
generation: Gen Z	-1.226** (0.578)
urbanicity: Rural	-0.153 (0.170)
subgroup: Allied health professionals	0.046 (0.129)
subgroup: Roles requiring no health training	0.088 (0.175)
organization size: 50 - 249	-0.064 (0.141)
organization size: 250 - 499	0.093 (0.162)
organization size: 500 - 1,000	-0.074 (0.169)
organization size: 1,000+	0.059 (0.131)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 7: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (7 of 8)

COVID-19 vaccine likelihood	(1)
gender: Woman	-0.280*** (0.103)
gender: Other	0.458 (0.424)
household income: Prefer not to answer	-0.138 (0.158)
household income: Less than \$28,000	-0.629* (0.368)
household income: \$28,001 - \$53,500	-0.498** (0.211)
household income: \$53,501 - \$86,500	-0.288* (0.154)
household income: \$86,501 - \$142,500	-0.111 (0.128)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 8: The estimated effects of beliefs and perceptions, demographics factors, influencers, knowledge, social norms and structural enablers/barriers on COVID-19 vaccine likelihood (8 of 8)

COVID-19 vaccine likelihood	(1)
race: Black	-1.156*** (0.312)
race: Hispanic	-0.331* (0.200)
race: Other Minority Group	0.097 (0.314)
census regions: Midwest	-0.051 (0.135)
census regions: Northeast	-0.122 (0.145)
census regions: South	-0.222* (0.128)
education: Less than HS	1.920*** (0.528)
education: HS graduate or equivalent	-1.095* (0.587)
education: Vocational/tech school/some college/associates	-0.128 (0.175)
education: Post grad study/professional degree	0.027 (0.104)
Constant	3.965*** (0.945)
Observations	1,695
R ²	0.617
Adjusted R ²	0.600
Residual Std. Error	1.897 (df = 1622)
F Statistic	36.357*** (df = 72; 1622)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01