

Coronavirus Vaccine Information Equity and Demand Creation (COVIED)

Report of Findings from 1st Nationwide Survey

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Introduction

While we have a remarkable array of safe and effective COVID-19 vaccines, the United States is likely just short of achieving the population immunity levels needed to prevent sustained transmission and hence indirectly protect people who cannot be vaccinated (e.g., medical contraindications, the small percentage of vaccine failures, children < 12 years of age). Even as national levels of full vaccination coverage combined with presumed immunity resulting from infection approaches 75%, heterogeneity of coverage and virus exposure means that there are communities that remain vulnerable to persistent transmission. To achieve widespread population immunity (SOURCE 1 2), there will need to be greater public acceptance of SARS-CoV2 vaccines, access to all, and willingness to get immunized. The formulation of the vaccines with emergency use authorization and many others coming soon involve novel technologies that had not previously been administered wide-scale in humans. Given the speed of the development and access, there is a clear need for full transparency about what is known about these vaccines and to have the science translated in ways that will help people of various educational levels or cultural backgrounds make informed decisions.

Vaccines don't save lives; vaccinations save lives (SOURCE 3). The immense investments and achievements leading to the development of these vaccines will result in suboptimal public health benefits without a systematic approach to provide understandable, context/culture specific, accurate, trusted information about the vaccines offered to enhance acceptance. The pandemic continues to affect communities unevenly. People living in communities with high 'social vulnerability' are at markedly increased risk for hospitalization, death, and severe economic impacts when compared with wealthier and/or non-marginalized people (S 4-5). Many of those at disproportionate risk are African American (S 6), Hispanics/Latinx (S 7), Indigenous/First People (S 8, 9). It is becoming increasingly clear there are other populations of people who steadfastly oppose vaccination, combined with resisting physical distancing measures, which includes pole of increased risk for severe COVID illness because of comorbidities.

Recognizing the potential for equitable access and use of COVID vaccines to decrease the disproportionate impacts of the pandemic, we set out to ensure that every community that may be at increased risk has access to culturally relevant, resonant, informative information about COVID vaccines, thereby addressing concerns, doubts and lack of understanding of vaccine benefits versus risks. This information should increase each person's ability to make an informed choice about seeking vaccination and receiving a full course of vaccine. We recognized that equitable immunization cannot be achieved with 'one-size fits all' messaging. Rather, context-specific and persona-tailored messaging with optimal messengers using appropriate channels is needed. Coronavirus Vaccine Information Equity and Demand creation (COVIED) is a multifaceted program that includes:

1. Internet based national surveys
2. Rapid ethnographic assessments via designs/focus groups and key informant interviews in a variety of communities
3. Evidence based (through the surveys and rapid ethnographic assessments) context specific message development
4. Dissemination of messages through optimal messengers and appropriate channels for targets sub populations

Funding from CDC for COVIED began in mid February 2021. We present this report, the early findings from the first two surveys conducted as part of our national survey component of COVIED

Methodology

An internet based survey for U.S based internet users working with RIWI (Real time Interactive Worldwide Intelligence, Corp.) was launched on March 30, 2021. RIWI technology allows for the rapid culture and assessment of large samples of opinion and perceptions data on an ongoing basis. When internet users stumble upon one of the hundreds of thousands of domains (such as dead links that a user enters which does not take them to a functional website) that RIWI owns or controls, these random, non-incentivized users are filtered through a series of proprietary algorithms to ensure no non-human (AI/Bot) respondents. Once this initial check is confirmed, they are invited to participate in a survey.

Survey participants are accessed on all web enabled devices, and the technology is not susceptible to the increasing prevalence of ad-block technologies. The methodology collects and reports the age, gender, and geo-location of all

respondents. However, no personally identifiable information is collected or reported. No enticements are used. Participants can easily exit the survey at any point while responding to questions.

RIWI has developed and launched anonymous digital polling to reach anonymous users globally. RIWI technology was previously harnessed to measure anti-vaccine sentiment during the H1N1 pandemic (SOURCE 11). All data captured, acquired, used, published, or disseminated by RIWI technology and systems are fully compliant with all applicable laws.

RIWI employs strategic security measures at all levels of the survey design, respondent experience, and data storage. Security measures are specific to the topic and region of deployments, as well as the recognized security risk, and can be adjusted as new information and geopolitical developments unfold. No response is traceable to an individual. All RIWI respondents are advised of their anonymity, security, and privacy when they randomly access a RIWI survey. This allows for the collection of otherwise sensitive and unsafe answers, or socially undesirable perceptions.

The survey emphasized efficiency to be respectful of the time and other intended activities of the potential respondent. The questionnaire, when active, is functional on every device platform. This makes it possible to participate on smartphones, tablets, laptops, or desktops. Data may be provided in raw, unweighted format or weighted to the national population. Weights are applied to age and gender as per the most recent national census data available, drawn from the U.S. Census Bureau. Respondent weight values are generated post-stratification using a ranking algorithm. Weighted data estimates what the nationally representative populations perceives.

Due to the scale of internet users and the ability to randomly sample the entire internet using population of a country, it is possible to achieve very large samples in a short amount of time and engage large samples of previously unengaged voices. Respondents are not part of a panel or discussion group who usually come from specific demographic subsets. Additionally, the anonymity of respondents that make it possible to ask potential sensitive questions garners honest responses capturing viewpoints that some may not want to share during face to face communication.

The benefits of RIWI technology are simultaneously the drawbacks. As an internet based technology, it cannot reach people who have no access to the internet and likelihood of receiving as survey is related to amount of internet usage. Where no identifiable information is known about a respondent, it is not possible to follow up with a respondent later. Finally, since respondents are not incentivized or pressured to complete the survey in totality, there is the risk of 'straight lining' (SOURCE) the survey. This is a significant data quality issue among survey respondents leaving the survey. Many measures and strategies are introduced to engage and retain online participants including optimizing the survey instrument for ease and speed of participation on all device screens and bandwidths, as well as clear, concise language for immediate comprehension (SOURCE0

The survey questionnaire (available as a supplement used for this analysis included 26 questions with a variety of skip patterns and answer dependent follow-ups. The Survey was initiated on March 30th 2021, and continued through May 1st, 2021. Eligibility criteria included age ≥ 18 years, respondents needing to indicate their gender, and disclosing COVID (ever having contracted COVID-19) status. 20726 respondents completed through question 15 and 11,369 finished the entire survey (Figure 1).

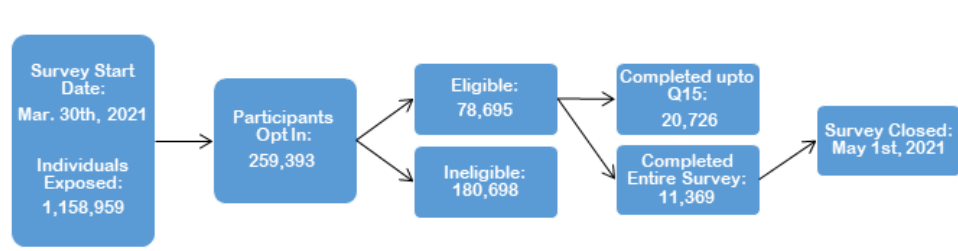


Figure 1: Baseline (Survey 1) progression from initiation to completion regarding general survey participation. Eligibility criteria include indication of and age equal to or greater than 18 years, COVID-19 illness status (ever contracted COVID-19), and gender.

When comparing the 78,695 who started the survey to those who remained through question 15 and to the end of the survey, we found the following differences (Table 1):

- Men, individuals 18-35yr olds, non-white individuals, and people who reported lower intention to vaccinate dropped off at higher rates than women
- Individuals 36+ years old, white individuals, and people who did not report low intention to vaccinate showed minimal drop off
- The lowest drop off rate (highest survey completion) observed among individuals who did not have COVID-19

Table 1. Demographic distribution at start, middle, and end of survey.

	Start		Complete (Q15)		Full Survey	
	n (%)		n (%)		n (%)	
Total n	78697		20726		11369	
Gender						
male	44281	(56%)	10907	(53%)	5706	(50%)
female	34416	(44%)	9819	(47%)	5663	(50%)
Age						
18-25	20961	(27%)	4612	(22%)	2153	(19%)
26-35	16466	(21%)	3728	(18%)	1902	(17%)
36-45	12666	(16%)	3322	(16%)	1878	(17%)
46-55	9553	(12%)	2911	(14%)	1722	(15%)
56-64	7143	(9%)	2484	(12%)	1551	(14%)
65-74	5709	(7%)	2039	(10%)	1263	(11%)
75-84	3032	(4%)	754	(4%)	445	(4%)
85+	3167	(4%)	876	(4%)	455	(4%)
Ethnicity						
white	30731	(46%)	11745	(57%)	6853	(60%)
african american/black	8788	(13%)	2525	(12%)	1349	(12%)
hispanic/latinx	8578	(13%)	2314	(11%)	1190	(10%)
asian	6603	(10%)	1432	(7%)	664	(6%)
native american/american indian	2638	(4%)	561	(3%)	288	(3%)
alaskan native	2014	(3%)	375	(2%)	185	(2%)
other ethnic group	7849	(12%)	1774	(9%)	840	(7%)
COVID status						
yes, diagnosed	6829	(9%)	1674	(8%)	921	(8%)
yes, tested positive	4245	(5%)	830	(4%)	497	(4%)
unsure, think had symptoms	4553	(6%)	1057	(5%)	667	(6%)
no	63070	(80%)	17165	(83%)	9284	(82%)
Vaccine Intention						
already received	19469	(36%)	9165	(44%)	4953	(44%)
will definitely as soon as can	7388	(13%)	3154	(15%)	1639	(14%)
will likely as soon as can	4902	(9%)	1322	(6%)	761	(7%)
will likely but not right away	6491	(12%)	1890	(9%)	1120	(10%)
will likely not	5557	(10%)	1430	(7%)	832	(7%)
will definitely not	10992	(20%)	3765	(18%)	2064	(18%)

RIWI-Kaiser Comparison

The Kaiser data used for comparison comes from the [April 2021 COVID-19 Vaccine Monitor](#). Respondents were asked, “Have you personally received at least one dose of the COVID-19 vaccine, or not?” If yes, respondents were asked, “Did you receive a single-dose vaccine, the first of two doses, or have you gotten both doses of a two-dose vaccine?” Kaiser found that 56% of adults received at least one dose of a vaccine. Kaiser does not provide 95% confidence intervals. The externally calculated 95% confidence interval based on the weighted proportion provided is 53.8% to 58.1%.

Kaiser collected data from April 15-29, 2021, using a random digit dial telephone methodology (i.e., Kaiser reaches potential respondents via landline and cellphone). The final sample consisted of 2,097 individuals (18+ y/o) living in the United States.

Kaiser specifies methodological details in their [methodology statement](#). Of note, Kaiser took measures to strategically oversample specific populations (e.g., Hispanic, non-Hispanic Black, lower-income populations). As such, Kaiser weights the data to be representative of the national population. The description of weighting is as follows:

The combined landline and cell phone sample was weighted to balance the sample demographics to match estimates for the national population using data from the Census Bureau’s 2019 U.S. American Community Survey (ACS), on sex, age, education, race, Hispanic origin, and region, within race-groups, along with data from the 2010 Census on population density. The sample was also weighted to match current patterns of telephone use using data from the January- June 2020 National Health Interview Survey. The weight takes into account the fact that respondents with both a landline and cell phone have a higher probability of selection in the combined sample and also adjusts for the household size for the landline sample, and design modifications, namely, the oversampling of potentially undocumented respondents and of prepaid cell phone numbers, as well as the likelihood of non-response for the re-contacted sample. All statistical tests of significance account for the effect of weighting.

RIWI heard from 30,865 adults during the same time frame (April 15-29, 2021) and found that 41%, 95% CI [40.6%, 41.8%], reported receiving at least one dose of a vaccine. This is a notably smaller proportion compared to Kaiser’s 56% (see Figure 2). When combining RIWI respondents who already received one dose of a vaccine with those who will definitely receive a vaccine as soon as possible, the RIWI proportion is comparable to that of Kaiser’s at 53%, 95% CI [52.1%, 53.3%] (see Figure 3). These comparisons provide a useful validation of the Riwi survey sampling frame and results.

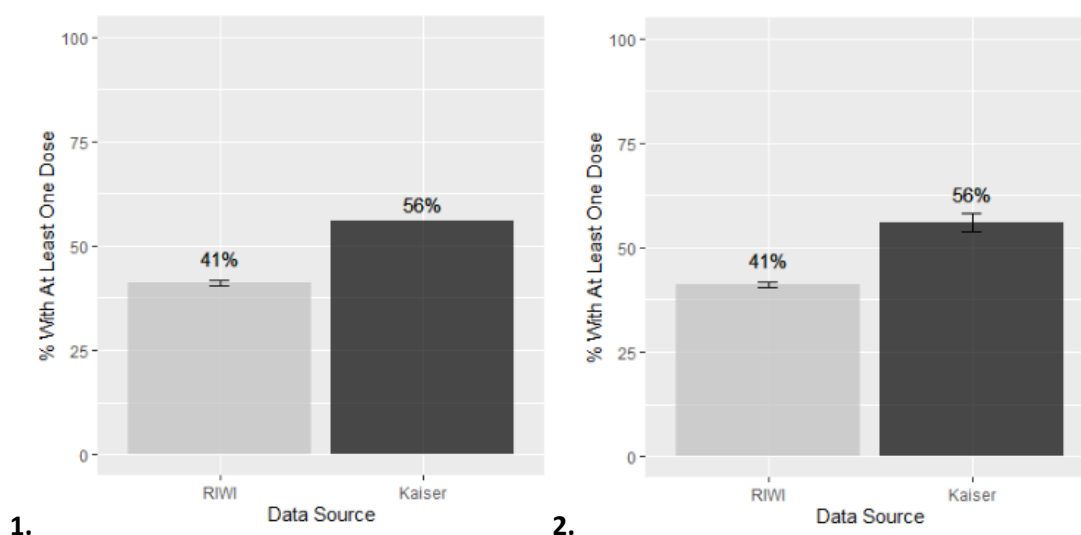


Figure 2: Proportion of respondents in RIWI and Kaiser datasets (April 15- 29, 2021) who reported receiving at least one dose of a COVID-19 vaccine. Figure B.2 includes an externally calculated 95% confidence interval for the Kaiser data.

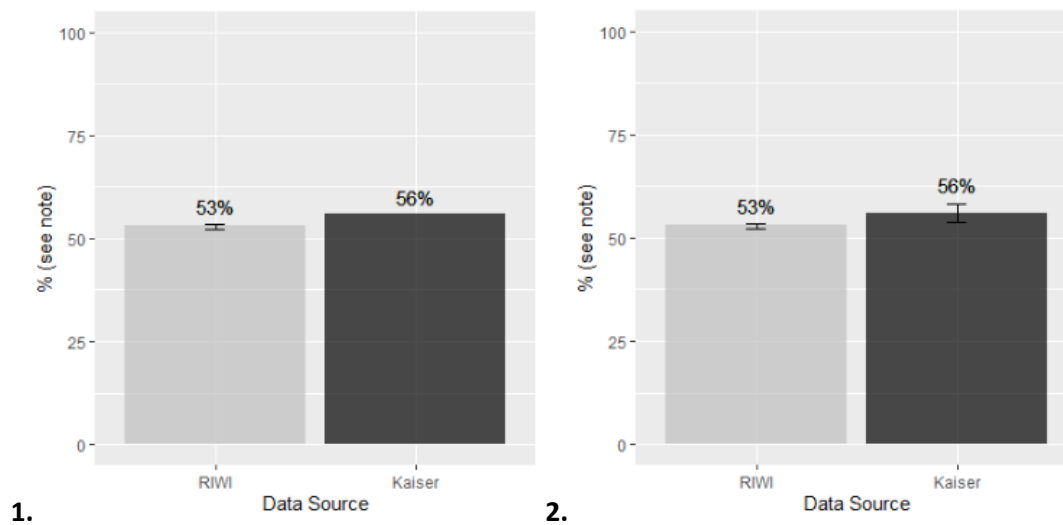


Figure 3: Proportion of RIWI respondents (April 15-29, 2021) who reported receiving at least one dose of a COVID-19 vaccine or reported that they would definitely receive a vaccine as soon as possible. Proportion of Kaiser respondents who reported receiving at least one dose of a COVID-19 vaccine. Figure C.2 includes an externally calculated 95% confidence interval for the Kaiser data.

Results

Vaccination Intent Overall

We asked all respondents about their history of receiving COVID-19 vaccine and their intention to get immunized. Overall, 36% of respondents indicated that they had already received one dose of the vaccine, 22% responded that they will either definitely be vaccinated as soon as they can or would likely receive the vaccine as soon as they can. 42% overall said they will either definitely not, likely not, or likely not right away get vaccinated (Figure 4). The breakdown varied by race/ethnicity with the highest proportion of already vaccinated individuals among whites (41%) and the lowest among Alaskan Natives at 21% (Figure 5). To gain an idea of high and low intention groups three generalized groups were formed. The first group consisted of those who have already received a single dose of any vaccine. The second group, the high intention group, is formed from the combination of those who answered they will definitely get the vaccine as soon as they can and those who responded that they will likely get it as soon as they can. The third, low intention group combines those who answered that they will likely get it but not right away, they will likely not get the vaccine, and will definitely not get vaccinated. The phrases or words interest vs. disinterest, high vs. low intent, or hesitant vs. willing to receive the vaccine are all used interchangeably when discussing aforementioned interest groups (Figure 6, 7).

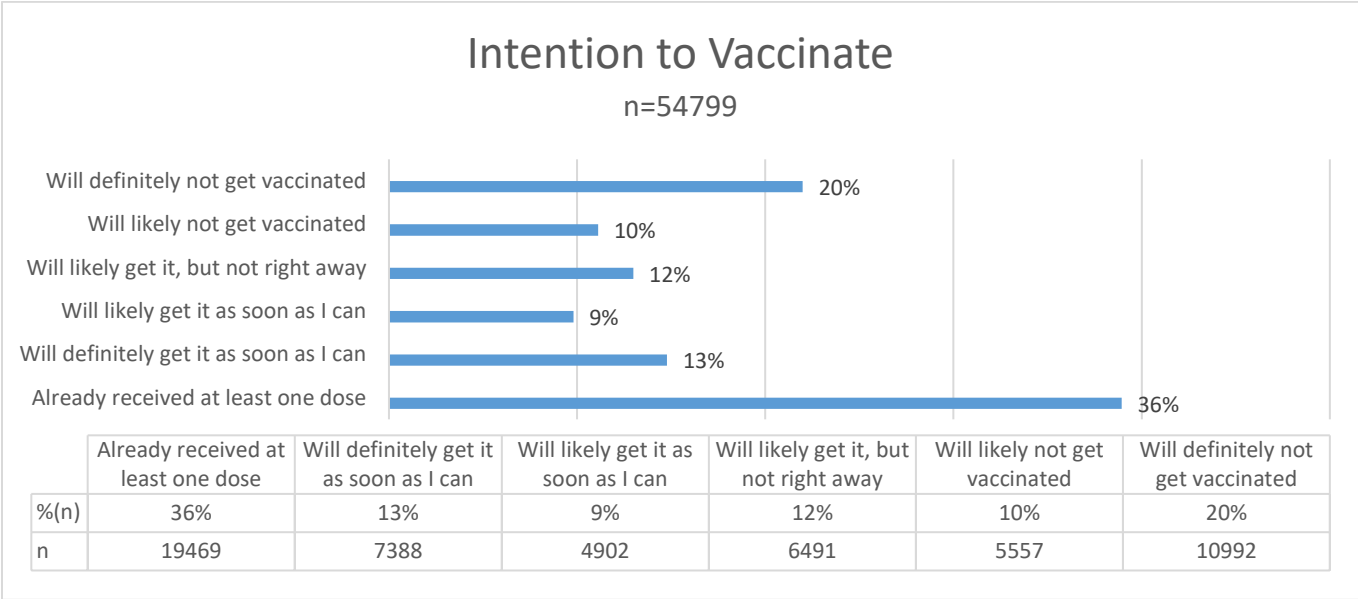


Figure 4: Intent to vaccinate as depicted by total number of respondents.

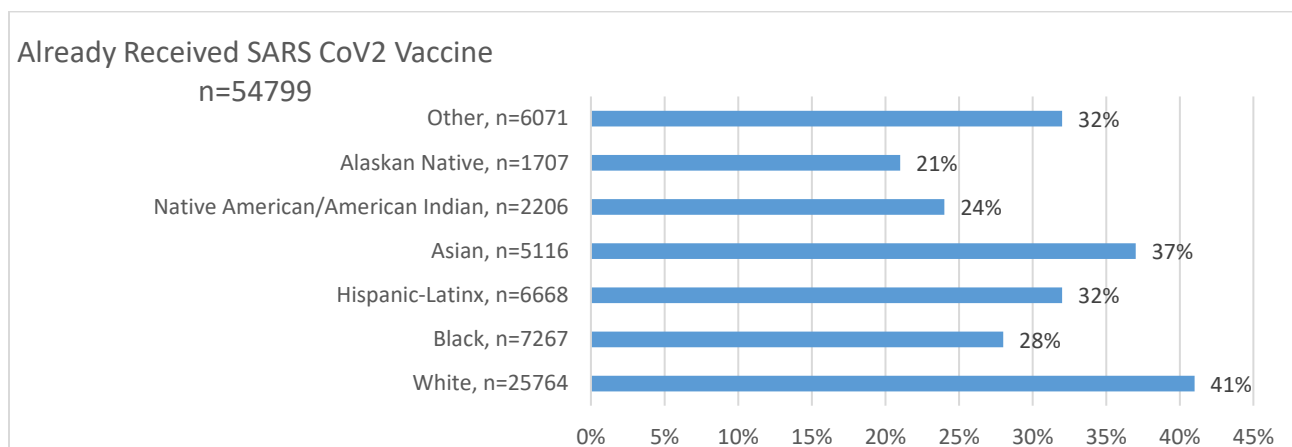
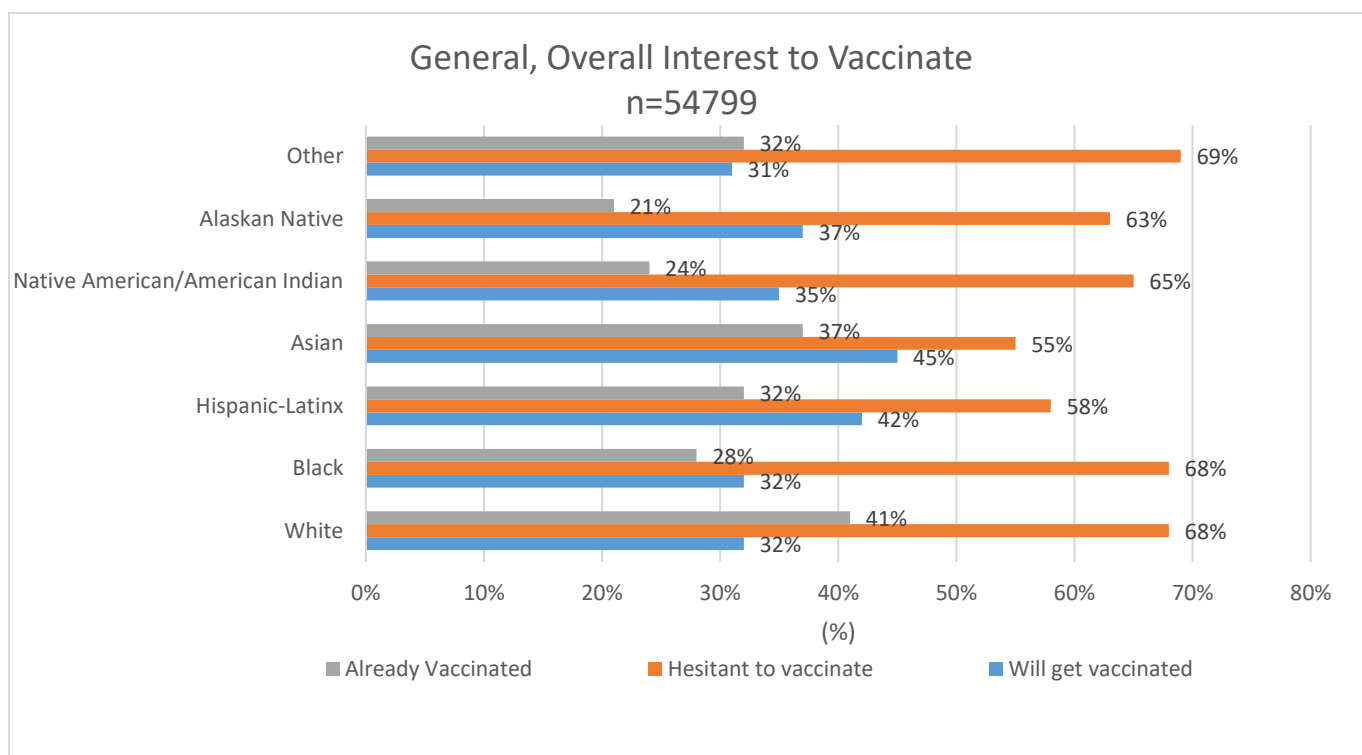


Figure 5: Ethnic breakdown of those who have already received at least one dose of the COVID-19 vaccine by percentage. Those who answered already received are those who have received at least one dose of any type of SARS-CoV2 vaccine. Among 25,764 White respondents, 41% indicated that they had already received vaccine, compared with 28% of 7,267 Black respondents, 32% of 6,668 Hispanic respondents, 37% of 5,116 Asian respondents, 24% of 2,206 Native Americans/American Indians, 21% of 1707 Alaska natives, and 32% of 6071 respondents who identified as an other ethnicity.



	White	Black	Hispanic-Latinx	Asian	Native American/American Indian	Alaskan Native	Other
Will get vaccinated	32%	32%	42%	45%	35%	37%	31%
12290	4906	1665	1934	1439	594	494	1258
Hesitant to vaccinate	68%	68%	58%	55%	65%	63%	69%
23040	10291	3531	2627	1786	1086	858	2861
Already Vaccinated	41%	28%	32%	37%	24%	21%	32%
19469	10567	2071	2107	1891	526	355	1952

Figure 6: General overall interest assessed by combining responses of intent. Interest (or those who lean toward vaccination) combines total responses of those who answered 1) will definitely as soon as can, 2) will likely as soon as can. Disinterest, or hesitancy, combines total responses of those who answered 1) will likely not right away, 2) will likely not, 3) will definitely not. Those who answered already received are those who have received at least one dose of any type of SARS-CoV2 vaccine.

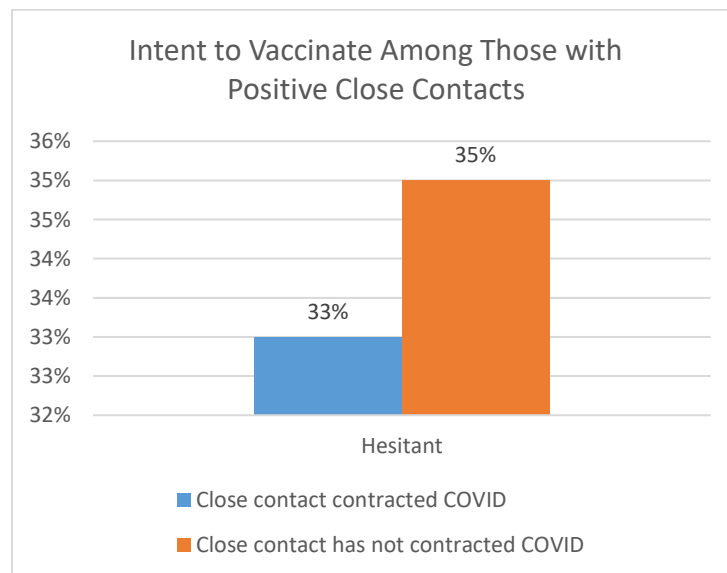
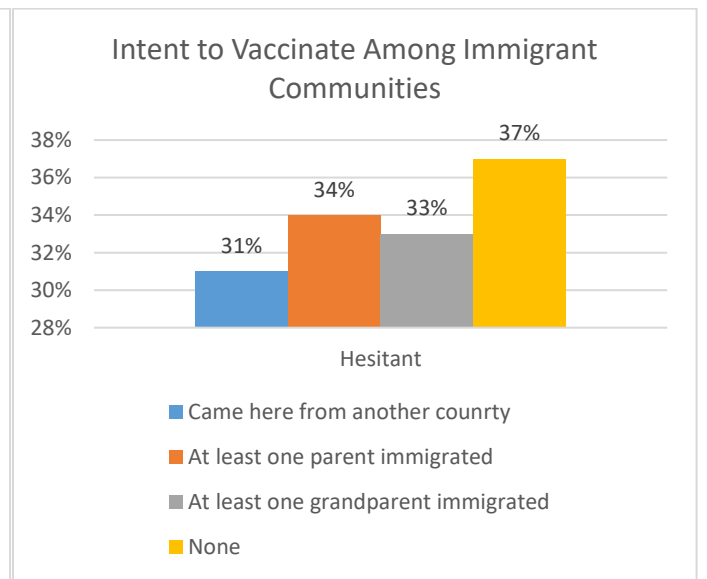
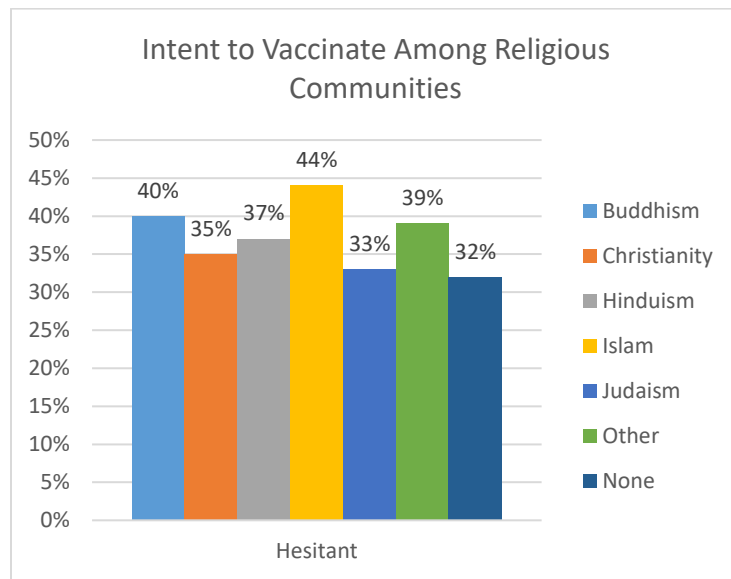
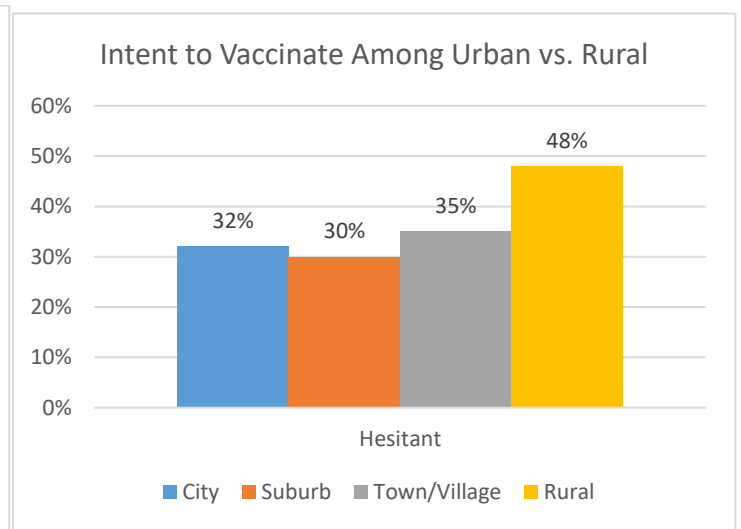
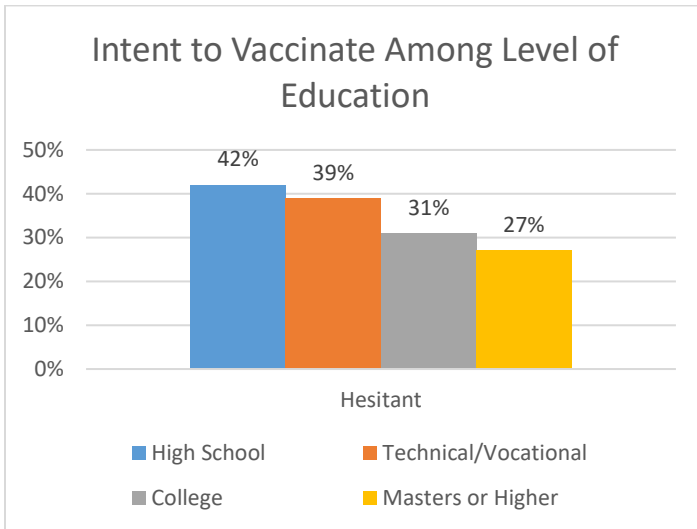
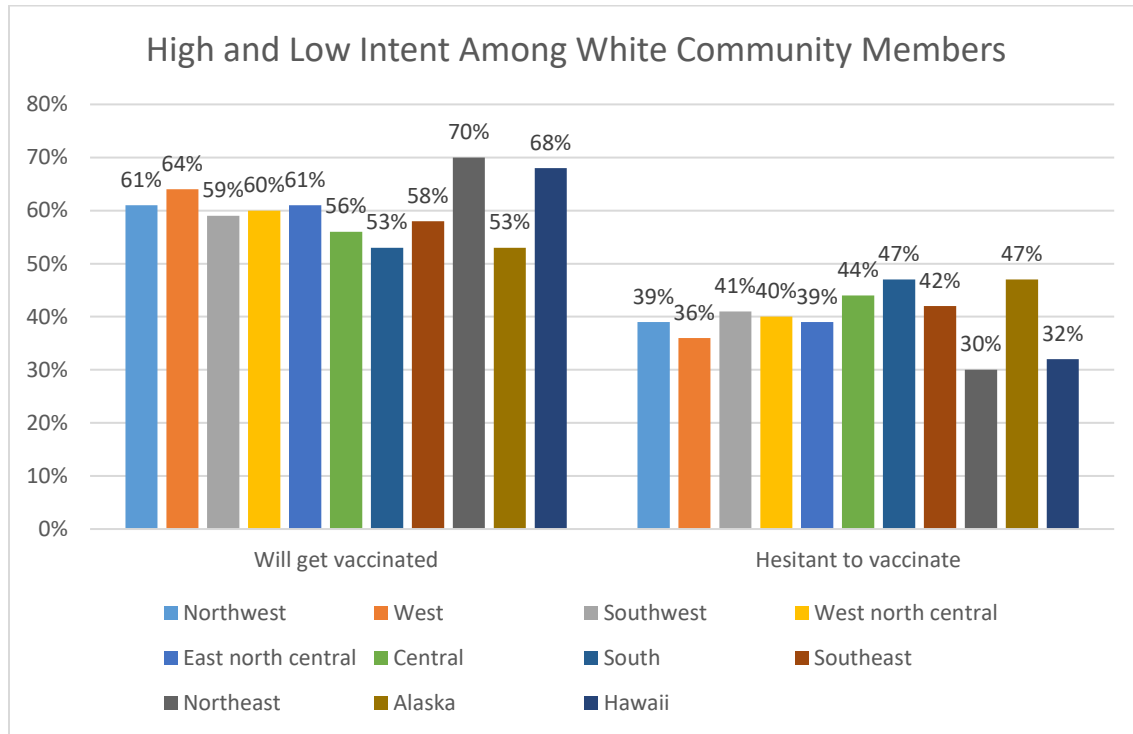


Figure 7: Various sociodemographic sub populations were isolated for preliminary low interest or vaccine hesitancy. Out of these various subgroups, 3747 high school students 1574(42%), 2159 of those living in rural environments 1036 (48%), 438 of those who identify with Islam 193 (44%), 7369 of those who do not identify with any immigrant community 2726 (37%), and 11179 of those who don't have close contacts that have not endured COVID 3913(35%), expressed hesitancy in receiving a COVID-19 vaccine.

Vaccination Intent by Region

Further analysis was completed on intent stratified by region of residence and race (Figure 8). There were not dramatic differences by race and region. However, Whites who reside in the northeast were less likely to indicate that they will not seek vaccine than in other regions (30%, Figure 8). In the northeast, Blacks were proportionately much less likely to have been immunized and much more likely to be vaccine hesitant, including 1.6 fold more likely to indicate that they will definitely not get vaccinated when compared to Whites (Figure 9).



Total	North west	West	South west	West north central	East north central	Central	South	South east	North east	Alaska	Hawaii
24728	1242	2233	1462	453	2015	4121	3410	4801	4892	34	65

Figure 8: High and low intent groups of white community members in the northwest region are least likely (30 to hesitate when making a decision about receiving a covid vaccine. Whereas Southern (n=3410) and Alaskan (n=34) White community members were most likely to hesitate. General overall interest was assessed by combining responses of intent. Interest (or those who will get vaccinated) combines total responses of those who answered 1) will definitely as soon as can, 2) will likely as soon as can. Disinterest, or hesitancy, combines total responses of those who answered 1) will likely not right away, 2) will likely not, 3) will definitely not. Those who answered already received are those who have received at least one dose of any type of SARS-CoV2 vaccine. Those who have already received are also included in the high intent, "will get vaccinated," group.

Intent to Vaccinate by Region and Ethnic Group

NORTHEAST

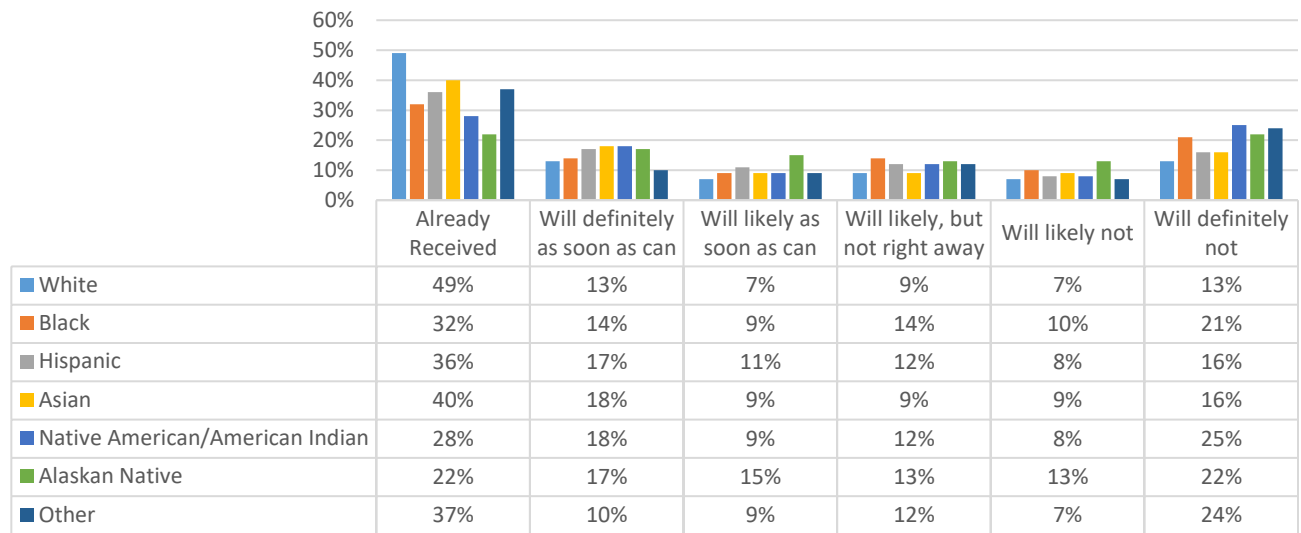


Figure 9: Among various race and ethnicities who answered intent to vaccinate in the Northeast (n= 10,020), the largest difference is among those who have already vaccinated with white community members at 49% (n=4892).

The region with the highest portion of Blacks that indicated they will definitely not get vaccinated was in the Southeast where 31% indicated they would definitely not, likely not, or likely but not right away receive a COVID-19 vaccine. Among Hispanics, the lowest proportion that already received a vaccine is in the East and West North Central Regions of the U.S. However, it should be noted that these regions also contained very few Hispanic community members. In addition, Asians residing in the West have the Highest Proportion with answers leaning away from immunization versus already received. (Figure 10)

Hesitancy vs. Vaccination of Ethnic Communities Per U.S. Region

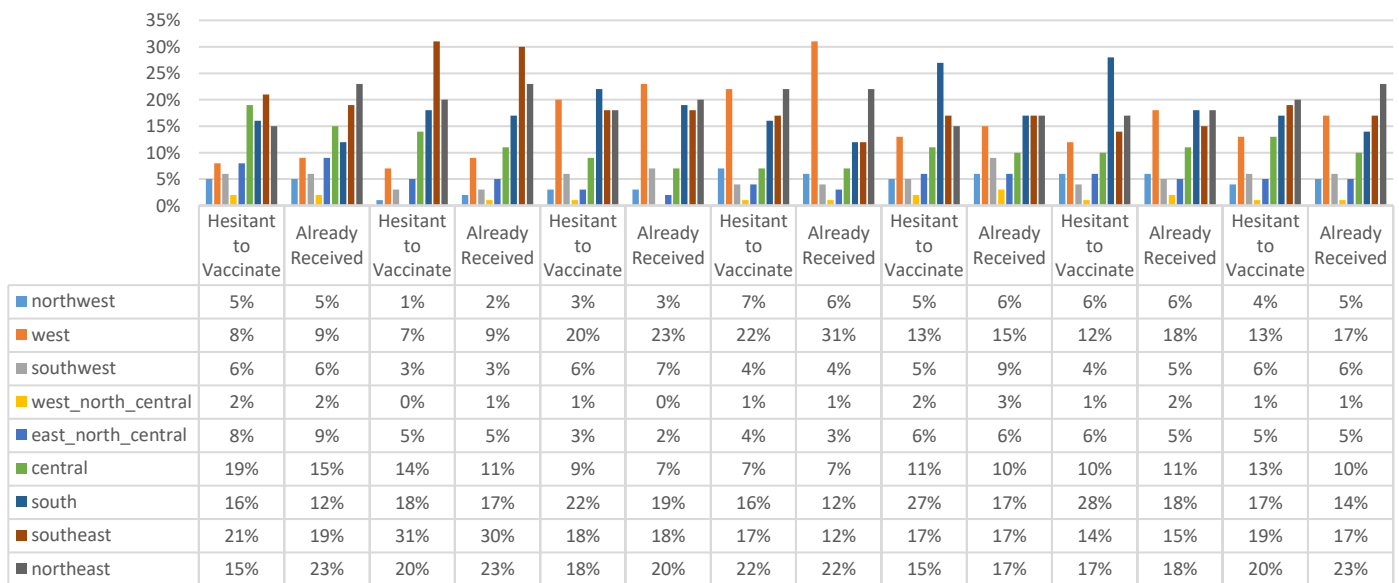
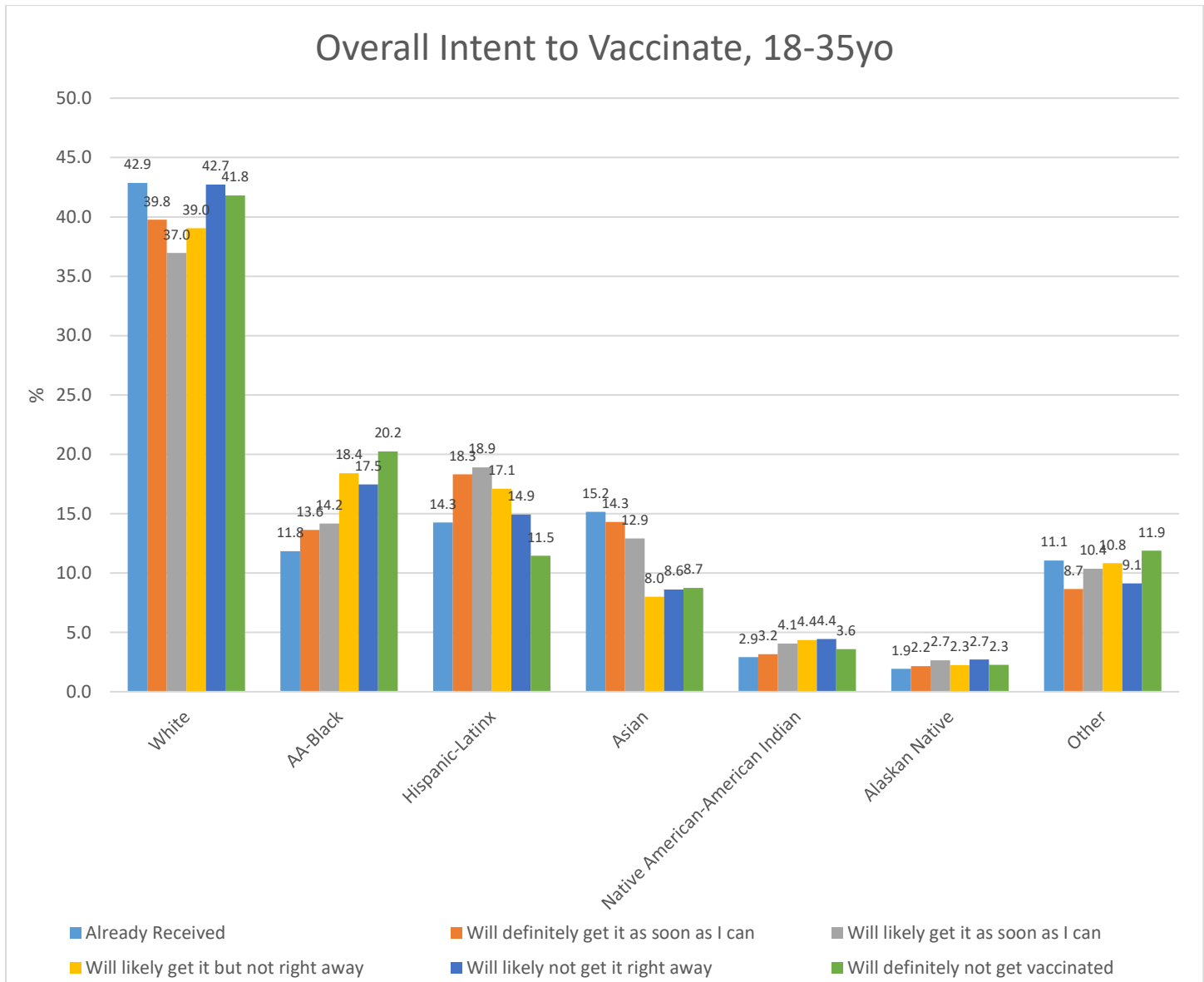


Figure 10: Black community members in the southeast display the greatest hesitancy to vaccinate at 31% (n=995) but also have the highest rate of receiving at least one dose of their vaccination (30%) along with Asians in the West (31%). Disinterest, or hesitancy, combines total responses of those who answered 1) will likely not right away, 2) will likely not, 3) will definitely not.

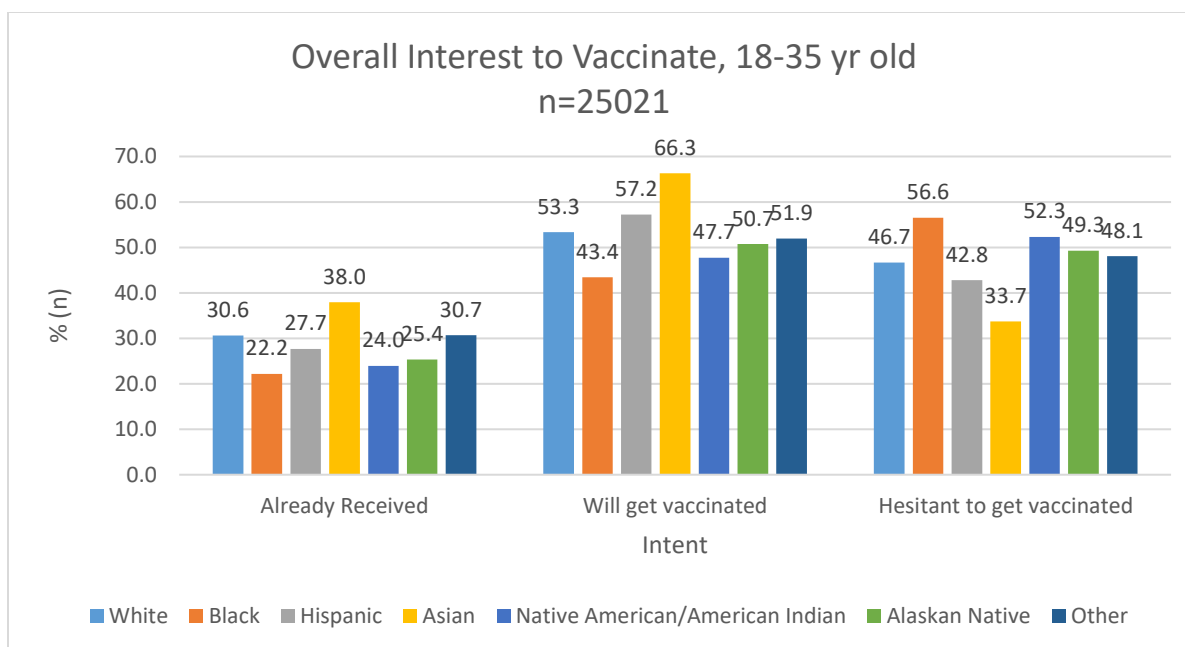
Vaccination Intent by Age, Race, and Ethnicity

Among respondents who were 18-35 years old, a higher proportion (41%) of White participants indicated they will definitely not get vaccinated when compared with various other ethnic and racial groups (Figure 11). When assessing low intention to vaccinate, Alaskan Natives and Native Americans (18-35yr old) had the highest proportions leaning away from immunization, followed by Blacks, Whites, Hispanics, and Asians. When assessing high intent responses in this age group Asians (66%), Hispanics (57%), and Whites (53%) showed higher proportions of interest than Black, Native American, and Alaskan Native respondents (Figure 12).



18-35 yo (n)	White	AA-Black	Hispanic-Latinx	Asian	Native American-American Indian	Alaskan Native	Other
Already Received	3149	869	1047	1114	214	142	812
Will definitely get it as soon as I can	1470	504	677	529	117	80	320
Will likely get it as soon as I can	864	331	442	302	95	62	242
Will likely get it but not right away	1317	621	577	270	147	76	365
Will likely not get it right away	1167	477	408	235	121	74	249
Will definitely not get vaccinated	2314	1120	634	484	199	126	658

Figure 11: Unwillingness among 18-35 year old age cohort, stratified by race/ethnicity. N=25021



18-35	White	Black	Hispanic-Latinx	Asian	Native American-American Indian	Alaskan Native	Other
Already Received	3149	869	1047	1114	214	142	812
Will get vaccinated	5483	1704	2166	1945	426	284	1374
Hesitant to get vaccinated	4798	2218	1619	989	467	276	1272
Total n=25012	10281	3922	3785	2934	893	560	2646

Figure 12: Vaccination hesitancy of 18-35yo compared to willingness to be vaccinated and those who have already received at least one (first) dose of vaccine. Willingness is represented by combined responses of the following variables: Willingness to be vaccinated: 1) will definitely as soon as I can, 2) will likely as soon as I can. Disinterest or hesitancy is defined by: 1) will definitely not, 2) will likely not, and 3) will likely not right away. Hispanic participants demonstrated the highest proportion willing to be vaccinated.

Among respondents who were 36-64 years old, those who identified with other ethnicities (22.9%), White (19.7%), and Native Americans (18%) had the highest proportions that indicated they will definitely not get vaccinated (Figure 13). Responses of, “definitely, as soon as I can,” and, “will likely soon as I can,” were proportionately highest ($\geq 2/3$ of those in each ethnic or racial population) in Asians (66.9%), followed by Hispanics (66.1%), Whites (60.3%), and Blacks (59.7%) (Figure 14).

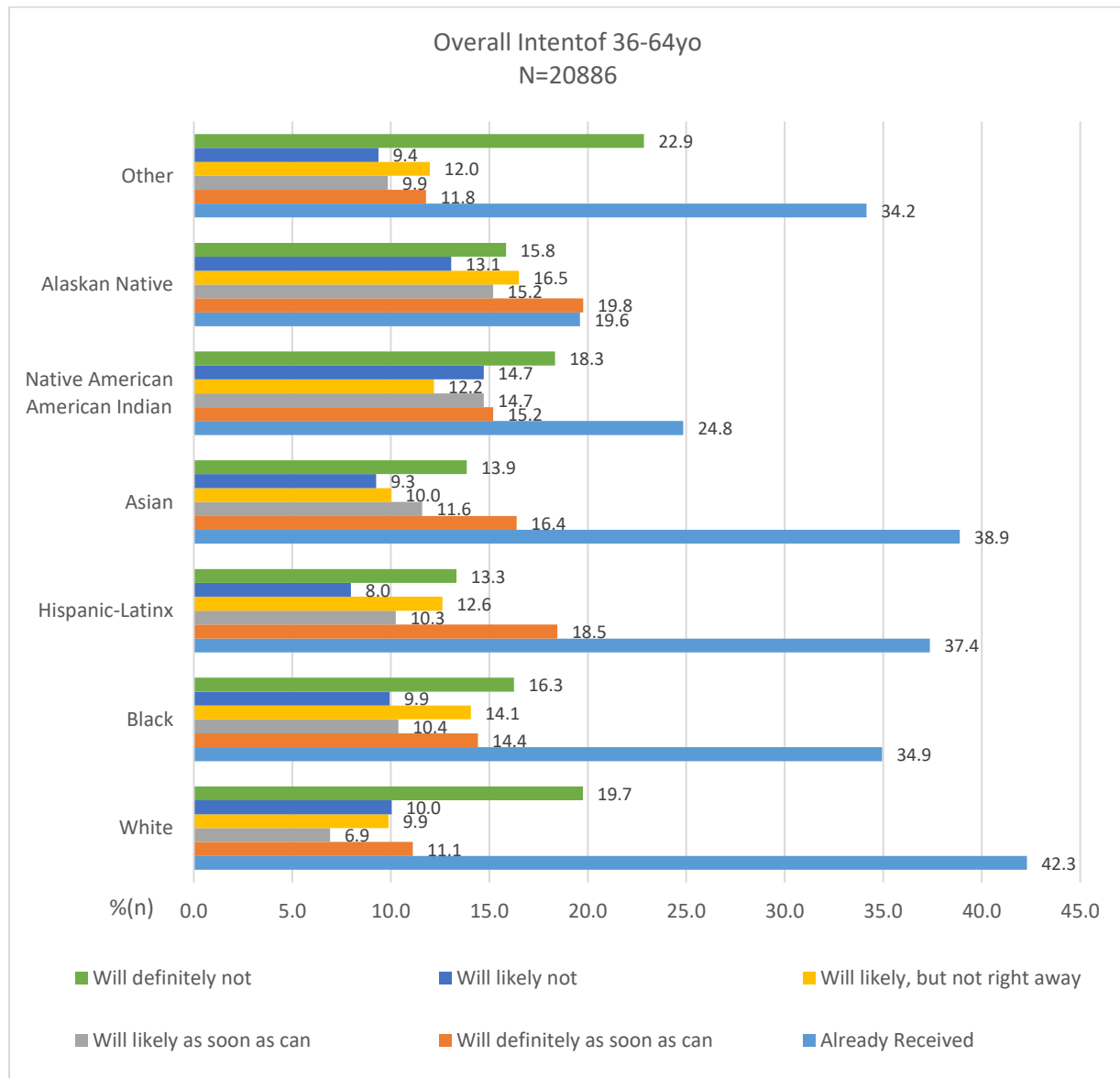
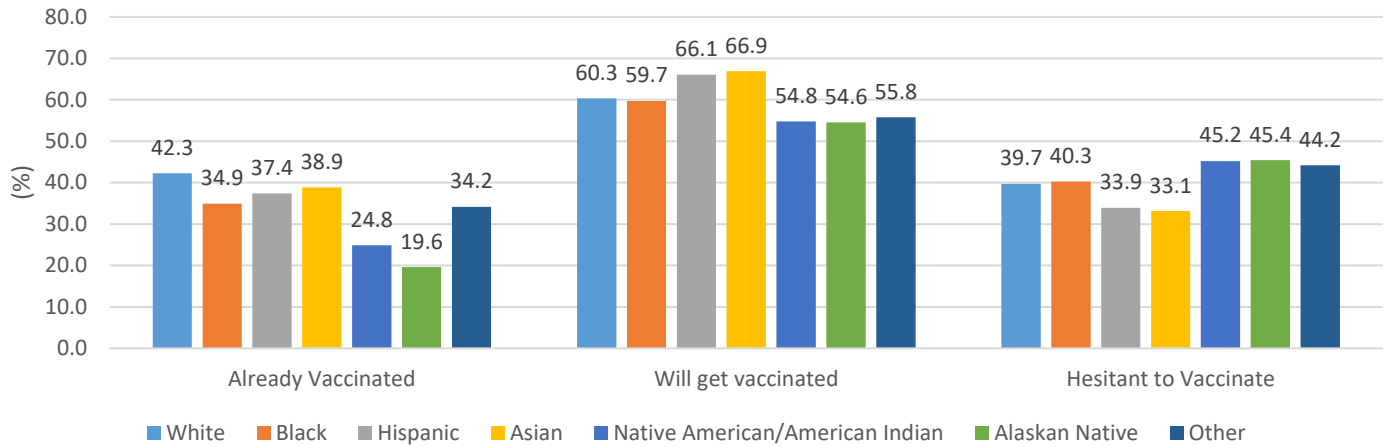


Figure 13: 20886 responses across various ethnicities, 8252 individuals indicated their hesitancy to vaccinate (will definitely not, will likely not, will likely but not right away). 2206 (19.7%) White, 407 (16.3%) Black, 299 (13.3%) Hispanic, 202 (13.9%) Asian, 152 (18.3%) Native American/American Indian, 97 (15.8%) Alaskan Natives, and 473 (22.9%) others disclosed their definite unwillingness (will definitely not) to vaccinate

Overall, General Interest of 36-64yo

N=20886



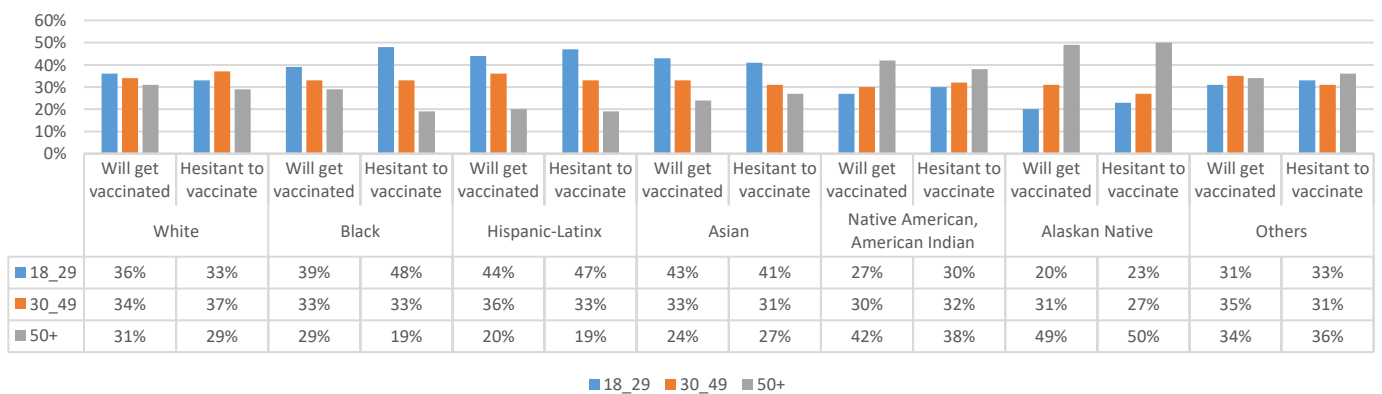
	White	Black	Hispanic	Asian	Native American/American Indian	Alaskan Native	Other
Already Vaccinated	4724	875	838	567	206	120	707
Will get vaccinated	6738	1496	1482	975	454	334	1155
Hesitant to Vaccinate	4432	1008	761	483	375	278	915

Figure 14: Vaccination hesitancy of 36-64yo compared to willingness to be vaccinated and those who have already received at least one (first) dose of vaccine. Willingness is represented by combined responses of the following variables: Willingness to be vaccinated: 1) will definitely as soon as I can, 2) will likely as soon as I can. Disinterest or hesitancy is defined by: 1) will definitely not, 2) will likely not, and 3) will likely not right away. Asian participants demonstrated the highest proportion willing to be vaccinated (66.9%). Out of 20886 respondents, 4724 White, 875 Black, 838 Hispanic, 567 Asian, 206 Native American/American Indian, 120 Alaskan Natives, and 707 others have already received their first dose.

Among respondents who had not been immunized (indicated they had not received any dose), there were not substantial differences among races and ethnicities. Rather, there are substantial differences that stand out when looking among age groups (18-29, 30-49, 50+ years). Alaskan Natives older than 50 years, African American and Hispanics 18-29 (48%, 47% respectively) showed greatest hesitancy to get vaccinated (Figure 15).

Overall Interest of Unvaccinated Individuals

N=35330



	White		Black		Hispanic-Latinx		Asian		Native American, American Indian		Alaskan Native		Others	
	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate	Will get vaccinated	Hesitant to vaccinate
18_29	1748	3427	642	1694	842	1247	616	736	162	327	99	198	395	933
30_49	1656	3859	544	1171	700	874	482	560	180	348	153	235	437	884
50+	1502	3005	479	666	392	506	341	490	252	411	242	425	426	1044

Figure 15: Overall, general interest by age and ethnic/racial group of survey respondents who have not started the vaccination process

Motivators of Vaccine Reception

We asked respondents what their first, second and third reason to vaccinate were (Figure 16). This excluded people who indicated that they will “definitely not get the vaccine,” but included others who indicated high and low interest about vaccination, including those who started the vaccine process (receiving a single or initial dose). Among Whites who intended to vaccinate (Figure 17), protect myself, return to normal life, and protect vulnerable people were the most common, initially prioritized, reasons. The table below demonstrates the similarities and differences when looking at categories among races/ethnicities. Importantly, the dominant factors that respondents indicated influencing vaccine choice were different for Whites, Blacks and Hispanics. When comparing those who indicated hesitancy versus those who were interested in vaccination; for those who are hesitant, factors such as “everyone else”, “doctor says I should”, and “required by workplace” were just as common (close in proportion) as protecting self, family, vulnerable people among those leaning towards immunization (Table 2).

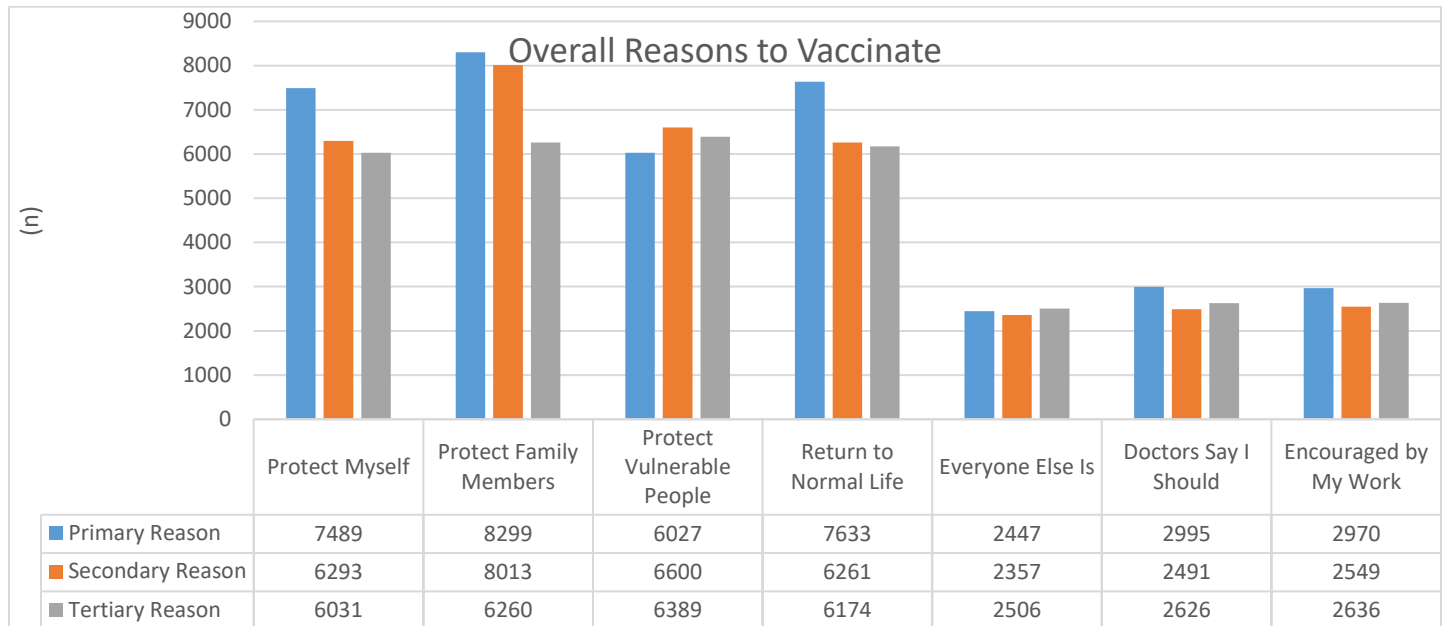
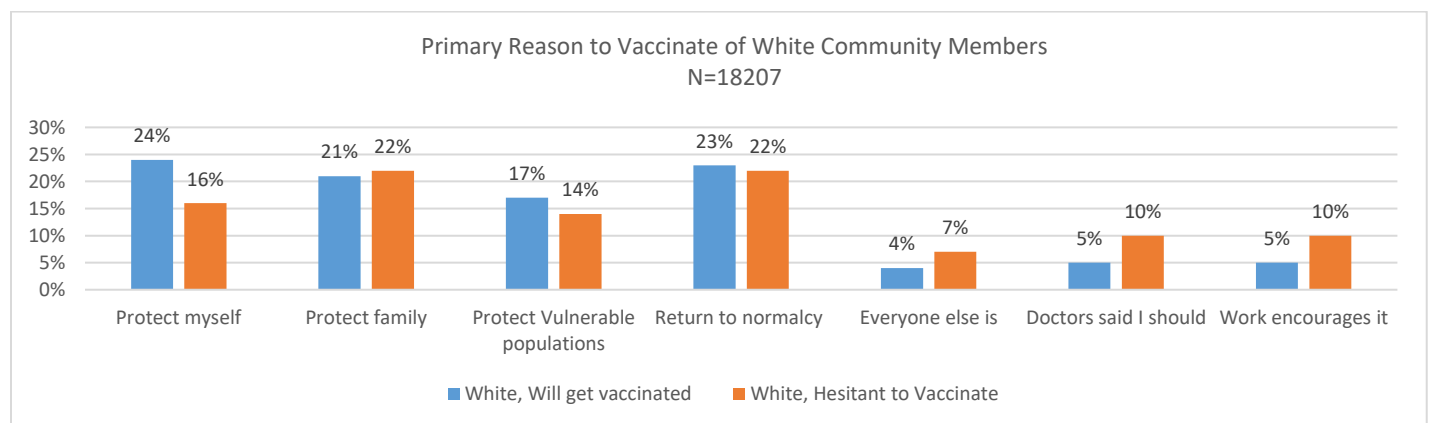


Figure 16: Out of 105046 responses (three responses from , both primary and secondary rationale for vaccination include protecting family members (22%, 23% respectively), protecting themselves (20%, 18% respectively), and returning to normal life (20%, 18% respectively). However, protecting vulnerable people beat protecting oneself as a tertiary ranking priority for vaccinating.



(n)	Protect myself	Protect family	Protect Vulnerable populations	Return to normalcy	Everyone else is	Doctors said I should	Work encourages it
Will get vaccinated	3294	2920	2414	3242	496	739	762
Hesitant to Vaccinate	677	947	620	952	294	433	417

Figure 17: White community members who identified reasons that motivated vaccination, intent to vaccinate, and racial and ethnic identities. Top three reasons for vaccination include protecting myself, return to normalcy, and protecting one’s family.

Table 2: Primary reason for vaccine motivation by racial group and vaccine intent.

		Protect myself	Protect family	Protect Vulnerable populations	Return to normalcy	Everyone else is	Doctors said I should	Work encourages it
White,	Will get vaccinated	24%	21%	17%	23%	4%	5%	5%
	Hesitant to Vaccinate	16%	22%	14%	22%	7%	10%	10%
Black	Will get vaccinated	23%	25%	14%	18%	6%	7%	7%
	Hesitant to Vaccinate	21%	24%	13%	17%	8%	9%	9%
Hispanic	Will get vaccinated	18%	28%	17%	17%	7%	6%	8%
	Hesitant to Vaccinate	15%	26%	13%	18%	10%	9%	8%
Asian	Will get vaccinated	17%	22%	14%	21%	9%	10%	8%
	Hesitant to Vaccinate	14%	18%	15%	18%	13%	11%	11%
Native American/American Indian	Will get vaccinated	17%	21%	15%	16%	10%	11%	10%
	Hesitant to Vaccinate	15%	20%	14%	17%	10%	13%	10%
Alaskan Native	Will get vaccinated	16%	14%	19%	13%	13%	13%	13%
	Hesitant to Vaccinate	16%	18%	14%	11%	11%	15%	16%
Other	Will get vaccinated	17%	19%	16%	18%	9%	10%	10%
	Hesitant to Vaccinate	15%	16%	18%	17%	10%	12%	12%

Factors for Not Getting Immunized

We also asked respondents who exhibited low intent to vaccinate (excluding those that had already been vaccinated or responded that they definitely would be vaccinated as soon as they can) about their top five reasons to not get the vaccine. We asked whether the “**system mistreated people like me**” was something they considered when deciding to get vaccinated. Regardless of race and ethnicity, this consideration was low among all ethnic and racial cohorts (figure 18) but highest among those who may be considered, “on the fence,” such as *will likely not*, or *will likely, but not right away*. .

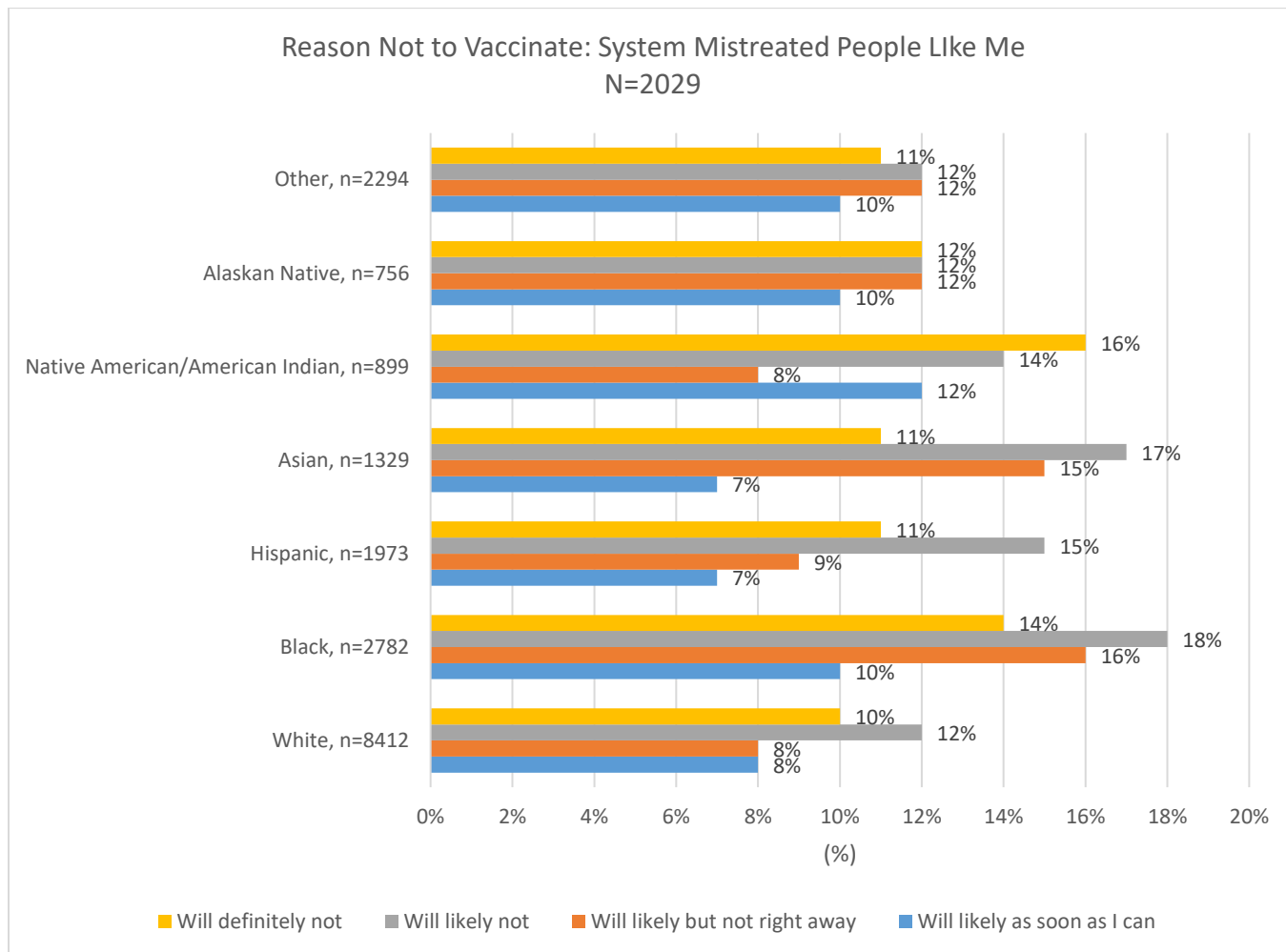


Figure 18: Out of 18,445 respondents who identified their intent and race/ethnicity, 16,416 respondents disclosed that system mistreatment was not a reason they would choose to remain unvaccinated. 2029 respondents suggested that this is a reason they would remain unvaccinated, particularly black and Native American/American Indian communities.

Key observations/implications

Substantially higher proportion of White participants in both surveys indicated that they had already been vaccinated when compared with other race/ethnicities; overall, Blacks were more likely than Whites to show disinterest in getting vaccinated.

The data on vaccine intent by race and ethnicity and by region suggested that there are parts of the country where customized messaging campaigns may be needed that would be focused on specific sub-populations with unique concerns and beliefs to consider.

The appeal of getting vaccinated (whether leaning towards or against) is somewhat different for Whites compared to Blacks and Hispanics. Hispanics tended to list protecting family ahead of other considerations, and protecting family and protecting oneself were equally distributed among Black respondents. By contrast, for Whites, protecting oneself stood out as the most important reason to get immunized regardless of vaccine intent. This difference will be important when considering targeted messaging, including images and sentiments that can be conveyed within messages.

A finding that is perhaps critical for targeted messaging is that among those who are leaning away from getting vaccinated, the reasons they listed that would potentially be persuasive for deciding to get vaccinated were vastly different from the reasons selected by those leaning towards immunization. The fact that hesitant respondents tended to describe peer pressure, recommendations by their physician and workplace requirements as potentially persuasive suggest approaches that will be needed to see those who are currently unimmunized arrive at vaccination centers for their doses of COVID vaccines. We did not ask questions related to various types of incentives currently being used or considered. We will be asking about these in our next nationwide survey.

Overt (or admitted to) concern about safety did not differentiate those leaning towards vaccination from those leaning away. This surprising finding needs to be examined more closely; safety concerns might be hard to articulate and woven into a general “free-floating” unease about using the newly developed tools.

A sense of being mistreated by the “system” was more common among those with low intent to get immunized. While the question was included to capture discontent among Blacks and other minority groups, the sentiment extended to White persons, as well. This may stimulate ideas about messaging. Perhaps getting immunized can be cast as a way to “beat the system”—i.e. achieve the same advantage that “rich people” have despite being mistreated in other health system venues.

One major issue is that there was no one person or group that stood out as being trusted sources of information among those leaning away from getting vaccinated. Thus, efforts to overcome hesitancy need to consider more diverse sources of information (the messengers) as well as how the messengers role model or communicate. It may be less about the message itself and more about whether the “role model” is someone that the unvaccinated person recognizes as someone they identify with or emulate.

We found that events around the discovery of thrombosis with thrombocytopenia syndrome with use of the J&J/Janssen vaccine led to an increased proportion of respondents who were unwilling to get vaccinated, regardless of the vaccine product. This suggests a need to focus on underlying discomfort about the potential for the vaccines to be unsafe, as in “I knew these rapidly developed vaccines would be unsafe as was seen with this J&J vaccines—I wonder what other dangers have not been detected yet.” What underlies this reaction with regard to any vaccine will be explored more closely in upcoming design/focus groups.

We found substantial resistance to immunization in 18-35 year olds regardless of race/ethnicity. Immunizing people within this age group may be a critical lynchpin toward achieving herd immunity. We will need to examine resistance more closely, but there are indications that decreased likelihood to seek immunization tracks with political party identification and level of education.

Recent changes, including CDC's latest mask recommendations may have increased or decreased interest in getting immunized. This will be explored in upcoming focus groups and we are considering an additional small/rapid survey to examine this as well as reactions to and sentiments around immunizing younger (>12 years old) children.

We found that adverse events and pausing vaccine use as happened with the J&J vaccine in April can affect intent to seek immunization, regardless of the vaccine to be given. And, negative sentiment does not always flow logically with increasing resistance seen in males versus females of Asian background, and little gender difference observed among Hispanic respondents. Messaging efforts will need to consider how concerns about safety with one vaccine can affect likelihood to receive any COVID vaccine.

Analyses of survey 1 and 2 are ongoing. One key observation is that within the limits of a survey approach, there were not large differences in responses to most questions asked by race and ethnicity, gender, age group, region of the country. The responses received and the differences observed by characteristics of respondents will now be explored in more detail during the rapid ethnographic assessments that are getting underway in a variety of communities.

Limitations of this survey include the substantial drop off from people who land on the RIWI owned domains who then finish the survey. We cannot assess those that drop immediately before entering any information; however, when we look at those who responded to the first three questions that are descriptive, there were not major differences between those who completed the survey and those who dropped off. Nonetheless, we cannot rule out the possibility that those who completed the survey are unique and are fundamentally different from the populations they represent.

Information collected during these surveys are being explored among people participating in focus groups. Focus groups provide opportunities to evaluate details that are not possible with pre-formatted surveys with limited numbers of questions. The information conveyed during focus groups are being used to develop messages and other approaches to inform people with a variety of sub-categories (persona). These approaches for delivering information will be evaluated in continued iterative processes in focus groups and community engagement.

Approaches towards adopting prevention strategies like immunization, especially novel vaccines need to be well thought out and consider complex inputs. Ultimately, we hope that our efforts will contribute to informed choices about COVID immunization by people of a vast array of backgrounds and pre-existing concerns and intentions.