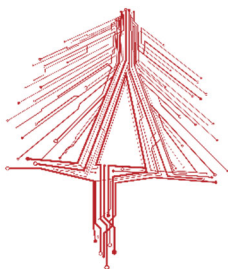




Living in Boston During COVID-19: Vaccination Planning and Hesitancy

Report #5 in a Series



Boston
Area
Research
Initiative



Partnering Institutions

The Boston Area Research Initiative is an interuniversity partnership based at Northeastern University that convenes researchers, policymakers, practitioners, and community leaders to envision and realize the future of the city. Our primary goal is to leverage data and technology to better understand and serve cities, with a focus on enhancing equity, justice, and democracy.

The Center for Survey Research (CSR) at the University of Massachusetts Boston is a full-scale academic survey research center. CSR conducts basic and applied research that contributes to knowledge and understanding of important social issues and supports public and private agencies and university scholars in carrying out high quality policy-related research. Its projects include BEACON, a panel study on Boston neighborhoods

Boston Public Health Commission, the country's oldest health department, is an independent public agency providing a wide range of health services and programs. Public service and access to quality health care are the cornerstones of our mission—to protect, preserve, and promote the health and well-being of all Boston residents, particularly those who are most vulnerable.

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Executive Summary

In the summer of 2020, the Boston Area Research Initiative (BARI) at Northeastern University, the Center for Survey Research (CSR) at University of Massachusetts Boston, and the Boston Public Health Commission (BPHC) conducted a survey among 1626 Bostonians about their experiences of during the first months of the COVID-19 pandemic, including: their ability and tendency to follow social distancing recommendations; attitudes toward regulations; and the economic and personal impacts of the pandemic. In the fall, we followed up with an additional web-based and mailed survey that asked about continued employment, plans for getting the vaccine, mental health, and respondents' perceptions about life in their neighborhood.

This fifth report in a series describes Boston respondents' intentions to get the COVID-19 vaccine, when available. In a mail and web-based survey conducted in the September 2020, we asked if respondents plan to get vaccinated—definitely, probably, probably not, or definitely not. In this report, we explore personal characteristics associated with Bostonians' hesitancy to get the vaccine (probably not/definitely not). We also provide information about which respondents are definitely planning to get the COVID-19 vaccine. This information may help identify people who are reluctant to get the vaccine and assist efforts to tailor messages to Boston residents who have reservations about the coronavirus vaccine.

Main Findings

- **One in five Bostonians do not plan to get vaccinated.**
- **Black and Latinx Bostonians are more hesitant to get vaccinated than Whites.**
 - Almost 50% of Black respondents stated they definitely do not or probably do not plan to get the vaccine.
 - Over 1 in 4 Latinx respondents said they do not plan to get the vaccine.
 - Over 90% of White and Asian/Pacific Islanders are probably or definitely planning to get vaccinated.
- **Respondents with less formal education have less enthusiasm regarding their plans to get vaccinated, compared to those with college education.**
 - About one-half of college educated respondents plan to get vaccinated.
 - Over 1 in 4 respondents with less than a college education report that they do not plan to get the vaccination.
- **Men and women have different plans to get vaccinated.**
 - Over 1 in 4 women do not plan to get vaccinated, while about 1 in 6 men do not plan to get vaccinated.
 - About one-half of men “definitely” plan to get the vaccine, compared to 36% of women.

- For the most part, the more worried Boston respondents are about COVID-19 infection for themselves or family members, the more likely they are to get the vaccine, but among people who are extremely worried about COVID-19, about one-third probably or definitely do not plan on getting the vaccine. For these people, worry about the virus and worry about the vaccine may go together.

Conclusions and Next Steps

Efforts to encourage vaccination for the COVID-19 coronavirus will be facilitated by public health efforts that are sensitive to differences in people's fears about the coronavirus as well as vaccines. As the spring of 2021 approaches, more people will likely have some personal contact with someone who has been vaccinated and that will help get to the proportion of the population vaccinated needed to stop the rapid spread of COVID-19 infection. However, there are some neighborhoods, particularly communities of color, where trusted members of the community may be the best resources to listen to people's concerns and provide information tailored to diverse audiences.



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1. Living in Boston During COVID-19: A Neighborhood Survey

The NSF-Beacon survey captures the experiences of 1626 Bostonians during the first months of the COVID-19 pandemic, including: their ability and tendency to follow social distancing recommendations; attitudes toward regulations; and the economic and personal impacts of the pandemic. It provides unique insights into how these factors varied across the populations and neighborhoods of a single city—something not currently available from any other source, in Boston or otherwise.

The Center for Survey Research (CSR) at University of Massachusetts Boston conducted the survey over the summer, in collaboration with the Boston Area Research Initiative (BARI) at Northeastern University, and the Boston Public Health Commission (BPHC). The National Science Foundation’s Human-Environment and Geographical Sciences (HEGS) program provided funding through a grant for rapid-response research (RAPID). The survey used a probability-based random sample stratified by 25 neighborhoods and the results presented here were weighted to match the demographic composition of the city. See Appendix A for more detail on the survey methodology.

In September 2020, we invited respondents to the NSF-Beacon survey to complete a follow-up questionnaire, either by mail or internet. The purpose of this survey was to collect more information about the effects of the pandemic on health, behaviors, and attitudes, including plans to get a vaccination.

This is the fifth in a series of reports describing key insights from the survey. The series focuses especially on the racial and socioeconomic inequities that have exacerbated—and may continue to exacerbate—differential impacts of the pandemic and the associated shutdown. In doing so,

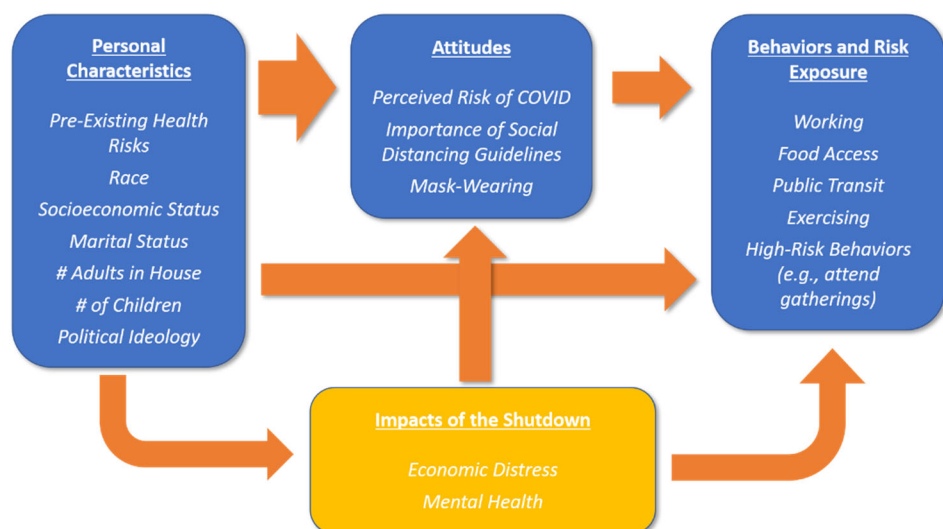


Figure 1. Model for Understanding the Effects of the COVID-19 Pandemic on Boston Residents.

we consider four crucial classes of factors. The first class is personal characteristics, including race, ethnicity, socioeconomic status, pre-existing health, family structure (e.g., number of children), and political ideology. Second are attitudes about the risk of infection and social distancing guidelines, such as mask-wearing. Third are the types of activities that might expose a person to infection. For instance, how often a person goes to work, the grocery store, rides public transit, or visits in other people's houses influences their exposure risk. Fourth, the survey included items on the impacts of the pandemic: employment, economic insecurity, and mental health.

We have designed the series to walk through the relationship between these features, as illustrated in Figure 1. Our first report described inequities in how Bostonians of different racial and socioeconomic backgrounds engaged in necessary day-to-day activities in April and the summer. The second report examined how attitudes, beliefs and risky behaviors were distributed across communities. In our third report, we described economic impacts—job and income loss—across individuals and neighborhoods, revealing inequities in relation to race and ethnicity, socioeconomic status, and family composition, as well as variation between neighborhoods. A fourth report provided a detailed description of the factors that influenced attitudes toward and knowledge about the pandemic, infection risk, and social distancing guidelines.

This report focuses on survey respondents' acceptance or hesitancy in getting a COVID-19 vaccine. The analysis is based on results of a second survey among all people who responded to our summer survey. To follow-up on Bostonians who responded to our survey, we conducted a survey in the fall of 2020 using mailed questionnaires and a web-based survey sent to those who provided email addresses. In this survey, 932 residents responded. The results in this vaccination report are weighted to represent Boston residents in terms of age, ethnicity, gender, and level of education.

Future reports will continue relate to the content of other data sets, such as mobility patterns, administrative records, and social media activity, collected as part of this project.¹

2. Who's Planning to Get Vaccinated?

In our follow-up survey, 921 Boston residents answered the following question: "If a vaccine against the coronavirus becomes available, do you plan to get vaccinated?" Figure 2 shows that 1 in 5 respondents stated they are not planning to get vaccinated: almost 9% stated they were "definitely not" planning to get vaccinated and about 12% stated they were "probably not" getting vaccinated. A little over 2 in 5 of respondents "definitely"

¹ <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/TDKDJJ>

planned to get vaccinated and another 2 in 5 said they probably would, making the overall rate of people saying they are likely to get vaccinated at nearly 80%.

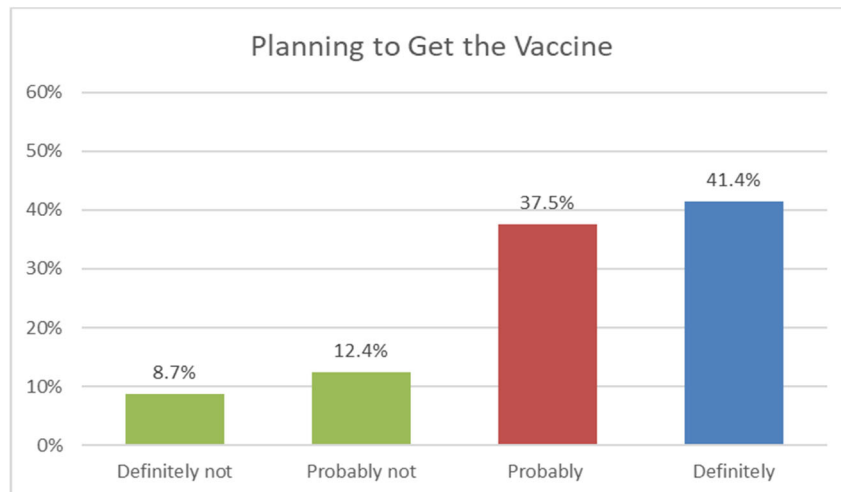


Figure 2. The distribution of respondents who planned to get a COVID-19 vaccine (n=921) in percentages

For the following analyses exploring who is planning to get the vaccine, the responses of either “definitely not” or “probably not” (green bars in the figure) are combined.

Willingness to be vaccinated varied considerably by age. Over one-third of respondents 65 years of age and older in Boston stated they are unlikely to get vaccinated (Figure 3). The age group most at risk of serious illness due to the virus, those 65 or older, contained the highest proportion of respondents disinterested in vaccination as well as a considerable proportion who definitely planned to be vaccinated. In contrast, younger respondents—those who were 18 to 34 years old—appear enthusiastic in their plans to get a vaccine with fewer than 1 in 6 respondents saying they do not plan to get vaccinated. Interest in being vaccinated was highest in this younger group, with over one half saying they definitely plan to get vaccinated, while about one-third of the three older groups were definitely planning on vaccination.

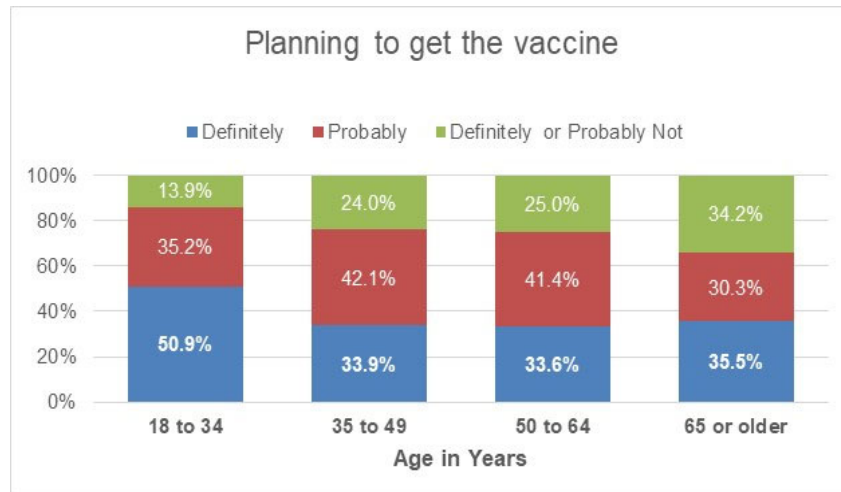


Figure 3. Planning to get a vaccine among respondents in four age groups

Men were more likely than women to state they definitely planned to get a vaccine (Figure 4). About the same percentage of men and women said they probably would get the vaccine (38 and 36% respectively). Hesitancy in planning to get a vaccine was much more prevalent among women respondents with over 1 in 4 women stating they did not plan to get a COVID-19 vaccine, compared to fewer than 1 in 6 men.

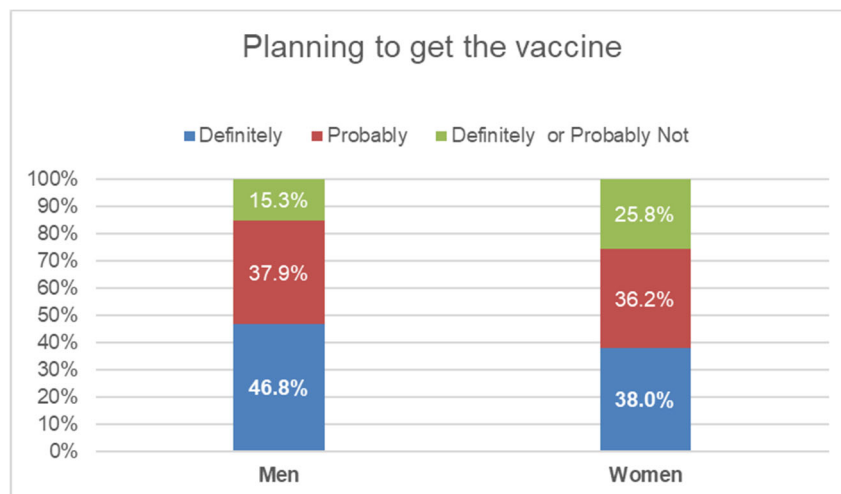


Figure 4. Difference in plans to get a vaccine by gender ²

Respondents with a child in the household were much more hesitant to get a vaccine (Figure 5). One third of respondents with children reported definitely or probably not planning for COVID-19 vaccination. Only 1 in 5 respondents with a child in their household

² This figure excludes 4 respondents who identify with a non-binary gender.

definitely planned to get the vaccine, compared to almost one half of respondents without children. This pattern of hesitancy among those with children is present among men and women: 41% of women with no child in the household definitely planned to get vaccinated, compared to 18% of women living with a child; the corresponding percentages for men were 49% without a child in the household compared to 24% of men living with a child.

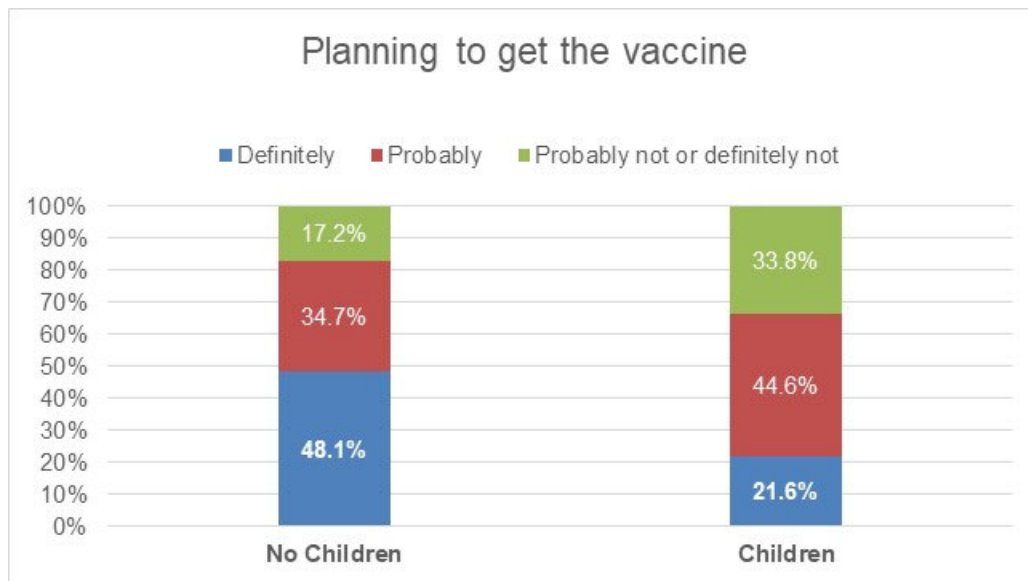


Figure 5. Plans to get a COVID-19 vaccine in relation to having children in the household

Intention to get the vaccine also increased sharply in relation to education completed, with the percentage of respondents definitely planning to get vaccinated much higher among those with a college education than those with less education (Figure 6).

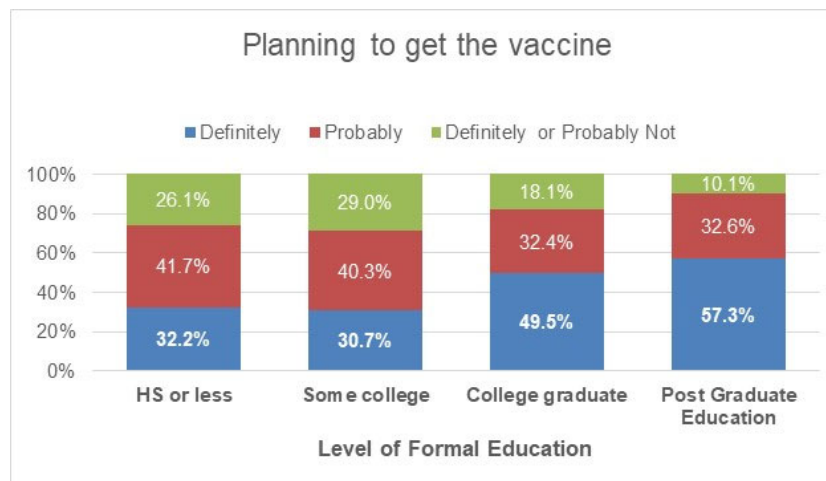


Figure 6. The association between level of formal education and plans to get the vaccine

Differences in plans to get a vaccine were evident among different ethnic and racial groups living in Boston. Latinx and particularly Black Bostonians had significant reservations about vaccination. This hesitancy is most likely related to general mistrust in government and the health care system in particular.³ Figure 7 shows that almost one-half of Black respondents stated they probably or definitely were not planning to get the vaccine. One-quarter of Latinx respondents indicated they do not plan to get the vaccine. Fewer than 1 in 10 White and Asian/Pacific Islanders probably or definitely did not plan to get vaccinated.

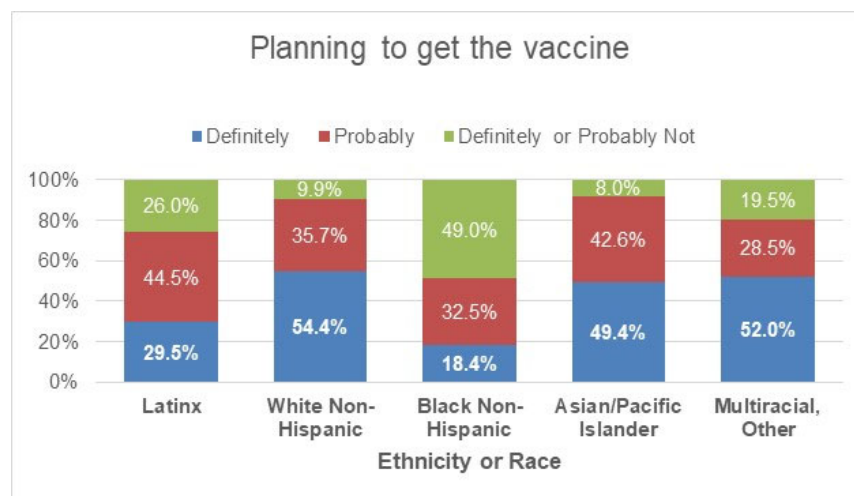


Figure 7. Ethnic and racial differences in plans for COVID-19 vaccination

3. People Who are Not Worried about Infection Do Not Plan to Get Vaccine

In our initial survey conducted in the summer of 2020, we asked respondents, “How worried are you about you or someone in your family being infected with the COVID-19 coronavirus?” We expected respondents who expressed more worry about COVID-19 infection would have definite plans to get the vaccine. This section of the report presents information about Boston respondents’ worries overall and by gender, age, level of education, and race/ethnicity. Then, we explore the association between levels of worry and plans to get vaccinated.

Figure 8 shows the association of worries about being infected with the coronavirus with plans to get the vaccine with the two responses (“Not at all worried” and “Not too worried”) combined—two patterns emerge. First, an increasing percentage of respondents

³ Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2003). Race and trust in the health care system. *Public health reports* (Washington, D.C. : 1974), 118(4), 358–365. <https://doi.org/10.1093/phr/118.4.358>

“definitely” planning to get the vaccine appears to be associated with respondents’ expression of being not worried to very worried, from 28% to 59%, respectively. However, a second finding is that respondents who are “extremely worried” about either them or family members getting the coronavirus are less likely to “definitely” plan to get vaccinated. Apparently, being extremely worried about infection does not directly lead to plans to get vaccination. Respondents who were extremely worried were more ambivalent about the vaccine. It may be that some respondents’ worries are about more than the infection and they may be worried about vaccines as well.

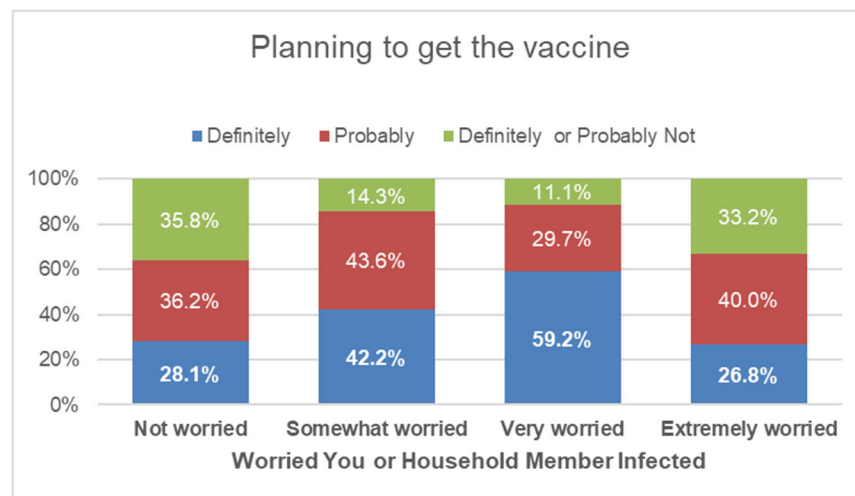


Figure 8. Worried about COVID-19 infection and plans to get the vaccine

Appendix B on page 16 presents a table showing responses to the question about COVID-19 worries for all respondents and cross tabulated by respondents’ age, gender, level of education, and race or ethnicity. Respondents who were “extremely worried” about COVID-19 infection were likely to have high school education or less, be older, or Black. Overall, 1 in 4 Boston respondents were “extremely worried” and almost 1 in 3 were “very worried” about COVID-19 infection, either for themselves or family members. Women were more likely than men to be extremely worried (29.4% compared to 22.8%). Age is associated with extreme worries about infection. Respondents with a high school education or less are much more worried than those with more education (48.6% extremely worried, compared to less than 26% among more educated respondents). Black and Latinx respondents stated that they were extremely worried at much higher rates than Whites. One in three Latinx respondents, one-half of Black respondents, and only 11% of Whites were extremely worried.

Note that the four groups that are most worried about the virus—women, those over 65, those with less formal education, and those who are Black—also reported in the figures above that they were less likely than average to want to get the vaccine.

4. Efforts to Encourage Vaccination Must Focus on Neighborhoods

The most difficult task for getting to what public health leaders call “herd immunity” will require significant proportions of neighborhood residents getting the COVID-19 vaccine. Boston neighborhoods historically have differed in terms of where racial and ethnic minorities reside; thus, efforts to encourage vaccination may need to be tailored by neighborhood. We found that greater percentages of Black and Latinx residents are hesitant to get the COVID-19 vaccine, compared to Whites. And since Latinx and Black residents represent majorities in multiple Boston neighborhoods, it is likely that some neighborhoods will have very few residents looking to be first in line to get the COVID-19 vaccine. This could severely slow the pursuit of herd immunity in these communities.

Using the rates of hesitancy presented in Figure 7 by race and ethnicity and American Community Survey data for race and ethnicity in each neighborhood, we extrapolated what percentage of the 25 Boston neighborhoods’ adult population may be likely to “probably not” or “definitely not” get the coronavirus vaccine. Figure 9 estimates the percentage of adult residents in each neighborhood who are likely to avoid vaccination. Given the rates of hesitancy expressed by Black and Latinx respondents in the *Living in Boston during COVID-19* survey, it can be expected that vaccination may be slower in some neighborhoods. The figure shows that vaccine hesitancy rates last fall are highest in neighborhoods with greater concentration of Black and African American residents—Mattapan, Roxbury, Dorchester Central, and Hyde Park.

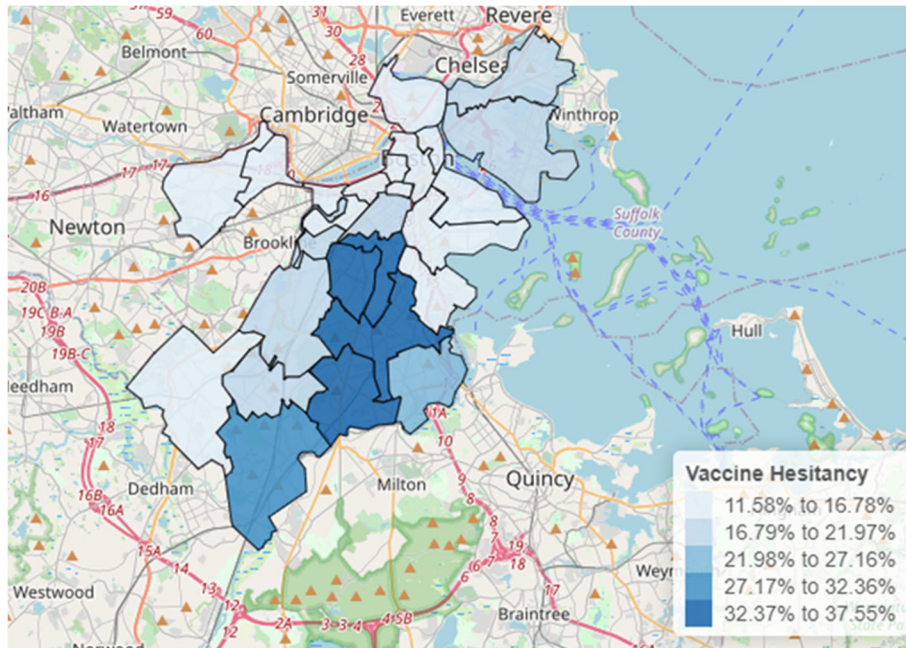


Figure 9. Percentage of respondents “Definitely not” or “Probably not” planning to get the vaccine in Boston neighborhoods extrapolated from *Living in Boston during COVID-19* survey data to American Community Survey race and ethnicity data for each neighborhood

5. Conclusions

The *Living in Boston during COVID-19* follow-up survey provides information about which Boston residents are clearly likely to get vaccinated and those who are more likely to hesitate. Personal characteristics, such as gender, age, and ethnicity, are clearly associated with plans to get the COVID-19 vaccine.

Our findings for Boston mirror nationally representative surveys. For example, we found that almost 80% of Boston respondents were planning to get the coronavirus vaccine with slightly more than 40% having definite plans for vaccination. This compares to more than 2/3rds of the nationally-representative *Understanding Coronavirus in America* tracking survey respondents saying they will likely get the vaccine.⁴

Our results related to race and ethnicity are also similar to national estimates with Whites more likely to want to get the vaccine, Blacks less likely, and Latinos in between. Nationally, men are more likely than women to plan to get the vaccine. Another observation from national surveys is a slight trend in more people being willing to get the vaccine as time passes and people hear more about it. For example, the *Understanding Coronavirus in America* September survey, that was done at about the same time as our

⁴ <https://covid19pulse.usc.edu/>, accessed 31 December 2020

COVID in Boston survey found 60% willing to get the vaccine. In a more recent survey, that number is now somewhat higher, around 65%.⁵ This uptick in the percentage of people wanting to get a vaccine is likely due to people's observations of the rollout of vaccinations among larger groups of people.

However, even though more people are willing to get the vaccine, there are still some groups of people who are less willing to get the coronavirus vaccine. The most serious finding relates to race and ethnicity. We know that neighborhoods continue to be characterized by race and ethnicity. If some groups are less likely to get vaccines and they tend to live in majority-minority neighborhoods, it may take longer to get vaccination levels to the percentage of people needed to mitigate spread of the COVID-19 coronavirus.

Our neighborhood-level estimates are based on survey responses from fall 2020. The COVID-19 vaccine began distribution in December 2020.⁵ As vaccination rolls out throughout the Commonwealth of Massachusetts, rates of acceptance among Boston residents in communities of color may shift in a positive direction.

Efforts to encourage vaccination will require tailored messages from trusted members of communities to achieve herd immunity, especially at the neighborhood level. And since Boston, like many U.S. cities, has neighborhoods that have ethnic and racial identities, efforts to get over 70% of residents immunized need to come from community-level influencers and leaders. Furthermore, these efforts must overcome hesitancy that is clearly associated with age, gender, and having children in the household.

⁵ <https://www.mass.gov/covid-19-vaccine-in-massachusetts>, accessed 5 January 2021



6. Appendix A. NSF Beacon Survey Methodology

The NSF-Beacon survey is a collaboration of the Boston Area Research Initiative (BARI) at Northeastern University, the Center for Survey Research (CSR) at University of Massachusetts Boston, and the Boston Public Health Commission (BPHC), funded by the National Science Foundation's Human-Environment and Geographical Sciences (HEGS) program through a grant for rapid-response research (RAPID) for collecting ephemeral data during or following a crisis. The survey captures the experiences of 1370 Bostonians during the first months of the COVID-19 pandemic, including ability and tendency to follow social distancing recommendations, attitudes towards regulations, and economic and personal impacts of the pandemic. The design allows for a unique observation of neighborhood-level estimates for these factors.

I. Sample Design and Final Sample

The NSF-Beacon survey used a stratified random sample that divided the city of Boston into 25 distinct neighborhoods. The neighborhoods were defined in collaboration with members of the Mayor's Office and other experts based on social, demographic, and historical salience. They were constructed to conform to census block group boundaries, meaning that metrics associated with census geographies (including from the U.S. Census Bureau) could be linked with the data. The Marketing Systems Group (MSG) was contracted to draw a simple random sample of residential addresses from within each neighborhood. They used the most recent United States Postal Service Computerized Delivery Sequence File (CDSF) to draw Address-Based Samples (ABS) of residential addresses. Four neighborhoods with a higher proportion of Black or Latinx populations were oversampled (Hyde Park, Mattapan, Lower Roxbury, and East Boston-Eagle Hill). As shown in Table 1, there were unbalanced sample sizes and selection probabilities across neighborhoods, meaning analysis of the data requires survey weights to correct for these differences. In addition to the survey being administered to the sample obtained for the NSF-Beacon study, we also invited participants in the previously constructed Beacon panel, which had been recruited using the same 25 neighborhood stratified sample design.

II. Data Collection Methodology

Paper copies of the survey, plus instructions for completing and returning, and a \$2 cash incentive were mailed to all sampled addresses. For three neighborhoods known to have higher percentages of Hispanic households, the materials mailed, including the survey instrument, were in both English and Spanish. All recipients were also given the option of completing the survey online and an associated URL. A randomly assigned half of the mailed questionnaires had instructions for the oldest adult 18+ in the household to complete the survey while the other random half had instructions for the youngest adult 18+ to complete the survey. In this manner, an attempt was made to randomize the age of the respondent within the household completing the survey. Approximately two weeks after the initial mailing of materials, a second mailing was sent to nonrespondents, though with no additional incentive.

Table 1. Survey neighborhood sampling specifications and data collection results by neighborhood

Neighborhood	Number of Sampled Addresses	Probability of Selection	Number of Completed Questionnaires	Response Rate
1 Hyde Park	364	0.02967	59	17.10%
2 West Roxbury	189	0.01407	59	32.24
3 Roslindale	188	0.01820	73	40.11
4 Mattapan	362	0.02704	61	17.58
5 Dorchester Central	189	0.01042	39	21.08
6 Dorchester South	191	0.01671	60	32.97
7 Dorchester North	188	0.02661	42	23.86
8 Lower Roxbury	372	0.05977	57	17.59
9 Roxbury	188	0.01511	37	20.67
10 Jamaica Plain	188	0.01138	71	39.66
11 Jamaica Plain-Mission Hill	191	0.02737	55	30.73
12 South End	188	0.01070	57	32.02
13 Fenway/Kenmore	195	0.01169	39	21.91
14 Allston	192	0.01702	51	28.81
15 Brighton	187	0.00839	58	31.87
16 Back Bay	194	0.01871	53	31.36
17 Beacon Hill	204	0.03593	53	30.11
18 South Boston	191	0.01150	45	24.86
19 Seaport	192	0.04554	40	22.47
20 Central	198	0.06119	50	27.78
21 Central Northeast	196	0.02839	58	33.14
22 Central West	200	0.01665	55	32.35
23 Charlestown	190	0.02286	62	34.25
24 East Boston	189	0.02501	43	24.29
25 East Boston-Eagle Hill	355	0.04189	93	27.84
TOTAL	5481		1370	26.88%

¹ Response rates computed using AAPOR Method 3.

III. Data Collection Results

The final sample included 1370 completed surveys (1208 paper, 162 online; 30 were completed in Spanish). The number of completed surveys ranged from 37 in Roxbury to 93 in East Boston-Eagle Hill. Overall response rate was 26.88% and ranged from a low of 17.10% in Hyde Park to a high of 40.11% in Roslindale. Full details on each neighborhood sample are presented in Table 1. An additional 256 completed surveys were obtained from members of the previously constructed Beacon panel, bringing the total number of completed surveys to 1626.

IV. Weighting of survey data

The sample requires weighting to account for both differing probabilities of selection and response rates across neighborhoods, especially insofar as these differences create a sample that is demographically and geographically non-representative. We created two survey weights, one for sample design factors including probability of selection and number of adults in the household adjusted for nonresponse bias across neighborhoods, the other which adds a post-stratified weight to account for demographic non-representativeness. Additionally, we conducted this process twice. First, we did it only for respondents to the NSF-Beacon survey. Second, we replicated the procedures for the dataset that combined the NSF-Beacon survey responses with respondents from the previously constructed Beacon panel (values reported in Table 2 for weighting are highly similar for the NSF-Beacon responses alone and the merged data set).

Weights for Nonresponse Bias

Weighting for nonresponse began by neighborhood with the inverse of the probabilities of selection adjusted for the response rates displayed by neighborhood according to the equation (see Table 1 for values):

$$W_b = (\text{Inverse of probability of selection}) / (\text{neighborhood response rate})$$

The final nonresponse adjusted weight further multiplies the base weight by the number of adults 18+ in the household (capped at 4 to prevent excessively large weights). Finally, these weights are adjusted so that the percentage of the total 18+ population in Boston that belongs in each neighborhood agreed with control percentages computed from the 2014-2018 5-year American Community Survey (ACS) data from the Census Bureau. These weights sum to the ACS estimate of the total 18+ population in the city of Boston. Therefore, the final nonresponse adjusted weight can be defined as:

$$W_{NR} = (W_b)(\text{number of adults in household})(\text{ACS population adjustment factor})$$



Post-Stratified Weights

As shown in Table 2, even after nonresponse weights, the respondents to the survey were not demographically representative of Boston's population. Most notably, people with education beyond 4-year college degrees were overrepresented and those with a high school education or less were underrepresented. Women were also overrepresented relative to men and White non-Hispanics were overrepresented relative to Blacks and Hispanics. There was also a smaller age bias with too many 65+ people and too few 18-34. A final adjustment to the survey weights was implemented to adjust for differential survey nonresponse by age, gender, race/Hispanic origin, and education. Control percentages for these categories were computed from the 2014-2018 5-year ACS data. Post-stratification factors were then computed to match weighted survey data to citywide percentages. The final post-stratified weight can be expressed as:

$$W_{PS} = (W_{NR})(\text{post-stratified factors})$$

It should be noted, though, that a small amount of trimming of weights, less than one percent of all sample cases, was employed to prevent some extreme values in the post-stratified weights. As shown in Table 2, this additional adjustment process brought the weighted survey estimates much more in line with ACS citywide estimates.

Weights for the second mail and web-based survey.

For the follow-up survey, where 932 of the original 1626 respondents answered questions, new post-stratification factors were developed to again match weighted survey data to the 2014-2018 5-year ACS.

Table 2. Comparison of ACS controls to nonresponse and post-stratified weights

Respondent Characteristics	ACS Controls	Nonresponse Weight	Post-stratified Weight
Age			
18-34	46.9%	38.4%	46.2%
35-49	21.3	20.1	21.5
50-64	18.4	22.1	18.6
65+	13.4	19.4	13.7
Gender			
Male	47.6%	38.0%	47.6%
Female	52.4	62.0	52.4
Education			
High School including GED or less	33.6%	16.4%	32.5%
Some college or 2-year degree	17.8	14.8	18.0
4-year college degree	26.5	29.3	27.0
Beyond 4-year college degree	22.1	39.5	22.5
Race/Hispanic origin			
White non-Hispanic	49.4%	57.5%	49.4%
Black non-Hispanic	20.6	15.8	20.6
Hispanic	16.9	12.4	16.9
Other	13.1	14.3	13.1

7. Appendix B: Worries about coronavirus infection by gender, age, level of education, and race/ethnicity

	How worried about self or someone in family being infected?				TOTAL % Unweighted n
	Not at all or Not too ⁶	Somewhat	Very	Extremely	
All Respondents	12.9%	29.8%	30.4%	26.9%	100% (924)
<i>Gender</i>					
Men	12.5%	35.1%	29.6%	22.8%	100% (363)
Women	12.9%	25.4%	32.3%	29.4%	100% (541)
<i>Age</i>					
18 to 34	13.6%	37.2%	37.4%	11.9%	100% (281)
35 to 49	15.8%	28.7%	26.4%	29.2%	100% (204)
50 to 64	7.8%	23.3%	31.9%	37.0%	100% (201)
65 or older	12.6%	16.8%	16.1%	54.5%	100% (207)
<i>Education</i>					
High school or less	10.8%	10.7%	29.9%	48.6%	100% (113)
Some college	18.2%	25.6%	30.8%	25.4%	100% (107)
College graduate	11.6%	46.2%	29.4%	12.8%	100% (271)
Post graduate education	11.7%	41.3%	33.4%	13.5%	100% (409)
<i>Race or ethnicity</i>					
Latinx	13.3%	27.2%	26.7%	32.8%	100% (70)
White non-Hispanic	15.3%	38.6%	35.0%	11.2%	100% (624)
Black/African American	11.0%	13.4%	21.8%	53.8%	100% (84)
Asian/Pacific Islander	2.2%	27.0%	35.1%	35.7%	100% (17)
Multiracial or other	10.1%	25.6%	44.7%	19.6%	100% (31)

⁶ Only 23 respondents selected “Not at all worried.” They are combined with the 96 respondents stating they were “Not too worried.”