Living in Boston During COVID-19: Inequities in Navigating a Pandemic

Report #1 in a Series

Boston Area Research Initiative

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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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Funding

The survey was funded by the National Science Foundation's Human-Environment and Geographical Sciences (HEGS) program through a grant for rapid-response research (RAPID; Award #2032384).

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 that 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 towards regulations; and the economic and personal impacts of the pandemic. The survey 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.

This is the first in a series of reports describing the results of the survey and related research. Here we concentrate on the frequency of multiple routine, or *necessary*, activities—including going to work, accessing food, using public transit, and exercising—that might expose individuals to infection risk. By examining how these activities were distributed by neighborhood, race, and socioeconomic status in both April and the Summer, we identify a variety of inequities in how different populations were able to mitigate risk.

Main Findings

- **Most respondents reported minimizing necessary activities outside the house**, especially in April. Very few went physically to work or rode public transit, and most went to the grocery store or food pantry 1-2 times a week. A little under half ordered food or groceries for delivery, lowering their risk exposure. There were only modest increases in these activities in the Summer.
- **There were stark differences in these activities between communities.**
    - **Black and Latinx residents and those with lower income were more likely to physically go to work**, with nearly a third working fully in-person in April, compared to fewer than 15% of White and Asian respondents.
    - **Lower-income respondents took on more risk to access food** by making more total weekly trips to grocery stores and food pantries. Some higher-income respondents appeared to be offsetting this risk by ordering food or groceries for delivery, which very few low-income respondents did.
    - Although very few individuals reported *any* transit riding in April or the Summer, **those that did ride transit were concentrated in the majority-minority neighborhoods** of Roxbury, Dorchester, Mattapan, and East Boston.

- **Outdoor exercise was high in affluent, majority-White, low-density neighborhoods** (e.g., Jamaica Plain), but rare in low-income, majority minority neighborhoods. This may have increased the risk of exposure somewhat; it also suggests the ability to maintain a healthier lifestyle in spite of the pandemic.

Conclusions and Next Steps

While all Bostonians have struggled with navigating the challenges of the pandemic, we see clear inequities in how different populations were able to manage risk exposure in April and the Summer. This suggests a need for targeted ways in which we might support low-income communities during the second wave. In the next report, we turn our attention to attitudes, mask-wearing, and high-risk, discretionary behaviors, like visiting in other peoples' houses or attending gatherings, and how they were distributed across the city in April and the Summer.

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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 survey was conducted over the summer as 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). It was funded by the National Science Foundation's Human-Environment and Geographical Sciences (HEGS) program 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 as a whole. More detail on the survey methodology can be found in Appendix A.

This is the first 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, 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

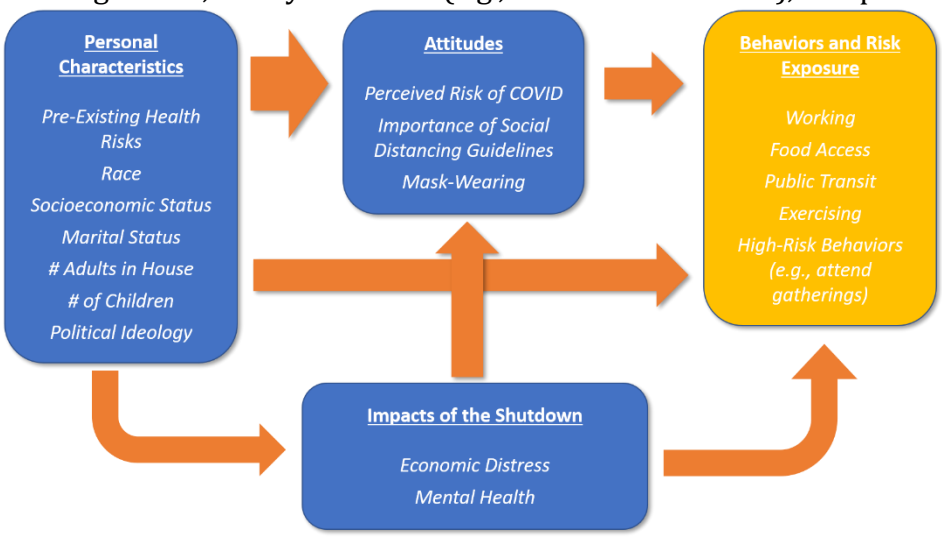

Figure 1. Relationships between personal characteristics, attitudes, behaviors, and the impacts of the shutdown to be explored by reports. Content for this report highlighted in yellow.

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. In this first report, we describe how Bostonians engaged in a series of necessary day-to-day activities in April and the Summer, revealing a variety of inequities in how residents of different neighborhoods and racial and socioeconomic groups were able to mitigate their risk exposure. Future reports will add to this by examining: high-risk behaviors, mask-wearing, and other attitudes and beliefs regarding the virus and risk; how an individual's personal characteristics predict attitudes and perceptions, and how those personal characteristics *plus* attitudes and perceptions predict the kinds of activities people have engaged in during the pandemic; economic and mental health impacts across communities, and how they relate to behaviors and attitudes across individuals; and how these results 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. Necessary Activities in Boston

The survey asked respondents to describe how many days per week they had engaged in multiple activities, both in the average week in April and in the last seven days (the survey was administered in early July; for sake of simplicity, we refer to this as Summer). Among these were a variety of routine, or *essential*, activities (see Table 1 for more detail; the survey also asked about high-risk behaviors like attending gatherings, which we explore further in the second report in the series).

- *Going physically to work*;
- *Food trips*, including visits to grocery stores and food pantries;
- *Ordering delivery* of food and groceries;
- *Riding public transit;* and
- *Exercising and walking outdoors*.

In a typical week in April / In the last week, how many days did you…
Going to Work
Leave home to do your work?
Riding Public Transit
Ride on a bus, trolley, or subway train?
Food Trips
Go to a food pantry or food bank for groceries?
Go to a store for groceries?
Ordering Delivery
Order food delivered to your home from a restaurant?
Order food delivered to your home from a grocery store?
Exercise and Walking Outdoors
Go outside for exercise or walking?

Table 1. Survey items measuring frequency of essential activities in April and Summer, by category.

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

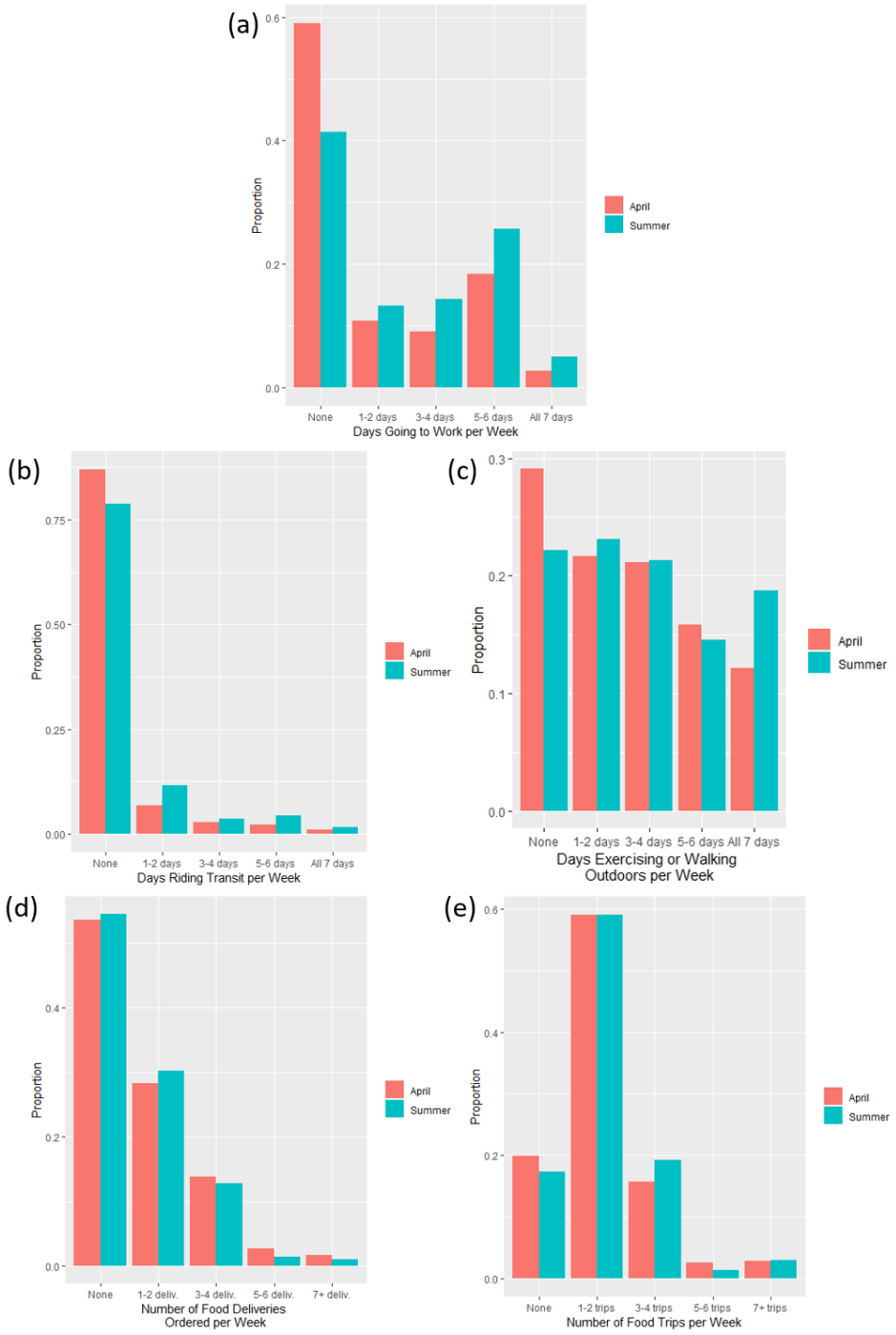

Figure 2. Frequencies of essential, out-of-house behaviors in April and Summer, including (a) days going to work, (b) days riding public transit, (c) days exercising or walking outdoors, (d) number of food deliveries and (e) number of food trips per week.

Figure 2 shows that the majority of people participated minimally in necessary out-of-the house activities in April. Most people reported making food trips 1-2 days per week and never riding public transit. Exercising outdoors, however, was more common, with only about half of people reporting never doing so, and many others reporting that they did so as many as 4 days per week. Meanwhile, a little under half (46%) of respondents reported ordering food or groceries for delivery at least once per week in April, potentially offsetting additional trips that would increase total exposure risk. That said, just over 40% were going physically to work at least one day per week, with just over 20% going to work 5 or more days per week.

Interestingly, very little changed between April and the Summer. There were slight shifts toward essential out-of-the-house activities: the proportion of people who reported never making food trips dropped from 20% to 17%; the proportion of people riding public transit increased from 13% to 21%; and the proportion of people exercising outdoors at least once a week increased from 71% to 78%. The proportion of people ordering delivery was almost exactly the same, but most individuals who were ordering delivery often in April (5-10 times per week) were doing so substantially less often in Summer. The one notable exception was a shift toward in-person work, with only around 40% of people continuing to work completely remotely in Summer.

These overall trends would seem to fit neatly with the public understanding of how people have been advised to navigate the pandemic, albeit setting aside high-risk discretionary behaviors like attending gatherings, which we will examine in our second report. That said, we will see in the following sections that the ability to minimize necessary out-of-the-house activities manifested in varied ways across populations, highlighting inequities in how well individuals in different circumstances were able to mitigate potential exposure. We describe four such stories here: the ability to work from home; the ability to minimize food trips; the need to ride public transit; and engagement in outdoor exercise.

3. Who Had to Go to Work?

A major narrative of the pandemic has been the question of who still had to leave the house in order to work, making it impossible for them to fully shelter in place. Returning to Figure 2a, it is apparent that respondents' work schedules in April largely broke down into two types: those whose work schedules were entirely remote (59% of respondents) and those that required going out five or more days per week (21%); the remainder fell in between those two poles. Mapping this geographically, we see that respondents from the city's southernmost neighborhoods—Mattapan, Hyde Park, West Roxbury, Central Dorchester—and East Boston were leaving the house to go to work more often than residents of other

neighborhoods. Mattapan is the most striking, with nearly a third going to work 5 or more days per week and the average respondent going to work approximately 3 days per week.

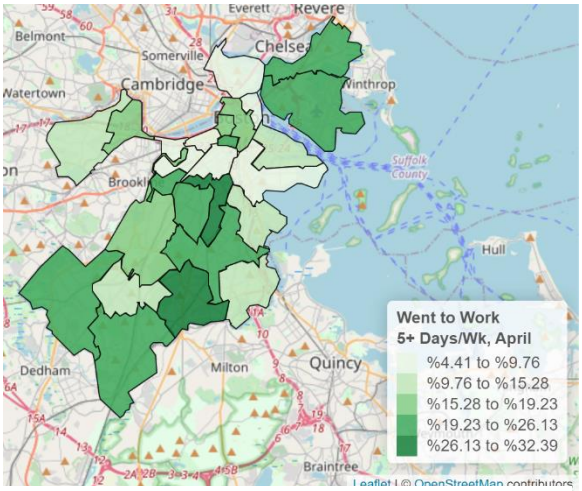

Figure 3. Proportion of individuals going to work 5 or more days per week in April, by neighborhood.

These geographic distinctions appear to reflect the different types of jobs that respondents from the neighborhoods held. For instance, over 50% of respondents from West Roxbury, Mattapan, East Boston, and Hyde Park reported having jobs that "put them in contact with the public" (compared to 46% across the sample); the majority (52%) of people with such jobs reported going to work 5 or more days per week. Healthcare workers, 78% of whom reported going to work 3 or more days per week, were also overrepresented in these neighborhoods (31-47% by neighborhood, relative to a global mean of 28%).

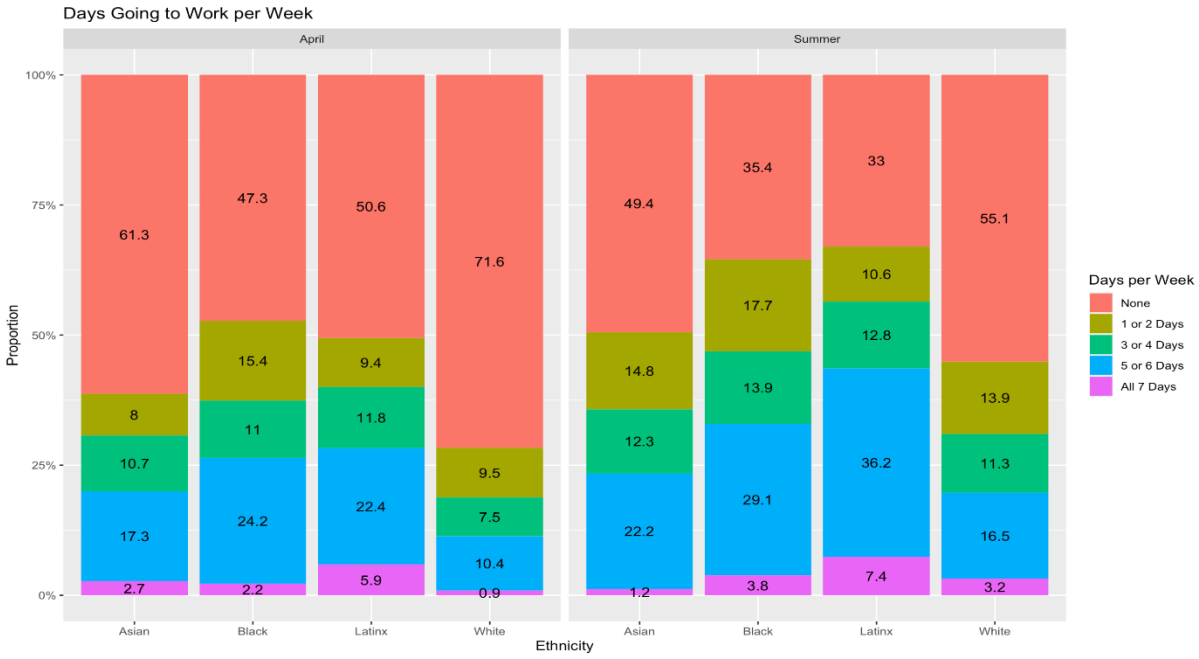

Figure 4. Proportions of individuals going to work different numbers of days per week in April (left panel) and Summer (right panel), by race.

In breaking down these differences by race and socioeconomic status, we see that as many Latinx and Black respondents were going physically to work for a full work week as were working remotely, whereas the same was true for a small minority of White and Asian respondents (see Figure 4). Similarly, those in lower-income brackets were far more likely to be going physically to work than those in higher income brackets. This points to themes noted throughout the early days of the pandemic that in our technologically-oriented age many of the jobs that require a physical presence are lower-income jobs often held by Black and Latinx workers, leading those populations to incur more risk of exposure.

Turning our attention to the Summer, the proportion of individuals going physically to work went up overall (41% worked entirely remotely and 31% went to work 5 or more days a week), but the disparities across neighborhoods and groups were the same, if not greater. The map across neighborhoods was nearly identical, with people living in the southern neighborhoods and East Boston most often going to work physically (see Figure 5). We do see a moderate increase in the amount of people working semi-remotely, going to work physically 1-4 days per week, and this occurs for all racial groups and primarily those in middle- to low-income jobs (see Figure 4). More strikingly, the vast majority of Black and Latinx respondents appeared to be back in the workplace full time, meanwhile most White and Asian respondents remained predominantly or entirely working from home.

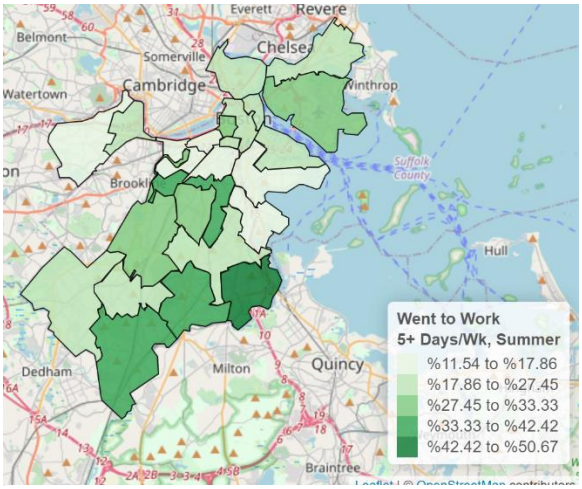

Figure 5. Proportion of individuals going to work 5 or more days per week in Summer, by neighborhood.

4. Balancing Food Access and Infection Risk

Food is a fundamental necessity. This was captured distinctly by the labeling of grocery store workers as "essential workers" throughout the early days of the pandemic. All households need food, but some were more able than others to adopt strategies that diminished the frequency with which they left the home to purchase food, thereby limiting their risk exposure. The survey included two measures that can tell this story: one quantifies how many trips people made to either a grocery store or food pantry; the other quantifies how often they ordered groceries or food for delivery.

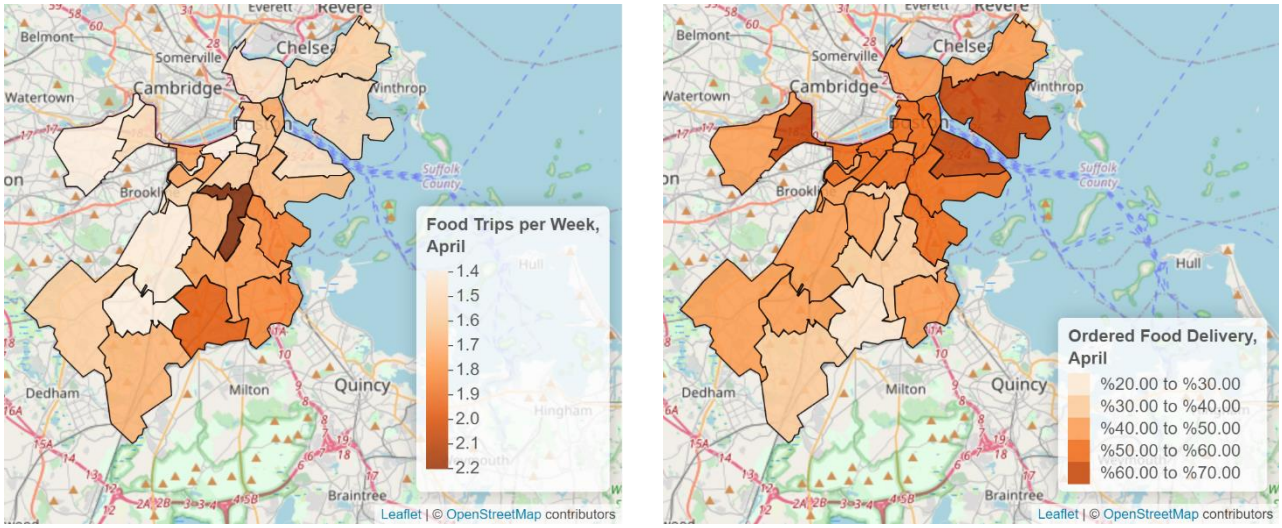

Figure 6. Differences across neighborhoods in weekly food access strategies in April, as seen in the frequency of food trips (left panel) and food delivery orders (right panel).

Unsurprisingly, we see stark differences in strategies for food access across the socioeconomic spectrum. We can see this geographically in April as respondents from majority-minority neighborhoods in Dorchester, Mattapan, and East Boston made moderately more food trips. Meanwhile, deliveries were concentrated in the more affluent neighborhoods in the north of the city, from South Boston and Downtown across to Allston and Brighton (see Figure 6). These results were almost exactly the same in the Summer.

The disparities in behaviors would seem to reflect the income differences between these neighborhoods. The most obvious interpretation is that individuals with more resources chose to pay the markup for delivery to avoid having to go to the grocery store and potentially expose themselves to infection. Indeed, about 60% of people with income below $75,000 per year reported zero delivery orders in April, but this proportion flipped to 40% for those making more than $75,000 per year. It is also possible that those with more resources also started making larger purchases, stocking up on food in order to limit their total number of trips, which may not have been an option for less affluent Bostonians—especially at a time of economic upheaval. For instance, 62% of respondents in the <$30,000 income bracket went on 2 or fewer trips per week, but the same was true for over 90% of individuals making over $75,000. Interestingly, if we add food trips and grocery delivery orders per week, these differences across income groups disappear. This implies that the primary strategy that higher-income Bostonians adopted for avoiding exposure was ordering groceries, not making fewer, larger purchases.

5. Who Rides Public Transit in a Pandemic?

Transit use was greatest in majority-minority neighborhoods in both April and Summer, including parts of Roxbury, Dorchester, and East Boston (see Figure 7). This mirrors reports from the MBTA (and others using their data) that bus service and the Blue Line have seen much higher relative ridership during the pandemic than other routes when compared to pre-COVID ridership. Meanwhile, respondents from more affluent neighborhoods that are heavily served by public transit, such as Downtown and South Boston, had almost zero transit usage. When we look at this in terms of race and income, unsurprisingly, Black and Latinx respondents and those in lower income brackets were more likely to report transit usage. Importantly, the majority of individuals in *all* racial and socioeconomic groups did not ride at all in April, but there were considerably more individuals who reported *any* riding (see Figure 8).

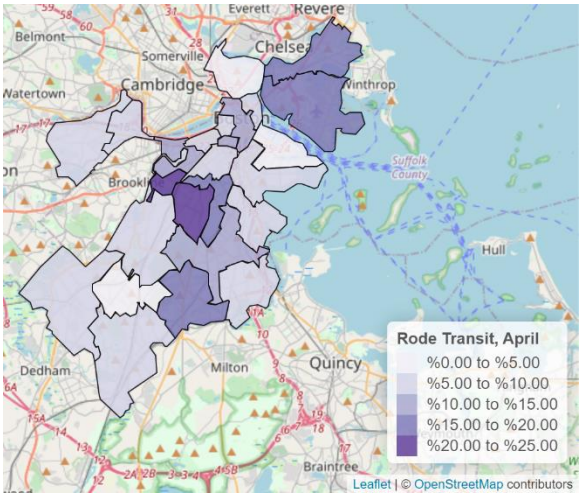

Figure 7. Proportion of individuals riding transit at least once a week in April, by neighborhood.

There are two ways that we might interpret these disparities, and it is likely that the truth is at their intersection. First, we have already seen that lower income, minority respondents made more trips for both work and food, which would seemingly make them more likely to have to ride public transit at some time. Second, these individuals were potentially less likely to own their own vehicle and thus unable to avoid public transit. It is the combination of these factors that might best explain this overall disparity as public transit usage was present primarily in neighborhoods that were both lower income and have multiple transit options.

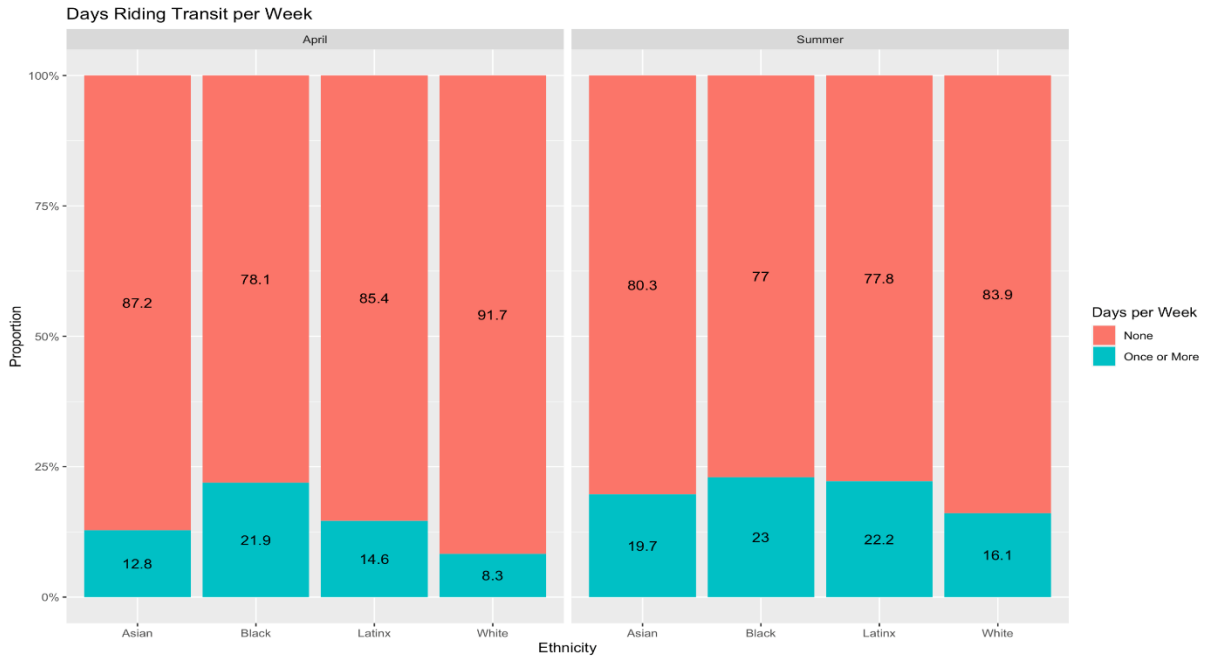

Figure 8. Proportion of individuals riding transit by race in April (left panel) and Summer (right panel).

6. Outdoor Exercise and Walking

Exercise and walking might not be seen by all as a true necessity. That said, physical activity is important for health, and at a time as challenging as the pandemic it is a low-risk, potentially therapeutic was for individuals to relieve some of the pressure of being under lockdown. Further, it is worth noting that our question is not exclusively about "exercise" but also asks about walking outdoors, which broadens the types of activities that people might consider relevant.

With this in mind, the map of outdoor exercise habits in Figure 9 is striking in that it is practically the opposite of the map of transit usage: high-frequency exercisers were

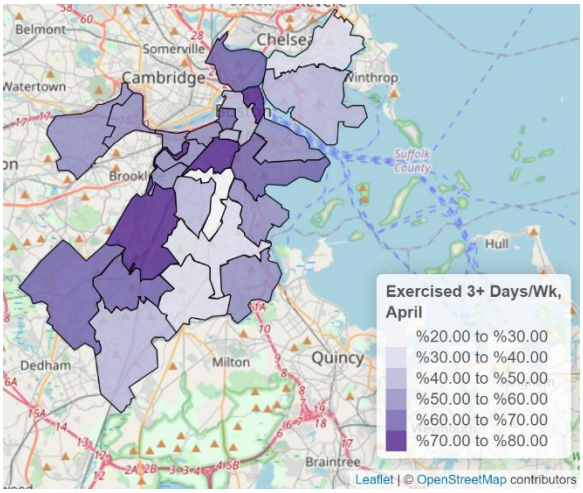

Figure 9. Proportion of individuals exercising or walking outdoors 3 or more days per week in April, by neighborhood.

Figure 10. Proportion of individuals exercising or walking outdoors different numbers of days per week in April (top panel) and Summer (bottom panel).

concentrated in the high-income neighborhoods ringing the city, from West Roxbury in the southwest, north through Jamaica Plain to Allston-Brighton, and across to Charlestown, North End, and South Boston in the east. Unsurprisingly, these geographic differences translate to ethnic and socioeconomic differences as well. Looking at Figure 10, we see a strong gradient with those in high income brackets exercising and walking outdoors numerous times a week, and nearly half of those in the lowest income brackets never doing so. Those exercising in general increased in the Summer, these differences persisted. In terms of race, White respondents were least likely say they never exercised outdoors (~15% and ~10%, respectively, for White respondents). Meanwhile, the plurality—typically around 40%—of Black, Latinx, and Asian respondents said they never exercised outdoors during both time periods.

As we look at these results, it is worth considering multiple interpretations. First, it could be that the additional trips to work, grocery stores, and the time on public transit might be adding up to diminish the amount of time that less affluent respondents had to exercise. Second, it could be that the lower density and greater number of parks in neighborhoods at the edges of the city means less risk exposure and the ability to socially distance while exercising, leading to more such behavior. Third, it could be that regular exercise was already more a part of the daily routine in these neighborhoods, though we

cannot ascertain this without baseline information on behavior before the pandemic. Whatever the specific reason, it points to disparities in the tendency and ability of different groups to engage in an activity that is low-risk and could have positive impacts on physical and mental health during a highly challenging time.

7. Conclusion

The *Living in Boston during COVID-19* survey captures how experiences of and attitudes toward the pandemic vary across neighborhoods and populations. In this first report we have concentrated on inequities in essential activities—including work, food access, transportation, and exercise—across neighborhoods, race, and socioeconomic status. As cases rise again, these disparities deserve our attention and creative problem solving. Interventions like intensified investment in testing and tracing for low-to-middle-income frontline workers will help protect them, their families, and neighbors; or the arrangement of subsidized food delivery or organized "food pick-up collaboratives" could limit the need of individual households to go to grocery stores themselves.

Effective policies and interventions will also depend on better understanding the precise sources of the disparities. Beyond income itself, factors like the number of adults or children in a household, political ideology, and attitudes and behaviors toward the virus and social distancing could all contribute. We will explore these nuances more deeply, but in the next report we first need to better understand those attitudes and behaviors and their own distribution across the city.

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. NSF-Survey neighborhood sampling specifications

Neighborhood	# of Sampled Addresses	Prob. of Selection	# of Completed Surveys	Response Rate[1]
Allston	192	0.01702	51	28.81%
Back Bay	194	0.01871	53	31.36
Beacon Hill	204	0.03593	53	30.11
Brighton	187	0.00839	58	31.87
Central	198	0.06119	50	27.78
Central Northeast	196	0.02839	58	33.14
Central West	200	0.01665	55	32.35
Charlestown	190	0.02286	62	34.25
Dorchester Central	189	0.01042	39	21.08
Dorchester North	188	0.02661	42	23.86
Dorchester South	191	0.01671	60	32.97
East Boston	189	0.02501	43	24.29
East Boston-Eagle Hill	355	0.04189	93	27.84
Fenway/Kenmore	195	0.01169	39	21.91
Hyde Park	364	0.02967	59	17.10
Jamaica Plain	188	0.01138	71	39.66
Jamaica Plain-Mission Hill	191	0.02737	55	30.73
Lower Roxbury	372	0.05977	57	17.59
Mattapan	362	0.02704	61	17.58
Roslindale	188	0.01820	73	40.11
Roxbury	188	0.01511	37	20.67
Seaport	192	0.04554	40	22.47
South Boston	191	0.01150	45	24.86
South End	188	0.01070	57	32.02
West Roxbury	189	0.01407	59	32.24
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 = (Inverse of probability of selection) / (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:

$W_{NR} = (W_b)$(number of adults in household)(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:

$W_{PS} = (W_{NR})$(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.

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

	ACS	Nonresponse	Post-stratified
Age			
18-34	46.90%	38.40%	46.20%
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	47.60%	38.00%	47.60%
Female	52.4	62	52.4
Education			
High School including GED or less	33.60%	16.40%	32.50%
Some college including 2-year degree	17.8	14.8	18
4-year college degree	26.5	29.3	27
Beyond 4-year college degree	22.1	39.5	22.5
Race/Hispanic origin			
White non-Hispanic	49.40%	57.50%	49.40%
Black non-Hispanic	20.6	15.8	20.6
Hispanic	16.9	12.4	16.9
Other	13.1	14.3	13.1