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Results of a Baseline Community Food Assessment on the Mississippi Gulf Coast: The Value of a Two-Pronged Methodology

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Abstract

The Mississippi Public Health Institute (MSPHI) [1] received funding from the Centers for Disease Control and Prevention's Racial and Ethnic Approaches to Community Health (CDC REACH) [2] program to implement the Healthy Families, Mothers, and Babies initiative [3]. Among its other aims, the five-year project (2018 - 2023) uses a health equity lens to improve access to healthier foods for residents in Hancock, Harrison, and Jackson counties along the Mississippi Gulf Coast. A baseline community food assessment was completed in 2019 as an initial snapshot of community food access needs and resources. The assessment was administered with input from a community-based coalition and utilized a two-pronged methodology: (1) a self-reported community resident survey and (2) an organizational stakeholder survey. These complementary assessment instruments were administered prior to the COVID-19 pandemic that has presented formidable challenges to food pantries in Mississippi and throughout the U.S. The findings reported in this assessment remain relevant, and likely have even greater urgency, given the exacerbation of food insecurity due to the pandemic. The results reveal a pronounced need for expanded healthy food access in the catchment region as well as a general convergence in resident and stakeholder perceptions, with a few noteworthy exceptions. Given the holistic results offered by insights from both community residents and organizational stakeholders, the two-pronged assessment methodology utilized by the Mississippi REACH team emerges as a promising avenue for measuring healthy food access in other communities within and outside the U.S.

Keywords: *Food Access; Healthy Foods; Food Insecurity; Community Health; Racial Disparities; Nutrition*

Abbreviations

CDC: Centers for Disease Control and Prevention; MSPHI: Mississippi Public Health Institute; NAACP: National Association for the Advancement of Colored People; REACH: Racial and Ethnic Approaches to Community Health; SNAP: Supplemental Nutrition Assistance Program; SSI: Supplemental Security Income; USDA: United States Department of Agriculture; WIC: Women and Infant Children

Introduction

The United States Department of Agriculture (USDA) defines food security as access by all people at all times to enough food for an active, healthy life. Food security is one of several conditions necessary for a population to be healthy and well-nourished [4]. Food security is also essential for building healthy, equitable, inclusive, and resilient communities. Mississippi is among the most impoverished and food-insecure states in the U.S. Mississippi also exhibits stark racialized health disparities. Quite strikingly, one in five Mississippians and one in four children statewide are food insecure and struggle with hunger [5]. Food insecurity contributes to the costly and inequitable

burden of chronic health conditions in Mississippi and undermines the physical and mental health, cognitive development, academic achievement, and the future economic success of the state's children. Many individuals residing in Mississippi are severely affected by chronic diseases. According to the Mississippi State Health Assessment and Improvement Plan published by the Mississippi State Department of Health in 2016 [6], several risk factors have affected the state's incidence of chronic diseases. Nutrient intake is among these risk factors. While clearly alarming, this situation also presents an opportunity to implement innovative programs that may turn the tide on such negative social indicators.

Adults who are food insecure face an increased risk of many negative health outcomes, including obesity, heart disease, hypertension, diabetes, and other chronic illnesses. Food-insecure children are placed at an elevated risk of developmental problems that include compromised physical growth, poor cognitive functioning, and limited immunity when compared with food-secure children. In addition, reduced frequency, quality, variety, and quantity of consumed foods may have a negative effect on children's mental health [7]. Moreover, food insecurity is not equally distributed across the population. Racial and ethnic minority groups for whom health disparities are pronounced are also more likely to confront protracted food insecurity. Many researchers therefore conclude that food insecurity is among the most important causes of health disparities and is linked to structural racism [8]. In Mississippi, there are several communities that are underserved by medical professionals and health promotion specialists that, as a result, are highly likely to face these adversities. The Mississippi Gulf Coast is prominent among such disadvantaged communities [9].

For the purposes of this study, the Mississippi Gulf Coast includes Jackson, Harrison, and Hancock counties. Data obtained through the Community Commons Vulnerable Populations Footprint reveal that approximately 20% of the population in this area has an income below the federal poverty level [9]. Data from the American Community Survey (2012 - 2016) show that average poverty status 12 months prior to the survey among African American families is 27.1% [10]. About four in ten (41%) female-headed African American families in these three Mississippi Gulf Coast counties live in poverty. Also, 13% of adults in the area do not have a high school diploma [10]. Statistics show that such characteristics can be directly linked to health outcomes. As noted, health outcomes are often connected to food access.

Health indicators and social correlates of health from the 2019 County Health Rankings [11] underscore the formidable risks—and opportunities for improvement—that are evident in the tri-county catchment area. The left-most statistical column of Table 1 reveals the positive nature of health indicators and social correlates among high-performing U.S. counties (top 10^{th} percentile), particularly when compared with Mississippi at large (second statistical column from left). This pattern is not surprising. Counties within Mississippi have especially poor health indicators and social correlates, and these affect overall state indicators. It is noteworthy that, for most indicators, the three counties in the project catchment region are poised between the top U.S. counties and Mississippi overall. However, for several indicators, the Gulf Coast counties served by this project are closer to Mississippi's suboptimal estimates than the estimates for the top U.S. counties. In some cases, a catchment county is worse off than Mississippi at large, including Harrison's child poverty rate, Jackson and Hancock's unemployment rates, and Hancock's physical inactivity rate. These data indicate the need for developing food security initiatives and policies in the tri-county service region of Jackson, Harrison, and Hancock counties.

Indicator	Top U.S.	MS	Jackson	Harrison	Hancock
Social Determinants					
Child poverty rate	11%	28%	22%	31%	24%
% African American	13.4%	37.8%	21.8%	25.4%	8.2%
High school graduation	96%	83%	87%	85%	83%
Unemployment	2.9%	5.1%	5.8%	4.8%	5.4%
Children in single-parent families	20%	44%	37%	44%	40%
Health Indicators					
Health outcomes rank*	----	----	6	21	7

Length of life*	----	----	7	21	11
Premature death	5,400	10,400	8,700	9,900	9,300
Poor physical health days	3.0	4.4	3.8	4.1	3.9
Poor or fair health	12%	22%	17%	21%	17%
Low birthweight	6%	12%	10%	10%	8%
Food environment index	8.7	3.8	7.0	6.1	6.8
Physical inactivity	19%	31%	27%	30%	36%
Access to exercise opportunities	91%	55%	77%	69%	47%
Adult smoking	14%	23%	19%	21%	19%
* Data available only for catchment area counties.					

Table 1: *Health indicators and correlates in top U.S. counties, Mississippi, and Mississippi Gulf Coast.*

Clearly, barriers and facilitators to healthy food access in Mississippi, and especially its Gulf Coast counties, should be carefully examined. Such efforts may yield a better understanding of the scope and contours of local challenges related to food insecurity. Additionally, along with food insecurity, it is important to understand perceptions about the availability, accessibility, and quality of healthy food selections within these socioeconomically disadvantaged areas. This goal is best pursued in collaboration with local residents and community stakeholders because their perceptions about groups most at risk of food insecurity and possible solutions are informed by their in-depth knowledge of the community that they call home. According to the Johns Hopkins Center for a Livable Future, conducting a community food assessment is an important facet of community development that is meant to "improve a community's food system via increased access to healthy food" [12]. The Johns Hopkins community food assessment instrument, which strongly informed our resident survey, collects information from community members about their perceptions of their food environment and shopping behaviors, and in turn uses that information to guide stakeholders within a community. The Johns Hopkins community food assessment instrument has been used as an effective tool in other areas of the country [13-21], and it offers an approach that can greatly benefit understandings of Mississippi food insecurity.

The Present Study

Our study shares results from the baseline Mississippi Gulf Coast Community Food Assessment, which was completed in 2019 as an initial snapshot of community food access needs and resources in the tri-county area (i.e. Jackson, Harrison, and Hancock counties) along the Mississippi Gulf Coast. The Mississippi Public Health Institute (MSPHI) is currently collaborating with a coalition of multi-sector community partners to bring positive changes to the food environment in this area. MSPHI received funding from the Centers for Disease Control and Prevention's Racial and Ethnic Approaches to Community Health (CDC REACH) grant program to support the implementation of various community health initiatives on the Mississippi Gulf Coast. The collaborating coalition partners implement services and programs that support the community improvement goals of the grant. It is MSPHI's hope that the efforts initiated through REACH flourish during its five-year project period (2018 - 2023) while also sparking longer-term community-led interest in improving healthy food access. The goal of the program is to improve the health outcomes of African American families residing in Hancock, Harrison, and Jackson counties, with special attention to African American women of childbearing age.

The Mississippi Gulf Coast Community Food Assessment was administered with sustained guidance and direct input from key members of a community-based coalition. The assessment utilized a two-pronged methodology to render holistic results: (1) a self-reported community resident survey and (2) an organizational stakeholder survey. This two-pronged approach allows for a richer understanding

of the availability, accessibility, and quality of healthy food selections within local communities than any single method alone would permit. It also provides a comparative set of snapshots on food-related issues whereby perceptions and practices evident among community residents can be analyzed alongside the standpoints of organizational leaders. The respective survey instruments, featured in the appendix, were tailored to ascertain the views of each particular group in light of their specific social position. Both groups in our sampling framework were treated as key informants, yet each occupies a distinctive niche in their community. The community resident survey was unique in that it was administered in a socioeconomically disadvantaged region and prioritized residents who were likely facing food insecurity. The stakeholder survey served a dual purpose. It was designed as an environmental scan of existing community food-related programs. It was also used to determine the status and impact of recommendations from a previous 2011 food systems assessment. Several food system recommendations were reported in a 2011 regional food system report for the Mississippi Gulf Coast [22]. The current stakeholder's assessment can therefore determine if those recommendations were still salient and relevant for implementation, while also aiming to improve food access at the current time. Both of these assessment instruments were administered in 2019 prior to the COVID-19 pandemic that has presented formidable challenges to food pantries in Mississippi, around the U.S., and across much of the world. The findings reported in this assessment remain relevant, and likely have even greater urgency, given the exacerbation of food insecurity due to the pandemic.

Materials and Methods

The REACH project evaluation firm, Bartkowski & Associates Research Team, assisted the Mississippi Public Health Institute in survey development for the Mississippi Gulf Coast Community Food Assessment based, in part, on the earlier assessment [22], as well as the goals and objectives of the funded REACH proposal. (The earlier assessment was implemented by a completely different team under a different grant.) Additionally, a series of validated questions were used from the Johns Hopkins Center for a Livable Future Community Food Assessments [12]. This Mississippi Gulf Coast Community Food Assessment investigates the needs and resources of specific geographical areas in Hancock, Harrison, and Jackson counties. These geographic areas were identified using data from the Gulf Coast Healthy Communities Collaborative Community Exchange [23], a database with information specific to the Mississippi Gulf Coast, including the Exchange Socio-Needs Index. The Exchange Socio-Needs Index is a measure of socioeconomic disadvantage correlated with poor health outcomes. Four geographical zip code areas were selected to be surveyed based on socioeconomic vulnerability, concentration of African Americans, designation as a food desert, and median income level according to the Exchange Socio-Needs Index.

The Mississippi Gulf Coast Community Food Assessment employed a two-pronged data collection procedure consisting of a self-reported community resident survey and an organizational stakeholder survey. The community resident survey ascertained perceptions about the availability, accessibility, and quality of healthy food selections within each respondent's local area. A key facet of the community food assessment entailed the administration of a resident survey in socioeconomically disadvantaged areas of the catchment region (i.e., the identified zip codes from the Exchange Socio-Needs Index). The resident survey was distributed in the four zip codes identified at community partner sites, while stakeholders were organizational leaders who were asked to complete an online survey based on their knowledge of these communities that they serve within the four zip codes.

Community resident survey

Specific zip codes in the catchment region were chosen intentionally to represent the perspectives of residents who are likely to have faced food insecurity. Additionally, to assess the priority population, respondents were recruited from community-based social service organizations (principally Families First Resource Centers). A total of 127 completed surveys were received. With a targeted convenience sample collected from clients at local community-based organizations on a self-administered survey, a response rate was not able to be calculated. Upon agreeing to complete the survey, respondents were first instructed to circle one of the four eligible zip codes in which they resided (zip codes: 39501, 39530, 39563, 39576). Next, they were asked to read the following instructions:

Your responses are confidential. Please do not put your name on this survey. A $10.00 thank you will be emailed to you for completing the survey. You will need to provide your name and email address on a separate form to the person at the site who provided the survey to receive your $10 thank you. But with no name on this survey, your responses cannot be traced back to you. Completion of this survey is entirely voluntary. This survey should take about 10 minutes to complete.

After reading these instructions, respondents then were invited to complete the survey. At the end of the survey, respondents were instructed to ask a staff person for a separate sheet to provide their name and email address for the $10 thank you. Then, a staff person would give the respondent the separate sheet of paper which included blanks for the respondent's name and email address. See Appendix A for the survey in its entirety.

Demographics from the resident survey

Resident respondent demographic information can be found in Table 2 and information about respondents' participation in publicly funded programs can be found in Table 3. Finally, Table 4 features information about food insecurity among survey respondents. As depicted in Table 2, a majority of respondents who completed the resident survey identified as African American, non-Hispanic, and female. The highest priority population for Mississippi REACH is, in fact, African American women of childbearing age, a consideration that is well aligned with our resident sample. Although not shown in a table, it is worth noting that roughly eight in ten survey respondents indicated that they are the main food shopper in their home (79.51%, n = 97) and are the major decision-maker for household food purchases (79.34%, n = 96). Additionally, ample variation in the age of survey respondents is evident (Table 2). About one third of respondents (30.25%) were young adults from ages 18 - 29. The other age categories featured roughly similar distributions, hovering around 13 - 15% of respondents, ranging from 30 years old to 70 years old and older. In an effort to consider the size of households in which respondents lived, they were also asked to identify the number of people in various age categories that lived with them. As revealed in Table 2, roughly half of the surveyed household members (52.27%) reported being within the 18 - 64 age range while just over one third of fellow family members were under age 18. The remainder of household members were elderly individuals.

Demographics	Percent	n
Race		
African American	76.67%	92
White	22.50%	27
American Indian/Alaska Native	0.83%	1
Valid Responses		120
Ethnicity		
Hispanic	5.77%	6
Non-Hispanic	94.23%	98
Valid Responses		104
Gender		
Male	23.33%	28
Female	76.67%	92
Valid Responses		120
Age		
18-29 Years Old	30.25%	36
30-39 Years Old	12.61%	15
40-49 Years Old	15.97%	19
50-59 Years Old	14.29%	17
60-69 Years Old	13.45%	16
70 Years or Older	13.45%	16
Valid Responses		119
Household Members by Age		
Household Members Under Age18	36.80%	138
Household Members Age 18-64	52.27%	196
Household Members Age 65 and Older	10.93%	41
Total Number of Household Members Reported		375

Table 2: *Demographics of community residents surveyed.*

Economic and social vulnerabilities faced by survey respondents are evident in Table 3, which features the prevalence of social welfare program participation. Respondents were asked if they or anyone in their household currently uses the social welfare programs listed in Table 3. Respondents could select all programs that apply given the possibility of multiple program enrollments. Consequently, two columns of results are presented in the table. Column A features the proportion and number of responses indicating participation in a specific program compared with all reported program enrollments combined (n = 119). Column B features the proportion and number of responses indicating participation in a specific program compared with all possible survey respondents (n = 127). The pattern in both columns is similar. Respondent vulnerability was observed, with about four in ten respondents having reported current Food Stamps/Supplemental Nutrition Assistance Program (SNAP) utilization. Relatively high usage of subsidized school meals and SSI was also observed.

Programs	Column A: Specific program enrollment/Total program enrollments (n = 119)	Column B: Specific program enrollment/Total survey respondents (n = 127)
Food Stamps/SNAP	42.86% (51)	40.16% (51)
WIC (Women and Infant Children)	10.08% (12)	9.45% (12)
Head Start	5.88% (7)	5.51% (7)
School breakfast/School lunch	22.69% (27)	21.26% (27)
SSI (Supplemental Security Income)	18.49% (22)	17.32% (22)
Total	119	127
Source: 2019 Community Food Assessment Resident Survey. Percentages are calculated as a fraction of total valid responses (n = 119) in Column A and as a fraction of the maximum possible responses (n = 127) in Column B because respondents were asked to select all that apply.		

Table 3: *Participation in publicly funded programs.*

The demographics collected about food insecurity among survey respondents are reported in Table 4. Food insecurity has been most commonly experienced intermittently (sometimes) but is relatively widespread among those who completed the survey. Skipping meals or being unable to afford balanced meals has been sometimes experienced by over four in ten of those surveyed. When this response category is combined with the highest-frequency response option (often) for items 1 and 2 in Table 4, more than half of surveyed residents reported encountering these problems. Few respondents lost weight to manage food insecurity (item 3), but this pattern is likely indicative of a reliance on high-fat foods in the face of household financial shortfalls and food insecurity. About four in ten respondents get food from a food pantry either often or sometimes, with roughly one in ten doing so often (item 3). A composite measure of food insecurity is also included in Table 4 (item 5). This measure was rendered by combining each respective categorical response to all items (e.g. 54 often responses) and then dividing that figure by the total number of responses to these various items (502 responses combined for all items). Based on the composite score, about four in ten respondents report having experienced some form of food insecurity, either often (10.76%) or sometimes (31.87%). However, this composite score probably underemphasizes the scope of the problem because item 3 (weight loss due to food unaffordability) likely masks the prevalence of food insecurity among the surveyed population.

Items	Often	Sometimes	Never	Valid responses
1. Because of limited money, we skipped meals or ate less.	12.60% (16)	40.16% (51)	47.24% (60)	127
2. We couldn't afford to eat balanced meals.	14.40% (18)	42.40% (53)	43.20% (54)	125
3. We lost weight because we could not afford food.	6.40% (8)	14.40% (18)	79.20% (99)	125
4. We get food from a food bank or food pantry.	9.60% (12)	30.40% (38)	60.00% (75)	125
5. Overall food insecurity Column total/cumulative valid response total	10.76% (54)	31.87% (160)	57.37% (288)	502
Source: 2019 Community Food Assessment Resident Survey.				

Table 4: *Food insecurity among survey respondents.*

Respondents answered questions that focused on three major areas: (1) perceptions of the community food environment, (2) food access and consumer practices, and (3) linkages between health and consumption. Concerning perceptions of the community food environment, respondents indicated their level of satisfaction with food in the community, rated food quality and healthy food access within the community, reported on their perceptions of food prices within the community, and reported on food acquisition options within the community. Under food access and consumer practices, respondents answered questions on grocery store access (and barriers to grocery store access), convenience store access (and assessments of convenience stores), utilization of food purchasing sources, food purchasing source expenditures, consumer capabilities and habits related to food, home meal preparation and family meal consumption, interest in learning about healthy food preparation, and daily vegetable and fruit consumption. Finally, to discern the linkages between health and food consumption, respondents were posed questions concerning their perception of the relationship between health and eating while also answering questions about their perceptions of the relationship between specific health conditions and eating, reported on health conditions that were evident in their household, and answered questions about fried foods, with this last set of items integrated as proprietary (novel) measures given the cultural penchant for frying as part of Southern cuisine.

Stakeholder survey

The same zip codes representing elevated food insecurity prevalence that were used to collect resident survey data were sampled again to field the stakeholder survey. The stakeholder survey was completed online. Stakeholders were part of the Gulf Coast Healthy Community Collaborative that work with the REACH project leadership team. Once stakeholders opened the online survey, they read the following set of instructions:

The REACH Program recently completed a community food assessment to gather perceptions from community residents regarding their thoughts on the food available in their local community. The assessment survey was distributed in four (4) specific zip codes - 39501; 39530; 39563; 39576. We would like to collect additional information from organizations and stakeholders who serve individuals from these areas to help us better understand the resources and barriers to food availability and quality in these communities. These zip codes were selected based on the priority population of the REACH program along with other food access data.

Please complete the survey below with respect to the zip code you serve. If you serve more than one zip code, we would appreciate your completing the survey for each zip code so that we have the most complete information for each community. If you need to complete a second survey for an additional zip code, select the option to complete a second survey when you see the prompt. Alternatively, if you have a staff or team member at an agency or organizational site who can provide the most appropriate responses for another zip code, please share this document with that staff person to complete or you both may complete it collaboratively, if preferred.

The stakeholders who were surveyed included a total of 21 respondents (over 80% response rate), and diversely represented Gulf Coast Healthy Community Collaborative members. These are organizational leaders who can serve effectively as key informants about risks and opportunities in their local communities. The stakeholder survey also focused on three major areas: (1) who is most at risk of food insecurity, (2) perceptions about the nature and causes of food insecurity at the community level, and (3) addressing community food insecurity and access issues. Additionally, stakeholders were provided the opportunity to offer suggestions that would improve the local food system. See Appendix B for the survey in its entirety. The following results section includes findings from each phase of the two-pronged community food assessment followed by priorities and recommendations to facilitate healthy food access in Mississippi Gulf Coast communities.

Results

Results of the assessment are shared in the sections that follow. Our focus is first on the community resident survey results. Thereafter, the stakeholder survey results are conveyed. Finally, a discussion is offered concerning recommendations for this region going forward.

Community resident survey results

We turn first to the results from the community resident survey, with a focus on three main areas: (1) perceptions of the community food environment, (2) food access and consumer practices, and (3) linkages between health and food consumption. Then, the stakeholder survey results will be discussed with attention to (1) persons who are most at risk of food insecurity, (2) perceptions of food insecurity at the community level, and (3) efforts to address community food insecurity and access issues[1].

Perceptions of the community food environment

Tables 5-8 show the results of the perceptions of the community food environment among surveyed residents. Tables 5 and 6 indicate a measure of satisfaction with the community food environment but also highlight considerable room for improvement. Table 5 reveals that roughly one quarter of surveyed residents indicated the highest level of satisfaction with the quality, selection, and availability of food (survey items 1-3). However, only about half that proportion (12.80%) expressed a superlative assessment with the price of food (item 4). Also, when dissatisfaction response categories are combined for item 3, over one third of respondents (35.72%) indicated that they were either somewhat dissatisfied (25.40%) or very satisfied (10.32%) with the availability of healthy food in the community. And nearly four in ten resident respondents conveyed some measure of dissatisfaction with the price of food (29.60% somewhat dissatisfied + 8.80% very dissatisfied = 38.40%) (item 4). These findings are generally affirmed by the rating indicator responses found in Table 6. Respondents were asked to rate food quality (item 1) and access to healthy food in their community (item 2) on a scale from 1 (very bad) to 10 (excellent). The means (averages) for both items reveal a relatively low score: 6.07 and 6.02, respectively, for food quality and healthy food access. If considered as a letter grade of these facets of the food system, respondents on average rendered a grade of a D- (nearly an F, where 59 or below is a failing grade).

Items	Very satisfied	Somewhat satisfied	Somewhat dissatisfied	Very dissatisfied	Valid responses
1. Satisfaction with the quality of the food sold in community	26.40% (33)	60.80% (76)	8.80% (11)	4.00% (5)	125
2. Satisfaction with the selection of foods available in community	23.62% (30)	58.27% (74)	13.39% (17)	4.72% (6)	127
3. Satisfaction with availability of healthy food in community	26.19% (33)	38.10% (48)	25.40% (32)	10.32% (13)	126
4. Satisfaction with the price of food available in community	12.80% (16)	48.80% (61)	29.60% (37)	8.80% (11)	125
Source: 2019 Community Food Assessment Resident Survey.					

Table 5: *Satisfaction with food in community.*

[1]Missing values on particular survey items were addressed through case wise deletion, that is, the elimination of item-specific non-responses from the generation of statistical results. Given the removal of missing cases from the denominator of all percentage calculations, the number of valid responses is reported for all survey results.

Items	Mean (average)	Standard deviation	Minimum	Maximum	Valid responses
1. On a scale of 1-10, with 1 being very bad and 10 being excellent, how would you rate the quality of food available in your community?	6.07	2.57	1.00	10.00	115
2. On a scale of 1-10, with 1 being very bad and 10 being excellent, how would you rate your ability to access healthy food in your community?	6.02	2.85	1.00	10.00	119
Source: 2019 Community Food Assessment Resident Survey.					

Table 6: *Ratings of food quality and healthy food access in community.*

Perceptions about the price of various types of food in the community (Table 7) indicate that a higher proportion of survey respondents (44.23%) reported believing that fruits and vegetables are more expensive in their community than elsewhere. This pattern compares unfavorably with resident reports of the price of junk food (only 27.20% believe it is more expensive in their community) and overall food prices (only 28.57% believe these are higher in their community). If resident perceptions are accurate, the healthiest of all foods, fruits and vegetables, are more expensive in their community than elsewhere.

Items	More expensive	About the same price	Less expensive	Don't know	Valid responses
1. Price of fruits and vegetables in community compared to elsewhere	44.23% (46)	35.58% (37)	11.54% (12)	8.65% (9)	104
2. Price of "junk food" in community compared to elsewhere	27.20% (34)	43.20% (54)	23.20% (29)	6.40% (8)	125
3. Overall food prices in community compared to elsewhere	28.57% (36)	53.17% (67)	7.94% (10)	10.32% (13)	126
Source: 2019 Community Food Assessment Resident Survey.					

Table 7: *Perceptions of food prices in community.*

Table 8 reports the results of a series of survey items that inquired about options for acquiring food in the respondents' local community. A number of patterns are evident in these results. One key pattern is the finding that nine in ten respondents (91.53%) would buy food grown in the community at a farmer's market (item 2). Knowledge about a community garden (16.39%) is not robust, but one third of respondents (33.61%) are unsure about this option (item 3). Quite notably, nearly two thirds of respondents (65.57%) would participate in a community garden (item 5). However, this rather enthusiastic response toward a community garden should be balanced against findings from the first item in Table 8, which indicates an only modest demand for foods that are currently unavailable (25.22%). Therefore, a community garden is likely to be viewed as an attractive option to reduce the cost of food rather than to expand the supply of foods beyond those that are currently unavailable.

Items	Yes	No	Don't know	Valid responses
1. Are there certain foods that you would like to buy but cannot find in your community?	25.22% (29)	74.78% (86)	0.00% (0)	115
2. Would you buy food that was grown in your community at a farmer's market?	91.53% (108)	8.47% (10)	0.00% (0)	118
3. Does your community have a community garden?	16.39% (20)	50.00% (61)	33.61% (41)	122
4. [If Yes answered to item 3] Do you participate in the community garden?	12.96% (7)	87.04% (47)	0.00% (0)	54
5. [If No answered to item 3] Would you participate in a community garden?	65.57% (40)	34.43% (21)	0.00% (0)	61
Source: 2019 Community Food Assessment Resident Survey.				

Table 8: *Food acquisition options in community.*

Food access and consumer practices

Access to high quality food can be a major barrier to healthy eating. Access can also shape consumer practices by creating an environment in which healthy eating is inordinately difficult. Consequently, survey respondents in the disadvantaged areas of the catchment region were presented with a series of items designed to examine food accessibility issues and consumer practices related to acquiring and consuming food. Respondents were asked, "How easy is it for you to get to the grocery store?" About half of respondents (49.21%) believe that it is very easy to get to the grocery store, while most of the remaining residents surveyed (32.54%) indicated that it is fairly easy to do. In short, grocery store access does not seem to pose significant challenges. For those who do indicate access barriers to grocery stores (Table 9), a sizable proportion (50%) pinpointed transportation challenges as an obstruction to such access (item 1).

Barrier Type	n
1. Lack of personal transportation (no car, etc.)	50.00% (20)
2. Lack of public transportation (no bus routes, etc.)	10.00% (4)
3. Long drive to store, too much traffic, etc.	12.50% (5)
4. No walkable route or too far to walk	17.50% (7)
5. Safety concerns	10.00% (4)
Total	100.00% (40)
Source: 2019 Community Food Assessment Resident Survey. Percentages are calculated as a fraction of total valid responses (n = 40) because respondents were asked to select all that apply.	

Table 9: *Barriers to grocery store access.*

Table 10 which presents data in two columns because respondents could select all that apply, generally paints a negative portrait of convenience stores as a healthy food option for local residents. An appreciable proportion of respondents have access to convenience stores (item 1), but robust majorities do not feel safe shopping at them (item 2). Moreover, healthy foods, and vegetables in particular, are generally not available at these outlets (items 3 and 6). Food prices are commonly perceived as high at convenience stores (item 5), and staff are not viewed as very welcoming (item 4).

Items	Column A: Item affirmative response/Total affirmative responses (n = 203)	Column B: Item affirmative response/Maximum possible responses (n = 127)
1. I can walk to a nearby convenience store	34.48% (70)	55.12% (70)
2. I feel safe shopping at a convenience store	17.24% (35)	27.56% (35)
3. Healthy foods are available at convenience stores	4.93% (10)	7.87% (10)
4. Convenience store staff are welcoming	24.14% (49)	38.58% (49)
5. Food prices are reasonable at convenience stores	11.33% (23)	18.11% (23)
6. Fresh produce is available at convenience stores	7.88% (16)	12.60% (16)
Total	100% (203)	---- (127)
Source: 2019 Community Food Assessment Resident Survey. Percentages are calculated as a fraction of total valid responses (n = 203) in Column A and as a fraction of the maximum possible responses (n = 127) in Column B because respondents were asked to select all that apply.		

Table 10: *Convenience store access and assessments.*

Tables 11 and 12 consider food source utilization and expenditure patterns, respectively. A perusal of the top sources through which residents acquire food with some frequency (daily, several times per week, and weekly) indicate that corner or convenience stores (item 1) and supermarkets or grocery stores (item 2) are quite commonly utilized, as are fast food restaurants (item 6) (Table 11). Use of a warehouse store (item 3) and farmer's market (item 4) is rare.

How often do you buy food at each of the following?	Daily	Several times per week	Weekly	Every two weeks	Monthly	Rarely	Never	Valid responses
1. Corner or convenience store	8.73% (11)	12.70% (16)	24.60% (31)	10.32% (13)	9.52% (12)	23.02% (29)	11.11% (14)	126
2. Supermarket or grocery store	6.40% (8)	20.80% (26)	24.80% (31)	24.00% (30)	20.80% (26)	2.40% (3)	0.80% (1)	125
3. Warehouse store	0.79% (1)	1.59% (2)	1.59% (2)	3.97% (5)	17.46% (22)	34.13% (43)	40.48% (51)	126
4. Farmers' market	0.00% (0)	0.00% (0)	7.94% (10)	6.35% (8)	15.08% (19)	32.54% (41)	38.10% (48)	126
5. Carry-out shop	1.61% (2)	12.90% (16)	20.97% (26)	21.77% (27)	20.97% (26)	17.74% (22)	4.03% (5)	124
6. Fast-food restaurant	2.38% (3)	19.05% (24)	26.98% (34)	17.46% (22)	15.87% (20)	17.46% (22)	0.79% (1)	126
7. Sit-down restaurant	0.00% (0)	4.00% (5)	13.60% (17)	9.60% (12)	31.20% (39)	35.20% (44)	6.40% (8)	125
Source: 2019 Community Food Assessment Resident Survey. All percentages are based on row totals. Item 7 includes all-you-can-eat restaurants.								

Table 11: *Utilization of food purchasing sources.*

On average, how much do you spend when you buy food at each of the following?	Mean	Standard deviation	Minimum	Maximum	Valid responses
1. Corner or convenience store	$25.00	$43.34	$0.00	$300.00	60
2. Supermarket or grocery store	$105.24	$105.17	$0.00	$600.00	74
3. Warehouse store	$61.08	$65.32	$0.00	$300.00	49
4. Farmers' market	$29.83	$35.08	$0.00	$200.00	52
5. Carry-out shop	$19.76	$25.24	$0.00	$205.00	75
6. Fast-food restaurant	$14.13	$11.85	$0.00	$80.00	80
7. Sit-down restaurant	$26.52	$17.98	$0.00	$100.00	79
Source: 2019 Community Food Assessment Resident Survey. Item 7 includes all-you-can-eat restaurants.					

Table 12: *Food purchasing source expenditures.*

Food expenditure results are a bit more difficult to interpret (Table 12). Significant response attrition is evident for this survey item, likely because respondents either do not use some of these options or do not recall their expenditures in sufficient detail to provide the requested information. Moreover, wide variations are often present within any of the data points for Table 12, which can be discerned from the rather large standard deviations in comparison to means. Thus, these distributions are often highly dispersed, which is not surprising given consistent minimum values of zero. Still, some patterns associated with food expenditures are reflected in this table. As may be expected, expenditures are larger in grocery stores than elsewhere, likely because of their more frequent use (item 2). Additionally, fast food establishments are known to provide cheap yet unhealthy food (item 6). Table 13 provides insight into food consumer capabilities and habits. Quite tellingly, significant proportions of respondents lack sufficient money to purchase healthy foods often (17.32%) or, more alarmingly, sometimes (40.94%); thus, a combined total of over half of all respondents (58.26%) indicated familiarity with this problem (item 1). Nutrition label reading is fairly prevalent, with a combined two thirds (65.88%) doing so with some frequency, either often (31.75%) or sometimes (34.13%) (item 2).

Items	Often	Sometimes	Rarely	Never	Valid responses
1. How often are you unable to purchase healthy foods due to lack of money?	17.32% (22)	40.94% (52)	24.41% (31)	17.32% (22)	127
2. How often do you read nutrition fact labels?	31.75% (40)	34.13% (43)	19.84% (25)	14.29% (18)	126
Source: 2019 Community Food Assessment Resident Survey.					

Table 13: *Consumer capabilities and habits related to food.*

Data on home meal preparation and family meal consumption (Table 14) yield mixed results. Roughly one quarter of families prepare daily meals from scratch and eat together. However, these proportions indicate that considerable room for improvement is evident concerning these practices. A majority of respondents exhibited some interest in learning more about how to prepare foods in a healthy way, with 42.74% (n = 53) indicating that they are very interested in doing so and 39.52% (n = 49) marking somewhat interested. Only 14.52% (n = 18) indicated that they were not very interested and only 3.23% (n = 4) indicated that they were not at all interested. In total, then, 82.26% of respondents were positively disposed toward learning more about healthy food preparation strategies. This finding is quite promising. Daily vegetable and fruit consumption averages are somewhat mixed. The average daily consumption of vegetables among surveyed residents (1.79 servings, SD = 1.19; n = 120) falls somewhat short of the CDC recommendation of two to three cups of vegetables per day. It is worth noting that CDC reports that only 9.3% of Americans meet this vegetable intake standard [24]. CDC recommends that one and one-half to two cups of fruits be consumed per day, and surveyed residents report consuming an average of 1.84 servings (SD = 1.36; n = 122) of fruit per day [24]. Only 12.2% of Americans meet the recommended fruit consumption standard. Questions remain about the form of fruit that is consumed (e.g. fresh versus canned with syrup).

Items	Daily	A few times per week	Several times per month	Rarely or never	Valid responses
1. How often does your family prepare meals from scratch?	23.62% (30)	40.16% (51)	21.26% (27)	14.96% (19)	127
2. How does your family sit down and eat a meal together?	24.59% (30)	39.34% (48)	16.39% (20)	19.67% (24)	122
Source: 2019 Community Food Assessment Resident Survey.					

Table 14: *Home meal preparation and family meal consumption.*

Linkages between health and food consumption

Community residents surveyed were asked to respond to the following prompt, "What do you think of the following statement? In general, a person's health is related to what they eat". Of the 124 responses collected, 55 (43.35%) strongly agreed, 55 (43.35%) agreed, 7 (5.65%) disagreed, 3 (2.42%) strongly disagreed, and 4 (3.23%) indicated that they were not sure. Thus, nearly nine in ten residents surveyed (87.70%) expressed some level of agreement that a person's health is related to what they eat, with roughly equal proportions either strongly agreeing (43.35%) or agreeing (44.35%) with this proposition. Table 15 examines respondent perceptions about the relationship between health and eating for specific conditions. The highest proportion of respondents (60.20%) expressed the belief that obesity or overweight (item 5) is related to eating, followed by high blood pressure (55.56%) (item 2) and heart disease (45.45%) (item 3). Less than one third of respondents (29.89%) link cancer to eating (item 4).

Health Conditions	Yes	No	Not sure	Valid responses
1. Diabetes related to eating	50.00% (50)	36.00% (36)	14.00% (14)	100
2. High blood pressure related to eating	55.56% (60)	25.00% (27)	19.44% (21)	108
3. Heart disease related to eating	45.45% (40)	38.64% (34)	15.91% (14)	88
4. Cancer related to eating	29.89% (26)	51.72% (45)	18.39% (16)	87
5. Obesity or overweight related to eating	60.20% (59)	31.63% (31)	8.16% (8)	98
Source: 2019 Community Food Assessment Resident Survey. Valid responses fluctuate due to respondent interpretation of instructions.				

Table 15: *Relationship between health conditions and eating.*

Table 16 displays the results of questions inquiring about specific health conditions that are evident among any people in the homes of those surveyed. Because respondents could select all that apply, column A presents the proportion and number of affirmative responses for specific conditions divided by the total number of affirmative responses (all conditions combined) (n = 166) while column B presents proportions and numbers of affirmative responses over the number of people surveyed (n = 127). The general pattern in both columns is similar. High blood pressure (item 2) is the most common condition, followed by obesity (item 5) and diabetes (item 1). Heart disease (item 3) and cancer (item 4) are less prevalent conditions among those in the homes of survey respondents. The links between food insecurity and these conditions for Mississippi adults have been well established [25].

Household Health Conditions	Column A: Item affirmative response/Total affirmative responses (n = 166)	Column B: Item affirmative response/Maximum possible responses (n = 127)
1. Diabetes	19.88% (33)	25.98% (33)
2. High blood pressure	33.13% (55)	43.31% (55)
3. Heart disease	14.46% (24)	18.90% (24)
4. Cancer	9.04% (15)	11.81% (15)
5. Obesity or overweight	23.49% (39)	30.71% (39)
Total	100% (166)	---- (127)
Source: 2019 Community Food Assessment Resident Survey. Percentages are calculated as a fraction of total valid responses (n = 166) in Column A and as a fraction of the maximum possible responses (n = 127) in Column B because respondents were asked to select all that apply.		

Table 16: *Health conditions evident in household.*

Table 17 displays results of survey items that are designed to gauge perceptions of fried foods. These items were developed by the project evaluator as proprietary measures given the prominent place of fried foods in Southern cuisine. Respondents were, in fact, told that "fried" in these questions referred to battered and deep fried, as is customary in traditional Southern cuisine. Roughly six in ten respondents (62.70%) combined either strongly agreed (21.43%) or agreed (41.27%) with the idea that fried food is comfort food (item 1). One limitation of this item in its present form is that it does not discern if this perception is held by respondents or is simply a broader statement about Southern culture. Other items reveal that respondents are aware of the health hazards that can be introduced by the consumption of fried foods, which is a welcome pattern. The idea that fried foods can be healthy if people just use the right kind of oil (item 4) has the most support among item 2-4. So, that perception could be an impediment to healthy eating among those surveyed.

Items	Strongly agree	Agree	Disagree	Strongly disagree	Not sure	Valid responses
1. Fried food is comfort food.	21.43% (27)	41.27% (52)	20.63% (26)	11.11% (14)	5.56% (7)	126
2. Fried foods can be eaten daily with no bad health effects.	6.56% (8)	10.66% (13)	45.90% (56)	32.79% (40)	4.10% (5)	122
3. Fried vegetables are about as healthy as fresh vegetables.	2.44% (3)	17.07% (21)	53.66% (66)	23.58% (29)	3.25% (4)	123
4. Fried foods are healthy if people just use the right kind of oil.	3.25% (4)	29.27% (36)	36.59% (45)	16.26% (20)	14.63% (18)	123
Source: 2019 Community Food Assessment Resident Survey.						

Table 17: *Fried food health assessments.*

Community stakeholder survey results

Again, the stakeholder's survey also focused on three major areas: (1) the identification of people who are most at risk of food insecurity, (2) perceptions of food insecurity at the community level, and (3) efforts to address community food insecurity and access issues.

Who is most at risk of food insecurity

When asked to identify the groups in the community who they view as most at risk of food insecurity, respondents offered a variety of replies. Low-income, elderly, and homeless groups were listed with the greatest frequency. Children and those without transportation were also identified, albeit less frequently. It should be noted that because this question was open-ended, survey respondents were not limited in the number of responses allowed. Therefore, while nineteen people replied to this question, there were a total of 30 discrete responses. According to Healthy People 2020 [26], "The risk for food insecurity increases when money to buy food is limited or not available. In 2016, 31.6% of low-income households were food insecure, compared to the national average of 12.3%. Unemployment can also negatively affect a household's food security status. High unemployment rates among low-income populations make it more difficult to meet basic household food needs." Because many older Americans are no longer active in the workforce, may have a developmental disability, and are likely to have significant medical expenses, this population faces an elevated risk for food insecurity. Table 18 details these responses.

Populations At Risk	Percent (n)
Low income	30.00% (9)
Elderly	20.00% (6)
Homeless	16.67% (5)
Children	13.33% (4)
Lacking transportation	13.33% (4)
Minorities	6.67% (2)
Total number of mentions	30
Source: 2019 Community Food Assessment Stakeholder Survey. The n = number of mentions for each category. The reported percent is the number of mentions divided by 30 (total number of mentions).	

Table 18: *Populations viewed most at risk of food insecurity.*

Perceptions of food insecurity at the community level

Survey respondents were provided with a list of several recommendations that had been identified in a recent food report as opportunities to improve local food systems. The ten strategies presented to them were these.

1. Establish a local food distribution program to support the distribution of fresh food to food-insecure neighborhoods.

2. Create and implement a fresh/healthy corner store program to ensure fresh food access in food-insecure neighborhoods.
3. Advocate for the Harrison county farm to donate farm produce to food banks.
4. Establish a healthy food financing initiative to assist businesses in expanding into food-insecure neighborhoods.
5. Launch a grocery store shuttle from food-insecure neighborhoods to grocery stores.
6. Create a community kitchen for food storage, meal preparation, nutrition counseling, and cooking demonstrations.
7. Establish a regional food policy council.
8. Start a school to farm and sea program.
9. Target food businesses for economic development.
10. Expand school garden demonstration projects

Respondents were then asked if they were aware of the strategy currently being implemented and, if so, were given the opportunity to rate the program's effectiveness (Table 19). Based on the responses, there does appear to be some awareness (43.37%) of a local food distribution program that provides fresh foods to neighborhoods with little to no access to such foods; moreover, 80% of respondents indicated that this program is either somewhat effective or very effective. Additional strategies were identified with a relatively high level of awareness and deemed relatively effective: school garden demonstration projects (36.84%); community kitchens for food storage, meal preparation, nutrition counseling, and cooking demonstrations (26.32%); and a regional Food Policy Council (22.22%). It should be pointed out that the number of "Yes" responses for awareness, coupled with possibly the number of "Not Sure" responses, does not directly align with the number of responses for effectiveness. It is likely that some respondents indicating "Yes" and "Not Sure" did not feel sufficiently aware of a strategy to assess its effectiveness, and therefore skipped the rating opportunity. It is also possible that a few respondents, including some who indicated "Not Sure," nevertheless answered the effectiveness item.

	Awareness of Implementation				Degree of Effectiveness			
Strategy	**Yes**	**No**	**Not Sure**	**N**	**Ineffective**	**Somewhat effective**	**Very effective**	**N**
1. Fresh food distribution program	47.37% (9)	21.05% (4)	31.58% (6)	19	20.00% (2)	50.00% (5)	30.00% (3)	10
2. Fresh/Healthy Corner Store Program	10.53% (2)	52.63% (10)	36.84% (7)	19	50.00% (4)	37.50% (3)	12.50% (1)	8
3. Farm produce donations to food banks	16.67% (3)	33.33% (6)	50.00% (9)	18	57.14% (4)	0.00% (0)	42.86% (3)	7
4. Healthy Food Financing Initiative	10.53% (2)	47.37% (9)	42.11% (8)	19	62.50% (5)	12.50% (1)	25.00% (2)	8
5. Grocery Store Shuttle	15.79% (3)	52.63% (10)	31.58% (6)	19	28.57% (2)	42.86% (3)	28.57% (2)	7
6. Community kitchen	26.32% (5)	42.11% (8)	31.58% (6)	19	50.00% (4)	12.50% (1)	37.50% (3)	8
7. Regional Food Policy Council	22.22% (4)	38.89% (7)	38.89% (7)	18	50.00% (4)	0.00% (0)	50.00% (4)	8
8. School to Farm and Sea Program	10.53% (2)	47.37% (9)	42.11% (8)	19	50.00% (4)	12.50% (1)	37.50% (3)	8
9. Food-focused economic development	5.56% (1)	44.44% (8)	50.00% (9)	18	71.43% (5)	14.29% (1)	14.29% (1)	7
10. School garden demonstrations	36.84% (7)	42.11% (8)	21.05% (4)	19	44.44% (4)	11.11% (1)	44.44% (4)	9
Source: 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by row totals (N).								

Table 19: *Awareness of implementation and effectiveness of local food system strategies.*

Of the aforementioned strategies, survey respondents indicated a number of them that would be beneficial to implement, namely, those that ensured fresh food access, either through direct distribution or through local economic development initiatives (Table 20). Respondents were asked to indicate beneficial strategies by selecting all that applied to the list of the strategies presented to them. The most favorably rated strategies included a Fresh/Healthy Corner Store Program to ensure fresh food access in food-insecure neighborhoods (80%); a Grocery Store Shuttle from food-insecure neighborhoods to grocery stores (65%); a local food distribution program to support the distribution of fresh food to food-insecure neighborhoods (65%); a community kitchen for food storage, meal preparation, etc. (60%); and a Healthy Food Financing Initiative to assist businesses in expanding into food-insecure neighborhoods (55%).

Strategies	Percent (n)
1. Fresh food distribution program	65.00% (13)
2. Fresh/Healthy Corner Store Program	80.00% (16)
3. Farm produce donations to food banks	40.00% (8)
4. Healthy Food Financing Initiative	55.00% (11)
5. Grocery Store Shuttle	65.00% (13)
6. Community kitchen	60.00% (12)
7. Regional Food Policy Council	35.00% (7)
8. School to Farm and Sea Program	45.00% (9)
9. Food-focused economic development	50.00% (10)
10. School garden demonstrations	50.00% (10)
Total number of respondents	20
Source: 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by total number of respondents who answered this item (N = 20). Respondents could select all that apply.	

Table 20: *Beneficial strategies to implement.*

What are viewed as the primary causes of food insecurity? Affordability and access to food were the most common responses, at 80.95% and 76.19%, respectively, as indicated in Table 21. It should be noted, in this case, that access to food was intended to include location and proximity of stores that sell food, as well as the ability to get to stores that sell food (i.e., transportation). So, access intentionally represented a multiple-factor cause. The availability of food, defined as both the number of food stores and the types of food for sale in food stores, followed with 42.86% of respondents reporting this condition to be a primary cause of food insecurity. These responses are in line with studies that demonstrate that those living in neighborhoods where transportation options are limited or residents without personal vehicles, those with a greater travel distance to stores, and those who live where there are fewer grocery stores are at greater risk [26]. Responses that those surveyed wrote into the "other" category included the cheap cost of dollar items on fast-food menus, a lack of education about service programs, and inadequate transportation.

Causes	Percent (n)
Access to food	76.19% (16)
Availability of food	42.86% (9)
Affordability of food	80.95% (17)
Other cause(s)	14.29% (3)
Total number of respondents	21
Source: 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by total number of respondents who answered this item (N = 21). Respondents could select all that apply.	

Table 21: *Primary causes of food insecurity.*

Addressing community food insecurity and access issues

When survey respondents were asked about community programs and resources commonly used by those in need of food, food banks or food pantries and food provided by the Women, Infant, and Children (WIC) program were strong points of reference at 100.00% and 95.24%, respectively. Interestingly, the other two options, Meals on Wheels and congregate meals, were also equally selected by respondents, as 14.29% of respondents indicated that these two options were commonly used. SNAP benefits were also mentioned in the "other" write-in category. Results are detailed in Table 22.

Programs or Resources	Percent (n)
Food banks or pantries	100.00% (21)
Women, Infant, and Children (WIC) Program	95.24% (20)
Meals on Wheels	14.29% (3)
Congregate meals	14.29% (3)
Other	4.76% (1)
Total number of respondents	21
Source: 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by total number of respondents who answered this item (N = 21). Respondents could select all that apply.	

Table 22: *Commonly used food programs or resources.*

What are the most urgent priorities related to food access in their community? Access, availability, and transportation were again noted as top concerns, as shown in Table 23. The availability of fresh fruits and vegetables was reemphasized as a high priority as well, suggesting that access to nutritious foods is of great importance to community stakeholders and residents alike.

Priorities	Percent (n)
Access to healthy, affordable foods	37.50% (6)
Transportation	12.50% (2)
Availability	25.00% (4)
Affordability	12.50% (2)
Proximity	12.50% (2)
Total number of codable responses	16
Source: 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by total number of codable responses to this item (N = 16). Respondents could specify priorities through this open-ended question.	

Table 23: *Urgent food access priorities.*

Barriers to disadvantaged residents being able to secure healthy fresh foods do appear to corroborate earlier survey items. When asked about specific barriers to healthy fresh food access (Table 24), stakeholders commonly pointed to income as a significant challenge to accessing nutritious foods (80%), followed by a lack of social support that encouraged the consumption of healthy foods (65%) and a

lack of food assistance programs that provided these foods (60%). This combination indicates a complex mix of structural and cultural barriers to healthy fresh foods. These factors are important to note as intervention strategies are designed and implemented. Problems with multiple causes require multifaceted solutions.

Barriers	Percent (n)
Lack of income in relation to the price of healthy fresh foods	80.00% (16)
Limited options for purchasing healthy fresh foods in the local community	45.00% (9)
Lack of proximity to stores that stock and sell healthy fresh foods	50.00% (10)
Lack of food assistance programs that provide healthy fresh foods	60.00% (12)
Limited consumer knowledge about the importance of healthy fresh foods	45.00% (9)
Lack of personal interest in consuming healthy fresh foods	50.00% (10)
Limited social support to encourage the consumption of healthy fresh foods	65.00% (13)
Total number of respondents	20
Source 2019 Community Food Assessment Stakeholder Survey. Percentages represent cell values (n) divided by total number of respondents who answered this item (N = 20). Respondents could select all that apply.	

Table 24: *Barriers to healthy fresh food access.*

Respondents were asked if there were programs or resources that were underutilized. The results are reported here in narrative form. Most respondents (57.14%, n = 12) replied "Not Sure" and 19.05% (n = 4) responded with a "No," thus leaving 23.81% (n = 5) to describe in more detail their "Yes" answer. Of those who provided a "Yes" response, such underutilized programs included WIC, the local farmers' market SNAP program, and gardening. (It is unclear if this response implies a community garden or gardening in general.) One respondent noted that resources are unknown to the community in general and another indicated that several projects are being assembled right now, but that all are in the very early stages of development.

There is ample evidence highlighting the structural determinants of food consumption patterns such as poverty, food deserts, and other environmental factors [27]. When asked if they believed that residents facing food insecurity are receptive to eating healthy fresh foods, nearly two thirds (61.90%, n = 13) responded "Yes." One of the eight who responded "No" (23.81%, n = 5) and "Not Sure" (14.29%, n = 3) commented that a specific barrier is the cost of healthy food and the inconvenience that it causes. Thus, a strong majority of stakeholders recognize resident receptivity to healthy eating despite food environment challenges.

Community gardens have become more popular during the past few years given their ability to promote the overall health and well-being of nearby residents along with community cohesion [28]. These benefits extend into physical and social-emotional health, as gardens provide a place for community members to get physical exercise as well as strengthen relationships and enhance community greenspace. Awareness of the availability of community gardens on the Mississippi Gulf Coast is approximately 50% among stakeholders, with 33.33% (n = 7) indicating that they are aware of community gardens and 19.05% (n = 4) marking "Unsure." The remaining 47.62% (n = 10) responded that they were not aware of any community gardens. Those who responded with a "Yes" (n = 7) reported that local Head Start Centers have initiated gardens at each location, but some recognized that engaging parents has been a challenge. Others commented that there are community gardens or farms in the Biloxi and Gulfport areas, but that they were not sure how many exist. It also seems that there is one garden, location unknown, that provides produce specifically for a food pantry and community kitchen.

As community gardens have increased in popularity, so have gleaning projects. Gleaning services are those that redirect excess food, especially produce, to people facing food insecurity. Based on survey responses, it does not appear that such an approach is widely utilized

in the community, as only 9.52% (n = 2) of respondents answered with a "Yes." Moreover, 47.62% (n = 10) and 42.86% (n = 9) indicated "Not Sure" and "No," respectively. One "Yes" respondent did comment that Feeding the Gulf Coast has organized occasional gleanings.

The survey results for active food-buying clubs or cooperatives were in line with those related to community gardens. A food-buying club is a group of people who work collectively to purchase food in bulk at wholesale prices. Of the two (9.52%) who replied that they were aware of such offerings, Praise Temple was explicitly named as such a local club or cooperative. Eight respondents (38.10%) were unsure of these resources and 52.39% (n = 11) indicated that they were not aware at all. This result does not come as a surprise, as such food-buying clubs and cooperatives have not reached their full potential in Mississippi.

Below is a list of organizations in the community that offer food security programs.

- Lena's program (specifics unknown)
- MS Department of Health, WIC Program
- Jackson County Civic Action
- 34th Street Wholistic Gardens and Education Center (Gulfport)
- Loaves and Fishes
- Magnolia Medical Foundation (National Diabetes Primary Prevention Program)
- Hancock County Food Pantry
- Local school with Backpack Buddies
- Feeding the Gulf Coast
- Our Daily Bread
- Jackson County Head Start Centers
- Galloway Family Farm (Ocean Springs)
- St. Paul Outreach (Division St.)
- Catholic Charities (non-perishable food only)
- King's Kitchen (supplies meals and clothing for the homeless population)
- Local churches
- Education, Economics, Environmental Climate and Health Organization (EEECHO Gulfport)
- Back Bay Mission
- Biloxi MS NAACP Environmental and Climate Justice Committee

- Belief Bethel Church
- Bay Area Food Bank

When survey respondents were asked if they partner or collaborate with any organization or agency to address food security in their community, just over half (52.38%, n = 11) replied "No." Of the 38.10% (n = 8) who responded with "Yes," the identified organizations were many that had been mentioned previously in earlier survey responses. One respondent commented that several local organizations have collaborated on short-term programs, but are now working together on developing more long-term programs as well. Unfortunately, specifics were unnamed. Another respondent noted that Jackson County Civic Action provides congregate meals to senior citizens through South Mississippi Planning and Development District and transportation to the sites as well. They also operate a food pantry. Most of this food is supplied though the Bay Area Food Bank. Feeding the Gulf Coast was mentioned frequently, four times out of eight, by respondents. Additional organizations noted by surveyed stakeholders included the U.S. Department of Agriculture, East Biloxi Community Collaborative, and Farmhouse to Your House.

Aside from the Gulf Coast Healthy Community Collaborative, 40% (n = 8) of participants describe themselves as involved in specific food access programs or projects. One survey participant was in the process of attempting to form a consumer food co-op, while another stakeholder reported working with the local food bank, and one participated in cooking demonstrations for the community. One respondent specifically mentioned the National Diabetes Prevention Program and one explicitly referenced Healthy Families, Mothers, and Babies (Mississippi REACH). Another currently serves on the Board of Backpack Buddies in Pascagoula and conducts food drives at Head Start Centers once or twice per year to restock the food pantry. One is Chair of the Biloxi NAACP Environmental and Climate Justice Committee and is a member of the EEECHO (Education, Economics, Environmental, Climate and Health Organization).

When community leaders were provided with the opportunity to offer suggestions that would improve the local food system, their affection and support for their community were evident. These stakeholders have a profound dedication to their community and want very much to see their local area become a healthier place to live, work, and play, particularly for those most at risk of food insecurity. Several words were mentioned in almost every single response: education, accessibility, and availability. "I cannot stress enough the use of education," said one survey participant. Another added, "Show people how to eat healthy on a budget, [provide] cookbooks, and [foster] accessibility to affordable or free fruits and veggies." Stakeholders asserted that there is a palpable demand for more grocery stores in the area, increased funding to organizations to support families, fresh fruits and vegetables at local food pantries, revised eligibility requirements for SNAP benefits, and greater affordability of fresh foods. One respondent recommended that schools are capable of playing a role in the education component of food access and insecurity. Lastly, several respondents recognized that the high cost of healthy foods along with the time and resources needed to cook from home can contribute to challenges residents face in eating healthy.

Discussion

This study has revealed the value of a two-pronged methodology for conducting a community food assessment. Community residents and organizational stakeholders offer remarkable insight into food-related challenges on the Mississippi Gulf Coast. In many respects, there were similar observations shared by community residents and organizational stakeholders. In this regard, their standpoints confirm and even reinforce one another. For example, both recognize the pressing need for more fresh, healthy foods that are affordable. Food pantries and community gardens were enthusiastically supported across the board, and limited income was recognized as a key barrier to healthy food consumption. Both groups also found much merit in cooking classes, workshops, and related activities to make the most of local food environment resources, particularly given healthy food limitations. Our two subsamples, however, did not agree on every point. Residents were less enthusiastic about the pursuit of a healthy corner/convenience store initiative, even as stakeholders were more inclined to rate this option as a promising avenue for improving the food environment. While it is difficult to render a final judgment on such disparate views, residents' perspectives may be influenced by the fact that these stores have not historically carried such foods and

they do not always feel safe at such stores. Thus, their perspectives are quite justifiably shaped by their firsthand experiences. However, sustained work with store owners and other local organizations could create an opportunity for change. Significant effort would also be needed to inform residents of such an initiative and win residents' trust. So, while there is overriding agreement across our subsamples, it is important to recognize where divergent viewpoints also surface and how those divergences require multipronged actions.

The findings from this baseline community food assessment lend support to a series of recommendations for improving healthy food access in disadvantaged communities along the Mississippi Gulf Coast. There are eight main recommendations that stem from these results: (1) transportation, (2) healthy retail initiative, (3) incentive-based voucher programs, (4) food pantries, (5) community and school gardens, (6) community and workforce development, (7) awareness and education, and (8) pandemic impact and response.

Transportation

Structural impediments to healthy food access loom large in disadvantaged communities along the Mississippi Gulf Coast, and transportation is certainly among the most formidable barriers. A large percentage of residents are essentially living in food deserts not only due to the location of stores, but because these residents' means of accessing existing retail outlets are obstructed. Community organizations, both secular and faith-based, as well as other stakeholders with resources to establish a shuttle or transportation network for community members should join forces to overcome the challenges faced by those with limited transportation options.

Healthy retail initiative

Given the prevalence of corner (convenience) stores, and their common utilization by local residents, a healthy corner store retail initiative presents itself as a viable option for improved healthy food access, especially where transportation is an access barrier. The cost of healthy options would need to be addressed because residents have expressed concerns that healthier food options are generally more expensive. Corner store initiatives could help offset the transportation challenge faced by many residents. Also, careful coordination with corner store owners would need to be undertaken to ensure alignment between their offerings and consumer demands. Finally, a small but significant proportion of residents do not feel safe shopping at such stores, so efforts to improve the safety of such retail outlets may also be needed.

Incentive-based voucher programs

SNAP (Supplemental Nutrition Assistance Program) recipients are among those who could most benefit from the use of incentive-based voucher programs. Every effort should be undertaken to increase the number of sites that are willing to redeem incentive-based healthy food vouchers. SNAP Education (SNAP-Ed) programs could be used in tandem with such efforts to ensure that recipients are aware of the vouchers and that they understand how to utilize them. Retail outlets and farmers markets that may not already be accepting vouchers should be prioritized. Partner organizations could be encouraged to seek federal funding or leverage partnerships with foundations to cover the expenses of voucher programs.

Food pantries

Food pantries address a formidable gap for families who need supplemental food support on an intermittent or continuous basis. Food pantries and the residents they serve could benefit from expanded capacity to provide healthy food options such as fresh produce. Mississippi REACH has already moved in this direction by providing large refrigerators to a number of pantries, although more remains to be done. Improvements in physical infrastructure to store produce could be combined with policies that support the provision of healthy options to clients. Increased cool storage capacity is essential for pantries to accept produce. These changes would be best combined with healthy food policy adoption to signal an organizational commitment to client health. Pantries are often housed in community churches

or faith-based organizations. Information can be shared with these venues to help them become member organizations of the regional food bank.

Community and school gardens

Community and school gardens can have a tremendous impact on the availability of healthy food options. Opportunities for establishing community gardens and school gardens should be explored by community leaders and residents alike. Vacant community property that would be suitable for developing a garden should be researched. Establishing a relationship with city leadership prior to seeking to develop gardens is recommended. Local organizations could play a critical role in these efforts. Local early childcare and education sites such as Head Start should also be explored for establishing gardens. Integral to both of these strategies is forming relationships, if not already developed, with leadership and leveraging these relationships to facilitate the establishment of gardens. The community-led coalition should play a significant role in this relationship development process.

Community and workforce development

Programmatic interventions are best combined with efforts to foster structural changes designed to reduce or eliminate food insecurity. The results reported in this assessment support a robust effort to partner with programs that directly address the social determinants of health. Such efforts could include programs that work directly with the community to address economic development, social capital, health disparities, community revitalization, and workforce development. A foundational contributor to food insecurity is economic vulnerability.

Awareness and education

Residents are interested in learning more about nutrition and health. Programs designed to enhance resident knowledge should be pursued vigorously. Such an effort would be optimally combined with positioning community partners as a conduit for education and ensuring alignment between residents' needs with programmatic resources. Where possible, evidence-based approaches with a proven track record of effectiveness among the prioritized population should be utilized. Any efforts on this front would be best coupled with initiatives designed to improve the food environment that has such a profound influence on people's purchasing and consumption patterns.

Pandemic impact and response

Tracking the impact of the COVID-19 pandemic on Mississippi Gulf Coast food insecurity and local response efforts are well beyond the purview of this assessment. The surveys featured in this assessment were administered prior to the onset of the pandemic. However, the REACH project team will continue to support effective pandemic response [29] into the future through its work with Feeding the Gulf Coast as well as local food pantries. Community organizations are encouraged to pursue this very worthwhile goal as well, ideally in a collaborative and coordinated fashion.

Limitations and future directions

This study has several limitations. First, as a baseline assessment, this study provides a valuable but limited cross-sectional snapshot of the Mississippi Gulf Coast food environment. Any single point in time assessment like this one is best complemented by follow-up assessments, preferably those that track progress on the foregoing recommendations. We enthusiastically endorse and encourage such an effort. To the extent possible, the impacts of Mississippi REACH will be monitored and reported.

Second, any study of this sort would be enhanced with a larger number of responses from a wider range of community stakeholders. Organizations fill different niches within communities. Some community sectors such as justice and housing are not as well represented

in our organizational subsample as others. Expanding the coalition and the sectors represented by stakeholders to include those that would not seem principally focused on food (on first blush, at least) would provide an even more holistic portrait than we were able to render here. Of course, our undertaking still provides much value by complementing stakeholder insights with resident perspectives. But the broadest possible swath of community leaders, ideally in sufficient numbers to compare insights across community sectors (e.g. youth-serving agencies vs. eldercare organizations) would be an optimal expansion of one methodological prong applied here.

Third, food environment problems require community-level solutions. This assessment was a step in that direction, but much additional work remains. Efforts to explore the adoption of health-promoting food and nutrition standards in food pantries, restaurants, local congregations, etc. were intentionally not considered in this assessment to keep the survey length contained. And, of course, the first efforts of such an initiative should be undertaken with owners and leaders of food-serving establishments rather than residents and community leaders. Nevertheless, resident and community stakeholder support for such an initiative could help facilitate its adoption among community organizations that regularly serve food. To its credit, Mississippi REACH will promote the adoption of healthy food and nutrition standards in the time that remains on this grant.

Finally, this study presented results from the Mississippi Gulf Coast community food assessment, which was completed in 2019. These results are certainly useful in terms of compiling recommendations for the communities surveyed. And those recommendations included actions related to transportation, a healthy retail initiative, incentive-based voucher programs, food pantries, community and school gardens, community and workforce development, awareness and education, and pandemic impact and response. However, on this last point, it will be particularly important to remain aware of unique food environment challenges and potential solutions in the wake of the COVID-19 pandemic. This health crisis was especially pronounced in Mississippi. It placed a severe strain on the state's food safety net, and Mississippi's vaccination rate has lagged behind those of many other states, thereby prolonging the pandemic's negative impacts. Nevertheless, health promotion workers remain dedicated to the task, and the Mississippi REACH team is intent on improving the health outcomes of African American families residing in Hancock, Harrison, and Jackson counties by encouraging community-led interest in improving healthy food access.

Conclusion

Among its other goals, this project aimed to use a health equity lens to improve access to healthier foods for those in the communities served by the CDC-funded Mississippi REACH project, namely, citizens of Hancock, Harrison, and Jackson counties. This two-pronged baseline community food assessment has provided an initial snapshot of community food access needs and resources. The Mississippi Public Health Institute believes that efforts initiated through REACH can flourish during its five-year project period (2018 - 2023) while also sparking longer-term community-led interest in improving healthy food access. This assessment was unique in that it was administered through local social service organizations and a community-based coalition. We utilized a two-pronged methodology: (1) a self-reported community resident survey and (2) an organizational stakeholder survey. The coalition created to implement REACH program goals will be instrumental in helping to develop community-driven strategies that are informed by the findings from this assessment.

Acknowledgements

The Mississippi Public Health Institute thanks each of the Healthy Families, Mothers, and Babies community partners for allowing their sites to participate in the administration of the community food assessment resident survey and for their representatives' completion of the stakeholder survey. Organizational and personal insights have been instrumental in completing this assessment. We are also grateful to each community member who completed the resident survey to help us better understand local challenges with healthy food access. This manuscript was developed from an earlier draft of the Mississippi REACH Community Food Assessment that was submitted to the Centers for Disease Control and Prevention (Grant Number 1 NU58DP006585-01-00) as part of key project activities.

Conflict of Interest

This assessment was conducted with funding from the Centers for Disease Control and Prevention's Racial and Ethnic Approaches to Community Health (CDC REACH) grant program. The REACH grant that supported these assessment efforts was awarded to the Mississippi Public Health Institute. Bartkowski & Associates Research Team served as the independent program evaluator. No conflicts of interest are evident among those who conducted this assessment.

Appendix A: REACH Community Food Assessment Resident Survey

REACH Community Food Assessment Survey

We are surveying people to get their thoughts on the food available in their local community. Only adults who reside within one of these four zip codes may complete the survey: 39501; 39530; 39563; 39576.

If you reside in one of the four survey eligible zip codes, please circle your zip code. → 39501 39530 39563 39576

Your responses are confidential. Please do not put your name on this survey. A $10.00 thank you will be emailed to you for completing the survey. You will need to provide your name and email address on a separate form to the person at the site who provided the survey to receive your $10 thank you. But with no name on this survey, your responses cannot be traced back to you. Completion of this survey is entirely voluntary. This survey should take about 10 minutes to complete.

For each of the following, please check (✓) the one response that most closely identifies what you think.

1. How satisfied are you with the overall quality of the food sold in your community?

   □ Very satisfied □ Somewhat satisfied □ Somewhat dissatisfied □ Very dissatisfied

2. How satisfied are you with the selection of foods available in your community?

   □ Very satisfied □ Somewhat satisfied □ Somewhat dissatisfied □ Very dissatisfied

3. How satisfied are you with the availability of healthy food in your community?

   □ Very satisfied □ Somewhat satisfied □ Somewhat dissatisfied □Very dissatisfied

4. Overall, how satisfied are you with the price of food available in your community?

   □ Very satisfied □ Somewhat satisfied □ Somewhat dissatisfied □ Very dissatisfied

5. Are the fruits and vegetables in your community more expensive, the same price, or less expensive than elsewhere?

   □ More expensive □ About the same price □ Less expensive □ Don't know

6. Is "junk food" in your community more expensive, the same price, or less expensive than elsewhere?

   □ More expensive □ About the same price □ Less expensive □ Don't know

7. Are the overall food prices in your community more expensive, the same price, or less expensive than in other areas?

□ More expensive □ Same price □ Less expensive □ Don't know

8. Are there certain foods that you would like to buy but you cannot find in your community? □ Yes □ No

    a. If Yes, what foods would you buy if you could find them? _____

9. Would you buy food that was grown in your community at a farmers' market? □ Yes □ No

10. Does your community have a community garden? □ Yes □ No □ Don't know

    a. If you answered Yes to item 9: Do you participate in the community garden? □ Yes □ No

    b. If you answered No to item 9: Would you participate in a community garden? □ Yes □ No

Please indicate how often you buy food at each of the following and about how much you spend each visit.

11. How often do you buy food at a corner store or convenience store?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

12. How often do you buy food at a supermarket or grocery store (e.g., Walmart Food Center, local supermarket)?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

13. How often do you buy food at a warehouse store (e.g., Costco, Sam's Club)?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

14. How often do you buy food at a farmers' market?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

15. How often do you buy food at a carry-out shop (e.g., Pizza, Chinese, chicken box to-go)?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

16. How often do you buy food at a fast-food restaurant (e.g., McDonald's, Burger King, KFC, Popeye's)?

    □ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

    a. On average, how much do you spend each time you buy food there? $ ____ per visit

17. How often do you buy food at a sit-down restaurant, including an all-you-can-eat restaurant?

□ Daily □ Several times per week □ Weekly □ Every 2 weeks □ Monthly □ Rarely □ Never

a. On average, how much do you spend each time you buy food there? $ ____ per visit

For each of the following, please check (✓) which of the following best describes your household.

18. How often are you unable to purchase healthy food because you are out of money or lack financial assistance?

□ Often □ Sometimes □ Rarely □ Never

19. A nutrition facts label indicates the number and types of calories that are found in foods. How often do you read these?

□ Often □ Sometimes □ Rarely □ Never

20. How often do you or a family member prepare meals from scratch (that is, cook meals with food you have purchased)?

□ Daily □ A few times per week □ Several times per month □ Rarely or never

21. How often does your family or household sit down and eat a meal together?

□ Daily □ A few times per week □ Several times per month □ Rarely or never

22. Please indicate your level of agreement with the following statements about fried foods (that is, battered and deep fried).

a. Fried food is comfort food.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Not sure

b. Fried foods can be eaten daily with no bad health effects.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Not sure

c. Fried vegetables are about as healthy as fresh vegetables.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Not sure

d. Fried foods are healthy if people just use the right kind of oil.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Not sure

23. How easy is it for you to get to the supermarket or grocery store?

□ Very easy □ Fairly easy □ Fairly difficult □ Very difficult □ Don't know/not sure

a. If it is very difficult or fairly difficult for you to get to the supermarket or grocery store, what are the reasons it is difficult? (Select all that apply.)

□ Lack of personal transportation (no car, etc.)	□ No walkable route or too far to walk
□ Lack of public transportation (no bus routes, etc.)	□ Safety concerns
□ Long drive to store, too much traffic, etc.	□ Other reason: _____

24. How interested are you in learning more about how to prepare foods in a healthy way?

□ Very interested □ Somewhat interested □ Not very interested □ Not at all interested

25. About how many servings of vegetables do you eat in a typical day? A serving is one cup, or about what fits in the palm of your hand. → ____ number of servings of vegetables per day

26. About how many servings of fruit do you eat in a typical day? A serving is one cup, or about what fits in the palm of your hand. → ____ number of servings of fruit per day.

27. In the past 12 months, how often have any of the following been true for you or members of your household?

a. Because of limited money, we skipped meals or ate less. □ Often □ Sometimes □ Never

b. We couldn't afford to eat balanced meals. □ Often □ Sometimes □ Never

c. We lost weight because we could not afford food. □ Often □ Sometimes □ Never

d. We get food from a food bank or food pantry. □ Often □ Sometimes □ Never

28. If there is anything you would like to change about the way you eat, what would that be?

_____

_____

29. If you could change anything about the food available in your community, what would that be?

_____

_____

30. On a scale of 1-10, with 1 being Very bad and 10 being Excellent, how would rate the quality of food available in your community? → ___ 1 = Very bad … 10 = Excellent

31. On a scale of 1-10, with 1 being Very bad and 10 being Excellent, how would rate your ability to access healthy food in your community? → ___ 1 = Very bad … 10 = Excellent

32. What do you think of the following statement? □ In general, a person's health is related to what they eat.

□ Strongly agree □ Agree □ Disagree □ Strongly disagree □ Not sure

33. Please check (✓) any of the following conditions that you or anyone in your household has experienced. (Select all that apply.) Then, indicate if the condition you checked is related to what a person eats by circling Yes, No, or Not sure.

Check Condition (✓) Circle "Yes," "No," or "Not sure"

___ Diabetes → Related to what person eats? Yes No Not sure

___ High blood pressure → Related to what person eats? Yes No Not sure

___ Heart disease → Related to what person eats? Yes No Not sure

___ Cancer → Related to what person eats? Yes No Not sure

___ Obesity or overweight → Related to what person eats? Yes No Not sure

Finally, please tell us about yourself.

34. Including yourself, how many people of the following ages live in your household? Please place a number for all categories that apply.

    ___ Children under age 18 ___ Adults age 18-64 ___ Adults age 65 and older

35. Do you or does anyone living in your household participate in any publicly funded programs? (Check all that apply.)

    ___ Food Stamps/SNAP ___ School breakfast/School lunch

    ___ WIC (Women and Infant Children) ___ SSI (Supplemental Security Income)

    ___ Head Start ___ Other (please specify): _____

36. Are you the main food shopper for your household? Yes No

37. Are you a major decision maker for household food purchases? Yes No

38. Which of the following best describes you? Male Female

39. In what year were you born? _____

40. With which of the following do you most closely identify? (Check all that apply.)

    ___ Black or African American ___ Native Hawaiian / Pacific Islander

    ___ White ___ American Indian / Alaska Native

    ___ Asian ___ Other (please specify): _____

41. Are you Hispanic or Latino? (Please circle one.) Yes No

Thank you for taking the time to complete this survey. We appreciate your thoughts and comments.

Please ask the staff person for the separate sheet to provide your name and email address for your $10 thank you.

Thank you!

Thanks again for completing this survey. This page will be kept separate from your survey so your responses cannot be traced back to you.

We want to offer a thank you for the time you've spent providing the information on your completed survey. Please print your name and email address below and you will be emailed a $10 thank you card (certificate).

Name: _____

Email Address (please print clearly): _____

Your name and email address will never be shared with anyone other than the Mississippi Public Health Institute, the agency that is conducting this survey. Your email address will only be used to send the $10 thank you card.

Give this completed page to the staff person at the agency you are visiting.

Questions about this survey?

Contact Tennille Collins at Mississippi Public Health Institute at (601) 398-4406 or tcollins@msphi.org.

Appendix B: REACH Community Food Assessment Stakeholder Survey

REACH Community Food Assessment Stakeholder Survey

The REACH Program recently completed a community food assessment to gather perceptions from community residents regarding their thoughts on the food available in their local community. The assessment survey was distributed in four (4) specific zip codes - 39501; 39530; 39563; 39576. We would like to collect additional information from organizations and stakeholders who serve individuals from these areas to help us better understand the resources and barriers to food availability and quality in these communities. These zip codes were selected based on the priority population of the REACH program along with other food access data.

Please complete the survey below with respect to the zip code you serve. If you serve more than one zip code, we would appreciate your completing the survey for each zip code so that we have the most complete information for each community. If you need to complete a second survey for an additional zip code, select the option to complete a second survey when you see the prompt. Alternatively, if you have a staff or team member at an agency or organizational site who can provide the most appropriate responses for another zip code, please share this document with that staff person to complete or you both may complete it collaboratively, if preferred.

1. Select the zip code for which you will respond to the following questions

   □ 39501 □ 39530 □ 39563 □ 39576

2. A most recent food system report (2011) identified several recommendations to improve the food system for Gulf Coast Communities. Please respond to both columns below indicating if you aware of the strategy currently being implemented (column A) or beneficial to community if not currently being implemented (column B). For currently implemented programs in column A, please rate the effectiveness of the program (3 = very effective, 2 = somewhat effective, 1 = ineffective).

3. What do see as the most urgent priorities related to food access in your community?

A. Currently implemented programs and program effectiveness rating **From the list below, please check all of the recommendations that you are aware of *currently being implemented*.**	**B. Promising programs not currently implemented** **Select which of these programs would be beneficial (if not currently being implemented.)**
□ Establish a local food distribution program to support the distribution of fresh food to food-insecure neighborhoods • Program effectiveness rating (3, 2, or 1): ___	□ Establish a local food distribution program to support the distribution of fresh food to food-insecure neighborhoods
□ Create and implement a Fresh Corner Store Program to ensure fresh food access in food-insecure neighborhoods • Program effectiveness rating (3, 2, or 1): ___	□ Create and implement a Fresh Corner Store. Program to ensure fresh food access in food-insecure neighborhoods

□ Advocate for the Harrison County Farm to donate farm producers to food banks • Program effectiveness rating (3, 2, or 1): ___	□ Advocate for the Harrison County Farm to donate farm producers to food banks
□ Establish a Healthy Food Financing Initiative to assist businesses in expanding into food-insecure neighborhoods	□ Establish a Healthy Food Financing Initiative to assist businesses in expanding into food-insecure neighborhoods
□ Launch a Grocery Store Shuttle from food-insecure neighborhoods to grocery stores • Program effectiveness rating (3, 2, or 1): ___	□ Launch a Grocery Store Shuttle from food-insecure neighborhoods to grocery stores
□ Create a community kitchen for food storage, meal preparation, nutrition counseling, and cooking demonstrations • Program effectiveness rating (3, 2, or 1): ___	□ Create a community kitchen for food storage, meal preparation, nutrition counseling, and cooking demonstrations
□ Establish a regional Food Policy Council • Program effectiveness rating (3, 2, or 1): ___	□ Establish a regional Food Policy Council
□ Start a School to Farm and Sea Program • Program effectiveness rating (3, 2, or 1): ___	□ Start a School to Farm and Sea Program
□ Target food businesses for economic development • Program effectiveness rating (3, 2, or 1): ___	□ Target food businesses for economic development
□ Expand school garden demonstration projects • Program effectiveness rating (3, 2, or 1): ___	□ Expand school garden demonstration projects
□ Use vacant lots for community gardens • Program effectiveness rating (3, 2, or 1): ___	□ Use vacant lots for community gardens
□ Use vacant buildings for urban agriculture and aquaculture • Program effectiveness rating (3, 2, or 1): ___	□ Use vacant buildings for urban agriculture and aquaculture

4. Who in the community is most at risk of food insecurity?

5. What do you see as the main causes of food insecurity?

□ Access

□ Availability

□ Affordability

□ Other: _____

6. Can you describe the current resources or services that most people in your community use to assist them in obtaining food?
7. Are there programs or resources that are underutilized? ☐ Yes ☐ No ☐ Not sure
    a. If yes, please describe.
8. Do you believe there is an interest in eating healthy fresh foods? ☐ Yes ☐ No ☐ Not sure
    a. Are there specific barriers to consuming healthy foods?
9. Are you aware of community gardens available for your clients/patients/individuals you serve?

    ☐ Yes ☐ No ☐ Not sure

    a. If yes, please describe.
10. Are there any community gleaning projects in the area you are serving? (A gleaning project is a program that redirects excess food, especially produce, to people facing food insecurity.)

    ☐ Yes ☐ No ☐ Not sure

    a. If yes, please describe.
11. Are there any food buying clubs or cooperatives active in your community?

    ☐ Yes ☐ No ☐ Not sure

    a. If yes, please describe.
12. Please provide the name of any organization *and* specific food security program of which you are aware:
13. Do you partner or collaborate with any organization or agency to address food security in your community?

    ☐ Yes ☐ No

    a. If yes, please identify the organization or agency.
14. Are you involved in specific food access programs or projects?

    ☐ Yes ☐ No

    a. If yes, please describe.
15. What changes can you suggest that would improve the local food system?
16. Please provide any additional comments about food access or food insecurity that have not been addressed above.

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Volume 16 Issue 10 October 2021