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Feeding Families

Evaluation Report: Twelve-Month Program Time Point

Allison Karpyn, PhD
Nicole Kennedy, MPA
Mia Seibold, BS
Tara Tracy, BS

Submitted to Westside Family Healthcare

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Center for Education in Research and Social Policy, University of Delaware
Pearson Hall, Suite 107, 125 Academy Street
Newark, DE 19716
(302) 831-2928
cresp.udel.edu
Twitter: @udcresp

CRESP Leadership Team

Henry May, Director (hmay@udel.edu)
Allison Karpyn, Senior Associate Director (karpyn@udel.edu)
Sue Giancola, Associate Director (giancola@udel.edu)
Jeff Klein, Associate Director (kleinjef@udel.edu)

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Report Contacts

Allison Karpyn, PhD, 610-909-3154, karpyn@udel.edu
Tara Tracy, 610-212-2601, tetracy@udel.edu

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Executive Summary

Using carry-over funding from a 2020 Highmark BluePrints for the Community (Highmark) grant, Westside Family Healthcare (WFH) continued the "Feeding Families" pilot program between January and July of 2022. (For review of Feeding Families' first six months, please refer to *Feeding Families. Evaluation Report* (R22-01). Newark, DE: Center for Research in Education and Social Policy. March, 2022.) Feeding Families is designed to address food insecurity, expand access to fresh foods, provide routine nutrition counseling, and teach participants how to better manage their chronic diseases. Of the 51 WFH families recruited at program inception in early 2021 both to receive fresh foods from home-delivery service Hungry Harvest and to meet virtually with a nutritionist and social service coordinator for customized education, cooking tools, and recipes, 42 had stayed in the program's six-month point. Of these 42, 38 remained in the program at the 12-month point, an extremely commendable and overall retention rate of 74.5%.

After 12 months, Feeding Families has met or exceeded program goals. Findings include:

Dietary Quality and Fruit and Vegetable Consumption:

- After 12 months of program participation, 11.8% of participants reported that their dietary quality was excellent; no participants had reported that their dietary quality was excellent at baseline. At 12-months, 70.5% of participants reported that their dietary quality was very good or good, while this proportion was 35.3% at baseline.
- Additional biometrics measured between the six- and 12-month time points included FV consumption, which increased for fruit (an average of 0.4 cups/day) and slightly for vegetables, a 0.1 cup/day average increase. Also measured over these same time points were weight and body mass index (BMI). Average participant weight decreased by two pounds (from 191 to 189) and average BMI decreased from 34.1 to 33.7.

Weight Loss:

- At the 12-month time point, almost two-thirds of program participants indicated that they had lost weight since they started receiving their food boxes. This is a notable behavior change due to goal setting – 72% of participants reported working towards their goals.

Food Security:

- At baseline, 70.6% of participants were food insecure while after 12-months, this proportion decreased to 47.1%.

Background

Westside Family Healthcare (WFH) is a community-minded, non-partisan Federally Qualified Health Center located in Wilmington, DE. Dedicated to a person-centered approach, WFH serves individuals and families with various programs and services including primary care, dental care, women's health services, pediatric healthcare, behavioral health, and in support areas such as nutrition and social services.

In January, 2021, with funding from Highmark Blue Cross Blue Shield Delaware's BluePrints for the Community: Social Determinants of Health Grant (Highmark), WFH launched the "Feeding Families" program designed to address food insecurity. The Feeding Families program serves those persons with diabetes, a hemoglobin A1c level greater than eight, and/or hypertension, and/or obesity, and those who identify as food insecure according to the Hunger Vital Signs[1] screening tool. The program provides routine nutrition counseling, and educates WFH patients in self-management of chronic diseases. The Feeding Families program addresses the social economic inequities that lead to chronic food insecurity and poor health outcomes among WFH's patient population. While these social inequities existed long before the COVID-19 pandemic, it exacerbated the need and drastically deepened the hunger crisis in Delaware.

The Highmark grant provided participating families with 24 weekly, fresh foods deliveries from Hungry Harvest, a fresh food delivery service based in Baltimore, MD. Each week, patients received enough food to prepare healthy meals for their whole family. Participants were asked to attend monthly nutrition counseling and social service check-ins; they also receive additional incentives such as cooking appliances and kitchen utensils. WFH initiated a partnership with the University of Delaware's Center for Research in Education and Social Policy (UD-CRESP) to measure how increased access to healthy foods, nutrition counseling, and other support facilitates behavior change.

Program planning, structural organization, and recruitment occurred between January and June 2021; program implementation in the form of the weekly food deliveries and monthly nutrition and social services check-ins took place between June 2021 and the end of 2021. (For review of Feeding Families' first six months, please refer to *Feeding Families. Evaluation Report* (R22-01). Newark, DE: Center for Research in Education and Social Policy. March, 2022.) During this first six month period of the program, WFH enrolled 51 families; notably, 42 remained enrolled and active by its end.

With additional approvals, the program carried over funding and continued until the end of June, 2022; i.e., for an additional six months. Of the 42 who remained in the program at the start of this additional period, 38 (90.5%) remained at the program's 12-month time point (i.e., the end of June, 2022), another notable retention rate. The current report evaluates this second six-month period, with comparison to the first six months where appropriate.

[1] https://childrenshealthwatch.org/public-policy/hunger-vital-sign/

Similar to the initial six-month period, the second six months included the previously described weekly food deliveries as well as monthly nutrition counseling and social services support, along with incentives such as cooking appliances, kitchen utensils, and a journal. Monthly nutrition counseling sessions were conducted by WFH nutritionists and included goal setting and tracking, strategies for behavior change, and education on chronic disease management. The monthly check-ins between WFH's social services team and program participants assessed progress, addressed program challenges, and connected participants to other resources as needed.

The 42 families continued to receive weekly food deliveries from Hungry Harvest (e.g., fruits, vegetables, eggs, bread) as shown in the photo of a sample delivery. Over the course of the 12-month program, Hungry Harvest delivered over 32,000 pounds of food to Feeding Families participants. This total was comprised of approximately 29,000 pounds of produce plus another almost 3,150 pounds of eggs and bread.

During program development, WFH established four outcomes for the Feeding Families program:

1. At least 60% of patients increase consumption of-fruits and vegetables and decrease frequency of fast-food consumption per week by end of program period
2. At least 55% of patients achieve self-management goal by end of program period
3. At least 75% of patients show an increase in knowledge and understanding of how nutrition influences their chronic disease
4. At least 50% of patients feel food-secure during the program period

The evaluation approach sought to capture progress toward these outcomes as well as to understand program implementation and process measures.

Methods

In order to measure program impacts and processes, as well as progress towards meeting established outcomes, several survey measures and data capture tools were created and used. All program materials and surveys were available to participants in both English and Spanish to increase the program's accessibility, and are available in this report's Appendices. UD-CRESP and WFH collaborated on the creation and revision of survey tools both before and during implementation of the two six month program periods, following applicable Institutional Review Board (IRB) and WFH privacy standards. Each participant received a unique identification number used to track participation across the survey tools; only approved WFH staff had access to the participant name associated with that number.

An IRB protocol for review by University of Delaware was submitted in the Spring of 2021 and was determined exempt on May 4th, 2021 (see Appendix A). WFH's Quality Improvement

Committee also reviewed and approved the internal "Investigational or Research Activity Application" as part of the evaluation.

Survey measures and tools included:

1. Participant Knowledge, Dietary Behaviors, and Food Security Survey: This survey was administered via Qualtrics at the baseline (i.e., program start), six-month, and 12-month program time points. Questions addressed participants' knowledge about nutrition and their own health, dietary behaviors, and food security. WFH social services coordinators administered the survey verbally at the three time points in order to assess change in participants' health and food insecurity status along with changes in nutrition knowledge and behavior. Several other questions, addressing participants' perceptions of weight loss, health change, and other potential program benefits, were added to the survey at the six-month point, and were asked again at the 12-month-time point. The Qualtrics survey was shared securely between UD-CRESP and WFH using an anonymous link generated by UD-CRESP. WFH collected the primary data through direct responses from participants while UD-CRESP completed data analyses using the de-identified survey responses. (See Appendix B.)

2. Nutrition Lesson Knowledge Assessment: WFH facilitated monthly nutrition lessons with participants that reviewed basic nutrition principles and how nutrition affects chronic disease. Participants were asked questions centered on fat, sodium/salt, and sugar intake and how consumption thereof is related to diabetes, hypertension, and obesity. (See Appendix C for the nutrition lessons and related questions that were asked in the Qualtrics survey described in #1 above and presented in Appendix B.) This report does not present data from questions since the implementation and evaluation teams decided to revise these questions prior to recruiting future cohorts of the Feeding Families program.

3. Self-Management Tool: WFH facilitated monthly check-ins by phone with a social service coordinator that followed a self-management tool, where participants provided feedback on their progress towards meeting nutrition-related goals. Additional questions addressed participants' health goals, perceptions of meals made with the food box, and any feedback that they had about the program. The data was entered into a SmartSheet; see Appendix D.

4. Fruit and Vegetable Screener: During the early part of the second six-month program period, WFH and UD-CRESP added a fruit and vegetable (FV) survey[2] to better understand how many FVs participants were consuming. While FV consumption is generally discernable from responses to the Self-Management Tool's questions, use of validated and short (eight question) screener improves the quality of the evaluation. WFH staff felt this addition would not be problematic, given participants' confidence in

[2] 2001 California Health Interview Survey, Adult Questionnaire, Section E (Health Behavior, Dietary Intake): https://healthpolicy.ucla.edu/chis/design/Documents/CHIS2001_adult_q.pdf

answering other questions, as well as the overall stability of program implementation. For most participants, the FV screener was administered twice during the second six months, as close as possible to both the start and end of this period (see Appendix E).

Findings

Baked sweet potato with butter and cinnamon, orange as snacks;

Raw cauliflower;

Salad with tomatoes; and,

Hard-boiled egg with salt and pepper.

–Feeding Families Participant Description of dishes made with Food Box items

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Program Participation

The Feeding Families program enrolled 51 participants between March and June 2021, exceeding its initial goal of 50 participants; 42 of these persons were still program participants after six months, an almost 82.3% retention rate. At the 12-month time point, 38 participants remained, a 74.5% retention rate between the program's start and end (i.e., June, 2021 to June, 2022). It should be noted that not all of these 38 participants were available to respond to the administered surveys (three); accordingly, the number of respondents reported in the Findings section of this report will vary.

Table 1 presents the diverse demographic makeup of the 38 participants. Most participants were female (86.8%), Spanish speaking (57.9%), Latinx (65.8%), and White-identifying (60.5%), although approximately 34.2% of participants identify as African-American.

Table 1: Feeding Families Participant Characteristics

Demographic and Other Characteristics	
	12-months (n=38)
Average Age	49.3 years
Gender	
Female	86.8%
Male	13.2%
Preferred Language	
English	42.1%
Spanish	57.9%

Demographic and Other Characteristics	
Ethnicity	
Latinx	65.8%
Not Latinx or Latino	23.7%
No Response	10.5%
Race	
African American	34.2%
White	60.5%
American Indian	2.6%
More than one race	0%
Refuse to report	2.6%

As previously noted, a 74.5% retention rate (n=38) was achieved between the program's starting and 12-month time points. It is notable that the program's high retention rate of its Latinx participants was stable throughout the program; at 12-months, persons of Latinx ethnicity represented 65.8% of all participants; this number was 66.7% as previously reported at the six-month time point. The participants who un-enrolled from the program since this prior time point did so for several reasons as shown in Table 2.

Table 2: Participant Drop Out

Reason for Un-Enrollment (n=4)	
Reason	
Participant's family does not eat vegetables so food is going to waste	25.0%
Did not want to complete surveys	25.0%
Moved outside of delivery zone	50.0%

Progress towards Outcomes

The remainder of the Findings portion of this report is organized into two sections. The first section responds specifically to the stated outcomes originally established for the Feeding Families program. The second section describes a range of food, nutrition, and well-being outcomes of interest to program developers and stakeholders.

Progress toward Outcome 1

At least 60% of patients increase consumption of-fruits and vegetables (FVs) and decrease frequency of fast-food consumption per week by end of program period.

This objective was met given the positive trends in several metrics reflective of a healthy diet that emphasizes FV consumption and de-emphasizes fast food consumption. Average fruit and vegetable consumption increased during the program's second six months (i.e., the time period over which this metric was measured). While the sample size was too small to show statistical

significance, average fruit consumption increased from 1.7 cups/day to 2.1 cups/day, while vegetable consumption increased from 2.7 cups/day to 2.8 cups/day on average.

Further analysis indicates that almost all participants ate relatively few meals away from home, including at fast food establishments, over the entire program period. Specifically, and at each of the time points respondents indicated that they had eaten only 0-7 meals away from home during the previous week. Across the three time points, it is notable that more than half of the 34 persons who answered this question ate dinner at home every day of the week: 58.8% (n=20) at baseline; 67.6% (n=23) at six-months; and, 61.8% (n=21) at 12-months.

The overall increase in consumption of healthy foods is further evidenced by these examples of meals prepared by participants. These examples were taken from participants' 108 distinct responses provided between the six- and 12-month time points, and are provided in addition to the examples on page 8:

Stir fry with the carrots and cabbage

Salad, omelet with veggies

Apples and peanut butter, broiled potatoes with olive oil, garlic salt and pepper

Spinach with olive oil, chili peppers, onions, tomatoes with grilled breast and rice

Cabbage with brown rice and chicken; bowl of fruit on the table

Squash with eggs for kids; tomatoes with spaghetti for dinner

Additional evidence of participants' increased access to, and comfort with, healthy foods is their knowledge of healthy meal preparation. As shown in Table 3 and while approximately 79.5% (n=27) of participants agreed or strongly agreed they were able to prepare healthy meals at baseline, these proportions increased to 94.1% (n=32) at six-months and 91.2% (n=31) at 12-months.

Table 3: Healthy Meal Preparation

	Baseline, % (n=34)	Six-months, % (n=34)	Twelve months, % (n=34)
Strongly agree	32.4	35.3	44.1
Agree	47.1	58.8	47.1
Disagree	14.7	5.9	5.9
Strongly disagree	0.0	0.0	2.9
Don't know	5.9	0.0	0.0
Refuse to answer	0.0	0.0	0.0

Last, participants' perceptions of their overall diet quality also improved. At baseline, no participants felt their diet was excellent; this result positively shifted at both six-months (17.6%,

n=6) and 12-months (11.8%, n=6). Corresponding decreases in participants' perceptions of dietary quality that were fair or poor. Specifically, and at baseline, 41.2% (n=14) of participants felt their dietary quality was fair and decreased to 14.7% (n=5) and 8.8% (n=3) at six- and 12-months respectively, as seen in Table 4.

Table 4: Participant Dietary Quality

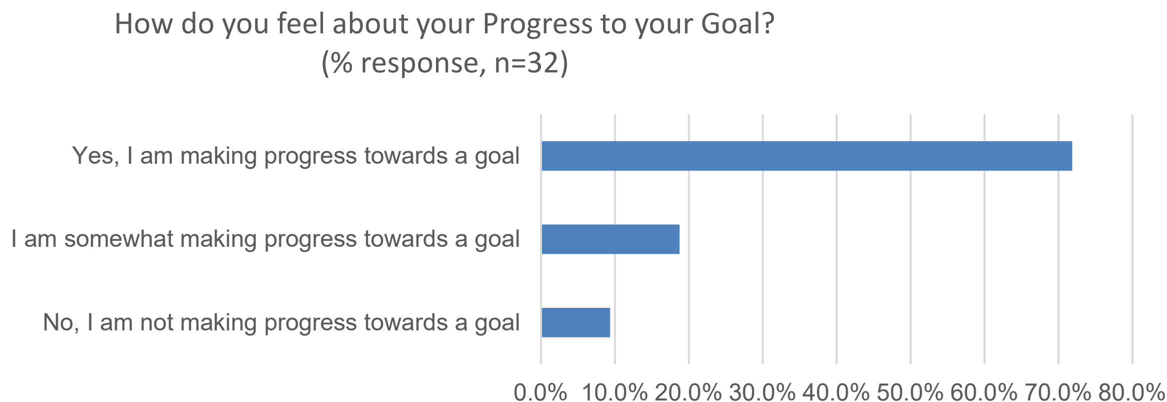
	Baseline % (n=34)	Six months, % (n=34)	Twelve months, % (n=34)
Excellent	0.0	17.6	11.8
Very Good	8.8	20.6	17.6
Good	26.5	41.2	52.9
Fair	41.2	14.7	8.8
Poor	14.7	2.9	5.9
Don't know	8.8	2.9	2.9
Refuse to answer	0.0	0.0	0.0

Progress toward Outcome 2

At least 55% of patients achieve self-management goal by the end of program period.

This goal was achieved, since 71.9% (n=23 of 32 responses) reported, yes, they were working towards a goal. This is an important improvement, since approximately 45% of participants had reported progress towards reaching their goal at the six-month mark. Goal setting is a main component of the Feeding Families program in helping participants with chronic disease management. Throughout the 12 months of the program, participants completed monthly check-ins with WFH's Social Services staff to help with goal establishment and management, via the Self-Management Tool. Goals established by the 23 participants included: losing weight, drinking more water, increasing exercise, eating fewer salty foods/managing blood pressure, working toward better control of glucose, and/or eating fewer carbohydrates and fried foods.

Figure 1: Participant Perception of Progress



Participants were also asked to describe barriers toward making progress on their goal. Respondents mentioned a personal stressor (e.g., death in family, worry about children), or physical ailments such as illness, back pain, or medication issues as limitations toward progress. Additional challenges faced in working towards goals included difficulties maintaining dietary changes and not having enough time for physical activity due to caregiving responsibilities and/or poor weather.

In terms of goal tracking, participants received a program journal, and were asked about its usage. On average, 40.6% of participants had used the journal during the current week, while another 9.4% sometimes used the journal during the same time period. Half (50.0%) of participants did not use the journal at all during the current week.

Progress toward Outcome 3

At least 75% of patients show an increase in knowledge and understanding of how nutrition influences their chronic disease.

This objective was met through evaluation of participants' knowledge of food label. At baseline, 64.7% (n=22) said yes, they understood how to read a food label. These proportions improved to 91.2% (n=31) and 88.2% (n=30) at six- and 12-months respectively. These data are shown in Table 5.

Table 5: Food Label Understanding

	Baseline, % (n=34)	Six-months, % (n=34)	Twelve-months, % (n=34)
Yes	64.7	91.2	88.2
No	35.3	5.9	11.8
Don't know	0.0	2.9	0.0

Progress toward Outcome 4

At least 50% of patients feel food-secure during the program period.

Over half of Feeding Families participants are food secure, a notable achievement that meets the stated outcome. Food security for the program's participants is an important outcome measure given Feeding Families' efforts to address an important Social Determinant of Health (i.e., food insecurity) by providing adequate, nutritious food. To assess food security, participants answered the two-question Hunger Vital Signs survey, which was included in the Participant Knowledge, Dietary Behaviors, and Food Security Surveys administered at the program's three evaluation time points (i.e., baseline, six months, 12-months). To be considered food-insecure, respondents must answer "always true" or "sometimes true" to at least one of these two questions:

1. Within the past six months, I worried whether our food would run out before we got money to buy more.

2. Within the past six months, the food I bought just didn't last and we didn't have money to get more.

We examined the proportion of participants (n=34) who answered affirmatively to either of the food security questions at baseline and again at the six-month and 12-month time points (Table 6). In this analysis and at baseline, 70.6% of participants were food insecure. At the six-month follow up, this rate had declined to 47.1%, while the 12-month rate was stable, also at 47.1%. Similar to the more detailed analysis above, these results indicate that 52.9% of participants had answered 'no' to both questions and therefore, were food secure.

Table 6: Food Insecurity

	Food Insecure at Baseline, % (n=34)	Food Insecure at six months, % (n=34)	Food Insecure at 12-months, % (n=34)
Yes	70.6%	47.1%	47.1%
No	26.5%	52.9%	52.9%
Don't Know	2.9%	0%	0%

Additional Food, Nutrition, and Well-being Outcomes

Participant body mass index (BMI)[3] was tabulated at the end of the 12-month program period, over two time points within three months of enrollment and completion dates. The source for this data was participant electronic medical records for height and weight from clinical appointments. The average weight of these participants decreased from 191.2 pounds to 188.9 pounds over the two time points. Similarly, average BMI decreased from 34.1 to 33.7; both results mean that on average, all participants are obese since their BMI is greater than or equal to 30.0[4]. The BMI finding approaches statistical significance at p=.07, although neither is statistically significant at p=.05 or less.

Further and as noted in the Methods section, questions were added to the Participant Knowledge, Dietary Behaviors, and Food Security Survey at the mid-point of the program. The first of these addressed self-perceived weight loss since food box deliveries began. Of the 33 participants who answered this question, over two-thirds (69.7%, n=23) indicated that they had lost weight when asked at six-months, while a similar percentage (65.5%, n=19) indicated that they had lost weight at the 12-month time point.

Participants were also asked if they had noticed improvements in their health as a result of food box receipt. Not surprisingly, similar percentages of respondents who said they had lost weight also said that they had noticed health improvements. At six-months, 78.8% (n=26) of

[3] https://www.cdc.gov/healthyweight/assessing/bmi/index.html, accessed June 30, 2022.
[4] https://www.ncbi.nlm.nih.gov/books/NBK541070/, accessed August 18, 2022.

respondents indicated that they had seen positive health changes. At 12-months, these proportions increased to 86.2% had noticed improvements to their health. Observed changes included weight loss, increased energy, and positive changes in health metrics such as blood pressure, cholesterol, and blood sugar.

Participants were further asked if they had noticed changes to their mental health due to receipt of the food boxes. Almost half (48.5%, n=16) of the 33 responses indicated a positive benefit to their mental health at six-months, while this number remained stable at 12-months. These changes include thinking more positively, feeling better about themselves and food, and being less anxious since they are certain they will have food. One respondent said, "I get happy when I get the box with all the fruits and veggies I get."

Slightly less than half of participants (45.9%, n=17) documented the additional benefits they had experienced due to the food boxes. These responses were similar to the previously noted physical and mental health benefits; e.g., "I make better meals," "I saved money," and "…I am now more prone to snack on fruits and vegetables rather than on pizza or junk." Participants also noted that they can share meals with a neighbor, are more open to new foods, and that their family now spends more time in the kitchen with them.

The final two questions addressed the overall nature of the program by asking, "how would you make the program better" and, "overall, how likely would you be to recommend this program to a friend or family member." Some respondents suggested adding fish, providing live cooking classes, and having more flexibility regarding when and how often the food box is delivered. And notably, all participants (100.0%, n=33) who responded to this question were either extremely likely or likely to recommend the Feeding Families program to a friend or family member at the six-month time point. This proportion decreased to 96.6% at 12-months since one respondent said they would be extremely unlikely to recommend the program.

Summary and Next Steps

After 12 months, Feeding Families has met or exceeded the program goals. Overall, this is a highly effective program that has resulted in participants gaining dietary knowledge, improving food security, and losing weight, among other positive benefits. Most participants are highly satisfied with the Feeding Families program.

Program retention (74.5% remaining fully engaged in the program at the end of 12 months) is a notable accomplishment given that WFH provided a range of time- and resource-intensive services along with relatively frequent contact. It is particularly noteworthy that the Feeding Families program retained nearly all its Latinx participants throughout the 12-month implementation period. Serving this population is a state-wide priority, and WFH's organization, staffing, commitment, and multi-lingual approach are all to be recognized in their contributions to achieving this priority. WFH's Feeding Families program could be a model for similar efforts in other parts of Delaware.

The reduction in food insecurity as part of the Feeding Families program is an important and notable achievement and is consistent with prior studies on similar programs. A recent report[5] provides a review of recent studies examining the effectiveness of nutrition and health-care oriented partnerships broadly, and includes a review of studies specifically focused on food insecurity and referral to produce programs. The review identified 14 studies which included a food insecurity screening and referral to food distribution, however, of these only four reported on changes in food security; all four found improvements as a result of the produce program[6,7,8,9]. In one study of 1,722 patients[5], food insecurity decreased 94% over the course of the intervention. Another study of the Fresh Rx Program[6] found that, by the end of the nine-month intervention 98% of participants were food secure. A study examining the impact on pediatric food insecurity[8] found a 72% improvement in food security associated with participation in a food voucher program.

Comparatively, our findings showed a considerable improvement in food security, at baseline 70.6% participants were food insecure, and after 12 months of intervention 47.1% were food insecure. Ongoing, and perhaps more sizable, resources are needed to impact larger populations.

To continue to test the program, WFH can use the tools and program with additional or larger groups of participations and build on this data. There is an opportunity to collect and assess more biometric and mental-wellness data to prove health outcomes. While reducing food insecurity will remain a prime program outcome, improving health appears to be a likely secondary outcome and worth studying. Using this pilot program WFH can explore ways to expand the program, collect more data, and prove a concept for health insurance reimbursement for improving health through improving food access.

These remarkable achievements reflect significant dedication and commitment by WFH and its patients. WFH and UD-CRESP have pledged to continue collaborating to secure additional funding for the Feeding Families program, furthering research to reach the mutual goal of increasing access to healthy food in Delaware.

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Appendix A: IRB Approval Letter for Exemption

Institutional Review Board
210H Hullihen Hall
Newark, DE 19716
Phone: 302-831-2137
Fax: 302-831-2828

DATE: May 4, 2021

TO: Allison Karpyn, PhD
FROM: University of Delaware IRB

STUDY TITLE: [1749395-1] Feeding Families - Westside Family Health
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
EFFECTIVE DATE: May 4, 2021

REVIEW CATEGORY: Exemption category # *(2)*

Thank you for your New Project submission to the University of Delaware Institutional Review Board (UD IRB). According to the pertinent regulations, the UD IRB has determined this project is EXEMPT from most federal policy requirements for the protection of human subjects. The privacy of subjects and the confidentiality of participants must be safeguarded as prescribed in the reviewed protocol form.

This exempt determination is valid for the research study as described by the documents in this submission. Proposed revisions to previously approved procedures and documents that may affect this exempt determination must be reviewed and approved by this office prior to initiation. The UD amendment form must be used to request the review of changes that may substantially change the study design or data collected.

Unanticipated problems and serious adverse events involving risk to participants must be reported to this office in a timely fashion according with the UD requirements for reportable events.

A copy of this correspondence will be kept on file by our office. If you have any questions, please contact the UD IRB Office at (302) 831-2137 or via email at hsrb-research@udel.edu. Please include the study title and reference number in all correspondence with this office.

INSTITUTIONAL REVIEW BOARD

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Appendix B: Participant Knowledge Survey Administered via Qualtrics
(also made available in Spanish)

CONSENT TO PARTICIPATE IN A RESEARCH STUDY, Title of Study: Feeding Families Program
Principal Investigator(s): Allison Karpyn
Important aspects of the study you should know about:
Purpose: The purpose of the study is to evaluate the effectiveness of the Westside Family Healthcare Feeding Families Program.
Procedures: If you choose to participate, you will be asked to answer the questions provided in this survey to the best of your ability.
Duration: The survey will take about 10 minutes, and you will be asked to complete it two times; once at the start of the program and again at the end of the program.
Risks: There are no foreseen risks or discomforts that will result from this survey.
Benefits: There are no direct benefits from participation in this survey.
Costs and Compensation: If you decide to participate there will be no additional cost to you. You will not be directly compensated for completing this survey.
Participation: Taking part or not in this research study is your decision. You can decide to participate and then change your mind at any point.
Contact Information: If you have any questions about the purpose, procedures, or any other issues related to this research study you may contact Westside Family Healthcare Director of Clinical Operations, Debbie Bryant at 302-836-2864 ext: 1313 or deborah.bryant@westsidehealth.org. If you have any questions about the content of this survey please contact the Principal Investigator, Allison Karpyn at 610-909-3154 or karpyn@udel.edu.

I have read and understood the information in this form and I agree to participate in the study. I am 18 years of age or older. I have been given the opportunity to ask any questions I had and those questions have been answered to my satisfaction. I understand that I will be given a copy of this form for my records:
( ) Yes I consent to participate.
( ) No I decline to participate. Thank you very much for your time.

1. In general, how healthy is your overall diet? Would you say:
    a. Excellent
    b. Very good
    c. Good
    d. Fair
    e. Poor
    f. Refuse to answer
    g. Don’t know

2. In general, how many times each week do you eat dinner at home with family?
    a. 1
    b. 2
    c. 3
    d. 4

e. 5
f. 6
g. 7
h. Refuse to answer
i. Don’t know

3. During the past seven days, how many meals did you get that were prepared away from home in places such as restaurants, fast food places, or from vending machines?
   a. 0 - 7
   b. 8 - 15
   c. 16 - 21
   d. Refuse to answer
   e. Don’t know

4. Within the past six months, I worried whether our food would run out before we got money to buy more.
   a. Always true
   b. Sometimes true
   c. Never true
   d. Refuse to answer
   e. Don’t know

5. Within the past six months, the food I bought just didn’t last and we didn’t have money to get more.
   a. Always true
   b. Sometimes true
   c. Never true
   d. Refuse to answer
   e. Don’t know

6. Do you understand how to read a food label?
   a. Yes
   b. No
   c. Refuse to answer
   d. Don’t know

7. This question has been removed, please go to the next question.

8. I have the knowledge and skills to prepare healthy meals for my family
   a. Strongly disagree
   b. Disagree
   c. Agree
   d. Strongly agree

e. Refuse to answer
f. Don't know

9. Are you aware of any major health problems or diseases that are related to the amount of fat people eat?
   a. Yes
      i. If yes, what diseases or health problems do you think are related to fat?
   b. No
   c. Not sure

10. Are you aware of any major health problems or diseases that are related to how much salt or sodium people eat?
   (a) Yes
      i. If yes, what diseases or health problems do you think are related to salt?
   (b) No
   (c) Not sure

11. Are you aware of any major health problems or diseases that are related to how much sugar people eat?
   a. Yes
      i. If yes, what diseases or health problems do you think are related to sugar?
   b. No
   c. Not sure
   (a)

[The remaining questions were added at the program's six month point]

12. Since you began this program and started getting your food box, have you lost weight?
   a. Yes
   b. No
   c. Unsure

13. Since you began this program and started getting your food box, have you seen an improvement in your health?
   a. Yes (if so please describe below)
   b. No

   If Yes, please describe how you have seen an improvement in your health:
   ____

14. Since you began this program and started getting your food box, have you seen a change in your mental health?
    a. Yes
    b. No
    c. Unsure

    If Yes, Please describe how you have seen a change in your mental health:
    ____

15. Are there any other benefits of the program or food box that you have experienced?

____

16. How would you make the program better?

____

17. Overall, how likely would you be to recommend this program to a friend or family member?
    a. Extremely Likely
    b. Likely
    c. Unlikely
    d. Extremely Unlikely
    e. Unsure or Don't know

Appendix C: Feeding Families Nutrition Lesson Curriculum and Evaluation Metrics

FEEDING FAMILIES LESSON PLANS

Metric 3: At least 75% of patients show an increase in knowledge and understanding of how nutrition influences their chronic disease

There will be 3 lessons via zoom on:

1. Sodium and hypertension;
2. Carbohydrates and Diabetes;
3. Fats and obesity.

Each topic will contain three parts:

1. Definition/Information on the nutrient and why it is important for the related chronic disease
2. How to read a label for that nutrient
3. "Recipes" or how to use the fruits and veggies delivered in the food box

We will encourage patients to prepare meals at home as much as possible because they are healthier and cost less money.

Nutrition topic 1: Sodium and hypertension

Objective: 1. At the end of the program, patients will know that eating salt increases their blood pressure

Objective 2: At the end of the program, patients will know how to read a nutrition label for sodium content

Introduction: Sodium is a mineral, like iron. We get most of our sodium from salt in our food. Eating too much sodium increases our blood pressure. High blood pressure, also called hypertension, is a health problem since it increases the risk for stroke and kidney disease.

Dietary sources of sodium- the salt shaker- during cooking or at the table. Most of our salt comes from food that we buy ready to eat. Like fast food or takeout meals, canned foods including vegetables and soups; frozen dinners, snack foods like chips; lunchmeat, cheese, pizza, sauces and pickles. Breads, rolls, bagels, flour tortillas, and wraps often have a lot of salt too.

Lower sodium options- "no added salt" in canned foods, low salt chips and pretzels; cooking with less salt- many seasonings like Old Bay, Maggi, Adobo seasoning, BBQ sauce, ketchup are very high in sodium. Try Mrs. Dash; all the herbs like onion, garlic, cilantro, thyme are salt free.

Fruits and veggies are naturally low in sodium so it is a good idea to eat more of them. Many of them also contain other nutrients that help with high blood pressure.

How to read a label for sodium: -2300mg or less daily (the amount in 1 teaspoon)

Recipe discussion: Foods delivered this week?

How did you use them? Additional ways to use them.
How did eating fruits and veggies help you to be healthy?
How can we reduce sodium when preparing meals?

Remember: Preparing meals at home saves you money. It also allows you to use less salt, which helps to keep blood pressure normal.

Evaluation: Are you aware of any major health problems or diseases that are related to how much salt or sodium people eat?
(a) yes
(b) no
(c) not sure
If yes, what diseases or health problems do you think are related to salt?

Nutrition topic 2: Diabetes and carbohydrates
Objective 1: At the end of the program, patients will know that diabetes is a chronic disease, which is made worse by eating sugar and other carbs.
Objective 2: At the end of the program, patients will know how to read a nutrition label for carb content

Introduction: Carbohydrates, or carbs, are a source of energy. Diabetes is a serious disease that is related to how much sugar, and other carbs, people eat. Most of us love to eat carbs since they include sugar and sweet foods like cookies and cakes.

Some carbs are healthier than others. We need to eat less sugar – including honey and syrup; candy, soda, sweet drinks; cookies, cakes, pies. Less white flour and foods made from it like white bread, white pasta. Less white rice.

It is healthier if we get MORE our carbs from whole grains like whole wheat breads and tortillas, whole-wheat pasta, brown rice, (quinoa). Fruits and some veggies also provide healthier carbs. Milk provides natural sugar, which is a carb.

Different foods provide different amounts of carbs. This includes “natural sugar”, which is naturally in the food- like the sugar in fruit; and “added sugar” which we add to the food when we prepare it.

Recommended maximum amounts of added sugar- 6 teaspoons for women, 9 for men- and there are 17 teaspoons of added sugar in 20oz of Pepsi

Ways to reduce added sugar- Eat fruit for dessert instead of cookies or cakes • Swap sugary cereals for unsweetened cereal with fruit • Drink water or low-fat milk with meals instead of sodas

Remember: Preparing meals at home saves you money. It also allows you to use less sugar. Eating less sugar and fewer carbs can help to control diabetes.

How to read a label for carbs and added sugar
Recipe discussion: Foods delivered this week?

How did you use them? Additional ways to use them.
How does eating fruits and veggies help you to be healthy?
How can we reduce added sugar when preparing meals?

Evaluation: Are you aware of any major health problems or diseases that are related to how much sugar people eat?

(a) yes
(b) no
(c) not sure
If yes, what diseases or health problems do you think are
related to sugar?

Nutrition topic 3- Dietary Fat (and overweight/obesity)
Objective 1: At the end or the program, patients will know that overweight and obesity are serious health problems, which can be helped in many ways. One way is to eat less fat.
Objective 2: At the end of the program, patients will know how to read a nutrition label for fat

Introduction: Fat is the most concentrated way to store energy (calories). We make fat from the foods we eat and store it on our bodies. We also get fat from our foods. Eating a lot of fat can cause us to gain weight. Eating less fat can help us lose weight. Overweight and obesity are serious health problems because they increase the risk for many diseases including high blood pressure, diabetes and cancer.

There are many types of fat. Some are solid like the fat on meat, and others liquid, like oils that we use in cooking. The chemists helped us to divide fats into groups based on how they work. You may have heard the names of these groups, like saturated fats, unsaturated fats, monounsaturated fats, omega three fats. They all provide a lot of calories, so can cause a lot of weight gain, but some are healthier for your heart. Generally, oils are healthier for your heart, especially Olive oil and Canola oil. The solid fats, like the fat on meat or butter or the fat in cheese are not so good for your heart. We should eat less of these solid fats.

Eating less of all kinds of fat can help us lose weight. [We may get questions about Keto].

Ways to eat less fat:
Choose lean meats- round, 90% lean ground beef, chicken and turkey breast. Remove visible fat and chicken skin. Eat more fish and seafood (not fried).

Have less fried foods since frying adds oil to foods. Frying also makes the oil less healthy for your heart. Have more baked, air fried, grilled, boiled foods or in soups and stews. Use non-stick cooking spray.

Have lower fat dairy- low fat milk, yogurt, low fat cottage cheese, reduced fat or fat free cheese, lite cream cheese

Have less butter, margarine, gravy, and mayonnaise; use lite versions

To lose weight, we need to eat fewer calories. That can mean less fat and more foods that have few calories. Most Fruits and veggies have little fat and few calories.

The fruits and veggies that we are sending you every week can help you to be healthier and to lose weight if you are overweight.

Whole grains, like the whole wheat bread we are sending you, are healthier than white bread. Other whole grains like brown rice, whole grain pasta, whole-wheat tortillas, oatmeal and quinoa are also better choices. Beans, peas, lentils are low in fat and good choices.

Try to eat foods that are less processed. These foods often have a long list of ingredients on the label.

Something else that is important for losing weight if you are overweight is exercise. Aim for 30 minutes or more 5 days a week. Walking is a great place to start.

Remember: Preparing meals at home saves you money. It also allows you to use less fat, which can help you to avoid overweight and obesity.

How to read a label for fat
Aim for – less saturated fat, no trans fats
Low fat foods- <3 g per serving, < 1g saturated fat;
Lower fat foods are useful because they help you not to gain weight.

Recipe discussion:
How can we cook with less fat? Baked/ air fried, grilled, steamed, in soups and stews
    -perhaps replacing fat in recipes by bananas, flaxseed
    -skim off fat after cooking- use little or no gravy
What did you get in your fruit/veggie box this month?
    How did eating them help you to be healthy?

Evaluation: Are you aware of any major health problems or diseases
that are related to the amount of fat people eat?
(a) yes
(b) no
(c) not sure
If yes, what diseases or health problems do you think are
related to fat?

Appendix D: Self-Management Questions

Weekly Self-Management Check in, Baseline-Six Months	**Monthly Self-Management Check in, Six Months – Twelve months**
Participant ID	Participant ID
Full Name	Today's Date
Date of Birth	Are you working on a health goal? (yes or no)
Today's Date	If yes, what goal are you currently working on?
Are you working on a health goal?	How do you feel about your progress to your goal? (Yes, Somewhat, No)
What goal are you working on?	What are some barriers you faced this week?
How do you feel about your progress to your goal?	Did you use your program journal this week?
What are some barriers you faced this week?	How many people live with you in your home?
Did you use your program journal this week?	Did you receive your food box delivery last week?
How many people live with you in your home?	What foods did you like best in your food box?
Did you receive your food box delivery last week?	What meals did you make with your food box?
What foods did you like best in your food box?	Is there anything else you would like to share?
What meals did you make with your food box?	Staff name completing check in
	Type of check in (social service/nutrition)

Appendix E: Fruit and Vegetable Screener Administered via Qualtrics

Patient ID: _____

These questions are about foods you ate over the past month. When I ask how often you ate something, please tell me how many times per day or per week or per month you ate or drank it.

The following questions are about fruits and vegetables.

1. Not counting any juices, how often did you eat any fresh, frozen or canned fruit?
   ___ Times
      ___ Per day OR
      ___ Per week OR
      ___ Per month
   ___ Refused
   ___ Don't know

2. Over the past month, how often did you have French fries, home fries, fried potatoes, or hash browns?
   ___ Times
      ___ Per day OR
      ___ Per week OR
      ___ Per month
   ___ Refused
   ___ Don't know

3. Over the past month, how about other white potatoes, such as baked potatoes, boiled potatoes, mashed potatoes or potato salad?
   ___ Times
      ___ Per day OR
      ___ Per week OR
      ___ Per month
   ___ Refused
   ___ Don't know

4. Over the past month, how often did you have cooked or canned dried beans, such as refried beans, baked beans, bean soup, lentils, or pork and beans?
   ___ Times
      ___ Per day OR
      ___ Per week OR
      ___ Per month
   ___ Refused
   ___ Don't know

This question is ONLY about salads made with lettuce, with or without other vegetables in them.

5. Over the past month, how often did you have lettuce salads?

    ___ Times

        ___ Per day OR

        ___ Per week OR

        ___ Per month

    ___ Refused

    ___ Don't know

6. Over the past month, not counting the lettuce salads, potatoes or beans you told me about, and not counting rice, how often did you have any other kind of raw, cooked, canned or frozen vegetables?

    ___ Times

        ___ Per day OR

        ___ Per week OR

        ___ Per month

    ___ Refused

    ___ Don't know

7. Over the past month, how often did you have salsa made with tomatoes or sauces made with tomatoes such as spaghetti sauce or pizza with tomato sauce?

    ___ Times

        ___ Per day OR

        ___ Per week OR

        ___ Per month

    ___ Refused

    ___ Don't know

This question is about 100% fruit juices. 100% fruit juices do NOT include fruit drinks like Kool-Aid or lemonade, cranberry juice cocktail, Hi-C, Tang, Tampico, Sunny Delight, or Twister.

8. How often did you drink 100% fruit juices, like orange juice, mango juice, apple or grape juice?

    ___ Times

        ___ Per day OR

        ___ Per week OR

        ___ Per month

    ___ Refused

    ___ Don't know