FINAL REPORT: EVALUATION OF THE IMPACT OF THE HOUSTON FOOD BANK FOOD RX PROGRAM ON HIGH RISK PREGNANT MOTHERS

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Executive Summary

This evaluation examines a Houston Food Bank-implemented food prescription program designed to support high-risk pregnant women who are members of Community Health Choice. The initiative sought to address the persistent challenge of food insecurity during pregnancy, a period marked by heightened nutritional vulnerability and elevated risks for adverse maternal and infant outcomes. The population enrolled in this program represents a group with substantial needs and limited resources, underscoring the urgency of identifying effective interventions. Nearly all participants were Medicaid-insured, over three-quarters were food insecure at baseline, one quarter were nutrition insecure, and the median household size was three. These women entered pregnancy with a high burden of health risks; among those with prior pregnancies, nine percent reported past gestational diabetes, thirteen percent reported pregnancy-induced hypertension, and fourteen percent reported a history of preterm birth. This pattern of high baseline morbidity signals the importance of strengthening supports for maternal health during pregnancy, particularly in settings of sustained economic hardship.

The program was delivered through biweekly home-delivered or pantry pick-up food prescriptions depending on the phase of implementation. Recruitment occurred from July 2023 to early 2025, with CHC identifying eligible at-risk pregnant women through its case-management system. Participants completed multiple surveys, were enrolled in the Food Bank's system, and received fresh produce along with other healthy foods. Midway through the evaluation, the food delivery model shifted from a client-choice online ordering system to an automatic delivery and pantry pick-up model as the Food Bank sought to respond to rising operational and financial pressures. These changes created variability in exposure, an eight-week recruitment gap, and longer wait times between enrollment and first delivery.

While 206 high-risk pregnant women were enrolled in the evaluation and completed baseline measures, pre-post analysis was completed on 186 women. Process evaluation findings highlight the structural and communication challenges that limited program engagement. Participants struggled with online enrollment, account activation, and ordering in the original client-choice model, which translated into low redemption rates. Even in the home delivery phase, the median redemption rate was roughly one third of eligible deliveries, and twenty-seven participants received no food at all. Pantry pick-up had even lower uptake. Reasons for non-redemption were rooted less in disinterest and more in procedural confusion, unclear program requirements, and delayed communication. Among those who did receive boxes, participants consumed approximately three-quarters of the produce provided, suggesting that when food was received, it was used. They reported spoilage and oversized quantities as the main reasons for incomplete consumption. Satisfaction with the Food Rx program remained high among utilizers, with cost savings, access to healthy foods, and convenience cited as the most valued features.

Overall, rates of gestational diabetes (GDM), hypertension (HTN), low birthweight (LBW), and macrosomia were lower in the FIM-exposed sample as compared to the Medicaid population nationally and in other states, and significantly so in the case of LBW rates, both overall and for African-American women generally. Although the results are not conclusive due to limitations of our study design, they do suggest that exposure to the FIM program may have resulted in some improvements in rates of adverse pregnancy and birth outcomes. Impact on dietary behaviors in this population, apart from a slight increase in fruit intake, were minimal. There was a significant improvement in self-rated health in the participants over the course of the intervention. We also examined if the dose of exposure, operationalized as the number of

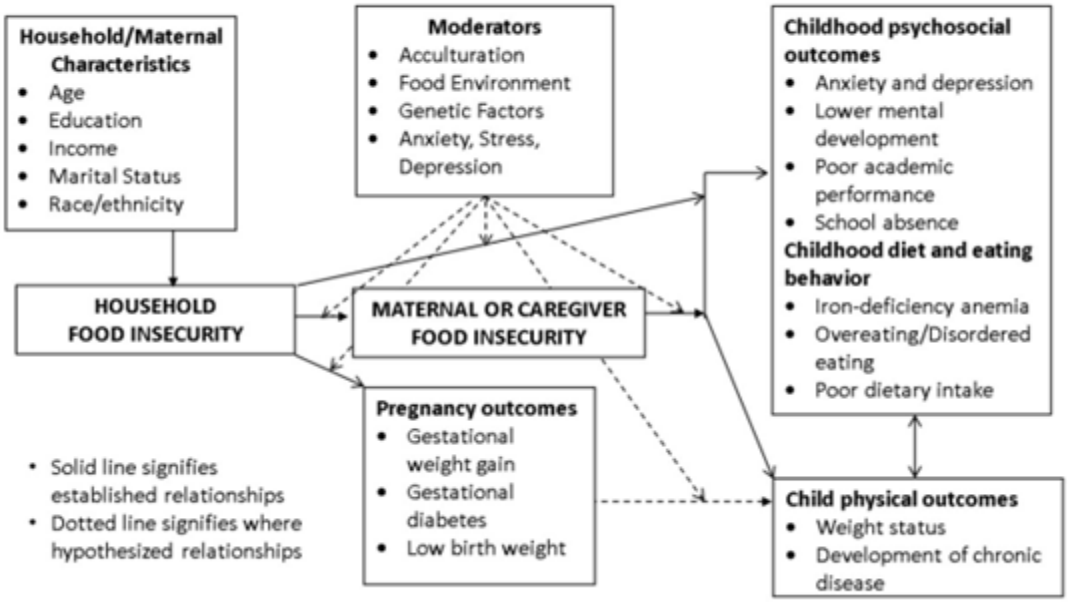
redemptions, impacted clinical and dietary outcomes. The risk of clinical outcomes stayed more or less constant across levels of exposure, suggesting no impact. There was some evidence, however, that some of the dietary outcomes (fruit intake, vegetable intake, and dairy intake) improved with number of redemptions. This was measured at the patient level, not family level, thus, it is an encouraging finding, suggesting that improving food access over a period of several months can result in dietary improvements in this population (as seen in our prior studies). These findings suggest that stable access to healthy foods can influence behavioral outcomes even within complex socioeconomic environments where clinical metrics may respond more slowly in a high-risk population.

Overall, this evaluation identifies clear opportunities for investment and program strengthening. The women enrolled in this initiative represent a population with elevated clinical risk, substantial social vulnerabilities, and high structural barriers to food access. The program's low and uneven redemption rates reflect operational challenges, not lack of need or interest. Enhancing enrollment procedures, key performance metrics related to implementation that are available for trouble-shooting in real-time, improving communication, reducing delays between enrollment and delivery, and ensuring consistent delivery of food benefits are likely to increase exposure and, by extension, increase the potential for meaningful impact. High-needs groups such as these require reliable and well-supported interventions. Continued support to enable program refinements that improve reach and mitigate known barriers while supporting an evidence-building agenda that remains critical for advancing maternal health equity.

Chapter 1: Background

Food and nutrition security during pregnancy is of particular importance because of the impact not only on the health of the mother during pregnancy, but also on birth outcomes for the child, and the potential long-term impact on health outcomes for the child. The conceptual model in Figure 1 below outlines the multiple pathways through which household food insecurity can negatively impact pregnancy and childhood health outcomes.

Figure 1: Conceptual Framework of the influence of Household and Maternal Food Insecurity on Childhood Health Outcomes



Source Committee on National Statistics; Division of Behavioral and Social Sciences and Education; Food and Nutrition Board; National Research Council; Institute of Medicine. Research Opportunities Concerning the Causes and Consequences of Child Food Insecurity and Hunger: A Workshop Summary. Washington (DC): National Academies Press (US); 2013 Dec 23. 8, Health and Developmental Correlates of Child Food Insecurity from Pregnancy to Adolescence. Available from: https://www.ncbi.nlm.nih.gov/books/NBK201400/

Food insecurity has particular importance for women during pregnancy: nutrient demands are higher, the effort required for food preparation may be more difficult, and pregnant women may be obliged to leave the workforce, especially in later pregnancy, which leads to financial strain. A substantial body of research suggests that food insecurity during pregnancy is associated with an increased risk of low birth weight, certain birth defects, excess weight gain, gestational diabetes, and other pregnancy complications. Moreover, women who are food insecure enter the pregnancy at greater risk than women who are food secure. In one study, women living in a food-insecure household had three times greater odds of severe pre-gravid obesity relative to women living in a food-secure household. Baseline obesity puts food-insecure women at risk of greater weight gain; on average, 1.87 kg (approximately 4 lb) of excess weight gain during pregnancy can be attributed to food insecurity. Weight gain is an important risk factor during pregnancy, as it increases risks for gestational diabetes, pregnancy-induced hypertension, eclampsia, and potentially,

birth outcomes. Thus, addressing food insecurity during pregnancy is an ideal time to reduce downstream pregnancy outcomes as well as food access.

The Houston Food Bank (HFB) is one of the primary implementers of food prescription programming in the Greater Houston area and surrounding counties. HFB is the largest food bank in the nation, serving over 800,000 individuals each year through 1500+ partnerships across 18 counties in southeast Texas. The HFB is at the forefront of efforts by food banks to partner with social service programs to help individuals achieve their life goals using food as a catalyst. Their Food for Change program, which includes the food prescription strategy, is designed to deliver healthy foods to improve health outcomes among the underserved members of the community. Since 2015, the HFB has been implementing FoodRx programs in Harris County, TX in partnership with multiple healthcare organizations including UT Physicians, Pasadena Health Center (FQHC), Harris Health (county hospital system), and Texas Children's Hospital (pediatric populations). The HFB has a comprehensive database (Link2Feed) that aggregates process and outcomes data from their healthcare counterparts. [1-2]

Investigators: Principal Investigator Dr. Sharma has worked extensively with the HFB since 2015 in evaluating the food prescription programs, including the Harris County BUILD project, Harris Health and Texas Children's Hospital food prescription program initiatives. Principal Investigator Dr. Ranjit collaborated with Dr. Sharma in a Rockefeller Foundation-funded project to assess clinical impacts of the HFB Food Rx program on a patient population drawn from multiple hospital systems across Houston.

Community Health Choice (CHC) is a local, nonprofit managed-care organization based in Southeast Texas that was founded in 1997 by Harris Health System, the safety net system providing care to uninsured and low-income residents in Harris County. CHC's mission centers around improving the health and well-being of Texans, especially underserved populations, by providing access to affordable and no-cost health - community resources. Through its participation in the state's Medicaid managed care program Texas STAR Medicaid Plan, CHC delivers healthcare coverage to children and pregnant women who meet income eligibility criteria under Medicaid.

Within the STAR program, CHC offers a "Case Management for Children and Pregnant Women (CPW)" service, assigning a case manager to Medicaid members who have existing health needs or are at high risk, to help them navigate and access needed medical and support services.

Our collaboration with CHC leverages that existing case-management infrastructure: through CHC's managed-care case-management program, we are placing eligible members into our Food Rx program. In

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[1] Ranjit N, Aiyer JN, Toups JD, Liew E, Way K, Brown HS, McWhorter JW, Sharma SV. Clinical outcomes of a large-scale, partnership-based regional food prescription program: results of a quasi-experimental study. BMC Research Notes. 16, Article number: 13 (2023)

[2]Aiyer J., Raber M, Young R, Brewster A, Oestman K, Bello R, Galindez M, and Sharma SV. Pilot testing of a food prescription program to mitigate food insecurity among healthcare patients. Translational Behavioral Medicine. September 19, 2019.

doing so, CHC helps extend social-determinants-of-health interventions — like access to healthy food — alongside their medical care. This partnership allows us to reach pregnant women and families already served under CHC's Medicaid plans, connecting them with supplemental nutrition support as part of a holistic approach to health that extends beyond clinical care.

Chapter 2: Study overview

Study Design

The study was designed as a quasi-experimental study to examine the impacts of a real-world implementation of a food prescription program developed and implemented by the HFB on selected incident pregnancy and birth outcomes, as well as 3-month or 6-month change (with pre- and post-measures) in various dietary outcomes, among pregnant women using services at Community Health Choice (CHC). A one-group pre-post evaluation design was used as randomizing patients to a control group was not acceptable to implementation partners on ethical grounds. We do compare our overall findings to the state and national averages in the same time period. HFB and CHC were implementers, while UTHealth Houston School of Public Health conducted the evaluation.

Recruitment Procedures

(Timeframe: July '23 - February '25)

Active recruitment started in July 2023. The sample frame consisted of all at-risk pregnant women attending their first prenatal appointment at CHC clinics, as long as that prenatal appointment occurred before 24 weeks gestation. CHC applies Texas' Health and Human Services Coalition's criteria for identifying high risk pregnant mothers:

- Age 35 and older or 15 and younger
- Preeclampsia, high blood pressure, or diabetes diagnosis
- Mental health or Substance Use Disorder diagnoses
- Previous pre-term birth(s)

Exclusion criteria included:

1.) Tobacco, alcohol, and/or drug use during pregnancy
2.) Twin or multiple pregnancies
3.) Medically required bedrest

High risk pregnant mothers were recruited at <24 weeks gestation through 2 months post-partum. Through this period, they were eligible to receive food provided through HFB's Food Rx program. In total, 206 participants were recruited for the evaluation study and completed baseline measures. However, for the analysis, we restricted the sample to 186 women who were eligible for at least one home delivery over the course of the intervention. Reasons for this are articulated in detail below, but primarily are related to curtail the high amount of intervention variability.

Recruitment process: The recruitment process had 4 main touchpoints as shown in Figure 2. Progeny, who has partnered with CHC, performed initial screening of at-risk pregnant mothers for the Food Rx program. CHC's team then confirmed eligibility enrolling patients in Food Rx and the evaluation. Participants self-registered for the program on the HFB online portal which required them to place orders twice a month on the online portal. HFB provided enrollees data to UTHealth evaluation team. UTHealth Houston Center for Health Equity (CHE) team then enrolled participants into the evaluation sending out a consent form as well

as the baseline, mid-point, and post-partum surveys. HFB administered their own enrollment survey to participants, collecting demographic data, and shared this data with CHE.

Figure 2: Food Rx recruitment workflow

Recruitment changes: As of July 2024, HFB changed the form of the intervention (see details under The Intervention), and corresponding to this, they also altered the enrollment survey. The previous survey included questions used to compare the study's duration with the post-partum survey, such as food security status and benefits used.

This new enrollment survey included different questions that didn't correspond to the original survey created. In addition, the format of responses did not correspond to the original formats. Although these issues were resolved after extensive discussions between CHE and HFB, we were unable to recruit participants with the changes from July 15 up until the week of September 5th (8 week period).

The Food Rx intervention

At the start of the study, the intervention allowed women to place online orders (client choice model) through the HFB's designed portal "Order Ahead" for boxes of food to be delivered to their homes up to two times a month. Of note, if the women did not order the boxes in the online portal, they did not receive the food. The CHC CHW team educated patients about the Food Rx program and study. Participants had the choice to opt into Food Rx program only if they did not want to participate in the evaluation. Enrollment into the program included completion of an online HFB enrollment form and survey (see key variables measured table below for more details). The CHC team also sent a Food Rx welcome packet (used across HFB's Food Rx partnerships) that contained documents explaining how the program works, a tutorial on the "Order Ahead" platform and a card with a identifier that linked the patient in the Houston Food Bank's home delivery system. Once the participant enrolled in the HFB's Food Rx program, they received an e-mail notification prompting them to launch an account on the Order Ahead platform normally within a week after enrolling. Once the participant enrolled in the platform, they received a text and/or e-mail (based on her preference) notification normally a week before each delivery prompting her to log online to order contents in her box. The food baskets included up to 30 pounds of fruits, vegetables, and other healthy food items such as peanut butter, lean proteins, whole-grain bread, etc. The day of their delivery varied but was normally every other week each month. Participants received a text or call a couple of days before or on the day of the delivery notifying them of an expected time frame for the food delivery to their home.

Switch to pantry pick-up from home delivery: In early July 2024, due to capacity –related concerns regarding home delivery of food boxes, HFB modified how it would administer Food Rx to program participants. Previously all eligible participants in the evaluation were enrolled in a home delivery program. Beginning the week of July 15, 2024, participants could qualify to receive a home-delivered food prescription if they met specific eligibility criteria:

- All participants in their 3rd trimester, or up to 6 months post-partum can receive Food Rx through home delivery, regardless of transportation access.
- Participants without access to transportation or transportation assistance from CHC are eligible to receive home delivery (even if enrolling in 1st and 2nd trimester)
- All other participants would pick up food at the HFB Food For Change (FFC) markets (food pantries).
- Participants who enrolled in the first and second trimesters can opt to receive home deliveries starting the third trimester or continue to pick up food at the FFC Markets.
- A notable change with the change to a (primarily) pantry pick-up program is that HFB started processing enrolled patients in batch mode, i.e., at the first of each month, rather than continuously as they were earlier doing.

Move away from client choice model: Since July 15, 2024, participants receiving home deliveries are no longer required to place orders online. Instead, at the end of each month, CHC's team e-mails a list of newly enrolled home-delivery participants. HFB then enrolls new participants, and they begin received a pre-selected box of produce and up to 4 healthy items, determined by HFB's Nutrition team every two weeks. Thus, the client choice model is no longer operative.

Time frame between enrollment and delivery: The two options also create two different time frames between the patient's enrollment in Food Rx and receiving the food prescription, as follows. *Home-Delivery:* Prior to July 15, 2024, participants had a median weight time of 26 days between enrolling in Food Rx and receiving their first delivery. With the HFB enrolling participants at the start of each month, patients wait anywhere from 1-6 weeks depending on when they enroll with CHC. *FFC Market Pick-Up:* Participants can expect to begin redeeming the food prescription between 1-2 weeks after completing the enrollment survey.

In summary, the intervention underwent several changes over the course of the study, with downstream impacts on recruitment, exposure intensity, and evaluation as detailed throughout this report.

Key Performance Indicator Dashboard

To support continuous monitoring of study progress and timely implementation of corrective actions, UTHealth team established a set of Key Performance Indicators (KPIs) to track throughout the study period.

From July 2023 through February 2024, our team monitored recruitment activities using an Excel-based tracking system. The spreadsheet was updated weekly and included the following metrics:

- Number of CHC referrals for at-risk enrollees to the Food Rx program
- Number confirmed eligible for Food Rx by CHC's Community Health Worker team
- Number enrolled in Food Rx
- Number expressing interest in enrolling in the study
- Number of baseline surveys completed

In late February 2024, we refined our surveillance approach to include additional critical performance indicators, specifically:

- Survey completion at each time point (baseline, mid-point/3-month follow-up, and 2-month postpartum)

- Number of redemptions (Home Delivery vs. Food for Change Market pick-up)
- Redemption rate by redemption modality (Home Delivery vs. Market pick-up)

Beginning in March 2024, we transitioned to Microsoft Power BI for routine real-time KPI monitoring displayed weekly to all partners. This interactive dashboard has substantially improved the efficiency of performance surveillance, allowing the team to monitor not only recruitment progress but also allows for real-time trouble shooting for recruitment, survey completion and redemption, thus increasing implementation efficiencies . (See the Appendix for the full visualization)

Participant Data and Measures

Data from participants were gathered across multiple sources and data collection points, including

- The HFB Enrollment Survey
- A Baseline Survey administered by CHE
- Follow-up surveys during the pregnancy at 3 months and 6 months after baseline (if patient was still pregnant), and at 2 months post-partum.
- EHR data made available to CHE under a Data Sharing agreement.
- A utilization survey to document what happens to the food once it enters the home Non-redeemer and redeemer surveys .

Key variables obtained from each of these sources are detailed in Table 1 below:

Table 1: Study measures	Key variables measured
HFB Enrollment Survey	Demographics, Program Acknowledgement, 6 Question Food Insecurity Screener, PHQ-2, Rate health, Financial Security
Baseline Survey	Other demographics, Diet (fruit and vegetable intake; protein intake, dairy intake whole grain intake), food and nutrition security,
3 and 6-month Surveys	Diet (fruit and vegetable intake; protein intake, dairy intake whole grain intake), food and nutrition security,
Postpartum Survey	Diet (fruit and vegetable intake; protein intake, dairy intake whole grain intake), food and nutrition security.
EHR data extract	Pregnancy outcomes (gestational diabetes, gestational hypertension) and birth outcomes (low birth weight, macrosomia, and C-Section)
Utilization Surveys	Data on waste, sharing, reasons for incomplete consumption, program perceptions
Non-redeemer and redeemer surveys.	Reasons for availing / not availing of the pantry pickup program.

Analysis Plan overview

Two types of analyses were planned:

Process assessment: An important objective of the study was to examine key process parameters (a) perceptions of delivery portal (b) measures of utilization of food baskets delivered to participants' homes (c) redemption rates under the home delivery and the pantry pickup program, and (d) reasons for variations

in redemption behaviors, as ultimately, exposure is defined by completeness of redemption behavior. Process assessment can also shed light on reasons for variation in impacts.

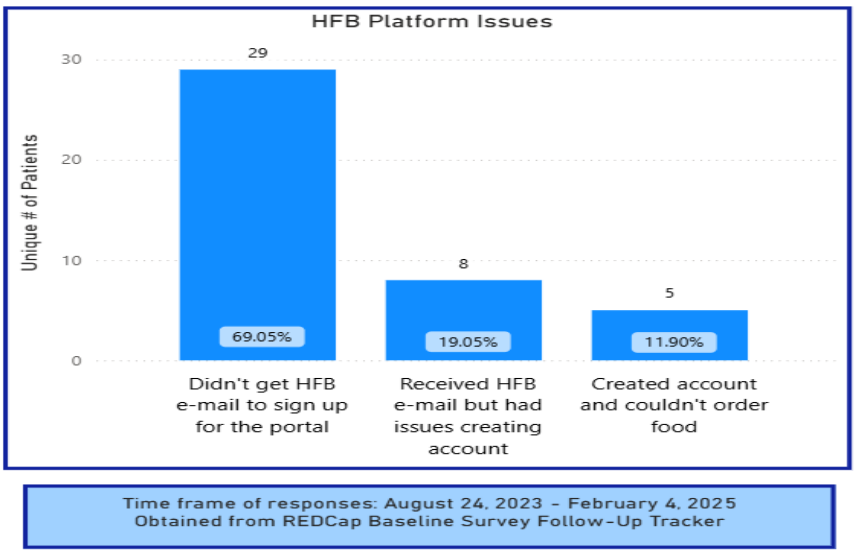
Impact assessment: Our primary study objective in this single-group study is to examine if exposure to a biweekly home food delivery program (1) improves pregnancy outcomes (incident GDM, HTN, low birth weight, macrosomia, and C-section) compared to historical cohorts of comparable populations, and (2) results in positive pre-post changes in dietary behaviors (fruit and vegetable consumption). Exploratory analyses include (a) examining impacts of number of redemptions (i.e., exposure as a continuous variable) on pregnancy outcomes and dietary behavior.

Chapter 3: Process Assessment: Was the intervention implemented as planned?

Participants' experiences with Order Ahead Platform:

Beginning August 2023, the UTHealth team documented clients' difficulty enrolling in the delivery program when calling patients to enroll them in the study. Common issues included not receiving the e-mail to enroll, receiving the HFB's e-mail but having trouble creating the account, and creating the account but not being able to order. In order to track these issues formally, a select all that apply checkbox question was added during the enrollment call. From August 2023 – February 4, 2025, the issues were tracked at each call attempt when enrolling patients (see figure 3 below).

Figure 3: Most common issues related to Food Rx program enrollment.



Beginning in late spring '24, all three organizations discussed changing the order process given that participants' had issues successfully or repeatedly ordering online. Beginning July 15, 2025, the HFB changed the process (discussed in detail in "The intervention" section above) to pre-select produce and automatically enroll participants. Participants automatically received deliveries after enrollment (which occurred at the end of the month). If they missed 2 deliveries consecutively, they were automatically taken off the delivery roster.

Redemption Rates

Redemption rate is defined as the number of completed food redemptions divided by the number of food redemptions that a participant was eligible for. Among the 186 participants enrolled in the home delivery program, the median redemption rate (defined as number of claimed deliveries / number of deliveries that patient was eligible for) was 31% [IQR 8.5% to 53%], with 27 eligible participants having no food redemption during the study (14.5%). Across participants, the median number of redemptions was 4.5 and mean was 5.1 redemptions, with about three-quarter of participants completing fewer than 8 redemptions (corresponding to a redemption rate of <50% approximately). See Table 2.

Table 2: Food redemption metrics in participants who were enrolled in the home delivery program during the study (N = 186)

	Min	Median [Q1, Q3]	Max	Mean (SD)
Number of completed redemptions	0	4.5 [1,8]	17	5.1 (4.1)
Number of eligible redemptions	11	15 [13,17]	22	15.1 (2.4)
Food redemption rate (%)	0	30.8 [8.5, 52.8)	93.8	33.3 (25.5)

*Food redemption rate = Number of completed food redemptions / Number of eligible food redemptions

Among the 20 participants enrolled in the pantry pickup program initiated in July 2024, 15 of them did not redeem any food from the pantries (75%); thus the median redemption rate was 0, and three-quarters of participants had a redemption rate of < 1.5% [IQR 0 – 1.5]. See Table 3.

Table 3: Food redemption metrics in participants who were enrolled in the pantry pickup program during the study (N = 20)

	Min	Median [Q1, Q3]	Max	Mean (SD)
Number of completed redemptions	0	0 [0,0.2]	10	1.2 (2.9)
Number of eligible redemptions	11	16 [14,17]	18	15.6 (1.8)
Food redemption rate (%)	0	0 [0, 1.5]	62.5	7.9 (17.9)

*Food redemption rate = Number of completed food redemptions / Number of eligible food redemptions

Demographic predictors of redemption behaviors

We examined the quantitative data to Identify demographic predictors of redemption rate in the 186 participants enrolled in the home delivery program, from the following: (a) Demographic factors (age and family size) (b) Food security and Nutrition security status at baseline (c) Whether enrolled in any benefits programs. The number of completed home deliveries was modeled as the outcome negative binomial regression model, with the number of eligible deliveries included as an offset variable. Results showed that each additional member in the household led to a 11% increase in the food redemption rate (p value = 0.01). Coefficients for age, food insecurity status, and receipt of benefits (SNAP or WIC) were all non-significant, suggesting they do not predict redemption behavior.

Table 4: Summary of the zero-inflated negative binomial model for the food redemption rate in participants enrolled in the home delivery program (N = 163)

	Coefficient	SE	P-value	Rate ratio (95% CI)	Odds ratio (95% CI)
Count model (negative binomial with log link)					
Intercept	-1.053	0.386	0.006	0.349 (0.164, 0.743)	-
Age	-0.011	0.011	0.343	0.989 (0.968, 1.011)	-
Household size	**0.086**	**0.034**	**0.011**	**1.09 (1.02, 1.164)**	-
Food insecure vs. secure	0.104	0.17	0.541	1.11 (0.795, 1.549)	-
Nutrition insecure vs. secure	0.064	0.135	0.635	1.066 (0.819, 1.388)	-
Any benefit vs. none	-0.044	0.163	0.786	0.957 (0.695, 1.317)	-
Zero-inflation model (binomial with logit link)					
Intercept	-3.584	2.016	0.075	-	0.028 (0.001, 1.444)
Household size	0.088	0.147	0.548	-	1.092 (0.819, 1.458)
Any benefit vs. none	1.386	1.868	0.458	-	4 (0.103, 155.587)

Reasons for incomplete redemption

From July 2025-November 2025, we surveyed 12 non-redeemers (eligible but did not redeem at the food pantries) to examine reasons for non-redemption. Almost all participants agreed that the food was healthy, that they needed the food, that they liked the kind of food that was being provided. No participants reported that they believed quality was an issue, or that pantry hours were inconvenient. The biggest barriers to redemption arose from participants lack of understanding of how the Food Rx program works. About 70% of the participants reported that they did not receive the card or that they lost track of the card. Participants are not required to physically hold a card to utilize the program. Some of these participants further reported that they either forgot about the program or could not tell if they were enrolled. Transportation barriers, on the other hand, were reported by 25% of the participants.

In addition, UTHealth team contacted 5 patients who were able to successfully order and obtain their food boxes. Of these, one participant reported that she could not understand if she was enrolled, and another reported that she could not find a Food for Change market. In each case, patients reported that they were able to resolve their issues by calling CHC or the HFB.

These results strongly suggest that a few changes to program enrollment procedures could substantially improve redemption rates if using a food pantry pick up model. One suggested change is consistent and continuous multi-modal communication from HFB and CHC with participants regarding food redemption criteria and processes, and providing support to participants for redemption. For example, one immediate change requires emphasizing that participants do not need the physical card to participate in the program. Follow-up calls from the HFB soon after enrollment to remind participants of their benefits, and to troubleshoot any reasons for non-redemption and answer any questions could further improve redemption rates. Transportation barriers would be more difficult to address, but the HFB already has a home-delivery program to assist participants that lack transportation.

Utilization of box contents

In June 2024, we administered a short survey to a sample of women (n=30) who had placed and redeemed at least one delivery to understand what happens to the food box once it enters the home. Of note, this is a sample of 30 participants who were successful in redeeming the food and as such, there is a selection bias to the findings since it does not include those who were unable to redeem. Selected findings from this survey are listed:

Proportion of box consumed:

Survey respondents reported that they consumed, on average, three fourths (76%-78%) of fruits or vegetables that were delivered. Slightly smaller proportions (72%) of other foods were consumed before the next delivery.

Reasons for incomplete consumption:

While survey respondents reported consuming three quarters of their vegetables and fruits, we were interested in learning why they did not consume 100% of the produce that was delivered. Reasons provided by participants are listed below, separately for fruit and vegetables. A likely cause of non-consumption was that the quantities of vegetables delivered were too large, with 30% of participants reporting that there were too many vegetables, and 43% reporting that they could not get to the vegetables before they spoiled. There did not appear to be a surplus problem with fruit (just 10% reporting too many fruit). There are some

indications that quality was compromised at some point during delivery, with 30% and 20% respectively reporting spoiled vegetables and fruit on arrival. Inability to cook veggies, or lack of interest in eating veggies do not appear to be problems in this population. See tables 5 and 6.

Table 5: Reasons participants didn't consume all the vegetables delivered in box (n=30)	
	%
Other reasons	17%
Veggies went bad before user got to them	43%
Too many veggies in box	30%
Veggies were Spoiled on arrival	30%
Doesn't like veggie selection in the box	10%
Doesn't normally eat veggies	3%
Doesn't know how to prepare veggies	3%

Table 6: Reasons participants didn't consume all the fruit delivered in box (n=30)	
	%
Other reasons	37%
Fruit went bad before user got to them	30%
Fruit were spoiled on arrival	20%
Too many fruit in box	10%

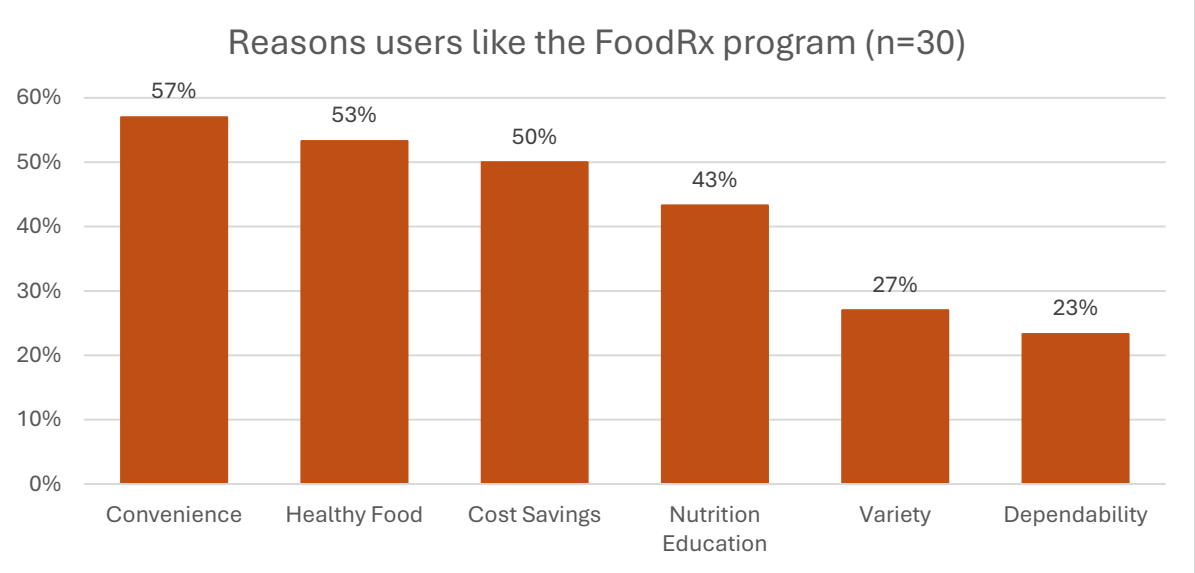
Sharing behavior:

Of the food that was consumed (72%-78%), approximately two-thirds was consumed (on average) by the participant, and the remaining one-third by family members as reported by the survey respondents. However, a quarter of participants reported sharing more than half of the delivered food. 27%-30% reported that that they shared more than half of the fruits or vegetables from the box, and 23% reported that they shared more than half of the other food from the box. These numbers suggest that the distribution of percent shared is skewed, with a quarter of participants sharing a lot of their food, and the rest sharing relatively small amounts, if at all.

Satisfaction with FoodRx program

When asked: “Overall, do the other food items available in the Food Rx delivery meet your needs and preferences?”, A majority of survey respondents reported that they were either somewhat satisfied (53%) or completely satisfied (37%) with the Food Rx program. Top reasons provided for liking the program included Convenience, Healthy Food and Cost Savings, each of which was endorsed by more than half the participants. In contrast, only 23% of participants referred to Dependability of delivery as a positive attribute of the program.

Figure 4: Reasons participants like the Food Rx program as described in the satisfaction survey



Summary of Process Evaluation Results

Overall, Food Rx redemption rates were low with a median redemption rate of 31%, and 15% of participants not redeeming at all. The pantry pick-up program apparently held appeal to only a quarter of the participants. Similarly, redemption rates were low with the delivery program when users were expected to proactively place orders on a portal. Poor redemption rates in each of these scenarios resulted primarily from poor communication of processes to users. For example, many of the people surveyed about reasons for not picking up at the pantry reported that they lost their card. In fact, the physical card was not needed for redemption. Ordering through the delivery portal was stymied by users not receiving sufficient information from HFB. The highest redemption rates were obtained when food was delivered to participants' homes, even though this option did not allow free choice. Household size was the only significant predictor of redemption, with each additional household member accounting for about 11% increase in redemption rates.

Turning to utilization of redeemed food, we found that about three-quarters of delivered food was consumed, most of it by the patient, the intended consumer which aligns with other studies. Among reasons for incomplete utilization, reasons related to quality of food was among the most frequently endorsed. Quality control may suffer for larger scale programs, although there are models where quality is maintained even at scale. Overall, among utilizers, 50% of more reported cost savings, convenience, and availability of healthy food as benefits of the program. Notably, fewer than a quarter reported that dependability was a favorable attribute of the program.

Chapter 4: Impact Assessment

Analysis plan overview

Our primary study objective was to examine if exposure to a biweekly home food delivery program (1) improves pregnancy outcomes (incident GDM, HTN, low birth weight, macrosomia, and C-section) compared to historical cohorts of comparable populations, and (2) results in positive changes in dietary behaviors (primarily fruit and vegetable consumption), and (3) improves self-rated health (Aim 1). Exploratory analyses include (a) examining impacts of number of redemptions (i.e., exposure as a continuous variable) on pregnancy outcomes and dietary behavior (Aim 2). Given the high amount of treatment variability, most pre-post analyses were limited to the subset of 186 women who were eligible for at least one home delivery over the course of the intervention, regardless of whether they redeemed their food package. Selected analyses were conducted for the small population of women (n=20) who were eligible for FFC Market pickup.

Statistical analysis

Descriptive statistics examine the distribution of key demographic and health-related characteristics of the participant population (n=206) at baseline (Table 7 below). For the primary analysis of Aim 1 (FIM participation impacts), three sets of outcomes are examined. In *Aim 1.1*, we compare the rates of selected pregnancy outcomes (gestational diabetes, pregnancy hypertension) and birth outcomes (C-section, low birth weight and macrosomia). incidence rates of pregnancy outcomes in the FIM-exposed groups, and compared them to incidence rates for comparable populations that were not exposed to FIM interventions, using a one-sample binomial test. Incidence rates for comparable populations were obtained from published data for the state of Texas wherever possible. In *Aim 1.2*, we examine impacts of FIM participation on changes in dietary behaviors, specifically (1) fruit consumption (2) vegetable consumption (3) protein consumption (4) whole grain consumption and (5) dairy consumption. We hypothesized that each of these outcomes will experience positive changes over the course of the intervention (i.e., positive slope of change). Measures of dietary outcomes were obtained at baseline, 3 months, 6 months and post-partum. Because post-partum dietary behaviors may be affected by other unmeasured factors, only dietary measures taken prior to the post-partum period were included in these analyses. Repeated measures models were used to estimate slope of change in each dietary behavior, with time treated as a categorical variable (baseline, 3-month and 6-month surveys). Models adjusted for key covariates (age, race/ethnicity, baseline receipt of SNAP or WIC, household size and gestational age) as needed. These analyses were only conducted for the 186 women exposed to the home-delivery intervention. *Aim 1.3* examines if the proportion of women self-rating their health as good/very good/excellent (compared to poor/fair) increases over time. Conditional logistic regression models were used to examine changes in proportion from baseline to 3 months without adjustment. These analyses were only conducted for the 186 women exposed to the home-delivery intervention.

For the Exploratory aim (*Aim 2*), we examined if number of redemptions impacts pregnancy outcomes and changes in dietary and other behaviors explored in Aim 1. Pregnancy outcomes were modeled using logistic regression. Exposure is number of redemptions to the date of the pregnancy-related event. Dietary behaviors during pregnancy were evaluated using data collected from the baseline, 3-month and 6-month surveys. Linear mixed-effects models were used to estimate slope of change in each dietary behavior with

number of food redemptions at each survey as a continuous variable, adjusting for age, race/ethnicity, baseline receipt of SNAP or WIC, household size and gestational age. As most women aged out of pregnancy before the 6-month survey, data at the 6-month period is sparse. For the last outcome, self-rated health, a large proportion of missing or absent values at month 6 limited us to examining only change from baseline to 3 months. Logistic regression was used to examine the proportion of women having a better self-rated general health status at 3 months compared to baseline with number of food redemptions as the exposure.

Results

Table 7 presents selected demographic characteristics of participants (n=206) at baseline. The median age at recruitment was 28 years, while the median gestational age was 16 weeks. A little over half the participants were Hispanic, and another 30% were Black. A majority of participants were enrolled in either SNAP or WIC, although only 25% were enrolled in more than one food assistance program. As expected, close to 100% of participants were enrolled in Medicaid. Over three-quarters of patients were classified as food-insecure using the 6-item food insecurity screener. In contrast, only a quarter of patients were classified as nutrition-insecure. The median household size of patients was 3, while the median number of children per household was 2. Nearly two-thirds of patients were not educated beyond high school. 37% of the sample was working for pay, while 39% were not working for pay by choice. Income data was obtained from participants but was not considered reliable as nearly 46% preferred not to answer or could not answer. Accordingly, income data are not presented here.

Table 7: Demographics and Baseline Characteristics of participants (n=206)

	Overall
n	206
Age, years (median [IQR])	28.00 [24.25, 33.00]
Race/ethnicity	
% Hispanic or Latino	109 (52.9)
% Black or African American	62 (30.1)
% White / Other/Multiracial	33 (16.1)
Gestational age at recruitment, weeks (median [IQR])	16.00 [14.00, 21.00]
Number of food assistance programs received (median [IQR])	1.00 [1.00, 2.00]
Government asssitance programs received	
% with WIC (Women Infants and Children)	109 (52.9)
% with SNAP Benefit (Supplemental Nutrition Assistance Program)	91 (44.2)
Food security status (% missing=5.3)	
Food insecure %	156 (75.7)
Nutrition security status (% missing=8.7)	
Nutrition insecure	54 (26.2)
Household size (median [IQR])	3.00 [2.00, 5.00]
Number of children (median [IQR])	2.00 [1.00, 3.00]

Education	
% Grades 0-12 / GED	139 (66.4)
% Tradeschool/Prof accreditation/ 2 year degree	54 (26.2) % 4
year degree and higher	10 (4.9)
Employment	
% working for pay	77 (37.4)
% not working, but looking for a job	43 (20.9)
% not working, and not looking for a job	81 (39.3)

Table 8 lists relevant baseline characteristics of participants. Fifty one (nearly 25%) of the 206 participants were primiparous, while 62 (30.6%) had had 3 or more pregnancies in the past. Among women who had at least 1 prior pregnancy, 9% reported a past history of gestational diabetes, 13% reported h/o of pregnancy hypertension, 14% reported preterm birth, and 7% reported a low-birth weight baby. Sixty percent reported no history of pregnancy complications. The median BMI of participants was 29.6, suggesting that about half of these women were obese. Daily fruit and vegetable intake (about 2 cups), weekly protein intake, and weekly whole grain intake were all lower than recommended. About 40% of women rated their health as poor or fair.

Table 8: Health status and behaviors of the participants at baseline

	Overall (n=206)
Previous known pregnancies (%)	
None	51 (24.8)
1	47 (22.8)
2	45 (21.8)
3 or more	62 (30.6)
Previous pregnancy diagnosis* (%DK/PNA=6.5%)	
% Gestational diabetes	14 (9)
% Pregnancy induced hypertension	20 (12.9)
%Preterm birth	22 (14.2)
% Low-birth weight baby	11 (7.1)
None of the above	93 (60)
	10 (6.5)
Pre-pregnancy BMI (median [IQR])	29. 6 [24.6, 35.5]
Daily fruit intake, cup (median [IQR])	0.84 [0.62, 1.18]
Daily vegetable intake (excluding fries), cup (median [IQR])	1.22 [1.06, 1.47]
Daily fruit and vegetable intake (excluding fries), cup (median [IQR])	2.03 [1.72, 2.53]
Protein intake, times/week (median [IQR])	2.00 [0.62, 3.50]
Whole grain intake, times/week (median [IQR])	2.00 [0.62, 3.50]
Milk intake, times/week (median [IQR])	3.50 [0.62, 5.50]

General health (% DK/NA=6.8%)	
Poor or Fair	85 (41.3)
Good / Very Good / Excellent	107 (51.9)

Note:

*Number of women with at least one previous pregnancy was used as the denominator when calculating the percentages.

Impact analysis

Health outcomes: To examine if participation in FIM improved pregnancy and birth outcomes in our participant cohort, we performed statistical comparisons of observed rates in our sample (CHC claims data) against reference rates in two normative populations i.e., Texas women overall (Medicaid plus private insurance), and Medicaid populations nationally or from other states. Of note, published data on rates of these outcomes in Texas Medicaid populations, the most appropriate comparator, were not available. Likely the most comparable comparator for our sample is the Medicaid population nationally/other states. Table 9 presents sample rates and the two sets of reference rates for each of the pregnancy /birth outcomes of interest within the 186 women who were eligible for home deliveries. Our hypothesis held that rates of each adverse outcome should be lower in our FIM-exposed sample than rates in unexposed, comparable populations. As Table 9 shows, rates of GDM, HTN, LBW, and macrosomia in the FIM-exposed sample were lower than in Medicaid populations, and significantly so in the case of LBW rates, both overall and for African-American women generally. Such clear patterning was not evident in comparison to the in the overall Texas women, that include Medicaid and private insurance holders. Although the results are not conclusive, they do suggest that exposure to the FIM program may have resulted in some reduction in rates. While redemption rates were low, it is possible that increased sensitization resulting from program participation improved diets and downstream outcomes in these women. Future randomized studies with a carefully designed comparison group will allow for more conclusive findings and attribution of effects to the intervention.

Table 9: Incidence of pregnancy and birth outcomes in participants compared with normative values (Texas women)

Race/ethnicity	Hispanic or Latino	Black or African American	White	Overall
n of participants	**102**	**54**	**22**	**186**
Incidence rate of GDM in our sample (%)	*12.7*	*3.7*	*9.1*	*9.7*
Prevalence of GDM (%) in Texas women	*8.6*	*5.6*	*6.1*	*7.6*
Prevalence of GDM (%) in a Medicaid population	*No race-specific data available*			*14.0*
Incidence of HTN in our sample (%)	*11.8*	*14.8*	*36.4*	*15.1*
Prevalence of HTN (%) in Texas women	*9.1*	*12.7*	*10.9**	*9.9**
Prevalence of HTN (%) in a Medicaid population	*No race-specific data available*			*17.7*

Incidence of LBW in our sample (%)	*5.9*	*5.6*	*9.1*	*6.5*
Prevalence of LBW (%) in Texas women	*No race-specific data available*			*8.6*
Prevalence of LBW (%) in a Medicaid population	*7.3*	*15.5**	*9.3*	*11**
Incidence of macrosomia in our sample (%)				*4.8*
*Prevalence of macrosomia (%) in US women**	*No race-specific data available*			*8.1*
Prevalence of macrosomia (%) in a Medicaid population	*No race-specific data available*			*6.5*
Incidence of C-section in our sample (%)				*34.9*
Prevalence of C-section (%) in Texas women	*No race-specific data available*			*34.5*
Prevalence of C-section (%) in a Medicaid population	*No race-specific data available*			*31.7*

*Incidence rates for macrosomia were only available for the US population.

Analyses shown here are limited to the 186 women who participated in the delivery program. Similar analyses were conducted for the women who participated in the pantry pick-up program (n=20), but the numbers were too small to be reliable. Analyses that used the entire sample provided similar results to those shown here. See Appendix 1 for sources of reference estimates.

Behavioral outcomes: To evaluate if diet quality improved over the course of the FIM intervention, we fitted mixed effects linear models to account for repeated measures within participants. Models adjusted for participant age at enrollment, gestational age at time of measurement, race/ethnicity, whether the participant was enrolled in SNAP or WIC at baseline, and participant household size. These analyses were only conducted for patients in the home delivery intervention component. Table 10 lists estimated values for consumption of different index dietary outcomes at each point of data collection (baseline, 3 months, 6 months). Overall, the results indicate no improvements in any dietary component over 6 months of exposure to the FIM program, except for fruit intake, which increased by about a quarter-cup over the period of the intervention. As in the case of incident pregnancy and birth outcomes, the only justifiable inference is that exposure to the FIM program as planned did not improve dietary intake in this population. Again, the low redemption rates in effect mean insufficient dose of exposure. One way to interpret these results is that the delivered food baskets simply substituted usual grocery purchases among participants. This seems likely, given that utilization data presented earlier suggested that about 70%-80% of the delivered food was consumed. An unintentional benefit of FIM, therefore, might have been some cost-savings for participants. We did not measure this, but in a utilization survey that obtained data from 30 participants (see Process Evaluation section), over half the participants reported that cost-savings was a reason they liked the program.

Table 10: Impacts of FIM participation on dietary outcomes and self-rated health

Time of measurement	Estimated daily fruit intake (CI)	Estimated daily vegetable intake (CI)	Weekly protein intake (CI)	Estimated whole grain intake per week (CI)	Estimated dairy intake (times per week) (CI)
Baseline survey	1.1 (0.9, 1.2)	1.34 (1.3, 1.4)	2.41 (1.9, 2.9)	2.73 (2.1, 3.3)	5.39 (3.8, 7.0)
3-month survey	1.22 (1.1, 1.4) *	1.37 (1.3, 1.5)	2.49 (1.9, 3.1)	2.84 (2.1, 3.6)	5.23 (3.3, 7.2)
6-month survey	1.38 (1.1, 1.6) *	1.36 (1.2, 1.5)	2.43 (1.5, 3.4)	3.60 (2.4, 4.8)	7.06 (3.9, 10.3)

Although most covariates were not significantly associated with outcomes, we did fine that Black race/ethnicity (significantly higher fruit consumption than Hispanics), and SNAP/WIC enrollment, associated with higher dairy consumption could serve as potential confounders, hence the data presented is based on covariate-adjusted models.

We also fitted a conditional logistic regression model to examine changes in self-rated health. **Results (data not shown in tables) show a significant increase in the odds of reporting good/very good/excellent health after 3 months of exposure to FIM (OR (95% CI) = 3.18 (1.62, 6.26).**

Dose-response analysis of impacts

Overall, in this intent-to-treat analysis, we saw no evidence of program participation on pregnancy outcomes, birth outcomes, diet quality metrics, and self-rated health, even when we limited the analysis to those who participated in the better accepted delivery phase of the intervention. Given the low and generally unequal redemption rates, it is difficult to understand if the absence of effects is due to ineffectiveness of the Food Rx program as intended, or due to inadequate dose of exposure.

To evaluate if the probability of adverse pregnancy and birth outcomes was impacted by the number of redemptions, we ran multivariate logistic regressions adjusted for age, race/ethnicity, and pre-pregnancy BMI. These models were estimated for all respondents, including during the period that they were only eligible for food pantry redemptions.

Table 11 presents the change in odds of each of the tested clinical outcomes for each unit increase in the number of redemptions after adjusting for important covariates. Overall, there was no evidence that the odds of any of examined outcomes were altered by number of redemptions. Although age, pre-pregnancy BMI and race/ethnicity were each associated with one or more of the outcomes, their effects were independent of the number of redemptions; thus, the unadjusted effect of number of redemptions was similar to the covariate-adjusted effect, for each of the examined outcomes.

Table 11: Impacts of number of redemptions on pregnancy and birth outcomes.

Pregnancy and birth outcomes	OR (95% CI)	*p-value for significance*
Gestational diabetes	1.18 (0.91, 1.53)	*0.2*
Hypertension	1.02 (0.88, 1.17)	*0.8*
Low birth weight	0.85 (0.64, 1.07)	*0.2*
Macrosomia	1.12 (0.88, 1.40)	*0.4*
C-section	1.03 (0.92, 1.16)	*0.6*

We ran similar models to evaluate if there was a possible dose-response effect of the number of redemptions on change in dietary behaviors (Table 12). Both unadjusted models (i.e., models that only included number of redemptions), and covariate-adjusted models were evaluated. Covariates in adjusted

models include age, race/ethnicity, receipt of SNAP or WIC at baseline, household size, and gestational age when completing the survey. As none of these covariates was significant in any of the adjusted models, we present only the results from the unadjusted models here. (Non-significant covariates introduce noise and mask the 'signal' of the exposure).

Table 12: Impacts of number of redemptions on dietary outcomes

Dietary intake metrics		
	Coefficient	*p-value*
Fruit intake	0.048 (0.021)	***0.016***
Vegetable intake	0.026 (0.012)	***0.031***
Protein intake	0.126 (0.071)	*0.075*
Whole grain intake	0.128 (0.093)	*0.171*
Dairy intake	0.844 (0.259)	***0.001***

From these results, it is apparent that the number of redemptions does impact dietary intake, particularly fruit, vegetable, and dairy intake ($p<0.05$), such that increasing redemptions are associated with increased consumption of these foods. While the impacts on fruit and vegetable intake are modest, the impact on dairy intake (times consumed per week) is quite substantial, translating to one extra time that dairy is consumed for each redemption. Effects on protein intake and whole grain intake are not significant.

We did not see any impact of number of redemptions on self-rated health in either adjusted or unadjusted models (data not shown).

Summary of impact evaluation:

Overall, rates of GDM, HTN, LBW, and macrosomia were lower in the FIM-exposed sample as compared to the Medicaid population nationally/other states, and significantly so in the case of LBW rates, both overall and for African-American women generally. Although the results are not conclusive due to limitations of our study design, they do suggest that exposure to the FIM program may have resulted in some improvements in rates of adverse pregnancy and birth outcomes. Impact on dietary behaviors in this population, apart from a slight increase in fruit intake, were minimal. There was a significant improvement in self-rated health in the participants over the course of the intervention. We also examined if the dose of exposure, operationalized as the number of redemptions, impacted clinical and dietary outcomes. The risk of clinical outcomes stayed more or less constant across levels of exposure, suggesting no impact. There was some evidence, however, that some of the dietary outcomes (fruit intake, vegetable intake, and dairy intake) improved with number of redemptions. This was measured at the patient level, not family level, thus, it is an encouraging finding, suggesting that improving food access over a period of several months can result in dietary improvements in this population (as seen in our prior studies).

Chapter 5: Conclusion

In summary, our evaluation of the Food Rx program showed high variability in implementation of the program. The changes in the administration of the Food Rx program have introduced significant adjustments to the enrollment process, recruitment, and evaluation. While these modifications aim to address capacity and financial constraints, they also led to temporary disruptions in recruitment and variations in the time frame for participants to receive their food prescriptions. Continuous monitoring and feedback will be essential. Implementation outcomes are critical to behavioral interventions. If the program is not implemented as planned, it is challenging to attribute outcomes seen to the intervention itself.

Our evaluation did demonstrate preliminary evidence of impact on clinical outcomes, promising impact on self-reported health, and a positive dose-response relationship between redemption and consumption of fruits, vegetables and dairy. Strengthening redemption should be a focus of future implementation of these programs. Our study design was pre-post pragmatic evaluation of a real-world implementation of a food bank led Food Rx program. Lack of a control group and no randomization limits causal inference and should be considered in future evaluation of this work. Furthermore, this evaluation was not statistically powered to detect significant differences, and as such these findings are considered preliminary and could be used to power future studies.

Appendix 1:

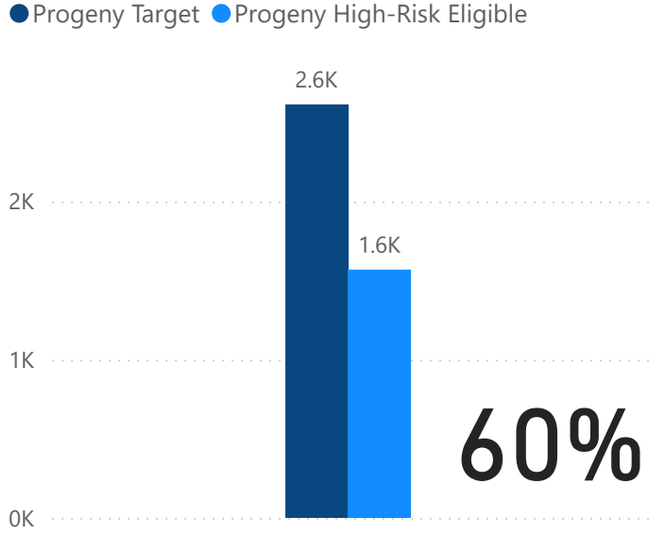
Appendix to Table 9.

Reference Rates	Sources
Prevalence of GDM (%) in Texas women	https://www.dshs.texas.gov/sites/default/files/mch/pdf/HTMB_Data_Book_2022-2023_revFeb2025.pdf
Prevalence of GDM (%) in a Medicaid population	https://ldh.la.gov/assets/docs/MQI/pupp/2024-articles/Lin_2024_GDM.pdf
Prevalence of HTN (%) in Texas women	https://www.dshs.texas.gov/sites/default/files/mch/pdf/HTMB_Data_Book_2022-2023_revFeb2025.pdf
Prevalence of HTN (%) in a Medicaid population	https://pmc.ncbi.nlm.nih.gov/articles/PMC10705593/
Prevalence of LBW (%) in Texas women	https://www.dshs.texas.gov/sites/default/files/mch/pdf/HTMB_Data_Book_2022-2023_revFeb2025.pdf
Prevalence of LBW (%) in a Medicaid population	https://pmc.ncbi.nlm.nih.gov/articles/PMC11149325/
Prevalence of macrosomia (%) in Texas women	https://pubmed.ncbi.nlm.nih.gov/31811414/
Prevalence of macrosomia (%) in a Medicaid population	https://pmc.ncbi.nlm.nih.gov/articles/PMC10468113/
Prevalence of C-section (%) in Texas women	https://www.marchofdimes.org/peristats/data?reg=99&top=8&stop=87&lev=1&slev=4&obj=9&sreg=48
Prevalence of C-section (%) in a Medicaid population	https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/infant-mortality/meetings/medicaid-chip-updates.pdf

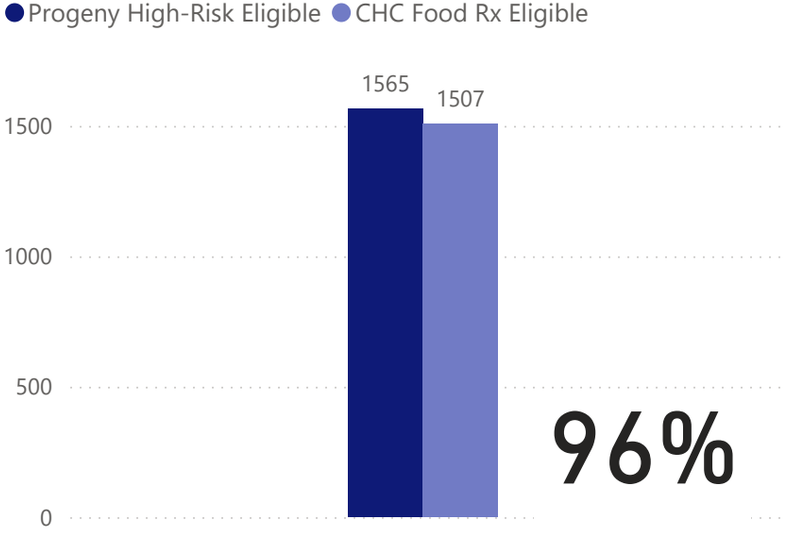
APPENDIX- KPI DASHBOARD

RECRUITMENT DATA (June '23 - Mid Feb '25)

Progeny Screening (Figure 1)



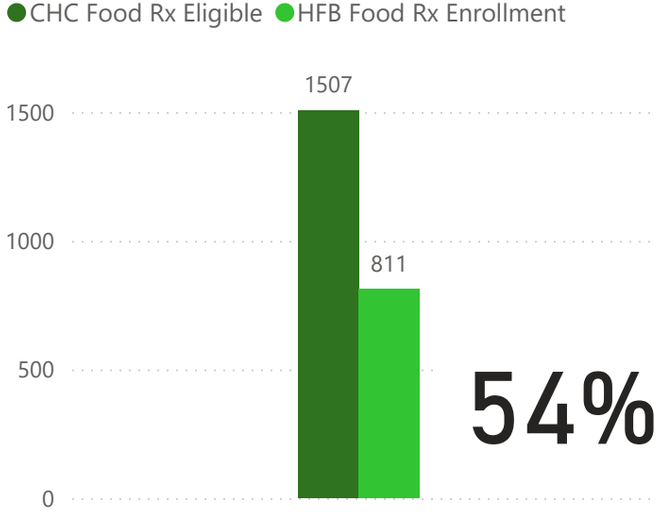
CHC Enrollment (Figure 2)



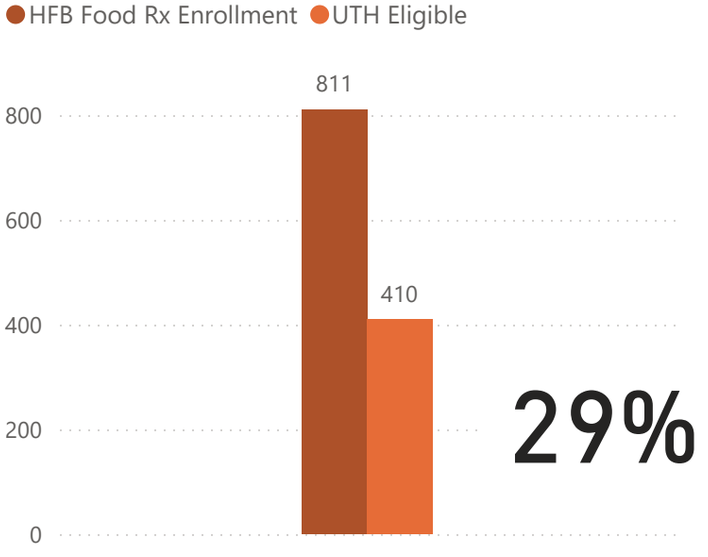
Terms Explained

- **Progeny Target:** recruiting goal of women who are at-risk
- **Progeny High-Risk Eligible**: number of women screened by Progeny
- **CHC Food Rx Eligible:** number CHC determined to qualify for at-risk pregnancy and to receive home-delivered Food Rx
- **HFB Food Rx Enrollment:** number who enroll in Food Rx with CHC
- **UTH Eligible:** number who are screened eligible for the study when enrolling in Food Rx (18 years+, <24 weeks pregnant, interested in participating)
- **UTH Consented:** number who have actually consented into evaluation

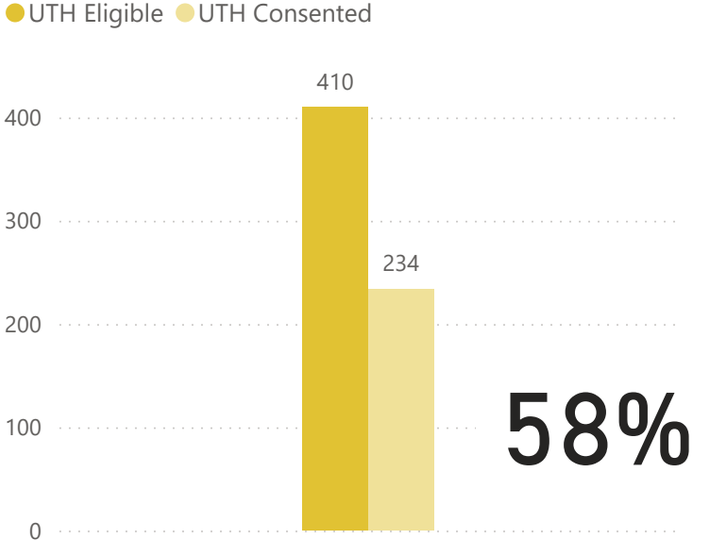
Food Rx Enrollment (Figure 3)



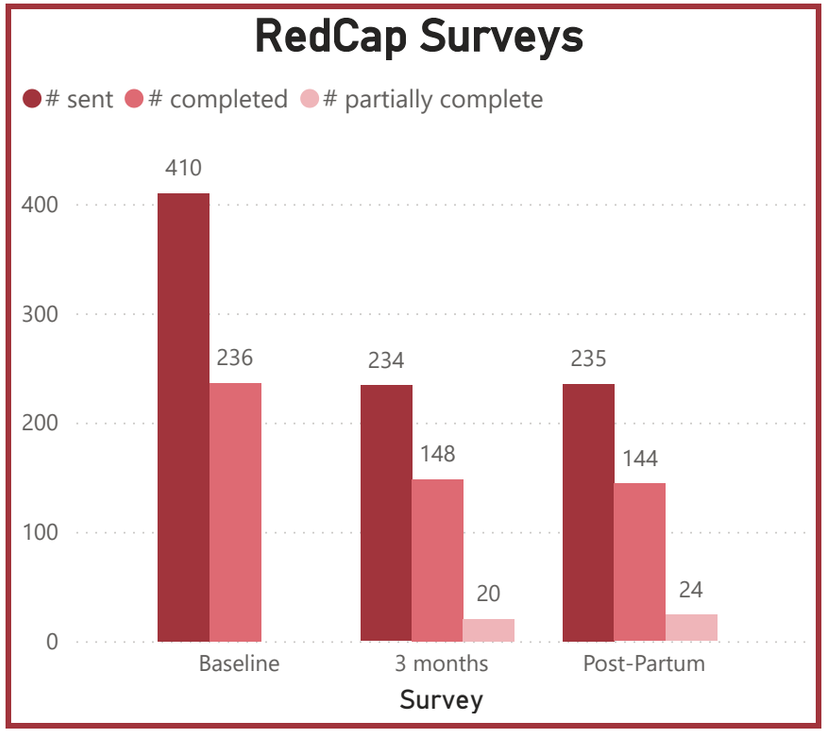
UTH Eligible (Figure 4)



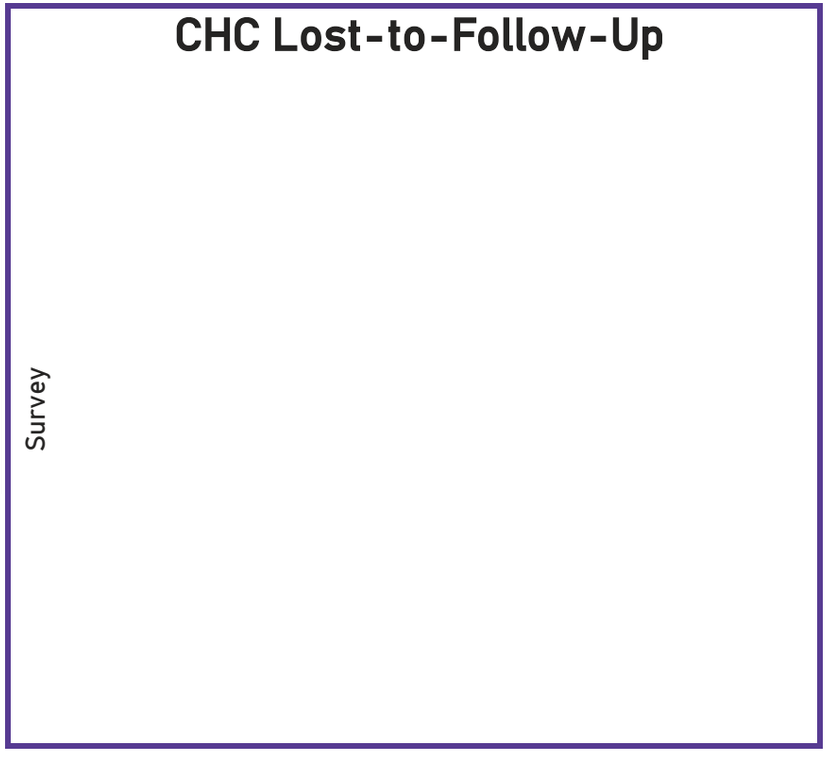
UTH Consented (Figure 5)



REDCAP SURVEY COMPLETION
(July '23- August '25)



 # sent: number of participants alerted to complete each survey
 # completed: number of participants who completed the entire survey
 # partially complete: number of participants who completed a portion of the survey



 # sent to CHC: number of participants lost to follow-up by UTHSPH team sent to CHC
 # CHC contacted: number of participants CHC was able to talk to on phone
 # incomplete after CHC: number of participants who didn't complete survey after CHC team attempted to contact

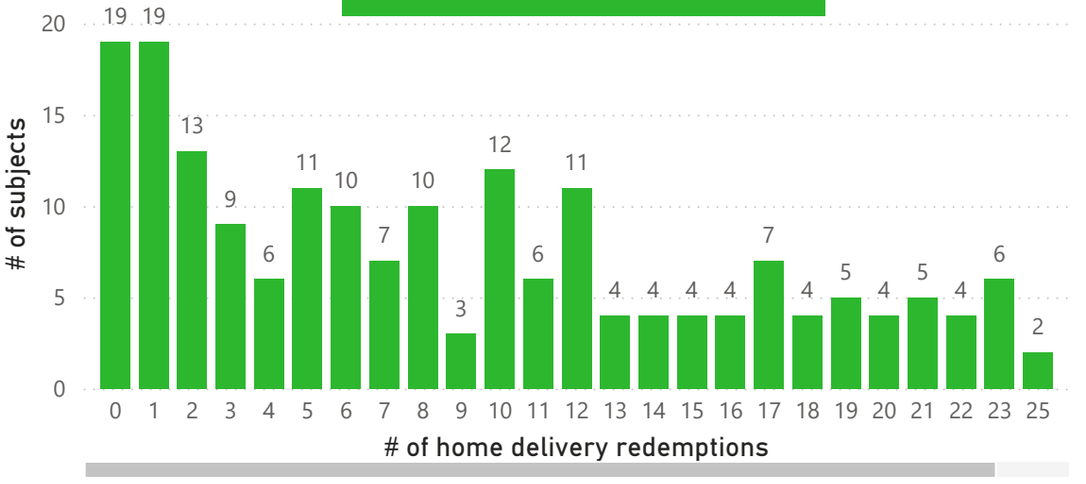
HOME DELIVERY DATA

Month & Year
9/1/2023 3/31/2024

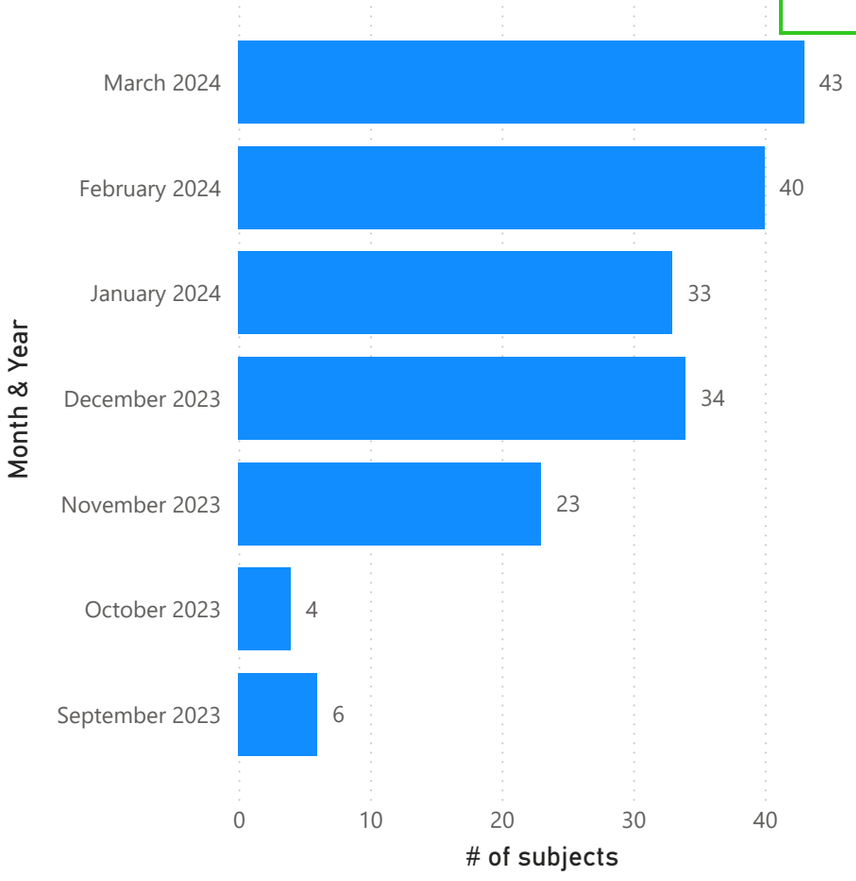
enrolled in study vs. redeemed

Note: 1 participant has 17 redemptions (including home delivery and FFC market pick-up)

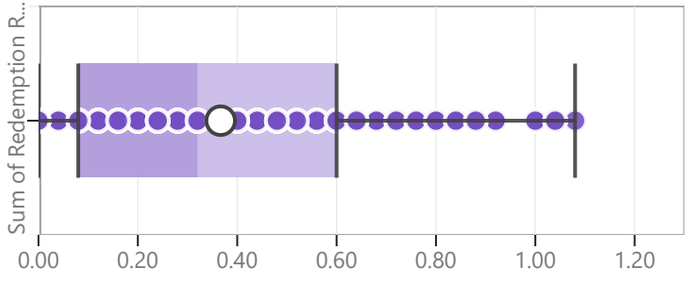
Number of Redemptions



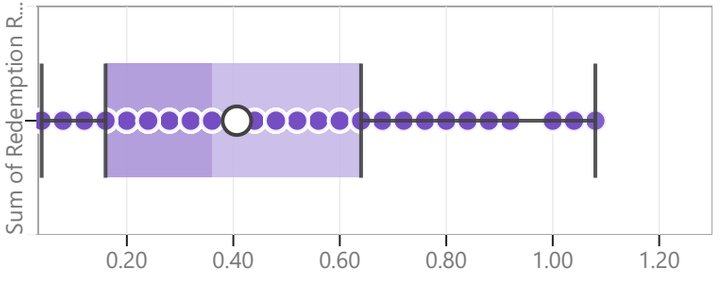
Redemptions by Date



Redemption Rate



Redemption Rate (excluding 0 redemptions)



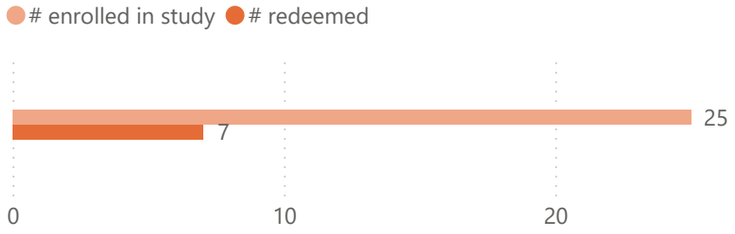
Median Redemption Rate 32%

Median Redemption Rate (excluding 0) 36%

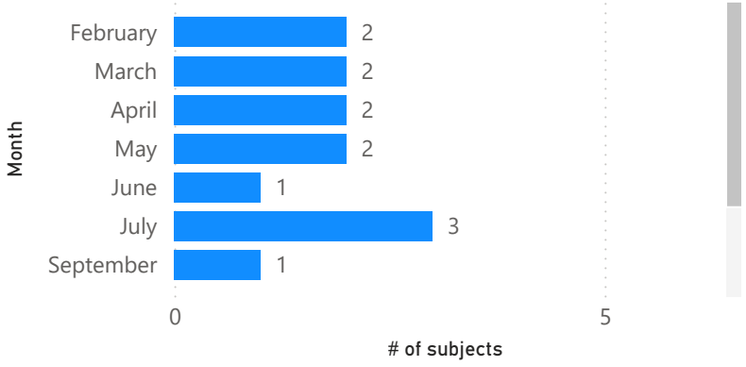
FFC MARKET REDEMPTION DATA

Note: 1 participant has 17 redemptions (including home delivery and FFC market pick-up)

enrolled in study vs. redeemed



Redemptions by Date



Markets Visited

Location	# of redemptions
Abiding Faith UMC	1
Bethel's Heavenly Hands Ministry	1
Catholic Charities Richmond	1
Christ Temple of Deliverance COGIC	1
Total	**28**

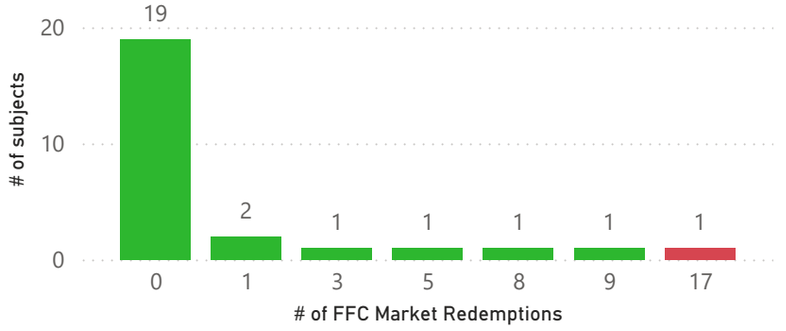
Median Redemption Rate

0%

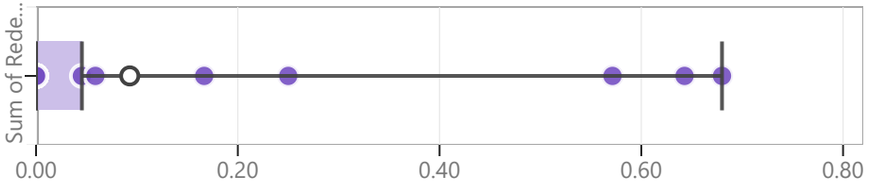
Median Redemption Rate (excluding 0 redemptions)

25%

Number of Redemptions



Redemption Rate



Redemption Rate (excluding 0 redemptions)