



MELANATED MAMA'S MEALS

Medically Tailored Meals Program



Innovative Health
Solutions

July 1, 2023 to June 30, 2024

CONTENTS

SECTION 1: INTRODUCTION	3
Background	3
Project Need and Description	4
Setting and Population	6
Stakeholders	7
SECTION 2: DATA and PROCEDURES	9
Evaluation Goals	9
Evaluation Questions	9
Outcome Indicators	10
Process Indicators	10
Procedures	10
SECTION 3: ANALYSIS	14
SECTION 4: CONCLUSIONS, LIMITATIONS and RECOMMENDATIONS	26
Conclusions	26
Limitations and Recommendations	27
SECTION 5: APPENDICES	30–81

SECTION 1:

INTRODUCTION

Background

Adequate nutrition during pregnancy and early childhood helps ensure healthy growth, development, and long-term positive health outcomes in birthing parents and babies.¹ Conversely, inadequate nutrition during these critical time periods presents immediate health hazards and can increase the risk of chronic illnesses later in life.² Fostering pre and postnatal healthy eating and active living can help promote the well-being of entire communities³ and remains an important focus for public health and healthcare professionals.

Since the Social Determinants of Health (SDOH) contribute to 80% of health outcomes, providing support within the built environment is critical in preventing and managing poor health outcomes, especially during critical time periods, such as the perinatal period.⁴ Studies have found that food security status strongly predicts chronic illness.^{5,6,7} Currently, 42 million Americans are food insecure; improving food security is critical in managing diet-related illnesses.⁸ Chronic conditions

disproportionately affect people who have less access to resources to prevent and manage those conditions. Healthy access to food can reduce barriers to healthy eating, improve patient outcomes, and assist the overly burdened medical system with solutions for chronic condition management while saving healthcare spending.

Medically Tailored Meals (MTM) are meals approved and formulated by Registered Dietitians and chefs that offer a solution in a range of food and nutrition services that help individuals with specific health conditions or dietary restrictions achieve their nutrition goals at critical times. MTM have been shown to improve health outcomes by reducing hospitalizations and healthcare costs, improving treatment adherence, increasing survival rates, and enhancing quality of life through promoting independence, preventing food insecurity, reducing meal preparation burden, and supporting overall well-being.⁹

“I loved the produce bag, and it really helped me eat more fruits and vegetables.”

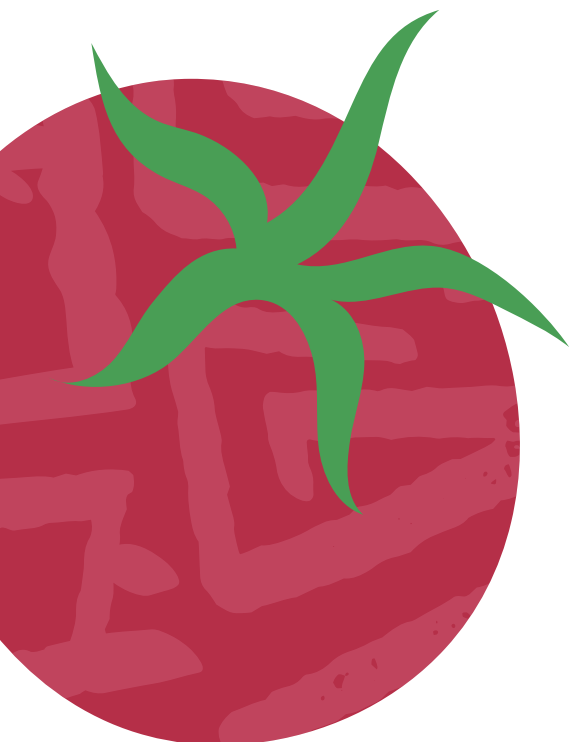
Project Need and Description

There is significant health inequity in perinatal outcomes. Overall, in Solano County, the infant mortality rate is 9.8 per 1,000 live births,¹⁰ more than twice the national average.¹¹ The rate of infant deaths varies by race/ethnicity, and pediatric health outcomes such as low birth weight and preterm delivery disproportionately affect Black and Indigenous communities.¹² Black infants are almost four times as likely to die from complications related to low birthweight as compared to non-Hispanic white infants¹⁰, and Black infants have a mortality rate that measures 2.4 times higher than non-Hispanic-white infants.¹⁰

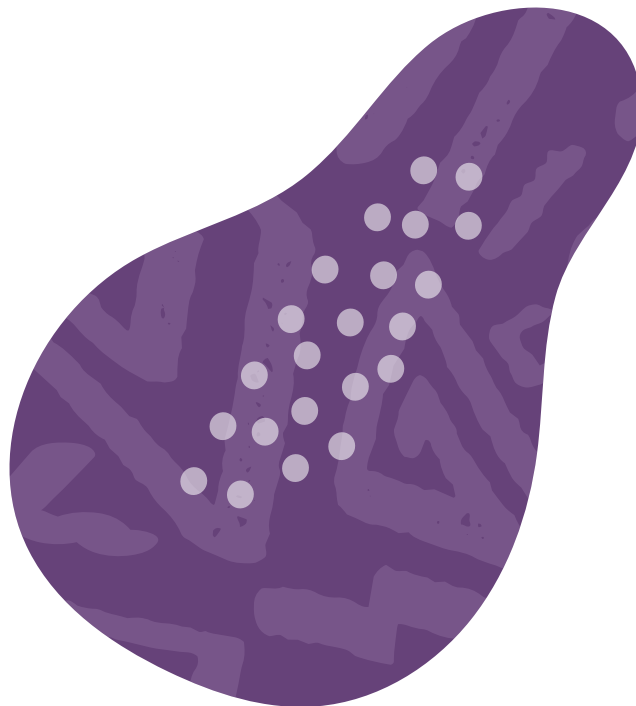
“My Doula was awesome, and I would score her off the charts. I recently lost my mom, and this program helped me at a critical time.”

Similarly, in 2018–2020, Black birthing people in Solano had 45.8 deaths per 100,000 live births, which is 3.1 to 3.6 times higher than the rates for Asian (15.0), Hispanic/Latino (14.8), and White birthing people (12.6).¹³

The Melanated Mama’s Medically Tailored Meals (MTM) Program is designed to support Solano County’s Black birthing population, their babies, and their families. It is specifically tailored to address their unique health needs and challenges. Focusing on this population, the program aims to reduce infant mortality rates, improve birth outcomes, and promote overall health and well-being in Solano County. In 2023, Innovative Health Solutions (IHS) received funding from Solano Public Health in partnership with the California Equitable Recovery Initiative (CERI) and the Workforce Development (WFD) grant to implement a MTM program in Solano County. In collaboration with several community partners, IHS developed and coordinated the activities to implement the program.



“Everyone who called me was so supportive. It was a big help; it is so hard to find support like this, especially right after you have a baby. I felt like a big village was helping me.”



The Solano County Health and Social Services Black Infant Health Program (BIH), a health equity program that offers individual and group support to African American and Black perinatal persons, provided the referrals for the Medically Tailored Meals Program, known as Melanated Mama's Meals MTM Program. In addition to direct referrals, the BIH Program provided continual feedback and input while the program progressed through its 12-week duration. Melanated Mama's Meals MTM Program focuses on a holistic approach to support perinatal persons with nutrition support from home-delivered meals by Rasta Mama's Kitchen, shelf-stable nutrient-rich grocery boxes, and fresh local produce provided by Eatwell Farm. Food was hand-delivered to the participant's doors by the partnering agency, Food is Free Bay Area. The participants also received social and emotional support from African American Doulas who were part of the partnering agency, Doula Doula (Solano HEALS), and breastfeeding support, where requested, from Solano Public Health WIC Program's Lactation Consultants. This holistic approach intends to decrease poor physical and mental health outcomes during a critical time in the birthing parents and their babies' lives.

4X Black infants are almost four times as likely to die from complications related to low birthweight

The Melanated Mama's MTM Meals Program was designed and implemented to operate virtually. This virtual approach ensured larger accessibility, convenience, and flexibility for busy new parents and a continuous and supportive environment for participants, making it easy to engage with the program.

Program Key Components Included:

1. An in-person initial orientation for BIH program staff to make referrals

- a. Location: Solano County Public Health Office
- b. Purpose: To receive an initial referral from a trusted source (BIH staff) through connections to their existing programs.
- c. BIH staff were provided with the MTM program flyer, a phone script, and list of frequently asked questions (Appendix A).

2. Telephone Touchpoints for Participants

- a. Pre and post-survey
 - i. Completed by the IHS Dietitian and the lead Doula.
- b. Follow-up consultations with the Dietitians and the Lactation Consultant as needed.
- c. Trauma-informed nutrition
 - i. Completed by the Doulas.

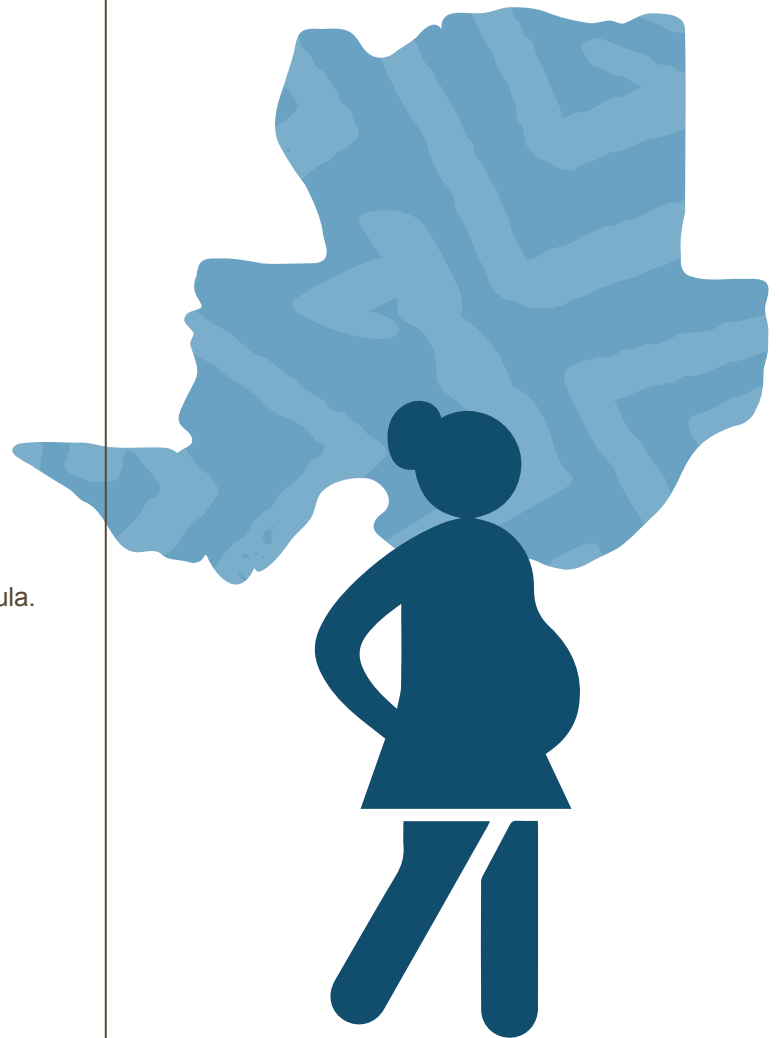
3. Home Meal Delivery Services

- a. Weekly delivery of chef-prepared medically tailored meals to the participant's home.
- b. Weekly delivery of grocery boxes and fresh produce to the participant's home.
- c. Nutrition handouts, event flyers, and Eatwell Farms newsletters were provided in the grocery box (Appendix D).

Service Provider Program Components:

1. Virtual Meetings between Partners

- a. Meeting with the food provider to discuss menus, logistics and participants with allergies.
- b. Training in trauma-informed nutrition given by IHS staff for the Doulas
- c. Bi-weekly collaboration meetings with BIH staff, Solano Public Health staff and IHS staff.
- d. Monthly meeting with the Doula Team to discuss how the program was going and any needed changes.



Setting and Population

The target population was Black or African American Perinatal persons (pregnant or within 6 months postpartum) in Solano County who were participants or referrals from the Solano Public Health Black Infant Health Program (BIH) during the program recruitment period.

Stakeholders

IHS gathered a diverse group of stakeholders to implement and evaluate this program. It is essential to involve Black and African American perinatal persons living in Solano County in assisting with the design and implementation of the program because they are most affected by the program's success, modifications, and implementation.

Other important partners include the Black Infant Health and Healthy Families Programs, IHS, the Doula Doula (HEALS organization), Solano Public Health WIC Program, Solano Public Health Administration, Rasta Mama's Kitchen, EatWell Farms, Food is and Free Bay Area.

AGENCY	ROLE
Solano Public Health Administration, in partnership with the California Equitable Recovery Initiative (CER) and the Workforce Development (WDF) grant	Funder
Innovative Health Solutions (IHS)	Implementing Agency
Solano Public Health Black Infant Health (BIH) and Healthy Families Programs	Collaborating Agency, Referrals, continued Case Management
Doula Doula (Solano HEALS)	Doula Entity—6 Participating Doulas
Rasta Mama's Kitchen	Local Food Vendor
Eatwell Farm	Local Community Support Agriculture (CSA) Farmer providing fresh produce
Food Is Free Bay Area	Food Transportation and Coordination
Solano Public Health WIC Program	Breastfeeding consultation and collaboration to assist with WIC enrollment and other infant formula issues

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SECTION 2:

DATA AND PROCEDURES

Evaluation Goals

The evaluation of the Melanated Mama's Meals MTM Program serves two main purposes. Firstly, it gathers data that can be used to identify areas for program improvements. Secondly, the evaluation establishes the project as an effective program that can be successfully implemented in Solano County and other communities. The data gathered from the evaluation play a crucial role in providing detailed insights that can be used to enhance the program's effectiveness, thereby improving the health outcomes of the target population. The goal is to ensure that the program delivers the desired results and positively impacts the lives of those it serves.

Process evaluation was conducted to make program design and delivery improvements. Behavioral data from intervention participants was collected and analyzed to evaluate if the intervention achieved the expected outcomes.

Evaluation Questions

This evaluation seeks to answer:

1. Do participants of the Melanated Mama's Meals MTM Program show improvements in healthy eating and active living after participation in the program?
2. Have participants of the Melanated Mama's Meals MTM Program improved their relationships with food and nourishment?
3. Do participants of the Melanated Mama's Meals MTM Program have more positive feelings and reduced stress after participating in the program?
4. Does the Melanated Mama's Meals MTM Program effectively connect participants to community resources, such as food and physical and mental healthcare?

Outcome Indicators

The five indicators below will assess participants' physical activity, food behavior, and overall health and well-being.

1. The average change participants report in regular physical activity.
2. The average change participants report in healthy food/nutrition behaviors.
3. The average change participants report in their relationships with food and nourishment.
4. The average change participants report in positive feelings, thoughts, and stress.
5. The percentage of participants linked to food, physical, and mental healthcare resources available in their community.

Process Indicators

The eight indicators below will be used to monitor program implementation and progress.

1. Number of participants who participated in the program.
2. Number of participants who completed the entire program, including both the pre and post-survey.
3. Number of sessions participants attended with Doula.
4. Total Number of sessions/meetings (trauma-informed nutrition and Doula) provided.
5. Number and type of referrals provided.
6. Number of meals distributed to participants.
7. Number of grocery boxes distributed to participants.
8. Number of produce bags distributed to participants.



Procedures

IHS program staff trained Solano Public Health Black Infant Health (BIH) staff to identify individuals who meet program criteria and are interested in participating in a Medically Tailored Meals Program in December 2023. Program criteria included African American/Black pregnant or postpartum persons (up to 6 months after birth). Solano Public Health BIH program staff referred 30 participants to the program in December 2023 and January 2024. Once the eligible individuals were screened and deemed qualified, the BIH staff notified IHS of their eligibility and interest through a shared Google Drive, and the individuals were enrolled in the program by phone.

The IHS Registered Dietitian worked with Rasta Mama's Kitchen to develop the menus, ensuring they were nutritionally balanced and appropriate for perinatal persons.

EVALUATION COMPONENT #1: PARTICIPATION AND PROCESS MEASURES

IHS staff tracked fidelity to the program model for all program participants throughout the 12-week program, which started on February 5, 2024, and ended on April 29, 2024. The pre-surveys were uploaded to the Microsoft Teams platform to review for accuracy, and the post-survey was administered by IHS staff and the Executive Director for Doula Doula as assigned.

IHS staff provided several trainings to implementation staff, including BIH staff and the Doula team. An initial training was provided to BIH staff on December 8th, 2023.

Six two-hour trainings were conducted with the six Doulas before the initiation of the program:

1. Training One was conducted on January 12, 2024, and covered the following topics: program overview, introduction of staff, overview of home visiting, and general nutrition topics (calcium, protein, fruit/vegetables, sugar-sweetened beverages, and water) (2 hours).
2. Training Two was conducted on January 19, 2024, and covered the following topics: breastfeeding basics by the WIC Lactation Consultant, and prenatal and postpartum Nutrition (3 hours).
3. Training Three was conducted on February 2, 2024, and covered the following topics: Trauma-Informed Nutrition Training, Sessions 1 & 2 (2 hours).
4. Training Four was conducted on Feb 23, 2024, and covered the following topics: Trauma-Informed Nutrition Training, Sessions 3 & 4 and conducted case conferencing (Doula shared what was going on with clients, helped each other with ideas on how to help, strategies working well to keep the participant engaged, and made program adjustments) (2 hours).
5. Meeting/Training Five conducted on March 22, 2024: Trauma-Informed Nutrition Training Session and conducted case conferencing (Doula shared what was going on with clients, helped each other with ideas on how to help, strategies working well to keep the participant engaged, and made program adjustments) (2 hours).
6. Meeting/Training Six conducted on April 26, 2024: final case conferencing, referrals for participants not in home visiting programs, and reviewed program follow-up (2 hours).

Bi-weekly collaboration meetings occurred virtually with Solano Public Health BIH leadership staff, Solano Public Health contract management team, and IHS Staff to discuss how the program was going and to make any necessary changes along the way.

IHS also met monthly with the Doula team to review the program's progress, answer questions, and make necessary changes.

“It was like therapy but better. My Doula called me to make sure I was okay; even when I could not talk to her, she never made me feel bad. She always listened to me; it was so supportive, and I wish the program could continue.”

Doula Doula employed the six Doulas for the program, who were all Black or African American. They provided support and education to the participants. Each Doula was assigned five perinatal persons to follow for the 12-week program so that each perinatal person had one point of contact for the program. The Doula Doula Executive Director held monthly meetings with each Doula to mentor and support the Doulas.

Rasta Mama's Kitchen and Eatwell Farm provided a food safety plan to ensure the food was handled correctly and safely. A registered dietitian approved the menus (Appendix B).

Participants received 84 specially designed meals (one meal per day for 12 weeks—seven meals delivered each week), one grocery box (shelf-stable

food items) per week, and one box of local, fresh fruits and vegetables per week. They received trauma-informed nutrition education sessions and 7 additional visits with a Doula scheduled over the phone at the participant's convenience. All participants received a \$100 gift card for completing the program and completing the post-survey.

Meals were frozen and needed to be heated in the microwave. Participants were instructed to eat fresh items (salads and sandwiches) earlier in the week. The seven meals, one grocery box, and one local produce box were delivered weekly on Mondays, and participants needed to have enough refrigerator and/or freezer space for them. Weekly meals were delivered in reusable insulated bags with ice packs. The insulated bags were placed outside the participant's door for pick up the following Monday by 2 pm. IHS staff picked up the insulated bags from Food is Free, sanitized them, and delivered them to Rasta Mama's Kitchen for use again. Participants opted in to receive text messages from Food is Free on Mondays, letting them know the food had been delivered.

“Everyone who called me was so supportive. It was a big help; it is so hard to find support like this, especially right after you have a baby. I felt like a big village was helping me.”

EVALUATION

COMPONENT #2: CLIENT ENCOUNTER FORMS

Doulas completed a Client Encounter Form each month for each participant (Appendix E) on paper or by typing into the document during each telephone or virtual touchpoint. The Doula Doula Executive Director reviewed the Client Encounter Forms to provide feedback to the Doulas and then forwarded them to IHS monthly. The Client Encounter Form included the number of contacts made during the month, significant challenges and successes faced by participants, topics covered, and referrals made. IHS staff entered data from the Encounter Form into Apricot 360 (a data platform).

EVALUATION

COMPONENT #3: PRE- AND POST-SURVEYS

IHS staff designed the pre- and post-surveys (Appendix E), developing questions tailored to the program and adapting questions from the Trauma Informed Nutrition Education curriculum from the nonprofit Leah's Pantry. The Doula Doula Executive Director was trained to administer the survey. The Executive Director of Doula Doula and the IHS Senior Clinical Registered Dietitian completed the initial orientation and administered the pre-survey with all eligible perinatal persons in January 2024 at the program's outset and before the participants received the program intervention. The completed pre-surveys were uploaded to the Microsoft Teams platform to review for completeness and then entered into Apricot 360.

The Doulas were provided with a copy of the pre-survey for each perinatal person for whom they were providing light case management.

The Pre-Survey included:

- An explanation of the program
- Meal modification for allergies, intolerances and dislikes
- Participant basic information
- Pregnancy or postpartum status
- Documentation of immediate referral provided to a Registered Dietitian or a Lactation Consultant

And questions on:

- Healthy Eating and Active Living
- Food and Nourishment
- Feeding Baby
- Feelings and Thoughts
- Connections to Medical Care
- Food Security

The IHS Registered Dietitian used the pre-survey results to tailor the meals and grocery boxes to accommodate food allergies, intolerances, and dislikes. Several meetings were held with Rasta Mama's Kitchen and the grocery box provider to ensure that perinatal persons with food allergies, intolerances, and dislikes

received the correct food. Each participant was assigned a number,¹ through 30, to Rasta Mama's Kitchen, the grocery box provider, and Food is Free, the food delivery organization, to ensure they received the correct box tailored to their needs.

At the end of the program, IHS staff and the Doula Doula Executive Director completed a post-program survey with each participant in the last week of the program in April 2024. If participants completed at least seven visits with their Doula and completed the post-survey, a \$100 Walmart or Target gift card was delivered in their last meal delivery. This included the same core components and questions as the initial survey. In addition, the survey included a Participant Feedback section and an additional section that inquired about program impact ([Appendix E] [POST survey only]). All data for pre- and post-surveys were entered into Apricot 360 for analysis.

EVALUATION COMPONENT #4: DOULA SKILL SURVEY

At the end of the program, each of the six Doulas completed a Doula Skill Survey (Appendix E) about their confidence in their skills and descriptions of any new skills they acquired during the program. They also had the opportunity to report on what worked well and, if they did the program again, what they would do differently.

EVALUATION COMPONENT #5: SUCCESS STORIES

Doula Doula staff were invited to provide a success story of what occurred during the program.



SECTION 3:

ANALYSIS

This section shows how well indicators of success were met for both the process and outcome indicators of the evaluation. Results will be used to improve further implementation cycles of the program and as a basis for subsequent evaluations.

Quantitative data were analyzed using t-tests and chi-square tests for statistically significant differences in pre- and post-test results. Sample size and participant response rates are also reported. Qualitative data were analyzed, themed, and coded for patterns in participant responses and comparatively analyzed and summarized.

EVALUATION COMPONENT #1: PARTICIPATION AND PROCESS MEASURES

This program served a total of 30 unique participants. Of those, 30% were pregnant, 13% were with babies under 1 month old, and 57% had a baby that was 1-6 months old at the start of the program (Figure 1). For those who were pregnant, the average week's gestation was 22 and ranged from 6 to 39 weeks. All 30 participants (100% of the total) completed an intake form and pre-survey, while 29/30 (97%) completed a post-survey.

More than half (57%) of the participants had a health or medical condition, such as diabetes, hypertension, and/or anemia. More than 1/4 (27%) of the participants had some kind of food allergy,

Participant Status When Program Began

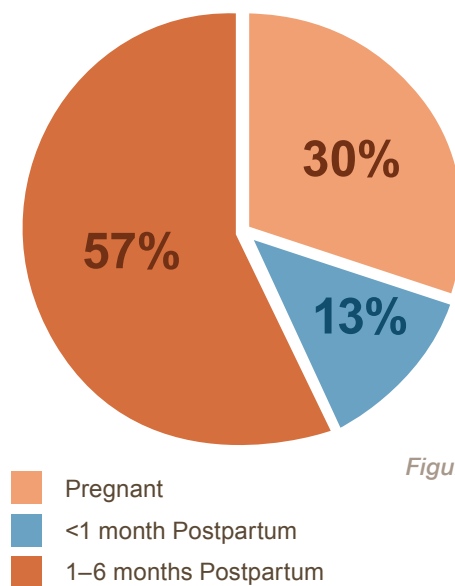


Figure 1

Figure 1: Medically Tailored Meals Program Participant pregnancy and postpartum status (self-reported).

and 1/3 (33%) had other special dietary instructions or dislikes. Nearly all (97%) had a refrigerator and freezer with adequate space. Participants were asked for their preferences for milk (cow's, lactose free, almond, or coconut) and nut butter (peanut butter, almond butter, or other), as well as whether there were any special instructions for meal and grocery delivery at their home.



PARTICIPANTS RECEIVED:

2,394
medically
tailored meals

356
shelf-stable
grocery boxes

356
bags of
fresh produce

EVALUATION COMPONENT

#2: CLIENT ENCOUNTER FORM

A total of 310 contacts were made to participants by the Doulas, an average of 10.3 contacts/encounters per participant, over the 3-month program. These encounters covered a range of topics including, but not limited to, personal nutrition habits, stress/mental health, physical activity, feeding baby, relationship with their healthcare provider, food security, and referral support. Five classes on trauma-informed nutrition education program were offered topics included: “Exploring Our Health Histories,” “Stress and Your Body,” “Food, Mood, and Energy,” “Feeding Our Family – Loving Food Environment,” and “Nourishment in Our Communities.” Many of the classes were offered, confirming that fidelity to the program by the Doulas was high and the program content was appropriately tailored to the target population (Table 1).

Core Topics	% of Participants Who Received Content
CLASS 1: Exploring Our Health Histories	77%
CLASS 2: Stress and Your Body	90%
CLASS 3: Food, Mood, & Energy	80%
CLASS 4: Feeding Our Family Loving Food Environment	63%
CLASS 5: Nourishment in Our Communities	53%
Additional Topics	% of Participants Who Received Content
Dealing with Stress/Mental Health	93%
Physical Activity	80%
Feeding Baby/Breastfeeding Support	80%
Relationship with Healthcare Provider	83%
Food Security	63%

Table 1: Medically Tailored MealsProgram percentage of participants who received core topic and additional topic content.

The main challenges the participants overcame and any success moving toward their goals were also captured. The word cloud below (Figure 2) displays the most important and frequent topics that participants chose to discuss with their Doula, with maternal health and breastfeeding rising to the top of the list.



Figure 2

Figure 2: The most important and frequent topics that participants chose to discuss with their Doula.

Referrals to other resources were common. More than half (60%) of participants received at least one referral, with 5 (17%) receiving four or more referrals to other helpful resources, such as CalFresh food assistance, WIC Programs, food banks, behavioral healthcare, Dietitian consults, breastfeeding consults, primary healthcare, financial help, domestic violence prevention and response, home visiting programs, and relevant community events.

EVALUATION COMPONENT

#3: PRE AND POST SURVEYS

Results from the pre- and post-surveys for each domain are outlined below.

Healthy Eating and Active Living

Participants improved their levels of physical activity during the program. They were asked whether they engage in physical activity every week (Yes/No). Prior to the program, 60% (18/30) reported engaging in physical activity, which improved to 82% (23/28) after the program (P=.06). Also, 43% saw an improvement in how long (in minutes) they exercise when they exercise.

Personal nutrition habits also showed improvement after the intervention (Table 2), with more than half (53%) of participants increasing the frequency with which they eat vegetables.

Food item	% with Improvement in frequency of consumption
Fruit	40%
Vegetables	53%*
Calcium-rich foods	40%
Protein-rich foods	50%
Water	37%

Table 2: The Percentage (%) of Participants who Improved from pre- to post-intervention in consuming five food items important for adequate perinatal nutrition.

*Statistically Significant Difference

Also, 50% of participants reduced the frequency of consuming sugary drinks, a statistically significant result (P=.002).

Food and Nourishment

Participants expressed a strong relationship with and appreciation for food both before and after the program, with marginal increases after the program ranging from 4=“Agree” to 5=“Strongly Agree.” (Table 3).

Table 3: Pre- and post-survey averages and differences for questions related to program participant relationship with food and nourishment.

Question (1= Strongly Disagree through 5 = Strongly Agree)	Pre Average	Post Average	Difference
I get satisfaction from knowing the food I eat is good for my health.	4.5	4.5	0.0
Eating food, I know is good for my body, brings me comfort.	4.5	4.6	0.1
I feel that nourishing my body is a meaningful activity.	4.5	4.5	0.0
I eat in a way that expresses care for my body.	3.9	4.1	0.2

Table 3. Pre- and post-survey averages and differences for questions related to program participant relationship with food and nourishment.

Feeding Baby

Feeding a baby can be a complex and personal decision and experience that often does not go according to plan. However, breastfeeding consultation and support can help people who desire to breastfeed but are having challenges. At the outset of the program, 19 of the pregnant people planned to breastfeed, which was raised to 21 of the people who were still pregnant at the end of the program. One-fifth (6/30

= 20%) of participants were referred to a Lactation Consultant for support.

Feelings and Thoughts

At both the outset of the program and after the program, participants reported on average positive feelings and thoughts from 3=“Sometimes” to 4=“Most of the Time,” with modest increases after the program for 8 out of 10 questions (Table 4).

Question	Pre Average	Post Average	Difference
I’ve been feeling interested in other people.	3.7	3.4	-0.3
I’ve had energy to spare.	3.2	3.0	-0.2
I’ve been dealing with problems well.	3.9	4.2	0.4
I’ve been thinking clearly.	3.7	4.4	0.7
I’ve been feeling good about myself.	3.8	4.1	0.3
I’ve been feeling close to other people.	3.5	3.6	0.1
I’ve been feeling confident.	3.6	3.9	0.3
I’ve been feeling loved.	4.0	4.3	0.3
I’ve been interested in new things.	3.9	3.9	0.0
I’ve been feeling cheerful.	3.7	4.0	0.3

Table 4: Pre- and post-survey averages and differences for questions related to program participant feelings and thoughts.

Connections to Medical Care

Most of the pregnant persons were receiving prenatal care at the beginning of the program; one was working on getting a doctor for prenatal care.

Some participants felt their doctor did not listen to them adequately. Doulas were able to help connect participants to additional resources and options for their primary and obstetric care (72% said their doctor listens to their questions and concerns at the outset of the program, compared to 85% at the end of the program).

Food Security

At the beginning of the program, almost half (43%) of participants reported worrying about running out of food before the end of the month. This percentage was reduced significantly to less than a third of participants (31%) by the end of the program (Figure 3). In tandem with the Medically Tailored Meals Program, the percentage of participants receiving meal support from CalFresh (food stamps / EBT) or WIC (e.g., formula) increased from 73% to 83% by the end of the program.

Percent of Participants Who Worry About Running Out of Food Before the End of the Month

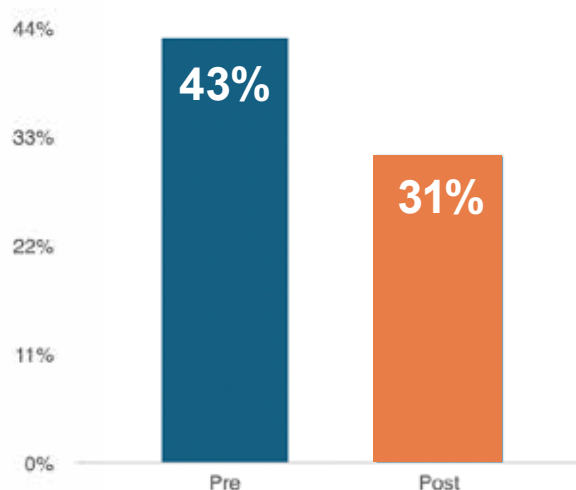


Figure 3

Figure 3: The percentage of participants who responded that they worried about running out of food before the end of the month, before (pre) and after (post) the program.

Average composite scores were also computed for four of the domains, including all questions for each domain (Table 5). The majority (80%) of participants improved their overall personal nutrition habits, and this result was statistically significant. Feelings and thoughts were also improved overall, with 60% showing improvement. Almost half (43%) of participants increased their physical activity. Differences in both feelings and thoughts and physical activity after the program were statistically significant. Overall, participants relationship with food and nourishment showed modest improvement (27% of participants), but this difference was not statistically significant.

Composite Domain	Pre Average Score	Post Average Score	Difference	P-Value	Percent with Improvement
Physical Activity	2.2	3	0.8	0.02	43%
Personal Nutrition Habits	12.9	15.2	2.3	0.002	80%
Food and Nourishment Attitudes	17.4	17.6	0.2	0.49	27%
Feelings and Thoughts	35.7	38.6	2.9	0.02	60%

Table 5

Table 5: Pre- and Post- survey averages, Differences, P-values, and Percentages with Improvement Values for participants of the program's Composite Scores for each domain, considering all questions.

Part of the post-survey involved the collection of participant feedback, both quantitative and qualitative.

The program participants were asked to rate how satisfied they were with the different interventions on a scale of 1 to 5, 1 being Very Unsatisfied and 5 being Very Satisfied, with the program (Table 6). Overall, participants were "Satisfied" to "Very Satisfied" with the program, particularly with the support provided to them by their Doula (4.9/5).

The lowest-ranked intervention was the meals provided (3.9/5).

On a scale of 1 to 5, 1 being Very Unsatisfied and 5 being Very Satisfied, how satisfied were you with the:	Average Score Across All Participants
Overall Program	4.5
Meals Provided	3.9
Grocery Box	4.2
Fruit and Vegetable Bag	4.4
Support Your Doula Provided to You	4.9

Table 6

Table 6: Level of Satisfaction for Program Participants with various aspects of the BIH MTM program.

Most participants (28/30 = 93%) found the educational handouts in the grocery box helpful. One participant stated that they did not see the handouts.

Overwhelmingly, when asked for qualitative feedback, participants reported having had a positive experience with the program and wished it did not have to end.

They felt supported by their Doulas and appreciated the convenience and financial help and food given to them.




DIRECT PARTICIPANT QUOTES

- “I loved my Doula; she really supported me. I wish I could do the program again.”
- “My Doula was awesome, and I would score her off the charts. I recently lost my mom, and this program helped me at a critical time. My Doula listened to me and was a great source of support.”

“On days I had to go to work, I could put one of the prepared meals in my lunch box. It saved me so much time, and I could relax at lunch. I also loved having healthy snacks, and I learned about new healthy snacks.”

- “This program helped me during a very difficult time in my life. My mom was hospitalized, and she is my support system, and my baby was in the NICU. I have type II diabetes. I was referred to the Registered Dietitian who helped me with managing my diabetes and resources for my mom when she came home from the hospital. I felt very supported. I did not have much time to take care of myself, so having prepared meals and the grocery box took a lot of stress away. Now I am inspired to write a book and start a support group to help moms with infants who are in the NICU.”
- “I was transitioning with my housing, and the program figured out how I could participate even though I did not have a permanent address. I was able to pick up my food at Food is Free. I would like to volunteer now to help Food is Free.”
- “I struggled after having my baby with low iron levels, low energy, and insecurities with my weight. I am a mom of 3 children and do not have a lot of support. I felt supported during this program and was able to lose 30 pounds, my iron status improved, and I am 100% breastfeeding my baby. It was because I got healthy food, lots of produce, and support. I felt less stressed due to all the parts of the program.”
- “I loved my Doula and would give her a 100 score out of 1-5.”

- “I loved the produce bag, and it really helped me eat more fruits and vegetables. I tried golden beets for the first time, and my family loved them.”



“I recommend keeping the program for new moms (who) go through tough times and need this support. I loved everything. It was so helpful. Can you find a way to do this again?”

- “My Doula provided me with lots of community resources. She helped me with breastfeeding, and I am still breastfeeding. She helped me when my daughter had to have tubes put in her ears.”
- “I liked it. It provided me with a variety of food that I had never tried before. It helped me eat healthier and not run out of food.”
- “No complaints. I loved getting the meals. My anemia is doing much better. I learned about high-iron foods.”
- “It was like therapy but better. My Doula called me to make sure I was okay; even when I could not talk to her, she never made me feel bad. She always listened to me; it was so supportive, and I wish the program could continue.”

“I loved the program.”

- “I really enjoyed the program and wish it could continue. It was convenient, especially since I went back to work. I don’t always have enough time to cook or bring lunch to work. I used the meals a lot to bring for my lunch. I did not have to go out to lunch; it saved me money, and I could relax during my lunch hour.”
- “It was so nice to just buy meat and I made tacos with the beans, tortillas, salsa and the cilantro. It was so helpful. I was also exposed to many new healthy foods that I liked such as whole wheat bread and brown rice.”

Opportunities for improvement were mostly related to the food and they wanted more choices related to the food, in addition to the desire to know what food was coming in advance so they could shop and plan accordingly. Also, several participants stated they did not always receive a text message that their food was delivered and wanted to ensure it did not sit out.

Constructive feedback included the following commentary:

- “I noticed that the meal portions during the last few weeks were much smaller than they were in the beginning.”
- “I would like the recipes of the food that we were given. I think it would help to know what was in the provided meals. “
- “The produce was too much for my family. I had to give them away to family and friends.”
- “I would suggest giving more variety of canned foods.”
- “I would have liked ingredients to make meals.”
- “I would like to know what is coming a week before, so I did not buy the same foods. I would have liked more choice with what foods I want in the grocery box.”

A high percentage of the 30 participants reported changes that occurred because of their participation in the program. More than 90% of participants reported eating a healthier diet, eating more fruits and vegetables, and feeling more supported.

“Because of This Program, I...”

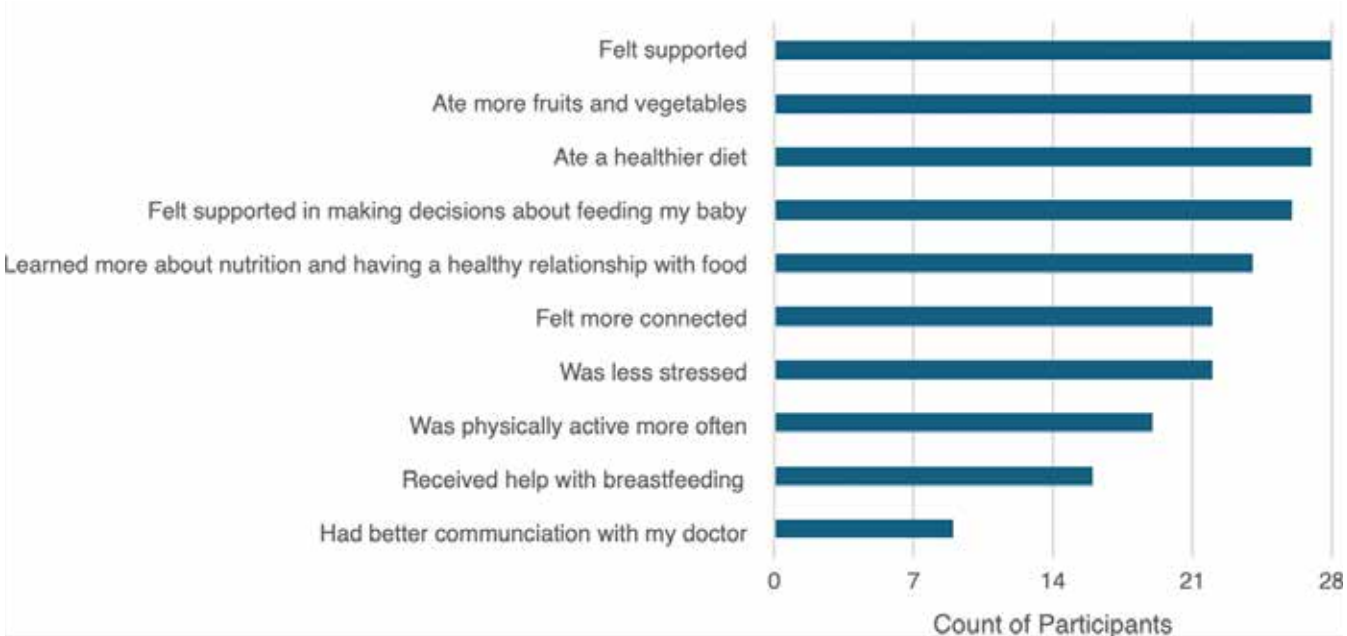


Figure 4: Count of Participants who had the outcomes specified.

EVALUATION COMPONENT

#4: DOULA SKILL SURVEY

Overall, the six Doulas reported feeling very confident in their skills to assist the program participants. Average scores for four different skills are displayed below (Table 7), ranging from 4 = “Confident” to 5 = “Very Confident.”

When asked to describe any new skills acquired during the program, all six (100%) Doulas expressed having learned a great deal about prenatal and postpartum nutrition, as well as trauma-informed education techniques. Several also noted an increased ability to communicate, balance client load, document client interactions, and make referrals to Solano County resources.

How confident are you to:	Average Score (Scale of 1-5, 1=Not Confident and 5=Very Confident)
Successfully identify issues a mother wants to address during a conversation	4.3
Encourage a mother to express her thoughts and feeling	4.8
Successfully show empathy (acknowledging a mother’s view and feelings)	4.8
Incorporate trauma-informed nutrition education in your conversations with a mother	4.8

Table 7: Level of Confidence Doula’s reported in their Skills related to the Program.

CHANGING LIVES

“Thank you all so much; I can’t believe how much this has helped me. I could feed myself and prioritize myself with food prepared for me. You don’t know how much I appreciate it. I hope everyone took advantage of such great food.”

EVALUATION COMPONENT

#5: SUCCESS STORIES

Out of six Doulas, six (100%) submitted at least one success story. Success stories suggest that for several of the participants, the program was extremely impactful and continued implementation of this type of programming is desired.

Success Story 1:

Emotional and Community Support

As a mother of two young children and an infant, she had several challenges when we met her. She was an athlete and accustomed to feeling healthy, fit, and comfortable with her body. She struggled during the postpartum time with body weight insecurities, low energy, and low iron levels. Lacking motivation and limited access to nutritional food, this mom struggled to meet her basic needs. In need of mental health support, she was not comfortable in the beginning letting her Doula know she needed assistance and that her demanding daily routine and lack of support were taking a toll on her mental health. The Melanated Mama’s Meals MTM Program team continued to build trust and offer support, adjust her meal deliveries, and change her approach to her phone check-ins. This left space for this mom to process her needs and how the team could assist and support her. The team affirmed her work with her family and the changes she made to her health. With continued encouragement, motivation, and grace, she found the support she needed to succeed.

With Melanated Mama’s Meals MTM Program, she addressed her low iron symptoms and incorporated walking and exercise via YouTube videos. She lost weight, which kickstarted her confidence and reduced her risk for cardiovascular and weight-related illnesses.

The Melanated Mama’s program equipped her with recipes, knowledge, and healthy coping mechanisms for the many obstacles of motherhood.



Success Story 2: Building Resilience, Modeling Advocacy

A dedicated mother to a three-month-old and focused on providing the best possible future for herself and her child. This mom works for a non-profit organization and receives support from the WIC program. She moved in with her mother as she transitioned to a new apartment. She experienced extreme stress related to her milk supply and struggled to transition her baby to formula.

The Melanated Mama's team helped find a formula so her baby could thrive, yet it was more expensive and difficult to obtain. Understanding the financial strain, the team alleviated the added stress by helping her navigate the process of getting the formula covered under the WIC program. The additional requirements for a doctor's referral were part of

“It’s hard, but I’m still pushing through.”

this navigation. Weekly check-ins provided a consistent source of support, encouragement, and guidance as she navigated high-stress situations. Her stress became manageable as she continued to work with the Melanated Mama's team, which equipped her with advocacy, research, and follow-through skills to build her resilience and confidence as a mother.

Success Story 3: Empowerment

As a second-time mother, balancing her roles as a wife and working mother was challenging. Her biggest challenge was finding care for her oldest daughter and learning to advocate for her daughter's medical

needs. Working with Melanated Mama's Meals MTM Program, she was empowered and educated about her rights. This led her to advocate for her daughter to receive the necessary ear procedure, improving her speech successfully. Once this primary need was met, she could adjust to a healthier lifestyle by beginning to work out and eat healthily. She learned new life skills and recipes to introduce her children to healthy foods. Weekly check-ins provided resources and support, which motivated her as she navigated her journey through the program.

Success Story 4: Advocacy for Self and Family

A mother to a thirteen-year-old and two-year-old son, she joined the Melanated Mama's Meal program soon after she became pregnant with her third child. It was very important to her to work hard to build her life from relying on government assistance. She had a history of hardships related to family, housing, and medical assistance, especially during her pregnancy. Doctor's appointments would be canceled multiple times and rescheduled weeks out. Since participating in Melanated Mama's, she has learned to be patient through her obstacles and gently vigilant with her perseverance. She is an advocate for herself and her children.

After participating in Melanated Mama's, she

“Having the support of a Doula like you and the meals makes me feel like parenthood isn’t a lonely journey.”

has learned to take advantage of activities that make her feel the best each day and eat foods that support a healthy lifestyle. She takes her son to the park daily and has learned better communication with him. She appreciated someone holding space for her each week, providing consistent support, and listening to her through her journey.

Success Story 5:

Meal Prep and Support Returning to Work

A first-time working mother to a three-month-old, she joined Melanated Mama's with gratitude and excitement to start the program. During this postpartum time, she struggled with adequate nourishment, finding time to cook for herself and stay hydrated throughout the day. Participating in Melanated Mama's allowed her to get into the flow of motherhood.

She eagerly progressed in her health and expressed interest in exercising, journaling, mindful eating, and wellness groups. Consistent weekly check-ins made her more aware of her body's needs, like drinking more daily water.

Her participation in Melanated Mama's equipped her with meal-prepping skills to address her concerns for time and energy during the week. On days without time to cook, she was provided cooked meals as a supplement, ensuring she met her nutritional needs postpartum. She experienced the direct benefits of meal prepping and extended grace to herself as a mother trying to listen to her body.

“I want to be healthier for my kids. They deserve a mom who can keep up with them and be there for them.”

Success Story 6:

Overcoming Environmental Challenges

A full-time mother to two infant children, she lives with her mother, who helps with childcare. Being overweight puts her at risk for diabetes and other long-term health issues. With limited healthcare access, she attended a clinic for her and her family's medical care. The financial strain caused difficulty for her in affording essentials for her children, and her lack of educational qualifications hindered her job opportunities. She had difficulty accessing safe exercise or taking her children to the park without a car.

Since participating in Melanated Mama's, she has received emotional support, nutritional guidance, and meal planning assistance. She went from drinking 8 sodas a day to drinking no soda and finding healthier alternatives. She now goes to the gym in her apartment complex and has overcome some environmental challenges that prevented her from having a healthier lifestyle. She has expressed an interest in meal prepping to help ensure her success after the program ends. She is experiencing improvements in her physical and emotional health, leading to a better quality of life. Gaining access to resources and support empowered her to address the challenges in her life.

SECTION 4:

CONCLUSIONS, LIMITATIONS & RECOMMENDATIONS

Conclusions

The Melanated Mama's Meals MTM Program had very favorable results, showing that almost half (43%) of participants had an improvement in their activity levels, and four-fifths (80%) of participants reported improvement in their eating habits. More than half (60%) of participants' positive feelings and thoughts improved during the program, suggesting both their physical and mental health benefited from participating. Participants also showed modest improvement in their food insecurity.



Additionally, the partnership with Solano Public Health BIH and the Doula Doula organization has been invaluable in ensuring the sustainability of the Melanated Mama's Meals MTM Program, connecting participants, recruiting them, and effectively providing light case management.

The partnership with Rasta Mama's Kitchen and Food is Free Bay Area has also been an immensely valuable resource for the program, providing quality meals and safe storage and transportation.

The program has also provided participants with a Medically Tailored Meals program, which has played a crucial role in promoting their health and well-being. The partnerships have been a mutually beneficial collaboration that has helped improve the health outcomes of the participants and the community.

Lastly, participants themselves were very satisfied with the program overall, improving their access to healthy food and supporting them during a critical time. They responded positively to their participation and requested that the program continue. Another implementation of this same program model, with improvements, is already planned for Fall of 2024.

Limitations and Recommendations

Below are outlined some limitations of this program and its evaluation, as well as recommendations for future versions.

Food

It is important to identify the appropriate type of cuisine for the population being served first, and then develop the menus with the food provider before enrolling participants into the program. The implementation of a meal component requires pre-planning to ensure the menus are appropriate for perinatal persons, have variety, and are well-balanced. It is critical to find a food vendor and grocery box provider that are willing to work collaboratively with a Registered Dietitian to plan the 12-week menu and grocery boxes taking into consideration appropriate number of calories, well-balanced, variety, and nutrients critical during the perinatal period. After the menus have been developed and the allergens and intolerances identified, the Registered Dietitian and Chef need to continue to work together to make further modifications to the menus and to ensure the substitutions are appropriate and varied. It is recommended to have the meals delivered to the implementation team to check on quality and consistency.

During the intake process, it is critical to have a Registered Dietitian consult with each of the participants who have allergies and/or intolerances to determine which are true allergies and which are intolerances or preferences to communicate this information to the chef. Additionally, labeling each meal with meal contents is necessary for the participants' confidence in knowing what is being

provided and for safety reasons to ensure that participants' allergens are being noted.

Another consideration when planning the meals to ensure there is variety so that participants do not get tired of the same meals. One solution to increase variety could be to have two chefs instead of one for the 12 weeks. However, this would require additional time for menu planning, education, and logistical coordination.

It is recommended that food vendors be extensively educated before program initiation and that menus and participant satisfaction be monitored on an ongoing basis throughout the program.

Food Packaging and Transport

Food packaging and transport requires careful consideration. It is important to include this discussion after the menu has been established especially if home delivered meals service is new to the food provider. The packaging for each menu items needs to be the appropriate size for the meal portion and packaged together when the heating instructions are the same. If the food container is too large or not securely contained, the food item moves around in the container making it look messy or it can spill out such as soup. Each meal needs to be have a label that includes the contents of the container, ingredients, and heating instructions. Once the food packaging/containers are decided, then the appropriately sized insulated bags and ice packs need to be discussed and selected so that they are not too small or too large. It is also important to select a food vendor that has a refrigerated van.

Food Familiarity

For many, food brings comfort during stress, such as the perinatal period. Familiar foods can help bring comfort, whereas for many participants, the meals delivered were very different from the day-to-day meals they were accustomed to in their homes. Some participants loved this challenge. For others, this was not comfortable. The food vendor was culturally connected to a Jamaican food tradition, and while many items were familiar, some were new and not well-accepted. In future programs, it is recommended to include foods that will be mostly familiar to the widest population, with some new foods introduced intermittently.

Shelf-Stable Grocery Box

The shelf-stable grocery box added food security and extended the family's nutrition support each week. However, in future programs, it is recommended to provide a more cohesive box with ingredients to prepare meals and suggested meals/recipes. This would provide education and create additional meal-prep opportunities. It will also be helpful to note the family size and age of children in the home during intake to better support the whole family during the 12 weeks.

Fresh Produce

During the first week, some participants were unsure how to use produce because the box contained unfamiliar items. The CSA Farmer did include a newsletter with recipes and a description, yet many did not read it in the first week. The CSA Farmer helped increase the number of familiar citrus items in the second week, decrease the total amount of produce, and simplify the newsletter. By the third delivery, participants loved their produce bags, and the Doulas were helping with preparation ideas and recipe ideas.



Transportation

Transportation of food is a challenging component of this program. The first two deliveries did not go according to plan, with food not staying in containers and presentation being compromised. Action items that were taken included the following:

- IHS worked with the chef to improve the presentation
- Chef began using press-n-seal to prevent leakage
- IHS worked with transportation vendor to prevent food bags from tipping over in transport
- IHS worked on the consistent size of the insulated bags to prevent food from extra movement

Due to these incredible partnerships, transportation, and delivery of food were ultimately successful, with some changes and adjustments along the way. During the intake, it is vital to ask for delivery details and instructions, such as gate codes and where food may be safely placed. It is also recommended to google the address at intake to understand the location better. Continual communication with participants about changes in addresses is also important, and a text should be sent out bi-weekly with this reminder to provide updates.

Mode of Delivery of the Program

Through the experience of prior in-person models, this program was intentionally designed to primarily communicate with participants by phone. Offering an in-person option for the initial orientation helped build a connection with the participants. Both the participants and the Doulas felt that a hybrid method should be considered in future iterations of this program.



THANK YOU!



EVALUATION REPORT

July 1, 2023 to June 30, 2024

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